

FUTURE TRADING

FUTURE TRADING

UPON

ORGANIZED COMMODITY MARKETS

IN THE

UNITED STATES

by

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To
Florence Fernstrum Hoffman

PREFACE

The purpose of a preface is usually two-fold: to permit the author to acknowledge his indebtedness to others, and to allow him to venture an opinion regarding the place and use of his treatise. In both of these matters, the statements of authors are always greatly abridged and, partly because they are abridged and partly due to the inherent difficulties of the task, are usually defective. The present preface is not an exception in these regards.

In the matter of indebtedness to others, I am sincerely grateful to my colleagues in the University of Pennsylvania for counsel and assistance and particularly to Professors S. S. Huebner and H. J. Loman. I am, also, greatly indebted to my associates in the work of the Grain Futures Administration in the United States Department of Agriculture, particularly to Dr. J. W. T. Duvel, Chief of the Grain Futures Administration, Mr. J. M. Mehl, Assistant Chief, Mr. H. S. Irwin, Agricultural Economist, and Mr. E. M. Blaylock, Assistant Chief Accountant.

Beyond the limits of these two groups, I am indebted to a number of men actively engaged in the grain and cotton trade. These include Mr. W. G. Reed of Geo. H. McFadden and Brother, Mr. Lowell Hoit of Lowell Hoit and Company, Mr. A. R. Marsh of the New York Cotton Exchange, Mr. Louis Sayre of the Rosenbaum Grain Corporation, Mr. J. H. Frazier of the Commercial Exchange of Philadelphia, Mr. Karl H. Rehnberg and Mr. E. J. Dies both of the Chicago Board of Trade. Each of these men read portions of the manuscript and supplied valuable criticism which I am glad here to acknowledge. From Mr. Reed and Mr. Hoit especially, I have had most generous help. The secretaries of the various exchanges have kindly supplied me with needed reports and information. To these and many others whom I have called upon for information or counsel my sincere thanks are due.

Concerning the purpose of this study, my main object has been to describe accurately the nature of future trading. Accurate description in this field as in most others implies unfolding, apprehending and explaining cause and effect among many apparent interrelationships. No one is aware more than I how imperfectly this has been done in the present study. All too often examples believed to be representative have been substituted for adequate sampling, and approximations rather than generalizations have followed. Beyond the limits of my main objective, I have at appropriate points, suggested possible solutions to certain of the more important problems and matters of policy in this field, all of which are ventured with due regard to the difficulties involved.

For those having no knowledge of future trading, the whole of Part I should be read before attempting Part II; for those having a general knowledge of the form of trading in futures, Chapters I and VI of Part I are suggested as a prerequisite to a reading of Part II. Chapter summaries and a general summary in Chapter XXII enumerate the principal points considered.

G. WRIGHT HOFFMAN

Philadelphia,
October, 1931

CONTENTS

PART I

ORGANIZATION AND OPERATION OF FUTURE MARKETS

	<i>Page</i>
Chapter I. ECONOMIC POSITION OF FUTURE TRADING	1
Chapter II. EVOLUTION OF FUTURE TRADING: GRAIN AND PROVISIONS	13
1. Development of the American grain trade.	
2. Types of grain trading.	
3. Standardization of the "to arrive" contract.	
4. Future trading.	
5. Organization of grain future markets.	
6. Summary.	
Chapter III. EVOLUTION OF FUTURE TRADING: COTTON AND OTHER COMMODITIES	35
1. Cotton.	
2. Coffee, sugar, cottonseed oil, flaxseed.	
3. Development since the World War.	
4. Summary.	
Chapter IV. GRAIN MARKETING	58
1. The marketing process.	
2. Marketing at country points.	
3. Terminal marketing.	
4. The grading of grain.	
5. Summary.	
Chapter V. COTTON MARKETING	79
1. The production and consumption of cotton.	
2. The classification of cotton.	
3. Local marketing.	
4. The central markets.	
5. Summary.	
Chapter VI. THE FUTURE CONTRACT AND ITS USE ..	99
1. The future contract.	
2. Cash vs. future contracts.	
3. Legal nature of the future contract.	
4. Summary.	
Chapter VII. THE MARKET STRUCTURE: TRADING FACILITIES	119
1. Physical equipment.	
2. Market reports and news.	

CONTENTS

Chapter VIII.	THE MARKET STRUCTURE: BROKERS AND TRADERS	133
	1. Brokers.	
	2. Traders.	
	3. Summary.	
Chapter IX.	ORGANIZATION AND RULES OF EXCHANGES	147
	1. The nature of an exchange.	
	2. Organization of exchanges.	
	3. Rules and regulations of Exchanges.	
	4. Summary.	
Chapter X.	TRADING PROCEDURE	161
	1. The operations of trading.	
	2. Kinds of orders.	
	3. Other trading operations.	
	4. Summary.	
Chapter XI.	CLEARING OF FUTURE CONTRACTS	185
	1. The need for a clearing system.	
	2. Development of clearing methods.	
Chapter XII.	CLEARING OF FUTURE CONTRACTS (CONTINUED)	201
	3. Present-day methods of clearing contracts.	
	4. Legality of the clearing process.	
	5. Summary.	

PART II

PRICE ASPECTS AND PROBLEMS OF FUTURE TRADING

Chapter XIII.	THE PRICE STRUCTURE	233
	1. The determination of price.	
	2. Demand.	
	3. Supply.	
	4. Quantitative comparisons of supply and price.	
	5. Seasonal movements in price.	
	6. The market in commodities used for future trading.	
	7. Summary.	
Chapter XIV.	INTERRELATION OF CASH AND FUTURE PRICES	254
	1. Why cash and future prices are similar in movement.	
	2. Cash prices built up from future prices.	
	3. The principal reasons for variations in the relation of cash to future prices.	
	4. Summary.	

CONTENTS

xi

Chapter XV.	DIFFERENCE SYSTEMS AND THEIR EFFECT ON FUTURE PRICES	277
	1. Occasion for a difference system. 2. Types of difference systems. 3. Some price limitations in difference systems. 4. Summary.	
Chapter XVI.	DELIVERABLE CASH SUPPLIES AND FUTURE PRICES	306
	1. Ideal conditions. 2. Natural factors causing abnormal conditions. 3. Artificial factors causing abnormal conditions. 4. Remedies. 5. Summary.	
Chapter XVII.	MARKET OPERATIONS AND THEIR RELATION TO FUTURE PRICES	324
	1. Some general aspects of trading and price. 2. Individual trading factors in their relation to price. 3. Remedies. 4. Summary.	
Chapter XVIII.	GOVERNMENTAL REGULATION OF EXCHANGES	351
	1. The background of regulation. 2. State regulation. 3. Federal regulation. 4. Summary.	
Chapter XIX.	HEDGING	377
	1. Reasons for hedging. 2. The process of hedging. 3. Types of hedging in grain.	
Chapter XX.	HEDGING (CONTINUED)	397
	4. Types of hedging in cotton. 5. Trading in basis. 6. The extent of hedging. 7. Summary.	
Chapter XXI.	THE MARKET-MAKING FUNCTION	419
	1. Continuous character of the market. 2. Dissemination of market news and quotations. 3. A two-sided market,—short selling 4. The influence of arbitraging. 5. A sensitive market. 6. Price leveling. 7. Price forecasting. 8. Summary.	

CONTENTS

Chapter XXII.	SUMMARY AND OUTLOOK	444
Appendix A.	FIRST 12 SECTIONS OF THE UNITED STATES COTTON FUTURES ACT	456
Appendix B.	THE GRAIN FUTURES ACT	462
Bibliography		471
Index		475

TABLES

<i>Table</i>	<i>Page</i>
1. The Principal Exchanges and Commodities in which Future Trading is Maintained in the United States Judged by the Total Value of Trading in the Year 1929	10
2. Early Growth in the Grain Exports of the United States	15
3. Inspections of Grain into Chicago Elevators, June 15-December 31, 1858	26
4. The Volume of Trading in Cotton Futures on the New York Market for 1869 and 1870 and upon the New York Cotton Exchange for Specified Years, 1871-1929	43
5. The Volume of Future Trading and an Estimate of its Aggregate Value, by Commodities and by Exchanges, for the year 1929	54
6. Monthly Marketings of Wheat by Farmers, in Percentages, Average of the 10-Year Period, 1920-1929	61
7. The Consumption of Cotton and the Active Cotton Spindles in the United States, by Sections for the Years 1870 and 1928, Showing the Growth of the Cotton Industry in the South ...	81
8. The List of Grades Constituting the Universal Standards for American Upland Cotton Showing the Estimated Proportions of each Grade Composing the 1930 Crop.	85
9. The Estimated Quantity and Distribution of Staple Lengths for the 1930 Crop of American Upland and American-Egyptian Cotton	88
10. The Amount of Grain Used to Fulfill Future Contracts on the Chicago Board of Trade for the Three Futures 1924 September, 1924 December, and 1925 May, Combined	107
11. Cotton Future Contracts Fulfilled by the Delivery of Warehouse Receipts on Two Leading Cotton Exchanges, for the Three Crop Years 1919-20, 1920-21, and 1921-22, Combined	108
12. Cash and Future Contracts Contrasted	109
13. Interaffiliations of Commodity Exchanges through Firm Membership	123
14. Average Changes between Cash Sales Prices of Various Wheats at Beginning and End of Crop Year, for a Twenty-one Year Period	249
15. Twenty-two Year Average of Monthly Cash Prices for Wheat, Corn, Oats and Cotton Based on the Periods, 1900-1914 and 1921-1929	250
16. Car-lot Purchases of Wheat and Oats made by a Leading Firm upon the Chicago Board of Trade on August 11, 1930,	

<i>Table</i>	<i>Page</i>
Showing Premiums and Discounts Based upon the September Future	261
17. A Limit Sheet Sent by a Cotton Firm to its Representative to be used as the Basis of Purchase of Spot Cotton at Country Points	264
18. Grades of Grain Deliverable on Future Contracts upon the Chicago Board of Trade during 1929 Showing the Differentials Over or Under the Contract Price for Each Grade	281
19. Points "on" or "off" the Contract Price Paid by or Allowed to the Seller of Cotton Futures for Various Grades of American Upland Cotton Measured by the Mean of the Spot Prices Prevailing on Ten Designated Spot Markets, January 11, 1930 ..	289
20. Car Inspections of Wheat at Chicago Showing the Proportion of No. 2 Winter to All Grades for Ten Years, 1920-1929	293
21. Classification of the 1928 American Cotton Crop by Type, Color, Grade and Staple	295
22. The Average Grade of Each American Upland Cotton Crop as Reported by Shepperson Annually from 1915 to 1928 ...	296
23. The Volume of Trading and the Open Commitments in Wheat Futures upon the Chicago Board of Trade Compared with the Receipts and Visible Supply of Wheat at Principal Markets, for Six Crop Years, 1924-1929	326
24. Number of Days on which the Net of Individual Purchases and Sales of 500,000 Bushels or Over and the Future Price Moved in Same Direction, for Wheat, for Leading Speculators, All Futures Combined, from January 2, 1925, to December 31, 1926	335
25. An Illustration of a Hedged Transaction in Oats	384
26. An Illustration of a Hedged Transaction as a Problem in Basis	385
27. An Illustration of the Use of a "Give-up" in Hedging, Using Two Different Future Prices	395
28. Aggregate Long and Short Positions in Wheat Futures of Members of the Millers' National Federation, for Quarterly Dates, 1926-1931	416
29. The Average Monthly Fluctuation (in per cent) in the Wholesale Price of a Group of Food, Farm and Miscellaneous Products, for the period 1890-1925 (excluding 1914-1921)	433
30. Correlation of September Future Prices of Oats during the Growing Season with Cash Prices in September	437

CHARTS

<i>Figure</i>	<i>Page</i>
1. The Principal Channels of Trade in the Merchandising of the Wheat Crop	63
2. Relation of Cash to Future Contract	106
3. Trading Floor of the Chicago Board of Trade Facing page	121
4. Pit Broker's Trading Card	162
5. Customer's Confirmation of Purchase	163
6. Price Signals Used in Floor Trading	165
7. Diagram of the Course of a Trade in Futures	167
8. Customer's Account of Purchase and Sale	170
9. Customer's Monthly Statement	171
10. Warehouse Receipt for Grain	174
11. Warehouse Receipt for Cotton	175
12. Market Positions Set Up between Brokers and Customers as a Result of a Transaction in Futures	186
13. Market Positions Set Up between Brokers as a Result of Two Completed Transactions by Customers	187
14. Direct Settlement of 10,000 Bushels of May Corn Futures ..	190
15. Ring Settlement of 10,000 Bushels of May Corn Futures ...	191
16. Settlement by Transfer of 10,000 Bushels of May Corn Futures	192
17. Settlement by Warehouse Receipt or by Transferable Notice of 10,000 Bushels of May Corn Futures	193
18. A Delivery or Transferable Notice Used in the Clearing of Trades	194
19. Clearing Money Balances through the Use of a Settlement Price	197
20. Confirmation Slip Used to Verify Oral Trades between Clearing Members	204
21. Purchase and Sales Sheet Used in Clearing Trades	206
22. The Recapitulation Statement Used in Clearing Trades	208
23. Form Used to Call for an Additional Variation Margin	211
24. Street Book Used as Record of Inter-broker Transactions in Futures	217
25. Steps Involved in Executing a Selling order in Futures	220
26. Illustration of a Demand Curve for Wheat	236
27. Illustration of an Elastic and of an Inelastic Demand	237
28. Supply-Price Relationship for Oats	243
29. Supply-Price Relationship for Cotton	243
30. Supply-Price Relationship for Corn	244
31. Supply-Price Relationship for Wheat	244
32. Seasonal Variation in the Price of Four Commodities: Wheat, Cotton, Oats, and Corn	248

<i>Figure</i>	<i>Page</i>
33. Relation of Cash to Future Prices for Four Commodities for the 10-year period October, 1920-September, 1930	255
34. The Seasonal Trend in No. 2 Hard Winter Wheat Prices, Chicago, During Crop Year, 1928-1929	270
35. The Seasonal Trend in Cash Prices Relative to the Price of Futures, for Wheat, Corn, Oats, and Cotton, Averaging 9 Crop Years, 1921-1930	272
36. Comparison of Spot Price of Middling Cotton at New York and the Average Spot Price of Middling at New Orleans, Memphis, Galveston and Houston with the Price of Future Contracts for the Spot Month on the New York Cotton Exchange, Fridays, September, 1906-August, 1907	297
37. An Illustration of the Effect of a Relative Change in the Spot Prices of Cotton	302
38. The Influence of Supplies of Corn in Store, Chicago, upon the Relative Levels of Future Prices, 1921-1930	313
39. A Comparison of the Fluctuations in the Volume of Future Trading in Wheat with the Fluctuations in Wheat Future Prices, Chicago Board of Trade, by Months, for 6 years, 1924-1929	329
40. The Combined Position in Wheat Futures of 5 Leading Speculators Compared with the Price of Wheat Futures, Chicago Board of Trade, by Days, for the Period April 30-December 31, 1926	333
41. The Net Position, All Wheat Futures Combined, of Each of 5 Leading Speculators, Chicago Board of Trade, by Days, for the period April 30-December 31, 1926	337
42. The Combined Position in Wheat Futures of the Customers of 15 Clearing Firms Compared with the Price of Wheat Futures, Chicago Board of Trade, by Days, for the period April 30-December 31, 1926	339
43. Illustration of the Shifting of Price Risk by Hedging	383
44. Reproduction of a "Call" Contract for Cotton	401
45. Changes in Spot Cotton Prices Relative to Future Prices, New Orleans Cotton Exchange, by Weeks, for 9 Crop Years, 1921-1930	408
46. The United States Visible Supply of Corn Compared with the Combined Net Position of 67 Large Hedging Accounts, by Weeks, for the period October, 1924-September, 1928	415
47. The Intra-annual Variability of Wheat Prices and of Cotton Prices, 1867-1930	430
48. Diagram of Price Forecasting as of October 1, in which the General Level of Prices is Shown as an Expression of Probable Market Conditions a Few Weeks Hence, with Specific Future and Spot Prices Adjusted to this General Level	440

PART ONE
ORGANIZATION AND OPERATION OF
FUTURE MARKETS

CHAPTER I

ECONOMIC POSITION OF FUTURE TRADING

There is perhaps no place in the world where speculation is carried on with such care-free abandon as in the United States. It sweeps along from one object of interest to another invading, at various times and with varying degrees of intensity, every economic activity of this country. At one time, interest is centered upon the untold possibilities of agriculture; at another time, promising developments in the means of transportation attract attention to be later replaced by assuring improvements in the field of public utilities. So, from farm land to suburban real estate, from mining to manufacturing processes, from the products of agriculture to the products of new and untried inventions, we freely risk our capital in the hope of unusual gain.

While its effect varies widely between individuals, there can be little doubt that this speculative bent is, to society as a whole, a highly valuable asset. This is particularly true in a new and rapidly developing country. An industry once established can frequently continue to operate successfully for long periods of time with a fair assurance of success. But for all types of new enterprise, and for undertakings which are an innovation to a going concern, and at all times for certain types of established business, unusual hazards must be assumed. In the absence of those willing to enter these fields, improvement and progress are certain to be retarded.

The corporate form of organization has been of inestimable value in encouraging individuals to enter new or hazardous fields of enterprise. By incorporating and offering shares of small denominations, thousands who could not otherwise participate are able to share in the risk and possible gain of any undertaking. Students of economic history tell us that industrial progress in the past was retarded as much if not more by

a lack of available capital than by any absence of known methods or new improvements. Inventive genius had little to encourage it as long as it was known in advance that adequate funds could not possibly be obtained to promote an improvement and this was not due so much to an absence of capital as to an inability to mobilize it. Through the medium of corporate shares, comparatively small amounts of capital can be drawn together from many sources to undertake and to perpetuate enterprises which must of necessity be large to be successful.

Risk and Insurance.—While it is true that the element of risk is present in every phase of economic activity and in this broad sense all must share in assuming it, it varies widely in amount and incidence between different groups. Thus in a simple business undertaking, labor and capital are brought together by the enterpriser. From the income derived, payment is first made to the first two groups, the balance going to the enterpriser. The amount of the income to be received from the business each year is for this reason much more uncertain for the enterpriser than for the laborer or capitalist group. Between the various types of enterprise there is also a wide variation in the element of risk. The railroad industry for example involves much less uncertainty than the steel industry, the production of necessities involves less risk than the production of luxuries, and the manufacture of goods in general involves less uncertainty than their marketing and distribution.

It is only in those phases of business where the elements of risk are large that the role of risk-bearer assumes any practical importance. It is here we find the speculator, the enterpriser, the underwriter, the insurer. The risks, when traced to their source, assume a wide variety of forms. They may consist of natural hazards such as those of weather or plant and animal disease. They may pertain to human hazards resulting in sickness, accident, or death. They may include social hazards such as strikes, adverse legislation, or wars. Finally, and by far the most important in their effect, they may involve the hazards

causing unforeseen changes in market price.¹ All of these risks represent, from an economic point of view, the possible loss of something of value. The hazards of weather affect the value of farm crops, of transportation and of innumerable minor interests. The human hazards remove or diminish the income and thus the economic value of the lives affected. The social hazards, at times, are equally severe, decreasing the value of life and property. And the wide range of unforeseen forces which adversely affect the prevailing price of property represents an ever-present and all inclusive source of loss in value.

Some of these risks have been segregated and separately provided for. In this form they are said to be insured. Willett defines insurance as "that social device for making accumulations to meet uncertain losses of capital which is carried out through the transfer of the risks of many individuals to one person or to a group of persons."² Insurance thus involves the shifting of risk either to some special fund as in self insurance or mutual insurance or to some special interest or group definitely created for that purpose. In either case it relies upon a superior knowledge of the hazards assumed, or an application of the law of large numbers or both to operate successfully; and it is of social value only if it results in a net saving in the long run to all of the interests affected. For a considerable list of risks such as those covered by life, fire, marine and casualty forms of insurance, a successful application of these principles has been attained. But in other fields, and notably in those involving unforeseen changes in price, insurance is afforded only to restricted groups and under very limited circumstances. Those risks which cannot be separately handled by transferring to an insurance carrier must be borne in conjunction with other business operations. As a rule they are carried as a part of the responsibility of the enterpriser though not infrequently

¹ Cf. Hardy, C. O., *Risk and Risk Bearing*, The University of Chicago Press, 1923, p. 2 ff.

² Willett, A. H., *Economic Theory of Risk and Insurance*, Columbia Univ. Press, 1901, p. 106.

the work and reward of laborers as well as capitalists depend chiefly upon the risks assumed.

The Nature of Future Trading.—The subject matter of future trading constitutes a part of the broad field of risk and insurance. The entire activity of future trading consists in either assuming risk as speculators or in shifting risk as hedgers. The hazard involved is the highly important one of unforeseen changes in market price. Speculators, in buying and selling contracts for the future delivery of commodities, freely assume this hazard with the hope of profitable gain. Hedgers, who are engaged in the business of merchandising commodities, buy and sell futures for the express purpose of transferring this hazard to the shoulders of others and principally to speculators willing to assume it. Hedging is, therefore, a form of insurance in which a wide variety of merchandising and marketing interests compose the insured and a much wider variety of speculators constitute the insurer. We will find later that a major part of the entire body of future contracts currently carried forward arise out of hedging operations. In so far as this is true, the institution of future trading is a price insurance agency.

Whatever its form or subject matter, speculation embodies the common characteristic of attempting to forecast or understand that which is not known. As a mental process, to speculate is to ponder or contemplate the various aspects or relations of a subject. In general business usage, the term is applied to the field of ventures the outcome of which is relatively uncertain and hence from which the profits or losses are likely to be large. More specifically, and particularly as it is applied to the field of future trading, speculation is an attempt to profit from uncertain fluctuations in the price of either wealth or rights to wealth. Those who speculate in futures risk their capital in an attempt to accurately foresee and profit from future changes in price. The field of future trading is thus a part of the broad field of risk, taking the form of speculation for those who assume the risk and the form of hedging or insurance for those who transfer the risk of uncertain price changes.

Future Trading a Political Football.—Dealing as it does with the course of prices, future trading necessarily exerts a vital effect upon interests immediately concerned with the commodities in which it is maintained. These commodities are principally in the field of agricultural products and for this reason the interests of the farmer, the shipper and warehouseman, the merchant, and in a broad way the entire body of consumers are involved. Of these groups, the farmer has generally opposed the practice of future trading (particularly if prices are low or declining), the intermediate merchandising groups have usually favored the practice, and the consumer has taken little active interest except to complain occasionally when prices are high or advancing rapidly. Here then is an excellent field for controversy and one which political leaders have exploited to the fullest extent. The farmer has not been in a position to study closely the operations and effects of future trading. His vote is an important one in the agricultural states of the Central West. For these reasons politicians have usually aligned themselves with the farmer and have freely fanned the flame of discord. The result has been that trade interests in general and exchanges in particular have had to assume the defense. In doing so they have naturally been willing to advance only those arguments and aspects of the subject which appear favorable to the practice.

Taylor states that in Illinois as early as 1874 "the Grange element of the state which was very strong and which had never been in sympathy with the Board of Trade or its methods, favored the passage of a law declaring all transactions in 'futures' to be gambling operations."³ Later in 1883 New York State made an investigation into the methods of trading being carried on by the New York Produce Exchange.⁴ In this same year a similar investigation was carried on by the State of

³Taylor, C. H., *History of the Board of Trade of the City of Chicago*, Vol. I, p. 501.

⁴Special Senate Committee, *Testimony and Report . . . on the System of Making Corners and Dealing in Futures*, Sen. Doc. No. 45, Albany, 1883.

Illinois regarding the trading methods of the Chicago Board of Trade⁵ while Congress at the same time was considering a bill to prohibit the use of the mails for messages involved in the purchase and sale of futures.⁶ The first clash of outstanding importance, however, did not occur until the early nineties when the Butterworth Bill and later the Hatch Bill were before Congress and at which time a prohibitive act barely failed of passage. Since that time an almost continuous series of regulatory and prohibitive measures have been considered by Congress, no less than 164 having been introduced up to 1920⁷ and with no apparent slackening in volume up to the present.

A running fight of such length and intensity strongly suggests some merit in the contentions of both interests. But all too often the facts to be had have been either purposely avoided or obscured in a mass of irrelevant material. In the Congressional hearings, for example, lengthy consideration is given from time to time to the proposition that the present practice of hedging could be effectively maintained without the practice of short selling. And strangely enough the debate is sometimes settled in the affirmative. Considerations of this sort strongly suggest that little can be accomplished in ironing out differences of opinion until a more thorough-going understanding is had of the fundamental nature of future trading.

Approach.—It is proposed in this study to marshal the available facts in the field of future trading for the purpose of better understanding its nature. To this end, we will need to know the essential features of the contract used as a medium for trading; we will need to know the process and technique of trading; we will need to know the effect of trading upon prices

⁵ *Report of the Special House Committee to Investigate the Chicago Board of Trade*, together with testimony taken before the Committee. Springfield, 1883.

⁶ *H. R. 5007*, 48th Cong., 1st Sess., (1883-84): "to prohibit mailing of letters and money orders relating to future contracts."

⁷ Cf. Phillips, C. L., *History of the Subject of Options and Futures in Congress as Reported in the Congressional Record* (typewritten), U.S. Dept. of Agr., 1920.

and upon the various interests involved. Finally, we will need to know the principal functions or uses for which this type of transaction is regularly employed.

An initial requisite to any scientific investigation is that it be approached with honesty and fairness. This involves something more than a mere willingness to consider any or all of the various aspects of a subject. It involves, also, a willingness to critically examine and, if need be, recast concepts already constituting an important part of one's beliefs upon a subject. Our opinions are strongly influenced by environment: our home life, our early economic status, our present business and social connections, all of which play an important part in influencing our thinking. It is impossible to free oneself entirely from the background of these experiences. But if an appraisal is made of them with an attempt to place one's point of view beyond their limits, a much larger measure of validity will be attained in considering any subject.

It is especially desirable that our approach to the present study be from a detached or objective point of view. The subject of future trading is a controversial one. Some of the opinion growing out of it is based upon a detached and careful analysis of the various phases of the subject but most of it is not. All too often in the past the circumstance of training or occupation has served as a determining element in appraising the practice, and where this is the case some measure of bias or prejudice is certain to play a part. We need, therefore, in considering the various aspects of this subject, a point of view entirely beyond the limits of the groups immediately affected and to consider how this practice operates and how it affects these various groups. We can then bring together pertinent information, marshal it according to its importance, analyze and interpret it, bringing to bear upon it as careful judgment as possible.

Limits of the Study.—The present study is limited to *economic phases* of future trading. Principally because it can be used as a basis for gambling, there are, however, in addition

certain ethical and social aspects to this subject. These will not be considered beyond an occasional reference necessary to an adequate understanding of some economic feature. By thus limiting the field, a larger measure of consideration can be given to the economic phases of the subject although it is clear that in excluding the ethical-social problems the broadest possible appraisal of future trading cannot be made.

To know the nature of future trading in any thoroughgoing fashion requires something more than a general consideration of its operations and functions. At certain points it is essential to study closely the detailed methods employed in order to obtain an accurate estimate of what is accomplished. For this reason our analysis and illustrations will be taken from only two types of commodities: grain and cotton. In doing this, it will be possible to build up for these two commodities a background of essential trade information which will greatly aid in analyzing particular phases of the subject. It is in these two commodities, also, that the practice of trading in futures has been developed to the most advanced stage and in which by far the major portion of the entire volume of futures is transacted. In selecting these commodities, emphasis is being placed, and properly so, upon the leaders in the field.

The Extent of Future Trading.—In the United States, future trading had its origin just prior to the Civil War in grain and pork products. Cotton followed in the latter part of the sixties, coffee in 1882, cottonseed oil in 1904 and raw sugar in 1914. Since the World War, a long list of products has been added including rubber, cocoa, eggs, butter, hides, silk, cottonseed and cottonseed meal, mill feeds, tin and copper. Classified by commodities, the list includes at the present time (1931) over twenty-five individual products; and the future markets for these commodities also number more than twenty-five. Their total volume of trading during the year 1929 amounted to approximately 42 billion dollars.⁸

It is of interest to note in connection with the growth and

⁸ See Table 5 at the end of Chap. III, pp. 54-55.

present size of the trade in futures its comparative importance with organized markets in stocks. Stock and commodity markets have similar structural equipment in exchanges, private wire and news facilities and brokerage offices; and through inter-broker membership connections, they appeal in large measure to the same body of speculative trade. The market value of the trade in stocks upon the leading exchanges in 1929 approximated 125 billion dollars, an amount about three times the size of the trade in commodities. Future trading in commodities thus represents an important fraction of the exchange trading in stocks though the latter has a much wider popular appeal.

Of the various commodities and exchanges, those in grain and cotton are of outstanding importance. The trade in grain futures during 1929 constituted two-thirds of the total trade in all commodities, and together with cotton accounted for a total of over 92 per cent of the value of all future trading. Not only is the trading concentrated in these two commodities but it is also centered in large measure upon two exchanges,—the Chicago Board of Trade and the New York Cotton Exchange. Upon these two boards occurred three-fourths of the trading during 1929. These facts are summarized in Table 1.

The data of Table 1 are to be considered only as broadly representative, since trading varies widely from year to year and in these variations some markets gain or lose in business relative to others. For many years, however, the trade in wheat, corn and cotton upon the Chicago Board of Trade, the New York Cotton Exchange and the New Orleans Cotton Exchange has held a commanding position in the future business of the United States; and for earlier years the proportions for these three exchanges and commodities were, of course, larger than those shown for the year 1929.

Competition vs. Cooperation.—In an effort to obtain timely insight into probable price changes, speculators and trade interests have built up an elaborate news gathering and reporting system extending to important points throughout the world.

A veritable network of private wires brings to the exchange floor a reflection of this news. No less than 500 cities and towns in the United States located in 45 states have private wire connections with the Chicago Board of Trade; and to this count should be added a large number of points in Canada and abroad. Through the medium of these facilities, all varieties of price factors are focused at one central point, there to

TABLE 1.—THE PRINCIPAL EXCHANGES AND COMMODITIES IN WHICH FUTURE TRADING IS MAINTAINED IN THE UNITED STATES JUDGED BY THE TOTAL VALUE OF TRADING IN THE YEAR 1929.

Principal Exchanges		Principal commodities	
Exchange	Per cent of total trading	Commodity	Per cent of total trading
Chicago Board of Trade	59.1	Wheat	55.5
New York Cotton Exchange	18.3	Corn	11.1
New Orleans Cotton Exchange	7.2	Oats	1.1
Minneapolis C. of Commerce	4.2	Rye	1.1
Kansas City B. of Trade	3.0	Cotton	25.7
N.Y. Coffee and Sugar Exch.	2.0	Sugar	1.4
Other exchanges*	6.2	Other commodities	4.1
Total	100.0	Total	100.0

* No one exceeding 2 per cent.

create through the composite opinion of thousands of individuals a highly competitive market.

One of the primary uses of future trading is this market-making function. Nowhere are markets to be found more keenly and at the same time openly competitive than those upon organized stock and commodity exchanges. The rules and methods of trade are carefully drawn to afford equal opportunity between buyer and seller; the trading contract is highly standardized to minimize uncertainty in the details of trade; easy access is had to the market itself and to all variety of governmental and private information making possible a free

and open expression of opinion. Here if anywhere in our economic structure the law of one price still prevails.

Markets of this type deserve close study in view of the present-day trend toward economic integration. Cooperative effort for the immediate or ultimate purpose of price control is very much the order of the day. It is found in varying measure in all phases of industrial activity necessitating year by year a gradually increasing measure of governmental regulation. The attitude of business leaders toward this movement is an interesting one. While anxious to merge with, buy out or otherwise dictate the operations of their chief rivals and thus to lessen the severity of competition, they are equally anxious to avoid the obvious consequence of such a policy viz., State and Federal regulation.

To the extent that cooperative effort is effective in dictating the level and direction of prices, to that extent the force of competition is weakened. Organized commodity markets must be free from price control if they are to be successful. It is true that a measure of cooperation is present and desirable in the most highly competitive markets; and it is equally true that a measure of competition is always present among the most closely regulated monopolies. But this measure of cooperation or of competition should not be permitted to direct the course of prices if either plan of operation is to be effective. Competition and cooperation constitute, in their principal features, alternative plans of procedure.

It is not the intention of the author either to defend or deny the claim that competition as exemplified by organized exchanges is best suited for agriculture. Rather, it is desired to emphasize the point that we cannot have an effective exchange system and a fully developed cooperative plan at the same time. Numerous examples of exchange failures in the past bear out this point. Both systems have certain desirable and certain undesirable features. It is a question of choice between the two as a broad policy best suited for agriculture and the welfare of the country as a whole. In view of the extensive agricultural

cooperative undertakings of recent years, this question is of unusual timeliness. Organized exchange methods as well as organized cooperative plans are very much on trial. The question of whether they are to continue to effectively operate or are to give way to newer methods is one which should be decided with an adequate knowledge of how exchanges operate and what they accomplish.

CHAPTER II

EVOLUTION OF FUTURE TRADING: GRAIN AND PROVISIONS

Trading in grain futures had its origin in the development of the grain trade of the United States. While there were ample precedents to be found in the English trading methods in iron warrants and, in particular, in the highly developed Japanese future exchanges in silk and rice, these precedents were apparently unknown in this country or, if known, were not availed of. Instead, future trading developed with our commerce in grain and since 1850 has formed an integral part of it. We need to review, therefore, the salient points in the growth of our grain trade to appraise properly the place of future trading in it.

1. DEVELOPMENT OF THE AMERICAN GRAIN TRADE

The westward expansion of the United States during the 19th century is a familiar story. In this, agriculture naturally played the dominant rôle. In the census of 1840, the states of Pennsylvania, New York and Ohio led in the production of wheat while Tennessee, Kentucky and Virginia were the leaders in corn production. But by 1860, the center of production for wheat had moved westward to Illinois, Indiana and Wisconsin, while Illinois, Ohio and Missouri led in corn production. Later in the century Iowa joined Illinois as an outstanding leader in corn, while the North Central states of Minnesota and the Dakotas together with Kansas and Nebraska drew the center of wheat production to its present location.

Westward Development.—It is difficult to say at what point this westward expansion reached its height or to select exact dates of significant development. The characteristic of importance was the growth or change taking place. In the first quarter of the 19th century, our grain trade was largely a local affair;

by the third quarter it had become distinctly international in character. In this transition, markets and means of transportation were of primary importance.

The Mississippi River and its tributaries were early availed of as a means of transportation and with the development of the steamboat they were for a time of great importance. Bogart states that the number of steamboats on the western rivers increased from 14 in 1815 to 450 in 1842. The commerce on the Mississippi and Ohio made St. Louis, New Orleans and Cincinnati prominent trading centers during this period, their importance being aided somewhat by the rapid development of cotton culture in the lower Mississippi area which supplied a partial market for the agricultural products of the North.

But despite the flourishing character of this river commerce, it was destined to be inadequate. It was slow and dangerous. Accidents due to uncertain and treacherous currents made it costly. The completion of the Erie Canal in 1825 together with a system of canals a few years later in Pennsylvania, New York, and other eastern states supplied, in conjunction with the Great Lakes, an additional outlet for some of the products of the Central West as well as diverted some of the traffic from the Mississippi.

But it remained for the railroad to solve the problem of transportation for this region and to bring to its door the industrial markets of the East and Europe. Actual construction was accomplished largely between the years 1845 and 1860, and as a result, where in 1840 our grain trade was a local affair, by 1860 it was international in scope. The following table taken from the *Eighth Census of the United States*, 1860, giving the value of grain exports by ten-year periods, illustrates well this change.

The railroads linked the Middle Atlantic and New England states to the Central West. The grain trade turned from the North Central states Eastward instead of Southward and as a result Chicago and Buffalo and Eastern points of reshipment developed and Southern points relatively declined.

Chicago's Early Leadership as a Grain Center.—In this development, Chicago, at the outset, took the leading rôle. From a fortress and trading post of 350 in 1833 it had grown to a town of 7,500 by 1843. By 1853 it was a city of more than 60,000 inhabitants. During these formative years, events of far-reaching importance to the commercial life of Chicago were happening in rapid succession. Some of these events were a product of the initiative of the city's pioneers, but most of them and certainly those of permanent importance were the result of the city's location.

Chicago became a large city because of its location: firstly, in the heart of a vast and rich agricultural region, and secondly,

TABLE 2.—EARLY GROWTH IN THE GRAIN EXPORTS OF THE UNITED STATES

Period	Aggregate value of grain each year.	Per cent of increase each ten years.
From 1823 to 1833	\$ 67,843,211
From 1833 to 1843	73,303,440	8.0
From 1843 to 1853	198,594,871	170.9
From 1853 to 1863	512,380,514	158.0

on Lake Michigan where, in conjunction with the railroad, low freight costs to the East were possible. The initial impetus to Chicago's growth was the building of the Illinois and Michigan Canal by the State. It was opened in the spring of 1848. Prior to this, receipts of farm produce into the city were either by wagon or, in the case of livestock, driven in. The completion of the canal, which connected the Illinois River with Lake Michigan at Chicago, was for a half dozen years an important factor in Chicago's commerce.

Problems of Transportation.—It is hard now to visualize the difficulties of transportation in this country before the time of the railroad. For Chicago, the problem was especially acute for much of the territory surrounding the town was marshy and at times the roads, due to the great volume of traffic, became congested and almost impassable. Writing on April 10,

1849, a local newspaper facetiously describes Chicago's main thorough-fare thus: "Lake and Randolph [streets] are staked out with guide boards and finger posts so that there is no danger of disappearing without full warning beforehand. . . . A post set on its edge has a placard upon it with the information, 'No drugstore below this.' Another post is surrounded with several hats, a pair of boots, feet uppermost, an umbrella and other articles appertaining to this life, with the inscription:

'As I am, you may be,
Taking this road you'll follow me, etc.'¹

The handicap of poor transportation was removed with the coming of the "iron horse." The first ten miles of railroad leading into Chicago were built in 1848. By 1855, a network of lines had been completed, no less than six systems running West to the Mississippi with other important extensions to the North and South and Eastward. These served as feeders to Chicago and made it at this early date the leading primary grain market of the world. During the year 1855, receipts of grain amounted to over 19 million bushels of which 66 per cent was shipped in by rail, 29 per cent by canal and less than 5 per cent by wagon. The shipments of grain from the city were handled almost entirely by lake to an eastern point of re-shipment and thence by rail or canal. According to Taylor, during this year "the number of vessels arriving by lake and reporting at the customs house was 5410."² To use a modern expression, Chicago, by the year 1855, had "arrived" as a commercial city.

Widespread Speculation.—The practice of trading in grain futures developed at Chicago, gradually and naturally, from early methods of trade in the physical product itself. To understand how and why this came about, it is especially essential to visualize the commercial and financial spirit of the time. Picture a city which suddenly finds its importing radius ex-

¹ Cited in Taylor, C. H., *op. cit.*, Vol. I, p. 153.

² *Ibid.*, p. 216.

tended from a few miles by wagon haul to a hundred miles and more by rail; whose grain receipts, accordingly, mount by millions; whose markets have expanded from the meeting of purely local requirements to the meeting of demand abroad; and whose merchants eagerly await the daily despatches giving news of Europe's needs from the latest vessels arriving at New York. The rapid sky-rocketings of price or drastic breaks in price were the rule rather than the exception, and speculation, accordingly, became very much the order of the day. This was particularly true after 1854 when the Crimean War stimulated prices through 1855, followed by the depressing effect of the panic of 1857, later by the influence of the Franco-Italian war against Austria in 1859 to be followed by the unparalleled effect of our Civil War.

Speculation assumed a variety of forms during these early years. The monetary system was especially poor all through this period and many varieties of paper currency were in use each having its own measure of value relative to gold.* This one factor was a source directly of a large volume of speculation and, indirectly, it added greatly to the possibility of unusual gain or loss in all forms of wealth. City real estate offered untold possibilities for profit and supplied an active field for those inclined to speculate. Farm land offered another opportunity especially if currency depreciation could be maintained or increased. Finally, farm produce, being the mainstay of commerce for the Central West and being influenced in price by so many uncertain factors, supplied an excellent medium.

2. TYPES OF GRAIN TRADING

Of the various kinds of farm produce, grain became the leader as a speculative medium. Prior to 1848, it was brought into the city by wagon and sold on arrival to dealers. With the coming of the railroad and the development of lake traffic, the

* See Wentworth, J., *Early Chicago*, (lecture given May 7, 1876) for a very interesting description of the varieties and uncertainties of money during this period.

receipts and shipments grew rapidly and by 1855 Chicago's grain trade had assumed the size and certainly the complexity of a modern market.

Curb Trading.—Concerning the busy life of the traders, Taylor gives the following vivid description, quoting in part from the *Press and Tribune*, a daily newspaper of the time. They are "the hardest worked race of beings on the face of the earth. They get up at sunrise, bolt their steak and rolls, and rush down to the 'first board,' which meets at a well known corner between 8 and 11 o'clock. At 11 the 'second board' met at the Board of Trade rooms, but buyers and sellers waited for the New York dispatches, which were due about noon. Early in the afternoon the 'third board' congregated on the corner before mentioned (called Gamblers' corner by some unregenerate rascal), where nothing was heard but 'No. 1 red,' 'Standard,' 'my option all next week,' 'your option next ten days,' etc., until the court house bell striking 6 o'clock cleared the sidewalk and allowed pedestrians to pass unmolested. The 'fourth board' met on the sidewalk opposite the Tremont House an hour later, and trading continued until 9 o'clock, when the overworked grain traders went home for a few hours' sleep."

B. P. Hutchinson.—It was amid a scene of this sort that B. P. Hutchinson, perhaps the most cunning of all grain speculators, made his début. He had been a shoe manufacturer in Lynn, Massachusetts, but had failed in the crisis of 1857. He went West and in 1859 bought a membership on the Chicago Board of Trade for \$5 and began trading. We are indebted to Andreas for the following picture of his early operations which gives, also, a glimpse of the trading methods of this period.

"He had the genius of a careful speculator, but was not a daring one. He understood fully, and acted upon, the first half of Ricardo's great maxim, 'cut short your losses.' He had no pride of opinion, but could change with the varying tide of the market. He was at one time a bull, and at another time a bear, and often both by turns, within the compass of an hour. No man ever had a keener perception of what the crowd was do-

ing, as well as what particular operators were doing. No man on 'Change, who dealt largely, could long hide his schemes from 'Old Hutch,' as the boys soon began to familiarly call him. Many a time he has escaped but narrowly being a victim to the great operators, but he has always escaped. Whenever he scented danger he ran.

"In the early days he would run small 'corners' himself, but they were little affairs, for options, at the longest, run scarcely longer than a week, and the main business was done in cash grain. But 'corners' were not to his taste, his great principle of speculation being to get in and out of the market quietly, and before the 'tailers' could perceive what he had been doing. He may be called, without exaggeration, the Prince of Scalpers. Between 1859 and 1863, he had amassed money enough to pay all his Lynn debts, and to have a fortune estimated at \$150,000."

Arrivals, actual and prospective, of vessels of all sizes and description, steamers, propellers, sailing vessels, made up almost the whole of the demand for grain during this period. Cargoes were needed "at once," "within three days," "by May 1," or perhaps "upon the opening of navigation." These were for various quantities and various grades.

In some cases the buyer might also want the privilege of saying what day during the month he would take the grain, in which case the contract of sale was known as a buyer's option. This was especially useful when buying in advance of the arrival of a vessel or before available ship space had been obtained. In other instances seller's option as to time of delivery was allowed, this being especially useful to a dealer who planned to obtain the supply to fulfill his contract from country arrivals but not being certain just what day he could deliver.

Exporters bought their supplies from grain dealers or merchants who in turn bought from the country. But the grain merchants' business was not simply a hand-to-mouth affair. While only a few of the larger merchants owned elevator space, there was ample public storage to be rented and, if resources

permitted, the dealer could hold his purchases in store for higher prices. This was frequently done where future prospects indicated a better price. Chicago had, according to Andreas,⁴ twelve elevators by 1857 with an aggregate capacity of 4,095,000 bushels.

"To Arrive" Contracts.—From the preceding section, it can be seen that buying and selling grain by contract calling for delivery some time in the future was a natural development to meet the needs of the trade at the time. With receipts from country points doubtful, with shipping arrivals and departures uncertain, and, especially, with orders from the East and Europe varying widely with corresponding variations in price, both buyers and sellers frequently sought to provide for their needs by contracting forward for specific quantities and grades of grain. These time contracts were usually referred to as "to arrive" and were quite common throughout the fifties. They were the fore-runner of the future contract proper and for that reason deserve more than passing reference.

From the *Democratic Press*, a prominent daily newspaper of Chicago at the time, the following review of the Chicago market is quoted in part. The selection illustrates the wide variety of contracts in use as well as the common use of forward orders.

Oct. 25, 1854.—“Corn.—Transactions during the week were as follows:—On the 18th, sales 5,000 bu. at 55¢ afloat—4,000 bu. in lots at 55¢ on board and 4,000 bu. afloat at 54¢—3,000 bu. in lots from depot at 58¢ on the track and 2,000 bu. delivered to warehouse. . . . On the 21st, sales 12,000 to 15,000 bu. deliverable within 10 days, and 15,000 bu. deliverable within 15 days, at seller’s option upon 3 days’ notice at 54¢ on board (the latter quantity to be called for under 8 days)—26,000 bu. immediate delivery at same figure.—On the 23rd, —On Saturday a sale of 15,000 bu. deliverable on board from 1st to 20th of Nov. on 3 days’ notice at 54¾¢. . . .” Quotations

⁴ Andreas, A. T., *History of Chicago*, Vol. I, p. 581.

similar to these were also given for wheat and oats and other grains though they were less frequent than those for corn.

In the issue of January 30, 1855, during the period of the year when lake traffic was closed, we read: "In wheat there is nothing doing; . . . in corn, there is something doing for Spring delivery; a sale made today of 10,000 bu. is reported at 50¢ afloat, cash in hand, deliverable in April on 3 days' notice." A few days later, February 7, 1855 the market reviewer observes: "Closing contracts for Spring delivery of corn and oats has served to lend something of animation to the grain market but even in this department of business, so little has been done in comparison with previous years at this part of the season that we are compelled to call it very dull."

The quotations just given illustrate the practice of buying and selling grain "to arrive," a type of trading well established in the early fifties. Furthermore "to arrive" contracts were used not only at Chicago but also to a limited extent at other markets and notably those of Milwaukee, New York and St. Louis. But it is on the Chicago market that this form of contract first developed into the highly standardized future contract and it is for this reason that this market merits special consideration.⁵

Speculation in "To Arrive" Contracts.—The "to arrive" contract permitted of a wider and freer type of speculation than dealing in the spot product and this fact was apparently recognized by traders on the Chicago market at an early date. We find frequent references to speculators and "operators" and usually they were buyers or sellers of some form of contract permitting postponed fulfillment.

There were two underlying reasons for this preference. First, the use of time contracts permitted a trader to operate profitably for a fall in price as well as a rise. This was accomplished by selling short a contract calling for delivery say three weeks hence. If, in the interim between the date of contracting and

⁵ See *Second Annual Statement, Milwaukee Chamber of Commerce*, p. 13. Also, especially, Taylor, *Op. Cit.*, pp. 206-207.

the day when the supply of grain was actually acquired, the price declined, the short-seller would profit by that amount. In contrast, trades requiring the immediate delivery of grain offered no opportunity to sell short. A speculator could buy grain and hold for higher prices if the outlook appeared good; but if he were "bearish" regarding the future, he could dispose of his holdings to prevent loss but beyond that he was unable to profitably act on his opinion.

It should be stated, in passing, that, for a time, short selling was also accomplished by borrowing warehouse receipts for delivery on spot contracts, later returning to the lender another receipt of the same grade which called for the same amount of grain. By this means, the borrower of the receipt realized a profit or sustained a loss amounting to the difference between the price at the time of borrowing and at the time of acquiring another receipt to be returned to the lender. This is the method of selling short in general use on American stock exchanges.

But it did not meet with favor in grain trading, for as early as 1859 the Directors of the Chicago Board of Trade, according to Taylor, resolved "that the custom which prevails among certain warehousemen of lending grain which has been stored with them by other parties, or in speculating in the same themselves, is prejudicial to the interests of the members of the association, and exercises a false influence on the market, and ought to be discountenanced by the Board." Three years later there appears in the Fifth Annual Statement of the Board as a part of the general regulations governing the grading of grain, a provision condemning the practice; this was apparently sufficient to discourage its use altogether. It remained for short selling to be accomplished by the only other method possible; that of trading in time contracts or those calling for delivery at a date subsequent to the contract of sale.

"To arrive" contracts were preferred to spot contracts as a speculative medium, secondly, because of their convenience. To buy a cargo of grain to hold for higher prices involved the

trouble of weighing, inspecting, storing and insuring, together with the risk entailed in any changes in the condition of the grain during the period held. It is true these items were, in the long run, covered in the sales price but they involved a measure of trouble that many preferred to avoid even though a somewhat smaller profit was obtained.

Trading in "to arrive" contracts, in contrast, involved much less trouble and offered many possibilities. If the speculator were "bullish" regarding the immediate outlook, he could buy to arrive say in ten days. If two days later prices had declined and the trader's view had changed, he could limit his loss by selling his "to arrive" contract. And so this contract might be passed about until it lodged in the hands of one who needed the grain. Likewise, on the short side of the market, he could sell a "to arrive" contract in the particular grain in which he expected lower prices and later, if he did not wish to make delivery, pass the contract on, realizing any loss or gain involved.

In the illustrations just given, it is implied that the trader had a complete and continuous market on which he could bargain for and liquidate any kind of contract he desired. Such was hardly the case during the fifties. There was a very active market at Chicago and at other grain centers, particularly during the years 1854, 1855, 1856 and 1859; but all kinds of contracts were dealt in, involving a variety of periods of delivery, a variety of quantities and a variety of grades; this lack of standardization frequently made it necessary for the trader to mix the function of merchandiser with that of speculator. The points of importance are that "to arrive" contracts offered the possibility of selling short, as well as buying; that, compared to cash contracts, they were much more convenient as a speculative device; and, finally, that due to the wide prevalence of speculation, the tendency throughout this formative period was to make an increasing use of time contracts rather than spot contracts. It remained for this trading to be mobilized through the use of a highly standardized contract before future trading could become a general practice.

3. STANDARDIZATION OF THE "TO ARRIVE" CONTRACT

The future contract in common use today is a highly standardized agreement. The size of the contract is a unit of 5,000 bushels, each bushel weighing a prescribed number of pounds; the quality of grain called for must be one of the established grades; the period of time during which delivery can be made is one month; the seller has the option of choosing the exact day of delivery and the exact grade to be delivered, and each contract is made in accordance with a carefully drawn body of rules and by-laws. It will be necessary for us to trace briefly how each of these elements became incorporated in the "to arrive" contract to ultimately develop from it the highly specialized future contract.

Bulk Handling.—It was apparently the practice to handle grain in bulk in the Chicago area and eastward at a very early date. The first warehouse of importance was built in 1848 and Taylor mentions that prior to that date "grain arriving in Chicago had been stored either in ordinary warehouses in bags, or in bulk."⁶ Certainly within the next few years following 1848 it became the general custom to handle grain only in bulk, a practice in contrast to that in vogue in St. Louis, Chicago's leading rival at that time, where handling by sacks was continued.⁷

The handling of grain in bulk undoubtedly had a bearing on the practice of buying and selling grain by a weighed bushel rather than a measured one. Here again the lake ports of Milwaukee, Chicago and Buffalo took the lead and we find that by 1854 it was the general rule to buy and sell at these points using a bushel of standard weight. New York, and possibly other Atlantic coast points, however, continued to buy and sell by measure and it was not for several years that they discontinued the practice.

⁶ Taylor, C. H., *Op. Cit.*, p. 144.

⁷ In the 1857 *Annual Review of the Trade and Commerce of Chicago*, published by the Democratic Press, a Chicago newspaper of that date, there is an interesting description (p. 8) of the methods employed in the handling of grain at Chicago and at St. Louis at that time.

Even Lots.—By 1854, also, a measure of standardization had been effected in trading in grain in even lots of 1,000 bushels and 5,000 bushels or in multiples of these units. The practice first came into common use about 1850 in the purchase of boat loads of grain (usually corn and very frequently 5,000 bushels) brought in on the Illinois and Michigan Canal, and in sales to make up lake cargoes, being used in both spot and “to arrive” transactions. Being of convenient size, this trading in even lots continued to be used as future trading developed.

Grading.—Of the various factors contributing to the standardization of grain trading, the grading of grain was by far the most important. With a dependable, uniform system of grades, warehouse receipts could be issued which were general rather than specific in character, i. e., the warehouseman agreed to deliver, upon presentation of the receipt, the amount and quality (grade) of the particular grain called for by the receipt rather than a specific, ear-marked lot. This aided in the bulk handling of grain and greatly reduced the cost of storing grain due to the elimination of most of the separate binning. In particular, it greatly broadened the market in time contracts of all kinds since both buyers and sellers could contract ahead with reasonable assurance of being able to fulfill their agreement.

The Chicago Board of Trade recognized the importance of grading at its very first meeting in April, 1848, when inspectors of fish, provisions and flour were appointed.⁸ No action was taken with reference to grain, however, until 1856. Andreas states that in this year the first steps were taken “for defining and regulating the standard and grades of wheat. The standards established were to be designated as ‘white wheat’ (winter), ‘red wheat’ (winter), and ‘spring wheat.’ ”⁹

This classification was largely experimental and in 1858 the “new system of wheat inspection” was adopted by the Board. It provided for the centralization of inspection under a Chief

⁸ Andreas, A. T., *op. cit.*, Vol. I, p. 582.

⁹ *Ibid.*, Vol. I, p. 585.

Inspector, with grades of "club," "No. 1," "No. 2" and "rejected" for each class of wheat. Provision was also made for the grading of corn, oats, rye, and barley under a three-fold classification: "No. 1," "No. 2," and "Rejected." Later in the year, minimum test weight per measured bushel was added as a grading factor.

The following table has been prepared from data given in the *First Annual Report of the Chicago Board of Trade*.

TABLE 3.—INSPECTIONS OF GRAIN INTO CHICAGO ELEVATORS,
JUNE 15—DECEMBER 31, 1858.
(In thousands of bushels, i.e., 000 omitted.)

GRAIN	GRADE				Total
	Club	No. 1	No. 2	Rejected	
WHEAT: Spring	2	189	2,120	648	2,959
White winter		112			112
Red winter		634	360	59	1,053
Corn		1,148	801	551	2,500
Oats		404	13	116	533
Rye		17	7	1	25
Barley		21	69	14	104
TOTAL	2	2,525	3,370	1,389	7,286

While incomplete in that only a part of the receipts for the period were inspected, the table illustrates the completeness of this initial classification into grades; it also shows the early commercial importance at Chicago of wheat and corn and for the former, in particular, the dominance of Spring wheat.

Because of the importance of Spring wheat, and particularly No. 2 Spring, it became the basic grade for wheat future contracts, and continued to be so used until well into the eighties when, in order to lessen the likelihood of corners, the contract was broadened to include several grades. Thus the classifying of grain enabled speculators to trade in time contracts on the basis of grade alone. By selecting a grade in which a con-

siderable volume of actual grain was available at any time, they could freely contract ahead, either purchases or sales, with assurance that if need be they could meet their obligations.

Optional Period of a Month.—We have already mentioned the fact that throughout the fifties speculation was carried on in all kinds of contracts, both spot and “to arrive,” calling for various qualities of grain with various periods of time involved. With the establishment of carefully defined grades and weights, trading began to centralize into fewer varieties of contracts. More and more, also, speculation centered in time contracts permitting delivery during a period of one month. While it is impossible to say just at what point speculators adopted the month as the optional period of delivery, the practice was well established by 1864¹⁰ and during the next four years it became the regular practice.

During these early years, and in fact up to 1880, it was the general practice to trade in futures maturing not more than two or three months in advance. Thus during the month of January, in addition to contracts maturing during that month, trading would also be maintained in February futures and March futures; and during the month of February, the current month together with March and April would be traded in. Thus every month in the year was actively traded in though not many months in advance. Gradually, however, certain of the months, and notably May, July, September and December, were singled out as trading favorites. Gradually, also, it became the practice to trade in each of these futures many months in advance.

¹⁰ Although speculative trading was carried on in large volume during the Civil War, the trade papers of the time did not apparently consider it worth while to regularly report quotations of the various types of trades. Occasionally, however, quotations for future delivery were given. Thus *Wells' Commercial Express*, a daily trade sheet of the time, quotes wheat for May 6, 1864: “For future delivery 5,000 bu. No. 2 Spring, seller's option all the month at \$1.20; 5,000 bu. do. on same condition at \$1.18.” And for corn on May 16, 1864: “3,000 bu. No. 1 new sold \$1.06½ buyer's option all the month.” See also Mar. 3, 4, 5, 7, 8, 9, 11, 1864. However, quotations were not given every day and only for wheat and corn.

Trading in futures is frequently referred to as option trading. The name is derived from the fact that, with respect to the time of delivery, either the buyer or the seller has the right to choose the exact day during the delivery month when the contract will be fulfilled. It is the practice today to give this privilege to the seller including also the right to choose the grade of grain (within certain limits) to be delivered. But in the early trading in both "to arrive" contracts and futures, it was customary to trade in both buyer's and seller's options. This was the practice apparently until well into the seventies when seller's options became the rule.¹¹

4. FUTURE TRADING

We have outlined in the preceding section step-by-step the way in which the "to arrive" contract was gradually standardized. Yet it should be observed that no one of these developments was purposely devised to promote speculation. Instead, each was planned to meet an urgent need in the actual handling of grain. But each added improvement increased the facilities for pure speculation and, in keeping with the tenor of the times, these facilities were quickly availed of.

Historians frequently follow the practice of attaching significance to particular dates. This is doubtless valid for political history but for economic history it is quite often misleading. Particularly is this true where an attempt is being made to describe a change in some economic practice. The development of future trading in grain is a case in point. There is no particular date from which one can say this practice began or had its origin. Instead it simply evolved out of the trading customs of the time.

We know that during the fifties it was the practice to buy and sell grain in Chicago on a "to arrive" as well as a cash basis. We know that the "to arrive" contract, involving a

¹¹The Chicago Board of Trade first recorded future prices in its *Twentieth Annual Report* for the year 1877 at which time prices for seller's option were quoted.

period of time before fulfillment is necessary, was found to be an excellent medium for speculation and that by 1859 it had come to be widely used for that purpose, while continuing to be used, also, for the purchase and sale of actual grain. And we know, finally, through the standardization of the "to arrive" contract, a process extending from 1850 through the following two decades, that the future contract emerged bringing with it the highly mobilized, continuous market so characteristic of present-day trading.

The Adoption of Rules.—Speculation in time contracts became so large during the Civil War that the Chicago Board of Trade was forced to set up a body of rules regulating the trading. These rules were adopted on October 13, 1865. They outlined the rights of parties on time contracts for both buyer's and seller's options, set forth the requirements for margins, and the procedure and rights of parties in the event of failure to deliver or receive on contracts.¹²

The adoption of these rules constituted a formal recognition of future trading by the Chicago Board of Trade. While trading in a semi-developed form had been maintained for a decade or more prior to this, and for a perfected form additional minor changes were still to be made, nevertheless, this recognition by the Board marked a mile-stone in the development of future trading. Henceforth it was to be accounted for in the councils of the exchange.

Early Opposition.—This recognition was not given without protest by the more conservative element. The Chicago Board of Trade was established in 1848 as a general mart for all kinds of commodities and during its early years it served as such being a trading center for grain, beef and pork packing, lumber, seeds, salt, hides, high wines, alcohol, fish, coal, wood, lead, wool, stone, brick and various kinds of produce. But gradually speculative trading gained the upper hand and the trade in many of the staples declined relatively. So pronounced had this change become toward the close of the Civil War that

¹² *Eighth Annual Report of the Chicago Board of Trade, 1865.*

the Secretary of the Board felt it necessary to call it to the attention of the Board in preparing his Annual Report. He writes, "it is true that speculation has been too much the order of the day, and buyers and sellers of 'long,' 'short,' and 'spot,' have passed through all the gradations of fortune from the lower to the higher ground, and in many instances have returned to the starting point, if not to a step lower, but it is to be hoped that with the return of peace this fever of speculation will abate and trade will be conducted on a more thoroughly legitimate basis."¹³

But instead speculation remained and flourished. While the buying and selling of actual grain continued as an important part of the work of the Board, the trade in future contracts grew in relative importance. Commission houses came to find in it their chief source of income; grain merchandisers learned to use this new device as a means of price insurance; while its reputation as a medium of convenient speculation spread far and wide.

Rapid Growth in Trading.—It is only within recent years that an accurate record of the volume of trading on the Chicago Board of Trade has been kept. But an estimate made by the Federal Trade Commission¹⁴ and derived from the business handled by the Clearing House of the Board, indicates that, by 1885, the volume of trading was as large and perhaps somewhat larger than it is today. What the volume was during the sixties and seventies can only be guessed, though it was undoubtedly large. Bearing on this point is the fact that the annual reports of the Board give its membership as 535 in 1860 and 1,462 in 1865. By the latter year it had grown in membership to practically its present size.

Provisions.—Mention should be made at this point of the development of future trading in provisions or pork products: lard, ribs, mess pork. From the very beginning of the Chicago

¹³ *Seventh Annual Report of the Chicago Board of Trade*, 1864, p. 7.

¹⁴ *Report of the Federal Trade Commission on the Grain Trade*, Vol. V, p. 36.

market the trade in hogs and pork products was large. In the development of future trading, the steps involved and the methods employed in grain trading were applied in a similar fashion to the dealings in pork products with the result that both developed futures markets very much alike and at the same period of time. The volume of grain trading being much larger, however, it is likely that its features were currently adapted to the trade in pork products though this may not have been the case.

Considerable light is thrown upon the development of provision futures in the following quotation from the *First Annual Report* of the Chicago Board of Trade (p. 29) and relating to the year 1858. At this early date contracts embodying many of the features of future trading were apparently in common use. We read:

"The market during the month of October was stagnant in the extreme. There were no sales of moment either for present or future delivery. Operators seemed to think they could buy the hogs and pack cheaper than they could purchase the products and the rumors of a short hog crop being generally discredited, a general inactivity prevailed. Mess pork was nominal at \$15.00 to \$15.50 for present and \$14.00 to \$14.25 for November delivery. Later in the month some sales were made to fill November contracts at \$14.50. Green shoulders for November delivery sold at 4 cents and hams at 6 to 6½ cents. Prime lard was offered for same delivery at 9½ cents. . . .

"The offerings for forward delivery were so rapidly picked up in the beginning of the month of November that sellers retired from the market. Some sales of mess pork were made for delivery all winter, seller's option, at \$14.50 but about the 20th the market became much excited and some sales were made as high as \$16.00 per barrel."

The forms of trade described being time contracts are of the same general character as those used in grain; and, as in grain, they were used both as a basis of merchandising the products and purely as a speculation. By 1868 a flourishing futures market had developed. We are indebted to Andreas for the following description of the year: "Scarcely a month had elapsed since the New Year's day without a corner on 'Change. Three on wheat, two on corn, one on oats, and one attempted

on rye and the year threatened to go out with a tremendous corner on the products of pork packing,—technically known as provisions.”¹⁶ The market in provision futures has continued down to the present time and, while comparatively small, has always had the active support of the packing interests to play an important part in that industry. The volume of trading in 1929 amounted to 50,862 contracts of 50,000 pounds each.

5. THE ORGANIZATION OF GRAIN FUTURE MARKETS

With the exception of the Chicago Board of Trade and to some extent the Milwaukee Chamber of Commerce, and the New York Produce Exchange, future markets in grain were definitely planned and organized. As we have seen, the future market upon the Chicago Board of Trade evolved out of the forms of cash dealings in use during the latter part of the decade, 1850-60. The other exchanges adopted this new method of trading, following the example of the Chicago market, and with such changes as they found necessary to meet their own needs. It is difficult to determine, particularly among the older exchanges, just the year that future trading did begin. The secretaries have supplied estimates based upon the records of the exchanges and information to be had from early market sheets and it is from this source that the following data have been obtained.

The Chicago Board of Trade was organized in 1848 and began trading about 1859. The Milwaukee Chamber of Commerce was organized in 1858 and began trading about 1864. The present New York Produce Exchange started in 1861 as the New York Commercial Association and changed its name to the present form in 1868. It traded in futures as early as 1870. During the eighties and nineties the volume of trading was large but gradually declined and finally ceased altogether. In 1926-27 it maintained a small volume of trading in wheat futures. On March 3, 1931, a market in wheat futures was

¹⁶ Andreas, *op cit.*, Vol. II, p. 363.

again undertaken, this time in a contract calling for delivery of Canadian wheat in bond at Buffalo.

The Merchants' Exchange of St. Louis was organized in 1836 under the title of the St. Louis Chamber of Commerce but did not begin trading in futures until about 1872. The Chicago Open Board of Trade began trading in futures as an informal body of brokers as early as 1877 and was formally organized in 1880. The Duluth Board of Trade was formed in 1881 and began trading in futures in 1885. The Minneapolis Chamber of Commerce was organized in 1881 and began trading in futures in 1890. The Kansas City Board of Trade was formed in 1869 and began trading in futures in 1899. The Omaha Grain Exchange was organized in 1903. In 1904 it attempted a market in futures and again in 1916-17 but without success.¹⁹ In 1930 it again undertook trading in wheat futures. The Grain Trade Association of the San Francisco Chamber of Commerce was formed in 1912 and has since that time maintained a future market in barley. The Los Angeles Grain Exchange has maintained a barley future market since 1917. The Seattle Grain Exchange in 1926 and the Portland Grain Exchange in 1929 began future markets in wheat.

In the chapter immediately following the present one, the development of future trading in commodities other than grain is described. At the close of the chapter, Table 5 presents the volume of trading in futures during the year 1929 by exchanges for each of the various grains, for cotton, and for each of the other commodities.

6. SUMMARY

Trading in grain futures evolved naturally from the grain trade practice of the time. Widespread speculation during the fifties and sixties greatly stimulated its development. Its prototype was the "to arrive" trading which came into common use on the Chicago market about 1850. The "to arrive" contract

¹⁹ *Report of the Federal Trade Commission on the Grain Trade*, Vol. II, p. 167.

was gradually standardized as trade needs required and, in standardized form, it provided an excellent instrument for speculation. Used for this purpose there developed the highly mobilized, continuous market characteristic of present-day future trading. As the volume of futures grew upon the Chicago Board of Trade, other exchanges took up this new method of dealing with the result that it is now a feature of most of the leading grain exchanges of this country.

CHAPTER III

EVOLUTION OF FUTURE TRADING: COTTON AND OTHER COMMODITIES

1. COTTON

The essential features in the development of future trading in cotton were not unlike those in grain. There was a natural sequence of events out of which the practice evolved. A gradual growth in the cotton trade was accompanied by a similar growth of speculation in cotton. This speculation was greatly stimulated by the events of the Civil war, which together with certain technical changes in the methods of speculation resulted in firmly establishing the practice. As in grain, this process was apparently a natural product of the trade and not a carryover of similar practices found elsewhere.

Development of the Cotton Trade.—While the use of cotton for clothing extends several hundred years prior to the time of Christ, it has come into general use only since the industrial revolution in the fourth quarter of the eighteenth century. The improvements of Hargreaves (in 1770) and Arkwright (in 1769) and Samuel Crompton (in 1779) in the machinery for spinning were of outstanding importance in stimulating the demand for cotton.¹ As a result imports of cotton into England increased rapidly, the principal source of supply being from the West Indies. Imports grew from 4 million pounds in 1770 to 23 million pounds in 1787 while the price of cotton at the same time increased from a range of 10½ to 14 pence per pound in 1770 to a high in 1787 of 42 pence per pound.² Cartwright's improved power-loom appeared in this latter year. Both imports and prices continued to rise, prices touching a

¹ Daniels, G. W. and Unwin, G., *The Early English Cotton Industry*, London: Longmans, 1920.

² Ellison, Thos., *The Cotton Trade of Great Britain*, London: Effingham Wilson, 1886, pp. 48-49.

high point of 60 pence per pound in 1799 at which time imports amounted to 43 million pounds.

This unusual demand for raw cotton was naturally a strong stimulus to its production. The chief deterrent in the United States was the cost of cleaning the seed from the fiber and this difficulty was overcome by Whitney in 1792. The rapidity with which the cotton trade of the United States grew as a result of these improvements is shown by the fact that in 1791 it produced 2,000,000 pounds, or less than $\frac{1}{2}$ of one per cent of the world crop; in 1811, it produced 80,000,000 pounds or $14\frac{1}{2}$ per cent of the world crop; in 1834, it produced 460,000,000 pounds which constituted over 50 per cent of the entire production of the world.³

The Trade with England; the Liverpool Market.—Both prior to and following the Industrial Revolution, England has held a leading position in the cotton industry and many of the features of present-day trading in spots and futures have had their origin in English practice. Like most other organized markets, the Liverpool market developed from a small group of curb brokers. On the selling side they represented importing merchants and on the buying side the spinning interests. Their trade during its formative years was limited entirely to dealings in cotton on hand which was bought only after an inspection of each lot. Ellison states that in 1757 the first sale of cotton was made in Liverpool⁴ (the earlier center of trade having been in London), and that as early as 1779 an attempt was made to corner the market. This marks the appearance of speculators in the market and it is worthy of note that this was nearly a hundred years before future trading became an established practice. Speculation in spot cotton grew as the trade

³That is, judged by available figures of commercial production. Data from *Reports of the Secretary of the Treasury* given in Cox, A. B., *Evolution of Cotton Marketing*, U. S. Dept. of Agr. bull. (mimeo.), 1925.

⁴Ellison, Thos., *Gleanings and Reminiscences*, Liverpool: H. Young & Sons, 1905. This work together with *The Cotton Trade of Great Britain* by the same author give an intimate survey of the development of the Liverpool cotton market.

grew so that by the early part of the nineteenth century it had become an established and widespread practice. Writing in the year 1816, one of the leading spot brokers observes that "for the purposes of speculation there was 'nothing equal to cotton' and that the operators in this article consisted not only of regular merchants but included 'brokers, grocers, corn merchants, timber merchants, tobacconists, coopers, etc.'"⁶

As the cotton trade expanded, greater improvements were also made in the packing and handling of cotton so that "it became possible to offer the imports in even running lots by sample and the custom of selling by sample shown on a counter was established." Improvements in cultivation and packing contributed greatly to the development of a system of grading. The earliest terms applied to cotton simply designated it by the locality in which it was grown as Smyrna, East India, Barbados, without any attempt at further classification. But by 1830 a system of grading was regularly established including "Ordinary to Middling," "Fair to Good Fair" and "Good to Fine."⁷

Sale "To Arrive."—Of outstanding importance in the development of future trading in cotton as in grain was the practice of buying and selling the supplies while in transit. While Ellison cites transactions made on this basis as early as 1780, they probably did not come into common use until after 1840 with the development of the steamship and a fairly regular passenger service. It then became possible to send forward the samples of a shipment of cotton and thus to sell the cotton from two to six or eight weeks in advance of its arrival. Payment was unnecessary until the arrival of the cotton although a deposit or margin was sometimes required. One might buy

⁶ Quoting Mr. John Stack in Ellison, *Gleanings, etc.*, p. 83. To illustrate that the problems of brokers are by no means new, Mr. Stack also observes, 'A great evil exists both in London and Liverpool, by brokers being both merchants and dealers: the duty, and only duty of a broker is to be a middleman between the buyer and seller, and not to buy and sell on his own account.' From Ellison, *The Cotton Trade, etc.*, p. 244.

⁷ Todd, J. A., *The Cotton World*, London: Pitman, 1927, p. 62.

"to arrive" on the basis of these samples, hold for an advance in price and resell; this might occur a score of times before the actual cotton arrived to then continue upon a spot basis. Similarly, at New York, samples were forwarded in advance and these frequently served as the basis for added speculation beyond the limits of the actual supplies on hand.

It is important to note in connection with speculative operations upon a "to arrive" basis as well as in spots, that facilities were not developed for short selling or "bearing" the market prior to the Civil war.⁷ When "to arrive" or "in transit" sales were made they were based upon the possession of that amount of the commodity being forwarded so that the selling became an actual liquidation or offsetting of a long position.

Speculation During the Civil War.—Speculation mounted rapidly during the Civil war reaching by 1863 enormous proportions. Curiously enough there was far less cotton on hand or in transit to buy or sell than during peace years. But the rapidity of turnover more than offset the smallness of supply, so much so in fact, that the body of cotton brokers in Liverpool necessary to handle the business nearly doubled. A contemporary of this period says "to witness the enormous speculative sales and purchases that have taken place during the last few months of this year (1864), and to notice the avidity with which some have bought cotton to arrive the first six months of the next year, at prices five times greater than the value only a few years ago, would lead an observing speculator to think that such parties believe in a never-ending war in America."⁸

The Liverpool Cotton Brokers' Association was organized in 1841 but up to 1863 it had not been found necessary to formulate written rules of trade for its membership. In the latter year the size of the speculative operations and the disputes con-

⁷ Ellison, *Gleanings, etc.*, p. 325; also Ellison, *The Cotton Trade, etc.*, p. 256.

⁸ Williams, M., *Seven Years' History of the Cotton Trade of Europe*, Liverpool, 1868, p. 38 cited in Cox, A. B., *op. cit.*, p. 16.

tinually arising necessitated the formulation of a body of written rules and these included regulations in "arrivals" and "futures." Speculative operations also developed on the short side of the market at this time,⁹ though there was little demand for short positions until after the close of the war.

The successful completion of the Atlantic cable constituted the last important step in the preliminary developments to future trading. This became an accomplished fact in 1866 and shortened the time between the United States and Liverpool to a matter of only a few hours. Sales "on arrival" and involving a delivery period of two months came into increasing prominence in the years 1867 and 1868. Liverpool merchants having acquired cotton in the South would sell at once "on arrival"; or they might sell "on arrival" and then acquire the cotton. In either case as the cotton arrived in Liverpool it was sorted out into lots to suit the needs of particular trade interests, samples displayed and spot sales made, and at the same time the "arrival" or "future" contracts would be bought back.¹⁰ This is the process known today as hedging, a development in which Mr. John Rew, a prominent Liverpool merchant, played an important part.¹¹

To successfully develop a hedging market it is necessary that there be a body of speculative interest to assume the price risks involved. This the Liverpool market had in abundance due in part to the speculative experience of the Civil war and in part to the experience and interest built up through many earlier years of speculation in spot cotton. It was the practice on the Liverpool market to report the disposition of British receipts into three groups: purchases for export, purchases for consumption, and purchases by speculators. Ellison gives the figures

⁹ Ellison, *Gleanings, etc.*, p. 325 ff.

¹⁰ Cf. *Jol. of the Royal Statistical Society*, Vol. 69 p. 365 being a description of early Liverpool practice by a merchant of the time.

¹¹ Ellison, *The Cotton Trade, etc.*, p. 269. A good description of this development and the part played by Mr. Rew is found in Marsh, A. R., "Cotton Exchanges and their Economic Functions," *Annals of the Amer. Acad. of Political and Social Science*, Sept., 1911.

for this third group by years for as far back as 1816 at which time they amounted to only 28,700 bales. By 1840 sales to speculators amounted to over 200,000 bales and in 1861 they reached the peak figure of 1,329,100 bales. From this point on, sales of spot cotton to speculators began to decline, falling below 400,000 bales by 1873 and below 200,000 bales by 1883. These figures clearly indicate the unusual speculative interest developed during the Civil war as well as the shift from speculating in actual cotton to speculation in futures following the war.

Development of Future Trading in New York.—The development of future trading in cotton in New York naturally followed along the same lines as that in Liverpool. As a spot-market New York was, of course, less important than Liverpool and it is to be supposed in the changes taking place in trading methods that the latter market took the lead. Speculation in cotton during the war was large in New York and was further complicated by the fluctuations in the value of the currency. As in Liverpool, transactions were classified prior to the development of futures on the three-fold basis of sales to spinners, sales for export and sales to speculators, and frequent references are to be found in the trade news of the activities of speculators.

It is likely that future trading in New York first reached substantial proportions in 1868. In the weekly summaries of the cotton market in *The Commercial and Financial Chronicle* during the year 1869, sales are described which clearly indicate that future trading was then an established practice. The following excerpt from the issue of Saturday, January 2, 1869, will serve to indicate the character as well as the extent of the market at that date. The market for the week is described as buoyant due in part to Liverpool activity and in part to "the large speculative orders from the South based on the idea of reduced estimates of the crop (some of which orders went forward by cable Wednesday to Liverpool) while the purchasers to fill contracts for December delivery also entered the

market to cover their short sales. The South appears to have great confidence in higher rates, and large offers are made without finding takers for lots for March and April delivery. The reported sales for future delivery reach about 3,500 bales of which 775 bales were Middling for January delivery at 25 to 25½ cents; 900 bales Low Middling for February at 24 to 24¾ cents; 500 bales New Orleans Middling for February at 26 cents; 100 bales Middling for March at 25¼; 200 bales Low Middling for January at 24¼ cents; 750 bales Low Middling for February and March at 24¼ to 24¾ cents; 300 Low Middling for February at 25¼. Immediate delivery 24,682 bales."

This summary is typical of the type of trading regularly reported by *The Commercial and Financial Chronicle* during 1869 but not prior to that time. Thus in the issue of Oct. 3, 1868, the market is referred to as very active including sales to speculators but no mention is made of future transactions. In the issue dated July 4, 1868, the review states: "Speculators have bought largely not only in this market but through the cable they have been large buyers of cotton afloat." During the year 1867, cotton prices steadily declined to greatly stimulate forward buying by English spinners during the fall of 1867 and the spring of 1868.¹² This in turn stimulated the forward trade among merchants and speculators both in Liverpool and New York to the extent apparently that it was thought worth while to regularly report the transactions in the market reviews. In reviewing the New York cotton market for December, 1868, the *New Orleans Price Current* observed: "In December there was a fair demand and prices for the most part were steady, though occasionally affected by the contracting for future delivery, which now began to be a regular feature in the market, at prices 1 to 2 cents below those current for spot lots."¹³

¹² *The Merchant's Magazine and Commercial Review*, N.Y., May, 1868, p. 361.

¹³ Quoted in *Report of the Commissioner on Cotton Exchanges*, Wash. 1908, Part I, p. 40.

Standardization of the Contract.—In the absence of rules or customs governing the matter, the earlier future forms of “to arrive” and “afloat” contracts included a variety of conditions. In New York, varying periods of delivery were stipulated such as “for January and February,” “from January 15 to February 14” “from May to June 15.” They were usually, however, at seller’s option for a single month and this soon developed as the standard period. Upon the Liverpool market the coupled month, e.g., June-July or October-November, came to be the ruling delivery period due to the greater distance from the South and this continued until 1918. Various sized contracts were also entered into, though the unit of 100 bales or multiples thereof early came to be the prevailing standard.

A basis grade was employed in these early forms of trading with adjustments if other grades were proffered. In New York the basis was low middling, and apparently losses or gains due to differences had to be reckoned with then as now. In “The Chronicle” of July 30, 1870 we read, “The business for future delivery was active for the first half of the week but latterly was very dull. That for July covers a wide range of prices and the advance of Low Middling to 20 cents on Tuesday shows the working of the ‘corner.’ The sale today of Low Middling for July at 18½¢ with only one day to deliver while the same grade on the spot brought 19 cents suggests the explanation that in sales for future delivery the seller is entitled to fill his contract with any grade from Good Ordinary to Good Middling *on the basis of Low Middling* [italics by the magazine] so that parties having irregular lots of cotton take this method of disposing of them.”

Growth of Futures Trading.—The high and uncertain level of cotton prices during the late sixties and early seventies served as a strong incentive to spinners and merchants to hedge and to traders to speculate so that once started the practice grew rapidly. The data of Table 4 show this growth for the New York market by years up to 1880 and for certain available years since 1880. Future Trading in cotton upon the New

EVOLUTION OF FUTURE TRADING: COTTON 43

York Cotton Exchange reached sizable proportions by 1875 and by 1880 a market of large proportions had been developed.

The Organization of Exchanges.—Mention has already been made of the organization of the Liverpool Cotton Brokers' Association in 1841. This was the first exchange upon which future trading in cotton was maintained. Rules governing the trade in "arrivals" and "futures" were formulated in 1863

TABLE 4.—THE VOLUME OF TRADING IN COTTON FUTURES ON THE NEW YORK MARKET FOR 1869 AND 1870 AND UPON THE NEW YORK COTTON EXCHANGE FOR SPECIFIED YEARS, 1871-1929.*

Year ending August 31	Volume of trading	Year ending August 31	Volume of trading
	<i>(bales)</i>		<i>(bales)</i>
1869 (from Jan. 1)	101,665	1885	20,889,700
1870	591,586	1890	22,138,200
1871	3,000,000	1897	36,113,000
1872	4,933,700	1919	73,159,800
1873	5,299,700	1920	73,333,300
1874	6,187,700	1921	67,758,600
1875	8,358,000	1922	78,361,700
1876	7,233,650	1925 (calendar yr.)	82,346,900
1877	10,735,400	1926 (calendar yr.)	105,701,600
1878	12,973,300	1927 (calendar yr.)	110,388,000
1879	25,410,600	1928 (calendar yr.)	80,246,600
1880	34,006,600	1929 (calendar yr.)	99,986,800

* For years 1869-1897 from *Report of the Commissioner of Corporations on Cotton Exchanges*, Wash. 1909, Part I, p. 55 and Part IV, p. 273; for years 1919-22, from *Federal Trade Commission's Report on the Cotton Trade*, Wash., 1924, Part I, p. 123; for 1925-29 from Sen. Report No. 248 71st. Cong., 2nd Sess., on *Cotton Conditions*, p. 6.

and in 1876 a clearing house was formed. Some dissension developed in the trade growing out of the use of the clearing house with the result that a reorganization and incorporation occurred in 1882 under the name of the Liverpool Cotton Association.

In 1868 the New York Board of Cotton Brokers was organized to be superseded in the fall of 1870 by the New York Cotton Exchange which was incorporated in 1871. As we have

seen, the trade in futures in New York was well established in 1869. After the formation of the New York Cotton Exchange this trade was carried over and continued on the exchange. Following the lead of the cotton brokers in New York, a number of exchanges were formed in the South in the early seventies. These included among others the New Orleans Cotton Exchange, the Mobile Cotton Exchange, the Galveston Cotton Exchange, the Savannah Cotton Exchange, the Charleston Cotton Exchange, the Memphis Cotton Exchange, and the Houston Cotton Exchange. However, with the exception of the New Orleans Cotton Exchange, trading in futures has not been successfully developed upon any of these exchanges although at various times attempts to build up an organized market have been made.

The New Orleans Cotton Exchange was formed in January, 1871, and for several years operated only as a spot market. In 1880 it began trading in futures and, while continuing as an important spot market, has successfully maintained a large future market as well. Its volume of future trading¹⁴ for the 5-year period 1925-29 has amounted to 31,998,850 bales in 1925, 39,001,600 bales in 1926, 40,312,200 bales in 1927, 24,948,900 bales in 1928 and 41,253,500 bales in 1929. Its future business during recent years has approximated 40 per cent of that of the New York Cotton Exchange. Its relative importance to that of New York is somewhat greater than this percentage indicates, however, due to its important position as a spot market, this latter feature being largely lacking in New York. On December 1, 1924, the Chicago Board of Trade inaugurated trading in cotton futures. To date the market has remained comparatively small, the volume of trading in 1926 being 1,040,500 bales, in 1927, 6,093,000 bales, in 1928, 5,864,100 bales and in 1929, 1,430,150 bales. This volume of trading averages less than 4 per cent of that upon the New York Cotton Exchange for the corresponding 4 years.

¹⁴ As reported to the U. S. Bureau of Internal Revenue, Pub. in *Cotton Conditions*, Sen. Report No. 248, 71st Cong. 2nd Sess., 1930.

2. COFFEE, SUGAR, COTTONSEED OIL, FLAXSEED

Future trading in grain and in cotton may be accurately referred to as evolutions from current trade practice. They are a natural product of a period in which speculation and uncertainty played a prominent role and emerged from this period as a firmly established practice. In contrast to the development in these two fields, organized trading in other commodities has been definitely planned and with very minor modifications has taken over the features found upon the older markets. At the time of the World War, additions to the list of commodities having future markets in the United States included coffee, sugar and cottonseed oil though from time to time trading in other commodities was attempted. In this connection mention should be made of the seed future market of the Toledo Board of Trade. Its origin apparently dates back to the time of the Civil war and for many years it constituted an important branch of the trade. The exchange still maintains a future market in Clover seed and Alsike seed though the volume of trading is negligible. In 1929 it amounted to 8,000 bags of 155 pounds each in Clover futures and 2,000 bags of 155 pounds each in Alsike futures.

Coffee.—In December, 1881, a group of coffee brokers and dealers formed and incorporated the New York Coffee Exchange and on March 7, 1882, trading in coffee futures began.¹⁵ The background to the organization of this exchange extends back to the Civil war at which time prices were high and uncertain. They were again high in the seventies encouraging undue speculation and with the advent of large supplies in 1879 and 1880 fell rapidly leaving the market generally in a chaotic state. It was believed that an organized exchange would aid in bringing order into the trade, the New York Cotton Exchange and the Chicago Board of Trade being held up as suc-

¹⁵ Brunn, E. M., "The New York Coffee and Sugar Exchange," *Annals of the Amer. Acad. of Pol. and Social Science*, May, 1931. See also Huebner, G. G., "The Coffee Market," *Annals of the Amer. Acad. of Pol. and Social Science*, Sept., 1911.

cessful examples, and that a greater measure of standardization in grading and in trade practice would ensue. Considerable opposition was encountered prior to and following organization, but trading gradually grew to give the exchange after a few years a prominent place in the coffee trade. In 1904, the volume of sales reached the high point of 25,487,500 bags of 132 pounds each. Five years later the volume had declined to 6,661,750 bags. In 1928 it amounted to 12,720,000 bags; in 1929 it amounted to 15,428,250 bags.

From the beginning, the trade in coffee futures has been maintained under a standardized contract with the features common to contracts in futures. The unit of trading is 32,500 pounds or about 250 bags, the point of delivery from licensed warehouse, New York, a basis grade—No. 7 for Rio coffee—is used with fixed differentials for the delivery of other months. These features common to contracts in futures are outlined in detail in a later chapter describing the nature of the future contract. They are mentioned here merely to indicate that coffee future trading, in form at least, began as a fully developed practice.

Beginning in January, 1928, an additional contract was added having as the basis grade No. 4 Santos coffee, and late in 1929 a third contract for Mild coffee was adopted. As at present maintained, the market thus offers facilities for hedging or trading in three separate future contracts.

Sugar.—In December, 1914, the New York Coffee Exchange broadened its field of activity by adding a contract in raw sugar futures; and in 1916 after this new market had proven to be a success, the name of the exchange was changed to its present title of the New York Coffee and Sugar Exchange. Trading in raw sugar futures has continued with fair success up to the present time, the trade in 1929 amounting to 12,710,850 tons (2240 pounds to the ton). Two contracts in raw sugar are maintained viz., "in bond" reflecting the price prior to the payment of the Cuban tariff and "duty free" upon which no tariff is due. In 1921 this exchange attempted trading

in a refined sugar contract with but little success and in a few years it was given up.

Cottonseed Oil.—In 1904 the New York Produce Exchange organized a future market in cottonseed oil. The commercial importance of cottonseed oil gradually grew and with it the future trade so that by 1914 the volume of future trading exceeded 3 million barrels. During the war the added stimulus created through the use of cottonseed oil in the manufacture of explosives resulted in raising the volume of trading to 8,000,000 barrels. Following the war trading ranged from 3 to 5 million barrels though recently it has declined considerably. In 1929 the volume was 2,630,900 barrels.

A standardized contract is employed. Beginning in May, 1930, several outstanding changes were made to bring the contract into line with recent trade changes. These included an improvement in the quality of oil deliverable upon the contract, a change from delivery in barrels to a contract suitable for delivery in tank cars and the addition of several delivering points.

In 1925 the New Orleans Cotton Exchange inaugurated trading in cottonseed oil futures. While located very well with respect to the commercial supply, they have not as yet succeeded in developing a market of any size. They have not seen fit to disclose their volume of trading. Private estimates, however, place it around 150 million pounds or 375,000 barrels for 1929.

Flaxseed.—Mention should also be made of the trade in flaxseed futures. Two grain exchanges maintain a future market in flaxseed at the present time, viz., the Minneapolis Chamber of Commerce and the Duluth Board of Trade, the former inaugurating trading in this commodity in 1920 and the latter in 1892. The form of contract employed and the rules governing the trade in flaxseed futures are, with some minor adaptations, the same as those for grain. For the year 1929 the volume of trading upon the Minneapolis Chamber of Commerce amounted to 25,022,000 bushels and upon the Duluth Board of Trade 22,674,000 bushels.

3. DEVELOPMENT SINCE THE WORLD WAR

Judged either by the number of new exchanges or by the number of additional commodities, future trading has had an unusual growth during the past 12 years. There have been added to the list at least 16 distinct commodities; and in the number of new future exchanges, at least 12 have either been formed specifically to trade in futures or have added to their existing organization the necessary facilities to trade in futures. Such a formidable array of commodities and exchanges suggests for the field of future trading a "new era" in the position it occupies in the marketing and merchandising of commodities. An "era" is, however, far more easily seen in retrospect than in prospect and for that reason time is necessary to properly appraise the present movement. All of these newer exchanges are very much in the testing period and more especially since the development of the present depression (1930-31). Commodity prices now are low and declining with the result that much of the speculative interest and to some extent the hedging interest has withdrawn from the market; and since exchanges as associations of brokerage firms are dependent upon commissions, they necessarily feel the effect of the smaller volume of trading. It is likely that some will not survive the present period of depression while others will continue and come to occupy an even larger place in the industry or trade with which they are associated. Nothing more than a brief summary of these newer entrants will need to be made to complete the picture to date of the development of future trading in this country.¹⁶

Butter and Eggs.—In December, 1919, the Chicago Mercantile Exchange inaugurated trading in butter futures and in

¹⁶ Most of the facts regarding the development of these newer exchanges are to be found in articles contributed to a special commodity market number of the *Annals of the American Academy of Political and Social Science*, (Philadelphia) May, 1931. Excellent summaries are also to be found in *Commerce and Finance* (N.Y.) July 17, 1929, for the markets located in New York City.

egg futures. While the exchange as a body of brokers and known as the Butter and Egg Board had been in existence prior to this time they had not set up rules for futures nor attempted to maintain trading on this basis. The new department proved to be a success in attracting the trade to its use and during its first year of operation transacted sales amounting to 11,000 cars of eggs and 4,000 cars of butter. The following year the business increased to 34,000 cars of eggs and 15,000 cars of butter. In 1929 it amounted to 47,398 cars of eggs and 15,216 cars of butter.

The contracts employed for these commodities follow the same general lines as those of other commodities. The unit of trading is the carlot being for eggs 12,000 dozen and for butter 19,200 pounds; price fluctuations are in eighths of a cent per dozen or per pound; delivery is provided for during a period of a month at seller's option as to day; the basis grades are refrigerator standard eggs and storage or fresh standard butter; the principal month used as a basis of trading is November though the other months are also traded in. The exchange has succeeded in enlisting important cash trade interests in its use, a feature of which more recently has been the dealing in futures to hedge a trade position.

In 1925, the New York Mercantile Exchange also organized a department for future trading in these two commodities. For the year 1929 a volume of business amounting to 5,858 cars of eggs and 36 cars of butter was transacted.

Cocoa.—West Africa and Brazil produce respectively about 60 per cent and 25 per cent of the world's output of cocoa and the United States consumes about 40 per cent of the world crop each year. Both the supply of and the demand for cocoa beans have grown rapidly during the last twenty-five years to develop New York as an important market in this commodity. In 1925 the New York Cocoa Exchange was formed in an attempt to organize the market and to develop it along the lines of the older markets operated through the use of futures. While the exchange maintains trading only in futures, it num-

bers among its membership leading chocolate manufacturers and other trade interests both of the United States and foreign countries. Up to and including the year 1929 its volume of trading grew rapidly amounting to 47,208 lots of 30,000 pounds each for the year.

Rubber.—The formation of a rubber future market in 1925 was closely associated with the general instability in rubber prices at that time. With the coming of the automobile the consumption of rubber expanded rapidly with the United States absorbing over 70 per cent of the total supply. In the general decline in prices in 1920-21, rubber prices fell from a war-time level of 50 cents to as low as 15 cents per pound and as a result the British Government late in 1922 put into operation the Stevenson plan to control the export of rubber from her Eastern possessions. The effect of the plan together with the general recovery in business resulted in rubber advancing rapidly, especially during 1925, reaching in the fall of that year a level of prices approaching \$1.00 per pound.

In February, 1926, the Rubber Exchange of New York opened for trading having as its purpose, as set forth in its charter, "To decrease local risks attendant upon the business; and generally, to promote and facilitate the business of buying, selling and dealing with and dealing in the above mentioned products." It began business at a time, therefore, when rubber prices were extremely high and uncertain. In response to these prices, exports increased from sources other than those under British control, prices declined greatly, and in 1928 the Stevenson plan was abandoned. Rubber, in line with other commodities, has further greatly declined in the recessions of 1930-31 reaching a level considerably under 10 cents per pound.

In its methods of trade, the Rubber Exchange has adopted the same general features as the other exchanges: a standardized contract, a delivery period of one month, standardized commissions, uniform trading hours, carefully drawn trading rules. Its volume of trading up to 1929 expanded rapidly reaching in that year 196,486 contracts of 2½ tons each.

Silk.—In point of value, silk has been during recent years the principal import into the United States, foreign receipts for the five year period, 1925-29, having an aggregate annual value of about \$400,000,000. This volume of product was thought sufficiently large to serve as a basis for a market in futures in this country and in 1928 the National Raw Silk Exchange was organized and trading begun in New York City. While the exchange has been in operation only a short while it has made good progress in establishing itself as an integral part of the silk trade. Its volume of business in 1929 amounted to 222,675 bales of 130 pounds each and in 1930 increased by 10 per cent to 244,290 bales. In working out a standardized contract it has already materially aided the silk industry in standardizing grades and qualities for silk and in collecting and making available more complete and reliable statistics.

The Metals.—In the eighties and nineties of the last century the New York Metal Exchange maintained an active future market in tin, copper, lead and zinc. The future trade in these metals gradually declined, however, and finally disappeared altogether. Perhaps stimulated by the success of other and newly-launched exchanges, a reorganization of the Exchange was effected in 1928, and in December of that year under the name of the National Metal Exchange a future market in tin was undertaken. It met with fair success and 5 months later a copper futures market was added. The contracts and rules of trading are framed along similar lines to those of other organized commodity markets, having, of course, problems distinctive to the particular fields in grading and deliveries. Copper, for example, is distinctive among American commodity trading in being deliverable at a point outside as well as within the United States. It is deliverable in London and uses a contract of the same size as that used in future trading on the London Metal Exchange. For the year 1929 the volume of trading in tin futures amounted to 41,460 long tons; and for its first year of trading ending May 15, 1930, copper future trading amounted to 6,125 long tons. Plans are now (1931)

being perfected by the Exchange for a future market in silver.

Hides.—In the spring of 1929 plans were perfected and a market opened to deal in hide futures. The New York Hide Exchange located in New York City was organized for that purpose. A standard contract is used calling for delivery of 40,000 pounds of No. 1 "Packer" light native cow hides with other grades deliverable under a rather elaborate difference system. During its first year of operation transactions amounting to 22,356,670 pounds were executed with the business growing rapidly. Work is going forward in the collection and dissemination of more adequate statistics of the industry. Improvements are also being made in the details of grading and handling.

Cottonseed, Cottonseed Meal.—Seed cotton yields, when ginned, 2 pounds of seed for every pound of lint. There is produced, therefore, in point of volume several millions of tons of cottonseed every year. Its principal commercial value lies in its use as (1) cottonseed oil for compound lards, shortening, soaps, etc.; (2) cottonseed meal used for feed and fertilizer; (3) hulls used as fiber and as a substitute for hay; and (4) linters used in the manufacture of nitrocellulose products and in the manufacture of rayon. During the World War, trading in cottonseed meal was undertaken by the Memphis Merchants Exchange but was discontinued after a short while because of the war control over exchanges. It did not again undertake trading until January 15, 1929, when a futures market in cottonseed meal and another in cottonseed were formed. Memphis is the center of a large spot trade in these products. Backed by an old and strong exchange organization, these markets give promise of becoming an important factor in the trade. They embody the essential features of the usual future market. For the period July 1, 1929—June 30, 1930 the volume of sales for both markets combined amounted to 768,850 tons.

Other Commodities.—In June, 1929, the Merchants Exchange of St. Louis opened a future market in *mill feeds*. Three contracts are used viz., for bran, for grey shorts and for standard middlings. An attempt is being made to enlist the active

interest of the trade and to build up a hedging market. During its first year of operation the volume of trading amounted to 632,925 tons.

The Chicago Live Stock Exchange on March 1, 1930, opened a market for future trading in *live hogs*. The contract enables one to buy or sell a future specifying delivery by carlot and for a delivery period several months away. On January 12, 1931, the Chicago Mercantile Exchange started trading in *potato futures*. The contract embodies the usual standardized features of period and place of delivery, grade, etc., the unit of trading being a carlot of 36,000 pounds. On February 2, 1931, trading in blackstrap *molasses futures* was undertaken upon the New York Coffee and Sugar Exchange. In 1930 world production of blackstrap molasses exceeded one billion gallons. The future contract provides for a unit of trading of 24,000 gallons deliverable at New Orleans.

After consideration and investigation extending over a period of several years, the New York Cotton Exchange finally decided to establish a future market in *wool tops* and on May-18, 1931, trading was begun. The principal difficulty with future trading in wool is that of grading. This difficulty has been met in part by the use of oiled wool tops as the standard of trading in which the wool has been scoured and combed and loosely prepared for spinning. This is the basis of the contract upon the Antwerp market where trading is well established. The unit of trading upon the New York Cotton Exchange is 5000 pounds of wool tops, the price based upon delivery at Boston but with provision for delivery at other points if desired.

It is, of course, too early to judge the measure of success these newer markets will attain. If they develop in proportion to the spot trade upon which they are in part dependent, they will become in time flourishing exchanges. Each has its own particular problems to meet in maintaining a contract generally attractive to the trade and all are subject to those broad cyclical variations in trade which at times so largely determine profits or losses.

FUTURE TRADING

TABLE 5.—THE VOLUME OF FUTURE TRADING AND AN ESTIMATE OF ITS
AGGREGATE VALUE, BY COMMODITIES AND BY EXCHANGES,
FOR THE YEAR 1929.
PART A.—Grain

Exchange	Began trading in futures ¹	Trade during 1929			
		Commodity	Volume ²	Estimated price per bushel ³	Estimated Value
			<i>(millions of bushels)</i>	<i>(cents)</i>	<i>(millions of dollars)</i>
Chicago Board of Trade	1859	wheat	15,684.4	125	19,605.5
		corn	4,537.2	95	4,310.3
		oats	874.3	48	419.7
Minneapolis C. of C.	1890	rye	371.0	103	382.1
		wheat	1,258.2	125	1,572.8
		oats	110.6	48	53.1
		rye	44.6	103	45.9
Kansas City B. of T.	1899	barley	89.3	64	57.2
		wheat	850.1	125	1,062.6
		corn	232.4	95	220.8
Chicago Open B. of T.	1880	oats	0.0	48	0.0
		wheat	495.9	125	619.9
		corn	133.8	95	127.1
		oats	6.9	48	3.3
Duluth B. of T.	1885	rye	.3	103	.3
		wheat	394.5	125	493.1
		rye	43.3	103	44.6
Milwaukee C. of C.	1864	barley	.9	64	.6
		wheat	36.5	125	45.6
		corn	30.2	95	28.7
		oats	10.2	48	4.9
St. Louis Merchants' Ex.	1872	rye	3.3	103	3.4
		wheat	28.9	125	36.1
		corn	9.5	95	9.0
Portland Grain Exch.	1929	wheat	14.9 ⁴	125	18.6
Seattle Grain Exch.	1926	wheat	12.7	125	15.9
Omaha Grain Exch.	1904 ⁵	wheat	0.0	125	0.0
New York Produce Exch.	1870 ⁶	wheat	0.0	125	0.0
San Francisco C. of C.	1912	barley	0.0 ⁷	64	0.0
Los Angeles Grain Exch.	1917	barley	0.0 ⁷	64	0.0
Total					29,181.1

¹ The date refers to the exchange rather than to any one given grain.

² Data from Grain Futures Administration, U. S. Dept. of Agriculture.

³ Average of monthly prices, Chicago.

⁴ Year ending June 30, 1930.

⁵ Future market reorganized in June, 1930.

⁶ Future market reorganized in March, 1931; the date of 1870 estimated.

⁷ Actual volume 4,000 bushels.

EVOLUTION OF FUTURE TRADING: COTTON 55

PART B.—Cotton and Other Commodities

Exchange	Began trading in futures ¹	Trade during 1929			
		Commodity	Volume ²	Estimated price per pound ³	Estimated Value
			(millions of pounds)	(cents)	(millions of dollars)
New York Cotton Exchange	1870	cotton	41,173.5	18.8	7,740.6
	1931	wool top	0.0	—	0.0
New Orleans Cotton Exch.	1880	cotton	15,999.4	18.8	3,007.9
	1925	cottonseed oil	157. ⁶⁴	9.7	15.3
Chicago Board of Trade	1924	cotton	715.1	18.8	134.4
	1859	provisions ⁵	1,271.6	11.9 ⁶	151.3
New York Produce Exch.	1904	cottonseed oil	1,052.0	9.7	102.0
Memphis Merchants Exch.	1929	cottonseed			
	1929	cottonseed meal ⁷	1,537. ⁷⁷	2.0 ⁸	30.7
Duluth Board of Trade	1892	flaxseed	1,167.0	4.9	57.2
Minneapolis C. of C.	1920	flaxseed	1,309.7	4.9	64.2
Toledo Board of Trade	1862	field seeds ⁹	1.6	30.0 ⁸	.5
N. Y. Coffee & Sugar Exch.	1882	coffee	2,036.5	13.8	281.0
	1914	sugar	28,472.3	2.0	569.4
	1931	molasses	0.0	—	0.0
New York Cocoa Exchange	1925	cocoa	1,416.2	10.1	143.0
Rubber Exchange of N. Y.	1926	rubber	1,100.3	20.6	226.7
Nat'l Raw Silk Ex. (N. Y.)	1928	silk	28.9	487.0	140.7
Nat'l Metal Exch. (N. Y.)	1928	tin	92.9	44.9	41.7
	1929	copper	13.7 ¹⁰	17.6	2.4
	1931	silver	0.0	—	0.0
New York Hide Exchange	1929	hides	293.8 ¹¹	15.5	45.5
Chicago Mercantile Exch.	1919	butter	292.1	43.5	127.1
	1919	eggs	568.8 ¹²	34.7 ¹³	197.4
	1931	potatoes	0.0	—	0.0
New York Mercantile Ex.	1925	butter	.7	43.5	.3
	1925	eggs	70.3 ¹²	34.7 ¹³	24.4
St. Louis Merchants' Exch.	1929	mill feeds ¹⁴	1,265.9 ¹⁵	1.5 ⁸	19.0
Chicago Live Stock Exch.	1930	live hogs	0.0	—	0.0
Total					13,122.7

¹ That is, exchange trading began in the commodity opposite the date shown.

² Data supplied by the exchanges with the exception of the N. Y. Cotton Exchange and the New Orleans Cotton Exchange.

³ Average of monthly prices, mostly New York.

⁴ Estimated.

⁵ Lard, ribs, bellies and mess pork.

⁶ Weighted average price.

⁷ Year ending June 30, 1930.

⁸ Average price.

⁹ Clover and alsike.

¹⁰ Year ending May 15, 1930.

¹¹ Year ending June 30, 1930.

¹² Millions of dozens.

¹³ Price per dozen.

¹⁴ Bran, Grey shorts and standard middlings.

¹⁵ Year ending June 10, 1930.

Trading in 1929.—In Table 5 there is shown the volume of future trading and an estimate of its value for the year 1929. The list includes all of the exchanges of the United States having any trading in futures in 1929 as well as all of the commodities traded in during that year. The table is divided into two parts: (1) Grain and (2) Cotton and Other Commodities. The importance of the trade in grain and cotton is clearly shown as well as the dominant position of the Chicago Board of Trade and the New York Cotton Exchange. A summary of this table is to be found in Chapter I, Table 1. Too great importance should not be attached to the *absolute* figures since they vary somewhat from year to year, and for the year 1929 were influenced by abnormal speculative conditions. They are broadly indicative, however, of the *relative* importance of the trade upon the various markets and in the various commodities.

4. SUMMARY

In this chapter the development of future trading upon the exchanges other than grain has been described. With the exception of cotton, this development has consisted of the formation of an association for the purpose, the framing of a contract and suitable rules along the lines of the older exchanges, and the inauguration of trading. In cotton, the process was just the opposite of this. Trading began first, then rules and finally the formation of a formal exchange. Future trading in cotton was a natural evolution from trade practice in which merchants and brokers were increasingly attracted to the advantages of this method of trade both as a means of speculative profit and as a useful tool to be used in connection with their usual spot dealings. Liverpool took the lead in developing the features necessary to organized future markets in cotton, the principal steps of development occurring during and immediately following the Civil War. By 1868 future trading was an established practice both in Liverpool and New York.

Down to the World War additional commodities in which future markets had been successfully developed were coffee,

EVOLUTION OF FUTURE TRADING: COTTON 57

sugar and cottonseed oil. Since the World War not less than fifteen commodities have been added to the list. While trading in these newer commodities has had a reasonably rapid growth, it has not had time as yet to fully prove its place in the various markets involved.

Grain futures and cotton futures still occupy the dominant positions among the organized markets, accounting, in 1929, for over nine-tenths of the entire volume of trading. In the chapters which follow, they will, therefore, be used as the basis of analysis and appraisal of the functions of future trading.

CHAPTER IV

GRAIN MARKETING

Cash and Future Trading Often Confused.—Much of the mystery popularly ascribed to future trading has its origin in a superficial knowledge of the relation between the trade in futures and the trade in the actual product itself. A trade in futures is commonly explained as simply a purchase or sale of so much actual product to be delivered at a stipulated future time. A definition of this sort is simple, appears plausible, and is at once disarming. With the basic concept so clear, the inquirer assumes that trading practice must also be simple and expecting little usually receives little.

A future is much more than simply a contract maturing at some future date. This definition would apply equally well to a "to arrive" contract yet no one engaged in the trade would admit for a moment that "to arrive" contracts are the same as futures. The essence of the future contract is the use to which it is put and in this it differs radically from the "to arrive" contract. To understand this and to lay a firm foundation for subsequent phases of the subject we need to examine thoroughly the manner in which future trading is related to the marketing the merchandising of the various commodities in which the practice is maintained.

In this chapter and the one immediately following, there is presented an epitome of the marketing process as applied to the two leading commodities: grain and cotton. No attempt is made to trace the entire detail in the handling of these two crops. In particular, extended discussions of the important subjects of hedging and the price relationships between cash and future trading have been avoided because of their separate analysis in subsequent chapters.

1. THE MARKETING PROCESS

Grain Merchandising Presents Complex Problems.—In the United States, grain is harvested between the months of July and November. Winter wheat, oats, rye and barley are harvested mainly in July and August, spring wheat in August and September and corn in October and November. Once harvested, it becomes necessary to so handle the crop that the demands of the ultimate consumer will be met until the following year's crop is ready for market. Under our system of free competition this is accomplished through a continual adjustment of price, upward if demand improves or supply appears smaller than expected, downward if the reverse occurs. The market for the various grains, and especially wheat and rye, is world wide. Production areas are also widely distributed. Killough has shown that the price of wheat at Chicago is affected more from year to year by the production of wheat outside the United States than by the production within this country.¹

Merchandisers of our grain crops are confronted with problems extremely difficult of solution. The condition of growing crops both at home and abroad, involving factors of weather, plant and animal disease, demands constant consideration. Supplies consumed and exported must be accounted for. Supplies on hand in mill and elevator must be kept in merchantable condition and if possible disposed of at a profit and in this all must assume a measure of chance regarding the future course of prices.

The *risk of changing prices* is greatly increased by an extensive use of credit and this fact, in particular, has forced merchants and traders to adopt means to meet the situation. Those who are inclined to use their credit carefully and to be satisfied with a moderate volume of business can weather heavy losses from time to time if, in the long run, their business shows a profit; others prefer to use their credit to the limit and pro-

¹ Killough, H. B., *What Makes the Price of Oats?* U. S. Dept. of Agr. Bull. No. 1351, 1925.

tect their market position through the use of offsetting trades in the futures market; while others, making a special study of world market conditions and having a penchant for speculation, choose to assume the role of risk bearer.

Development of the Marketing Process.—These diverse and uncertain factors inherent in the merchandising of each crop of grain, have occasioned various types of trade practice. In the early days, markets were local affairs. Sales were made with the goods on hand and paid for in cash or kind. But with improvements in transportation and communication, methods of trade changed to meet new situations.

Markets widened and the work of marketing became a series of operations. Elevators for reshipment were built at principal connecting points; others were constructed at primary markets for storage and reshipment; and gradually hundreds and thousands of smaller ones were extended along the railroads farther and farther into the country. We thus find, in present-day practice, marketing machinery and methods arranged to meet a wide variety of situations both physical and financial.

Commercial Importance of Wheat.—Of the various grains, wheat is commercially the most important, the portion of each year's crop moving out of the county where grown being over 70 per cent of the crop, with a market value twice that of its nearest rival, corn. While corn is the leading grain crop, both in size and value, not more than 20 per cent of the crop moves out of the county where grown and the bulk of this moves into commercial channels only a short way. This is also the situation with respect to oats and barley, the percentages of the two crops moving beyond the counties where grown being approximately 25 per cent and 35 per cent each, with a market value far below that of corn. Rye ranks last among the five leading grains measured in size and value though a rather large percentage of the crop reaches our primary and export markets.

Wheat is our most important commercial crop not only because of its size but also because of the varied character of the trade in it. It is a staple food having a wide and general con-

sumption. In its manufacture into flour, a variety of types and grades are required. It enjoys a lively export trade and, being a product of many countries, grown under generally uncertain conditions, its price is subject to continual variation. We will, then, emphasize wheat because of its commercial importance; to the extent that the other grains enter into commercial channels, it is fairly typical of each of them, particularly with reference to the trade in futures. Only occasionally will it be necessary to mention some special feature regarding the trade in one grain not characteristic of the others.

Movement of the Wheat Crop.—Our leading winter wheat states are Kansas, Nebraska, and Oklahoma and for spring wheat, North and South Dakota, Minnesota and Montana. The winter wheat crop is harvested mainly in July and the spring wheat crop in September. Both crops begin to move to market immediately following harvest. The first step is to near-by country elevators. Then supplies are moved on either to local mills or products companies or to primary markets. At the pri-

TABLE 6.—MONTHLY MARKETINGS OF WHEAT BY FARMERS, IN PERCENTAGES, AVERAGE OF THE 10-YEAR PERIOD, 1920-1929.*

Month and per cent												
July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Season
16.9	18.7	16.3	11.5	7.4	5.8	4.6	4.4	3.5	2.9	3.4	4.6	100.0

* U. S. *Yearbook of Agriculture*, 1931, p. 592.

mary markets, sales are made to mills or for export or stored for later disposal. The supply thus becomes scattered following harvest: a portion of the crop remains on the farms, a portion is in the hands of country mills and elevators, a portion is in the terminal elevators, a portion is in the form of flour supply and a portion in transit and afloat going into the export trade.

The movement of the crop from the farm varies considerably from year to year depending upon the financial resources

of the farmer and the level of prices. It is usual, however, for the major portion to be marketed in the fall. Averaging the past ten years, Table 6 shows the percentage of the wheat crop marketed each month by farmers as reported by the U. S. Department of Agriculture.

At least 70 per cent of the crop has moved out of the hands of the farmer by December 1, 40 per cent having been consumed and the other 30 per cent being carried by mills and elevators or being in transit or afloat. There is, thus, a continual flow of grain from farm to market throughout the crop year varying somewhat from year to year and from month to month.

Diagram of the Movement of the Wheat Crop.—A schematic presentation of the marketing process is shown in the accompanying figure. Here are pictured the principal avenues of trade in the marketing of wheat. The main channel leads from the producer to the country elevator, thence to the leading terminal markets where the crop is shared between the miller, the food manufacturer, the commercial feed company and the exporter. An important supplementary artery leads from the country elevator to interior markets where a large fraction of each crop is utilized in milling and manufacture. In addition, country elevators usually have available local or near-by mills and food products companies which from time to time, bid for their supplies.

No attempt has been made to represent in the diagram the many types of intermediate buyers which are to be found at each step of the merchandising process. For the most part these represent either brokers or commission men acting for a principal, or jobbers buying and selling for their own account and relying upon a large and quick turnover together with a detailed knowledge of markets to earn for them a livelihood.

To the producer, the main source of disposal of his crop is through the country elevator. There are, to be sure, some alternatives. He can sell at times to a "scoop shoveler,"—a free lance who bids for the farmers' grain by the wagon load as it arrives at the country station and who, upon purchase, shovels the load into a car. As a source of competition to the local ele-

vator, however, he is of trifling importance.² If favorably located, the farmer may at times sell to a near-by industry or mill or he may sell to a local feeder or dealer. Finally, if he has sufficient grain for a carload or more he may consign his supply

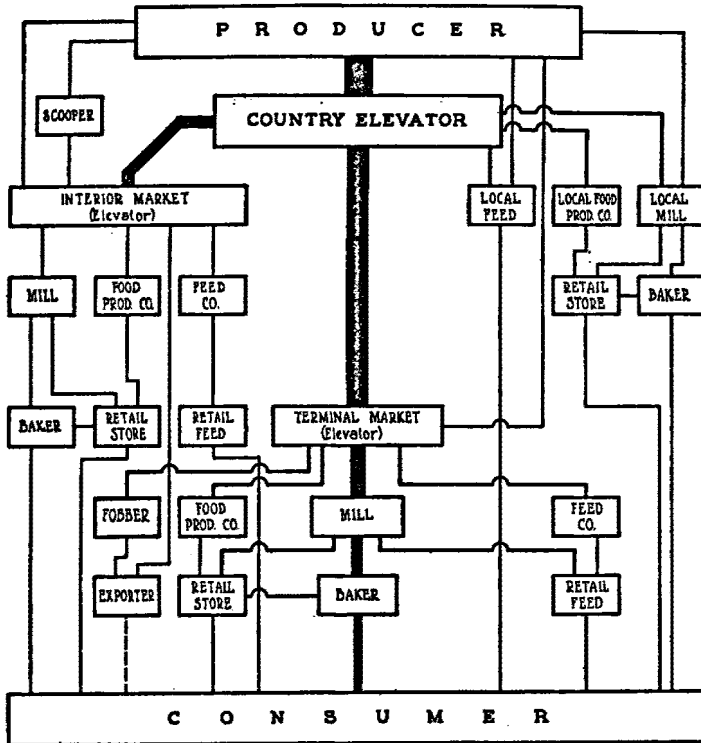


Fig. 1.—The principal channels of trade in the merchandising of the wheat crop.

to a distant market. But taken together these are alternatives of minor importance in comparison with the country elevator.

² Cf. Livingston, G. and Seeds, K. B., *Marketing Grain at Country Points*, U. S. Dept. Agr. Bull. No. 558, p. 21.

See also p. 13 of this bulletin for a somewhat different diagram of the marketing process to that shown in Figure 1.

2. MARKETING AT COUNTRY POINTS

Methods of Sale by the Farmer.—In the disposal of his crop, the farmer may choose one of three courses: (1) he may contract with a buyer before the crop is harvested; (2) he may sell immediately following harvest; or (3) he may store his grain and sell later.

The first of these methods is the least used of the three. Usually it consists of simply an oral agreement by the farmer to sell his on-coming crop to a local elevator at a fixed figure per bushel, delivery to be made before a specified date. Contracts are not, as a rule, made before a crop is assured and usually terminate in the fall. The following is a written form of such an agreement:

GRAIN CONTRACT^s

Contract No., 19....

THIS IS TO CERTIFY that I have this day contracted and sold tobushels of at cents per bushel, to be clean, sound and dry and to grade No. to be delivered into elevator or cribs at on or before the day of, 19..... If damaged or inferior grain is delivered and accepted on this contract, the market difference at which such grain is selling under the contracted grade on day of delivery shall be deducted from the contract price.

I certify that this grain is in my possession and free of all liens and encumbrances.

.....

This contract is reproduced, not because of its importance in the marketing of grain, but because of its marked similarity to the type of contract used in future trading. In *form* it is a future contract. But in its *use* it is employed in the actual handling of grain and in this essential differs radically from

^s Reproduced from *Report of the Federal Trade Commission on the Grain Trade*, Vol. I, p. 321.

the commonly used future contract of organized exchanges. It is not extensively used by farmers and country elevators because of disputes and misunderstandings arising frequently in the fulfillment of the contract.

The second method which the farmer may use is sale immediately following harvest. This is most frequently employed due, in part, to the necessity of immediate cash and, in part, to the convenience of the fall of the year in hauling his grain to market. Upon receipt of a load of grain, the country elevator makes a bid based upon quotations which he has received from prospective buyers and prevailing prices at the central markets. In making his bid he must take into account the quality of the grain being offered: its test weight per bushel, its appearance of color, soundness and cleanliness, the presence of foreign material such as chaff, weed seeds, garlic, smut, and its general condition whether damp or heated. From these factors he estimates the probable grade of the grain. If purchased it is merged with other grain of a similar grade to be sold in car-load lots to the best bidder.

If the farmer desires, and his financial condition permits, he may choose to hold his grain and sell later. This he can do by keeping it at the farm or by leaving it with a country elevator. If prices move up, this policy will redound to his benefit, assuming other conditions the same, but if downward, to his loss. If his grain is left with the country elevator in all likelihood it will not be stored there since the storage space is limited but will be sent on to a central market. There it will be sold and a future of equal amount purchased to protect the country elevator against the day when the farmer elects to "sell." This practice, being one phase of the broad subject of hedging, will be more fully discussed in a later chapter devoted to that subject.

Price Information for Country Elevators.—Country elevators are of three types: independent, line and cooperative. The first type includes those which are separately owned and operated by a local grain dealer. The second is characterized by a series of country elevators owned and managed under central

authority, usually at a terminal market. The third type consists of individual units, farmer controlled, and operated on a non-profit basis by the farmers patronizing the elevator. While these three types have somewhat different business policies, it will be sufficient here to treat them together in describing the usual methods of sale.

Because of the size and wide-spread interest in the grain trade, there is available for every country elevator manager an almost continuous series of quotations. Whether he avails himself of all of these quotations depends in part upon his alertness in following the market but mainly upon the degree of service demanded by his volume of business. He will, of course, have available the usual market news and quotations found in the daily newspapers and in the price currents sent out from central markets. But in addition he can subscribe to special services which supply prices in greater detail or at more frequent intervals. The most widely used of these are the Daily Price Card and the C.N.D.'s, the former being a postal mailed daily to patrons with some supplemental telegraphic service giving current cash and future quotations, and the latter being the quotation service of the Commercial News Department of Western Union which supplies subscribers with the latest prices at frequent intervals throughout the day.

These quotations keep the country elevator manager informed in a general way regarding the state of the market and what he may expect if he decides to sell a car or more of grain. In addition he may receive direct bids for his supplies from many sources: local industries, terminal elevators, commission firms, track buyers, who offer to buy under a wide variety of conditions. It is from these current bids and prevailing market conditions that he formulates his sales policy.

Types of Sale by Country Elevators.—Selling policies of country elevators may be conveniently grouped under five plans. A particular elevator or line of elevators may follow any one of these plans; in most cases, however, no one method will be consistently used to the exclusion of the others.

(1) He may ~~consign his grain to a commission~~ firm at a central market, there to be sold to the highest bidder. Most of the grain moving to terminal markets is sold by this method. Upon receipt of the car, the commission firm sees that it is properly graded and displays a sample of the car on the grain tables provided for the purpose on the floor of the exchange. If an advance has been made on the car by a local bank, he honors the draft drawn upon him. He directs the disposal of the car, after sale and acts for the consignor in any disputes which may arise, later sending the shipper an account sales. This sets forth the sales price and gross value of the car, and deducts freight, weighing, inspection and other incidental charges, including a commission for his services usually of about 1 per cent. After deducting any advance payment, the balance due is remitted. Under this plan the country shipper is assured of a fairly broad market and of obtaining the prevailing price for his product. He runs some risk, however, of a market decline in price while his grain is enroute to the market. This suggests the second plan of sale.

(2) He may hedge his consignments of grain. The technique concerned in this involves questions of future trading and hedging which will be analyzed more fully in later chapters. In substance, the process consists of selling future contracts each day equal in amount to the day's purchases of actual grain and later, as the grain is sold by the commission merchant, to cancel by purchases of equal amounts of the futures. By thus setting up this counter structure, the country elevator is in a position to gain from its future contracts what it loses on its actual grain due to a decline in price during the period of accumulation and shipment to market. It follows that it sacrifices by this plan any speculative gain which it might have obtained from a rise in the price of the grain during shipment. This it is willing to forego for the assurance that possible losses will be met by means of the hedge. Few country elevators make hedging an invariable practice though many regularly employ this plan. The Federal Trade Commission's survey covering all sec-

tions of the grain belt, found that approximately 40 per cent of the country elevators followed the custom of hedging their grain purchases while an additional 10 per cent hedged to some extent.

(3) As alternatives to consignment, the country elevator manager may sell his grain direct to buyers or he may store and sell later. Direct sales may be either "on track" or "to arrive." If an "*on track*" sale is made, the elevator agrees to load the car within the time specified and guarantees the quality of the grain. The price is thus F.O.B. country point agreed upon at the time of sale. Bids are frequently made on this basis by local industries, by mills, feeders, track buyers and interior brokers who specify by what date the car must be ready and instruct the manager to whom to bill the shipment if accepted. "On track" bids necessarily embody specific requirements and usually, therefore, not all of a country elevator's supply can be disposed of by this plan. Where it is possible to meet the bidder's needs, however, very frequently an advantageous price can be obtained. It follows, too, that sales made on this basis limit the necessity of hedging by the country elevator since the risk of a price decline is passed on to the buyer.

(4) Direct sales may also be made by means of "*to arrive*" contracts. Bids in this form are commonly sent out by terminal market buyers either direct or through commission firms. Here the basis of quotation is on track at the terminal market, so that the country elevator in comparing these bids with "on track" bids must first subtract the freight charges to the terminal market. The "to arrive" contract differs from the "on track" in this additional respect that under the former, the country shipper usually runs the risk of accident to the grain in transit, while under the latter his responsibility ends with the loading of the grain.

"To arrive" contracts are occasioned mainly by the necessity of meeting larger contracts made at the terminal markets, for shipment to seaboard, for export or for mill or industry. An exporter may be making up a cargo to move one month hence.

He may meet his needs through a "to arrive" bid to the country. Occasioned by a wide range of circumstances, it follows that these bids also assume a variety of forms, particularly with reference to the element of time. They may be for "this week only," "within 5 days," "by October 10." Frequently bids are made for "first half November" or, "30 days," or "during January," meaning in each case that the grain must be shipped by the end of the period specified. For certain seasons of the year buyers sometimes specify whether old crop or new crop grain is desired, and usually mention a particular type of billing needed.

On the Chicago Board of Trade a regular market is maintained in "to arrive" business. Definite rules of the Exchange specify the prompt posting of all bids. During trading hours bids are based upon prevailing future quotations and are subject to "acceptance in 5 minutes or less after their receipt." At the close of trading bids sent out are subject to acceptance up to 9:30 A.M. the following day. What was said regarding the specific character of "on track" bids is true also of "to arrive" bids. Their requirements cannot always be met and at times suitable bids are not available. They serve, however, as an excellent supplement to the broader sample market and, as in "on track" sales, they minimize for the country elevator the risk of carrying forward large supplies.

(5) and (6) The last two of the various sales policies which a country elevator may follow do not need extended consideration here. The elevator may, within rather narrow limits, *store* supplies purchased, unhedged; or it may *store and hedge* a certain volume of its purchases. If the first of these two plans is adopted it is with the hope that higher prices may later develop; if the second plan is used, it is for the purpose of earning a storage differential on the grain carried forward. The first plan has little to recommend it unless followed under careful and expert direction. Additional consideration will be given to the second plan in sections relating to hedging practice. Under either plan, the average-sized country elevator will not permit

of a great deal of storing, having a capacity usually of not more than 30,000 bushels and requiring the use of several of its bins for current operation.

3. TERMINAL MARKETING

Terminal Markets.—The focal points of the grain trade are the terminal markets. Here the commercial portion of each grain crop converges, to be distributed to consuming channels. To the terminal markets, surplus supplies flow, to cause, through keen competition, continual adjustments in the general level of grain prices. Being the leading centers of trade, these price adjustments reflect not only current local conditions but, also, through an elaborate network of news service, probable future developments throughout the world.

In common with most business terminology, the expression "terminal market" is loosely used. It is sometimes employed in the sense of points where reshipment is necessary. Sometimes the term is limited to those markets having ample storage facilities. Or a distinction may be drawn between important primary markets, where receipts come mainly from the country and seaboard points. Frequently the term refers only to the size of the market judged by receipts and shipments. It will be used in this last sense here, meaning simply the largest of our grain centers. On this basis, Chicago, Minneapolis, Kansas City, Duluth, Buffalo and St. Louis, together with the seaboard points of New York, Baltimore, Philadelphia, New Orleans, Galveston, Portland and Seattle constitute our leading terminal markets while Indianapolis, Peoria, Omaha and Wichita are leaders among many important interior markets.

The Exchange.—The nucleus of the terminal market is the exchange, while its most important physical asset is its system of elevator warehouses equipped to handle and store in-coming supplies of grain. Shipments consigned to commission firms at a terminal market are sold by sample on the floor of the exchange. Upon arrival, the railroad company notifies the consignee, and a sample of the grain is taken from the car, in-

spected, and a grade placed thereon by an official either of the state in which the exchange is located or of the exchange itself all of whom are Federally licensed. A portion of this sample, with the grading information attached, is sent to the floor of the exchange and placed on the consignee's table.

A sample of each consigned car thus finds its way to the grain tables of the exchange, there to be sold to the highest bidder. In this trading, sellers are mainly country shippers represented by commission firms while buyers include representatives of terminal elevators, mills and industries. Most of the buying of car-lot shipments, however, is for the account of terminal elevators. Having ample storage capacity and cleaning and conditioning facilities, they are in a position to buy larger quantities and over a much wider range of quality than individual industries or mills.

Terminal Elevators.—Where the average country elevator has a maximum capacity of 25,000 bushels, it is not uncommon for a terminal elevator to have a capacity one hundred times this or 2,500,000 bushels. Chicago has 3 such elevators and in addition 17 having a capacity of 1,000,000 bushels or more and over 30 of smaller size. Similarly at Minneapolis, Duluth, Kansas City and other terminal centers, large storage capacities are available. Were it necessary to fill to the limit the entire elevator space at the 50 leading grain centers of the United States, they could store considerably in excess of 300,000,000 bushels. Such an amount of storage capacity places the terminal markets in a position to handle vast movements of grain.

Terminal elevator companies act as wholesale *distributors* of grain. They buy in car lots from country points either direct through their "on track" and "to arrive" bids or indirectly through their purchases on the floor of the exchange. As purchases are made, they are hedged in the future markets. They sell to mills and industries or to shippers or direct for export in round lots of large size and of quality to fit the needs of the buyer, at the same time removing corresponding amounts of their hedge.

They are, however, more than distributors. At the time purchases are made, and particularly in the fall of the year, terminal elevators frequently are unable to find buyers for immediate shipment. Large quantities of grain thus accumulate in storage, either to be applied on deferred contracts or held until buyers can be obtained. The *storage* of grain is thus another of their regular functions.

Elevators qualify under the various state laws of the state in which they are located as either public or private. If public, their business is to receive and store grain usually in bulk, by grades, for a compensation, in which the various owners' grain is merged. By court decision, it is also expected that the operator will not store his own grain with that of others, though in practice this provision has been usually evaded. If operated as a private elevator, the grain is stored and handled for the operator's own account. The storage function may thus be either of private or public character, though for many years it has been largely for private account.

The *conditioning and mixing* of grain is another important function of terminal elevators. This, too, may be for public account for a fee or for private purpose. The conditioning of grain may include many operations. Cleaning may be required to remove foreign material or to separate undesirable quantities of other grains such as wild oats, flax or weed seed. Cooling or blowing or the transferring of grain from bin to bin is occasionally necessary to prevent heating and subsequent deterioration. Moisture content being a grading factor, in addition to its effect on keeping qualities, it is frequently profitable to dry lots of grain. Clipping, bleaching, scouring, and washing are sometimes used to improve the grade.

Grades of grain as prescribed by the Federal Department of Agriculture represent zones of quality for each class of grain. Several factors enter into the determination of the grade and it frequently happens that separate lots of grain qualify in certain respects for one grade and in others for another. By judiciously mixing several lots of grain, the average grade for the

whole can be considerably raised and in consequence its market value increased. This is a common practice of terminal elevators and serves to add materially to their profits.

Being conveniently located for shipment by rail, and frequently by vessel also, terminal elevators serve in the *unloading, elevation, and loading* of grain. Originally this was the main function of the terminal elevator. Much of the machinery installed for this purpose is automatic and the ease and rapidity with which a hundred cars of grain can be unloaded or later spouted into the hold of a vessel is remarkable. Here again the elevator may operate for its own account or, through the payment of a fee, for others.

Methods of sale at Terminal Markets.—We have traced the movement of grain from the country to the terminal markets and the methods of sale employed. A part is bought direct through "on track" and "to arrive" bids and a part is consigned and sold by sample on the exchange floor, the principal buyers being, in both cases, the operators of terminal elevators. To whom and by what methods are the terminal elevator stocks sold? What other groups share in the disposal of terminal market supplies?

Terminal markets, being situated in leading cities, require a considerable fraction of their receipts for local consumption. Of far greater importance is the fact that several of the terminal markets are important milling and grain converting centers. This is notably true for Minneapolis and Indianapolis where flour mills and corn products mills respectively consume a large fraction of their receipts of these two grains. In contrast, Chicago, Duluth and Eastern ports are mainly forwarding centers.

For supplies needed for local consumption for mills, manufacturers of food products, and feed companies, the usual method of sale is by grade and sample of supplies on hand. A portion of the current car-lot receipts are bought direct by local mills and industries. A considerable portion of their supplies are acquired in even lots from the terminal elevators. Here the

basis of purchase is either by sample of the actual grain offered or by type sample. Mills, in particular, are likely to insist upon buying by sample of actual supplies on hand rather than by grade alone as the latter has most likely been mixed by the terminal elevator and in this form fails to meet the miller's needs in preparing particular blends of flour.

Supplies not needed for consumption at the terminal markets must be sold either at other consuming centers or for export. If at other consuming centers, the method of sale used by terminal elevators is by private solicitation either by phone or by correspondence or by a representative or through the use of an offer card. Some firms send out a daily offer card, quoting prices for specified grades of grain, time and terms of delivery. In these quotations, the position of the grain is all important. If the seller is located at Kansas City, for example, his quotations may be for grain "on track" or "in store," Kansas City, in which case the buyer would have to pay the freight and handling charges to the point needed. Or the offer might be made on a "c.i.f." basis to one or more points, in which case the seller proposes to meet all costs, insurance and freight charges to the point of destination. Naturally, in this case, the offer price will be correspondingly higher. Or, if for export, the basis of sale may be "f.o.b." a particular port, in which the seller meets the expenses of handling, insurance and shipping up to and including the placing of the grain on board ship. Grain sold to mills and industries located at distant points is usually offered by grade, though in some instances a type sample may be sent to a prospective buyer to serve as a basis of present or subsequent sale. In either case, success in selling the quality of grain needed depends largely upon a knowledge of the needs of the buyer gained through connections of long standing.

Quality is less important for grain going into the export trade. Wheat constitutes over 60 per cent of the volume and approximately 75 per cent of the value of our grain exports, most of which is sent to Great Britain. In the manufacture of

flour, the English miller is not as particular as the American in selecting exact shades of quality, and as a result sales for export are made almost entirely on the basis of grade alone and usually include grain previously mixed by terminal elevators.

Operators of terminal elevators do not, as a rule, sell directly to foreign buyers but rather to export firms who in turn sell abroad. At some markets, and notably at Duluth, shippers, buying from elevator operators at the primary point and selling to exporters at a seaboard point, further sub-divide the process. These shippers are known as "fobbers" because they sell f.o.b. the point of destination.

Sales in the export trade usually originate between exporter and foreign buyer growing out of an acceptance of a bid or offer made by one of the parties. The basis of sale is usually by grade, c.i.f. the foreign port, for delivery either within some specified period of time or on named steamer on definite schedule and at a fixed figure with reference to the prevailing future price. The exporter hedges the sale at once and then canvasses the market for supplies of a suitable grade, price and position. He may buy of a "fobber" in which case he avoids the trouble and risk of bringing the grain to the seaboard; or he may buy from an interior elevator and assume this risk. At times he can buy from available supplies at the seaboard point. In any event his purchases are usually drawn from the elevator supplies at important terminal and interior markets.

Terminal elevators thus sell the remainder of their supplies either to "fobbers" in store or exporters f.o.b. or c.i.f. and with each sale remove a corresponding amount of their hedge in the future market. The basis of their sale is by grade, usually for deferred shipment and at a price measured as a premium or discount of a prevailing future price. The quantity sold is usually a round lot such as 8,000 bushels or multiples of 8,000 bushels.⁴ An elaborate structure of trade customs and written provisions also supplements every transaction, both in the export and the

⁴The lot of 8,000 bushels is basic in foreign shipments for wheat and represents 1,000 quarters of 480 pounds or 8 bushels each.

domestic trade, to meet minor points of possible misunderstanding.

4. THE GRADING OF GRAIN

As an essential of the marketing process, special consideration should be given to the part played by the grading of grain. Future trading to be successful requires the use of a highly standardized contract; and this implies that the quality of product contracted for each time shall be clearly defined and understood. Without this quality, contracts will not be freely entered into and much of the continuity of the market lost. Grading has, therefore, been a necessary part of the development of organized markets.

Exchange Regulation of Grading.—The earliest grading of grain was done under the direction of the exchanges. We have seen that in the early fifties the handling of grain in bulk and the use of a weighed instead of a measured bushel became the practice.⁸ This merging of grain into common lots destroyed its separate identity so that an owner of grain upon storing it had every reason to want a careful grading and weighing. By 1858 the Chicago Board of Trade had worked out a system of grades for each of the various grains and placed its enforcement under a Chief Inspector. The following year in its special charter the Board of Trade was expressly granted the right to grade, weigh and otherwise supervise the grain handled through its membership. Other exchanges also set up inspection services and it became the common practice to buy or sell grain both domestic and for export subject to the inspection of some particular city or exchange.

State Regulation of Grading.—In Illinois dissatisfaction soon arose over the handling of grain by the railroads and elevators, complaints coming mainly from the farmers, and in 1871 the grading work was taken out of the hands of the exchange and placed under the direction of the State. The Illinois State Grain Inspection Department has continued this work up to the present time. In 1885 the State of Minnesota assumed

⁸ *Supra*, p. 25 ff.

this function also, and in later years several of the other important grain states followed suit. At the present time, therefore, the work of inspection and grading (and including in some cases the weighing) of grain is divided between the several states in the Central West and Far West having state laws covering the matter and the principal exchanges particularly in the East where exchange control is permitted.⁶

Federal Supervision of Grading.—In 1916, Congress passed the United States Grain Standards Act (39 U.S. Stat. L. p. 482) authorizing the Secretary of Agriculture “to fix and establish . . . standards of quality and condition for corn (maize), wheat, rye, oats, barley, flaxseed, and such other grains as in his judgment the uses of the trade may warrant and permit,” and to license competent persons “to inspect and grade grain and to certificate the grades thereof for shipment or delivery for shipment in interstate or foreign commerce. . . .” As a result of this act Federal grades for grain have been established and, with certain minor exceptions, all grain passing into interstate commerce must be inspected and graded according to these standards.

To assure an adequate quality of work, every inspector whether an employee of a State or of an exchange must be Federally licensed. General supervision at the principal points of inspection is also maintained and in addition the buyer or seller if not satisfied with the grade established may appeal to a Federal inspector for final determination. The effect of this Act has been to raise the general plane of inspection work and to standardize the grades and grade terminology between important shipping points. The importance of this work and the place occupied by the subject of grading generally we will need to more fully evaluate later in connection with important aspects of price particularly with reference to difference systems, deliverable supplies and the subject of hedging.

⁶ *The Report of the Federal Trade Commission on the Grain Trade*, Vol. II, Ch. 6 is an excellent survey of this subject. See also Goldstein, B. F., *Marketing: A Farmer's Problem*, N.Y.: Macmillan, 1928.

5. SUMMARY

A thoroughgoing knowledge of the nature of future trading cannot be had without at least a general understanding of the marketing aspects of the subject. In this chapter, a summary of the marketing process as a whole has been developed with special emphasis on the types of purchase and sale. This survey has carried us from the harvesting of the crop through the country and terminal marketing stages up to the point where the grain is converted into manufactured product. It is designed to serve as a frame-work upon which various phases of the grain trade especially related to future trading can be developed. An understanding of the essential aspects of marketing and merchandising is especially necessary in order to differentiate clearly between future trading and the several forms of trade in the actual commodity itself.

CHAPTER V

COTTON MARKETING

In its fundamental aspects, cotton marketing is similar to grain marketing. Cotton is a farm product, harvested in the fall, sold by the farmer to local buyers who in turn sell to larger merchants there to move into domestic or export hands for ultimate consumption in manufactured form. In its detail, however, cotton marketing is somewhat different. It employs, too, an entirely different terminology and to adequately understand how future trading functions in this important field we will need to have some background in cotton marketing practice.

1. THE PRODUCTION AND CONSUMPTION OF COTTON

Sources of Production.—For over a hundred years the United States has been the leading source of the World's supply of cotton. In 1791 the production of this country did not exceed one-half of one per cent of the world production; twenty years later it was still less than 15 per cent; but by 1831 it amounted to over 45 per cent and in 1834 exceeded 50 per cent. Since that time, with the exception of the Civil war period, United States production has continued between 50 and 65 per cent of the World crop, averaging in recent years over 14 million bales of cotton lint. India, producing annually between 4 and 5 million bales, and Egypt, producing about 1½ million bales of fine quality cotton, rank second and third in commercial importance. China produces a sizable quantity of cotton each year of which around 2 million bales enter into commercial channels. Russia since 1928 has produced in excess of a million bales and is becoming increasingly important as a commercial source of supply.

The United States crop is produced in the South, Texas leading with a crop exceeding $\frac{1}{4}$ of the entire production of this country. If we combine Oklahoma with Texas, approximately

5 million bales of each year's crop is accounted for, amounting to over $\frac{1}{3}$ of the annual production. A second major section, including the important Mississippi delta area, includes the states of Missouri, Tennessee, Mississippi, Arkansas and Louisiana. Together they account for approximately another third of each year's crop. The Atlantic Coast states of North and South Carolina and Georgia together with Alabama form a third region producing over $\frac{1}{4}$ of the yearly crop. In addition to these three regions the states of Virginia, Florida, New Mexico, Arizona and California produce some cotton.

International Trade in Cotton.—The international trade in cotton has averaged during recent years around 13 million bales. The United States has been the principal exporter with an annual total averaging over 8 million bales followed by India with exports approximating 3 million and Egypt $1\frac{1}{2}$ million. Over 3 million bales of these exports move to the United Kingdom, another 3 million to Japan, $1\frac{1}{2}$ million to France, $1\frac{1}{2}$ million to Germany, 1 million to Italy and smaller amounts to other European countries.¹ These figures indicate, of course, only the average international trade in cotton, exports and imports varying considerably from year to year as production and demand change.

Consumption of American Cotton.—Of the total American crop of lint cotton, from 50 to 70 per cent is exported and from 30 to 50 per cent consumed in the United States. An average of the past five years shows a domestic consumption of 44 per cent and into export 56 per cent. Subdividing this 56 per cent we find that 32 per cent moved to the continent of Europe, 12 per cent to Great Britain and 12 per cent to other countries of which Japan is the most important.² Because of the large fraction of the American crop consumed at home, the United States is not only the leading producer and exporter of cotton but also the leading consumer.

We need to examine further the fraction of each year's crop

¹ For the data by years, see U. S. *Yearbook of Agriculture*, Annual.

² Data by years in *Cotton Year Book*, N.Y. Cotton Exchange, 1930.

consumed within the United States. It amounts to between 6 and 7 million bales. Fifty years ago the domestic portion moved in large part to mills located in New England and only a small fraction remained in the Southern States. Today the major portion is consumed by mills located in the south, principally in the South Atlantic area. This change is clearly shown in Table 7. Seventy-five per cent of the domestic consumption of cotton is in the South and 55 per cent of the active cotton spindles

TABLE 7.—THE CONSUMPTION OF COTTON AND THE ACTIVE COTTON SPINDLES IN THE UNITED STATES, BY SECTIONS FOR THE YEARS 1870 AND 1928, SHOWING THE GROWTH OF THE COTTON INDUSTRY IN THE SOUTH.*

Section	Cotton Consumed				Active cotton spindles			
	Bales (000 omitted)		Per cent		Spindles (000,000 omitted)		Per cent	
	1870†	1928†	1870	1928	1870	1928	1870	1928
New England States	551	1,438	69	21	5.5	13.8	78	41
Cotton Growing States	69	5,114	9	75	.3	18.3	4	55
All other States	177	282	22	4	1.3	1.5	18	4
Total, U.S.	797	6,834	100	100	7.1	33.6	100	100

* Data from *Cotton Production and Distribution*, U.S. Dept. of Commerce Bull. 164, 1928.

† Year ending July 31.

are located there. Of the 5,114,000 bales consumed in the South in the crop year 1927-28, 4,653,000 bales or over 90 per cent were consumed in the South Atlantic states of Virginia, North Carolina, South Carolina and Georgia together with Alabama.

2. THE CLASSIFICATION OF COTTON

The matter of quality plays a very important part in the merchandising of cotton. Every bale is sampled at least once and usually more than once. No two bales are just alike. These shades of difference between bales are of primary concern to

the spinner. He wants cotton of a uniform or even-running quality and in contracting for his supplies he specifies precisely the type his business needs. It is the duty of the cotton merchant to acquire, sort out and assemble even-running lots of cotton of particular qualities to meet the needs of the spinner. The problem of quality is thus two-fold: (1) to set up adequate *standards* as guides to determine and to describe the various shades of difference between bales and lots of cotton and (2) to exercise adequate *skill* in classifying the cotton crop according to these standards.

Cotton Standards.—In its broadest sense, the standards for cotton include all of the guides or measures which have been developed either by custom or by regulation to aid in accurately describing, comparing, recording and trading in various lots of cotton. While a great deal of improvement has been made in recent years, the standards in common use are still not entirely uniform. The weight of a bale of cotton is ordinarily thought of as 500 pounds though its actual weight may vary considerably from this figure. For this reason cotton is bought by actual weight or if specified in bales it is usually understood in the United States that the contract will be fulfilled on the basis of 50,000 pounds per 100 bales gross weight.

The matter of allowance for tare, i.e., the bagging used to cover the bale and the steel bands used to bind it, is not entirely standardized though the usual deduction in domestic trade is 21 or 22 pounds before the bales are compressed, 24 to 27 pounds after compression and 30 pounds per 500 pound bale in the export trade. Standardized methods of shipping, handling and quoting cotton have to some extent been worked out mainly under the direction of the larger exchanges.

It is in the classification of the various qualities of cotton itself that the greatest need for standardization has been felt and it is here that standardization work has reached its most advanced stages. To accurately classify and describe the essential qualities of cotton in accord with present-day practice it is necessary to determine its growth, grade, staple length and character.

Growth.—Cotton was first grown in the United States along the South Atlantic coast. Two varieties were introduced which came to be known as “sea-island” and “upland,” so named because the former was grown on the coastal islands near and south of Charleston and the latter upon the higher plateaus back from the coast. Sea-island cotton was of long staple and very fine quality and found a ready market. It could be successfully grown, however, only within the limited coastal area and for that reason did not develop into the leading American crop. In recent years the commercial demand for this cotton has been small and with the coming of the boll weevil, it has almost entirely disappeared as a part of the commercial crop of this country.

Upland cotton developed in commercial importance in the South and it now constitutes, with the exception of a small amount of American-Egyptian cotton grown in Arizona, the entire American crop. The American-Egyptian crop, like the earlier sea-island growth, is a long staple, quality variety. The 1929 crop amounted to only 28,800 bales or approximately $\frac{1}{10}$ of one per cent of the entire United States production.

Through the course of time upland cotton in a broad sense has come to mean any one of a number of varieties and qualities depending mainly upon the character of the soil and growing conditions. Thus “Texas” cotton is something different than “Orleans” and both have a much shorter staple and a somewhat different character from “Delta” cotton grown along the bottom-lands of the Mississippi and its tributaries. An additional regional distinction is “Upland” cotton applied in the narrower sense to cotton of the type grown in the Carolinas, Georgia and Alabama. Preferences are frequently shown, also, for the kind of cotton grown in a particular locality.

Grade.—To further differentiate the qualities of cotton, an elaborate system of grading is employed. Grade takes into account (1) the color, (2) the foreign material and (3) the preparation of the cotton. Bales of bright, white cotton, free from leaf materials, seeds, dirt, dust, and properly ginned to avoid roughness and irregular stringiness will command a high

rating while dull, colored cotton poorly prepared and including a great deal of foreign materials will be graded low.

Until recent years grading has been handled entirely by the trade and mainly through the supervision of the leading exchanges. Inspection bureaus were set up in conjunction with the exchanges and cotton bought and sold subject to the inspection of some particular market. While the various markets used the same terms in classifying cotton, it was frequently the case that a particular term did not in fact represent the same quality between markets. Thus Strict Middling might represent a better quality in Mobile than in Houston and these markets might be slightly different than the standards applied in Memphis.

In an effort to render more uniform these various trade usages, the Federal Department of Agriculture in 1909 prepared a set of standards which could be used by the exchanges if they desired. Later in 1914 with the passage of the United States Cotton Futures Act a set of "Official Cotton Standards of the United States" was prepared and it was required that all cotton offered for delivery upon future contracts be classed according to these standards.* In 1923 the United States Cotton Standards Act (42 Stat. L. p. 15-17) was passed which broadened the application of the official standards to all cotton passing into interstate commerce. This same year the leading cotton exchanges of Europe agreed to adopt the official standards in all purchases of American cotton by grade and the United States grades then became known as the "Universal Standards for American Cotton."

The effect of the work by the Federal Government has been to greatly standardize and clarify the qualities of cotton important in grading. The Universal Standards are kept in Washington and from these, duplicate sets are made which serve as the basis of classification at all important spot cotton centers. While the actual classifying is done by exchange or private organizations (with the exception of cotton certificated for delivery on future contracts which is done by Federal employees),

* See Chapter XV for an analysis of the Cotton Futures Act.

it is everywhere classed according to the same standards to greatly aid in the purchase and sale of cotton by description.

Table 8 has been drawn up to show (1) the various grades of upland cotton which have been prepared in practical form and (2) the relative importance of each grade. There are for white cotton, for example, 9 grades ranging from the highest,—Middling Fair,—to the lowest,—Good Ordinary. White cotton, it will be seen, includes a large part of the commercial crop amounting for the 1930 crop to 87.1 per cent of the entire pro-

TABLE 8.—THE LIST OF GRADES CONSTITUTING THE UNIVERSAL STANDARDS FOR AMERICAN UPLAND COTTON SHOWING THE ESTIMATED PROPORTIONS OF EACH GRADE COMPOSING THE 1930 CROP.*

Name	Extra white	Blue stained	Grey	WHITE	Spotted	Yellow tinged	Light yellow stained	Yellow stained	Total
Middling Fair	—	—	—	.0	—	—	—	—	—
St. Good Middling	—	—	—	.1	—	.0	—	—	.1
Good Middling	.9	.0	.0	6.5	1.1	.1	.0	.0	8.6
Strict Middling	1.6	.0	.0	32.0	4.0	.1	.0	.0	37.7
MIDDLING	.8	.0	.0	30.7	2.4	.1	.0	.0	34.0
St. Low Middling	.2	—	—	12.7	1.0	.1	—	—	14.0
Low Middling	.0	—	—	4.2	.2	.0	—	—	4.4
St. Good Ordinary	—†	—	—	.8	—	—	—	—	.9
Good Ordinary	—†	—	—	.1	—	—	—	—	.1
Total	3.6	.0†	.0†	87.1	8.7	.4	.0†	.0†	99.8

* Adapted from *Handbook for Licensed Classifiers* (1930) and *Grade, Staple Length, and Tender ability of Cotton Ginned in the United States, Crop of 1930*, (mimeo), publications of the Bureau of Agr Economics, U. S. Department of Agriculture.

† Less than $\frac{1}{100}$ of one per cent. "No grade," amounting to $\frac{1}{100}$ of one per cent, not shown in the table.

duction. To the right of the grades for white cotton are shown progressively deepening colors of a yellow hue, so marked because of the effect of frost or freezing. To the left of the grades for white cotton are shown in the shades of grey and blue stained indicative to the effects of rain and excessive weather exposure and to the extreme left are the grades for extra white cotton. Grades have been prepared either in descriptive or physical form for all of the entries in Table 8 except those marked off with a dashed line (—). Disregarding the matter of color it will be seen the grades of Strict Middling,

Middling and Strict Low Middling are of major importance though from year to year some variation occurs. For similar figures for the 1928 crop, Table 21, page 295, will be found of interest.

Color plays a part in determining the grade of cotton not only in the major shades of difference as shown in Table 8 but also in very minor gradations within any given color name. Thus white cotton is classified from Middling Fair down to Good Ordinary partly on the basis of the degree of whiteness. Middling Fair must be "slightly creamy, bright, 'bloomy' and free from any discoloration." The grades farther down the scale are less bright and toward the bottom grade they become dull in appearance.⁴

Grade also takes into account the foreign material present. In the picking of cotton, and especially following frost or freezing weather, particles of leaf and stem are likely to be present; and in its handling as well as through the effect of wind and rain, cotton frequently contains some quantities of dirt and dust. These extraneous elements materially lower the spinning value of the cotton. They are taken into account in the grades by requiring the highest grade to be practically free from foreign material and allowing in each lower grade a progressively larger amount.

Grade is a product of color, foreign material and preparation. This third element is accounted for largely by the way the seed cotton is put through the gin. If not properly fed into the gin or if the machinery is not properly adjusted or operated, the cotton will be stringy, possibly gin-cut and will lack the smoothness necessary for an even quality of yarn. The extent to which poor preparation appears in the cotton—its grade will be correspondingly lowered.

It should be pointed out that these elements of grade are not separately considered by the classer but rather jointly. A par-

⁴Palmer, A. W., *The Commercial Classification of American Cotton*, U. S. Dept. of Agr. Dept. Circ. 278, 1924, is an excellent summary of the elements and purpose of cotton classification.

ticular sample might in preparation and extraneous material merit a rating of Good Ordinary but if of excellent color it would probably be graded somewhat higher. It is the task of the classer to take all of the elements into account, to examine the various portions of the sample, to compare the sample with the standards where necessary, and assign a grade. His work is that of an artist in which quick, accurate and consistent judgment is necessary.

Staple.—Staple refers to the length of the fiber and is probably of greater importance than grade in determining relative values between various types of cotton. Determining the staple length of a given sample of cotton consists of breaking and pulling a small portion, evening the ends each time and eliminating the uneven fibers to obtain a fairly representative length. This length is then estimated in inches and fractions of an inch. Federal standards for staple length have been established as in grades as an aid to uniformity among classers.

The staple lengths for the 1930 crop of American upland cotton and American-Egyptian cotton is shown in Table 9. Similar figures for the 1928 crop are to be found in Table 21, page 295. The data illustrate the principal staple lengths in the American crop as well as the pronounced difference in staple length between the upland and American-Egyptian growths. That portion of the crop having a staple of 1 $\frac{1}{8}$ inches or more is usually considered as long staple cotton or simply "staple" cotton. Of the upland crop it is grown mostly in the delta areas along the Mississippi River with a small amount in the Carolinas and constitutes somewhat less than 5 per cent of the crop.

The great bulk of the American crop falls between the staple limits of $\frac{7}{8}$ and $1\frac{1}{32}$ inches. It is this range in particular that most mills in the United States are equipped to handle. Very little of the portion below $\frac{7}{8}$ of an inch is used by American mills⁵ this portion either going into the commercial uses or into the export trade.

⁵ Cf. *Quality of the Cotton Spun in the United States*, (mimeo.) Bur. of Agr. Econ., U. S. Dept. of Agr., Wash., 1929.

Character.—Character in cotton is a composite of elements highly important in determining its commercial value and which must be accounted for in any accurate classification of its essential qualities. These elements are, however, difficult of exact measurement and for that reason no uniform standards have been set up. They include an estimate of the tensile

TABLE 9.—THE ESTIMATED QUANTITY AND DISTRIBUTION OF STAPLE LENGTHS FOR THE 1930 CROP OF AMERICAN UPLAND AND AMERICAN-EGYPTIAN COTTON.*

Staple (in inches)	Bales	Per cent
Upland:		
$\frac{19}{16}$ and under	1,834,100	13.4
$\frac{7}{8}$ and $\frac{19}{32}$	5,321,400	38.8
$\frac{19}{16}$ and $\frac{21}{32}$	3,421,300	24.9
1 and $\frac{17}{32}$	1,742,400	12.7
$\frac{17}{16}$ and $\frac{15}{32}$	966,900	7.0
$\frac{17}{8}$ and $\frac{15}{32}$	382,900	2.8
$\frac{15}{16}$ and over	61,600	.4
Total	13,730,600	100.0
American-Egyptian:		
$\frac{17}{8}$ and $\frac{17}{32}$	2,500	10.7
$\frac{19}{16}$ and $\frac{19}{32}$	16,200	69.5
$\frac{15}{8}$ and $\frac{15}{32}$	4,600	19.8
Total	23,300	100.0

* Data from *Grade, Staple Length and Tenderability of Cotton Ginned in the United States, Crop of 1930* (mimeo.) Bureau Agr. Econ., U. S. Dept. of Agriculture.

strength of the fiber and of its body judged by the density and firmness. They include, also, the degree of regularity in the length of staple and its appearance of silkiness and smoothness. To some extent these elements are reflected in a description of grade and staple length but not entirely so. Frequently merchants or spinners are able to indicate the character of the cotton desired by specifying the region from which it is drawn.

Soil and climate play an important part in determining the character of cotton; and important differences between areas, sometimes only a few miles apart, are well known and reflected in the price paid for each type. Because of these shades of difference firms frequently employ private type names to indicate a particular quality not entirely covered by the recognized standards.

3. LOCAL MARKETING

It is a simple matter to buy or sell cotton in the South though it is not so easy to buy and sell at a profit. Cotton constitutes their stock in trade. Every village hamlet, however small, has a market in cotton during the crop moving season. Usually these local markets last for only 3 or 4 months but during this time they are the center of interest for the farmer, local storekeeper, banker and buyer. It is not possible here to describe in detail all of the aspects of local marketing. Instead an attempt will be made to outline the typical features and as far as possible to integrate these various elements into a fairly representative picture of the marketing process as a whole.

Marketing by the Farmer.—As a rule the financial status of the cotton grower requires that he sell his crop as it is picked. He is likely to be indebted to a local merchant for supplies or to his bank and with the understanding that his obligations will be met at harvest time. Fully 75 per cent of each year's crop has passed out of the farmers' hands by January 1. As the cotton is picked it is hauled to the local gin, generally in amounts sufficient to make a bale. For the ginning of his cotton and the baling of it the farmer pays the ginnery the usual charge, probably sells the seed there, and hauls his bale away. If he has not already agreed to turn the cotton over to some party having an interest in it, he will in all likelihood drive to a nearby street market and offer it for sale. A few days later he may have another bale or two ready. The average cotton farm in the South will produce from 5 to 10 bales each and this begins to move

on the market in quantity in August and September to continue through December and into January.⁶

Local Buyers.—Primary or local markets range in size from a crossroad with a country store to a town of several thousand inhabitants. At the very small centers there are, of course, few buyers; but in a town of average size which the large majority of farmers can reach, there are likely to be a dozen or more local or so-called "street" buyers of cotton.

The local storekeeper from whom the farmer purchases his supplies is frequently a buyer of cotton. If it is a customer of his whose cotton is for sale and he desires to keep his trade, he can well afford to outbid his competitors for the profit to be derived in future sales of merchandise. If his customer is already heavily in debt to him, it may be the part of wisdom to buy his cotton as a means of prompt payment.

The local banker is sometimes a buyer of cotton. His business through the extension of credit is naturally closely associated with the cotton trade and in addition, during the period of 3 or 4 months during which the bulk of the crop is moving, there is offered an opportunity to profit by trading. Particularly in the western portion of the belt, ginners are quite frequently buyers of cotton, in some cases after it has been baled and in some cases as seed cotton. Sometimes they are associated with cotton-seed-oil mills who make it a policy to buy seed cotton to assure an adequate supply of seed.

Of greater importance are the independent street buyers. These men are usually engaged locally in some other line of business, but during the crop moving season they devote their entire time to buying and selling cotton. As a rule they do not have a large amount of capital and for this reason their purchases must be disposed of currently, frequently sales being made to larger merchants at the close of each day's business.

Finally, mention should be made of the local representatives

⁶ Cox, A. B., *Local Marketing in Texas*, pub. jointly by Division of Cotton Marketing of the U. S. Dept. of Agr. and the Texas Agr. Exp. Station, 1927, is an excellent survey of local practice. See also by the same author *Services in Cotton Marketing*, U. S. Dept. of Agr., Bull. No. 1445, 1926.

of the large firms of cotton merchants and known usually as road buyers. As a rule they do not buy direct from the farmer preferring to deal in larger lots offered by local supply merchants or street buyers. They are either in the permanent employ of a merchant firm and paid a salary or are employed on a commission basis to represent the firm at a particular point or district.

Local Trading.—By custom most Southern towns and villages have a street or location where cotton is offered for sale. It is here that farmers bring their cotton if not already disposed of. A buyer samples a bale, roughly estimates its grade, with little or no reference to its staple, and makes a bid. The farmer's knowledge of the elements of quality are still more limited than those of the average street buyer and the assurance he has of obtaining a representative price is limited largely to the keenness of competition and the law of average. It is said that the purchases by local supply storekeepers aids considerably in assuring a fair average price since he can frequently afford to outbid his competitors. Local buyers usually go together in subscribing for 15 minute telegraphic service which gives the current future quotations. From these figures they must make "on" or "off" adjustments to account for grade, freight and handling charges and an estimate of profit. If a purchase is made, the farmer is given a ticket for the price, which together with his weight receipt, he can present at the bank for payment.

During the day and at the close of the day, purchases made from farmers are resold among buyers and more especially to the local representatives of the larger firms. This trading is usually on the basis of what is known as "hog-round" lots in which a flat price per pound is agreed upon for the lot. Purchases are not made, however, without specific reference to the quality of each bale. A local supply merchant may, for example, offer an accumulation of 20 bales to a road buyer representing a firm of cotton merchants. The latter will go over the samples making an estimate relative to his basic price for each bale and from these obtain an average figure. This he will use

privately as the background for his bargaining with the seller. They may come to terms somewhat above or somewhat below this figure. If purchases are made at figures consistently below the limits supplied by his firm the buyer will naturally be considered as a good representative or employee.

↑ (The buyers for the larger cotton merchants are far more skilled in classing cotton than the usual local buyers as much of the success of their work depends upon their judgment in acquiring supplies at satisfactory prices. As a rule a buyer is sent his "limits" at least once each day and occasionally some changes may be made during the day. His prices consist of a schedule based upon the current future price with due allowance for the elements of distance and time and reflect appropriate variations for grade and staple. Naturally too they reflect the character of the cotton coming from that district. At a later point we will need to consider in some detail this price structure built upon the central futures market. As purchases are made by road buyers, they are forwarded to points of concentration, the cotton being compressed either at this larger center or at a point en route under a through bill of lading.)

Sale Through Farmer Cooperative Associations.—If he desires, the farmer may consign his cotton to one of the large cooperatives instead of selling to a street buyer. Around 10 per cent of the crop is now handled through these organizations. He will as a rule consign his cotton to the point designated by the association, and with the bill of lading draw a draft on the association's bank which he can readily discount at his local bank. The amount of this initial advance by the association is usually limited to around 60 per cent of prevailing prices. When his cotton arrives at the central point, it is classed by the Association and placed in a pool with others having a similar quality to sell. As the cotton is sold, each receives as nearly as can be determined his pro rata share of the net proceeds.⁷

⁷ Cf. Gatlin, G. O. *Cooperative Marketing of Cotton*, U. S. Dept. of Agr. Bull. No. 132, 1926; also Carson, W. J., *Financing the Production and Distribution of Cotton*, Federal Reserve Board, Wash., 1923.

Sales Through a Factor.—Mention should also be made of the place of the factor in marketing cotton. He is a commission merchant, and frequently advances credit as well, to the country shipper. He is located usually at a principal market such as New Orleans, Memphis, or Savannah and organized to handle cotton consigned to him to be sold. The factor receives the cotton, stores it, classifies the samples and displays them in his rooms to prospective buyers. For these services the seller is charged a commission in addition to the expenses of shipping, storage, interest, insurance, etc. The consignor may order the factor to sell at once or he may have him hold the cotton for a particular price or for a market advance.

The advantages of this plan to the seller include the advice and service of an expert representative together with the privilege of selling upon a larger market. Much more in the past but to some extent today, the factor also serves in the capacity of advancing credit to his clients during the growing season. Against these advantages, of course, are to be matched the added costs of this method of sale. While formerly a prominent form of marketing, since the World War this plan has declined considerably. It is still employed, however, particularly by the larger planters in the delta area and by many of the local supply merchants.⁹

4. THE CENTRAL MARKETS

The central markets serve as wholesale centers in the handling of the cotton crop. They are points of accumulation from the local markets and points of distribution to the mills and into the export trade.

The Sorting of Cotton.—One of the principal functions of the larger spot markets is to serve as centers for the sorting of cotton into even-running lots. As we have seen, cotton varies widely in quality as it comes from the farm. On the other hand the mill, if it is to prepare a yarn of uniform strength and

⁹ Federal Trade Commission, *Cotton Merchandising Practices*, Wash., 1925.

fineness or if it is producing trade-marked goods, must have cotton of uniform quality.

To supply this need is the task of the cotton merchant. As cotton is bought at local centers it is shipped to the larger points of concentration. There the firm owning the cotton will have it classed by grade and staple length and to some extent by character, bringing similar qualities together to make up even-running lots. These are usually in units of 100 bales or multiples of 100 bales and prepared to meet sales which have already been made or are anticipated.

Naturally there is in this process a considerable amount of cotton for which even-running lots of 100 bales are difficult to make up,—the “left overs” which require a wider search to find a buyer and which must often be carried for considerable periods of time. This is another function of the cotton merchant whether independent or cooperative. The movement of the cotton crop on to the market is largely in the fall. If a merchant is to acquire the amounts and particular qualities which he needs he must buy when the cotton is moving and he must buy in quantities sufficiently large so that when sorted they will meet his requirements.

Warehousing.—Cotton carried forward for any length of time and particularly at points of concentration requires adequate warehousing facilities. This is a matter over which most of the states of the cotton belt have exercised some control on the ground of general public interest. The hazards of fire and theft and fraud in addition to weather damage are highly important.

More recently a Federal statute,—the United States Warehouse Act (39 U. S. Stat. L. pp. 446, 486) passed in 1916,—has served to further raise the standards of warehousing. It is a permissive act in that warehousemen are not compelled to obtain a Federal license. If they do seek a license to operate under Federal supervision, they must measure up to standards required in the act and these include adequate financial responsibility covered by a bond, the proper handling of cotton while

in store, the keeping of adequate records, close supervision over the character and issuance of warehouse receipts. The result of this act has been to raise the general level of public warehousing to the advantage of the business itself and to those having an interest in the goods stored therein. Bankers in particular have come to know the added value of a Federal receipt and have in many instances shown a disposition to loan more freely upon this type of collateral.

The United States Warehouse Act applies to grain in the same way as to cotton in its effect upon the financing and the marketing of the commodity. It is of particular value at those points where delivery upon future contracts may be made, being an added measure of certainty to the conditions surrounding delivery. In one particular, however, grain differs from cotton. Unless provision is made for separate binning, it is graded and joined with other grain of like grade so that the owner does not have returned to him the precise lot he delivered to the warehouse. In the case of cotton each bale is tagged and this identical bale returned.

The Work of the Cotton Merchant.—As cotton moves on to the market, it is the task of the cotton merchant to buy it, sort it, store it and to seek out suitable contracts for its sale. Some cotton is bought direct by mills located in the South from farmers and near-by local markets but the quantity is comparatively small. A considerable fraction is also handled through the large cooperatives. In this work, they function mainly as merchants though the range of their marketing work extends further than the usual merchant's operations.

In its study on *The Cotton Trade* covering the crop years 1919-20, 1920-21 and 1921-22, the Federal Trade Commission made a count of the cotton merchant firms engaged in handling the United States crop at that time.⁹ Its tabulation included around 300 concerns. Most of these, however, were comparatively small. A group of 24 firms reporting annual sales of

⁹ *Report of the Federal Trade Commission on the Cotton Trade, Sen. Doc. No. 100, 68th Cong., 1st Sess., 1924, Part I, p. 79.*

100,000 bales or more transacted between 40 and 60 per cent of the business and of this group of 24, two or three were decidedly the leaders.

Depending upon their size, these firms have either offices or representatives at the important spot and future markets and at the principal consuming centers. If the price and terms are right, they are ready to do business at any time. They are in fact dealers in price and terms. Their purchases and sales are invariably made in relation to prevailing prices upon the future markets and as a rule their commitments are hedged by counter transactions in futures. Their purchasing is done in the South and for the most part at the crop moving time. Their sales are made at all seasons of the year depending largely upon the demand from mills. After placing their business upon what appears to be a profitable basis, it then becomes their duty to make up orders in even-running lots of the amounts and quality sold, to hold it until called for if desired, and to deliver it to the required destination.

Terms of Sale.—The price aspects in the marketing of cotton, and more particularly those which relate to the dealer or merchant, are taken up in the chapters comprising Part II of this volume. We need to outline here, however, certain of the terms and methods of sale common to most of the transactions in cotton. Three methods of sale deserve mention.

(1) Sale *by actual sample* consists of offering a given lot of cotton the samples of which are separately shown to the buyer. Assuming that each sample is representative of the bale from which it was drawn, the buyer by this method is able to examine the precise quality offered. Against this advantage are the disadvantages of the trouble involved and the comparatively narrow circle of prospects which the seller can reach.

(2) Sale *by type* involves the preparation by the merchant of samples of cotton representative of the type of cotton he has for sale or proposes to sell. Thus the representative of a merchant might call upon a mill treasurer and offer to sell, subject to sharply defined conditions of price, location and time, cotton

of the type displayed. Or the matter might be handled by correspondence in which the type is forwarded to the mill. Sometimes the initiative is taken by the spinner in which prices are sought for cotton of a given type sample. Frequently these types are kept for permanent reference both by mills and by merchants. They are marked by some characteristic name and at any future date bids or offers can be exchanged with a clear understanding of the precise quality involved.

(3) Sale by description has come to be the most widely used method. As its name implies it consists of offers or inquiries or transactions in which the quality and terms are accurately described. Thus an offer might specify Strict Middling Texas cotton, $1\frac{1}{16}$ "", October shipment, f.o.b. Galveston at some designated figure relative to the current future. If accepted the seller would be expected to deliver the amount of cotton specified of even-running Strict Middling white, $1\frac{1}{16}$ inch staple, free of charges at Galveston some time during October.

The precise meaning and interpretation of many of the terms specified in contracts are prescribed by the rules of the market in which they are executed or subject to some set of association rules. Thus in the illustration just given, the precise handling charges included in f.o.b. shipment vary somewhat between markets. In the export trade particularly "c.i.f." or "c.i.f. 6 per cent" contracts are common in which the seller meets all costs, insurance and freight to the point of destination, and in the second case gross weights less 6 per cent for tare are agreed upon. Here again the precise meaning of costs and of 6 per cent tare and how determined are subject to detailed procedure.¹⁰ In the event of dispute, established rules and procedure for arbitration prescribe the mode of adjustment.

5. SUMMARY

The United States is the principal producer, exporter and consumer of cotton. As a rule from 50 to 60 per cent of each

¹⁰ Cf. Cox, A. B., *Marketing American Cotton in England*, U. S. Dept. of Agr. Tech. Bull. No. 69, Wash., 1928, p. 44 ff.

year's crop is exported. Of the portion consumed at home over 70 per cent is taken by mills located in the South. Definite standards have been set up either by the trade or through governmental enactment, to serve as guides in the purchase and sale and merchandising of each year's crop. These include Federal standards for grade and staple length as well as trade classifications to indicate the growth and character of the cotton.

As it moves from the farm, cotton is given only an approximate classification. Purchases and sales are made at local or primary markets in small and irregular lots and are then shipped on to larger points of concentration or to central markets. Here each bale is expertly classed and sorted with other bales of like quality into even-running lots. This is the work of the cotton merchant.

Sales made to mills are in even-running lots and of qualities to meet a very exacting demand. They may be made by an examination of actual samples, by type or by description. Other and sharply defined terms prescribe the time of delivery, the place of delivery, what items of expense are included in the contract price and how arbitration shall be handled in the event of dispute. (The cotton merchant thus serves in the accumulation of cotton, sorting it into even-running lots by specific quality, shipping to the place required and in amounts as required.)

CHAPTER VI

THE FUTURE CONTRACT AND ITS USE

Transactions on our organized commodity markets are of two types: (1) those involving the delivery of the actual commodity, referred to usually as cash or spot trades, and (2) transactions in futures. Because cash transactions frequently require delivery at a future date and because futures are occasionally used to deliver or receive a specific quantity of the actual commodity, the two are often confused. It will be the purpose of this chapter to analyze in some detail the principal characteristics of the future contract both from a legal as well as an economic point of view, and to emphasize how, in form and purpose, it differs essentially from contracts used in the physical handling of commodities.

1. THE FUTURE CONTRACT

Form of Contract.—None of the leading grain exchanges prescribes the written form which shall be implied in each oral trade in futures. They do, however, carefully define its several elements in their rules and by-laws and these provisions become an implied part of each transaction. The following form for wheat, prescribed by one of the minor grain future exchanges, includes all of the essential elements. The portions in brackets [] have been added to illustrate a typical contract.

Grain Future Contract

[Place] [Feb. 15] 19....

In consideration of one dollar in hand paid, the receipt of which is hereby acknowledged [A. B.] have this day sold to [C. D.] or bought of, [5,000] bushels of contract wheat, at [145] cents per bushel of 60 lbs., deliverable at seller's option during [July], 19....

This contract is made in view of and in all respects subject to by-laws and rules established by the Exchange, in force at this date.

In order to conform to the provisions of the U. S. Cotton Futures Act, the form of contract prescribed by the New York Cotton Exchange and the New Orleans Cotton Exchange is somewhat more elaborate. The By-laws and Rules of the New York Cotton Exchange prescribe the following form:

Cotton Future Contract

New York, [Feb. 15] 19.....

[A. B.] of the County and State of New York have this day (sold or bought) and agreed to Receive from [C. D.], of the same place [50,000] pounds in about [100] square bales of Cotton, growth of the United States, at the price of [17.66] cents per pound for Middling, with additions or deductions for other grades in accordance with the provisions of the United States Cotton Futures Act, Section 6, and allowance for staple premium, deliverable from licensed warehouse in the ports of New York, Norfolk, Charleston, Mobile, Savannah, Galveston, Houston or New Orleans, between the first and last delivery days of [July] inclusive, the delivery within such time to be at seller's option in one warehouse, upon notice to buyer, as provided by the By-laws and Rules of the New York Cotton Exchange. The cotton dealt with herein or delivered hereunder shall be of, or within, the grades for which standards are established by the Secretary of Agriculture, except cotton prohibited from being delivered on a contract by the fifth subdivision of Section 5 of the United States Cotton Futures Act, and shall be no other grade or grades, and shall be subject to New York Cotton Exchange Inspection.

Every party may call for a margin, as the variations of the market or like deliveries may warrant, which margin shall be kept good.

This contract is made in view of, and in all respects subject to, the regulations made pursuant to said United States Cotton Futures Act and to the By-laws and Rules of the New York Cotton Exchange not in conflict with said Act or said regulations.

Subject to United States Cotton Futures Act, Section five.

Since the contract used is the basis of future trading, we will need to analyze in detail its various provisions. Those which relate to the grades deliverable on the contract, together with the bearing which the United States Cotton Futures Act has upon this phase of the subject, are reserved for separate treatment in Chapter XV, *Difference Systems and their Effect on Future Prices*. At other points it will be necessary to touch upon

other special phases. Here we will need to review the points which definitely characterize the contract.

Analysis of the Future Contract.—Whether the future contract be for grain or cotton, or coffee or rubber, or any one of the other commodities currently traded in, it includes the same essential provisions, adapted of course in each case to meet the needs of the particular commodity. Using grain and cotton as examples, these provisions may be grouped under the following headings:

(1) *Size of contract.* With reference to size, the wheat future contract provides a unit of 5,000 bushels, each bushel to weigh 60 pounds while the cotton future contract specifies a unit of "50,000 pounds in about 100 square bales." Why these units happen to be just this size is in part historical but mainly a matter of trading convenience. They are units in round figures, always the same size, and multiples of which can be easily figured. This is in marked contrast to the trading units used in the actual handling of grain or cotton where the indefinite carload, cargo or varying weights in bales are currently bought and sold.

In addition to the standard unit, the leading grain exchanges also provide a 1,000 bushel "job" lot for the convenience of the smaller trader; and a 50 bale contract is provided by two of the cotton exchanges for the same reason.

(2) *Many grades deliverable.* The cotton future contract given in the previous section provides that the buyer shall pay the seller a stipulated price per pound "for Middling, with additions or deductions for other grades, . . ."; while the grain future contract simply states that the buyer shall pay the seller a stipulated price per bushel for "contract" wheat, the word "contract" meaning not a particular grade, but any one of several grades. Thus, in both contracts, provision is made for the possible delivery of a wide range of grades. The purpose of this is to lessen the possibility of an artificial (or natural) scarcity of supplies deliverable on maturing future contracts. Such a scarcity invariably introduces an element of fear into

the market, generating a "squeeze" or possibly a corner with a large element of price uncertainty.

(3) *Price based on a "basis" grade.* Different grades have different market values and account must be taken of this fact in making any one of several grades deliverable on a future. This is accomplished by setting up a system of price differences measured from one central grade known as the basis grade. For cotton this grade is Middling while for grain the grade of No. 2 is most frequently used. The subject of difference systems is a large one and, in the cotton trade, an especially complex one. Since it is more fully considered in a later chapter, we need only observe here the written and implied provisions of the future contract relating to it. In each trade, the grade bargained for, if the contract price is to be paid, is the basis grade. If the seller chooses instead to deliver a better grade, then the contract price plus a premium must be paid; if a poorer one, then the contract price less a discount. As a rule, the grade selected for the basis grade is one which is likely to include a considerable fraction of each year's crop.

(4) *Deliverable from licensed warehouses.* To aid in making it uniform and dependable, the contract provides, either in writing or by implication through the rules of the Exchange, that in the event of fulfillment by delivery the commodity must be stored in a warehouse approved by the Exchange.

(5) *Graded and weighed by licensed inspectors.* Similarly, the contract requires that the grade and weight of grain or cotton or other commodity shall be determined by a licensed inspector if it is to be used for delivery on a future contract. For some commodities, this work is done under the direction of the Federal and State governments; for others, the exchange provides the facilities. In either case a greater measure of dependableness is imparted to the contract.

(6) *Deliverable during a future month.* The cotton future contract provides that delivery may take place "between the first and last delivery days of [July]." A period of one month is thus allotted to the seller in which to deliver the commodity

if fulfillment has not already been accomplished by offset with other future contracts. This optional period of one month has been the established practice since the beginning of future trading and is dictated mainly by convenience and uniformity. For cotton, trading centers largely in the delivery months of October, December, January, March, May and July. For grain the favorite months are May, July, September and December. Contracts specifying delivery in these various months are entered into as far as 11 months in advance. For example, "A" might sell to "B", on June 10, a May future maturing during the month of May the following year (if not previously offset by a counter-balancing transaction).

(7) *Seller's option.* Future contracts give to the seller two important options: (1) to choose the day during the delivery month upon which the commodity will be tendered; and (2) to select the grade or grades, among those permitted, to be delivered. These two options give to the seller considerable latitude in the fulfillment of his agreements. Like the provision permitting the delivery of any one of several grades, they are designed to lessen the possibility of a "squeeze" or corner by giving the seller every opportunity to meet his engagements. Because of this characteristic, the various future months are frequently referred to as options such as the July option or the December option. This is, however, a rather loose use of the term since the future contract itself is not a true option.

(8) *Margins.* Throughout the history of future trading both parties to contracts have had the right to require the placing of adequate margins. The cotton future contract provides: "Every party may call for a margin as the variations of the market or like deliveries may warrant, which margin shall be kept good." Future contracts may remain open for months; also, each broker or trader is obligated to trade with the first party accepting his terms and these facts require that both buyers and sellers should have the right to protect themselves against the other's failure. Margins are nothing more than deposits placed as collateral security to reinforce the

separate promises of the contracting parties. Through the use of margins, continually kept good, another and important element of dependableness is added to the contract.

(9) *Contract subject to the law and to the rules of the exchange.* We will examine in a later chapter the regulation of future trading by Federal and State law. It is sufficient to observe here that each contract entered into is subject to the law and to the rules and by-laws of the exchange. These conditions are numerous and, especially in the operations of trading, play an important part. With reference to the fundamental character of the contract, however, they are only incidental and supplementary to the main points already reviewed.

The Future Contract Highly Standardized.—The various elements of the future contract taken together make of it a highly standardized agreement. Its size is uniform being in round lots or multiples thereof. The price reflects a particular grade, defined and determined either by exchange or governmental authority. If delivery is made, it must take place in every case during a period of one month, the commodity to be from an authorized warehouse. Trading is centralized in particular future months and the options of naming the day of the month and the grade are always given to the seller. Other rules and by-laws of the exchange prescribing the place and hours of trading, the unit of price quotations, the methods of bidding and offering further concentrate and systematize the trading.

Traders and brokers in futures thus have a market on which they can buy or sell with a minimum of misunderstanding. The inquiries and bickerings preliminary to every-day trade are here eliminated by rigid rules so that attention is concentrated entirely on the price. This fact will become increasingly apparent as we review the machinery and methods of trading and of clearing contracts.

2. CASH VS. FUTURE CONTRACTS

Spot, "To Arrive", and Future Contracts.—Prior to the middle of the last century, the buying and selling of cotton and

grain in this country was maintained largely on a basis of immediate delivery. Trades made on this basis are known as *spot* contracts. They imply that the seller has the goods on hand ready for delivery, and they constitute the ordinary form of trade everywhere.

But around 1850 in the grain trade and a little later in the cotton trade (especially after the completion of the Atlantic cable in 1866), the practice of buying and selling on a "to arrive" basis came into common use. A wide variety of these "to arrive" or forward delivery¹ contracts was developed to continue in general use in the handling of cotton and grain. Finally, as merchandising and marketing methods improved, there developed a highly standardized form of deferred delivery contract, which under the stimulus of widespread speculation in money, in land, and in the produce of land during the quarter century, 1850-1875, proved to be an excellent instrument for speculation and hedging. This highly standardized form of contract came to be known as a "*future*."

Time Contracts.—"To arrive" or forward delivery contracts and future contracts thus have one point in common. They both involve a period of time between the date of contracting and the date of fulfillment. Agreements having this characteristic of postponed fulfillment may be appropriately called *time* contracts. This time element may be only a short while as in a sale to be delivered "within 3 days" or it may be a forward sale made in August for delivery the following November; or it may be a sale in futures deliverable over a period of time extending from 1 day to approximately 1 year.

Cash Contracts.—The use of the terms "spot" and "cash" contracts as employed by the trade is not altogether consistent. With reference to cotton the term "spot" is frequently employed in a broad sense, meaning all types of trade involving

¹As used by the trade, these two terms are not exactly synonymous. They are fundamentally alike, however, both involving a period of time between the date of contracting and the date of fulfillment. Frequently a trade of this kind is referred to as a deferred delivery contract. For convenience, we have chosen the term "to arrive" for use in describing this type of transaction.

the actual delivery of cotton whether at once or at a later time in contrast to a "future" on which actual delivery is not usually made. In the grain trade, the term "cash trade" is employed for this broad concept and the term "spot," when used, refers to the narrower meaning of a sale completed at once. For the sake of uniformity, we will use the terms in this latter sense. Cash contracts or cash trading is thus of two types: (1) spot trades and (2) "to arrive" or forward delivery trades.

A Diagram.—The way in which cash and future contracts are related can be more clearly defined by means of a diagram.

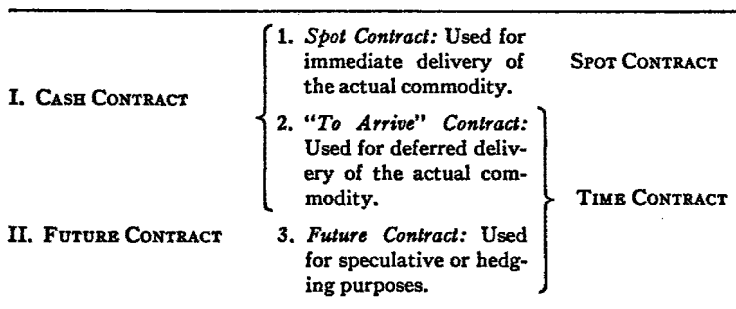


FIGURE 2.—Relation of Cash to Future Contract.

Classified according to their use, spot and "to arrive" contracts are grouped together in contrast to future contracts. Based upon immediate or postponed fulfillment, "to arrive" and future contracts are contrasted to spot contracts.

Deliveries on Future Contracts.—A consideration of the volume of future contracts fulfilled by actual delivery will serve to further emphasize the difference in use between cash and future contracts. Cash contracts, whether spot or deferred, are fulfilled by an actual delivery of the quantity of goods specified. This is the essential purpose of the contract: to obtain definite supplies of the commodity. But in future contracts only a small fraction of the total volume set up matures at a later date by actual delivery. The reason for this is two-fold. In the first place most buyers and sellers are interested only in changes in

the prices of futures and do not wish to undertake the handling and merchandising of the commodity traded. They, therefore, avoid this necessity by selling out (or buying in) their commitments before delivery time. It follows that contracts may thus be passed around through many hands and frequently be later closed out entirely by being bought back by the parties originally selling.

TABLE 10.—THE AMOUNT OF GRAIN USED TO FULFILL FUTURE CONTRACTS ON THE CHICAGO BOARD OF TRADE FOR THE THREE FUTURES 1924 SEPTEMBER, 1924 DECEMBER, AND 1925 MAY, COMBINED.*

Grain	Total volume of future trades	Fulfilled by the delivery of warehouse receipts		Grain used in actual delivery	
		Amount	Per cent of total trades	Amount	Per cent of total trades
	(1,000 bu.)	(1,000 bu.)	(%)	(1,000 bu.)	(%)
Wheat	12,435,082	27,769	0.22	10,075	0.08
Corn	5,420,624	10,932	0.20	4,825	0.09
Oats	2,265,114	15,334	0.68	6,833	0.30
Rye	926,024	19,519	2.11	13,404	1.45
All four grains	21,046,844	73,555	0.35	35,137	0.17

* Compiled from data in *Report of the Grain Futures Administration*, U. S Dept. of Agr., 1925.

Futures are seldom fulfilled by delivery, secondly, because the quality of the actual commodity to be received will probably not meet the needs of the buyer. The future contract permits the delivery of a wide range of grades and does not allow the buyer to specify particular qualities which his business demands. To those, therefore, who are in a position to merchandise the commodity, the future contract usually does not meet their needs.

Table 10 above has been prepared to show the extent to which delivery of the physical commodity occurs in future trading in grain.

A complete picture of grain deliveries, were the information available, would cover a longer period of time than is included in Table 10 and would also include other future markets. The data presented, however, are representative of the Chicago market and, since 85 per cent or more of the transactions in grain futures in the United States is made there, it includes a representative sample of the total trading.

In Table 10, deliveries are shown in two forms: viz., as warehouse receipts and as the net amount of grain actually used. The latter figure represents the true extent to which grain is merchandised through the futures channel, since warehouse receipts received are frequently passed on to fulfill other future contracts. The net amount of grain actually used thus amounts to less than one per cent of the total volume of trading, and for the particular period included in Table 10 it amounted to only one-sixth of one per cent.

For cotton the only available information relating to deliveries is for a period of three years covered in a study by the Federal Trade Commission. A summary of its figures is shown in Table 11.

TABLE 11.—COTTON FUTURE CONTRACTS FULFILLED BY THE DELIVERY OF WAREHOUSE RECEIPTS ON TWO LEADING COTTON EXCHANGES, FOR THE THREE CROP YEARS 1919-20, 1920-21, AND 1921-22, COMBINED.*

Exchange	Total volume of future trades	Fulfilled by delivery of warehouse receipts	Per cent deliveries to total trades
	(bales)	(bales)	(%)
New York Cotton Exchange	219,453,600	896,700	0.41
New Orleans Cotton Exchange	124,359,900	249,600	0.20
Combined	343,813,500	1,146,300	0.33

* Compiled from data in a report of the Federal Trade Commission entitled *The Cotton Trade*, Sen. Doc. No. 100; 69th Cong. 1st Sess., 1924. Part I.

While the net amount of cotton actually used in deliveries for this period is not given, the volume of deliveries by warehouse receipts is sufficient to show the relative unimportance of future trading as a medium for the merchandising of cotton. Probably less than one per cent of all trades is fulfilled by delivery, and for the three year period covered in Table 11 the percentage was only one-third of one per cent.

Figures are not available for other commodities but the same practice prevails of using futures as a medium of speculation or as a means of hedging rather than as a channel through which the actual goods are marketed or merchandised, and it is probable that the percentage of actual deliveries would be found to be small.

How Cash and Future Contracts Differ.—As we have just seen, the main difference between a cash and future contract is in its use, the former being a merchandising contract while the latter is a speculative or hedging contract. There are, in addition, other minor characteristics which usually differentiate these two forms of trading. They are differences which have already been considered in describing the characteristics of the contracts and it will only be necessary now to make a summary contrast of them. This is done in the accompanying table.

TABLE 12.—CASH AND FUTURE CONTRACTS CONTRASTED.

Future Contract	Cash Contract
1. Used to speculate on or hedge against price changes of the commodity.	1. Used to market or merchandise the commodity.
2. Executed in the pit.	2. Executed at exchange tables or privately.
3. Trades in round lots (5,000 bushels, 100 bales).	3. Trades in irregular amounts (car lots, cargoes, any number of bales).
4. A future month used for delivery.	4. Varying lengths of time used for delivery.
5. Seller's option of day of delivery.	5. May or may not have an optional period of delivery.
6. Seller's option of grade of commodity to be delivered.	6. Usually calls for specific grade or type of commodity for fulfillment.

While these characteristics do not earmark every cash or future trade, taken together they serve to clearly differentiate these two fields.²

3. LEGAL NATURE OF THE FUTURE CONTRACT

A Future an Executory Contract.—The law distinguishes between a contract *to sell* and a contract *of sale*. The former is simply an agreement to sell in which case title does not pass until the various conditions to the contract are fulfilled. Such agreements are known as *executory* contracts. In contrast, in a contract of sale,—an *executed* contract,—the general property rights pass to the buyer at once and “nothing remains for the vendor to do but to deliver the thing sold, and the vendee, as a result of the contract owns the thing outright.”³

From this legal point of view, a future contract is an *executory* contract. At the time of contracting, in most cases, the seller does not own the goods described in the contract. He cannot, therefore, give title to these goods since he does not, as yet, possess them. In addition to acquiring the commodity, its grade and warehouse location must be determined, together with certain minor details, before it is in a position to be delivered. When these conditions have been met by the one contracting to sell, the agreement then changes to an executed contract. Most cash contracts differ from futures on this point, being usually executed contracts. This is true of all spot contracts. “On track” country point contracts and “to arrive” con-

² Trades most difficult of classification are those in which a grain or cotton merchant buys a future with the intention of taking delivery and merchandising the goods thus obtained, or sells a future equivalent to his holdings with the intention of actually delivering his holdings on his future. Where this intention is carried out, the trade is of the forward delivery type. If, however, he changes his mind before delivery and decides to acquire or sell his supplies in the cash market, then at that point his future commitment changes from a forward delivery trade to a future proper in the form of a hedge. Trades of this kind are not common, however, as is shown by the small percentage of deliveries on future contracts.

³ Bisbee, L. H. and Simonds, J. C., *Law of the Produce Exchange*, p. 255.

tracts where the buyer assumes the risks of shipment are also as a rule executed contracts, while some of the longer deferred-shipment agreements are executory in form.

A Future is a Right to a Commodity.—Future contracts should thus be thought of as rights to the commodity rather than the commodity itself and in dealing in futures one is dealing not in the actual commodity but in claims on or contracts for the commodity. It should not be thought for an instant that futures are any less real or binding on this account. Every seller of a future has the right, and can legally enforce that right, to make his sale mature by the actual delivery of the commodity contracted for; and every buyer has the equal privilege of requiring that it be so fulfilled. It is simply an aid to clear thinking to thus separate future contracts and cash contracts. Having in mind this fundamental distinction, the answer becomes clear to the oft-repeated question, "Is not the grain crop or cotton crop sold twenty times over each year?" The answer is, no. Contracts or rights to cotton or grains are traded in to an amount this large, but the crop itself is bought or sold perhaps on an average not more than four or five times involving the various steps in marketing.

A fairly good analogy is to be found in the relationship which our commercial credit structure bears to bank reserves of gold and legal tender. If we assume that commercial credits are in the form of maturing notes due three to six months hence, with reference to their payment in money, they bear a similar relation to that of future contracts and their fulfillment in goods. Both are rights to or claims on property. Both may and do pass freely from hand to hand in liquidation of other maturing business obligations. In both cases these claims are largely offset by other and similar claims so that the quantity of money or commodity actually needed in ultimate settlement is small. Finally it should be observed that the major directing forces in the determination of the price of money (i.e., the interest rate) are focused in the credit structure and this too is the situation with respect to the factors determining

the price of commodities. They are centered in the future market.

Legality of the Future Contract.—The legality of the future contract is well established. In its use, two points, in particular, distinguish this form of contract from ordinary forms, viz., its use in short selling, and its possible use as a gambling instrument. On both of these points, the courts have repeatedly and consistently endorsed the future contract when properly employed.

While time contracts are common today in many lines of business, this was not the case a century ago and at the time when they first came into use they were considered particularly nefarious. This was not due to the fact of the time factor of itself but rather due to the fact that this time element permitted them to be used in short selling. There has apparently never been any objection to the sale of goods at present in one's possession for delivery at a future date, nor of contracting to sell goods for deferred delivery where the seller has at the time a reasonable claim on the goods. The question of doubt has been raised only in those instances in which the seller neither possessed nor had a claim on the property at the time the contract of sale was entered into.

This point was first tested in the English courts in the case of *Lorymer v. Smith* (1 B. & C. 1) in which Lord Tenterden observes: "If a man should bargain to deliver corn not then in his possession, and rely upon making a future purchase in time to fulfill his contract, such a mode of dealing ought not to be encouraged" and in a later opinion (*Bryan v. Lewis, Ry. & Mo.* 386) the same judge adds that "if a man sells goods to be delivered on a future day and neither has the goods at the time, nor has entered into any prior contract to buy them, nor has any reasonable expectation of receiving them by assignment, but means to go into the market and buy the goods which he has contracted to deliver, he cannot maintain an action on such contract." This view was later completely overruled, however, in the famous case of *Hibblewhite v. McMorine* (5 M. & W.

462) in 1838; and subsequent decisions both in the courts of England and the United States have added weight to this latter opinion.⁴ Short selling is thus well established under common law.

What could not be accomplished through the courts, in curbing short selling has been repeatedly attempted by statute law. The English law known as Sir John Barnard's Act (7 Geo. II, c. 8) passed in 1734 was the first important attempt in this direction. Section 8, bearing on short selling read as follows:

And whereas it is a frequent and mischievous practice for persons to sell and dispose of stock and other securities of which they are not possessed; be it enacted by the authority aforesaid, that all contracts and agreements whatsoever, which shall, from and after the first day of June, 1734, be made or entered into for the buying, selling, assigning, or transferring of any public or joint stocks or stock, or other public securities whatsoever, or of any part, share or interest therein, wherein the person or persons contracting or agreeing, or on whose behalf the contract or agreement shall be made, to sell, assign, and transfer the same, shall not, at the time of making such contract or agreement be actually possessed of, entitled unto, in his, her, or their own right, or in his, her, or their own name or names, or in the name or names of a trustee to their use, shall be null and void to all intents and purposes whatsoever.

How effective this act was at the time it was passed it is difficult to say; but the issuance of shares was gradually extended to banks and insurance companies and with the advent of the railroad they came into wide use. Public opinion regarding short sales gradually changed and in 1860 the act was repealed to be replaced in 1893 by a statute specifically authorizing short sales. In 1812, New York State passed a law prohibiting short sales in stocks, reënacted the law in 1830 in modified form, and in 1858 repealed it. This, too, was replaced later, in 1897, by an act definitely authorizing short sales. Almost every state in the Union has at some time passed laws regarding one or more phases of future trading, many of them relating to short sales. They have not, however, attempted to

⁴ Cf. Dewey, T. Henry, *A Treatise on Contracts for Future Delivery and Commercial Wagers*, Baker Voorhis & Co., N.Y., 1886, pp. 95 ff.

restrict the use of the short sale unless employed as a means of gambling.⁵

Intention to deliver.—The second point and the one most frequently raised with reference to the legality of the future contract is its use in connection with gambling. On this point, also, the courts of England and of the United States have built up a body of consistent opinion, testing each case upon the principal of *intent to deliver*. Where there is a bona fide intention to deliver the goods specified, the contract is a valid one; but where it can be shown that the parties to the contract have no intention of receiving or delivering the goods, the agreement is reduced to a mere settling of price differences and this the courts have consistently opposed as being gambling of a sort contrary to public welfare. In addition to court opinion on this point, many of the states have seen fit to enact laws definitely stating that contracts for the purchase or sale of stocks or commodities for future delivery are void, being gambling in character unless there is a genuine intention to deliver on the part of the seller and to receive on the part of the buyer the actual stocks or commodities specified.

This distinction between the legal and the illegal use of future contracts has been developed and applied mainly for the purpose of preventing the operation of bucket shops. We will outline in a later chapter the essential features of this form of trade. We need only note here that the matter of intention is entirely lacking in these contracts, trades being settled through the payment or receipt of price differences with no connecting link whatever with the market for the actual commodity. They are, therefore, illegal both by statute and by common law.

The difficulty, of course, with this principle of intention to

⁵ Dewey, T. Henry, *Legislation against Speculation and Gambling in the Forms of Trade* gives the laws of the various states as of 1905 and, together with *A Treatise on Contracts for Future Delivery and Commercial Wagers* by the same author, comprises an excellent survey of the development of future legislation in this country. See Chapter XVIII below,—*Governmental Regulation of Exchanges* for a survey of legislation in force at the present time.

deliver is in its application. Intentions are hard to prove and the burden of proof rests with the accuser. It is not sufficient to show that no actual commodity passed as a result of a future contract. Were this adequate proof of non-intention, almost all future contracts would be null and void for as we have already seen only a very few are fulfilled by actual delivery. Here the courts have come to the aid of the future exchanges and held that "off-setting" and other clearing methods constitute delivery in symbolic form, being thus merely a convenient and inexpensive way of accomplishing what would otherwise be a very burdensome and useless process.* In numerous opinions, also, the courts have held that it is sufficient to make a contract valid to merely *contemplate* delivery, suggesting that as long as delivery is one alternative in fulfilling a future contract that this is adequate.

Such a broad concept assures full legal status for all future contracts executed and fulfilled in accordance with the rules of regularly organized exchanges. So long as the exchange makes ample provision for sellers and buyers to make or take delivery if they so choose, or in other words so long as each contracting party has the *right* to fulfill his contract by actual delivery, the presumption is that actual delivery is intended or contemplated. Where this right is removed as in bucketing trades or by private agreement, it may be inferred that delivery is neither intended nor contemplated and that the parties to such agreements are merely betting on price differences.

Use of the Future Contract Essential.—To those familiar with the practical details of future trading, the legal qualification of intent to deliver must appear somewhat superficial. A speculator weighs to the best of his ability the various factors in the market situation. If he buys a particular future, it is with the knowledge that if the price rises, he will be able to

*The leading opinion on this point is that delivered by Justice Holmes of the United States Supreme Court in an appeal of the case of Christie Grain and Stock Co., et al., v. Board of Trade of the City of Chicago, delivered in 1905. (798 U.S. 236).

sell at a profit. He knows very well, also, that if the price falls he must sell his future and limit his loss. These are matters about which he contemplates and, if he acts, they measure his intentions. For that large body of speculators who have no contact whatever with the cash business, their interest is limited to probable price changes and the factors likely to cause them. While they are thoroughly aware that if their contracts are left open until the delivery month they will have the right (or obligation) to receive or deliver the actual commodity, they certainly do not contemplate nor intend doing this. Nor does it seem likely that they *plan* to fulfill their contracts by the symbolic method of offsets since their knowledge of clearing methods is not much greater than that of merchandising the actual goods.

It would appear that a far better criterion upon which to judge whether a given set of acts constitutes gambling or not would be that of economic usefulness. Does future trading serve a useful purpose in the light of attending costs? Are certain types of trading economically of value and others economically harmful? This is an objective standard and though it may be tedious and difficult to arrive at sound conclusions from a study of available information, it is by no means an impossible task. In contrast, to test a given set of acts by the subjective standard of *intention* to deliver or receive requires at once a measure of insight into human nature impossible to obtain.

As a matter of fact a close study of many of the leading cases involving this subject will reveal that the courts have frequently looked beyond this principle of intention for something more substantial to guide them. In contrasting gambling with lawful forms of trade it is repeatedly pointed out that a gamble or wager involves purely chance in which one party gains what another loses with no accruing benefit to both parties or to society at large; while in the ordinary forms of trade both parties stand to gain as an outcome of the bargain which in turn benefits society. This is an emphasis upon the

economic usefulness of ordinary trade in contrast to its absence in a gamble or wager. Making sure in each case that both buyers and sellers of futures have the right of delivery, in order to prove a particular trade or trading gambling in character, it should be necessary to establish one essential point: that the trade or trading did not serve any useful purpose. Using this standard, certain types of futures, such as hedges, we could at once place in the list of economically useful trades, while others such as those not adequately financed or occasional "flyers" made during periods of unusual price movements, would fall at the other extreme as purely gambling.⁷

4. SUMMARY—DEFINITION

In this chapter, we have inquired into the nature of the future contract. The form of the contract and its essential features have been analyzed and contrasted with cash contracts. Special emphasis has been placed upon the use to which future contracts are employed both from a legal and an economic point of view in order to determine their real character. We have found that the future contract is a highly standardized agreement; the size, grades deliverable, warehousing and inspection, delivery period, and other important points implied from the rules of the exchange are all carefully and rigidly qualified in order to render the contract quasi-negotiable and thus to permit complete freedom in trading.

While the future differs from the cash contract in minor details such as the place executed, size, and certain optional features, the main difference is to be found in its use. The future contract is used to speculate on or hedge against price changes of the commodity traded in while the cash contract is used to market or merchandise the commodity.

From a legal point of view, a future is an executory contract and, whether used to purchase or to sell short a particular commodity, is legal under common and statute law where there

⁷ Cf. Parker, Carl, "Governmental Regulation of Speculation," *Annals of the Amer. Acad. of Pol. and Social Science*, Sept., 1911, p. 151.

is a genuine *intention to receive* or deliver the commodity. Where this intention is lacking, the contract becomes a gamble or *wager on price changes*. The test of *usefulness*, however, would appear to be a better criterion to determine whether a particular trade or type of trading constitutes gambling or not.

We may now define a future contract as an *agreement to buy or sell, in accordance with law and the rules of an exchange, a definite quantity of a commodity at an agreed price at a future date, being entered into for the purpose of speculating on or hedging against price changes, and being usually closed out later by another offsetting future trade.*

CHAPTER VII

THE MARKET STRUCTURE: TRADING FACILITIES

To know the nature of future trading, we must have a rather thorough understanding of the structure through which it operates. Requiring as it does the execution of trades amounting to millions of dollars at an instant's notice, no action may be omitted which will in any measure retard complete and accurate operation. As a result we find in our modern organized exchanges a physical equipment and a body of brokers and traders without a parallel for rapid and accurate transaction of business. Just what this trading structure is and how it is coordinated to form a highly centralized market will be outlined in this chapter. We will need to know something about the material facilities such as the trading floor, offices, and private wire systems; we will need to include a survey of market reports and news since they, too, form an important part of trading equipment. Finally, a broad classification and description of the types of brokers and traders is essential to this survey of market facilities.

1. PHYSICAL EQUIPMENT

The Number and Location of Future Exchanges.—Future markets are maintained on exchanges organized especially for that purpose. These exchanges are located usually in our larger cities where communication and transportation facilities are adequate and where funds for the financing of trades can be easily secured. Generally, too, the cities in which exchanges flourish are those through which a substantial portion of the actual commodity passes each year.¹ Thus our leading future

¹This is not absolutely necessary, however, as delivery may be made at a distant point.

exchanges in grain are located at Chicago, Minneapolis, Kansas City and Duluth, and our leading cotton and cottonseed oil exchanges at New York and New Orleans. Flax futures are traded in Minneapolis and Duluth, and provisions and butter and egg futures in Chicago. Coffee, sugar, rubber, cocoa, silk, hides and tin, complete the list of other leading future commodities, all of which have but one exchange and that, in each case, is located in New York City. It should be observed that the entire list of future exchanges in the United States numbers only 26 (in 1931) if we include all those upon which the smallest amount of future trading is done. This is in marked contrast to our cash exchanges which abound by the hundreds in grain and cotton and are found in large numbers in many of the less important commodities.

With respect to market points, future trading is thus rather highly centralized. Not only is dealing limited to a small list of exchanges, but, of these, it is further centralized upon a very few leaders. Thus in grain futures, approximately 85 per cent of the entire volume of trading is made upon the Chicago Board of Trade. In cotton futures approximately two-thirds of the trading is executed on the New York Cotton Exchange. And the business of these two exchanges, if measured by the dollar value of the trading, is many times the size of all of the other commodity future exchanges combined.² This same centralizing tendency is to be found, also, in the stock market where over 90 per cent of the total market value of shares traded is made upon the New York Stock Exchange and the New York Curb Exchange. The cause of this centralizing tendency is to be found in the superior advantages of a broad market. Executions are made more easily and, since the leading market is the focal point in the determination of price, there is greater assurance that the trade will be made at prevailing prices.

The Trading Floor.—The most important physical feature of an exchange is its trading floor. Here the members congre-

² See Table 5 above.



FIG. 3.—Trading Floor of the Chicago Board of Trade.

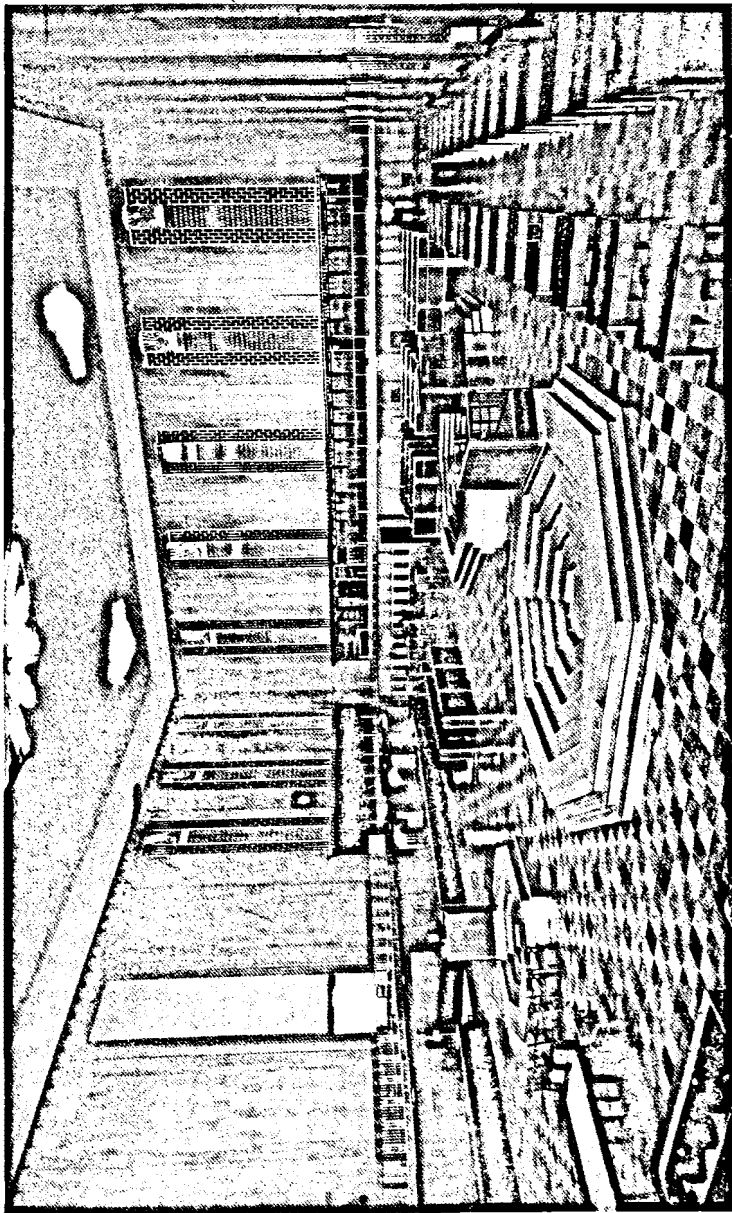


FIG. 3.—Trading Floor of the Chicago Board of Trade.

gate each day during trading hours to execute their own or their customers' orders. The exchange itself does not trade. It is an organization formed solely for the convenience and use of its members. Frequently the building has been designed and built by the exchange to meet the special needs of its members, though it is not unlike any other building with the exception of its trading floor.

The distinctive feature of the floor is the circular pit or pits where trades are executed. They are designed to bring the traders together and consist of concentric series of steps, stepping downward to a common center to bring each trader into clear view with every other trader. On the Chicago Board of Trade there are separate pits for wheat, corn, oats, and cotton futures, as well as trading areas for rye and provisions futures. For most of the other exchanges only one pit is used. On some of the exchanges, and notably the New York Cotton Exchange, a brass railing encircles the central portion of the pit and from this the term "trading ring" is derived.

Adjoining the pit or ring is an elevated platform known as the rostrum which serves as an observation tower for the collection and distribution of quotations. Here attendants, with the aid of reporters stationed in the pit, note each change in price for each future being traded in. These quotations are immediately placed upon the ticker to be sent to subscribing members within the city and by the telegraph companies upon the wires to be broadcast throughout the country and to important foreign points.

Along the sides of the trading floor are arranged the telephone facilities of the member firms. These connect by private wire with the brokerage offices and are used for the transmission of orders and confirmations to and from the floor. Upon the walls are statistical displays including usually the important governmental reports concerning the condition and supplies of crops and current quotations from other leading exchanges. Where cash trading is maintained in addition to the future market, which is usually the case upon grain exchanges, a

separate portion of the trading floor is set aside and equipped with tables for trading and the display of samples.

Brokerage Offices and Private Wire Systems.—While the market places for future trading are few in number and will probably so remain, this is not the case with the brokerage firms contributing to these markets. Here we find a division of business among a great many houses, each affiliated through its membership with one or more exchanges. The usual brokerage firm consists of a partnership formed for the purpose of making a profit from commissions derived from the trading of its customers. Usually one partner of the firm is a member of the exchange and through this membership the privileges of the exchange are obtained.

The typical commission firm located in or near the financial district of a city gives considerable attention to the outward facilities of its office. To it are intrusted the funds and securities of customers and for this reason it requires equipment to some extent like a bank. There are private offices for members of the firm. Divisions, in the form of cages or partitioned sections, are conveniently arranged for the accounting work, for the cashier's office and for the statistical and other departments. Adjoining the order department is a prominent section known as the customers' room. In this room is to be found the quotation board upon which are recorded current quotations of various commodities, by futures as they come from the tape. The continual posting of these quotations together with the drone of the ticker and telegraph instruments supplies much of the glamour associated with the usual brokerage office. A rather formal array of arm chairs is provided for customers,—professionals and others,—who attempt to follow the market continuously or whose business permits them to spend a part of the day away from their regular work.

As a part of the brokerage equipment, mention should be made of the private-wire system. Many of the larger commission houses lease private lines between the home office and branches or correspondents to supplement their service. These

lines are used to transmit orders, prices and market information, and reach throughout the United States and Canada. While the system has been developed mainly in connection with grain and centering in Chicago, it is used for all of the commodities as well as stocks due to the fact that many of the firms belong to all of the leading exchanges. It is stated by the Chicago Board of Trade that the network of private lines centering at that point extends to over 500 towns and cities. When taken in conjunction with the regular public telephone, telegraph, and cable service, we find a connected system of brokerage offices including branches and correspondents touching every important trading point in the United States and abroad.

Interrelation of Commodity Markets.—As a part of the trading facilities of organized exchanges, attention should also be directed to the manner in which the member firms are inter-related. While the various exchanges are entirely separate organizations, their members frequently are associated with firms whose partners or employees hold similar memberships on other exchanges. Through these inter-affiliations, a commission house

TABLE 13.—INTERAFFILIATIONS OF COMMODITY EXCHANGES THROUGH FIRM MEMBERSHIP.

Firms—members of both the	Number of Firms
Chicago Board of Trade and New York Cotton Exchange.....	90
New York Cotton Exchange and New York Coffee and Sugar Exchange.....	57
New York Cotton Exchange and New Orleans Cotton Exchange.	53
New York Cotton Exchange and National Raw Silk Exchange...	42
Chicago Board of Trade and New York Produce Exchange.....	39
Chicago Board of Trade and Minneapolis Chamber of Commerce..	33
Chicago Board of Trade and New Orleans Cotton Exchange....	29
New Orleans Cotton Exchange and New York Coffee and Sugar Exchange.....	29
Minneapolis Chamber of Commerce and Duluth Board of Trade.	29
Chicago Board of Trade and Duluth Board of Trade.....	25
Chicago Board of Trade and St. Louis Merchants' Exchange....	23
New York Cotton Exchange and New York Produce Exchange..	21

can offer its customers trading facilities on any one of a number of exchanges. Thus five large wire houses each hold memberships on ten or more of our leading stock and commodity exchanges, while over a hundred firms have memberships on at least four of the leading stock and commodity exchanges. Considering the member firms of the Chicago Board of Trade alone, approximately 200 hold memberships on one or more of the other leading exchanges, and the corresponding figure for the New York Cotton Exchanges exceeds 100. Table 13 compiled from the membership directories of 12 leading commodity exchanges illustrates the extent of the firm connections for this group.

While memberships are continually changing hands so that the figures in this table will soon be out of date, they illustrate accurately enough the close manner in which the various commodity exchanges, and especially the leading ones, are linked together through their member firms.

2. MARKET REPORTS AND NEWS

The physical facilities for future trading include something more than merely equipment. A large body of statistical and personal information currently offered for the use of the trader is also a part of the future facilities. The commissions paid annually by future traders must cover the costs of operation and allow a profit to the member firms when considered as a group. These costs include the maintenance of the exchange equipment and the expenses of operating the brokerage offices including communication facilities. They include, also, the expense of collecting, transmitting, tabulating and presenting in an interesting fashion market information covering a wide range of subjects.

The importance of this material is well recognized by every commission house of size. Here will be found in the customers' room ample supplies of trade information and "gossip" displayed for the trader's use. Without a copious and continuing supply of such material, popular interest in the market would

wane and the volume of trading correspondingly decline. It will be possible here to enumerate only the main types of information currently available and to briefly summarize each.

Governmental Reports.—Federal and State reports constitute the foundation stones in the building of commodity market opinion. Being comprehensive in character and free from personal bias, their fundamental importance is generally acknowledged. They are published at sufficiently frequent intervals, also, to be used currently as the basis for price adjustments; on all of the leading exchanges, displayed in a conspicuous place, are to be found the latest published reports.

Perhaps the most important of the Government reports are those relating to the size and condition of crops. These are published at monthly intervals thruout the crop growing season. The data are obtained mainly from a large corps of volunteer crop reporters who are farmers and who are so selected that a combined figure derived from their separate reports will be representative of the entire area for each crop reported upon. Thus reports to the Federal Department of Agriculture are made for cotton and the various grains (as well as a wide variety of other crops) covering township areas and county areas; these are combined to obtain State totals and, in turn, a total for the entire United States. In this work many of the State Departments of Agriculture cooperate.

For certain of the crops, the earliest reports compiled give "intentions to plant." These are followed by estimates of acreage planted to each crop; and as the season advances, reports on the condition and indicated production of each crop are published. Finally, toward the close of the season, preliminary estimates of production and quality are compiled and published.

Thus taking corn as an example, a report on intentions to plant is published about the middle of March. As of July 1, a report giving the estimated acreage planted, the condition of the crop, and a forecast of total production, is prepared. This is released about July 9. Similarly, August 1, September 1, and October 1, condition reports and forecasts of total production

are prepared and released. In the November 1 report, a preliminary estimate of production together with an estimate of the per cent of merchantable quality is given; and in a report published about the middle of December, final estimates of the acreage and production are published.

In addition to the above reports, estimates of supplies on farms and at country mills and elevators are compiled twice each year for the leading grains, while the visible supply at principal points of accumulation is published each week; for cotton, periodical reports on cotton ginned to specific dates are put out by both the Federal Department of Agriculture and of Commerce. Monthly exports and imports for each of the leading commodities are published by the Department of Commerce. The Weather Bureau contributes a daily map of weather conditions for the entire country and, during the summer months, special daily bulletins giving precipitation and temperature for selected crop areas. Each day the volume of future trading and the total of open contracts by grains on the Chicago Board of Trade is published by the Department of Agriculture, and each month a compilation covering all the grain future markets is released.

Other Governmental reports of less trading importance or less timely are also published such as those relating to inspections, monthly marketings and farm prices. All together they offer to the trader, whose judgment is based on primary facts, a broad and fundamental body of information.

- ✓ *Quasi-official Reports.*—Another body of trade data, probably as extensive as that just summarized, may be conveniently grouped under the title of quasi-official reports. While published under private direction and with private funds, these materials are like the Governmental reports in being comprehensive in character and reflecting no particular point of view.

The principal portion of this type of report is prepared by the exchanges themselves. Thus the Chicago Board of Trade has for many years prepared and published an *Annual Report* which includes a considerable amount of primary materials.

There is included, of course, a record of future prices, by days, covering the various commodities and futures traded in on that exchange. Receipts and shipments are compiled daily, and supplies in public and private store at Chicago each week, by grains. Through the cooperation of other leading grain markets, a United States visible supply figure for each of the principal grains is prepared weekly. Deliveries on future contracts are compiled daily. The New York Cotton Exchange, the New Orleans Cotton Exchange, the New York Coffee and Sugar Exchange, and other smaller future exchanges, similarly prepare and currently release series of original data. These frequently take the form of daily market reports followed by weekly, monthly and finally annual summaries, the data relating mainly to stocks on hand and the movement of supplies.

Under this same heading should be mentioned a group of privately published reports which are comprehensive in character and enjoy a wide and general use. In the grain trade should be included the reports of G. J. S. Broomhall of Liverpool, the Sanford Evan's Statistical Service of Winnipeg, and Russell's Commercial News (New York); in the cotton trade Shepperson's *Cotton Facts* (New York) deserves mention.

Private Reports.—A considerable volume of original material is collected and published by brokerage firms. This is, of course, for the immediate use of the firm and its customers though a much wider circulation frequently results. For the leading commodities of cotton and grain, several firms employ private crop observers who travel through the principal farm areas, noting the state of the crops and estimating the probable yield. These estimates of production are usually made on the first of the month and thus precede by a week or more the Government releases. Frequently, too, the larger firms will employ one or more experts to prepare special reports on some phase of the market situation and this work may involve the collection of materials both from this and other countries.

A large number of firms regularly publish one or more house

organs for the use of their customers. These usually include a cursory digest of the market situation together with some specific opinion regarding the probable course of prices. They are of little value as source material and, being designed to crystallize opinion at once, soon lose their value.

✓ *Trade Journals.*—The future trader also has for his use a rather wide range of daily, weekly, and monthly newspapers and journals. Many of these include a considerable amount of primary material though most of their space is devoted to summaries and digests of information appearing in original form elsewhere. Thus the daily newspapers publish usually the opening, high, low, and closing prices of the principal commodities together with a column of current trade gossip while the weekly and monthly journals contain broader summaries with an occasional special article on some one phase of the market.

Deserving special mention are the daily trade papers usually referred to as price currents. While separately published, their editors usually enjoy close cooperation with the exchange, having access to the floor, and including in their trade sheet a record of each day's business in greater detail than can usually be found elsewhere.

Ticker News and Tape.—Mention has already been made of the place of the ticker as a part of the physical equipment of future trading. Operated under special franchise granted by the exchange to one or more telegraph companies, it forms a familiar part of every brokerage office. Over it are sent, in rapid succession, the series of prices which tell the amount as well as the direction of each price movement. These prices are recorded by futures and by commodities and an attempt is made to give the price of every trade occurring on the floor which is either higher or lower than the previous one. When the market is dull, bid and asked prices are also occasionally given.

The news ticker is an instrument designed along the same lines as the smaller price ticker but used to record items of information, telegrams, and short articles of immediate interest.

Much of the information recorded on the news ticker appears in the form of "flashes" and, if worthy of general market interest, will appear later in the newspapers and trade journals. But a considerable portion never appears in print subsequently for sheer lack of importance. This latter portion is generally referred to as "gossip" and gives to the news ticker its distinctive character. This type of news stimulates interest among that class of transient trader which frequents the customers' room of the usual brokerage office. For this reason, ticker news is a trading asset to the house for which it is willing to subscribe.

In an effort to picture this type of market news, the following items have been taken from trade gossip. The attempt has been made to select a variety of items which, as a group, are fairly typical of the run of information appearing on any trading day.

Cotton: Texas weather at 40 stations maximum yesterday 100° to 118°.

Wheat: The wheat market is confusing. There is apparently a battle between two sets of professionals. The market has several times shown distinct weakness, only to receive important support on the dips. Each time the crowd have gotten short someone has taken them off and run them in.

Sugar: We look upon the switch of selling December and buying January very favorably believing January will go to a bigger premium over December.

Wheat: Some of the local pit shorts are covering wheat sold earlier. There has been good absorption of all pit offerings today. Cash market shows firm tone everywhere with premiums strong.

Cotton seed oil: Afternoon session was quiet, early upturns being maintained. Offerings continued light and few scattered sales were absorbed mainly by refiners and brokers around the 11.50 level for September.

Wheat: Mr. wires from Willmar, Minn., two out of twenty-five fields examined this vicinity show trace of black rust.

Corn: Showed a weak undertone much of the day, and eased under scattered pressure. Weather conditions over the belt were seasonal and apparently the crop generally is in fairly satisfactory shape.

Cotton: Heat waves in the southwest with the continued lack of rain brought buying in volume into the cotton market and prices moved upward easily on yesterday. It is probable that bears will prove timid again today and that the upturn may extend further.

The date, time of day and contributor of each of the above items have been omitted. It should be repeated that they typify only that portion of each day's news which is of transient interest and designed to stimulate trading among those who are followers rather than makers of the market. Occasionally an item such as the following will be circulated because of its general interest and special quality:

New York, Aug. . . . Mr. Livermore is reported as saying on the phone to a friend that he has no stock market interest as was reported yesterday.

Forecasting Services.—Our survey of market reports and news would not be complete without some reference to those individuals and organizations who offer their services for a fee as trading advisors. They are indeed a mixed lot. One service, with headquarters in New York, makes an annual forecast in the fall of each year of each high and low for each major price swing throughout the ensuing year. These turning points, futhermore, are foretold to the smallest fraction of a cent for cotton, wheat, and a number of other commodities and stocks,—and all for the very moderate sum of \$100.00! Another is an astrologer and the subscribers to his service are favored from time to time with a calendar of events predicting market movements not only from day to day but within the trading day as well.

Still another service, and one enjoying a much wider reputation, employs the technique of the chart reader. All students of market movements recognize in them a certain measure of rhythm. For this forecaster, they constitute his stock and trade and each time the price makes a "double bottom" or "breaks through to new high ground," a special significance is attached to it regardless of the surrounding circumstances. There are perhaps a dozen services in grain and cotton and a fewer number for the other commodities. Those which have just been mentioned represent what might be called the specialized type though almost all services try to attain special distinction through some feature represented to be exclusively their own.

The services of the broader type do not pretend to rely upon some one formula to the exclusion of all other information but seek to analyze the facts wherever they can be found. Naturally, an organization of this kind should employ a trained statistical staff. If directed by competent hands, it is in a position to render profitable service to its clients while supplying a quality of trading of real benefit to the entire market.

One service of this type, located in the Central West, deserves special mention. It operates in all of the leading commodities and stocks though it specializes in grain. It employs a trained staff of assistants whose task it is to compile, compare and contrast fundamental crop and market conditions over long series of years. It closely follows conditions of growth during the summer months as well as stocks at country and terminal points throughout the year.

One can, however, be well posted regarding fundamental market conditions and still not be a successful speculator. Financial strength commensurate with one's trading position is a necessary requisite. In addition, a measure of poise is needed. The advice to clients by this particular service is especially well taken. Few recommendations are made; and when traders are advised to buy or sell, it is in the light of broad swings in price rather than the minor and more uncertain movements. To demonstrate its sincerity, each market position advised for its clients is taken by the service and facsimiles of all closed trades, showing net profits or losses, are published in a weekly folder sent to subscribers. If the advice of the service is poor it thus becomes an open record in dollars and cents to everyone. This is in marked contrast to the usual service where poor advice is less costly and quickly "forgotten" and where fortunate counsel is frequently recalled as an example of forecasting ability.

There is in the future market, as well as the stock market, a class of traders popularly referred to as the "general public." While the term is a loose one, it is usually associated with the body of traders who occasionally buy or sell to a small or

moderate amount and whose principal business is in some other field. For this type of trader, a service such as the one just described can be of real use. If future trading is to be of greatest economic and social value, it should be so conducted that it tends to direct prices in accurate anticipation of their natural course and in so doing to remove at least a part of the element of uncertainty. This cannot be accomplished if trading operations are based upon emotions rather than sound judgment and this is frequently the case with the non-professional group. It is here that adequately equipped and well managed forecasting and statistical services can render worth-while service redounding to their own good as well as that of society at large.

CHAPTER VIII

THE MARKET STRUCTURE: BROKERS AND TRADERS

1. BROKERS

Types of Brokers.—The business of future trading comprehends not only the mechanical phase of equipment and trading facilities but also the personnel phase of brokers and traders. And of the two phases the latter is far more important. The most elaborate equipment and facilities will not assure success unless a body of active trading interest can also be built up. On the other hand, many exchanges have grown and prospered through a body of active brokers and traders having neither adequate nor modern facilities.

Brokers are of two general types: (1) those serving the non-member public being usually members of a firm and (2) those serving as brokers' brokers. The latter group is commonly referred to as floor brokers or pit or ring brokers in contrast to those offering their services to the public and popularly called commission brokers.

The work of the floor broker involves much less routine per trade than that of the commission broker. He is usually an individual enterpriser though frequently devoting his entire time as a broker to the execution of orders for only one commission house. He does not need to maintain a fully equipped office to receive customers and as a rule he gives up his client's name as principal, avoiding much of the detail in the handling and clearing of trades as well as a measure of legal responsibility. His commission, accordingly, is much less per unit of trading.

The commission broker, in contrast, is usually a member of a firm and he, together with his partners, makes up a business unit of much greater importance and financial responsibility than a floor broker. Considerable capital is tied up in a place of business suitable to receive customers and for many of the

larger firms branch offices are maintained. Many of the houses employ solicitors or customers' men to promote the volume of their business and in addition spend considerable sums in preparing and circulating market information among their clients. They rely upon their regular commissions to cover these expenses and leave a profit. Both floor brokers and commission brokers act in the legal capacity of agents. But we shall note in connection with a description of trading methods in a later chapter that the legal responsibility of the commission broker is considerably broader.

✓ *Brokers Often Traders.*—In addition to executing trades for others, both commission brokers and floor brokers frequently trade for their own account. The commission broker who is also a member of a firm may buy and sell for the account of the firm or he may maintain a private account of his own. In either case the account is likely to be an open commitment carried for some time rather than an active trading account. In contrast, the floor broker, who also trades for himself, will usually maintain an active account each trading day but will not, as a rule, carry forward a substantial position from one day to another.

The various exchanges attempt to regulate brokers acting as traders. They all prohibit their members from acting as agent and principal in the same transaction. In addition, regulation is usually attempted seeking to prevent a broker buying or selling to his own advantage through a knowledge of his clients' trading. Thus if a buying order or orders are received of such size that they are likely to move the price up, there is a temptation to the broker to precede his customers' orders with a purchase of his own, later to sell out his trade at the higher price level brought about by the purchases of his clients. This is an obvious violation of the broker's duty to use due care and diligence in the execution of his principals' orders. Other and similar practices involving the shifting of customers' and brokers' trades are contrary to the general rules of the exchange though difficult to properly enforce.

2. TRADERS

Classification According to Function.—The motives and methods of traders are many. Some buy and sell purely on the basis of a mechanical device such as a chart. Others enter the market only after extensive study of available basic information. Some simply follow the crowd or what they believe to be the leaders of the crowd, jumping on when the price van starts up with the hope that later they will be fortunate enough to hop off before a reverse movement gets under way. Still others follow no particular plan but trade from time to time in response to a wide variety of changing factors.

Classification has this for its purpose: to aid in clearly visualizing the limits and relationships of any body of knowledge. If it were possible, it would greatly aid in understanding the nature of future trading to group this vast army of traders according to the characteristics identifying each. But unfortunately traders as individuals cannot be separately sorted in this way. It is probably the rule instead of the exception for a trader to employ different tactics at different times and frequently to be actuated by several rather than a single motive. Accordingly our classification must be a functional one. Traders will be identified and described according to predominant types, the types selected for analysis being those of outstanding importance in future trading. The classification, too, will need to be broad enough to represent a major portion of all traders under some one of the various groups.

Two Broad Classes: Speculators and Hedgers.—In attempting to classify traders according to their methods of operation, the broadest division which can be made is that of speculators and hedgers. All traders can be grouped into one of these two classes. A speculator may be defined as one who buys or sells goods or rights to goods for the principal purpose of *profiting from uncertain fluctuations in price*. A hedger is one who buys or sells for the principal purpose of *protecting himself against uncertain fluctuations in price*. The two classes thus include all

trades in futures since a dealer or trader must have one or the other of these two objects.

The broad class of speculative traders can, however, be more advantageously analyzed by sub-classes. We will accordingly divide the entire body of speculators into three sub-groups of scalpers, speculators (in a narrower sense), and spreaders or straddlers.

Scalpers.—The practice of scalping is not peculiar to future trading. It is a common practice in securities. It is found in real estate dealings. Bearing this same name and with some of the same characteristics is the familiar practice of scalping in theatre tickets. A scalper is one whose plan of operation is small profit per trade but large turnover. He will buy one minute and sell the next if in this operation he can obtain a profit of a small fraction per unit of trade. It is said of speculators generally that success depends as much upon natural trading instinct as upon acquired knowledge. This is especially the case with a scalper. Van Antwerp ably dramatizes his essential qualities. "Age cannot wither, nor custom stale, his infinite variety. He is a bull one minute, and a bear the next. He is intent, resourceful, suspicious, vigilant and ubiquitous. He asks no quarter, and gives none. Now he is sphinx-like, deaf, inscrutable and impenetrable; now exploding with the frenzy of battle."¹

Scalpers, members of an exchange, usually trade from the pit or ring. They are thus referred to as floor or pit or ring traders. If strictly true to their profession they will leave the floor at the close of trading entirely even with the market. That is to say while their position in the market during the trading day may mount to large proportions either on the long or the short side, the close of the session will find this position entirely sold out or bought in. Their hope for profit must, therefore, come from the small intra-day fluctuations in price. These minor price variations are occasioned by a wide variety of temporary circumstances and it is here that the floor traders' skill

¹ Van Antwerp, W. C., *The Stock Exchange from Within*, p. 285.

is most closely tested. Their ability to succeed depends very little upon a broad knowledge of basic conditions in the trade; it does depend very much upon a quick sensing of the ebb and flow of market opinion from minute to minute and an accurate appraisal of current news and gossip likely to develop a change in sentiment.

Scalpers need not, of course, be members of an exchange. One can trade in and out of the market on the basis of quotations from the tape. This type of scalper operating from the customers' room of a brokerage house has in general the same body of current trade news that the pit trader has and he may be equally skilled in anticipating changing currents of opinion. He is as a rule, however, at considerable disadvantage. He has commissions to pay and in addition is likely to sacrifice a considerable part of his profit due to the fact that he cannot as promptly act on a change in market movements. In addition floor traders very often supplement their income materially by acting as brokers for other members as occasion demands. For these reasons non-member scalpers usually do not confine their trading to purely intra-day trades but in addition carry a position of varying size forward from day to day.

Speculators.—The theory of trading of speculators (using the term "speculator" in its narrower sense) is in marked contrast to that of scalpers. Instead of confining their market positions to the limits of a trading session, speculators carry forward their trades over periods of several days or weeks. Their interest is not in the minor intra-day fluctuations in price but rather in the larger movements or "swings." In consequence the basis of their judgment is more likely to be upon the broader factors of total supplies of actual commodity, market receipts and shipments, visible supplies and consumption, and less upon minor news items and transient price factors of little general importance.

Here, as with the scalpers, a division may be made between member and non-member speculators. The former are likely to be connected in some capacity with the trade other than as

simply speculators. They may be partners of future commission houses or in business with merchants or dealers in the actual commodity. In such capacities, their knowledge of the position of the commodity in which they speculate is likely to be much better than those whose regular business or occupation is in some other field. This disadvantage of the non-member may be and frequently is offset in part through his contact with the commission house through which he deals. Here then, as in stocks, we have varying degrees of knowledge among speculators depending upon the rapidity and extent to which important information circulates from group to group and reflects itself in the intermittent ups and downs in price.

For the purpose of analyzing the trading operations of speculators in their relation to price, some advantage is to be had in dividing the group into large-scale speculators and small or medium-sized speculators. While this phase of the subject must be reserved for later chapters devoted to price relationships, it is important to note here that the larger speculators usually make speculation their profession while the smaller do not, and secondly, that because of the size of the operations of the larger speculators, their trading becomes a market price factor while the trades of the smaller speculators have no appreciable influence upon price. Here again we find a hierarchy of knowledge set up among the entire body of speculators growing out of the operations of the leaders and spreading with varying rapidity from one trading strata to another.

The length of time a speculator may carry forward an open position may vary from one day to an indefinite period. Viewed in this light, speculators divide themselves into short-time and long-time traders. Those belonging to the former group are very often more nearly speculative scalpers than speculators. Their interest is in minor price changes. If they attempt to determine probable price moves by studying market conditions, only the very transient trade news is followed. And the success with which they operate depends largely upon the freshness of their information.

It is among the speculative scalpers, too, that one finds the typical chart traders. Their theory of operation is based on the assumption that price cycles display a considerable measure of regularity either in time or character of movement or both. By charting the course of prices, using various plans of construction and periods of time, systems of trading are worked out which may or may not be supplemented by reference to the immediate market situation. The speculative scalpers' purchases and sales are timed in accordance with these quasi-mechanical market movements in price and are thus far more like those of scalpers than of speculators. Instead of attempting to buy when prices are low and to sell when prices are high, their plan of attack is to buy after a price movement has definitely established itself (frequently after the price has broken through one or more previous highs) and to sell before a reversal in movement gets under way.

Spreaders or Straddlers.—This class of trader derives its name from the nature of its trading. The term "spreader" is used in the grain trade and "straddler" in the cotton trade. They are individuals or firms whose business is buying in one market or future and simultaneously selling short in another for the purpose of reaping a profit from a subsequent readjustment in prices. Their double trades thus become spreads or straddles reaching across from one market to another or from one future to another. A third term applied to this group is that of arbitrageur, in general use in trading in stocks and also used on some markets in grain.

Because of the cost of carrying a commodity from one month to another involving storage, insurance, and handling charges, there is normally a difference in the prices of two futures within a given crop year reflecting this basic cost. Similarly, because of the cost of shipping a commodity from one market to another, there is normally a difference in future prices between two markets reflecting this shipping expense. The future farther advanced in point of time and the market nearer a consuming center will, because of these cost elements,

usually prevail higher during any crop year. Yet there are many variations from this normal, some of which have an apparent explanation and some of which do not. It is the business of the spreader or straddler to take advantage of these temporary disparities. If his judgment is good he will be rewarded when prices later realign themselves. If his judgment is poor, he will be forced to close out his trade at a loss.

The practice of placing spreads between markets and between futures serves as the cement in the future and cash price structure. When price relationships deviate, the force of buying that which is relatively too low and selling that which is relatively too high tends to bring them back into line again and hold them there. This continual alignment and realignment of prices reflects not only present prospects but future conditions as well. Probable future conditions receive far greater attention since it is here that accuracy of estimate will later reveal itself in price. It is worthy of note in passing, also, that at times future prospects suggest the placing of a spread, not for the purpose of taking advantage of a subsequent return of prices to a more normal relationship, but on the assumption that they will later spread farther apart. The natural effect of this type of spread is of course to magnify existing derangements in price.

Spreaders or straddlers may be classified according to whether their transactions are usually inter-market operations or inter-future operations. A third and occasional type consists of those who spread between two commodities such as oats and corn or corn and wheat. Still a fourth and minor type consists of those who spread between job lots and round lots. Thus in wheat on the Chicago Board of Trade the job-lot market centers around a small group which stands ready to buy or sell in multiples of 1000 bushels and at an eighth or quarter of a cent below or above the prevailing bid or ask price. As the members of this group accumulate lots of 5000 bushels, or major fractions of a lot, they will in turn make a counter transaction in the larger market. Since these two markets are treated

as entirely separate units, jobbers find themselves long in one market and short in the other and usually at a fraction of a cent difference in price which they later hope to convert into a real profit by reversing their position. Their operations are thus essentially spreading in nature.

Spreaders and straddlers may also be classified according to whether their operations are of a short term or of a long term character. The short term spreader, like the scalper, is interested in news or forces likely to develop temporary price changes. If a price relationship between two futures or between two markets shows only a small derangement and it is believed to be only temporary, a spread will be attempted. Like the scalper, too, the short term spreader's income is a net of many small profits and losses. The long term spreader, in contrast, is interested only in probable changes in price relationships occurring over several days or weeks. He seeks his information from broader and more fundamental sources and is in judgment and temperament more nearly like the speculator described in the previous section. If he profits from his operations his profit per trade is likely to be somewhat larger than the short term spreader.

There is probably no phase of future trading more precarious in nature than that of trading in spreads or straddles. It is not sufficient that one have a thorough knowledge of the usual factors affecting the price of futures. In addition many problems of shipping costs, storage costs, the probable physical condition of deliverable supplies, exchange rates and other current problems must be estimated accurately. However, it is also true that these factors can be accounted for, and if carefully done the reward is perhaps more certain than the usual open speculation.

As a rule spreaders and straddlers devote their entire time to this work. There are, of course, some whose business is in another field who place an occasional straddle or spread between two markets or two futures. But they are considerably handicapped by a lack of detailed knowledge of the business. A firm or individual thoroughly familiar with the problem of

merchandising the actual commodity has a double advantage. He knows the extent to which allowance must be made in the prevailing prices of futures for the many marketing factors affecting these prices. And he can, if need be, take up the actual commodity on the purchase leg of his straddle or spread and effectively handle it to deliver upon the sale part of the straddle. This is not always possible; but at times it is, and highly advisable. To the non-professional, reliance must be had upon brokers for the proper handling of supplies when necessary and this does not always result in entire satisfaction. Because of its highly technical nature, spreaders are few in number compared with any one of the other groups of speculators or with the body of hedgers. Their combined market position will at times, however, reach large proportions.

Hedgers.—We have described thus far three types of traders: scalpers, speculators and spreaders or straddlers. Under these three categories may be included every variety of speculative transaction. There remains to be summarized the essential characteristics of a fourth group: hedgers. The trading motive of this last type is just opposite to that of the other three. Speculators attempt, through their purchases and sales of futures, to forecast changes in price and to profit thereby. In doing this they assume the role of risk bearer. Hedgers attempt, through their purchases and sales of futures, to eliminate the element of price change and to avoid loss thereby. In so doing they shift the risk to the shoulders of the speculators. Future trading thus provides a form of insurance in which the body of speculators constitute the insurers and the body of hedgers the insured.

The occasion for the practice of hedging is to be found in the prevailing methods of marketing and merchandising the actual commodity. Let us take cotton as an example. With the planting of each cotton crop there is automatically created a price hazard which must be borne by some interest until the crop passes into the hands of the ultimate consumer.³ It is borne

³ Cf. Hoffman, G. Wright, "Crop Insurance—Its Recent Accomplishments and Its Possibilities," *Annals of the Amer. Acad. of Pol. and Soc. Science*, Jan., 1925.

by the farmer in large measure up to the time the cotton is ginned. The crop then passes into the hands of merchants and exporters where it is held until sold to the mill. During this period the price hazard falls heavily upon the merchant and shipper. Forward orders are being placed by the cotton merchant with mills beginning with early summer and extending into the fall and winter. Here again where commitments are made at definite prices the hazard of price change is assumed.

The practice of hedging is designed to pass this price risk on to others willing to assume it. For the farmer or merchant or spinner having in his possession a supply of cotton as yet unsold, the risk of declining prices is present. Being long actual cotton, he may hedge his risk by selling short an equivalent amount of futures. For the cotton merchant who has contracted to sell and deliver shipments of cotton at various future dates at definite prices and who has not as yet acquired his supplies, the risk of rising prices is present threatening an increase in the cost of acquiring his supplies. He is short actual cotton. He might hedge by buying futures. This is the situation also for the spinner who has contracted to sell yarn at definite prices and who has not as yet acquired the necessary supplies of cotton.

So also in the grain trade, certain interests become long millions of bushels of grain in which a short future position is necessary as a hedge. This is especially the case with the terminal elevator interests. Other groups, and notably milling firms and grain exporters, frequently find their trade position heavily short through their forward order business and to them it is necessary to buy futures as a hedge.

The future market thus affords facilities through which merchandising interests can balance their trade position and avoid loss attendant upon either a market increase or decrease in price. The amount of loss sustained in a movement in price adverse to a trade position will be offset by a corresponding gain in an opposite market position in futures. The detailed price aspects of this practice will be given separate consideration in later chapters devoted to the subject. It is sufficient to note

here that these hedging facilities are capable of meeting the needs of a wide variety of trade situations and that they are availed of extensively in the movement of supplies from the farm to the consumer. Hedging has been found especially necessary in grain among the terminal elevators, the shipping and export business, and the large milling trade. In cotton its principal use is among the merchant-shipper-exporter groups. It is into the hands of these interests that a major fraction of each year's crop moves at harvest time. It is financed largely upon borrowed capital and, through the force of keen competition, there is every incentive to minimize the price hazard as much as possible.

We find, as a result, a body of traders upon our organized future markets buying and selling from time to time to meet their market needs. Their trades are not dictated, as in the case with the speculative traders, by their opinion of probable future prices. In so far as their trades reflect purely the hedging requirements of their business, they are likely to be infrequent and carried over comparatively long periods of time. There is no division here between the professional and nonprofessional. All are professional though by no means equally well informed either in the practices of the trade or in the details of handling futures. Whether members or not of an organized exchange is determined mainly by the volume of trading their business requires, the leading firms holding, of course, memberships.

3. SUMMARY

We have outlined in this and the preceding chapter the essential structural features of organized future markets. No attempt has been made to show how these markets operate nor their relation to the forces focused upon them in the determination of prices. Instead, attention has been directed entirely to the structure of the market,—its physical composition and its personnel.

Exchanges upon which future trading is maintained are few in number compared with those organized to trade in the actual

commodity. The list of future exchanges in the United States numbers less than 30. These are as a rule located in principal cities, frequently owning their own building, and equipped with a trading floor with special facilities to meet their particular needs.

Built up around these exchanges in the form of business feeders is an elaborate network of brokerage offices and private wire systems. Here are found facilities for the convenient execution of trades: customers' rooms, private offices, accounting equipment, quotation boards. Prompt and extensive telephone and telegraph connections, in many cases privately operated, reach to all parts of this country and abroad and closely link together all of the important commodity markets. Inter-broker membership extends this network to include, also, all of the important stock exchanges.

As an aid and stimulant to trading, the large body of market reports and news is of primary importance. Governmental reports form the most reliable and comprehensive source. In many instances exchanges and private organizations supplement this with less formal reports. Brokerage sheets, trade journals and ticker news and tape add another large volume of materials of a less reliable sort and of a more transient and personal character. This information is displayed upon blackboards and tables of every brokerage office and constitutes to them an indispensable facility. Forecasting services complete the list of market reports. Here a fee is charged by the trading advisor in some cases for advice of a worth while sort and sometimes for the merest trash.

The market structure for futures comprehends not only the physical facilities but also the large body of brokers and traders regularly engaged in buying and selling. This personnel side of the market is in fact far more important to its success than the physical side. A body of brokers, some deriving their business from the public and some serving merely as brokers' brokers, stand ready at all times to execute orders. A body of traders numbering many thousands and widely distributed consti-

tute a forum through whom the market currently functions.

These traders are of various types each catering to a particular method of operation or having in mind a particular purpose to attain. They may be divided broadly into two classes: speculators and hedgers. The former,—whatever their method of trade may be, buy and sell for the purpose of profiting from uncertain fluctuations in price. The latter buy and sell for the purpose of protecting against uncertain price fluctuations.

The hedgers constitute a group engaged in one or more phases of the work of marketing or merchandising the actual commodity. In this work they are exposed to the hazard of a material change in the market price of the commodity they are handling. They shift this risk to speculators by buying or selling futures.

The speculators, whose business it is to assume risk, are of three general types: (1) scalpers, (2) speculators (in a narrower sense) and (3) spreaders or straddlers. The first type is interested in price movements and news causing price movements of a very temporary character closing its trades usually by the end of each trading day. The second group is interested in broader and more fundamental market news and prices and as a rule carries its trades forward over a period of several days or weeks. The third group makes its specialty relative changes in prices, buying in one market or future and simultaneously selling an equal quantity in another market or future for the purpose of reaping a profit from a subsequent relative change of prices.

CHAPTER IX

ORGANIZATION AND RULES OF EXCHANGES

Future trading developed as a natural evolution in the growth of the grain and cotton trade of this country. Only after years of trial and error did it reach its present highly organized form. In this development, the form of organization and the rules of the leading exchanges played an important part. The first rules regulating future trading were passed by the Chicago Board of Trade in 1865 and since that time many changes and additions have been made. This has been equally true of the New York Cotton Exchange, organized in 1870. Other exchanges, while assuming the same general form as the two leading future markets, have on numerous occasions improved their trading rules and methods to the advantage of the entire trade. It is not possible or advisable here to trace the many changes which have been made nor to fully present the body of regulations under which exchanges operate at the present time. It will be sufficient simply to outline and briefly describe the form of exchange organization and the principal governing rules. This will be done for the leading commodity exchanges with the understanding that except for minor differences, the description applies equally well to all.

1. THE NATURE OF AN EXCHANGE

Legal Status of Organized Commodity Exchanges.—Commodity exchanges are organized as corporations. In this they differ from the stock exchanges of this country, the latter being unincorporated associations. The corporate status of a commodity exchange is, however, of a rather distinctive type. While its field of business is a commercial one, the same as the usual corporation, it does not, as an exchange, operate for profit. It is formed for the use of its members, the income de-

rived from annual dues and service fees being only sufficient to meet necessary expenses.

In the usual corporation, anyone who is financially able to purchase shares can become a stockholder. But in an exchange, the stockholders are the members, each membership instead of each share having one vote and admittance to membership being gained only after permission is granted by the members. These differences are important ones. By regulating the standards of entrance, the exchange is able to control the quality of its membership. The fact that each membership carries with it one vote insures that no one man or limited group of men can obtain permanent control of the exchange. This can be, however, a weakness instead of a strength. Not infrequently, in the past, desirable changes in methods of trading have been blocked because the reform group was decidedly in the minority. Were control based upon stock ownership instead of membership, progress might have been more rapid.

In this connection it is of interest to note the form of organization of Japanese commodity exchanges. They, too, are corporations, but the membership is entirely apart from the ownership of the stock. In Japan the exchange is organized for profit and the stock is traded in on the exchange just as the stock of any other commercial corporation, its price being a fairly good barometer of general business conditions. The exchanges are far more closely regulated by the government than in the United States which is true, also, of the exchanges of continental Europe.

In many particulars, the commodity exchange of this country is like any other corporation. It can act as a business entity, hold and transfer property, sue and be sued, use a common seal and make such rules and regulations, not contrary to law, as it may need to the proper carrying out of its purpose. Limited liability attaches to membership the same as to shares of an ordinary corporation and here, too, the liability is the same for all regardless of the price paid for the seat.

Both the Chicago Board of Trade and the New York Cot-

ton Exchange are incorporated by special act of legislature. The Chicago Board of Trade was organized in 1848 and in 1850 incorporated by the State.¹ But in 1859 it was incorporated by a special act of the legislature and has operated under this act since that time. The New York Cotton Exchange was incorporated by special act of the legislature in 1871. Most of the other commodity exchanges formed in more recent years have been incorporated under general membership corporation laws.

Purpose of the Exchange.—In the preamble to the rules of the Chicago Board of Trade, the objects of the Association are set forth as follows:

- (1) to maintain a commercial exchange;
- (2) to promote uniformity in the customs and usages of merchants;
- (3) to inculcate principles of justice and equity in trade;
- (4) to facilitate the speedy adjustment of business disputes;
- (5) to acquire and to disseminate valuable commercial and economic information; and generally,
- (6) to secure to its members the benefits of cooperation in the furtherance of their legitimate purposes.

This statement is an excellent epitome of the original as well as the present purposes of the Board. Substantially the same statement is to be found in the act of incorporation of the New York Cotton Exchange, in the charter of the New Orleans Cotton Exchange and in either the articles of incorporation or constitution of all of the other commodity exchanges.

Exchanges are, of course, primarily market places and the first purpose in organizing is to provide a common and adequate meeting place. But of equal importance is the formulation and rigid enforcement of rules of regulation relating to commissions, arbitration of disputes, hours of meeting and other important matters. Other questions of common concern arise from time to time in which joint action is far more effective than individual action.

¹ See Taylor, C. H., *op. cit.*, Vol. I, pp. 159-160.

Exchange Membership.—Membership on commodity exchanges is limited to individuals of lawful age and, in the judgment of the exchange, of good character and financial standing. As the membership of most of the exchanges is limited in number, to become a member it is first necessary to find a seat for sale. This can always be done providing the price which the buyer will pay is high enough. Having arranged to purchase, the prospective member must then file an application, properly endorsed, for admittance to membership on the exchange.

This application is considered by the membership committee of the exchange and must then be approved by the Board of Directors or Board of Managers. This Board of Directors or Managers (known on some exchanges, also, as the Board of Governors) is the governing body of the exchange and, on the Chicago Board of Trade, at least ten affirmative votes from the entire body of eighteen are necessary to elect a new member, with not more than three negative votes cast. For the New York Cotton Exchange, if the Committee on Membership has favorably acted upon the application, a majority vote of the entire Board is necessary; otherwise, a favorable vote of two-thirds of the entire Board is necessary.

When an applicant has been admitted to membership by the Board, he is required to sign a written agreement subscribing to the rules and by-laws of the exchange. If he is a member of a partnership (and on some exchanges this right extends to officers of corporations), this firm is registered by the exchange and becomes entitled to members' rates. Only one firm or corporation, however, can be registered for each membership. These registered firms, like the members, are subject to regulation by the Exchange for any type of unbusinesslike conduct.

We will review in succeeding sections, the principal rules affecting memberships. It is important to note here the general nature of a membership, how it may be acquired, what is acquired, and conditions under which it may be passed on. As we have seen, a membership, or seat as it is often called, is obtained only with the approval of the exchange and retained subject

to its rules. Any material infraction of the regulations renders the member liable to suspension or expulsion, in which case the membership privileges are taken away. Nor can the seat be sold without obtaining the approval of the exchange. This is particularly important because of the member's financial arrangements. Contracts entered into upon the floor are freely made with the belief that the opposite contracting party is financially responsible and this belief is based in part upon a knowledge that his seat cannot be disposed of without the exchange's approval. In the event of financial trouble, or for other reasons, a member's seat is to be sold, the first right upon the proceeds of the seat is by the exchange itself for membership dues, fees, etc.; next in order are creditor members of the exchange who have filed claims growing out of transactions on the exchange; any remaining balance is available for common creditors. The preferred status of the exchange and its members as here outlined is well established and greatly aids in rendering exchange contracts inviolable.

In view of these numerous restrictions, the purchaser of a seat obtains only qualified ownership of it. Robert Campbell, the eminent jurist, describes property "as a bundle of rights, each consisting in the right to deal with the subject in some particular manner." "One (or more) of these particular rights, detached, as it were, from the bundle and placed in the hands of one not the owner," may be described as "special property."² Viewed in this light, a seat is property belonging to the purchaser but with important special rights in it being retained by the exchange.

2. ORGANIZATION OF EXCHANGES

The Governing Board.—The form of organization is substantially the same for all of the commodity exchanges. The government of the exchange is vested in a body consisting usually of the President, Vice-President, and Treasurer of the

² Campbell, R., *The Law Relating to the Sale of Goods*, page 29. Cited in Bisbee, L. H. and Simonds, J. C., *op. cit.*, p. 199.

exchange, and a selected group of members. This body is known as the Board of Managers on the New York Cotton Exchange. It consists of eighteen members and is elected annually. On the Chicago Board of Trade, it is called the Board of Directors and is composed of the President, two Vice-Presidents, and fifteen other members, the President, one Vice-President, and five directors being elected annually.

The Board is the governing body of the exchange having final jurisdiction, except in questions voted upon by the entire membership of the association, in all important matters. Monthly, and sometimes weekly, meetings are held. It is charged with the management of the property of the association; it handles important financial questions; it may adopt resolutions interpreting the rules and regulations. The detailed affairs of the association are handled by a number of standing committees all of which are appointed by the Board. It also appoints the Secretary of the exchange as well as other salaried employees.

The Secretary is the principal administrative official of the exchange. He has charge of the keeping of the minutes of meetings, the posting of notices and the preparing and keeping of important documentary and statistical records.

The Standing Committees.—Separate small committees are designed to handle particular and detailed phases of the affairs of the exchange. They are appointed by the Governing Board, frequently from their own membership, and for a term of one year or less at the pleasure of the Board. They consist usually of three, five, or seven members. The distinctive character of each commodity traded in requires a somewhat different group of committees for each exchange. Several are, however, common in function to all of the exchanges such as an executive committee, a finance committee, a committee on rules and by-laws, a membership committee, a committee on information and statistics, a warehouse committee, a commissions committee, a committee on arbitration, and a committee on business conduct.

The names of most of these committees serve to describe

their duties and it will not be necessary to make a detailed summary of the duties of each. Thus the executive committee has "supervision over the property, business and affairs of the exchange," subject to the governing Board; the finance committee has "general supervision over the financial affairs of the exchange"; the committee on rules and by-laws advises on matters referred to it concerning changes or interpretations of rules; the membership committee receives, hears and passes upon applicants for membership, subject to approval by the Board; the committee on information and statistics is charged with general supervision in the preparation and suitable display of trade and exchange data; the warehouse committee supervises the work of the inspection bureau and the care and disposition of the supplies of the actual commodity involved in deliveries. The remaining three committees named deserve more extended description. Their work is based upon carefully drawn provisions in the body of rules. They will be discussed in connection with these rules in Section 3.

Departments.—The actual work of the exchange is divided into a number of departments which are usually subject to the general supervision of one or more of the committees just enumerated. Thus the Chicago Board of Trade maintains, in addition to the Secretary's Office, a Sampling Department, an Inspection Department, a Car Inspection Department, a Weighing Department, a Custodian Department, a Transportation Department, a Market Report Department, a Warehouse Department, a New Building Fund Department, and a Promotion Department. Most of these departments, it will be observed, are maintained in connection with the actual handling of grain and provisions, their work being mainly in connection with the cash rather than the future phase of the business of the exchange.

3. RULES AND REGULATIONS OF EXCHANGES

Need of Closely Drawn Rules.—Few, if any, organizations have a more detailed or drastic body of rules to govern them than our organized commodity exchanges. The nature of their

business requires this. An exchange is not composed of one single enterprise but instead joins together hundreds of individual business entities each represented by one or more memberships. These various firms and individuals are in most instances keen competitors. Some represent merchants, some shippers, some exporters, some manufacturers. Many are simply traders, or brokers for other traders, in and out of the market continually and to large amounts. The force of competition here as in any other line of business develops from time to time sharp practices which must be regulated.

The form of organization of an exchange also necessitates closely drawn rules. It is an open market where all bids and offers are publicly made within limited trading hours. There is no opportunity here as in private transactions of cultivating business contacts or of using tact or diplomacy. Trades if made at all must be freely and instantly made in which the record at the time of contracting consists of not more than a half dozen words legally binding the parties thereto and for sums amounting to tens and not infrequently to hundreds of thousands of dollars. A representative day's business on the Chicago Board of Trade involves the exchange of contracts having an aggregate value of over \$50,000,000. Highly developed competition of this type demands detailed and exacting rules.

Rules Governing Business Conduct.—The rules of exchanges divide themselves into two categories: (1) those which are restrictive or prohibitive in character and (2) those which prescribe methods of procedure. We will outline in this section the more important of the former group. The requirements of the Chicago Board of Trade will be used though the rules of other exchanges are very similar.

Irregular Trading.—No member shall make a fictitious transaction or give an order for the purchase or sale of commodities the execution of which would involve no change in ownership. Nor shall any member manipulate prices or corner or attempt to corner the market in any commodity. Furthermore "purchases or sales of commodities or offers to purchase

or sell commodities, made for the purpose of upsetting the equilibrium of the market and bringing about a condition of demoralization in which prices will not fairly reflect market values, are forbidden." These with other rules of lesser importance are designed to assure for the legitimate trader an open market reflecting at all times fundamental supply and demand conditions rather than artificial factors.

Bucketshops.—In this same general field are to be noted the exchange rules relating to the bucketing of orders. These, too, are designed to assure an open and real market. Upon their enforcement, the exchanges have spent many years of effort and many millions of dollars. "No member shall be directly or indirectly interested in or associated in business with, or have his office directly or indirectly connected by public or private wire or other method or contrivance with, or transact any business directly or indirectly with or for

(a) Any bucketshop; or

(b) Any organization, firm, or individual making a practice of dealing on differences in market quotations; or

(c) Any organization, firm, or individual engaged in purchasing or selling commodities or securities for customers and making a practice of taking the side of the market opposite to the side taken by customers."

General Rules.—There are a number of other rules outlining specific offenses such for example as prohibiting the circulation of rumors of a sensational character, prohibiting the acceptance of discretionary orders by employees, and failure to appear and testify before a committee. But these are also covered in an indirect manner and far more effectively by a group of broad and sweeping general rules which apply with equal force to every type of irregular conduct. These general rules are to be found in the regulations of all of the organized commodity and stock exchanges. Taken together they constitute a set of standards which if properly enforced exact the most exemplary conduct. These rules in summary form follow: Any member may be suspended or expelled if he is guilty of:

- 1.—A misstatement upon a material point to the Board or to a Standing or Special Committee.
- 2.—Reckless or unbusinesslike dealing.
- 3.—Attempted extortion.
- 4.—Fraud, dishonorable, or dishonest conduct or of conduct or proceedings inconsistent with just and equitable principles of trade.
- 5.—Any act which may be detrimental to the interest or welfare of the Association.

The enforcement of the rules regarding business conduct which we have outlined in this section rests with the Governing Board. It is usually aided, however, by a standing Committee on Business Conduct whose duty it is "to consider matters relating to the business conduct and financial condition of members and their customers' accounts; and to observe the course of transactions on the Exchange in order to determine whether resort is being had to improper transactions." Any member or special investigating committee appointed for that purpose may, however, bring charges against a member for any violation of the rules.

The accused member is entitled to a trial before the Board though he may not be represented before this or any standing or special committee by professional counsel. If guilty, the penalty is usually either suspension for a period of time, during which the privileges of the exchange are withheld from the member, or expulsion. The former usually requires a majority vote of the Board and the latter a two-thirds vote. To reinstate a member suspended for violation of the rules requires either a majority or a two-thirds vote of the Governing Board depending upon the nature of the offense. Final action by the Governing Board in expelling a member permanently bars him from membership. His seat is sold under the direction of the Board and the proceeds given to the expelled member after deducting all indebtedness to the Association and to the members growing out of business on the exchange.

Rules Regarding Commissions.—It was no mere coincidence

that the first written agreement to be drawn up in this country between stock brokers should relate to commissions. This agreement, entered into in 1792, bound together the group of traders who inaugurated the New York Stock Exchange. It read as follows:

We, the Subscribers, Brokers for the Purchase and Sale of Public Stock, do hereby solemnly promise and pledge ourselves to each other that we will not buy or sell, from this day, for any person whatsoever, any kind of public stock at a less rate than one-quarter per cent commission on the special value, and that we will give preference to each other in our negotiations.*

This compact would serve as well today as the day it was drawn as an effective commission law. It was designed, as are present-day commission rules, to serve two purposes: (1) to prevent competing brokers from cutting or rebating commissions, and (2) to give preference to members over nonmembers.

Like the New York Stock Exchange, every stock and commodity exchange has given a prominent place in its rules to the subject of commissions. Commissions constitute the livelihood of most of the active members. All exchanges have rules fixing minimum rates which members may charge. They may charge more than these rates if they choose but not less. As a rule, for commodity exchanges, a trade executed by a member for another member requires only half the commission charged to nonmembers. Thus the commission upon the Chicago Board of Trade for grain futures is one-quarter of one cent per bushel (or \$12.50 per 5,000 bushel contract) to nonmembers. This is for a complete trade or round transaction of purchase and sale. Members having their trades executed by another member pay only one-half this amount or \$6.25 per 5,000 bushels. For cotton futures, the minimum rates for a purchase or a sale to nonmembers and members are \$12.50 and \$6.25 respectively per 100 bale contract for trades made at a price not

*From Meeker, J. E., *The Work of the Stock Exchange* (rev. ed.), Ronald Press, N.Y., 1930, p. 63.

exceeding 25¢ per pound, and increases of \$2.50 and \$1.25 respectively for each five cents or portion of five cents above 25¢ per pound. These rates apply to trades made on the New York and New Orleans Cotton Exchanges as well as the Chicago Board of Trade.

A partnership having one or more general partners members of an exchange thereby becomes a registered or member firm of the exchange and is entitled to the same commission rates as members. Furthermore, the rules of all of the commodity exchanges extend this privilege to all branch offices of member firms if these branches are identical in name and interest with the parent concern. Close supervision is exercised over these branch offices as well as the parent firms to see that there is no evasion of the commission law nor any irregularities in methods of obtaining or transacting their business. For their conduct the exchange member is held entirely responsible.

Formerly, only partnerships were permitted the privilege of member rates. A change in the rules, which promises to extend to all commodity exchanges, has recently been made by some of the exchanges offering corporations the advantage of member rates. This action has been taken by the Chicago Board of Trade, by the newly organized National Raw Silk Exchange, the National Metal Exchange and certain of the other exchanges. To become a registered corporation, an executive officer must be a member and the corporation must agree to live up to the rules of the exchange just as any firm would do.

All forms of indirection having for their purpose rebating, splitting of commissions or in any manner reducing commissions are forbidden. These rules include the paying of special expenses, employing of clerks at unusual salaries, entering into agreements to give reciprocal business. The immediate enforcement of the rules regarding commissions is in the hands of a Committee on Commissions with general supervision exercised by the Governing Committee.

Arbitration of Disputes.—Disputes arising between mem-

bers, if incidental, are ordinarily settled by referring them at the moment to some disinterested observer or simply flipping a coin. Such is the case where a misunderstanding occurs between buyer and seller regarding the price or amount of a trade. But in the course of business dealings, controversies occasionally arise which cannot be so easily adjusted. For these cases, the rules of the exchanges usually provide for a Committee of Arbitration and a Committee of Appeals to whom members may apply for a settlement of their difficulties. The rules provide that members may submit their dispute if they desire; but they are not compelled to and may, if they wish, turn to their remedies at law.⁴ If they choose to refer their case to the Committee on Arbitration each party must sign and file with the Secretary of the Exchange a written agreement to arbitrate the dispute and abide by the decision. A date is then set for a hearing and the parties notified to appear. The facilities for arbitration are also available for nonmembers if they choose to avail themselves of them.

At the hearing, the Committee receives evidence submitted by the parties. Outside witnesses may also be brought in to testify. Under the Charter of the Chicago Board of Trade power is given to the Committee to "administer oaths to the parties and witnesses, and issue subpoenas and attachments compelling the attendance of witnesses, the same as justices of the peace, and in like manner directed to any constable to execute." Similar authority is granted by New York State in the Charter of the New York Cotton Exchange and certain of the other commodity exchanges. After the evidence has been received and duly recorded an award is made which if not appealed is final upon the parties. If an appeal is taken within a prescribed time, the Committee on Appeals will review the evidence in the case and make an award which is final upon all interested parties. This award (or that of the Committee on Arbitration where no

⁴On some of the exchanges, either member requesting requires the case to come before the Committee on Arbitration; on others, both members must be willing to submit the case.

appeal is made), if in accord with the laws of the State and of the United States, may be filed with the clerk of the appropriate court and an execution will be issued by the court. Cases so decided by the exchange thus assume the force of law upon the members and have consistently been upheld by the courts.

4. SUMMARY

The organized commodity exchanges of the United States are corporate bodies empowered to act in many particulars as any commercial corporation. Their form of organization is distinctive, however, in that it does not operate for profit, provides for voting according to membership rather than shares held and closely conditions all purchases of memberships. The purpose of an exchange organization is mainly to provide a meeting place and a code of rules under which all may operate with equal and equitable rights. To this end, also, the admission of new members is closely qualified. Special rights with respect to the member's seat are retained by the exchange outlining the member's commercial conduct and financial status with respect to the exchange and to the other members.

The internal organization of exchanges consists of a body of officers, a group of standing committees and an apportionment of operating detail into a series of departments. Ultimate responsibility rests largely with the standing committees headed by a Governing Committee which exercises general supervision and retains final authority on all important matters. Trading procedure and standards of conduct are prescribed in a detailed set of rules and by-laws, the enforcement of which is delegated to the various standing committees. Thus there are rules prohibiting certain types of trading methods, others prescribing minimum commissions to be charged and others outlining procedure in the settlement of disputes. A group of all-inclusive general rules makes acts of any kind punishable by suspension or expulsion if they are contrary to just and equitable principles of trade or affect the welfare of the Exchange.

CHAPTER X

TRADING PROCEDURE

In the chapters preceding the present one, we were concerned with the nature of the future contract together with certain basic information necessary to an understanding of its use. This included material on the evolution of future trading, a survey of present-day facilities for trading, a digest of important trading rules, and an epitome of the marketing process in the important commodities of grain and cotton. We learned, in particular, that future contracts are used mainly as a means of speculation or as a means of hedging; that trading in these contracts is maintained on a limited number of exchanges; that these exchanges do not themselves trade but are operated by their members who trade either for their own account or, on a commission basis, for others; and that these members are subject to a procedure and discipline very rigidly drawn.

We are now in a position to trace, in some detail, the trading procedure of commodity exchanges: to visualize the exchange in operation. Having a knowledge of the form and outward methods of trading, we will then be in a position to analyze the uses to which these methods are regularly applied.

1. THE OPERATIONS OF TRADING

Placing an Order.—Let us assume, as a point of departure, a comparatively simple though typical illustration of a future trade. A. V. Brown is a Chicago business man. He has a natural interest in agriculture, in that it affects his business at times, and has some knowledge of the current situation in the grain market. He decides to buy a contract in wheat futures believing wheat will sell higher within a few weeks. It is the eighth of February and he phones his broker, member of a commission firm by the name of Lee and Company, to buy 10,000 bushels of May wheat futures at the market.

\$1.38 $\frac{1}{4}$, asked \$1.38 $\frac{1}{2}$. But at that instant buyers were more insistent and a trifle more anxious to buy than sellers to sell. Perhaps Lee and Company's broker, or perhaps someone else, sensed this fact, quickly took the initiative in order to be sure of his purchase and bid an eighth higher. Only a trade or two were made at three-eighths and a few sellers began offering at five-eighths. Immediately bids (including that of Lee and Company) were made at \$1.38 $\frac{1}{2}$. At this figure there were several acceptances including the trade which we have been tracing—but still some buyers bidding one-half failed to buy all they wanted and the bid moved to five-eighths with a few new and higher offers coming forward at three-quarters. But at five-eighths the demands of the buyers were met with some offers continuing at that figure. Immediately bids began to appear at one-half again. A few seconds later more offers accumulate and trades are being freely made at one-half and some at three-eighths.

So the market moves up and down in immediate response to the orders and estimates of traders ready to buy or sell. It should be observed here that we are tracing simply the outward form of trading. To know the underlying and fundamental causes of market movements in price we need to go back of these bids and offers to those sending in the orders and inquire into the factors motivating their actions. This is a much more difficult problem though far more worth while. Price and the factors affecting price constitute the central theme of every business venture. But we cannot inquire into these broader aspects of future trading, at least to best advantage, without first knowing the forms and processes of trading.

On some of the larger exchanges, and especially upon the Chicago Board of Trade, the practice of signaling price as well as amounts has long been in vogue. This is a supplement to bids or offers made by open outcry and is used, of course, during periods of intense trading. At such times the cries of traders to make themselves heard develop into a deafening uproar and the signaling of prices as well as amounts becomes necessary

for certainty in trading. There is in this signaling, too, a measure of emotional display: some assume the rôle of the stoic while others wildly gesticulate in an effort to convince their adversaries of the genuineness of their position. Amounts are conveyed with the hands in an upright position while prices are denoted by the hand held in a horizontal position as shown in Figure 6.

Legal Conditions Relating to an Order.—In placing an order such as the one we have just reviewed, certain legal relationships between broker and customer are automatically set up. Of primary importance is the fact that the customer's order to the commission firm to buy or sell makes of the latter an agent in the transaction. It becomes

the agent of the customer and is bound by the law of agency to act with due care and diligence in carrying out the principal's orders. Having done this, responsibility of loss rests with the customer. It is also assumed by both customer and firm that the latter will act in accordance with the rules of the exchange with which it is associated and according to its customs and usages.

Thus with reference to the rules, all exchanges provide that members may buy or sell only during trading hours. These hours are limited on the grain future exchanges usually to the period from 9:30 A.M. to 1:15 P.M. and on the cotton exchanges, as well as most of the other commodity markets, to a five hour session from 10:00 A.M. to 3 P.M. The object in so limiting the period of trading is two-fold: (1) to concentrate all purchases and sales within a limited period and thus assure the advantage of a continuous market, and (2) to allow for

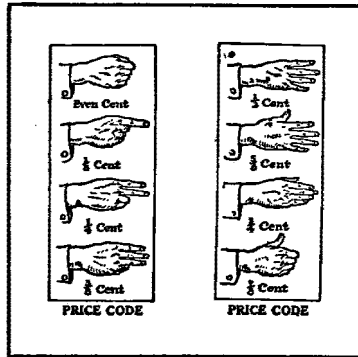


FIG. 6.—Price signals used in floor trading.

sufficient time outside of trading hours to permit brokers to complete the accounting and office routine incident to trading. The rules of exchanges also provide that members shall trade only in the open market and the place provided for this is at the pit or ring. Every exchange also has rules providing for the making of bids or offers by open outcry so that all may have equal advantage to accept or refuse. These rules are designed to assure for all members and their customers a free and open market.

A broker is required to abide by the rules of the exchange with which he is a member and these, as we have already seen, are minute and comprehensive. In so far as they indirectly affect the customer, he too is responsible. That is to say, every trade which he makes is either by usage or by explicit agreement subject to the rules, and by-laws of his broker's exchange.¹ As an example, a buyer of coffee futures cannot refuse to receive, during the month of delivery, a parcel of coffee of a grade unsuited to his purpose, provided it is among the deliverable grades as laid down in the rules of the Exchange. He is expected by his commission firm, and legally bound, to observe the rules and customs of the exchange with which the firm is associated.

Bearing on the subject of customs or usages, while these are binding upon both broker and customer, they are less explicit than written rules and are, therefore, open to interpretation. For this purpose, disinterested though well-informed opinion must be relied upon to determine the exact nature of any particular custom. Thus in our order by Brown to purchase 10 May wheat at the market, what constitutes "at the market" must usually be determined by trade practice rather than written rule. If the broker has exercised due diligence and care in executing the order and has followed the usual procedure he cannot be held responsible regardless of the price of execution.

Margin Requirement.—When a customer buys or sells a

¹ This clause is frequently printed on the memorandum of purchase or sale sent by the broker to his customer.

future, he enters into a binding agreement to purchase or sell the amount of the commodity stated sometime during the month specified in the contract. Thus in our illustration A. V. Brown agreed on February 8 to buy 10,000 bushels of wheat sometime during the month of May at \$1.38½ per bushel. This being a binding contract and involving a considerable sum of money, the parties thereto are likely to want some guarantee of financial responsibility. This usually takes the form of a deposit of cash or collateral called a margin.

The number and nature of margins required is dependent upon the character of the trading done. In our illustration, Brown bought through his firm, Lee and Company, from another member operating in the pit. This other member represented the firm of Flack Brothers, which was likely also acting for a customer who desired to sell 10 May wheat. We will call this customer J. H. Ralph. Then in diagrammatic form the following trade has taken place.

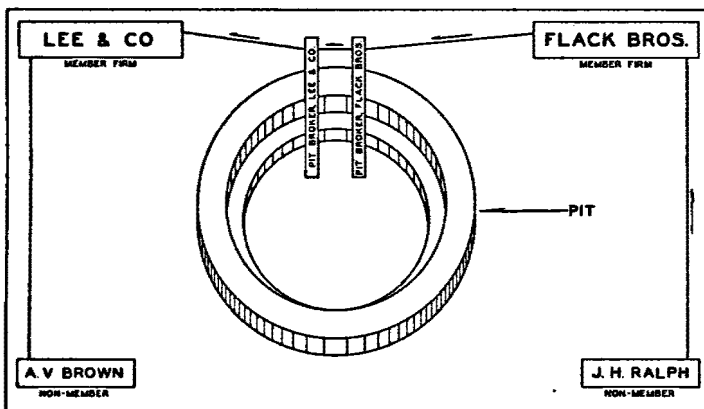


FIG. 7.—Diagram of the course of a trade in futures.

Here the ultimate buyer and seller appear as Brown and Ralph. Yet it is clear that these two did not deal with each other and, since the two commission firms do not need and

in practice do not disclose the names of their customers, ultimate parties to the contract cannot hold each other responsible. Instead Brown looks to his firm for the carrying out of the contract with respect only to Flack Brothers and Ralph depends upon his firm to fulfill the contract only as far as Lee and Company. But even here it must appear that the two firms do not know whether the other is dealing for its own account or for the account of a customer. Accordingly they look upon each other, and have the legal right to do so, as principals and each holds the other responsible for the trade whether the customer proves trustworthy or not. This is the practice upon all exchanges: members regard each other as principals in all trades for nonmembers and in all trades for other members where the real principal is not disclosed.²

It follows from this practice that a maximum of four margins might be required in our example. Lee and Company might ask of Flack Brothers a deposit to insure fulfillment of the latter's sale. Flack Brothers in turn might ask for a margin from Lee and Company, both margins to be deposited with a bank or clearing house as a third disinterested party. Both commission firms would then turn to their customers for a deposit to assure ultimate performance and their two margins would be deposited with the respective houses. Margins from customers are regularly exacted by firms. They do not as a rule exceed 10 per cent of the market value of the contract and in practice are usually somewhat less than this. It should be observed, also that Brown's deposit is in no sense a partial payment on the contract since no purchase has as yet been made.

²There is a distinction between a commission merchant or factor and a broker. The former usually conducts his principal's business in his own name and assumes full liability as a principal against third parties as long as his principal's name is not given up; the broker in contrast does not conduct his principal's business but simply seeks for him a buyer or seller and gives up his client's name. See Dewey, T. Henry, *A Treatise on Contracts for Future Delivery and Commercial Wagers*, p. 232-33. Firms, doing a general nonmember customer business are commission merchants or factors rather than brokers.

Only an agreement to buy and sell has been entered into and the margin serves only to assure performance.

We will consider the status of margins between brokers and how they are adjusted together with certain other inter-broker relationships in the chapter describing the clearing of future contracts. Let us consider here more fully the situation between the customer and his commission house as a result of the placing of a margin by the former. Here the firm becomes a pledgee and its customer a pledgor with respect to this deposit of cash or collateral. Accordingly the firm is expected to exercise the same care over these funds that any pledgee under the law would exercise and to return the deposit in the event the customer closes his account. The deposit is subject, however, to any claim by the firm on the customer growing out of any transactions. This is most likely to arise, of course, in an adverse market movement. Here the rules of the exchange usually provide that when the commission merchant deems the margin inadequate he may require additional margin and, failing to receive this within a reasonable time (which, in an emergency, may be only a few minutes), he may close out the customer's trade or trades to protect himself. If, however, the firm fails to close the trade before the margin is entirely gone so that after closing it remains liable to other firms, the customer likewise is legally liable to his firm to an equal extent. This is a fact well established by the court but too often learned by customers through practical experience.

Closing a Trade.—We can now briefly treat of the steps in closing a trade. The purchase by A. V. Brown through Lee and Company of 10 May wheat can continue to be employed to good advantage. This purchase was made on February 8th at \$1.38½. Brown is required to put up a margin of 13 cents per bushel or a sum of \$1,300. He may now follow one of two courses: (1) either hold his purchase until the month of May arrives, receive the actual grain and merchandise it as he sees fit, or (2) he may sell out his future at any time he desires within the life of the future. Of course if he delays until May

arrives he is running the risk of the seller delivering to him any day during the month, an option granted to the seller in the contract. It is highly probable Brown will sell out his future and sometime before the month of May. It will be recalled from data presented in Chapter VI that over 99 per cent of all wheat future contracts are so offset.

We will assume then that Brown sells out on March 8, just one month later, at \$1.34¼. He would again receive a con-

Chicago, March 8 1932

Account Purchase and Sale of 10 May Wheat
 By RAYMOND B. LEE & CO.
 For Account and Risk of A. K. Brown

1/8	BUY	10 May wheat	138½		13550
3/8	SELL	10 May wheat	134¼		13925
			<i>Lee</i>		425
			COMMISSION		25
			TAX		135
			BY YOUR	<i>Dr.</i>	45135
					13550
					13925
					425
					25
					135
					45135

FIG. 8.—Customer's account of purchase and sale.

firmation (see Figure 5), in this case of a sale giving the commodity, amount, price and value and the party to whom sold. Shortly thereafter he would be mailed an "Account Sales" or what is popularly known as a P. and S. (purchase and sale) slip. This would include the entries as shown in Figure 8 and constitutes a record of a round transaction showing net profit or loss. A Federal sales tax is charged the customer as well as a commission on the round transaction by the firm. Brown's loss thus amounted in this trade to \$451.35.

Brown may now close his account and withdraw the balance of his margin if he wishes since his purchases and sales offset each other and in their fulfillment with respect to other firms will be guaranteed and handled by his commission merchant in the capacity of a principal. If Brown does not close his account he will receive a monthly statement giving the status of his account as of the close of the month. Let us assume that he bought 10 July corn at 86 cents per bushel on March 24, that an additional margin of \$2,500 was deposited with his commission firm, and that he bought on the New York Cotton Ex-

RAYMOND B. LEE & CO. CHICAGO		ACCOUNT #424		NAME <i>R. V. Brown</i>	
				ADDRESS	
				MONTH OF <i>April, '30.</i>	
DATE	DESCRIPTION	DEBITS	CREDITS	DEB. BALANCE	CR. BALANCE
<i>2/28</i>	<i>Bob brought forward</i>				<i>1300--</i>
<i>2/18</i>	<i>Paid S. on 10 July wheat</i>	<i>451.25</i>			<i>848.50</i>
<i>2/24</i>	<i>Cash</i>		<i>2500--</i>		<i>3348.50</i>
<i>2/21</i>	<i>Open trade long: 10 July corn @ 86 2 July cotton @ 19.22</i>				

FIG. 9.—Customer's monthly statement.

change, of which his broker is a member, 2 contracts (100 bales or 50,000 pounds per contract) of July cotton at 19.22 cents per pound. His monthly statement would then appear as shown in Figure 9.

Customer's Accounts.—As we have already seen, the original record of all future transactions is the pit-broker's trading card. From these cards or from separate memoranda returned at the time each trade was made, a day book known as the *blotter* is prepared. Upon it are entered each trade giving the amount, future and commodity, price, from whom bought or to whom sold and for whose account. From the blotter each customer's trades are posted to a *Customers Option Ledger*

(known also as "Customers Contract Book") in which are listed the details of each trade alphabetically by customers. Columns are provided here for the entering of the purchases or sales price by futures with the date and a column for a record of the date on which an "Account Sales" was made up. Usually one line is used for each contract (e.g., cotton for each 100 bales or grain for each 5,000 bushels) so that one can tell at a glance what trades have been closed and the amount continuing open for each customer. It is the usual practice to close the oldest open trade where a purchase or sale offsets only a part of the customer's position in a given future.

From each Customers Option Ledger the open trades are transferred to his *Margin Card*, entering the amount and future with the original purchase or sales price (adjusted to include commission) and the present market price. From these two prices an extension of profit or loss on each amount is calculated and deducted or added to the customer's original margin. The margin clerk can then tell at any time the number of points the market may move before an additional call need be made. Necessarily this margin record must be kept up to date to be of value. From the Customers Option Ledger are also prepared the "Account Sales" or P. and S. slips already described. These, of course, can only be prepared as trades are closed.

The net profit or loss shown is then carried to the *Customers Ledger* and there credited or debited to the appropriate account. All cash margin deposits are also credited to the customer on this ledger and all withdrawals debited. It is of interest to note here that in neither the Customers Option Ledger nor in the final Customers Ledger are total values shown, i.e., cost of purchases and proceeds of sales. Instead a system of differences is employed which in the option ledger omits a financial entry altogether and in the final Customers Ledger shows only the net difference between purchases and sales or sales and purchases. This plan is adequate for the reasons that purchases and sales are contingent upon ultimate delivery to be-

come executed contracts, and until such time no realized money value will change hands. Furthermore, in almost all cases involving hedging or speculation, the contracts will be offset before the time of delivery in which case the net difference is the only realized value involved.³

Customer Taking or Making Delivery.—We mentioned above in our illustration that a customer who has purchased a future has the alternative of later closing out this long position by an offsetting sale or of waiting until the month of delivery and receiving the amount of actual commodity called for. While the vast majority of trades are offset, it is not uncommon at all for customers to accept the actual commodity or if short in the market to deliver the actual commodity. If they accept delivery they then have the responsibility of directing what shall be done with the commodity. It may be sold in the spot market where located or shipped elsewhere. Very frequently it is held to be delivered upon a future sold for the current or a later month. If a sale of a future has been made upon which delivery is planned, the customer must then acquire the necessary supplies in the local market or elsewhere and see that it is shipped and placed in a "regular" warehouse in time for delivery.⁴ These duties the customer need not personally carry out, however, since the services of commission firms are available; but he is responsible in directing his firm to act and in assuming all of the attending storage, transportation, insurance, handling and incidental expenses.

An understanding of the procedure involved in making or taking delivery requires some consideration of the handling of trades through the clearing mechanism and this latter subject is to be considered in the following two chapters. We will need to limit our discussion here to points relating solely to the practice as it relates to the customer. We have already observed

³ Cf. Todman, F. S., *Wall Street Accounting*, Ronald, N.Y., 1921.

⁴ In certain conditions of emergency, delivery is permitted on track at the delivery point. In certain instances, delivery has also been permitted from other than "regular" warehouses though this is rare.

that when a customer sells a future through his broker the identity of the ultimate party on the opposite end of the contract is never determined. For this reason, when the customer is ready to make delivery upon the contract he simply informs his own broker treating him as the other party to the contract, giving to him either the warehouse receipt for the proper amount or a check for the balance of the contract price. The customer's position is then closed out with respect to his broker, an account sales is rendered by the broker showing the details of the complete transaction. Figures 10 and 11 show the usual form of warehouse receipt for grain and for cotton.

J. ROSENBAUM ELEVATOR A NO 40

Received in Store of J. Rosenbaum Elevator, Chicago, Ill.

Two hundred and fifty bushels
of TWO HARD WINTER WHEAT

to the order, hereon of J. Rosenbaum & Co. subject only

and the surrender of this receipt and payment of charges

It is hereby agreed by the holder of this receipt that the grain herein mentioned may be stored with other grain of the same grade by inspection. Loss by fire or heating of owners risk. This grain is subject to an advertisement with the Federal Grain Inspection Service. Department of the Railway and Warehouse Commission within twenty-four hours after the issue.

1400 Bushels 50 lbs.

CHICAGO ELEVATOR PROPERTIES, INC. LESSEE.

FIG. 10.—Warehouse receipt for grain.

Similarly where a customer has bought a future and intends to accept delivery, due to the fact that the specific identity of trades cannot be traced through brokers, the customer will look to his broker for the making of delivery of the warehouse receipt. When notified that it is ready to be taken up, he will pay the balance on the contract price and receive the actual warehouse receipt if he so desires with an account sales.

We have now reviewed some of the detail and legal obligations in the handling of a future trade for a customer. In the accounting procedure, only an outline description has been presented and this only with reference to accounts immediately concerned with the customer. Another set of commission house

records is concerned with inter-broker relations and this can be reviewed to best advantage in connection with the subject of clearing future trades.

2. KINDS OF ORDERS

There are three kinds of orders commonly used by customers in buying and selling futures. They are the "at-the-market" order, the "limited" order and the "stop-loss" order. These same three types of orders are also employed in the buying and selling of stocks involving exactly the same procedure in exe-

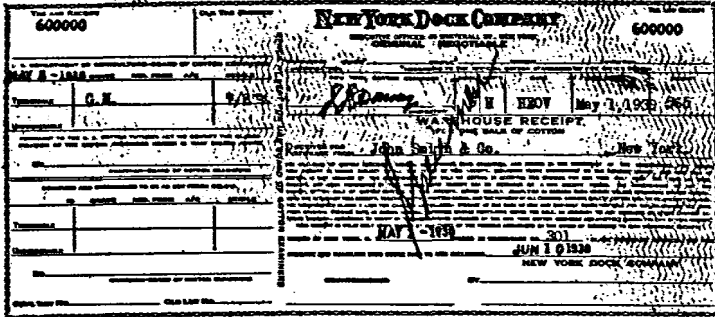


FIG. 11.—Warehouse receipt for cotton.

cution and constituting the method by which the vast majority of all trades is made. Because of their popular use and because they are not infrequently misunderstood to the financial regret of the user these three orders deserve more than passing mention. There are also several special orders, qualified in one or more ways, which will be reviewed briefly because of their occasional use.

At-the-Market Order.—In the illustration in the first section of this chapter an at-the-market order was employed. It read "Buy 10 May wheat at the market." The commission merchant entrusted with the execution of this order has a two-fold responsibility: (1) to act with due care and diligence as the legal agent of the customer and (2) to act according to the rules and

customs of the exchange of which he is a member. Since no price is stated in the order it may be executed at any figure so long as the broker faithfully meets his double responsibility. The market for May wheat is changing every instant of the trading session, this the customer knows, and it is assumed that in using this type of order he is willing to forego a measure of price uncertainty for the sake of promptness in execution. An at-the-market order means, then, to buy or sell as quickly as possible at the best price obtainable under the circumstances. The order must be sent at once to the pit and, upon its receipt there, must be executed at once by the pit broker. For the broker to purposely delay execution even with the excellent intention of obtaining for his customer a more favorable price is to openly violate the conditions of the order. On the other hand, there are times when the volume of trading is so large that orders cannot be promptly executed. These are almost always periods of rapidly changing prices also. At such times the at-the-market trader must be prepared for unusual price executions.

Promptness is more important than price in the execution of a market order. When the order arrives at the pit, the broker (if prior orders do not prevent) will promptly bid (or ask) the prevailing bid price. Failing immediate acceptance he will raise the bid an eighth. If it should happen that others are also willing to pay an eighth higher and succeed in buying he will as promptly raise the bid to a quarter higher. Under no circumstances will he permit the market to be taken away from him so that, while it falls or rises rapidly, he fails to execute his orders. It follows that customers using market orders must usually expect to sacrifice a small fraction for the sake of sureness and promptness of execution.

Limited Order.—Traders frequently use an order at a definite price instead of at the market to acquire a long or short position. Thus in our illustration Brown placed an order with his commission merchant to “buy 2 July cotton at 19.22.” The price stated in the order is 19.22 cents per pound and instructs

the broker to buy when and if the price reaches or goes below that point. Were this an order to sell, the broker would be obliged to sell as soon as the price rises to or goes above 19.22. In a limited order, then, the price inserted implies at that figure or better.

How soon this order can be executed will depend upon the extent of price movement of the July future and the distance away from the present price that the limit is placed. Thus, if during the past two or three days the price has on several occasions declined to or below 19.22 and at the time of placing the order is 19.24, it is altogether likely, though not a certainty, that the limit will be reached again in a short while. Or the limit may be far away from prevailing prices in which the prospective buyer or seller is willing to wait some time to acquire his position. To meet these situations, limited orders are often marked such as "G.T.C." or "G.T.W.," the first meaning "good till countermanded" and the second "good this week." If no time limit is added, the order is assumed to be good only for that day.

Limited orders are used in preference to market orders in a wide variety of situations. A common reason is for the mere satisfaction of determining the price of execution. Here a trader would rather occasionally forego making the trade than permit its execution at an uncertain market figure. This consideration increases in importance during periods when the market is fluctuating greatly. Traders at country points or distant cities frequently prefer limited orders⁵ because of a lack of exact knowledge regarding the market. Those buying and selling for a small profit and quick turnover prefer a limited order while the speculator interested in price movements of longer duration may consider a fractional variation as incidental and buy or sell at the market.

The broker's obligation in executing a limited order is to attempt to buy or sell as soon as the price is reached. Ordinarily

⁵ Cf. *Report of the Federal Trade Commission on the Grain Trade*, Vol. V, p. 208.

he is able to make the trade at the limit but in cases where the price moves quickly past the limit, a more favorable price will result for the customer. In those situations in which the price moves just to the limit and then recedes the broker is not responsible for an execution if in attempting to make the trade he fails to obtain a buyer or seller.

Stop-Loss Order.—The stop-loss order is in form a hybrid of the two previous types. Thus as an example an order might read, "Sell 10 December corn at 80, stop." In this case the prevailing price of December corn is somewhat above 80 cents per bushel and the owner of this amount of futures desires to sell his contract if and when the price declines to 80 cents. In so far as this order is dependent for its execution upon the market price reaching a fixed price it is like a limited order. But it differs radically from the latter upon the market reaching the particular price. When this point is reached or passed the stop order automatically becomes an at-the-market order and the broker is required to sell at once at the best obtainable price. This may be at the stop price placed in the order or below it or above it depending upon the action of the market immediately following the reaching of the specified price.

The nature of this order has frequently been misunderstood by those using it and almost always at times of severe price declines. In periods of normal trading, these orders are regularly closed at or very near the stop price and the customer comes to believe that the nature of this order requires that it be so executed. But in periods of rapidly falling prices, trades are few and orders numerous with the result that executions are frequently far from the price expected. To aid in a thorough understanding of the nature of this order the rules of the Chicago Board of Trade specifically define it:

Stop Order or Stop Loss Order.—An order to buy or sell when the market reaches a specified point. A stop order to buy becomes a market order when the commodity or security sells at or above the stop price. A stop order to sell becomes a market order when the commodity or security sells at or below the stop price.

The name of this order suggests its use: to stop a loss. This may be an actual loss or a paper loss. Thus a buyer may acquire 3 contracts of October cotton at 19.04 and immediately place a stop to sell at 18.90 indicating his desire to lose no more than 14 points per contract on the trade. The price may then move up to 19.60 in which case he has a paper profit in sight of 56 points gross per contract. He may now move up his selling stop to 19.50 in which case if the price reacts to or below the stop price his possible profit will be reduced by only 10 points, assuming the trade is closed at the stop price.

Limited orders are usually used to acquire or add to a market position, either long or short. Stop orders are usually used to close or reduce a market position long or short. Market orders are used for both purposes.

Special Kinds of Orders.—The rules of exchanges do not limit their members to the acceptance of only the three types of orders just described. Quite often the particular needs of a trader will require some variation from the usual form. This the firm will likely handle if there is reason to believe it will aid in building up its volume of business.

Spreading orders are frequently placed for the purpose of simultaneously buying one future and selling another or buying on one market and selling on another, the object being to later reverse one's position in each future or market and clip a profit. They may be at-the-market, limited or stop orders. Thus, "Buy 10 December oats and sell 10 May oats"; or "Buy 10 December oats and sell 10 May oats at 5½ difference"; or, "Buy 10 December oats and sell 10 May oats at 5½ difference stop." In the first instance, the order would be executed at once. In the second, it is the task of the pit broker to make the double trade with at least a 5½ cent difference in price. This involves, incidentally, considerable risk on the part of the broker since at the instant he is placing one-half of the spread the market may move adversely in the other. All that can be done then is to close out the part completed assuming any profit or loss and await another and more favorable opportunity. In

the third instance, the order becomes at the market when a difference of at least $5\frac{1}{2}$ cents has developed between the two futures and accordingly executed at once at the best possible prices.

Switching orders are identical in form with spreading orders but serve a different purpose. Here the trader (frequently a hedger) wishes to shift from a near-by to a more distant position. To do so he will need to buy one future and sell another. Or he may wish to switch from one market to another involving a similar operation.

Orders limited with respect to time are quite common such as "Buy 2 September rubber at the opening" or "Sell 2 September rubber at the close." Hubbard mentions, also, the occasional use of orders to be executed on the New York Cotton Exchange "at eleven o'clock" usually for English account, this being the time of closing of the Liverpool market.⁶ So also orders are occasionally conditioned upon the happening of some event or upon some contingency which may or may not occur.

Discretionary orders, permitting the commission merchant to use his own judgment in electing the precise time or price at which to buy or sell, are sometimes used. Their apparent justification rests in the fact that the commission merchant is in a better position to estimate the market than the customer, the latter perhaps located at some interior point. This may or may not be true. But at best it constitutes a type of business which brokers of the better type do not care to handle and which those whose standards are none too high are likely to encourage. The rules of the Chicago Board of Trade prohibit their members from accepting discretionary orders.

3. OTHER TRADING OPERATIONS

Short Selling.—In the illustrations developed thus far, situations of first buying and later selling have usually been chosen. Frequently, however, speculators and hedgers follow the op-

⁶ Cf. Hubbard, W. H., *Cotton and the Cotton Market*, pp. 240-44 for a review of types of orders used in the cotton trade.

posite course, taking a position on the short side of the future market. They sell short first and later buy in to cover their position. In its practical detail, provided delivery is avoided, this process involves the same body of operations as buying. An order may read, "Sell one May cotton," or if it is to be executed on the New York Cotton Exchange, simply "Sell one May." Whether this is in fact a short sale or not depends entirely upon the seller's market position at the time. If he holds no position in cotton, then he is obviously going short; or if he is already on the short side, then he is adding to his short position. If, however, he is long, then this is not a short sale but one in liquidation of his long position.

Assuming this to be an initial trade, the trader then takes a short position. He contracts to sell and deliver sometime during the month of May 100 bales of cotton in accordance with the rules and customs of the Exchange. As in the case of a purchase, his commission merchant assumes the status of a principal with respect to the party to whom sold, guaranteeing the trade and requiring of the customer a margin deposit for adequate protection. When the contract is closed by a purchase of one May, the broker will render an Account Sales, crediting the customer with the amount of the short sale and debiting him with the amount of the purchase, the commission and tax.

The operation of selling short in commodities is entirely different from that in securities. The term short selling means contracting to sell something you do not at the time possess but intend to acquire at a later date. The usual method of trade in stocks requires delivery the following full business day and to meet this obligation the short seller must resort to borrowing. This he does through his broker, borrowing from others who are willing to loan the necessary stock for the cash collateral they can obtain. But in commodities the contract of sale does not require delivery usually for many weeks or months. There is then no need to borrow nor to acquire in any manner the actual commodity called for in the contract as long as the contract is closed before the month of delivery or transferred to a

more distant month. The process of selling short in futures is thus much simpler than in stocks.

Switching a Trade.—Mention should be made of the operation of switching or transferring a position from one future to another. Trading in any given commodity usually centers in a limited number of futures. Thus for grains the months of May, July, September and December are favorites and for cotton January, March, May, July, October and December. Furthermore, due to the danger of a corner and to the necessity of making delivery, both hedgers and speculators trade in these futures several months before they expire. Thus the May future in grain is usually active during December, January, February, March and the first part of April; the July future during the latter part of April, all of May and the first part of June; the September future during the latter part of June, all of July and the first part of August; and the December future during the latter part of August, all of September and October and usually all of November.

As time passes it thus becomes necessary for traders to close out their contracts in one future and assume the same amounts in a more distant one if they desire to continue their position. The kind of order used for this purpose was discussed in the preceding section. By switching from time to time in this fashion a trader can continue long or short if desired for an indefinite period. It should be observed, however, that this switching is not without loss or profit. Expiring futures are not usually at the same price level as the more distant ones and as a result in closing one position and assuming another a corresponding loss or profit will result in addition to commissions and tax.

Job-lot Trades.—While there is a standard unit of trading in each of the various commodities, several of the exchanges make provision for trading in smaller quantities. Thus the regular unit of trading in grain is 5,000 bushels and in cotton 50,000 pounds or 100 bales. But on a number of the grain future markets it is also permissible to buy or sell amounts of 1,000

bushels or multiples thereof.* These contracts are known as job lots in contrast to regular lots of 5,000 bushels. So also in cotton, contracts are provided by the New Orleans Cotton Exchange and by the Chicago Board of Trade for a 50 bale unit of trading, this being the regular trading unit for the latter exchange.

These smaller sized contracts are designed to provide a market upon which cash trade positions may be more closely hedged. They also afford a market for traders whose capital is not adequate to buy and sell in larger quantities. As a rule traders in job lots or in contracts smaller than the regular unit must buy at slightly higher figures and sell at slightly lower figures than prevailing prices in the larger units. Where this is not the case, a relatively higher commission is likely to be charged.

Market Terminology.—Like many other fields of business activity, future trading has coined a distinctive body of trade terms. And, as in other fields, these terms are seldom self-explanatory. Thus the common expressions “buying” and “selling” are each used in two opposite situations. One may buy to “accumulate” a long position, or one may buy to “cover” a short position. Similarly one may sell to “liquidate” a long position, or one may sell “short” to assume or add to a short position. If a trader is entirely out of the market he is “even.”

One is a “bull” and is said to be “bullish” when he believes prices are going to rise and a “bear” or “bearish” when he expects them to fall. The bulls who enter the market in response to their views constitute the “longs” and the bears similarly the “shorts.” Some traders accumulate a “long line,” some “take profits,” others “close out” or “run to cover.” Depending upon their chosen field, they may “scalp,” “spread,” or “hedge” through their market operations. So we might enumerate a great many other terms in daily use. Most of these are best reviewed at the point where appropriately used to describe a par-

* Upon the Chicago Open Board of Trade the 1,000 bushels contract constitutes the regular unit of trading.

ticular practice. They constitute a body of expressions common to all fields of speculative activity and serve to symbolize a varied and extensive body of trade practice.

4. SUMMARY

An attempt has been made in this chapter to outline the form of future trading. Only the operations in common use upon our principal commodity exchanges have been described. A typical order as received by a commission merchant was traced through its execution, including the various operations involved, the legal obligations assumed by broker and customer, the nature and extent of margin requirements, the closing of the trade, the accounting involved and the statements rendered. The various kinds of orders in common use were examined and illustrated. Other market terms and trading operations described include short selling, the switching of trades and the buying and selling of job lots.

The purpose of this chapter is to lend reality to a subject difficult at best to visualize. One may, of course, study the broader and more fundamental aspects of future trading without extensive reference to the mere mechanics of operation. But all too often where this is attempted important errors in theory are made due to some oversight or false assumption regarding familiar matters of routine. An understanding of ordinary trading operations should avoid trouble of this kind. It will in any event permit one to approach the more difficult phases of the subject with a greater measure of confidence.

CHAPTER XI

CLEARING OF FUTURE CONTRACTS

1. THE NEED FOR A CLEARING SYSTEM

In the preceding chapter we reviewed in some detail the procedure of trading. Our point of view was largely that of the individual customer: how he would proceed in buying or selling a future, the types of orders he might use, what legal obligations he and his broker must necessarily assume and the forms and statements of account kept and rendered to him by his broker. The present chapter forms a complementary part to the preceding one. There the relationships of customer to broker were emphasized; here the relation of broker to broker will be developed. In the former chapter certain of the outer steps in trading procedure were outlined; in the present chapter some of the important inner processes will be examined. Necessarily the present chapter covers less familiar territory to the layman than the former.

Inter-broker Transactions.—When a commission house buys a future for a customer, it does so by buying from some other firm or broker. In this process the two brokerage firms treat each other as principals despite the fact that each may be acting as agent for a customer. This has been found necessary because of the circumstances of trading—the difficulty and inadvisability of each broker disclosing the identity of his customer in each trade made. Accordingly in any sequence of trades between two ultimate customers in which one becomes long and the other short, there is also a corresponding long and short position set up between the two brokers entirely independent of that of the customers.

This situation is illustrated in Figure 12. C_1 , a customer, sells through his broker, B_1 , one contract of October cotton on June 10. His broker sells to another broker, B_2 , who is buy-

ing for a customer of his, C_2 . Here C_1 sells to C_2 subject to the right of both B_1 and B_2 to substitute some other party in place of C_2 . In this general sense, also, C_2 has purchased from C_1 . In addition, B_1 is a seller to B_2 and the latter a buyer from B_1 . To further emphasize the independence of the trade between the two brokers, it should be observed that if either C_1 or C_2 defaults on his contract this in no way frees the brokers in their agreement with each other.

To throw more light on this problem, let us assume that on June 12, two days later, C_1 buys in his contract of October cotton and C_2 sells out his contract. These trades will, of course,

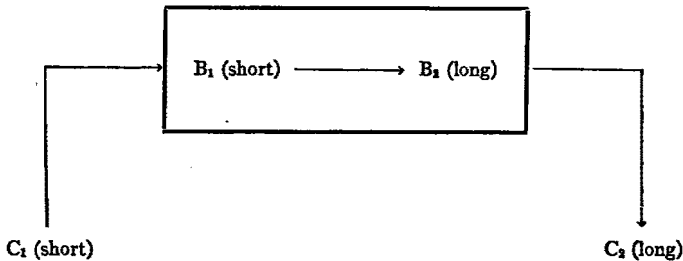


FIG. 12—Market positions set up between brokers and customers as a result of a transaction in futures.

be made through B_1 and B_2 respectively. But in executing the trades it is not likely that the two brokers will deal with each other. Their bids and offers are made in the open market and closed with the first to accept. The likelihood of C_1 and C_2 closing their trades at the same instant and of B_1 buying from B_2 thus becomes rather remote. Instead B_1 will probably buy from some third broker, B_3 , and B_2 sell to a fourth, B_4 . The entire situation will then appear as in Figure 13.

In Figure 13 both C_1 and C_2 have closed their trades, perhaps paid their loss or taken their profit and proceeded on their way. But this has not released their brokers B_1 and B_2 . They have set up binding contracts between themselves and with other brokers to which they are definitely committed. So we might add to our illustration scores of similar trades all of which would reveal definite market positions for customers

and other and independent market positions for brokers. We have seen how customers close out their market positions. Let us now examine how brokers close out their market positions with each other.

The Accumulation of Offsetting Trades.—In the buying and selling of futures throughout each trading session, innumerable contracts are being continually set up between brokers. An average day's trading upon the Chicago Board of Trade in wheat futures amounts to 35,000,000 bushels or 7,000 contracts of five thousand bushels each. In cotton futures, an average day's

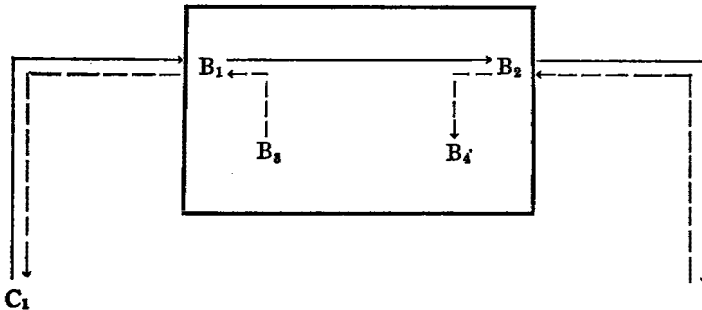


FIG. 13—Market positions set up between brokers as a result of two completed transactions by customers.

trading upon the New York Cotton Exchange exceeds 250,000 bales or, in contracts of one hundred bales each, 2,500 contracts.¹ These trades are being made throughout the trading session in various amounts in various futures and at varying prices. They link together the body of brokers into a veritable network of contractual relations.

The group of brokers or brokerage firms through which this business passes is rather definitely limited in size. While the membership of the Chicago Board of Trade, for example, exceeds 1,600, by no means is this entire membership active.

¹The actual amount of trading varies widely from day to day and from year to year, the figures given here being conservative averages based on the 5-year period, 1925-29. See, for cotton, Table 4 above and for wheat U. S. Dept. of Agr. Stat. Bull. No. 31 entitled *Wheat Futures*, 1930.

Many of the memberships are held by trade interests or individuals purely for the benefit of reduced commissions and as such their status is that of customers and not brokers. In many cases, also, firms hold several memberships so that the number of active brokerage houses probably does not exceed three hundred and of these the thirty leading houses probably handle 50 per cent of the entire volume of trading.³ This same situation in general prevails on other exchanges.

Margins and Accounting Affected.—This concentration of inter-broker transactions within a very limited number of firms results in the same firms frequently trading back and forth with each other throughout each trading session thus building up many market positions which in character offset one another. What is most needed in this situation is some system to match up trades of like character and to clear them from the records of the brokers concerned. B₁ sells to B₂ 5,000 bushels of July wheat at \$1.39¼ per bushel. Five minutes later B₂ may in turn, and purely by circumstance, sell to B₁ 5,000 July at \$1.39½. If an adjustment could be made for differences in prices, these and many similar trades could be cancelled and as a result the accounting burden of carrying these contracts forward day by day eliminated. Without such a clearing system each outstanding contract would have to be carried, along with daily additions in trading, week by week and month by month until the delivery month arrived. Then warehouse receipts would be passed and repassed among firms until they ultimately resided in the hands of those net long in the market.

The seriousness of this problem is greatly magnified when we consider the amount of margins involved. It will be recalled that not only are margins necessary to protect customer-broker relationships but also inter-broker commitments as well. If for every trade both the buying broker and the selling broker were required to deposit a margin, it would be but a very short while until further trading, for the time being at least, would cease.

³ Cf. *Report of the Grain Futures Administration*, U. S. Dept. of Agr., 1924, p. 21.

2. DEVELOPMENT OF CLEARING METHODS

Pre Clearing-House Methods.—It must have been at a rather early date that some solution to the problem we have just described was evolved. Future trading was carried on in grain and provisions in large quantity in the late sixties and it is altogether probable that at this time methods of mutually clearing trades had been devised by brokers. There are a number of court cases which show various clearing devices to have been well established in the seventies.³ In one of these early cases, the court relates at some length the exact manner in which contracts set up between brokers were cleared and the process described included both direct settlement and the “ring” method, plans presently to be described. This case occurred in the year 1877 and the Court pointed out that the defendant’s actions were “in accordance with the general custom and usage obtaining in such matters upon the Board of Trade.”⁴ There were four methods of clearing trades in popular use among brokers before any sort of a common clearing house for all members had been devised. They were all mutual arrangements in which brokers could enter or not as they chose. Being greatly to a broker’s advantage and especially if his financial status was limited, they were methods widely employed.

Direct Settlement.—The first and most obvious of these four methods is that of direct settlement. Where B₁ has sold to B₂ a given amount of a particular future and later it happens that B₂ has sold an equal amount of this same future (and commodity) to B₁, the most economical and convenient procedure is for each to cancel this dual arrangement. Since their relations to their customers are in no way affected by these inter-broker contracts and since to carry them forward to the month

³ Some of those cited in Dewey, *op. cit.*, pp. 144 ff. include *Clarke v. Foss*, (1874) 7 Biss 540; *Kent v. Miltenberger*, (1880) 13 Mo. App. 503; *Melchert v. Amer. Union Tel. Co.*, 11 Fed. Rep. 193; *Beveridge v. Hewitt*, 8 Bradw. 467; *Irwin v. Williar*, 110 U.S. 499; *Sawyer v. Taggart*, 14 Bush, 727.

⁴ *Oldershaw v. Knoles*, 4 Bradw., 64, cited in Bisbee and Simonds, *op. cit.*, pp. 47-49.

of delivery would only result in B_1 handing B_2 a warehouse receipt for the amount of commodity called for and B_2 in turn handing it back to B_1 each in turn paying the purchase price, the easiest thing to do would be to set off these trades against each other at once and adjust any difference in price. This, accordingly, was done in every instance where possible.

It should be observed that these two trades need not have occurred on the same day. One might have been made on January 12 and the other a month later. They would be offset immediately following the making of the second trade. It should also be observed that they need not grow out of trades of the same size. B_1 might have sold 15,000 May corn to B_2 and the latter have sold 10,000 May corn to the former. Then 10,000 bushels could be cleared by direct settlement. Figure 14 is an

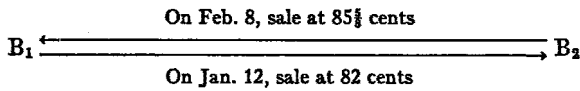


FIG. 14—Direct Settlement of 10,000 bushels of May corn futures.

example of direct settlement in diagrammatic form. In this illustration after having checked off these two trades at the close of trading on February 8, B_1 would send B_2 a check for \$362.50 being the $3\frac{5}{8}$ cents difference in price on 10,000 bushels.

Ring Settlement.—Only a fraction of the current commitments between brokers could be settled directly. More often the broker to whom a future was sold was not the same as the one from whom bought. Frequently these trades could be cleared, however, by forming what was known as a “ring.” B_1 has sold to B_2 , and B_2 to B_3 and B_3 to B_1 . By bringing these three parties together a triangular arrangement could be entered into. Or there might be four or five or even more in the circular chain. This situation is illustrated in Figure 15.

Here five firms have formed a ring to close out their respective positions. It might have been formed at the close of trading on January 12 or it might have been formed later. The

process of determining the presence of a ring was not an easy task. Apparently in the earlier years runners were sent from office to office seeking to close up series of trades. In our illustration B_1 might seek to form a ring to include B_2 and B_3 . He would call on B_2 and inquire whether he had open 10 May corn with B_3 . Failing this he would inquire with whom he does have 10 May corn open. B_2 would give him the name of B_3 . Asking B_2 to hold these trades out temporarily he would proceed to B_3 and so on to B_4 until he found someone having 10 May corn open with B_3 . He would then retrace his steps to definitely close the ring. Price adjustments are again necessary growing out of

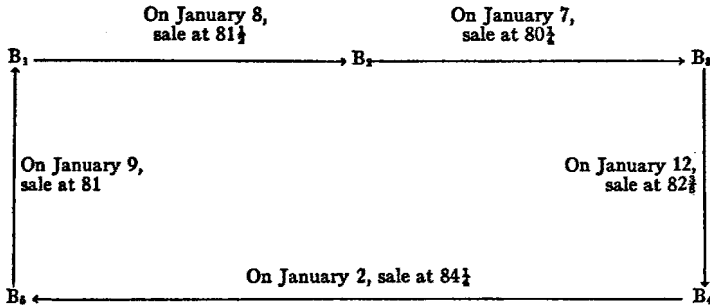


FIG. 15—Ring settlement of 10,000 bushels of May corn futures.

differences in purchase and sales prices and these were made directly between brokers.

Settlement by Transfer.—While the ring method of settlement was the principal one used, it did not meet every need. Not infrequently a broker was unable to form a ring despite the fact that he had purchased and sold an equal quantity; or if formed the ring might break before final settlement due to an error or someone withdrawing. Where such was the case it sometimes happened that an individual broker could clear his own trades by arranging a transfer. Thus B_1 has sold 10 May corn to B_2 and has bought 10 May from B_3 ; but B_2 has not sold 10 May to anyone nor has B_3 bought from anyone. In this situation a ring cannot be formed nor can direct settlement

(which is really a two party ring) be used. Accordingly B_1 asks B_2 if he would be willing to take up B_3 as his principal instead of himself, B_1 . If B_2 consents, B_1 will similarly proceed to B_3 to get his consent. If approved, B_1 can then clear his books by an adjustment of price differences. This is illustrated in Figure 16. Here B_2 and B_3 are pictured as having set up a new

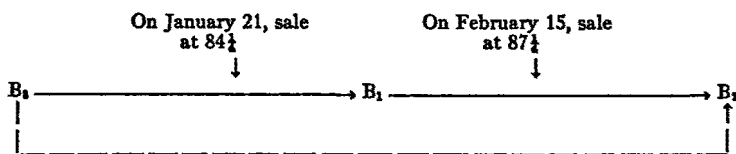


FIG. 16—Settlement by transfer of 10,000 bushels of May corn futures.

contract. The price at which it is set up can be any figure though we will assume it to be at $84\frac{1}{4}$. Then B_2 will pay B_1 three cents per bushel to adjust the price differences. By this process B_1 's trades are cleared through the accommodation of the other two brokers.

Settlement by Warehouse Receipt or Transferable Notice.—

Those contracts which could not be closed by direct settlement, by ring or by transfer had to be carried forward to the delivery month even though the broker's trades might balance. Thus in the preceding illustration, had either B_2 or B_3 refused to permit a shift of principals then B_1 could not have cleared his trades. Accordingly he might have carried them forward day by day until the month of May arrived. Since he is not interested in actually receiving corn or in acquiring corn to deliver but only desires to clear his trades, he will await the day when B_3 , who has sold to him and who has the option of electing the day of delivery, chooses to make delivery. When he does, B_1 will pass the certificate on to B_3 , thus finally clearing his position. So also B_2 may have sold to B_4 and he in turn will pass the certificate along. In this manner trades which could not or had not previously been cleared were finally settled, it being necessary of course to make a price adjustment in each step.

In diagrammatic form this process is shown in Figure 17.

Here B_2 chose to deliver on May 4 receiving from B_4 86 cents per bushel, B_1 paying B_2 $2\frac{7}{8}$ cents per bushel and B_2 passing on $2\frac{1}{2}$ cents per bushel to B_4 . The trades of B_1 and B_2 are cleared in this series.

We have referred to the form used in this final method of settlement as a certificate. More specifically it took the form of a warehouse receipt in the early years of future trading and later of a transferable notice. Just at what point this change took place cannot be precisely determined though it was probably sometime in the seventies.⁵ We have already had occasion to describe the warehouse receipt⁶ in common use. We will need at this point to consider more fully the nature of the

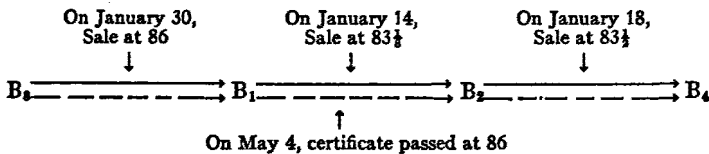


FIG. 17—Settlement by warehouse receipt or by transferable notice of 10,000 bushels of May corn futures.

transferable notice since its use has formed and continues to form an important step in the clearing process.

Transferable Notice.—In Figure 18 is shown a copy of the transferable notice in use upon the Chicago Board of Trade and filled in with typical entries as they appeared before the development of complete clearing methods. A portion of the reverse side is shown at the bottom showing the form of endorsement. The purpose of the transferable notice (or delivery notice) is two-fold: (1) to serve notice upon the buyer that the seller is ready to make delivery upon his contract and (2) to be used in place of the warehouse receipt in passing from firm to firm in settlement of outstanding contracts. Accordingly it is addressed to the buyer and informs him: "We have

⁵ Cf. *Report of the Federal Trade Commission on the Grain Trade*, Vol. V, p. 171.

⁶ *Supra*, p. 174.

on hand ready for delivery the following described Warehouse Receipts, and hereby make tender to you of the same, in fulfillment of our contract of sale. . . ." Then follows a descrip-

This Notice is deliverable on Contracts in the Exchange Hall in accordance with the Rules of the Board of Trade of the City of Chicago

No. 1372 DELIVERY NOTICE

Flack Brothers

S. P. and Company Chicago, May 2 1930

We have on hand ready for delivery the following described Warehouse Receipts, and hereby make tender to you of the same, in fulfillment of our contract of sale to you of 5000 bushels contract wheat at 138

DATE	WAREHOUSE	Receipt Number	GRADE	QUANTITY		STORAGE	
				Bush.	Lbs.	Rate	Amount
4 27 '30	S. C. Box 'C'	1157	27. Hd	5007			
			del. price	138			
			Less storage	230.50			
				\$6679.50			

Loeb Bros

E. & O. E.

Per *Flack Bros Cash*

(REVERSE SIDE)

No. 1372

To	DELIVERED	Time
<i>S. P. and Company</i>	@ 140 3/4	8:31
<i>Smith and Smith</i>	@ 127 1/2	8:32
<i>F. J. Lee</i>	@ 139 1/2	8:44
<i>Chicago Bros</i>	@ 140	8:45
<i>J. L. Lewis and Co.</i>	@ 140 3/4	8:47

FIG. 18—A delivery or transferable notice used in the clearing of trades.

tion of the commodity to be delivered, its location, grade, weight, etc.

In the earlier clearing methods, there was a definite time during which these notices could circulate. Representatives of the various firms met at this time each day during a delivery

month. A seller issuing a notice then served it upon the buyer. If the buyer in turn desired to pass it on, he was compelled to do so within a limited period of time (for grain on the Chicago Board of Trade, 5 minutes), otherwise the notice was "stopped" and the buyer was required to return it to the original seller with his certified check for the amount called for and take up the warehouse receipt. If he passed it on to someone to whom he had sold he indorsed it as shown in Figure 18 inserting his contract price and the exact time. And so a given transferable notice might be passed on from firm to firm to fulfill and thus to clear a score of outstanding transactions, ultimately to lodge in the hands of a buyer who had not sold. It can be readily seen that in this process of certificate passing, the transferable notice is better adapted to the purpose than the warehouse receipt since the latter would soon be soiled or might occasionally be misplaced or lost.

The Clearing of Money Balances.—A first step in the direction of a complete clearing system was made by the Chicago Board of Trade in 1884.⁷ They formed at this time an organization designed to handle the money balances growing out of trades cleared by one of the four voluntary methods we have just described. Members, desiring to adjust these money differences were required to do so through a Clearing House if they were clearing members or if not clearing members to have their trades handled by a member. Membership in the Clearing House was voluntary and usually availed of by the larger firms, the smaller houses and individuals having their trades cleared through a member. By this arrangement the Clearing House was assured of having to handle all inter-broker balances on cleared trades; and since for every debit to one firm there must be an equal and opposite credit to another, the checks received and the drafts paid out had to be equal each day. In addition to the handling of these money differences, the Clearing House also functioned as a central point for the daily exchange of written confirmations of all trades between clearing members

⁷ Cf. Bisbee and Simonds, *op. cit.*, p. 46.

and also for the exchange of memoranda between members of the respective amounts of the daily debits or credits growing out of cleared trades. It was, therefore, a sort of glorified post office for the convenient interchange of materials between members.

The New York Cotton Exchange formed a similar organization in 1896.⁸ But instead of having these balances handled through a separate clearing house they arranged with a New York bank to "run a clearing house for the money involved in all settlements."⁹ Itemized lists of collections and payments were submitted by each firm and the net amount accompanied by a check made payable to the bank or by a draft drawn upon the bank. The bank consented to audit these items and to honor the drafts if the entire body of reports was in balance. A system of fines for each error made served in both systems to stimulate accuracy.

The Use of a Settlement Price.—This earlier method of clearing money balances employed a settlement price to measure the amount of each balance. This feature has been retained in the complete clearing systems in use at the present time (though for a different purpose) and therefore deserves special consideration. It can be most easily explained by means of an illustration.

We will take as the basis of our illustration the five party ring settlement shown in Figure 15, page 191. In this case five firms have arranged to offset their mutual trades of 10 May corn. Each owes another the contract price per bushel on 10,000 bushels. We may then arrange this series of indebtednesses as shown in Figure 19. In this situation it is easy to see that B_1 wants to receive $\frac{1}{2}$ cent per bushel—the difference between his sales price of $81\frac{1}{2}$ cents and his purchase price of 81 cents. So also B_2 should pay $1\frac{1}{4}$ cents, B_3 receive $2\frac{3}{8}$ cents, B_4 receive $1\frac{7}{8}$ cents and B_5 pay $3\frac{1}{4}$ cents. And it is also clear that the total of the amounts to receive and to pay balance, being $4\frac{1}{2}$

⁸ New York Cotton Exchange, *Yearbook*, 1927-28, p. 23.

⁹ Cf. Hubbard, W. H., *op. cit.*, pp. 262-264.

cents each. But it is not so easy to see just from whom B_1 will receive his $\frac{1}{2}$ cent per bushel nor to whom B_2 will pay his $1\frac{1}{4}$ cents, and so on. They could of course each pay the full sum called for but this would be an expensive and unnecessary use of credit. And if all five parties met and compared net amounts due or to be received they could easily arrange a distribution but this, too, involves considerable inconvenience.

This difficulty is easily solved through the use of a settlement price,—a standard to which all will measure the amounts to be received or paid. Thus suppose in our illustration such a

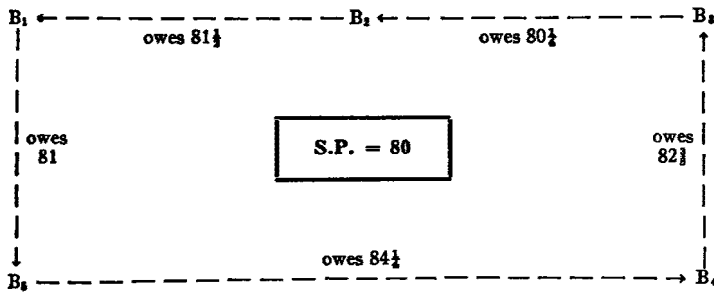


FIG. 19—Clearing money balances through the use of a settlement price.

price to be 80 cents. Then B_1 would expect to receive $1\frac{1}{2}$ cents from B_2 and to pay 1 cent to B_3 ; B_2 would expect to receive $\frac{1}{4}$ cent from B_3 and to pay $1\frac{1}{2}$ cents to B_1 , and so on. Here instead of measuring amounts to be paid or received from zero, which would be the case were the full purchase price to change hands, the base used is 80,—a figure in the proximity of all of the actual prices. It follows that the nearer this settlement price is to the average of all the actual prices the smaller these entries will be; and it can be easily demonstrated that any figure chosen will do justice to all of the parties. A settlement price, then, is merely a minor convenience. It represented each day the nearest even closing price for grain on the Chicago Board of Trade and the 10:30 A.M. price for cotton on the New York

Cotton Exchange,¹⁰ each determined by an official of the Exchange. These prices were always representative of current prices by this daily adjustment and, in so far as some or all of the trades cleared were currently made, it served as a close standard from which to measure.

This settlement price was similarly employed in measuring differences growing out of direct settlements, settlements by transfer and settlements through the use of the transferable or delivery notice. In settlement by transfer the new contract set up was, at the settlement price with differences adjusted to this price; in the use of the transferable notice, actual delivery of the commodity was made at the settlement price with differences in each case adjusted to this price. In reporting daily to the Clearing House under this system of handling money balances, each firm prepared a list of the trades it had cleared that day through any of these four methods. This list stated in the first column, classified by futures and commodity, the firms with whom it had cleared, in the second column collections (i.e., credits with the Clearing House), and in the third column payments (i.e., debits to the Clearing House). Collections and payments, each measured to the settlement price, were then totaled and the net determined,—if a collection, then a draft for that amount drawn on the Clearing House (or for cotton on the clearing house Bank) accompanied the list, if a payment, then a check for that amount was attached.

Adoption of Complete Clearing Methods.—The Minneapolis Chamber of Commerce was apparently the first among the commodity exchanges of this country to work out a modern clearing plan. Their system, put in operation in 1891,¹¹ is substantially the same today and is used upon all of the future commodity exchanges of this country.¹² Dewey states that in

¹⁰ Cf. Hubbard, *op. cit.*, p. 263.

¹¹ *Articles of Incorporation of the Chamber of Commerce Clearing Association*, p. 4.

¹² With the doubtful exception of the Toledo Produce Exchange which has no clearing facilities, clearing all trades by mutual arrangements. Their trade is in seed futures which during recent years has been very small.

1886 the Consolidated Stock and Petroleum Exchange of New York had at that date in regular operation a clearing house through which deliveries of oil in the form of pipe-line certificates were made each day.¹³ But this was not a system of clearing future trades but rather of clearing current deliveries of stock,—a forerunner of present-day methods of clearing stock certificates and in some respects more advanced than any American stock exchange employs at the present time.

Three years after the Minneapolis Chamber of Commerce had installed its system, a similar one was adopted by the Duluth Board of Trade; in 1899 a similar plan was inaugurated by the Kansas City Board of Trade,¹⁴ in 1901 by the Milwaukee Chamber of Commerce and in 1904 by the New York Produce Exchange. Others followed, the New York Cotton Exchange adopting the modern system in 1915, the New Orleans Cotton Exchange in 1924, and the Chicago Board of Trade finally in the fall of 1925. All of the newer exchanges formed within the past ten years have been organized to include the present-day system.

Resistance to Improvement.—Modern clearing systems have four principal functions: (1) they clear trades between brokers; (2) they handle the adjustment of money differences growing out of cleared trades; (3) they require an impartial and prompt adjustment of margins between brokers; and (4) they direct the making of deliveries. Of these four functions we have seen that earlier methods in part accomplished the first two. We will now need to examine in the following chapter in some detail the manner in which earlier methods have been materially improved by present-day plans.

It is in place here to observe briefly that the former methods were not abandoned nor the latter adopted by our leading exchanges without considerable resistance. It was long thought by

¹³ Dewey, *op. cit.*, p. 161.

¹⁴ Cf. Tanner, T. J., "The Kansas City Board of Trade Clearing House," *Annals of the Amer. Acad. of Pol. and Social Science*, Sept., 1911, p. 239. It was organized at this time apparently as a department of the Board of Trade, not being incorporated until 1913 as the Grain Clearing Company.

many members of these exchanges that a measure of secrecy is lost in entrusting important information of inter-broker dealings to a clearing house body. But it has been found that the advantages gained in efficiency and fairness far outweigh this sacrifice of secrecy. Like most bridges that are crossed before arrival, it has also been found that little can be known through the operations of the clearing house either of significant value or that would not be as fully known through the operation of earlier methods.

Two other alleged advantages of the older system should be mentioned. It was argued that where trades could be cleared only by mutual agreement, it served as a restraining influence upon financially weaker members. A larger firm could go along for some time without "ringing out," but the smaller and weaker had to take care continually, because of the margins required, that their trades were closed. It can be easily seen, however, that this sword of the larger firms has two edges, it being possible by this same means to considerably hamper a small but enterprising firm to the advantage of the larger one.¹⁵ The other advantage claimed was in a saving of credit. It was the general practice under the old plan, and especially so at Chicago, for brokers to require margins of each other commensurate with financial strength, confidence, and friendly relations. Accordingly between some firms little or no margins were put up; in other cases full amounts were exacted. Under the complete system the same standards serve for all; and while this may require larger margin for some, it is eminently fairer than the earlier plan.

¹⁵ Cf. Hubbard, *op. cit.*, pp. 264-265; also *Report of the Federal Trade Commission on the Grain Trade*, Vol. V, p. 240 ff.

CHAPTER XII

CLEARING OF FUTURE CONTRACTS (continued)

3. PRESENT-DAY METHODS OF CLEARING CONTRACTS

It is not advisable to fully describe each of the various clearing plans in use at the present time. They are very much alike in essential features and for that reason a description of any one will serve our purpose with an occasional reference to minor variations appearing in the others. Accordingly we will rely mainly on the system in force on the Chicago Board of Trade as the basis of our analysis. For some of the more important steps in clearing, however, we will also present the forms used by the New York Cotton Exchange Clearing Association¹ since they show in greater detail certain essential information.

Form of Organization.—All of the present-day plans function through some form of clearing house. With one exception,—that of the Chicago Open Board of Trade which operates an agency for the purpose,—the clearing house is a separate corporation formed specifically for the purpose. Its powers include the privilege of dealing in those commodities handled by the exchange, “to settle, adjust and clear for a compensation contracts for the purchase and sale of commodities,” to adjust and clear money balances and in other ways to handle the business of the exchange. The form of organization includes a Board of Governors elected by the stockholders, this Board having general supervision. The officers include a President, Vice-President, Secretary, Treasurer, etc., with the immediate direction of the work of the Clearing Association vested in the Secretary or a Manager. To be a stockholder and hence a member in the Clearing Association or Corporation it is necessary first to be a member or member firm of the Exchange and in

¹ And also used in substantially the same form by the New Orleans Cotton Exchange, the New York Coffee and Sugar Exchange and most of the other exchanges.

addition to show financial responsibility commensurate with one's trading. While the number of shares of stock held by each stockholder varies with the volume of business he or his firm does (in order to equitably distribute the financial burden of the Corporation), each stockholder has but one vote at meetings or elections.

The regular expenses of operation are raised through a fee levied on all members of the Clearing Corporation in proportion to the volume of items cleared.² If this fee is larger than needed a refund in the form of a dividend is paid at the end of the year. Thus if a firm does a considerable volume of business each year it will pay to belong to the clearing association since the fees plus the cost of purchasing the necessary stock will be smaller than the amount charged by another member to clear trades for it. But for the smaller firms it is more economical to have their trades cleared by someone else. With a membership in the Chicago Board of Trade of over 1,600, there are only 125 to 150 clearing members and a similar ratio is true for other exchanges.

Relation of Clearing Corporation to Its Members.—The theory underlying the complete clearing system is that in all inter-broker transactions the Clearing Corporation shall be substituted as seller to all buyers and as buyer to all sellers. We have already seen that under earlier methods this plan was occasionally employed between brokers in settlement by transfer. Here it is proposed to make a general and complete transfer of trades, substituting the Clearing House in each case for the broker with whom the trade was actually made. If B_1 sells to B_2 , each will at the close of trading that day substitute the Clearing Corporation for the other,— B_1 then looking to the Clearing Corporation to fulfill his sale and B_2 similarly turning to this body to fulfill his purchase.

It can be seen at once that by this arrangement only two party "rings" need be formed, or in other words direct settle-

² For the Chicago Board of Trade Clearing Corporation the fee (1930) is $1\frac{1}{4}$ cents per 5,000 bushel for grain and $1\frac{1}{4}$ cents per 50 bales of cotton.

ments, and that a maximum number of these direct settlements are automatically made possible at the close of every trading session. Suppose B_1 to have bought from B_2 and to have sold to B_3 . Then by substituting the Clearing House on the opposite end of each of these contracts, the sequence becomes: $B_2 \rightarrow C.H. \rightarrow B_1 \rightarrow C.H. \rightarrow B_3$. Here B_1 can at once clear, having both purchased and sold to the same interest. So in every series of trades whether with the same parties or different parties, if they are for the same commodity and future and balance in sales and purchases, they can be cleared at once with the Clearing House.

The By-laws of the Chicago Board of Trade Clearing Corporation read as follows on this point:

Buyers and sellers of commodities on change for future delivery may tender their contracts for clearance to the clearing house, and if the clearing house accept the same, the buyer shall be deemed to have bought such commodity from the clearing house, and the seller shall be deemed to have sold such commodity to the clearing house. Such substitution, shall be effective in law for all purposes. The original buyers and sellers shall be released from their obligations to each other, and the clearing house shall be deemed to have succeeded to all the rights, and to have assumed all the obligations of the original parties to such contracts.

This provision is clear and unequivocal. Through it the Clearing Corporation assumes the entire responsibility of the original parties in law and in fact.⁸ If for any reason a seller subsequently fails to fulfill his agreement to the Clearing House, this does not free the latter with respect to the opposite or ultimate buyer; so also if a buyer fails to take up and pay for a contract made with the Clearing House, the latter cannot turn

⁸Substantially this same clause appears in the rules of the other leading clearing corporations. An exception is to be found in the *Rules* of the Duluth Board of Trade Clearing Association (p. 10). Here the Association specifically states its legal position to be that of "agent or trustee for the members making such trade" and denies responsibility in event of a member defaulting. Under this plan the one suffering the consequences of default is determined purely by the circumstance of having a trade open at the time. This is not likely to be the original party to the contract and is, therefore, inequitable in its effect.

back to the original seller to recover. While this responsibility on the part of the Clearing Corporation appears weighty because of its magnitude, it is not in fact, due to the continuous check kept upon each of its members through an adequate and uniform plan of margins.

Confirmation of Trades.—The first operation performed by the Clearing House each day is the distribution of confirmation slips. This minor function was, as we have seen, a detail of earlier methods and consists of simply sorting the slips as

Chicago, **JUL 18 1930**
192

We hereby confirm **PURCHASES**
made by us today under the rules of the
Chicago Board of Trade, as follows, of
A. B. and Company

Amount	Delivery	Kind of Property	Price
10	<i>May</i>	<i>wheat</i>	<i>197³/₈</i>

RAYMOND B LEE & CO.
PER RLL

FIG. 20.—Confirmation slip used to verify oral trades between clearing members.

they are received and redistributing them in a system of boxes. Figure 20 shows such a slip used for grain on the Chicago Board of Trade. It was prepared by Lee and Co. from memoranda returned from the pit. A similar slip will be prepared by A.B. and Co. except that it will read "sales" instead of "purchases." These the Clearing House will receive and distribute,—Lee and Company's slip being placed in A.B. and Company's box and the latter's slip going to the former's box. A representative from each firm will then come to the Clearing House and get this slip along with many others and check them against their own records. If they disagree in any particular the difference will have to be corrected between the two firms, otherwise this item cannot be handled by the Clearing House. Upon the New York Cotton Exchange and certain of the other exchanges these confirmations are exchanged and signed by representatives of the various firms on the floor of the exchange immediately following the trading session.

Figure 20 shows such a slip used for grain on the Chicago Board of Trade. It was prepared by Lee and Co. from memoranda returned from the pit. A similar slip will be prepared by A.B. and Co. except that it will read "sales" instead of "purchases." These the Clearing House will receive and distribute,—Lee and Company's slip being placed in A.B. and Company's box and the latter's slip going to the former's box. A representative from

Purchase and Sales Sheet.—During the course of each trading session the trades made by a firm are being currently recorded. They are as a rule entered first in a record book known as the blotter,—from whom bought or to whom sold, amount, commodity and future, price, and the name of the customer from whom purchased or to whom sold. From this record a purchase sheet and a sales sheet is prepared by each clearing firm for the Clearing House and as soon as the trading session is over it can be completed. The confirmation slips are then checked against it and if each entry checks it is ready for the Clearing House. While the regulations usually provide 7:00 P.M. as the time limit for the clearing house reports to be in, they are usually ready by 4:00 or 5:00 o'clock.

Figure 21 is a somewhat abbreviated but representative sample of a purchase sheet and of a sales sheet as used upon the New York Cotton Exchange. Here the purchases of S.R. and Co. are listed showing from whom bought using a firm number, the amount, the future, the contract price, the settlement price established by the Exchange for that day and whether the Clearing House is to debit or to credit S.R. and Company's account. Similar information is shown for the sales sheet, with summary totals for amounts and debits and credits for both.

The Variation Margin.—The point deserving special consideration in these records of purchases and sales is the adjustment of each price to the settlement price, the latter being determined by the closing price that day. For example, in Figure 21, S.R. and Co. bought of H.D. and Co. (Number 10) 200 bales of March cotton at 17.21 cents per pound. Between the time this contract was entered into (which might have been at 11:40 A.M.) and the closing time at 3:00 P.M., March cotton declined 9 points, the closing or settlement price being 17.12 cents per pound. Since S.R. and Co. was a purchaser, this decline of 9 points on 2 contracts was to his disadvantage and so he debited himself 18 points in his account with the Clearing House. Conversely H.D. and Co. who will enter this trade on his sales sheet will credit himself this 18 points with the clear-

NEW YORK, 12/18 _____ 1930

BOUGHT BY A. R. and Company

AND CONTRACTS OFFERED TO NEW YORK COTTON EXCHANGE CLEARING ASSOCIATION, INC.
FOR CLEARANCE IN ACCORDANCE WITH ITS BY-LAWS AND RULES

202-1129, W. W. W. 1421-A

FROM WHOM BOUGHT		MONTH	PRICE	SETTLING PRICE	DEBIT POINTS	CREDIT POINTS
NUMBER	NO. SALES (OO OMITTED)					
10	2	Mich	1721	1712	18	
14	1	"	1721	"	9	
14	1	"	1710	"		2
					27	2
10	1	May	1750	1736	14	
17	3	July	1760	1764		12
TOTALS					41	14

SALE AND POINT TOTALS FORWARD

NEW YORK, 12/18 _____ 1930

SOLD BY A. R. and Company

AND CONTRACTS OFFERED TO NEW YORK COTTON EXCHANGE CLEARING ASSOCIATION, INC.
FOR CLEARANCE IN ACCORDANCE WITH ITS BY-LAWS AND RULES

202-1129, W. W. W. 1421-A

TO WHOM SOLD		MONTH	PRICE	SETTLING PRICE	DEBIT POINTS	CREDIT POINTS
NUMBER	NO. SALES (OO OMITTED)					
19	3	Jan.	1695	1684		33
6	3	Mich	1714	1712		6
TOTALS						39

SALE AND POINT TOTALS FORWARD

FIG. 21.—Purchase sheet and sales sheet used in clearing trades.

ing house. As a result of this operation, S.R. and Co. on the very first day this trade was open was forced to give to H.D. and Co. through the Clearing House an amount sufficient to margin the trade up to the closing price. We will see in a moment that each party will have to put up a much larger and more substantial margin on this trade based upon the close or settlement price of the market. It is sufficient to note here that they have already margined up each of their trades to the close according as the variations in the market moved against them; and they have drawn down their margins in each case where the market moved in their favor. These minor margins constitute a part of the member's daily variation margins, the remaining part being found in the summary sheet to follow.

Recapitulation Sheet.—We have prepared in Figure 22 some sample entries for the second major form required daily of each clearing member,—the recapitulation statement. It is a summary statement of the broker's positions growing out of today's as well as earlier trading and showing the margin requirements as a result of these positions. We have transcribed S.R. and Company's trades made today as given on its purchase and sales sheet. They are shown in the column marked "today's trading" in which a total of 800 bales were bought and 600 sold. There is then inserted to the right the various street positions of S.R. and Co. "carried over from yesterday." These consist of a long position in July cotton of 400 bales and in December of 200 bales and a short position in the January, May and October futures.

The positions carried over from yesterday are then merged with the trades made today to obtain the street positions as of the close of trading today. This combined position by futures is labeled "carried over for tomorrow." It is this last position that requires adequate margining by the broker. In our illustration S.R. and Co. finds himself at the close of trading today net long 100 March, 700 July and 100 December, with another 100 December long during the next 6 days on a transferable notice; he is short 500 January and 100 October or a

combined long position of 1,000 bales and a combined short position of 600 bales.

The Original Margin.—Since the Clearing House is assuming the opposite end of each of these contracts, it requires that at all times an adequate original margin be kept by the broker.

RECAPITULATION. STATEMENT OF *Ed. Reed Company* TO THE
NEW YORK COTTON EXCHANGE CLEARING ASSOCIATION, Inc.

THIS MEMORANDUM MUST BE DELIVERED AT THE OFFICE OF THE ASSOCIATION BEFORE 10:00 A. M. WITH CHECK OR DRAFT FOR NET BALANCE SHOWN HEREON AND ALSO A RECEIPT CHECK FOR ORIGINAL MARGIN IF REQUIRED.

NEW YORK, N. Y., 1930

NEW YORK *12/15* 1930

CARRIED OVER FOR YESTERDAY				TODAY'S TRADING				CARRIED OVER FROM YESTERDAY				SETTLING PRICE		DEBIT POINTS	CREDIT POINTS
LONG (100 BALETS)	MONTH	QUANTITY (100 BALETS)	HOLIDAY (100 BALETS)	MONTH	QUANTITY (100 BALETS)	LONG (100 BALETS)	MONTH	QUANTITY (100 BALETS)	MONTH	QUANTITY (100 BALETS)	SELLING PRICE	BUYING PRICE			
	JANU.	5		JANU.	3		JANU.	2			1675	1684		25	
1	FEBRU.			FEBRU.			FEBRU.								
	MARCH			MARCH	3		MARCH				1720	1712			
-	APRIL			APRIL			APRIL								
	MAY		1	MAY			MAY	1			1745	1736		9	
7	JUNE			JUNE			JUNE								
	JULY		3	JULY		4	JULY				1774	1764	40		
	AUGUST			AUGUST			AUGUST								
	SEPT.			SEPT.			SEPT.								
	OCT.	1		OCT.			OCT.	1			1725	1712		13	
1	NOV.			NOV.			NOV.								
1	DEC.			DEC.		2	DEC.				1693	1683	20		
10	TOTAL	6	3	TOTAL	6	6	TOTAL	4					60	44	
MARGIN MEMORANDUM															
T/N	LONG	T/N	SHORT	ORIGINAL MARGIN		MARGIN REQUIRED		MARGIN REQUIRED		BUYING PRICE		SELLING PRICE		NET	
1	1000	1	600	400	SALES \$5	2000								41	14
				600	" - 3	1200								39	
				EXCESS PREMIUM MARGIN (IF ANY)		TOTAL		TOTAL		TOTAL		TOTAL		TOTAL	
						3000		3000		3000		3000		3000	
PRECEDING BALANCE															
PREVIOUSLY DEBITED				CASH				TOTAL				TOTAL			
				1700				1700				1700			
RELEASED (IF ANY)				BALANCE				TOTAL				TOTAL			
				1700				1500				3200			
CHECK FOR DEFICIENCY (IF ANY)															

FIG. 22.—The Recapitulation statement used in clearing trades.

The broker in turn has a right to expect financial responsibility of the Clearing House as a similar protection. We will have occasion a little later in this connection to outline the financial strength of this body. In our example in Figure 22, the original margin requirement for cotton on the New York Cotton Exchange has been set at \$5.00 per bale (or 100 points) on the

net position of the broker and \$2.00 per bale (or 40 points) on the straddle interest. This margin is set by the Clearing House and varies somewhat from time to time depending upon the state of the market.

It will be observed that the margin upon the straddle interest is considerably smaller. This is occasioned by the fact that market losses in one future will be largely offset by market gains in another. Thus S.R. and Co. is short 500 January and 100 October. If the market the following day should move up adversely to these positions it will doubtless move up also in the July future and the straddle of 600 of the 700 long position in the July will offset in large part the loss on the short contracts. For this reason the original margin on straddle interests need not be nearly so large as on trades which have no offsetting position.

Our illustration requires a total original margin of \$3,200 but since the broker already had \$1,700 up from the previous day, the net deficiency amounts to \$1,500. In this illustration the original margin put up is the exact amount required. As a rule, however, the broker will deposit a somewhat larger sum to be conservative.

The Variation Margin Again.—We have already described that part of the variation margin calculated from the Purchase and Sales Sheets. This was designed to bring the contract prices of the current day's trades up to the settlement prices. These debits and credits in our illustration amounted to a total of 41 points and 14 points respectively per bale for the purchase sheet and to a credit of 39 points for the sales sheet. They are now transferred to the Recapitulation Statement and appear at the right-hand side. To them are added "differences on old contracts" of 60 debits and 44 credits. These "differences" are variation margins growing out of changes in price upon open trades from the close yesterday to the close today. Thus we find that S.R. and Co. "carried over from yesterday" 200 January short and under the column headed "Settling Price" we learn that January has declined 11 points from the

close yesterday to the close today. Accordingly a credit of 22 points per bale is shown at the right. So also for the other positions carried forward.

The effect of this adjustment is to bring the price of every open contract up to today's close. If the market moves against a broker in his street position he must each day supply funds to keep his position paid up and his original margin intact. If it moves in his favor he can draw down these funds. In Figure 22, then, S.R. and Co. has a total debit of 101 points, a total credit of 97 points with a net debit difference in points of 4. A point is 1/100 of a cent per pound and on a contract of 50,000 pounds (100 bales of 500 pounds each) amounts to \$5.00. Thus for four points a check to the Clearing House of \$20 is required.

Forms Used by the Chicago Board of Trade Clearing Corporation.—The forms of the New York Cotton Exchange Clearing Association which we have just described are somewhat easier to follow than those used by the Chicago Board of Trade. For this reason they have been used as the basis of our description. Similar forms are used upon most of the other exchanges. Those used at Chicago eliminate from the purchase and sales sheet the contract and settlement prices. Columns are devoted to amounts bought and sold and the amounts to be paid or received,—these latter figures being determined, of course, by the settlement prices. But this calculation is done in the broker's office upon separate work sheets, and is not shown on the clearing house forms. In this respect the Chicago forms disclose somewhat less information to the Clearing House than on other exchanges with possibly a little less work involved. The Recapitulation Sheet similarly does not show the separate calculation of the variation margin on contracts carried forward but simply states the amounts to be paid or received. Otherwise the information submitted and the type of margins required are the same as for the New York Cotton Exchange with the exception that no margin is required on straddle interests.

Call Variation Margin.—We have outlined how open trades are brought to the closing or settlement price through the payment of a regular variation margin. It not infrequently happens, however, that the fluctuation in prices the following day is sufficiently large to require an additional variation margin before the close. This usually takes the form of a written call sent out by the Clearing House, a sample of which is shown in Figure 23. This call must be responded to within an hour or the member will be regarded as in default. The frequency with which the Clearing House will need to call upon members will depend upon the state of the market and the size of

DAILY VARIATION MARGIN CALL
Board of Trade Clearing Corporation

CHICAGO, April 5 19230

M. Fleck Betters

PLEASE SEND CERTIFIED CHECK TO THE ORDER OF THE BOARD OF TRADE CLEARING CORPORATION FOR \$ 500 TO COVER MARKET VARIATIONS TODAY. THE AMOUNT PAID SHOULD BE SHOWN AND WILL BE CREDITED TO YOU IN SETTLEMENT ON TODAY'S SHEET.

The above call is pursuant to section 89 of the by-laws of the Board of Trade Clearing Corporation. Members who fail to deposit margins WITHIN ONE HOUR are in default under section 80 of the by-laws.

BOARD OF TRADE CLEARING CORPORATION
 BY [Signature]

FIG. 23.—Form used to call for an additional variation margin.

original margins required. Thus in our illustration of S.R. and Co. in Figure 22, it would doubtless receive a call the following day should the market decline 40 points or more, the Clearing Association using its own discretion regarding how much of an impairment of original margin must take place before additional funds are needed.

The Clearing Process.—We have described in some detail the technique of clearing for the principal purpose of more fully understanding just what is accomplished. We need now to distinguish the forest from the trees. In submitting to the Clearing House each day his entire trades, and substituting the latter as the opposite contracting party to each, the broker off-sets and settles all street positions in the same commodity and

future of equal amounts and opposite in character. Such offsets are final and he has no further responsibility regarding them.* They become accordingly, cleared trades; and the accounting procedure of handling the trades through a clearing body is the clearing process.

Thus in our illustration in Figure 22 of S. R. and Company, 300 March and 100 May were cleared. They do not appear on the record of trades carried over for tomorrow nor will they appear on any subsequent day. We may refer to this as a complete clearing system, too, because every possible position and trade that could be cleared is cleared each day, assuming of course that the brokers choose to use the Clearing House for all of their street trades.

Variation Margin Reflects Profits and Losses.—A close observer will have noted that in adjusting open trades to the settlement price each day, brokers are also paying up losses or drawing down profits. Thus if a broker's street position is net long and the market moves down he will add more margin which is another way of saying he will pay his loss. One or more other brokers must be to an equal extent net short and they will draw down their margin or take their profit.

This profit or loss is, however, more nominal than real with respect to the brokerage firm in so far as it represents customers' trading. A loss which it must pay to the Clearing House

*On this point the *By-laws of the Board of Trade Clearing Corporation* read (Sec. 48, *Offsets*): "Where, as the result of any such substitution, any member has bought from the clearing house any amount of a given commodity for a particular delivery, and subsequently, and prior to such delivery, such member sells to the clearing house any amount of the same commodity for the same delivery, the subsequent transaction shall be deemed *pro tanto* a settlement or adjustment of the prior transaction. In like manner, where a member sells, and subsequently, and before delivery, such member buys the same commodity for the same delivery, the second transaction shall be deemed *pro tanto* a settlement or adjustment of the prior transaction. Thereupon, such member shall become liable to pay the loss or entitled to collect the profit as the case may be upon such adjusted transactions, and shall be under no further liability to receive or make delivery with respect thereto."

in the form of additional variation margin it will in turn require to be met by its customers; and any profit it may temporarily derive from the Clearing House will be turned over to the customers as accounts are settled from time to time. In this particular, adjustments in margins or the payment of losses and receipt of profits is much more precise and dependable between brokers than between customers and broker. And because this is true, margins exacted from customers are considerably larger so that adjustment each day is unnecessary. A brokerage firm thus becomes custodian or trustee for considerable sums of money from which a certain amount of profit in the form of interest is derived.

The Handling of Deliveries.—Under practically all of the present-day plans of clearing, the Clearing House functions to some extent in the handling of deliveries though the rules and practice on the subject vary somewhat with exchanges. Most of the exchanges permit of delivery direct between members where a trade has been made in a current delivery month. Thus on May 5, B₁ sells to B₂ 10 May oats. Exercising his right of seller's option, B₁ may inform B₂ that day by means of a delivery notice to take up the warehouse receipt. Such a form of trade is very much like a spot or cash transaction. The usual situation in which delivery arises is, however, not so clear cut. As a rule the seller has sold before the delivery month arrives and this original buyer has in turn sold, cleared his position and passed out of the picture. Here the original seller does not know and has no way of determining precisely to whom to deliver. Here the Clearing House again steps in as buyer to the seller and as seller to the ultimate buyer. The seller accordingly addresses his delivery notice to the Clearing House.

When a seller serves notice on the Clearing House, it becomes the latter's task to pass it on to a buyer still open in that future. Since only trades of equivalent amounts in purchases and sales are cleared, it follows that there are always in amount buyers open on the long side exactly equal to sellers open on the short side. The task of the Clearing House is to choose among

the various buyers upon whom it shall serve notice. The usual rule of choice for this purpose is the length of time the trade has been open, the oldest outstanding long receiving the notice in each case. The Clearing House then sends a memo to the seller informing him to whom his transferable notice was delivered and accordingly from whom he may expect payment upon delivery of the warehouse receipt.

In the handling of the payment for the delivery, practice is not uniform. In most cases payment is made direct from ultimate buyer to ultimate seller at the time of delivery of the warehouse receipt; in some plans, however, it is made through the Clearing House. In either event the delivery price is determined by the settlement price at the time. In grain where delivery takes place the day of notice or the following day, the last settlement price is the delivery price. It is clear that this is equitable to both parties since daily variation margins have brought their actual contract price right up to this point and whether they use one settlement price or another is of little moment so long as each broker's contract price has previously been brought to this point.

In cotton and in certain other commodities there is a delay of a few days between the day of notice and the day of delivery. For cotton this period is five business days. Because of this longer period of notice, it not infrequently happens that a delivery notice may pass through several hands before being "stopped" by an ultimate buyer. Thus X and Co. which happens to be the oldest long receives a transferable notice from the Clearing House at the opening of a trading session. Not wishing to take up the actual commodity, it will sell immediately the amount of the current future designated on the notice and return the latter endorsed to the Clearing House with the name of the party to whom sold as a proof of sale. To be acceptable this must be done within a period of one hour upon the Chicago Board of Trade. The Clearing House will then pass the notice on to the next oldest long, and so it may be passed around through a number of hands within a trading day

to lodge ultimately in the hands of a firm desiring actual delivery.

Financial Responsibility of Clearing Houses.—In the street positions set up between brokers, the Clearing House, as we have seen, substitutes itself as buyer to every seller and as seller to every buyer. Accordingly it is necessary for the Clearing House to maintain financial strength commensurate with its responsibility. This is accomplished first of all through the sale of its stock to members of the Clearing Association. Each firm who becomes a clearing member is required to purchase, at the prevailing book value, shares in the Clearing Corporation in proportion to its prospective volume of business. These shares are usually few in number but are sold at a high figure so that the total sum received from this source amounts to a considerable sum. The Clearing House maintains a permanent lien upon these shares as well as the privilege to buy them back at any time.

In addition to this capital asset, many of the exchanges maintain a guaranty fund as a permanent protection to its members. Thus the New York Cotton Exchange Clearing Association requires of each clearing member an advance of \$15,000 upon joining. This fund can be used to meet loss to the Association due to the default of any of its members. In the event that it becomes necessary to draw upon this fund as for example in the case of a serious failure, the rules of the Clearing Association provide for the right to assess each member in proportion to his volume of business for the purpose of restoring the fund to its original amount.

Each clearing member is required to deposit through the Clearing House an original margin which we have already described. These monies are deposited at approved banks and can ordinarily be withdrawn only to the joint order of both the depositing firm and the Clearing House. But in the event of default, the latter is privileged to withdraw any or all of the margin of such defaulting member for its own protection. But what is for its protection is in reality for the protection of

parties open on the opposite end of outstanding contracts. Accordingly these deposits of original margins constitute a source of strength to the Clearing House as well as the depositing member.

Current expenses are met from fees regularly levied so that additional funds are needed only in unusual situations. Some of the clearing houses have built up an item of surplus from current income which can be used to meet immediate and rather substantial losses. It may be readily seen that these various active and potential assets make of a well-managed Clearing House a financially strong institution though as a matter of fact they are seldom called upon in actual test of their strength.

Inter-broker Accounting.—There was outlined in an earlier chapter the principal accounting records relating to customers. These include usually a *Customers Option Ledger* in which a record is made of the details of each trade classified alphabetically by customers, a *Customers financial Ledger* in which is kept a record of receipts or payments from or to each customer (in which house accounts are also treated as customers) and to which gains or losses from closed trades are posted, and the usual *Margin Record* currently kept up for each customer as a safeguard to the house. We have already had occasion also to point out that the open positions of these customers cannot be specifically identified with corresponding open positions growing out of trading between brokers. This is due to the fact that a customer's position is often closed before the interbroker position can be closed and as often the opposite is true. Accordingly these inter-broker or "street" positions as they are popularly called require the keeping of a separate record. This is handled in what is known as the *Street Book*.

The Street Book is an all-important record. In a good many houses it is the book in which trades are originally recorded either from the pit brokers cards or the memoranda returned to the office at the time of purchase or sale. This is the case where a blotter is not kept; where it is the practice to keep a blotter, postings are made from it to the street book. Figure

ent-day clearing plans, the position which the house has with the Clearing House and upon which its original margin is determined and adjusted daily.

The Grain Balance.—Aside from the current checks upon the accuracy of original entry, brokerage houses rely upon a periodic grain balance to prove the external accuracy of all of their accounts, both for customers and the street. Purchases entered in the Customers Option Ledger are likewise entered in the Street Book for identical amounts and prices. So also are sales. From day to day equal amounts of purchases and sales are closed for customers in the Customers Option Ledger and the net difference between purchase and sales prices calculated for the making up of *Account Sales* statements. Similarly from day to day equal amounts of purchases and sales of the street position are closed with the Clearing House and the net debits or credits posted to the Clearing House Account. It follows that the firm may at any time check the net amount in bushels it has open with customers in any one future against the net amount open with the Clearing House. The two should balance both by futures and all futures combined since only *equal* amounts of purchases and sales have been cleared from the record.

For a money balance it is necessary to account for the sums debited or credited to customers and to the Clearing House for the entire future up to the day the balance is being taken. Thus suppose the balance were as of the close, January 31. Then it would be necessary to know for each future from the time trading began in it the net debits and credits for trades closed for customers (before taking out tax or commissions). A special *Grain Ledger* is kept for this purpose to which postings are made daily and the total kept up to date. Similarly it is necessary to know the cumulative totals paid to and received from the Clearing House. If now a money balance is to be found between the customers end and the street end, it is necessary to add the cumulative total of customer debits and credits (net) to the aggregate of price differences between the

contract price of each customer's trade not yet closed and the settlement price on January 31.⁵ This aggregate of price differences on customers open trades constitutes the paper losses or gains due to customers as of January 31. When added (or subtracted) from their total realized losses or gains, the combined figure should equal the aggregate paid or received to the Clearing House on trades in that future up to the close of January 31. No adjustment is necessary for open trades with the Clearing House to obtain their total debit or credit, since, as we have seen, this is accomplished daily through an adjustment of the firm's variation margin. If the total due to or from customers to date is equal to the total due to or from the Clearing House to date, aside from possible internal and compensating errors within individual accounts, the entire record is in balance up to that point.

Résumé.—What we have just outlined regarding the grain balance illustrates well the long-run identity of interest between customers trades and positions and inter-broker trades and positions. While at any one point during the life of any future the aggregate street positions and money balances may vary widely from that of the customers, when reduced to a net figure they are the exact equivalent, and when carried forward to the close of the future all balance out to the ultimate benefit or loss of the customers involved, excluding of course the payments of commissions and taxes by the customers.

The following is an illustration of the channel through which an order may pass in the course of its execution. While this illustration probably involves two or three steps more than the most common course, it is not at all unusual. Here is shown the relaying of a sale of 10 May wheat and the positions set up as a result of it viewed only from the sales side. The customer in Miami becomes short 10 May wheat with his local broker;

⁵ In taking off a grain balance the usual practice is to handle debits and credits separately, calculating an aggregate of open trades at the contract prices and entering as a counter figure the same trades figured at the settlement price as of the date the balance is taken off. The totals prove up the same in either case.

the latter becomes short 10 May on the books of the Eastern Firm in N. Y. City and so on to the Clearing Member who on reporting this trade at the close of the day becomes short 10 May with the Clearing House assuming all along the line no earlier positions in May wheat to have been set up. Now let us assume that another customer in Miami buys on the following day 10 May wheat and that the order again passes through these identical channels. The result will be an offset of all of the inter-broker positions from the Miami office through to the Clearing House. The two customer positions, however, continue open in which each looks to the Miami firm for ultimate fulfillment. Similarly, hundreds of trades, through

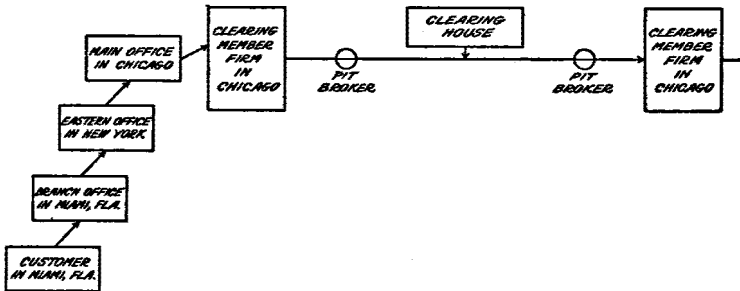


FIG. 25.—Steps involved in executing a selling order in futures.

many and sometimes rather circuitous routes are thus being set up each day necessitating a wide variety of inter-broker positions.*

In its ultimate analysis the system of handling and clearing trades thus reveals itself as an elaborate mechanism designed for the convenient, quick and economical handling of trades. Without such a system, future trading could not be maintained beyond a small fraction of its present proportions. It requires for accurate operation (to borrow a phrase from political sci-

* An interesting diagram of the course followed in the execution of a large order through an out-of-town firm is to be found in *Reports by Members of Grain Futures Exchanges*, Sen. Doc. No. 123, 71st Cong. 2nd Sess. Part 2, p. 11.

ence) an elaborate system of checks and balances. To be financially successful a volume of business commensurate with the expenses of maintaining offices and private wires must be obtained.

4. LEGALITY OF THE CLEARING PROCESS

The question of the legality of the clearing process has been raised repeatedly in court. Most of the cases fall within the period, 1880-1910, and it may be stated that its legality is now well established. The question of doubt was occasioned by the fact that through this process the vast majority of all future contracts are currently eliminated thus strongly suggesting that the plan is little more than a system of dealing in price differences. If this were true, future trading according to modern methods would be simply a system of commercial gambling. We shall outline in this section the measure of truth in this reasoning when judged by present-day legal standards.

Intent to Deliver a Basic Requirement.—The principal standard in testing whether this or any other commercial practice is gambling is that of intent to deliver. This point we have already reviewed in connection with the nature of the future contract.⁷ It was pointed out there that to be legally binding both buyer and seller in entering into a contract must contemplate its fulfillment by actual delivery. "Intent to deliver" or "contemplating delivery" is of course a subjective affair and difficult to determine. Furthermore the burden of proof rests with the accuser. But the courts are willing to admit as evidence any material and objective facts which will aid in determining the intent of the contracting parties, and it is in this connection that the clearing function has been questioned.

The Offsetting of Trades.—To lend reality to this problem, let us assume an illustration. Suppose the following transactions to be identical in amount and future, all made on the same day and that the contracting parties are all clearing members: B₁ sells to B₂; B₂ to B₃; B₃ to B₄; B₄ to B₅. At the close

⁷ Chapter five, esp. pp. 114-117.

of business that day each broker sends his trades to the Clearing House and the latter interposes as buyer and seller to each trade. Then the series before being cleared would be: $B_1 \rightarrow C.H. \rightarrow B_2 \rightarrow C.H. \rightarrow B_3 \rightarrow C.H. \rightarrow B_4 \rightarrow C.H. \rightarrow B_5$. After being cleared the series is reduced to $B_1 \rightarrow C.H. \rightarrow B_5$. Here the Clearing House has offset the trades of B_2 , B_3 and B_4 , and has substituted itself as buyer to B_1 and as seller to B_5 . Were there no other trades made by these brokers in this future, at maturity B_1 would serve notice on the Clearing House and the latter would in turn pass the notice on to B_5 thus bringing the two brokers together as ultimate buyer and seller.

In this illustration, the question pertinent to our present problem is: how does this offsetting process affect the *intent* of the various brokers to deliver or to receive on their contracts? Clearly B_1 and B_5 are in no way affected. Were the intermediate trades of B_2 , B_3 and B_4 not offset and therefore not cleared, the process of fulfillment would take place at delivery time when B_1 would serve notice upon B_2 . This notice would be passed along until it lodged in the hands of B_5 . But this too is a clearing process. Were we to entirely eliminate any measure of clearing, individual bills of sale representative of the actual commodity in hand would have to be exchanged. The passing of delivery notices, or at an earlier date, the practice of offsetting trades takes the place of this actual delivery. These clearing methods thus appear as simplified and symbolic forms of delivery and are no different from any other short-cut in business practice. Viewed in this light, if the intermediate parties contemplated delivery at the time of contracting, there is no reason to believe it to be any different in case delivery is carried out through the ultimate issue of a bill of sale than through the device of offset and substitution.

Board of Trade v. Christie Grain and Stock Company.— There have been many decisions in the State and Federal courts upholding the view that the offsetting of trades, either through a clearing house or by mutual arrangement, is in effect delivery. Perhaps the most celebrated of these is the case of the Christie

Grain and Stock Company against the Chicago Board of Trade. This case ultimately reached the United States Supreme Court and the decision delivered by Justice Holmes in 1905 has often been cited because of its clear and forceful statement (198 U.S. 236). We quote from that portion which bears immediately upon our present problem in which the question of doubt is raised regarding the intent of traders where clearing methods are employed.

When the Chicago Board of Trade was incorporated we cannot doubt that it was expected to afford a market for future as well as present sales, with the necessary incidence of such a market, and while the State of Illinois allows that charter to stand, we cannot believe that the pits, merely as places where future sales are made, are forbidden by the law. But again, the contracts made in the pits are contracts between the members. We must suppose that from the beginning as now, if a member had a contract with another member to buy a certain amount of wheat at a certain time and another to sell the same amount at the same time, it would be deemed unnecessary to exchange warehouse receipts. We must suppose that then as now, a settlement would be made by the payment of differences, after the analogy of a clearing house. This naturally would take place no less than the contracts were made in good faith for actual delivery, since the result of actual delivery would be to leave the parties just where they were before. Set-off has all the effects of delivery. The ring settlement is simply a more complex case of the same kind. These settlements would be frequent, as the number of persons buying and selling was comparatively small.

The fact that contracts are satisfied in this way by set-off and the payment of differences detracts in no degree from the good faith of the parties, and if the parties know when they make such contracts that they are very likely to have a chance to satisfy them in that way and intend to make use of it, that fact is perfectly consistent with a serious business purpose and an intent that the contract shall mean what it says.

It should be observed that the language of this decision makes the legal definition of delivery considerably broader than the usual business concept. In this legal sense it is necessary at the time of contracting to contemplate ultimate fulfillment by actual delivery or some substitute involving offset. But in every case one of the alternatives and possibilities must be delivery by proffering the actual commodity.

- ✓ *Money Differences Not the Essential Issue.*—It should also be observed that the point at issue does not involve the question of whether payment was made in full or simply by an adjustment of money differences. One of the earmarks of gambling in stocks and commodities is that the contracting parties profit or lose by fortuitous price changes; but to be classed as gambling this characteristic must be coupled with the fact that no genuine facilities are afforded for the making of actual delivery nor any serious intent to make delivery. Where the incidents of delivery are present, the question of whether profits or losses result from uncertain price changes and are adjusted by payments of money differences or whether they result from payments of the full purchase price becomes of no legal consequence whatever.
- ✓ *Proportion of Actual Deliveries Not an Issue.*—In this same case of the Christie Grain Company, the Court considered, also, the point frequently raised that the proportion of all trades to the number maturing by actual delivery strongly suggests a lack of any serious intent to deliver. On this point the reasoning of the court is again clear and forceful.

In the view which we take, the proportion of the dealings in the pit which are settled in this way [by off-set] throws no light on the question of the proportion of serious dealings for legitimate business purposes to those which fairly can be classed as wagers or pretended contracts. No more does the fact that the contracts thus disposed of call for many times the total receipts of grain in Chicago. The fact that they can be and are set-off sufficiently explains the possibility, which is no more wonderful than the enormous disproportion between the currency of the country and contracts for the payment of money, many of which in like manner are set off in clearing houses without anyone dreaming that they are not paid, and for the rest of which the same money suffices in succession, the less being needed the more rapid the circulation is.

- ✓ *Question of Intention a Question of Fact.*—We have pointed out that the legality of clearing methods, as well as the legality of the entire system of speculation in stocks and commodities, hinges upon the intent of the contracting parties. A final point in this connection which should be emphasized is that intent

must in all instances be in accord with surrounding facts. Merely to state either orally or in writing that delivery is contemplated is insufficient where other attending facts strongly suggest the opposite. This point is excellently summarized in the case of *Weare Commission Company v. People* (209 Ill. 528).

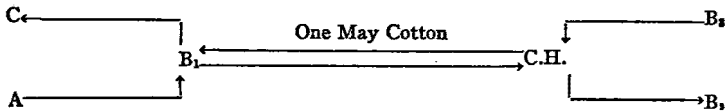
The question of intention is a question for the jury or for the court, to be determined by a consideration of all the evidence. . . . The intention of the parties in such cases may be determined from the nature of the transaction and from the manner and method of carrying on the business. . . . An examination of the authorities . . . will show that the intention of the parties may be determined from a variety of circumstances. Among the circumstances, besides the mode of dealing between parties, is the pecuniary ability of the party purchasing. If the purchases of a party, as ordered through a broker are larger in amount than he is able to pay for, it is a strong circumstance indicating that there was no intention of receiving the property, but rather an intention to settle the difference between the market price and the contract price. Such intention may also be inferred where the party making the purchase never calls upon the party, ordering the purchase, for the purchase money but only for margins. It makes no difference whether the real intention is formally expressed in words or not, if the facts and circumstances in proof show, that it was the real understanding that there should be no actual purchase and no delivery or acceptance of the property involved in the contract, but merely an adjustment of damages upon differences.⁸

The opinions we have cited rightly emphasize the necessity of a serious purpose in all of the aspects of dealing in futures in contrast to their use as a sham for wagers. Where the former object is clearly evident, the form of delivery whether by actual commodity, by notice, by offset or substitution becomes of minor importance.

Contracts with Customers.—When a member clears his trades with the Clearing House, the latter is freed from further responsibility as either buyer or seller. But this trade may be

⁸ Decided in 1904. The breaks shown in the quotation are a part of the printed decision. Another famous case reflecting this same view is *Jamieson v. Wallace*, 167 Ill. 388 (1897). More recent cases are those of *White v. Turner-Hudnut Co.*, 322 Ill. 133 (1926) and *Riordan v. McCabe*, 254 Ill. App. 177 (1929).

and frequently is still open upon the books of the broker for the account of a customer. This situation may be illustrated as follows:



Here A has sold through his broker B_1 one contract of May cotton to B_2 and C has that same day bought through B_1 one May of B_3 . The Clearing House substitutes itself between B_1 and B_2 and B_1 and B_3 so that B_1 clears this one May. The Clearing House then releases itself from further obligation with respect to B_1 . But the latter is still responsible to A and to C since their trades continue open. We pointed out in an earlier chapter that in trading through a broker in which the principal is not disclosed, the broker is legally responsible in all particulars for the ultimate fulfillment of his customers' trades.⁹ In the situation at hand B_1 must, therefore, continue his responsibility to A and C.

The rule of the Chicago Board of Trade bearing on this whole situation reads as follows:

316. Trades for Customers.—When a member makes a trade for future delivery of commodities for a customer (member or non-member) and the trade is cleared through the Clearing House, the Clearing House becomes the principal who is liable to the customer and to whom the customer is liable, subject to the following: (a) the trade shall remain subject to the Charter, By-Laws and Resolutions of the Clearing House; (b) the trade may be offset against other trades of the clearing member as provided in Rule 315; (c) if the trade is not offset, the member being a seller, tenders a delivery notice to the Clearing House, the member to whom such notice is passed, under Rules 286 and 287, shall thereupon be substituted as buyer in lieu of the Clearing House; (d) if the trade is not offset, and the member, being a buyer, receives a delivery notice, under rules 286 and 287, the issuer of such notice shall thereupon be substituted as seller in lieu of the Clearing House; (e) if the trade is offset, the Clearing House shall be discharged, and the member himself shall be substituted for the Clearing

⁹ Cf. Chapter 10, pp. 167-168.

House as principal. For the purpose of this Rule, the first trades made shall be deemed the first trades offset.

Attention is called to part (e) of this rule in which the broker is substituted in place of the Clearing House as principal with respect to trades open with customers A and C. A similar rule is provided in the regulations of the New York Cotton Exchange.¹⁰ A moment's reflection will show that in all such situations the brokerage house must have counter positions long and short of exactly equal amounts either with other customers, with their own house accounts or with other brokerage houses or the Clearing House at all times. This being the case, the requirement that the brokerage firm shall be substituted as principal amounts in practice to his guaranteeing the ultimate fulfillment by delivery or offset of all of his customers' trades. In fact the earlier wording of the rule of the Chicago Board of Trade stated that the broker guarantees his customers' trades¹¹ and from a legal point of view this earlier statement is superior to the present wording.

5. SUMMARY

The purpose of this and the preceding chapter has not been to instruct one in the intimate detail of brokerage accounting. To describe fully the many varieties of trades made upon our leading commodity exchanges, their form and purpose, and more especially how each "ties in" with the general accounting scheme would necessitate the unfolding of a veritable maze of inter-broker and customer-broker relationships. Many varieties of "accommodation" trades, "cross" trades, reciprocal business, "give-ups," transfers, special "make-up" practices and the shifting of accounts generally, while involving the same principles of clearing and accounting which we have outlined, are frequently handled by methods peculiar to individual houses. Some of these devices involving elements of question-

¹⁰ See their *By-laws*, Sec. 36; also their *Rules*, rule number 6.

¹¹ See the *Rules, By-laws and Regulations* of the Chicago Board of Trade for the year 1923 or earlier years. Rule XXII, Sec. 9.

able social value will be touched upon in a later chapter on irregular practices. Brokerage accounting involving the clearing of trades was not deliberately planned and installed to meet the requirements of future trading. Rather it developed or evolved as future trading evolved and has always constituted an intimate part of it. It is for this reason that a fairly detailed description of its processes has been presented in the above chapters. Through a knowledge of these processes, greater insight is to be had into the fundamental nature and functions of future trading than could otherwise be attained.

We have pointed out that under existing practice, the "life" of most future contracts is of short duration. While the buyer may purchase in February a future contract calling for ultimate delivery ten months hence, he may decide to sell a few days later. There are thus scores and scores of contracts being entered into and being closed every day involving a continual adjustment of accounts between broker and customer and between brokers. Compared with the number of ultimate customers involved, the brokers executing these trades are few in number. It follows that many of their trades offset each other in the course of each trading day. Machinery was devised, therefore, at an early date to permit brokers to set off against each other equal amounts of inter-broker transactions, to pay or receive any difference in price and thus to permanently clear trades from their records. While this did not absolve each individual broker from his responsibility to his customers long or short in the market, it greatly aided in lightening the load of inter-broker accounting and especially in reducing capital requirements in the form of margins.

The earliest forms for clearing trades were mutual arrangements in which each broker sought out other brokers with whom he had offsetting trades and arranged a settlement. These clearing methods assumed the form of direct settlement, ring settlement, settlement by transfer and settlement through the use of a transferable notice. Clearing houses were later set up first as an aid to brokers in confirming their trades and in

adjusting money balances growing out of cleared transactions.

Later these clearing houses greatly enlarged their functions to assume actual direction in the clearing of trades and in the adjustment of margins daily. For this purpose separate corporations with adequate financial facilities have been organized by all of the leading commodity exchanges. All trades made between brokers, members of the Clearing House, are reported daily to the Clearing House in which the latter assumes the position of buyer to each seller and of seller to each buyer. Those trades which are not cleared call for delivery by warehouse receipt and the direction in this final step is also assumed by the Clearing House.

Certain legal problems have from time to time arisen in connection with this whole matter of offsetting and clearing trades. Almost without exception these questions have resolved themselves into the issue of intent to deliver. Where the facts surrounding the making and handling of trades are such as to indicate that at the time of contracting the parties were simply dealing in price differences with no intention of carrying through the contract and assuming the responsibility of delivery if necessary, the status of the trades becomes a mere wager. But where responsible intent may be presumed from the circumstances of trading, no actual delivery need be made for the trade to be entirely legitimate. In this the offsetting of trades between brokers is a form of symbolic delivery and, therefore, the proportion of actual commodity involved assumes little significance.

PART TWO
PRICE ASPECTS AND PROBLEMS OF
FUTURE TRADING

CHAPTER XIII

THE PRICE STRUCTURE

In this and the following eight chapters, it is proposed to consider the principal aspects of future trading as they relate to price. Price constitutes the central theme of every economic problem. It is not to be implied from this fact that it deserves consideration to the exclusion of other phases of a subject but only that its relative importance be recognized. Problems of price also constitute the most difficult part of an economic subject to understand. For this reason their consideration has been postponed to the present point in order to build up a body of essential information regarding future trading. The preceding chapters outlining the evolution of future trading, the nature of the future contract, the market structure, rules, and form of trading should be a material aid to an understanding of this and succeeding chapters. It will be our purpose in this chapter to develop the theory of the subject unobscured as far as possible by intricate and conflicting detail. To this end, only the broad and more fundamental phases of the subject will be considered and these, also, as far as possible under the most favorable conditions. Price relationships in future trading frequently present extremely baffling situations either to understand or explain. Our plan of procedure must, therefore, be to move from the simple to the complex, from the normal to the abnormal.

1. THE DETERMINATION OF PRICE

The fundamental forces determining the price of a particular commodity future are the same forces as those determining the price of any other article of economic value. Futures are bought and sold the same as any other *claim or right to wealth* and reflect the value of the article traded in in substantially the same manner. Let us inquire then into the determinants of the value of commodities used as a future trading medium. In the chap-

ter following the present one consideration will be given to the relation of cash prices to future prices. It is sufficient here to note that there is a close and inter-dependent relation between them and that the fundamental value of each reflects the same basic factors. It will be necessary then only to consider the main determinants of the cash price of particular commodities in this chapter and to reserve for the following one additional points of difference to futures.

The Cost of Production and the General Level of Prices.—The starting point to an understanding of value is the cost of production. Cost of production does not determine the value of an article as it prevails at any particular point in time but rather serves to roughly mark its price limits over long periods of time. Let us take wheat as an example. The average farm price of wheat in the United States on December 1 for the ten year period, 1920-1929, was \$1.13 per bushel according to the reports of the United States Department of Agriculture. Why was this average price \$1.13 and not \$2.13 or \$.53? The answer is to be found mainly in the cost of producing wheat in the United States during this period.¹

Costs of producing wheat vary widely from farm to farm and from state to state but there is a minimum figure below which the bulk of the less productive areas cannot afford to be worked. This is true also in any program of intensive cultivation. As a result, in years of bumper crops when prices fall below costs, planting is curtailed which in time reduces supplies and raises prices. And in years of high prices farmers are encouraged to plant more which in time lowers prices again. This interrelationship of price and acreage planted has been very ably demonstrated by Smith in comparing the spot price of cotton prevailing in January each year with the acreage devoted to cotton during the ensuing season.² The cost of pro-

¹ Cf. *Agriculture Yearbook*, 1927, pub. by U. S. Dept. of Agriculture pp. 1135-1137 showing costs by states.

² Smith, B. B., *Factors Affecting the Price of Cotton*, U. S. Dept. of Agr., Tech. Bull. No. 50, 1928.

ducing a commodity thus serves as a broad and basic norm about which the actual price varies from year to year tending always under competition to be drawn back to this level.

At what level this cost of production happens to fall and, therefore, about which the price of a commodity tends to range is determined by the general level of prices of all commodities. Thus during the decade 1904-1913 the average farm price of wheat was \$.84 per bushel instead of \$1.13 prevailing after the World War. This difference is occasioned mainly by the general decline in the purchasing power of the dollar from 1913 to 1920 causing costs to rise correspondingly.

2. DEMAND

The Determinants of Demand.—While cost of production is fundamental in determining the general area within which the price of a commodity falls, it does not account for the major "swings" in price from month to month and from year to year. These are accounted for under the general categories of demand and supply. It is not in place here to enter into an extended discourse upon demand and supply since it constitutes an important part of every general treatise in economics. Instead we will need to note only points essential to an understanding of price in the particular field where organized future trading prevails.

The demand for any product such as wheat or the products of wheat is determined by two general factors: (1) desire and (2) purchasing power. To the extent that persons desire wheat products and possess the means of purchase, there will be a demand for these products. Many elements, in turn, are important factors in determining both the purchasing power and the desire of potential buyers for a commodity. Thus desire is greatly influenced by the personal tastes of individuals and particularly as they are influenced by competing alternative products offered for sale. Desire is also profoundly affected by the fact that additional units of a thing used or consumed render to the consumer less and less satisfaction. This is referred to

by economists as the principle of diminishing utility. Purchasing power, too, has underlying determinants and notably those growing out of the general wealth of individuals and of communities and conditions of employment.

Demand a Schedule.—The entire demand for a particular article is made up of thousands of individual demands of many

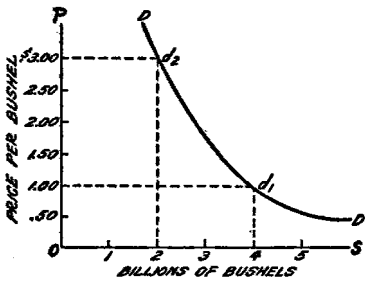


FIG. 26.—Illustration of a demand curve for wheat.

sizes and intensities. Some individuals are willing and able to pay a high price while others can afford only a very low price; at prevailing prices some desire this article in preference to other possible purchases while others do not. If we arrange these many individual demands according to the price and amount of each, we will find

that the entire *demand* for any product consists of a *schedule of prices* at which varying quantities of the article will be bought. In this schedule, supply bears an inverse relation to price, i.e., the higher the price, the smaller the amount which will be bought. This relationship is usually illustrated by means of a demand curve.

Figure 26 may be used to illustrate the demand schedule for wheat. On the horizontal axis OS, supply units of one billion bushels each have been laid off and on the perpendicular axis OP, price units are drawn. Then any point of intersection such as d_1 or d_2 represents the price which buyers will pay for the corresponding supply and the entire curve DD' represents the entire demand schedule. At the point d_1 in the illustration, \$1.00 will be paid for a supply of 4 billion bushels while \$3.00 per bushel might be paid were the supply to fall to 2 billion bushels.

An Increase or Decrease in Demand.—Were it possible to construct from actual experience a schedule of demand such as the one shown, it would be a true picture for only an instant

of time. Since demand is a vast composite of individual estimates it must shift as often as individual opinion shifts. If buyers change their mind and are now willing to buy a larger supply at the same price or pay a higher price for the same supply, demand has increased. Conversely, demand declines whenever only a smaller supply can be sold at the prevailing price or a lower price must be received for the same supply.

Elasticity of Demand.—Commodities vary widely in elasticity of demand. For certain commodities, and notably luxuries, a small change in price will result in a rather pronounced change in the supply which will be purchased. If the price is low, large amounts will be consumed but if high, little or none will be bought. These articles are said to have an elastic demand. Other commodities, and notably necessities, have an inelastic demand. Variations in price do not affect as greatly the amount which buyers will purchase. These two types of

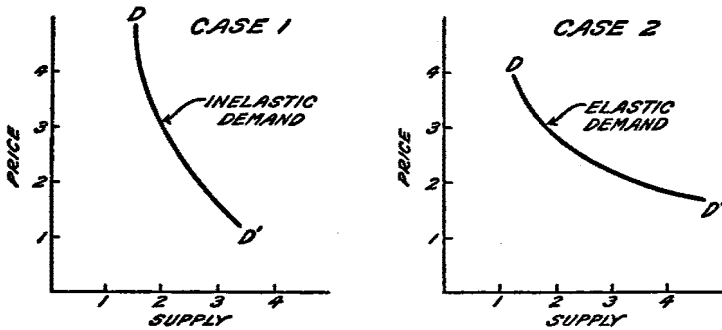


FIG. 27.—Illustration of an elastic and of an inelastic demand.

demand are illustrated graphically in Figure 27. In Case 1, there is shown a wide variation in price with a comparatively small change in supply. In Case 2, the supply offered increases more rapidly as the price is lowered.

The Demand for Grain and Cotton.—It has been necessary to give this summary description of the essential features of demand in order to better characterize the demand for the prin-

principal staples traded in on organized exchanges. The demand for grain and cotton and for grain futures and cotton futures should be thought of as a schedule of prices at which buyers stand ready to purchase varying quantities of the commodity. This demand should be thought of not as some fixed objective affair but rather as a composite of thousands of opinions. Nor should every change in price be thought of as a change in demand. It is only when a larger amount will be taken *at the same price* or a *higher* price paid for the same amount that demand has increased. Demand has not necessarily changed when a higher price is being paid for a smaller amount. The price may have simply shifted to another point in the prevailing demand schedule. The demand for a commodity thus consists of an *active* demand which is the amount demanded (or consumed) at the prevailing price level and a potential demand which consists of higher prices at which levels smaller amounts will be taken and lower prices at which larger amounts will be taken.³

The demand for the principal commodities having future markets is fairly stable and relatively inelastic. The reason for both of these characteristics is to be found mainly in the fact that these commodities occupy and have occupied for many years a position of prime necessity. Grain and cotton we must have every year and so far as human needs are concerned in somewhat the same quantities.⁴ Furthermore if the supplies are not forthcoming in the usual quantities we are willing to pay

³ In this discussion demand is being viewed as the quantities which will be "consumed" or "taken" at a given price rather than the amounts which will be purchased. The demand curve then reflects not only the potential and active *buyers'* estimates but also the reservation prices of sellers such, for example, as prices at which grain will be withheld for seed and feed. Supply thus becomes synonymous with total supply and not simply supply for sale. For the purpose of appraising the factors determining the price this general demand concept is more useful than a buyer's demand approach. It eliminates, also, the necessity of using a supply curve representative of a sellers' schedule of prices. Cf. Schultz, Henry, *Statistical Laws of Demand and Supply*, Univ. of Chic. Press, 1928, pp. 16-23.

⁴ Uniformity of consumption of grain and cotton is difficult to demonstrate in a quantitative way. Data of ultimate consumption are not available for either, and statistics of mill consumption are probably not a very ac-

considerably more for them. On the other hand, if large supplies are produced, demand being comparatively inelastic, the price will fall to low levels before additional consumption is stimulated. These are important factors in determining the character of price movements in grain and cotton and their popularity as media for future trading.

3. SUPPLY

Supply as a Price Determinant.—It is customary to say that the price of an article is determined by supply and demand. While this statement is doubtless true, it does not explain a great deal unless the terms are sharply defined and their implications understood. We have now briefly summarized the nature and principal determinants of demand. Could the demand for a particular product be accurately compiled and measured at an instant in time, we would have a vast array of items each composed of a price and an amount which we could group and tabulate in the form of a schedule; and these, when plotted as shown in Figure 26, would describe a curve sloping downward and outward revealing a general tendency for the amounts demanded to increase as the price decreases. To determine the market price at that particular instant, all that would then be necessary would be to observe the point on the horizontal scale where the existing supply falls and note the price on the demand curve corresponding to this point.

It is, of course, impossible to demonstrate the interrelation of demand, supply and price in practice in such a precise fashion. This is true for two reasons: (1) the immensity of the task, and (2) the fact that both the schedule of demand and the present supply are composed of personal estimates extremely difficult of accurate measure. Where attempts have been made

curate reflection of ultimate consumption. For flour consumption, 1880-1923 see *Wheat Studies* of the Food Research Institute, Stanford University Vol. II, p. 240 ff. Cf. also Smith, B. B., *op. cit.*, p. 9 for cotton. Cf. also findings of Timoshenko, V. P., *Wheat Prices and the World Wheat Market*, Cornell Univ. Agr. Experiment Station, Dec., 1928, p. 36.

to measure quantitatively this relationship, the usual procedure has been to start with a prevailing price at a particular time and interpret it in the light of available data regarding supply and such factors of demand as appear important and lend themselves to measurement. By this method it is possible to compile a series of price-supply relationships as they have appeared at various points in the past and, upon the assumption that demand has not subsequently changed, to prepare an approximation of the present schedule of demand. Some statistical measurements of this kind will be reviewed later in this chapter as an aid to a practical understanding of the fundamental determinants of price in this field.

Importance of Supply as a Cause of Price Changes in Agricultural Commodities.—Being inter-dependent, one cannot say that either demand or supply is the more important as a factor determining price. It is, however, possible to say which in a given situation is more influential in causing prices to change; and this second point is far more important than the first as a practical problem. We pointed out in the previous section that because the commodities of grain and cotton are necessities, the demand for them is fairly constant and comparatively inelastic. To the extent that this is true, changes in supply mount in relative importance in accounting for changes in price. Stated in another way, to the extent that our tastes and needs change only slightly from year to year in measuring our desire for these commodities rather than other products, and to the extent that we continue ready to buy these commodities even though the price be relatively high for a given quantity and refuse to buy more than the usual supply without a radical drop in price, to that extent variations in supply become all important in accounting for variations in price.

The Nature of Supply in Agricultural Commodities.—The importance of changes in supply as price determinants is enhanced by certain characteristics of agricultural commodities. One is the fact that additions to supply occur but once a year. As soon as a given crop is known it can be accounted for in the

price with some degree of definiteness since another crop in the same area will not appear for another year. If the crop is small the price for the time being will thus likely be high and the reverse will be true should the crop be large. This is in marked contrast to an article of manufacture where the supply may be freely increased or decreased from time to time as it seems advisable.

Agricultural supply is distinctive, secondly, in being subject to the vagaries of weather and plant and animal disease. It is subject, under the elements of weather, to such a formidable array as drought, hot winds, excess moisture, storms, hail, frost, floods and freezing and from plant and animal disease to scab, smut, rust, weevil, beetles, gophers, and an endless and ever-changing list of other forms of pestilence. What a crop may turn out to be thus becomes an uncertain affair from planting time to harvest and what is actually produced is determined in no small measure by these physical factors.

In the third place, agricultural supply is somewhat distinctive due to the fact that it is so widely distributed. Millions of farmers produce our annual grain and cotton crop. These farmers are individual business entities each planning, planting and producing crops according to his own judgment. They are not only widely scattered throughout the United States but, in so far as supplies in other producing areas need enter into a consideration of price, in many foreign countries as well. In addition to this widespread scatter of initial supplies, crops already harvested must be accounted for at the various stages in their movement from the farm to the consumer. Certain portions of the supply and notably those in transit and afloat, at terminal points in store (referred to in trade usage as the visible supply) and in the hands of mills can be fairly accurately accounted for; but the so-called invisible supply at country points and still in the hands of farmers is far more difficult to estimate. This fraction, in particular, continually injects a sizable element of uncertainty into the estimates of total supply.

Finally, because of the fact that several months have to elapse from the time of planting to the time of harvest, agricultural supply must include estimates of supplies in the making. It is quite true growing crops do not constitute a part of existing supplies but they are very definite commitments and serve as a most important index of probable future stocks. They are in fact *potential* supplies which if they appear either larger than usual or smaller than usual very definitely affect present prices: if large prices will decline, if small they will rise. Since this factor of on-coming supplies involves an entire new crop, it becomes during the growing season the outstanding factor in the supply situation. To summarize then, agricultural supply includes not only actual stocks in various positions but also potential supplies in the form of crop commitments; they are highly seasonal in character and subject to the many uncertainties of weather and plant and animal disease in their production; and being widely scattered throughout productive areas and marketing channels, they are very difficult to accurately estimate at any given time.

4. QUANTITATIVE COMPARISONS OF SUPPLY AND PRICE

There have been a number of investigations made during recent years which measure quantitatively the inter-relation of supply and price in agricultural commodities. Professor H. L. Moore is a pioneer in this field. In his work *Economic Cycles: Their Law and Cause*⁵ appearing in 1914, he attempts to measure the law of demand with reference to corn, oats, hay and potatoes. Following the war there appeared a veritable rain of treatises on statistical method as applied to economic data and these have served both as a stimulus and as a means to further effort in the field. Most of the investigations, and particularly those relating to agricultural commodities, use an historical approach analyzing comparable data over a series of years. These results are then thrown into a generalized form

⁵ Published by the Macmillan Co., N.Y.

and, on the assumption that present and future experience is not unlike the past, attempts are made to foretell future developments. This last step is of course the most uncertain in the analysis but if it contains any measure of accuracy it is also the most valuable. For our purpose here, however, it will be sufficient merely to review established relationships from past experience.

Four Illustrations.—In Figures 28, 29, 30, and 31 the relationship of supply to price is shown for four commodities: oats, cotton, corn and wheat. Each chart illustrates for a leading commodity the important influence of supply upon price. The charts are taken with some minor adaptations from separate studies covering varying periods of time.⁶ The choice of data has in each case been determined mainly by the nature of the crop. For oats, the carry-over on farms and in the visible supply remaining from

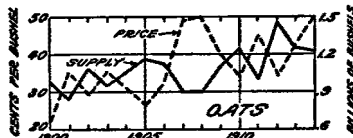


FIG. 28.—Supply-price relationship for oats.

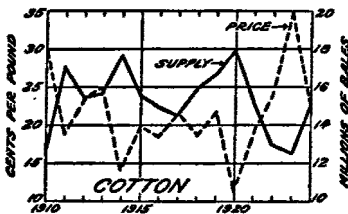


FIG. 29.—Supply-price relationship for cotton.

each old crop has been added to the United States production to obtain a total supply prevailing in the late summer of each year. The price with which this supply is compared is an average of cash prices at Chicago for the month of September. Using data at this point in the crop year has two advantages: the supply can be most accurately determined at this point and no consideration need be given of the crop to be grown the following year.

⁶The chart for oats is adapted from Killough, H. B., *What Makes the Price of Oats?*, U. S. Dept. of Agr. Bull. No. 1351, Sept., 1925, p. 18 in which "United States production plus carry-over" has been substituted for "United States production." For cotton, data appearing in Smith, B. B., *op. cit.*, p. 58 have been used. The chart for corn is taken from Hoffman,

Similarly for cotton, supply figures represent carry-over plus United States production. The price used is an average of spot prices at New Orleans during the month of December. The series of years included in the comparison for cotton, however,

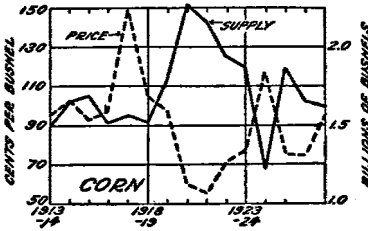


FIG. 30.—Supply-price relationship for corn.

extends into the war and post war period, years during which a general increase in the level of prices took place greatly influencing cotton prices. Accordingly the influence of this factor was removed before comparing the supply and price.⁷ In the corn chart, supply is represented

by an average of merchantable stocks in all positions in the United States for November 1 and March 1. It thus represents the prevailing level of supply each year during the winter months. The price used is a weighted average of cash prices, Chicago, for the five months November, December, January, February and March of each crop year with the influence of changes in the general level of prices removed.⁸

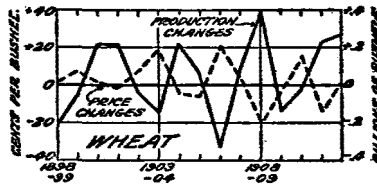


FIG. 31.—Supply-price relationship for wheat.

G. Wright, *Trading in Corn Futures*, U. S. Dept. of Agr. Tech. Bull. No. 199, 1930, p. 11. The chart for wheat is taken from Timoshenko, V. P., *op. cit.*, p. 71.

⁷It was found by multiple correlation, using the price of cotton as the dependent variable and cotton supply and the "all commodity" index of the Bureau of Labor Statistics (base 1913=100) as independent variables, that the rate of change in the level of cotton prices for the period was 1.548 times the rate of change in the "all commodity" index. Accordingly the items of the latter series were raised to the 1.548 power before being divided into the items of cotton prices. The deflated series was then adjusted to a 50 per cent higher level in order to bring the adjusted series in line with the level of prices during post war years.

⁸By dividing each average corn price by the index of "all commodity" prices for the same period. This method assumes that the influence of the

In the chart relating to wheat, a somewhat different procedure was followed. Here are shown *changes* in the annual production of wheat in the northern hemisphere with the corresponding changes in the price of cash wheat at Kansas City up to the war period. In the three preceding commodities of oats, cotton and corn the closeness of relationship between supply and price is the result in large part of the dominant position of the United States crop. But for wheat the United States crop is by no means as important. Europe (exclusive of Russia) is a considerably larger producer of wheat than the United States; and Asia (exclusive of China and Russia) together with Canada annually produces another supply as large or larger than the United States. As a result production throughout the northern hemisphere has been compared with wheat prices at Kansas City.*

The illustrations we have reviewed show in a quantitative way a fact stressed earlier in their chapter, viz., the fundamental importance of supply among agricultural commodities as a determinant of price. They illustrate also another fact: that from a study of the usual sources of information even for the most favorable periods of the year the price cannot be precisely determined by the supply. Imperfections in available data form a serious handicap; other and normally minor factors from time to time assume importance; finally, generalizations built up from the experience of the past are framed to fit as perfectly as possible this past experience and too often they lack

"all commodity" index upon corn prices is exactly 100 per cent each year. This may not in fact be the case and in this respect the method of multiple correlation employed by Smith in measuring this factor is thought to be superior. Cf. Smith, *op. cit.*, p. 26; also Killough, *op. cit.*, p. 20.

* A correlation of $-.65$ was found in this comparison in which price changes from spring to fall are compared with changes in production. Mr. Timoshenko found a much higher relationship in comparisons with prices prevailing on certain European markets. Thus for the Liverpool market, changes in price from spring to fall correlated with Northern Hemisphere production $-.866$ and when account was taken of world production one year previous and two years previous as independent variables, a coefficient of multiple correlation of $.939$ was obtained.

for this very reason a necessary amount of adaptability when applied to changing future conditions. A number of studies have been made in which data of supply and price are thrown into generalized form. An "estimating equation" is calculated by methods which will assure as close a fit as possible to the individual items. From this equation one can then solve for price under any known supply situation. When plotted the equation usually takes the form of a schedule demand curve illustrating the degree to which any change in the supply will effect an inverse change in price.¹⁰

5. SEASONAL MOVEMENTS IN PRICE

We have now reviewed what the economist would term the "long run" factors determining the price of agricultural commodities. Those describing the broad trend over many years are included in the two categories of costs of production and changes in the general level of all commodity prices. Those describing changes occurring from year to year and for shorter periods as well fall in the categories of supply and demand. Of the various determinants of supply and demand, those causing major changes have thus far been considered with special emphasis upon the important factor of variations in supply. For this purpose annual data were used.

Demand and supply also include, however, changing situations appearing within any crop year. These may be occurrences of a few months' duration, or of a few days' duration, or perhaps of only a few moments' duration. We will in this and the following chapters give increasing attention to these more immediate factors. While they are not the broadly fundamental forces determining prices, they are in most situations the indicia determining precise points for purchase or sale and for this reason deserve careful consideration. Goods are not bought at

¹⁰ Cf. Warren, G. F. and Pearson, F. A., *Interrelationships of Supply and Price*, Cornell University Agr. Experiment Station, Ithaca, N.Y., 1928, where a wide variety of agricultural commodities are examined. Pages 120-125 give an excellent list of similar investigations relating to this field.

average figures but rather at precise prices; and for hedgers, spreaders or straddlers, scalpers and all speculators except those whose vision is broad and financial capacity ample, these immediate and specific prices in large measure determine plans of operation.

Theory of Seasonal Price Variations.—It is appropriate to discuss one type of short-time variation in this chapter,—that of seasonal variations in price. These grow out of the fact that farm crops are harvested only once a year in the summer or fall but are consumed fairly uniformly throughout the year. This situation requires that someone carry forward these supplies from the time of harvest until needed. This is an expense to those supplying this function in the form of storage equipment, insurance, handling expenses and uninsurable risk. Here, then, we have another situation in price analysis fundamentally the same as any other problem of price. Grain prices or cotton prices tend in general to rise from the fall of the year to the late summer of the following year because of each successive month's cost of carrying forward supplies. And this gradually increasing seasonal cost serves as a norm in determining the extent to which prices of grain or cotton tend to rise on the average over a series of years. These costs, and in turn seasonal prices, are dependent in part, too, upon the general level of commodity prices.

At any particular time or for any particular year seasonal variations in price may depart far from the costs of carrying, depending upon the factors determining the demand and supply for storage. This latter phase of the problem can be more advantageously discussed following a consideration of the relation of cash to future prices. It is mentioned here simply for the purpose of noting that the essential features of seasonal price are the same as those of other problems in price.

Trend in Seasonal Price Variations.—We can measure the general way in which the spot price of a commodity tends to rise with the advance of the crop year by averaging the prices for the same periods each year for a number of years. This

averaging process tends to smooth the unusual variations of particular years giving as a result the general upward trend.

A careful compilation of available data covering a 21 year period has been made for wheat by the Food Research Institute.¹¹ Table 14 presents a summary of this information. The average cash price prevailing at the outset of the crop year is compared with similar prices prevailing at the close of the crop year. It shows, for three classes of grain and for each period, an average price prevailing in the latter part of the crop season distinctly higher than for the early part of the season. It also

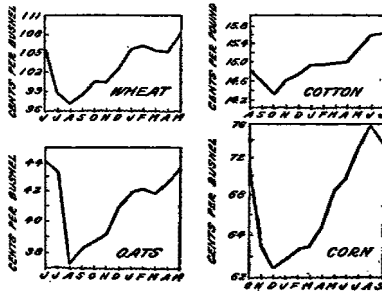


FIG. 32.—Seasonal variation in the price of four commodities: wheat, cotton, oats, and corn.

shows a somewhat wider spread during recent years reflecting, in part at least, the generally higher prices of this period.

Figure 32 has been prepared to show the gradual upward trend in seasonal prices by months for the four leading commodities in which future trading is maintained. Due to differ-

ences in periods of harvest, the low point is not the same for all four. For oats and wheat the lowest month is August, for corn December, and for cotton October. To place them on a comparable basis with respect to their seasonal movements, the curves for wheat and oats begin with June and end with the following May; the cotton curve begins with August and the corn curve with October. To place them on a comparable basis with respect to the extent of upward trend in each, they have been drawn to a scale which approximately describes the changes in each in proportion to its general price level. Table 15 gives the figures for each of the four commodities.

Figure 32 reveals a definite seasonal trend for each of these four leading commodities reflecting in general the advancement

¹¹ "Variations in Wheat Prices," *Wheat Studies* of the Food Research Institute, Stanford Univ., June, 1929.

of its crop season. It will be observed that the trend is not a uniform one despite the fact that it includes a period of over twenty years. The explanation is to be found in the pronounced influence certain of the years have upon the average,—years in which the price varied widely from this average upward swing. Some of these years, and some of the factors causing unusually wide deviations during these years, we will need to analyze more fully at later points. It is sufficient to observe

TABLE 14.—AVERAGE CHANGES BETWEEN CASH SALES PRICES OF VARIOUS WHEATS AT BEGINNING AND END OF CROP YEAR, FOR A TWENTY-ONE YEAR PERIOD.*
(In cents per bushel.)

Period	No. 2 Hard Winter at Kansas City			No. 2 Red Winter at St. Louis			No. 1 Northern Spring at Minneapolis		
	Aver. of July- Aug. prices	Aver. of May- June prices	Net Change	Aver. of July- Aug. prices	Aver. of May- June prices	Net Change	Aver. of Sept.- Oct. prices	Aver. of May- June prices	Net Change
1900-07	73.4	81.7	8.3	78.6	89.3	10.7	81.1	87.8	6.7
1907-14	93.6	102.5	8.9	96.4	107.8	11.4	101.5	106.8	5.3
1921-28	124.5	136.4	11.9	130.4	149.4	19.0	134.4	147.1	12.7
21 yr. aver.	97.2	106.9	9.7	101.8	115.5	13.7	105.64	113.88	8.2

* Based on data in *Wheat Studies* of the Food Research Institute, June, 1929.

here that our averages do not include enough years to iron out these outstanding differences. Attention is called also to the manner in which each of the seasonal movements tapers downward during the latter months toward the approach of the new crop season. Here the factor of carrying costs on the old crop gradually gives way through the force of competition to the new supplies in which no charge is as yet imputed.

We have now considered a number of phases of the problem of price. While they are very broad in character they are also very essential being the basic determinants of price from year

to year and from decade to decade. We have next to consider the nature of the market upon which these forces are focused.

6. THE MARKET IN COMMODITIES USED FOR FUTURE TRADING

Nature of a Market.—A market is usually thought of as being a place or region within which a particular article is bought

TABLE 15.—TWENTY-TWO YEAR AVERAGE OF MONTHLY CASH PRICES FOR WHEAT, CORN, OATS AND COTTON BASED ON THE PERIODS, 1900-14 AND 1921-29.*

Month	No. 2 H.W. Wheat K. C.	No. 3 Yellow Corn, Chi.	No. 3 White Oats, Chi.	Middling White Cotton. N. O.
	(cents per bu.)	(cents per bu.)	(cents per bu.)	(cents per bu.)
Jan.	105.50	61.73	41.86	14.92
Feb.	105.96	62.68	42.18	14.92
March	105.32	63.09	41.86	14.97
April	105.14	64.82	42.55	15.00
May	108.00	68.36	43.59	15.24
June	105.36	69.64	44.18	15.59
July	98.68	72.91	43.36	15.61
Aug.	97.14	75.55	37.36	14.83
Sept.	98.41	73.64	38.23	14.57
Oct.	100.55	71.09	38.64	14.32
Nov.	100.46	62.96	39.14	14.61
Dec.	102.55	60.96	40.91	14.74

* Monthly cash prices are averages of reported sales as compiled by the U. S. Dept. of Agriculture, crop year for wheat beginning July, for cotton and oats August, and for corn November.

or sold. As such it may comprehend a part of a street such as a curb market in fruit and produce, or a town or city such as the market for a retail store; or it may imply a much wider area such for example as the market for an issue of bonds. It is essential to a definition of a market, also, that there exists open competition within its area or zone to the extent that one price prevails for the article being traded in.

Future Markets Highly Competitive.—Prior to modern developments in transportation and communication, open com-

petitive markets having well defined limits were common. But under present conditions of integration and control in industry, where buyers and sellers trade by wire or letter over distances of hundreds and frequently thousands of miles, where contracts are entered into for goods widely distributed and of many specifications and prices, instances of well defined markets are rare. (Organized future exchanges in a very few of our agricultural commodities are probably the leading examples today of purely competitive markets. Here the law of one price still truly prevails and buyers and sellers vie with one another in the keenest kind of competition. Here the commodity being dealt in is sharply defined in quality and position. Here purchases and sales are made through open outcry, only at a prescribed place, and within prescribed hours so that any and all may respond or meet the offers of others. A study of future markets, therefore, is of distinctive interest as a type of market not often found in modern business.)

Market Information Focused on Exchange.—We described in an earlier chapter the body of market reports and news constituting an important part of the physical facilities of an exchange. This information is gathered by wire from all possible sources, relayed through news agencies, brokerage firms and individuals to thousands of interests who buy or sell accordingly. Much of the information is of little or no practical value but, in an effort to gain insight into probable price changes, it is ferreted out where there is the merest possibility of its being of market importance. All shades of news values are thus thrown together to be weighed by traders and in turn to be reflected through the composite opinion of all in the price.

In this process the elements of time and judgment are all-important. All traders do not receive items of information at the same time. Some rely upon trade journals and periodical reports, others upon telegraphic reports and the newspapers. Just at what time important information is received often depends upon how much trouble and expense a trader is in a position to incur. For substantially the same reasons the degree of judg-

ment displayed varies widely between trading interests. As a result, a continuous flow of widely varying market information finds its way to a single center, there to be interpreted at varying intervals of time by individuals with varying degrees of judgment. Thus an organized market becomes a many-sided affair fluctuating continuously in response to changing opinion. Its moments of apparent stationary price are moments of price equilibrium to be upset an instant later by new or revised opinion.

Price is a Record of Market Opinion.—In any theory of market behavior, it is extremely essential that this concept of composite opinion be a part of it. While it is undoubtedly true that the factors of costs of production, the general level of all commodity prices, the desires and purchasing power of consumers and the supply present and prospective are basic determinants of price, it is also true that they can only make themselves felt through the market actions of individuals. (If those who compose the trading body are in a position to sort out items of fundamental importance from the enormous mass of materials currently circulating and to make their decisions timely, prices will reflect basic market conditions. But if their judgment is not timely or if those competent to judge constitute but a small fraction of the entire trade, then prices may move a long way out of line before corrective forces are set up. We shall have occasion later to touch upon this point again.) It is in place to note here that whether prevailing prices reflect either sound and timely judgment or the most grossly misleading information, they constitute the market price just the same and that, whatever the means, the only way in which an improvement in the quality of the market can reflect itself in the price is through the character of purchases and sales made upon it.

7. SUMMARY

An understanding of price and the forces at work determining it constitute the most difficult parts of any economic problem. This is particularly true in a study of the nature of or-

ganized trading in futures. For this reason we have developed in this chapter some basic aspects from familiar ground in economic theory illustrating where possible by actual example. The factors entering into the determination of the price of a commodity involve a consideration of costs of production, the general level of commodity prices and more immediately the supply of and demand for the particular commodity.

For those agricultural commodities of importance in future trading, supply is much more uncertain than demand. These commodities have a comparatively stable and inelastic demand. The supply, however, due to the uncertainties of crop conditions during the growing season and to the difficulty in measuring it because it is so widely distributed and in various stages of production, is hard to accurately estimate. These aspects of supply account in no small measure for the popularity of agricultural commodities as a medium for future trading. The seasonal character of the supply also affects the general course of prices to some extent throughout each crop year. Production of a crop reaches the point of harvest in the late summer or fall but its consumption takes place throughout the year. Accordingly varying portions of the crop must be carried forward and this carrying cost is to a varying degree imputed in the price.

The determinants of price can have an influence upon price only through the market actions of individuals. If fundamental factors are accurately weighed by the body of traders, prices will reflect basic conditions; but if trading judgment is untimely or is incompetent, price may be far from an accurate reflection of fundamental conditions.

CHAPTER XIV

INTERRELATION OF CASH AND FUTURE PRICES

In the preceding chapter consideration was given to the manner and extent to which the fundamental determinants of supply and demand cause prices to vary from season to season and from year to year. Cash prices were used in the comparison made. But it was assumed that observations made with respect to cash prices were equally true for future prices since the two markets move up and down together. It will be our task in the present chapter to closely measure the accuracy of this assumption. Future prices do parallel cash prices in a general way but the relationship is by no means a perfect one. Why are future and cash prices related? To what extent do they fail to maintain a close relationship? What market factors are important in causing normal relationships to break down? These are questions of primary importance to an understanding of the nature and function of future trading. Under the present plan of marketing and merchandising commodities in which future trading plays an important part, cash trade interests everywhere depend upon a close correspondence of cash and future prices to hedge their trade positions and to determine daily the buying and selling limits for their products. In fact, were there no necessary and continuing relationship between cash and future prices, there would be no economic justification whatever for future trading. Having an understanding of how these two series are related, we will be in a position to consider some of the applied phases of the subject where an understanding of this relationship is necessary.

1. WHY CASH AND FUTURE PRICES ARE SIMILAR IN MOVEMENT

A Comparison of Cash and Future Prices.—Figure 33 has been prepared to show the general relationship of cash to

future prices. It illustrates for a period of ten years the course of cash prices and the course of future prices for the four principal commodities: wheat, corn, oats and cotton. The data selected were the prices prevailing every other Monday using identical dates for both series. The cash price is an average of the range prevailing upon the days selected; the future price

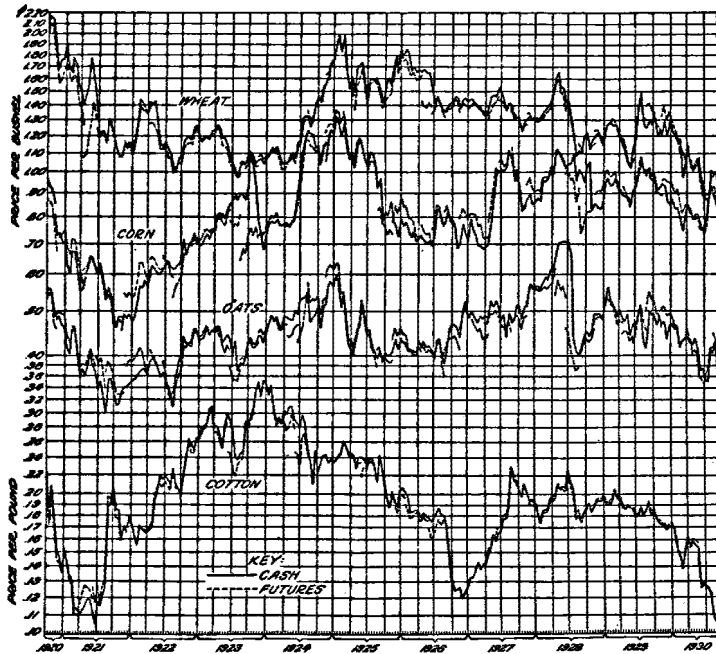


FIG. 33.—Relation of cash to future prices for four commodities for the 10-year period October, 1920-September, 1930.

likewise is an average of the range of the future prices prevailing on the days selected, the particular future used for each date being the one most active at the time.

The extent to which these two series are related can be easily seen. In general the major movements in price occur at about the same time and to about the same extent in both series. This

is true for each of the three grains and for cotton. The chart is drawn on a ratio scale so that equal percentage changes in price are represented by equal vertical distances upon the chart. This permits a direct comparison to be made between the four commodities. It may be seen that the degree of fit between cash and futures is about the same for each of the three grains and cotton. It is also worthy of note that there is a general correspondence in range of price movements from month to month and from year to year for these four commodities.

A closer inspection of Figure 33 will show that for certain periods the cash price differs considerably from the future price and that seldom are they precisely the same. Thus for wheat during May and June, 1921, for corn during October and November, 1923, and for oats during May and June, 1928, wide divergencies are shown. The occasion for these is to be found in the fact that for these particular periods of the year the cash prices continue to be for the crop just ending while the future prices reflect the on-coming new crop. This point we will develop more fully a little later and there also other market factors causing variations between cash and future prices will be considered, some of which are to be expected each year and some of which are of uncertain occurrence.

Why Cash and Future Prices Should Move Alike.—It was emphasized at earlier points that a future contract is a right to the commodity specified. In determining what the price of this contract should be, it is immaterial whether it ultimately matures in an actual delivery of the commodity or is offset so long as this right to deliver is always open and unobstructed. Where this is the case, the future market will regularly respond to the same fundamental factors, both present and prospective, that affect the cash market. The reason for this is that buyers of futures have the privilege of converting their future into actual grain and selling the latter if the future fails to keep pace with any advance in the price of cash grain. In any decline in cash prices, sellers of futures have the opportunity of acquiring the cash commodity at a very favorable

price and delivering upon their future if the latter fails to decline. It is the knowledge that these alternatives are available that keeps the future price in line with the cash.

The two markets will not always respond to a given item of market information to exactly the same degree. Sometimes the information is temporary in character such as unusually large receipts for a period of a few days. This factor will have a more noticeable effect upon the cash than upon the future market. At other times situations likely to materialize at some future time such as the outcome of a poor crop prospect will have a more pronounced effect upon the future than upon the cash price. But these are differences in degree only, both markets advancing or declining to an approximately equal extent in response to the same body of market information.

A similar situation in another field will aid in understanding this relationship. The price of a convertible bond, if on a convertible basis, will rise and fall with each variation in the price of the stock into which it is convertible. This is often true and for long periods of time without any of the bonds actually being converted. The knowledge that they can be converted is sufficient ordinarily to hold the two in line and only occasionally is it necessary for the bondholder to convert in order to take advantage of any advance in the price of the stock. Of a similar character and even more a parallel to the future-cash relationship is that of rights to subscribe to additional shares of stock in a corporation and the stock itself. Here again the rights will advance and decline in a definite ratio to the stock because of the knowledge that they can be converted into stock.

Effect of Spreading upon Cash-Future Relationship.—Cash and future prices are held in line not only by the knowledge that futures can if necessary be converted into grain but also by actual spreading operations between these two markets. If, for example, the May future should advance without a corresponding increase in the price of the cash product, merchandising and shipping firms in particular will buy the cash and sell a corresponding amount of the future. An illustration of this

kind occurred on a very large scale in the late winter and spring of 1922 when May wheat in Chicago rose for a time without the cash price following. Terminal elevators accordingly bought wheat in the country and in the markets wherever it could be obtained and sold the May future against it reaping an unusually large profit. Spreading operations of this kind tend to depress the price of the future sold and to raise the price of the cash and as a result bring the two markets back into line again.

The operations of these same concerns can likewise bring the two markets into line in situations just opposite to the above. Thus cash prices may for the time being be too high relative to the future. Cash houses will then be encouraged to sell their actual supplies at once. And as sales are made, they will remove their hedge in the future market by buying an equal quantity of the future. This will tend to advance the price of futures and to lessen the demand in the cash market.

Situations of this kind are not, however, corrected in a day. Not infrequently unusual premiums or discounts in the cash market relative to the future will prevail for a considerable period of time. Some of the more important of the many factors causing these temporary disalignments will be outlined presently. All of them tend, however, to set up corrective forces and as a result the two markets are held in general alignment from month to month and from season to season.

Future Prices Do Not Determine Cash Prices.—In the hearings and investigations in future trading and particularly those in grain, a great deal of consideration has been given to the question of whether future trading, through the price established in that market, does not determine the price paid for cash grain. This question can be answered at this point in the light of the analysis of the preceding and present chapter. Both cash and future prices are broadly determined by the same basic information, viz., the fundamental factors determining the supply of and the demand for the actual commodity. These fundamental factors cause both series of prices to advance and decline in their major movements at the same time and to ap-

proximately the same extent: for cash prices through sales and purchases of the actual commodity, for future prices through sales and purchases of contracts or rights to the commodity. It is therefore not accurate to say that future prices determine cash prices nor that cash prices determine future prices. Both are broadly determined by the same fundamental market information.

This statement will need to be qualified somewhat if it is not to be misleading. Fundamental market information determines prices only through the opinions and actions of traders composing the market. If then this information is not accurately interpreted (and this is usually the case at least in some measure), the level of cash and future prices will be affected thereby. In other words, while future and cash prices are broadly determined by the same market information it should not be implied that their price level at any given time is exactly where it should be. Our statement will also need to be qualified by the fact that through the medium of the future market, a great many trade who would not trade were only the cash market available. As a result the combined judgment of the market in its interpretation of current information may not be the same as it would be were it composed of a smaller number of traders. Finally it should be observed that reference is made only to the major movements in prices. There are hundreds of minor fluctuations, particularly in the future market, which are the result of factors which do not cause a similar variation in the cash market.

Future Prices Precede Cash Prices.—While future and cash markets both reflect the same body of fundamental market information, they do not as a rule receive this information at exactly the same instant in time. Here the future market functions more promptly than the cash. Speculators in futures buy and sell for the sole purpose of profiting from uncertain price fluctuations and they therefore bend every effort to obtain significant information. News agencies, private crop forecasters and various special services provide prompt reports as well as

extensive surveys. Private wires extend to all leading centers and to many smaller points. Private telephones connect the offices of commission firms with the floor of the exchange for use in handling future orders.

This equipment is not duplicated in the cash market partly because it would involve unnecessary expense and partly because the business does not demand such elaborate facilities. Cash traders derive their profit in the form of a margin for handling, shipping and processing the actual commodity and are dependent for their profit only in part upon the course of prices. They depend upon the future market to collect and reflect promptly the varying shades of market information.

The present-day practice of hedging cash commitments is probably the primary reason, however, for cash prices following future prices. Future markets have for many years afforded protection to cash trade interests against uncertain market price changes. Because some cash interests took advantage of these facilities and hedged their trade position, others through competition were forced to. Particularly in the large-scale handling of grain and cotton, hedging has long since become the established practice. But in order to hedge successfully, cash purchases as well as sales must be based upon the future market, and as a result cash interests continually turn to the future market to determine their buying and selling limits. It is quite true that there are many minor factors causing continual variations in these limits but the basic standard upon which every change is measured is the prevailing price in the future market.

2. CASH PRICES BUILT UP FROM FUTURE PRICES

The markets in futures are highly centralized compared with those in the cash or spot commodity. The details and terms embodied in each transaction are uniform while in the cash trade they vary widely. As a result the price structure in the cash trade reflects a much wider range of positions and conditions than does the future structure. Price adjustments must be set

TABLE 16.—CAR-LOT PURCHASES OF WHEAT AND OATS MADE BY A LEADING FIRM UPON THE CHICAGO BOARD OF TRADE ON AUGUST 11, 1930, SHOWING PREMIUMS AND DISCOUNTS BASED UPON THE SEPTEMBER FUTURE.

Number of cars	Description	Price of future at time of purchase	Premium or discount paid	Price paid	Hedged by sale of		
					Amount	Future	Price
	WHEAT	(cents)	(cents)	(cents)	(1000 bu.)		(cents)
1	No. 1 Nor. Spring	94	$\frac{1}{2}$ Under Sept.	93 $\frac{1}{2}$			
1	No. 1 Hard Winter	94	$\frac{1}{2}$ " "	93 $\frac{1}{2}$	5	Sept.	93 $\frac{1}{2}$
1	No. 5 " "	93 $\frac{1}{2}$	5 " "	88 $\frac{1}{2}$			
1	No. 2 " "	93 $\frac{1}{2}$	$\frac{1}{2}$ " "	93			
1	No. 1 " "	93 $\frac{1}{2}$	$\frac{1}{2}$ " "	93 $\frac{1}{2}$	5	Sept.	93 $\frac{1}{2}$
1	No. 4 " "	93 $\frac{1}{2}$	4 " "	89 $\frac{1}{2}$			
1	No. 2 Red " "	93 $\frac{1}{2}$	$\frac{1}{2}$ " "	93			
1	No. 2 Hard " "	93 $\frac{1}{2}$	12 " "	81 $\frac{1}{2}$			
1	No. 4 " " "	93 $\frac{1}{2}$	3 $\frac{1}{2}$ " "	90	10	Sept.	93 $\frac{1}{2}$
1	No. 4 Y. " " "	94	3 $\frac{1}{2}$ " "	90 $\frac{1}{2}$			
1	No. 2 Red " "	93	11 " "	82			
2	No. 2 Mixed	93 $\frac{1}{2}$	1 $\frac{1}{2}$ " "	92 $\frac{1}{2}$			
1	No. 1 " " "	93 $\frac{1}{2}$	1 " "	92 $\frac{1}{2}$			
1	No. 2 Red Winter	94	$\frac{1}{2}$ " "	93 $\frac{1}{2}$	5	Sept.	93 $\frac{1}{2}$
1	No. 1 " " "†	94	$\frac{1}{2}$ " "	93 $\frac{1}{2}$			
2	No. 1 Hard " "	94	$\frac{1}{2}$ " "	93 $\frac{1}{2}$			
	OATS						
1	No. 2 White	41 $\frac{1}{2}$	$\frac{1}{2}$ " "	41			
1	No. 3 " "	41 $\frac{1}{2}$	1 " "	40 $\frac{1}{2}$	15	Dec.	45 $\frac{1}{2}$
1	No. 2 " "	41	$\frac{1}{2}$ " "	40 $\frac{1}{2}$			
3	No. 2 " "	41 $\frac{1}{2}$	$\frac{1}{2}$ " "	41			
1	No. 3 " "	41 $\frac{1}{2}$	1 $\frac{1}{2}$ " "	40			
1	No. 2 " "	41	$\frac{1}{2}$ " "	40 $\frac{1}{2}$	5	Dec.	45 $\frac{1}{2}$
1	No. 2 " "	41	$\frac{1}{2}$ " "	40 $\frac{1}{2}$			
1	No. 3 " "	41 $\frac{1}{2}$	1 " "	40 $\frac{1}{2}$			
1	No. 3 " "	41 $\frac{1}{2}$	1 " "	40 $\frac{1}{2}$	15	Dec.	44 $\frac{1}{2}$
2	No. 2 " "	41 $\frac{1}{2}$	$\frac{1}{2}$ " "	41 $\frac{1}{2}$			
1	No. 2 " "	41 $\frac{1}{2}$	$\frac{1}{2}$ " "	41			
2	No. 3 " "	41 $\frac{1}{2}$	1 $\frac{1}{2}$ " "	40	5	Dec.	45
1	No. 2 " "	41 $\frac{1}{2}$	$\frac{1}{2}$ " "	41			
1	No. 1 " "	41	September	41	10	Dec.	44 $\frac{1}{2}$
1	No. 3 " "	41 $\frac{1}{2}$	1 $\frac{1}{2}$ Under Sept.	40			
1	No. 2 " "	41 $\frac{1}{2}$	$\frac{1}{2}$ " "	40 $\frac{1}{2}$			
1	No. 3 " "	41 $\frac{1}{2}$	1 " "	40 $\frac{1}{2}$			
2	No. 1 " "	41 $\frac{1}{2}$	$\frac{1}{2}$ " "	41			
2	No. 2 " "	41 $\frac{1}{2}$	$\frac{1}{2}$ " "	40 $\frac{1}{2}$			
1	No. 1 " "	41	$\frac{1}{2}$ " "	40 $\frac{1}{2}$	25	Dec.	44 $\frac{1}{2}$
1	No. 2 " "	41 $\frac{1}{2}$	$\frac{1}{2}$ " "	40 $\frac{1}{2}$			
2	No. 3 " "	41 $\frac{1}{2}$	1 " "	40 $\frac{1}{2}$			
2	No. 2 " "	41 $\frac{1}{2}$	$\frac{1}{2}$ " "	41 $\frac{1}{2}$			
5	No. 2 " "	41 $\frac{1}{2}$	$\frac{1}{2}$ " "	40 $\frac{1}{2}$			
2	No. 1 " "	41 $\frac{1}{2}$	$\frac{1}{2}$ " "	41	20	Dec.	44
1	No. 2 " "	41	$\frac{1}{2}$ " "	40 $\frac{1}{2}$			

* Smutty.

† Rail billing.

up to reflect the differences in costs of shipping and handling for the thousands of points in the marketing channels. Each grade and quality of the cash commodity must be accounted for and in forward or delayed delivery contracts further account must be taken of the time element involving costs of storage and insurance. It is in place at this point to consider how these adjustments are built up from the future price, using illustrations representative of common trade practice.

Spot Purchases of Grain at Terminal Markets.—The present-day method of purchase and sale of cash grain at terminal markets will throw light upon the way in which cash prices are built up from future prices. Spot purchases are made in units of car lots. Samples of each car are displayed by the seller and the prospective buyer will bid for the car on the basis of the prevailing future. Thus the future price for September wheat might be $98\frac{1}{4}$ cents. One buyer might bid "2 cents under the September," another " $2\frac{1}{4}$ cents under the September," and still another " $1\frac{3}{4}$ cents under the September" for a particular car. If the last bid were accepted, the actual purchase price would be $96\frac{1}{2}$ cents.

Table 16 shows the purchases of grain made by one of the leading terminal elevator companies of Chicago in the course of a trading day. On this particular day, only wheat and oats were bought by this house. These purchases are listed for each grain in the order in which they occurred showing the price of the September future upon which each trade was based at the time it was made, the discount agreed upon based on this future price, and the actual cash price paid as a result of applying this discount to the September future price. There is also shown at the right the hedges which were currently sold by this firm as cash purchases were made.

What is here presented as the practice of one firm is fairly typical of all of the firms in buying grain. Their interest is not in obtaining grain at any particular level of prices, such as \$1.00 per bushel or \$1.50 per bushel, but only in obtaining it upon as favorable a basis relative to the future as possible.

They rely upon the future market to determine the general level of prices to be paid. It is of interest to note in connection with Table 16 how the discounts are adjusted to meet the varying qualities and grades purchased. Two cars of wheat were smutty and this factor alone resulted in a discount of $11\frac{1}{4}$ - $11\frac{1}{2}$ cents. One car of No. 1 Red Winter wheat did not include the usual lake-rail billing so that as a result it brought no more than No. 2 Red. Oats shows a much smaller range in price partly due to a lower price level and partly to a smaller variation in quality, No. 1 White ranging from the September price to $\frac{1}{4}$ cent under, No. 2 White from $\frac{1}{4}$ to $\frac{1}{2}$ cent under and No. 3 White from 1 to $1\frac{1}{4}$ cents under. We will have occasion to refer to this table again at a later point in connection with the practice of hedging.

The prices paid for wheat and oats, as shown in Table 16, were based upon the September future and were, with only one exception, at a small discount under the September. The use of the September future in this instance is in line with the usual practice of basing cash bids or offers upon a near-by and active future. On August 11, 1930, the day on which these transactions were made, trading, both for wheat and oats, was also maintained in the 1930 December, in the 1931 March and in the 1931 May futures. These more distant futures, while frequently better suited as a hedge, are not as a rule as active nor as closely related to current cash conditions as the nearby future and for this reason are not usually used as the basis for cash trading.

The discounts paid for wheat and oats shown in Table 16 were occasioned by the fact that the September future reflects a point in time slightly more advanced in the crop year than the point of spot buying on August 11, the actual amount of the discount in each instance being partly determined by the quality of the cash commodity offered in relation to the quality reflected by the future price. In Section 3 immediately following, additional consideration is given to these points.

The Buying of Spot Cotton at Country Points.—In the fol-

lowing illustration for cotton, account is taken not only of quality and time but also of position. Grain or cotton at a country point is less valuable than the same quality of product at a central point roughly by the cost of shipping. Bids made for delivery at a country point when based upon the future price reflecting delivery at a central point will, therefore, be lower by an amount sufficient to meet the shipping costs.

TABLE 17.—A LIMIT SHEET SENT BY A COTTON FIRM TO ITS REPRESENTATIVE TO BE USED AS THE BASIS OF PURCHASE OF SPOT COTTON AT COUNTRY POINTS.

Firm name	Buying basis No. 20		Nov. 2, 19—	
	Based on December, N. Y., F.O.B. Texas common points			
Staple	Good Middling, white	Strict Middling, white	Middling, white; or S. Mid., spotted	S. Low Mid., white; or Middling, spotted
$\frac{13}{16}$ "	215 off	225 off	250 off	350 off
$\frac{7}{8}$ "	75 off	113 off	150 off	250 off
$\frac{15}{16}$ " shy	25 off	63 off	100 off	200 off
$\frac{15}{16}$ "	10 on	15 off	65 off	165 off
1"	55 on	30 on	20 off	120 off
$\frac{11}{32}$ "	90 on	65 on	15 on	85 off
$\frac{11}{16}$ "	105 on	80 on	30 on	70 off
$\frac{13}{32}$ "	125 on	100 on	50 on	50 off

Prompt delivery. Don't buy any staple below $\frac{13}{16}$ ". Don't buy any grades below S.L.M. value and be sure the grade is full on S.L.M. value.

It is the practice among the larger cotton merchants to supply their road buyers with a schedule of "limits" specifying the figures at which or below which they are expected to bid for cotton. These limits are expressed as differences "on" or "off" some near-by future used as a base. Table 17 reproduces a "limit sheet" for the purpose of illustrating this structure of spot quotations.

In the illustration given here, Middling white cotton $\frac{7}{8}$ inch staple is quoted at 150 points under the prevailing price of the December future on the New York Cotton Exchange. Know-

ing the price of the December future, it is an easy matter for the buyer to deduct the 150 points or $1\frac{1}{2}$ cents to obtain the spot price which he is permitted to pay. As the December future advances or declines from day to day the buyer will accordingly advance or lower his bid assuming his limits are not changed in the meantime by the firm and assuming also that he is unable to buy on a better basis.

For longer staples or better grades the buyer is permitted to pay a higher price and for shorter staples and lower grades he is required to lower his bid. The point of purchase is, delivered F.O.B., Texas common points. The freight rate structure referred to here includes many of the interior points of Texas at which a cost of 81 points is involved in moving cotton to the gulf.

3. THE PRINCIPAL REASONS FOR VARIATIONS IN THE RELATION OF CASH TO FUTURE PRICES

Too much care cannot be taken in analyzing the relation of cash to future prices. It involves the principal problems of hedging and is fundamental to an understanding of the market-making function of future trading. Furthermore the problem in itself is a composite of many and often conflicting relationships. Why cash and future prices at times move in perfect accord and at other times display very little apparent correlation is a question that can be answered only after careful consideration of many closely related factors.

We have considered thus far the principal aspects in the normal relationship between cash prices and future prices. This is but one-half of the problem and the easier half to demonstrate. There remain to be considered those factors which tend to cause variations in the relation of cash to future prices. These are many in number, are often conflicting in their effect and change in importance with each change in the trade. Some are of regular and fairly dependable occurrence while others are important only occasionally. Some of the more important of

these factors will be considered in the remainder of this chapter and in succeeding chapters as a part of separate problems.

Future Prices Reflect One Quality While Cash Reflect Many.—The future contract provides that any of a number of grades may be delivered at the option of the seller in fulfillment of the contract. The rules of the exchange provide which of these grades may be delivered at the contract price, which at a premium and which at a discount together with the amount of the premium or discount for each grade. These grades have a commercial value and their relative prices in the cash market plus or minus the premium or discount allowed on the contract determine for any given date which grade will be the most profitable for the seller to deliver. This problem of deliverable grades and difference systems will receive fuller consideration in the following chapter. For our purpose here it is sufficient to observe that at any given time there is usually some one grade which sellers of futures may deliver to better advantage than any of the others. Usually this grade is No. 2 for grain and Middling for cotton though not infrequently No. 3 or No. 4 grade of grain will be delivered. For grain there are also several classes and sub-classes of No. 2 grade such as No. 2 Hard Winter wheat, No. 2 Northern Spring wheat and No. 2 Red Winter wheat. Thus, in addition to the grade, there is at any given time a most advantageous class of grain for future delivery.

The future price will reflect that grade and class which at any given time is the most profitable to deliver. That this should be the case is easily seen from the buyer's point of view. He is aware that the seller has the right to choose any of a number of grades. He will, therefore, base his bid upon the assumption that the seller will choose the grade which is relatively the cheapest. The future price will reflect this "most likely deliverable" grade not only during the delivery month but for months in advance. Thus if No. 2 Hard Winter wheat upon the Chicago market is the most likely grade in January, the May future price will reflect that grade at that time and if the

situation remains unchanged, it will continue to do so until the month of May arrives. If at any time cash prices so change relatively that another grade or class, such as No. 2 Red Winter wheat, becomes the most likely deliverable grade, the future price will thereafter reflect this latter class.

Not only will the future price reflect a particular grade and class of grain or cotton, but, as the month of delivery approaches, it will also reflect the bottom of this particular grade. The grades of any commodity are like the steps of a ladder. They do not represent an exact quality but rather all shades and qualities within specified limits. Since no qualifications are made in the contract for the quality within a deliverable grade, the buyer rightly assumes that the seller will deliver no better quality of the grade than is profitable for him to deliver. This quality is appropriately referred to by the trade as "skin" grade because it is just sufficient to pass inspection as that particular grade. The future price, therefore, will reflect the most likely deliverable "skin" grade and with increasing accuracy as the delivery month for any given future approaches.

Here then is a basic and permanent factor causing variations at all seasons of the year between the future market representing one particular grade and the cash market representing many grades. The extent of these deviations is measured by the degree of variation occurring from time to time between the most likely deliverable skin grade and each of the other grades of the cash commodity. At times these variations reach large proportions as for example between No. 2 Red Winter wheat and the future price reflecting No. 2 Hard Winter wheat, a difference amounting occasionally to as much as 40 cents per bushel. These are deviations, too, which cannot possibly be avoided so long as a given future market permits delivery of a number of grades and classes capable of wide variations in price in the spot market.

Cash Prices Usually Reflect a Carrying Charge.—Due to the fact that crops are harvested at one time in the year but consumed throughout the year, it is necessary to continually carry

forward portions of every crop. Thus cotton, corn and spring wheat are harvested in the fall, and winter wheat, oats, rye and barley in July and August; and from this time on until another crop is ready, diminishing quantities of these crops must be carried forward. This involves expense in the form of storage, insurance and handling charges to those who own these supplies and this expense over a number of years will be reflected in gradually increasing prices as the season advances. This point we have illustrated in the previous chapter for wheat, corn, oats and cotton showing the average seasonal trend for a 22-year period.

The situation with regard to carrying a crop forward is the same in principal as that of growing a crop. Some years the price will advance sufficiently to pay the expense of storage, insurance, etc., and leave a liberal profit; in other years considerable loss will be sustained; but over a series of years price advances must be sufficient to at least approximate the aggregate expense involved. Since this tendency of cash prices to advance occurs during each crop year it can be appropriately referred to as a seasonal trend in cash prices.

Future prices do not involve this seasonal trend growing out of carrying costs. Thus, suppose 5000 bushels of May corn were bought on January 14. The purchase price would reflect the cost of carrying this corn to the month of May. Were this future bought on March 14 the same carrying charge would be reflected in the price since the time of delivery is the same. So from day to day and from month to month any particular future will reflect a uniform rather than an accumulating carrying charge. If then cash prices are compared with future prices over a period of several months using the same future throughout, they will normally rise relative to the future reflecting this accumulating storage cost. And to the extent that they do rise, cash prices will not parallel future prices.

This seasonal variation between cash and future prices while only a small one is highly important to the grain and cotton merchant under the present-day practice of hedging. Ordinari-

ly it enables the merchant to store and later sell his supplies at an advance relative to his future hedge sufficient to earn a carrying charge. While this factor accounts for a variation between cash and future prices it is in this respect unlike most other factors in that the variation introduced is a desirable one.

If cash prices normally rise relative to future prices, it follows that at the beginning of a crop season they must start comparatively low and at the close of the season end comparatively high. If we could conveniently use the same future for a period of ten months ending with the crop year and this relative increase amounted to one cent per bushel per month for grain, it would amount for the entire season to ten cents. And if the grade and quality of cash grain used were precisely the same grade and quality as that reflected in the future price this relative increase would be from a discount of ten cents under the future price at the beginning of the season up to the level of the future price at the end of the season. As another and new crop came on, the cash price would then drop down again to a discount.

An Illustration.—To aid in visualizing this seasonal relation of cash to future prices, Figure 34 has been prepared. It shows the course of wheat prices upon the Chicago Board of Trade during the crop year, 1928-29. This particular year was selected because it was a rather model year in the relation of cash to future prices. In Part A of the chart, cash prices of No. 2 Hard Winter wheat for each Monday are compared with closing future prices for the same days. The future used for each Monday was the most important one at the time, judged by the open commitments. Where a shift was made from one future to another, the two were over-lapped for three successive weeks to show the prevailing difference in price. The grade of No. 2 Hard Winter wheat was used in the curve of cash prices because for this particular market and year, this was the grade reflected by the future price. The actual cash prices shown were derived from the premiums or discounts paid each Monday

for this grade, an average of the day's range of premiums or discounts being applied to the closing future price.¹

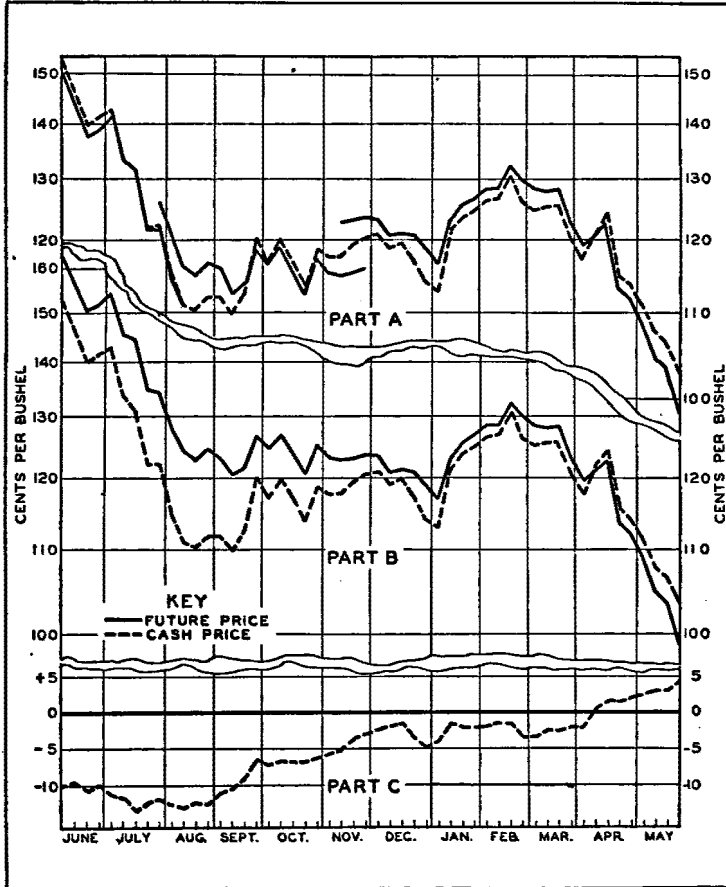


FIG. 34.—The seasonal trend in No. 2 hard winter wheat prices, Chicago, during the crop year, 1928-29.

The general relation of cash to future prices can be easily seen. The crop year, 1928-29, was on the whole one of de-

¹Data prepared by the Grain Futures Administration, U. S. Dept. of Agriculture.

clining wheat prices starting above \$1.40 and closing below \$1.00. In this decline cash and future prices reveal the same general trend. The future price, however, declined more rapidly than the cash; or stated in terms of the cash, the latter rose relative to the future. Part B shows the three futures of Part A combined in one continuous series by raising the September prices up by an amount equal to the average difference prevailing between the September and the December futures during the three weeks over-lapped, and similarly raising both the September and the December up to the level of the May. This adjusted May future permits of easier comparison of the two series while continuing to be just as accurate for a comparison of relative prices.

Part C shows the cash prices purely as a relative of the future prices. The adjusted May future series was subtracted each week from the cash series and these differences plotted as discounts or premiums of the future. The seasonal character of the cash prices is clearly shown. During the early period in which large supplies were coming on the market and in which no carrying charge was reflected in the cash price, discounts of from 5 to 14 cents are shown. Gradually these discounts disappeared as the season advanced to be replaced in the spring by premiums amounting to as much as $4\frac{1}{2}$ cents by the end of May.

The premiums prevailing at the close of the season illustrate a point already discussed, viz., that the future price represents a quality of grain in the lower part of the grade. The cash prices shown in contrast represent the average of the grade, being country-run grain in car lots, and for this reason command a premium over the future. This is the typical situation toward the close of a future for the contract grades of grain.²

Average Seasonal Trend of Cash Prices.—The extent to which cash prices have increased relative to future prices, aver-

² See Report of the Commissioner of Corporations on *Cotton Exchanges*, Part IV opposite p. 213 for a chart of cash and future prices for cotton covering the period 1881-1908 and showing a similar premium for spot cotton during the delivery month.

aging a 9-year period, for wheat, corn, oats and cotton is shown in Figure 35. In preparing the data for this chart, the same plan was followed as that of Figure 34. Cash prices were calculated as a premium or discount of adjusted future prices for the same day each week. The corresponding weeks of each crop year were averaged to obtain a figure representative of the entire period. These averages for each commodity were then plotted in which each curve represents the cash discounts

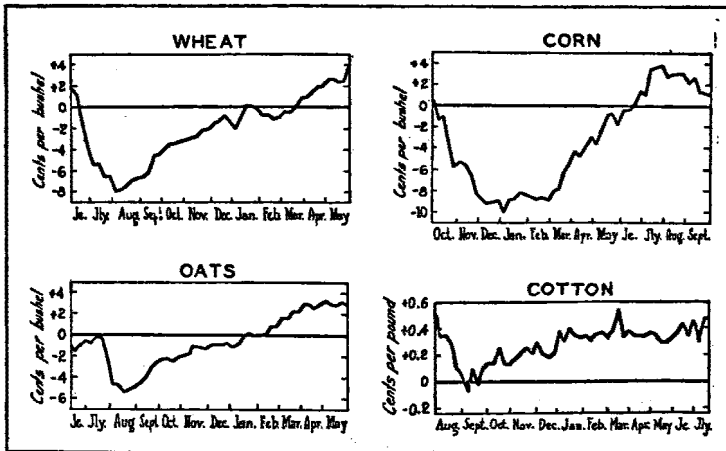


FIG. 35.—The seasonal trend in cash prices relative to the price of futures, for wheat, corn, oats, and cotton, averaging 9 crop years, 1921-1930.

or premiums below or above the future shown as a horizontal base line.³

The seasonal trend of cash prices for each commodity is a definitely upward one as the crop year advances amounting for wheat and oats to approximately 9 cents for the 9-month period, August to April, inclusive. For corn the upward trend amounts to somewhat more than one cent per month ranging from 8½ cents under the future during January and February

³Data for wheat, corn, and oats from Grain Futures Administration, U. S. Dept. of Agriculture.

to 3 cents over the future during the latter part of July and early August. For cotton the upward trend amounts to 40/100 cents for the 10-month period, September to July, or an average of only 4 points per month. This average is unusually small in view of the costs of carrying cotton forward and is accounted for by several years of small supplies in which cash premiums were large and declined rather than advanced toward the end of the crop year.

The periods just referred to as indicating the upward cash trend each year do not include the entire crop year. Instead they represent approximately the months during which the crop passes through commercial channels. A period of from one to three months is consumed in the transition from an old crop to a new during which cash buying and selling is almost entirely to meet immediate demand while future quotations reflect a less urgent situation several months hence. As this transition period advances, the new crop comes on to the market in increasing supplies to gradually eliminate this immediate demand thus lowering cash prices relative to future prices down to a storage basis. For this period then cash and future prices will not parallel each other by an amount equal to this cash adjustment, a period during which cash prices will ordinarily decline relative to future prices.

The movements of relative cash prices shown in Figure 35 reveal a general upward swing similar to that observed for actual cash prices in Figure 32 of the previous chapter. They are not precisely the same, however, because a longer period of years was used in the earlier comparisons, because this longer series reflects some upward trend from 1900 to 1913, and because the future prices used to measure the changes in the latter comparison do not average an exactly horizontal trend. Furthermore the data available for the 9-year comparison of cash to future prices do not always represent precisely the same quality of commodity.

Other Factors Affecting the Relation of Cash to Futures.—The elements tending to cause variations between cash and

future prices which have thus far been considered are known and expected by the trade. They regularly recur with varying degrees of force and can in a measure at least be foreseen and accounted for. There are many other factors, however, which cannot be definitely foreseen, which are abnormal in character and which continually inject a measure of uncertainty into both the cash and future trade.

Some of these factors are purely fortuitous in character, others are artificial and man-made and others are a mixture of both. A prominent example of the first type are changes in the condition of growing crops. Drought in the summer of 1930 caused corn prices to rise rapidly. But it did not affect cash and future prices to exactly the same extent. The markets for cash commodities are widely scattered while those in futures are centered at a very few points. As a result purely local conditions often have a far more pronounced effect upon cash than upon future prices. Where supplies are large cash prices will be low relative to future prices and where small comparatively high.⁴

An example of a factor artificial in character is that of a corner or "squeeze" in which the price of a particular future is run up as the month of delivery approaches and especially during the delivery month and in which cash prices do not advance with equal rapidity. The occasion for the failure of cash prices to make an equal advance is found mainly in the lack of faith buyers have in the prevailing level of future prices. As the future being squeezed advances, it appears less and less likely that it can be held at that level and buyers accordingly widen the discount they are willing to pay for the cash commodity or base their bids on a more distant future which has not been artificially advanced in price.

There are many other unforeseen factors causing cash and future prices to vary relative to each other. Variations from day to day in receipts and shipments have a more pronounced

⁴ *Report of the Federal Trade Commission on the Cotton Trade, Part I, p. 226 fn. for a 21-year comparison for cotton.*

influence on cash than on future prices. Changes in exchange rates, in freight rates, in the condition and position of supplies in both public and private store occasion continual change. In the chapters immediately following the present one, consideration will be given to two factors of fundamental importance to this subject. They are difference systems and deliverable supplies. These subjects are closely related and account for many of the abnormal deviations of cash to future prices. At other points, and particularly in the discussion of hedging where success is largely dependent upon the cash-future spread, we will need to consider other and pertinent phases of this subject. It will not be necessary, therefore, to consider further at this point these many uncertain and abnormal factors. Taken together they account for numerous and often large changes.

4. SUMMARY

The relation of cash to future prices is the central theme of all of the price problems in future trading. A knowledge of this relationship is essential to an understanding of the market-making function of future trading and to the practices of hedging and of spreading or straddling. It deserves, therefore, separate and detailed consideration. Certain forces are continually at work tending to hold these two price series together; others, and numerous minor ones, continually cause deviations in their price spread some of which are normal and expected and others of which are abnormal and unforeseen.

In the larger and principal price movements, cash and future prices advance and decline together. The reason for this is found in the fact that future contracts *can* be converted into the cash commodity if either the buyer or seller so desires. The knowledge that this is possible tends to hold the prices of cash and future contracts together very much as a convertible bond is held to the stock into which it may be exchanged. Spreading and hedging operations in the form of purchases of cash and sales of future or the reverse further aid in maintaining this relationship.

Both cash and future prices are broadly determined by the same body of basic information. But because the future market is more elaborately equipped to collect and quickly convert market information into price and because through their hedging operations cash buyers and sellers base their bids and offers upon the future price, the cash follows the lead of the future market in each advance or decline in price. The relation here is like a train consisting of a locomotive and two cars, the locomotive representing the basic market forces, the first car representing the future market and the second the cash market. The movement of both cars is determined by the force of the locomotive but the sequence is through the future car to the cash car.

The relationship of cash to future prices is not as close, however, as this illustration suggests. There are many elements continually at work causing variations in the otherwise parallel course of the two series of prices. Some of these elements are normal and expected such as the tendency of cash prices to rise relative to future prices by an average amount sufficient to meet the cost of carrying the cash commodity forward from month to month. Other elements are of an abnormal character and unforeseen such as changes in weather conditions, in conditions of shipment or storage and in innumerable minor factors continually playing a part in influencing prices. Basic changes in supply and demand manifest themselves in price only through market operations of traders and here elements of poor judgment, of fear and of artificial manipulation frequently affect the future market to a different degree than the cash market.

CHAPTER XV

DIFFERENCE SYSTEMS AND THEIR EFFECT ON FUTURE PRICES

Difference systems and their practical operation constitute one of the most difficult price problems in future trading. The future contract provides for the optional delivery of many grades and this fact introduces into the contract an element of uncertainty. The seller can deliver any of these various grades. If, however, he chooses an inferior grade, an allowance in the contract price is made to the buyer; if he chooses to deliver a superior grade, he is granted an allowance by the buyer. It is in these allowances or differences that difficulty arises. Cash prices are continually changing; they are subject to the interpretation of individuals; and in practical application, it is impossible to measure or determine these differences with precise accuracy.

Buyers of futures are aware that these differences are continually changing and that they are not always accurately determined. They shift their bid prices to meet any change or any likelihood of change and in turn the price of futures is affected. Difference systems then, while desirable for some purposes, are, in their effect on the relation of cash to future prices, frequently a disturbing element. Various plans have been employed from time to time to meet this problem. The more important of these will be outlined in this chapter together with some of the problems attending each.

1. OCCASION FOR A DIFFERENCE SYSTEM

To Lessen the Liability of Corners.—In the early years of future trading in grain, the contract called for the delivery of only one grade, e.g., No. 2 Spring wheat. In this form a buyer of a future knew definitely at the time of purchase that if he chose to take delivery, only this specific grade could be deliv-

ered to him by the seller. This form of contract was particularly useful to merchandisers of grain since it permitted them to use the future market to acquire supplies to fit their particular needs. But it was found deficient in that it continually encouraged corners. Since only one grade could be delivered those desiring to corner the market in a particular future had only to acquire the available supplies of that one grade. As time passed, too, the system of grading became more elaborate. Grading of grain by the Chicago Board of Trade was inaugurated in 1856 and consisted of wheat of only three types: Spring, Red (winter) and White (winter).¹ These were in time added to and sub-divided, winter wheats increased in importance, until by 1880 under Illinois inspection there were 9 grades of Winter wheat, 5 grades of Spring wheat and 2 grades of Mixed wheat. In the other grains also the number of grades had increased. This multiplication of grades made the problem of the manipulator still easier so long as the contract provided for the specific delivery of only one grade.

Accordingly in the early eighties the future contract for grain upon the Chicago Board of Trade was broadened so that not one but several grades were made deliverable at the seller's option.² This greatly limited the ability of any individual or group to gain control over the deliverable supply and in that respect was a worth-while improvement. In cotton the practice of permitting more than one grade to be delivered apparently began during the first few years of trading.³ While the contract provided for middling cotton other grades could be delivered if the seller desired.

To Broaden the Market in Futures.—Another though less

¹ See *First Annual Report of the Chicago Board of Trade*, 1858, p. 9. Also Andreas, A. T., *History of Chicago*, Vol. I, p. 585.

² In the year 1882 quotations for future delivery read "Regular or No. 2 wheat," "No. 2 corn," "No. 2 oats" and the rules provided for the delivery of any class of No. 2 as well as No. 1 but with no allowance to either seller or buyer.

³ See *Report of the Commissioner of Corporations on Cotton Exchanges* Part I, p. 89.

important reason for increasing the number of deliverable grades upon the future contract was to make its application wider in scope. Were future trading separately maintained in each grade, instead of having one market there would be several in the same commodity. And with the number of grades constantly increasing, such a practice would be sure to reduce the volume of trading in any one grade to small proportions. As an alternative, all of the future trading might be in some one principal grade. Aside from the likelihood of a corner, this plan greatly narrows the usefulness of the contract for those using it as a hedge. If, for example, the grade or class of commodity being hedged does not happen to be the grade or class sold in the future market, then the hedger is prevented from delivering it upon his future if he so desires; and the knowledge that this is the case is sure to weaken the price relationship between the non-deliverable cash grade and the future. Accordingly exchanges have long favored the inclusion of several principal grades and classes under the future contract to mobilize the trading and to broaden its application.

To Fairly Compensate Buyer or Seller.—If then not one but several grades were to be made deliverable at the option of the seller upon future contracts, it seemed only fair that some adjustment should be made to allow for variations in quality. A multi-grade contract could be employed, of course, in which no differential would be paid or received as an allowance for grade. Such a plan would result in the future price always reflecting the poorest grade and with no allowance to the seller for the delivery of better grades if a situation should develop in which a delivery of the upper grades were necessary. It is generally recognized that this plan is inequitable and as a result multi-grade contracts usually provide for some plan of price adjustment between grades.

Some one grade or group of grades is chosen as a basis. These are deliverable at the contract price and usually constitute the most important commercial grade or grades of that commodity. Certain grades of a better quality are then made

deliverable but with carefully defined additions to the contract price. Likewise certain grades of an inferior quality are made deliverable but at varying discounts to be deducted from the contract price, depending upon the quality tendered by the seller. In determining these differentials "on" and "off" of the contract price, the thought is that the future price shall normally reflect the basis grade but that if the seller finds it necessary or desirable to tender one or more of the other deliverable grades, an allowance in price shall be made which will fairly compensate both parties to the contract. We will consider some evidence in the latter part of this chapter indicating the extent to which his objective has been attained.

2. TYPES OF DIFFERENCE SYSTEMS

For the reasons enumerated in Section 1, all of the organized commodity exchanges at the present time employ some kind of a multi-grade contract upon which differentials are paid or received for certain grades. The rules and procedure set up by the various exchanges to determine these differentials differ considerably in detail in order to fit the needs of cash commodity and organization. They can, however, be broadly classified into three types, each of which will be described in the present section.

The Fixed Difference System.—Upon all of the grain future exchanges, the New York Coffee and Sugar Exchange, and some of the other smaller exchanges a schedule of fairly permanent price differentials is used. The grades which are to be deliverable upon future contracts together with the amount of the differential for each grade are determined usually by a vote of the entire membership. Having been thus established they will remain unchanged indefinitely unless conditions change so radically that a readjustment becomes highly desirable. In actual practice these changes are comparatively infrequent, the same schedule often being used without change for a period of several years.

In Table 18, there is shown the differentials used by the Chi-

chicago Board of Trade during the year 1929. With the exception of a temporary change in No. 3 White oats in 1928 and the elimination of the No. 4 grades of corn as deliverable grades in 1927, this set of differentials was used back to 1925. Further changes were made in 1931 in which the discount grades of wheat and rye were eliminated from the list. However, for the

TABLE 18.—GRADES OF GRAIN DELIVERABLE ON FUTURE CONTRACTS UPON THE CHICAGO BOARD OF TRADE DURING 1929 SHOWING THE DIFFERENTIALS OVER OR UNDER THE CONTRACT PRICE FOR EACH GRADE

Wheat	Premium or discount	Other grains	Premium or discount
	(cents per bu.)		(cents per bu.)
No. 1 Hard Spring	+2	Corn:	
No. 1 Dark Hard Winter	+1½	Nos. 1 and 2 White	+½
No. 1 Dark Nor. Spring	+1	Nos. 1 and 2 Yellow	+½
No. 2 Dark Hard Winter	+½	Nos. 1 and 2 Mixed	*
Nos. 1 and 2 Hard Winter	}	No. 3 White	-2
Nos. 1 and 2 Y. Hard Winter		No. 3 Yellow	-2
Nos. 1 and 2 Red Winter		No. 3 Mixed	-2½
No. 1 Northern Spring	*	Oats:	
No. 2 Dark Nor. Spring	-2	No. 1 White	+½
No. 2 Northern Spring	-3	No. 2 White	*
No. 3 Dark Hard Winter	-5	No. 3 White	-1½
No. 3 Hard Winter	-5	Rye:	
No. 3 Yellow Hard Winter	-5	Nos. 1 and 2 Rye	*
No. 3 Red Winter	-5	No. 3 Rye	-5

* At the contract price.

purpose of discussing the fixed difference systems, the list as shown for 1929 is more complete and will therefore be used.

It should be observed in Table 18 that the premiums for superior grades are somewhat smaller than the discounts for inferior grades. Thus for wheat, seven grades are deliverable at the contract price. Of these seven, No. 2 Hard Winter, No. 2 Yellow Hard Winter and No. 2 Red Winter are usually the

cheapest on the Chicago cash market. It follows that if the seller chooses to deliver any one of the four remaining No. 1 grades it is somewhat to his disadvantage since he could usually sell these grades on the cash market in exchange for one of the No. 2 grades and deliver the latter at a profit. Four other grades provide a premium but these are not large enough in relation to their cash value to enable the seller to deliver them without some loss compared to the No. 2 basis grade. Should the seller elect to deliver any one of the discount grades he is again confronted with a relative loss. Here the fixed differentials allowed the buyer are larger than those usually prevailing in the cash market. Thus while no premium is allowed for No. 1 Hard Winter wheat, No. 3 Hard Winter provides a five cent per bushel discount. This is equally true for the other grains. No. 1 White oats, for example, provides a premium of one-half cent while No. 3 White a discount of one and one-half cents.

The effect of narrowing the premiums and widening the discounts in these differentials and fixing them in this fashion definitely in advance of trading is to inform the prospective seller that his offer price should be based upon one of the No. 2 basis grades. It was pointed out in the chapter just preceding the present one that the future price reflects that grade and class of any commodity which at the time is most profitable to deliver. Fixing the differentials in this manner tends to force the future price to continually reflect only the lowest deliverable fraction of the basis grades. For the purpose of maintaining a uniform relationship between future and cash prices, this is highly desirable. It is for this reason mainly that the fixed differentials are so arranged. While tending to continuously focus the future price upon one grade, they also permit, in the event of a threatened "squeeze" or corner, the delivery of any one of a number of other grades at comparatively small sacrifices in price. This is the theory of the fixed difference system. Whether in practice it will operate as planned depends

upon the care with which these differentials are determined, the changes taking place in quantities and prices in the cash markets, and other factors of vital importance to its practical operation. These problems we will need to examine after a consideration of the other two difference systems.

The Periodic Difference System.—One of the limitations of the fixed difference system in practice is that changes may not be made in the differentials as often or as promptly as they appear in the cash or spot market. The periodic difference system is designed to correct this difficulty. This plan is used by several exchanges including the National Raw Silk Exchange, the Rubber Exchange of New York, and certain other exchanges most of which are located in New York City.

The plan provides usually for the appointment of an Adjustment Committee whose task it is to meet regularly to consider, and revise if necessary, any of the differentials. This Committee has final jurisdiction over any changes which it chooses to make and its composition is therefore highly important to the entire membership. Using the National Raw Silk Exchange as an example, an Adjustment Committee of 9 members is provided, 3 of whom are members of the Board of Governors. This Committee meets monthly on or about the 22nd of the month at which time the differentials are established and posted for use during the next succeeding month. The rules provide also for special meetings of the Committee at any time to make any changes deemed necessary and these to become effective on the following day. In practice, however, the regular monthly meetings are sufficient.

Under this plan differences "on" and "off" the basis grade are kept fairly abreast with current changes in the commercial markets. It is possible also to set the differentials nearer the actual differences prevailing in the spot market than under the fixed difference system which is designed to serve over many months' time during which material changes may develop. It is believed also that by establishing the differentials for a month

at a time that ample notice is given to the seller to provide the supplies and grades necessary for his contracts.⁴

The Commercial Difference System, Historical Background.—The organized cotton exchanges employ the third type of difference system. Instead of fixing the differentials indefinitely in advance or even one month in advance, they are established daily and applied currently to deliveries tendered each succeeding day. Both the New York and New Orleans Cotton Exchanges, at the outset of their organization in the early seventies, employed a commercial difference system. It was, however, somewhat different from the one employed at the present time. As in the periodic system, differences were determined by a regular committee of the exchange representative of both the buying and the selling interests in the spot trade. This committee followed closely the state of the spot market and met daily to establish official spot quotations for each grade of cotton as it prevailed in that market that day. These quotations were then posted and the differences between the various grades and the basis grade of Middling were used for cotton tendered for delivery on future contracts the following day.

Perhaps because the spot market in New York was not broad enough or because too frequent changes in the differentials were thought to have an injurious effect upon the trade in futures, the New York Cotton Exchange changed its plan in 1880 from a daily revision to that of once a week, the Revision Committee meeting on Thursday of each week to consider any necessary changes. This weekly plan was used until the year 1888 when the period of change was again widened this time to 9 meetings per year, viz., on the second Wednesday of September, October, November, December, January, February,

⁴An interesting hybrid difference system is used by one of the newer exchanges, the New York Hide Exchange. Fixed differences are provided for deliveries of hides depending upon the month of the year they were taken off. Fixed differences are also applied to certain special factors pertaining to the condition of the hides. Periodic differences established by an Adjustment Committee are determined bi-monthly for variations between grades.

March, April, and June. Finally in 1897 the rules were changed to provide for only two meetings each year: the second Wednesday of September and the third Wednesday of November. Thus while the New Orleans Cotton Exchange continued using the daily commercial difference plan, the New York Cotton Exchange changed to a periodic difference system.⁵ This it continued to use until the year 1914 when the Federal Cotton Futures Act put into effect the commercial difference system used at the present time.

The Cotton Futures Act.—There were difficulties encountered in applying the periodic difference system on the New York Cotton Exchange which occasioned considerable agitation for a change. The crop year 1906-07 was a year in which wide changes occurred in the price differences between the various grades of spot cotton. These unusual differences were caused mainly by a storm of unusual force which swept over the South in the fall of 1906 and followed by a period of rain which together greatly reduced the quality of the crop. In adjusting the differences that fall, the Revision Committee of the New York Cotton Exchange apparently did not foresee fully the unusual situation developing and set them narrower than they should have been. Heavy losses resulted for many cotton merchants, a Federal investigation followed and considerable sentiment developed in the trade for a change. We will review at a later point in this chapter some of the price effects of this period. It is sufficient to note here that the United States Cotton Futures Act passed in 1914⁶ was an ultimate outgrowth of these difficulties.

This act is based upon the tax clause of the Constitution. It provides in *Section 3* for a tax of 2 cents per pound upon each future contract of sale in cotton. This tax, however, will not

⁵The early changes made in the New York Cotton Exchange's plan of adjusting differentials are fully presented in the *Report of the Commissioner of Corporations on Cotton Exchanges*, Part I, 1908.

⁶Due to a technicality in passing the bill, the original act was repealed and repassed, the latter act being approved August 11, 1916. 39 Statutes at Large p. 476.

be levied if the contract complies with the conditions stipulated in Section 5. *Sections 1 and 2* consist of a definition of terms and *Section 4* prescribes that the terms of each contract shall be in writing.

Section 5 consists of seven subdivisions which may be briefly summarized. Subdivision 1 prescribes that the terms of each contract shall be in writing. Subdivision 2 provides that the basis grade shall be "one of the grades for which standards are established by the Secretary of Agriculture." Subdivision 3 provides that deliveries on futures contracts in cotton "shall be of or within the grades for which standards are established by the Secretary of Agriculture." Subdivision 4 provides that deliveries other than the basis grade shall be adjusted according to commercial differences to be determined as provided in Section 6. Subdivision 5 provides that white cotton "below the grade of Low Middling, or, if tinged, cotton that is below the grade of Strict Middling, or, if yellow stained, cotton that is below the grade of Good Middling . . . or cotton that is less than seven-eighths of an inch in length of staple" or of perishable staple, or "gin cut" or "repacked," or "false packed" or water packed shall not be delivered on future contracts. Subdivision 6 provides for written notice of delivery five business days prior to delivery and a statement prior to delivery of the grade and other identification of each bale. Subdivision 7 provides that officers of the Government shall class all cotton tendered on futures contracts.

Section 6 of the Act includes the material of principal interest to the present chapter. It outlines the method by which commercial differences are to be determined by all cotton future exchanges in the United States. When the Act was passed this section did not apply to the New Orleans Cotton Exchange since it already had an apparently effective commercial difference system. But in 1927 the application of the Act was made general by an amendment so that New Orleans as well as New York now uses the Government plan. It provides that "the differences above or below the contract price which the receiver

shall pay for cotton of grades above or below the basis grade . . . shall be determined by the actual commercial differences in value thereof, upon the sixth business day prior to the day fixed . . . for the delivery of cotton on the contract, established by the sale of spot cotton in the spot markets of not less than 5 places designated for the purpose from time to time by the Secretary of Agriculture . . ." In practice the Secretary has designated 10 spot markets to be used to measure each day the prevailing commercial differences.

Section 6A provides an alternative form of contract to that provided under *Section 5* for future trading and under which, if its provisions are fulfilled, no tax need be paid. Under a *Section 6A* contract no difference system is set up at the time of contracting but instead the buyer and seller are to attempt to mutually agree as to any difference at the time of delivery if the seller tenders any grade other than the basis grade. If they cannot then agree as to the proper allowance the buyer is given the right to request delivery of the basis grade. Such a contract, it can be easily seen, is unsuited to speculative or hedging use since it greatly increases the element of uncertainty. This section was inserted as a possible legal remedy in case the act were tested for its constitutionality. No contracts have at any time been made under it.

Section 7 gives the Secretary of Agriculture power to determine what shall constitute bona fide spot markets for the purposes of the Act and *Section 8* provides that he can make rules and regulations, collect data of spot sales, and otherwise determine what the actual commercial differences are each day in the event that an adequate number of bona fide spot markets cannot be selected for the purpose. Up to the present time it has not been necessary to follow this latter plan. *Section 9* authorizes the Secretary of Agriculture to "establish and promulgate standards of cotton by which its quality or value may be judged or determined, including its grade, length of staple, color, and such other qualities, properties and conditions as may be standardized in practical form, which, for the purposes

of this Act shall be known as the 'Official Cotton Standards of the United States.' " The carrying out of this section has been of great importance in rendering more uniform qualities and grades for cotton between the markets of the United States and in the principal cotton consuming countries abroad.

Section 10 excludes from application of the Act spot transactions in cotton and sales to arrive or for forward delivery. As we have already seen some of these contracts appear in form very much like future contracts and the Act carefully provides that it does not apply to these contracts. *Sections 11 to 22* inclusive constitute the remainder of the Act and pertain to its enforcement, how the tax if any shall be collected,⁷ and other minor details not necessary to review. In Appendix A, page 456, a copy of the first 12 sections of the Act as revised are given for study in greater detail.

The Commercial Difference System, Present-day Practice.—

In carrying out the provisions of the Cotton Futures Act, the Secretary of Agriculture has designated 10 leading spot markets, all located in the South, to be used to determine each day the differences "on" and "off" Middling white cotton, the basis grade. These 10 markets⁸ each have a spot quotation committee, representative of the various interests of the trade, which meets daily toward the close of the market and decides upon the prevailing value of each grade in the light of the actual sales, the bids and offers and the general tone of the market that day. These prices are telegraphed to the central markets and to Washington where they are averaged, the differences determined and posted for the purpose of measuring differentials on all deliveries tendered the following business day.

In Table 19 are shown these average differences by grades,

⁷The size of the tax—2 cents per pound—has the effect of making the Act regulatory rather than fiscal. This was the intention of its proponents and no tax has as yet been collected.

⁸At the present time they are the following: Norfolk, Augusta, Savannah, Montgomery, Memphis, Little Rock, Dallas, Houston, Galveston, and New Orleans.

both by name and color, for January 11, 1930.⁹ Those grades which are deliverable under the Cotton Futures Act at the present time are shown above the heavy line. The way in which the differentials range from grade to grade above and below Middling white and for the various colors is clearly shown. For the inferior classes of cotton damaged by storm or frost,

TABLE 19.—POINTS "ON" OR "OFF" THE CONTRACT PRICE PAID BY OR ALLOWED TO THE SELLER OF COTTON FUTURES FOR VARIOUS GRADES OF AMERICAN UPLAND COTTON MEASURED BY THE MEAN OF THE SPOT PRICES PREVAILING ON TEN DESIGNATED SPOT MARKETS, JANUARY 11, 1930.
(In hundredths of a cent per pound)

GRADE (name and color)								
Extra White	Name	Blue Stained	Grey	White	Spotted	Yellow Tinged	Light Y. Stained	Yellow Stained
—	Middling Fair	—	—	+102*	—	—	—	—
—	Strict Good Mid.	—	—	+85	—	-5	—	—
+70	Good Middling	-165	-80	+70	+23	-50	-125	-150
+49	Strict Middling	-240	-118	+49	-5	-100	-183	-235
Even †	Middling	-318	-165	Even †	-73	-160	-248	-315
-75	Strict Low Mid.	—	—	-75	-165	-227	—	—
-170	Low Middling	—	—	-170	-263	-315	—	—
—	Strict Good Ord.	—	—	-280	—	—	—	—
—	Good Ordinary	—	—	-378	—	—	—	—

* The plus (+) sign is used to indicate points "on" and the minus (-) sign points "off" the contract price.

† That is at the contract price.

the differentials fall below Middling white even though the grade is actually Middling or above.¹⁰

Commercial Differences for Staple.—Commercial differences are also set up by the cotton exchanges for staple differ-

⁹ Data published in "Crops and Markets," U. S. Dept. of Agr. Jan. 1930, p. 29.

¹⁰ Cf. Cox, A. B., *Cotton Prices and Markets*, U. S. Dept. of Agr. Bull. No. 1444, 1926.

ences. The Cotton Futures Act provides that nothing under $\frac{7}{8}$ inch staple shall be delivered on future contracts but makes no provision for an allowance to the seller if he should choose to deliver some staple above this minimum requirement. For many years the New Orleans Cotton Exchange provided that the seller might receive up to 25 points or $\frac{1}{4}$ cent per pound for extra staple. But since the spot premium on staple was usually far in excess of this amount it was seldom if ever that the seller chose to deliver a staple above the $\frac{7}{8}$ inch limit. Recently, however, the New York Cotton Exchange has provided for an allowance to the seller of 60 per cent of the commercial difference in the price between $\frac{7}{8}$ inch staple and $1\frac{5}{16}$ inch staple as well as 60 per cent of the commercial difference between $\frac{7}{8}$ inch staple and 1 inch staple if the latter is delivered, no further allowance being made if staples above 1 inch are tendered. To measure these commercial differences, prices are collected daily from leading spot markets for staple just as for grade; these are averaged and the differences applied by the exchange to all tenders having a staple length above $\frac{7}{8}$ of an inch made the following day.

As provided at the present time, therefore, definite assurance is given the buyer and seller at the time of contracting that while their price is basis Middling white cotton, if any other deliverable grade is tendered the price will be adjusted in accordance with prevailing prices in the spot market; and that if any deliverable staple other than $\frac{7}{8}$ inch is tendered it too will be adjusted in general in accordance with prevailing commercial differences. This would seem to be a system, par excellence, for the meeting of the problem created by making the future contract multi-grade in form. It has, however, its limitations just as the fixed and periodic plans do. Some of these are considered in the following section.

3. SOME PRICE LIMITATIONS IN DIFFERENCE SYSTEMS

Difficulties Under a Fixed Difference System.—In describing the essential features of the fixed difference system, its

theory of operation was also outlined. The differentials above the basis grade are purposely placed at somewhat narrower intervals than those usually prevailing in the cash market and the differentials below the basis grade purposely widened to greater amounts than the prevailing cash differences. The effect of this plan is to inform the seller at the time of contracting that the most profitable deliverable grade for him to deliver is the basis grade. But it also makes available other grades for delivery if a scarcity of the basis grade or grades develops. By so arranging these differentials, the future price should continually reflect only the basis grade since it is the most likely deliverable grade. This is a highly desirable feature as it minimizes the variations between cash and future prices due to this factor.

There are two principal limitations to the plan as it applies to grain. The first of these is that commercial differences between certain grades sometimes get seriously out of line with the fixed differentials. When this disalignment happens to be a discount, it will in turn bring the price of futures down.

An illustration of this kind occurred on the Chicago Board of Trade during the summer of 1925. At that time No. 2 Northern Spring wheat was deliverable on futures at the contract price along with No. 2 Hard Winter wheat and certain other grades, while No. 2 Dark Northern Spring carried a $\frac{1}{2}$ cent premium. The Chicago market is principally a winter wheat market, but that spring future prices in Chicago became sufficiently high relative to the spring wheat markets of Minneapolis and Duluth that shipments of Northern Spring wheat were made from Duluth to Chicago. This grain, while deliverable on future contracts, proved to be an undesirable supply in the Chicago cash market with the result that its cash value was somewhat below that of the corresponding grades of hard winter wheat. Due to the right of the seller to tender this Northern Spring wheat on future contracts the current prices of the latter in turn were lowered. This Northern Spring wheat continued to act as a depressing factor until October of that year when the fixed differential upon No. 2 Northern

Spring was changed from an "even" basis to a discount of 3 cents and No. 2 Dark Northern Spring from a premium of $\frac{1}{2}$ cent to a discount of 2 cents per bushel.

The result of this change was to raise the price of futures from 1 to 2 cents per bushel. The change was made effective October 1, 1925 and due to the existence of outstanding contracts entered into on the old basis, futures were traded in for a time following this date on a two-fold basis of "old" and "new" contracts, the former continuing to reflect the cheaper spring wheat and the latter reflecting, at a level of from 1 to 2 cents higher, more fully the basis of hard winter wheat. This example serves, too, as an excellent quantitative illustration of just how the future price reflects the most likely deliverable grade.

All too frequently there is a sharp conflict of opinion among those having an intimate knowledge of both the current cash and future situation regarding what the fixed differentials ought to be and their actual effect upon future prices. It is seldom possible, except in exceptional and drastic changes, to isolate and measure separately the effect of this one factor. This fact occasions the second limitation of a fixed difference system, viz., that it is subject to a strong personal element of bias and poor judgment. It is not possible to make even the smallest change in the fixed differentials without opening the possibility of benefit to some and injury to others. Furthermore these changes are always made at a time when wide divergencies have occurred resulting in large losses to some and gains to others. At such a time the air is surcharged with accusations of "deals" and manipulations with the result that such changes as are made are likely to be rather colorless compromises resulting in general dissatisfaction.

Fortunately, for grain, these two limitations of cash differences, changing sufficiently to more than offset the fixed differences, and the human element of bias and poor judgment adversely affecting the size of the differentials, are not often called into play. As a rule the future price continually reflects

hard winter wheat in Chicago and Kansas City and spring wheat in Minneapolis. This is due to the fact that the relative proportions of the various grades of each crop do not vary greatly from year to year, a large fraction in each market being of this particular grade. This is even more true for variations in the grades of corn and oats. Car inspections of wheat at Chicago are shown in Table 20 for ten different years showing the proportion of No. 2 Red and No. 2 Hard Winter wheat to the

TABLE 20.—CAR INSPECTIONS OF WHEAT AT CHICAGO SHOWING THE PROPORTION OF NO. 2 WINTER TO ALL GRADES FOR TEN YEARS, 1920-1929.*

Grades	Cars inspected during the year				
	1920	1921	1922	1923	1924
Total, all grades	12,404	28,830	35,176	32,565	43,733
No. 2 winter (red and hard)	2,114	11,930	16,124	9,755	21,830
Per cent of No. 2 winter	17.0	41.4	45.8	30.0	49.9

TABLE 20 (cont.)

Grades	Cars inspected during the year				
	1925	1926	1927	1928	1929
Total, all grades	14,623	23,579	23,710	17,779	24,435
No. 2 winter (red and hard)	4,734	6,804	8,272	6,835	14,180
Per cent of No. 2 winter	32.4	28.9	34.9	38.4	58.0

* Compiled from Howard, Bartels and Co., "Red Book," Chicago, annual.

total volume. With the exception of the year 1920 the percentages range from 28 to 58 per cent of the entire inspections. This fact has an important bearing on the success of the fixed difference system. Were this percentage either a small one or an uncertain one there would be many more changes to make from time to time in the fixed differences. The proportion of the basis grade being fairly large and dependable, the likelihood of an ample deliverable supply of this grade is correspondingly assured. The practice of mixing grain also adds to

the probability of success in using the fixed difference system for grain. Grades of No. 3 and frequently Nos. 4 and 5 are combined with the better qualities of No. 2 and No. 1 to meet the inspection requirements of No. 2 for the entire lot. To those interests most likely to deliver grain upon contract, this possibility can increase materially the supplies of No. 2 if need be and the knowledge that this is possible frequently keeps the future price from changing to a basis reflecting an inferior grade.

Limitations of the Periodic Difference System.—The periodic difference system operates, as we have seen, on the theory that the differentials established for each of the deliverable grades should be kept in proximity to those prevailing in the spot market and that this can be done by an occasional adjustment. Where they are adjusted once each month, it is assumed they will roughly approximate prevailing differences during the ensuing month; where once each year, that they will approximate prevailing spot differences for twelve months. This latter plan was the one formerly employed by the New York Cotton Exchange.

It should be observed at the outset that the object sought in determining the differentials under this plan is something more than that sought through the use of fixed differences. Under the latter plan, the differentials are so placed that the seller will, under normal conditions, be encouraged to deliver only the basis grade the object being to obtain a maximum degree of uniformity between cash and future prices. Under the periodic system the intention is not only to attain as high a degree of price uniformity as possible but also to place the buyer and seller upon an equal footing if any grade other than the basis grade is tendered. In other words the periodic plan, especially as it was applied to cotton, gives greater emphasis to the possible delivery of grades other than the basis grade.

The reason for this difference of emphasis is to be found in the fact that cotton is not as easily graded or as uniform in quality as grain. Because of the fact that a considerable frac-

tion of each year's crop of grain is almost certain to be the basis grade and certain other lots can be mixed to grade as No. 2, the seller is not particularly handicapped if the differ-

TABLE 21. CLASSIFICATION OF THE 1928 AMERICAN COTTON CROP BY TYPE, COLOR, GRADE AND STAPLE.*

Description	Quantity		Staple distribution		
	Bales	Per cent	Per cent under $\frac{1}{8}$ "	Per cent $\frac{7}{8}$ "	Per cent over $\frac{1}{8}$ "
Upland Cotton: White, Total	11,971,092	83.89	11.46	35.07	37.36
M. Fair	704	.00	.00	.00	.00
S. Good Mid.	42,630	.30	.07	.13	.10
Good Mid.	1,638,279	11.48	2.30	4.33	4.85
Strict Mid.	4,925,154	34.52	4.64	14.54	15.34
Middling	3,248,883	22.77	2.38	9.78	10.61
S. Low Mid.	1,366,193	9.57	1.21	4.08	4.28
Low Mid.	430,724	3.02	.53	1.32	1.17
S. Low Ord.	237,525	1.66	.26	.67	.73
Low Ord.	81,000	.57	.07	.21	.29
Extra White	418,271	2.93	.06	.29	2.58
Spotted	1,632,867	11.44	1.76	6.04	3.64
Yellow Tinged	39,719	.28	.06	.14	.08
Light Yel. Stained	1,801	.01	.00	.01	.00
Yellow Stained	919	.01	.00	.01	.00
Grey	21,004	.15	.01	.08	.06
Blue Stained	1,587	.01	.00	.01	.00
No grade	153,743	1.08	1.00	.03	.05
American-Egyptian Cotton	28,310	.20	.00	.00	.20
Total American Crop	14,269,313	100.00	14.35	41.68	43.97

* Adapted from "Cotton Grade and Staple Report for the United States" (mimeo.) prepared by the Cotton Division, Bureau of Agr. Economics, U. S. Department of Agriculture, April, 1929.

entials do not normally permit delivery of any other grade. But in cotton, no two bales are just alike, they cannot be mixed to yield a higher grade, and occasionally it happens that the

bulk of the crop is lower than middling. Data have not been available to fully illustrate this last point until the last two years and these years were not seasons of unusual quality. They are instructive, however, in showing the proportions constituting the principal colors and grades of cotton and a summary for 1928 is accordingly shown in Table 21.

The crop of 1929 was similar in size and proportions to that of 1928 with, however, a slightly larger proportion (30%) of Middling white cotton and a somewhat smaller proportion of Strict Middling (26%). It will be seen from Table 21 that for this particular year white cotton of Middling and Strict Middling grades and having a staple of $\frac{7}{8}$ inches or over was in abundance. We need, however, a series of years showing the poor with the good to measure the variations in quality of cotton. In Shepperson's *Cotton Facts*, an annual of cotton statistics, there is given back to the 1915 crop an estimate of the average grade of each crop. These are shown in Table 22.

TABLE 22.—THE AVERAGE GRADE OF EACH AMERICAN UPLAND COTTON CROP AS REPORTED BY SHEPPERSON ANNUALLY FROM 1915 TO 1928.

Year	Grade	Year	Grade
1915-16	Mid. to Str. Mid.	1922-23	Middling
1916-17	Mid. to Str. Mid.	1923-24	Str. Low M. to Mid.
1917-18	Middling	1924-25	Middling
1918-19	Barely Middling	1925-26	Str. Low Mid.
1919-20	Str. Low Mid.	1926-27	Str. Low M. to Mid.
1920-21	Barely Mid.	1927-28	Mid. to Str. Mid.
1921-22	Middling	1928-29	Str. L. Mid. to Mid.

While they are only estimates they indicate at least the changes occurring from year to year, variations ranging from Strict Middling to Strict Low Middling.

Variations in the quality of crop from year to year result in variations in the commercial differences in price often of a pronounced character. If the crop turns out to be a poor one, there is an over-abundance of low grade cotton, a scarcity of high grade cotton, the former can be substituted for the latter only

to a limited extent with the result that the spot differences spread rapidly. One of the main limitations of a periodic difference system applied to cotton is thus apparent. An effort is made to estimate at the outset of the season what the prevailing commercial differentials will be for the entire year,—an attempt which, in any exact sense at least, is humanly impossible.

Another and important limitation of this plan is the human element of bias and error in judgment. This was mentioned as

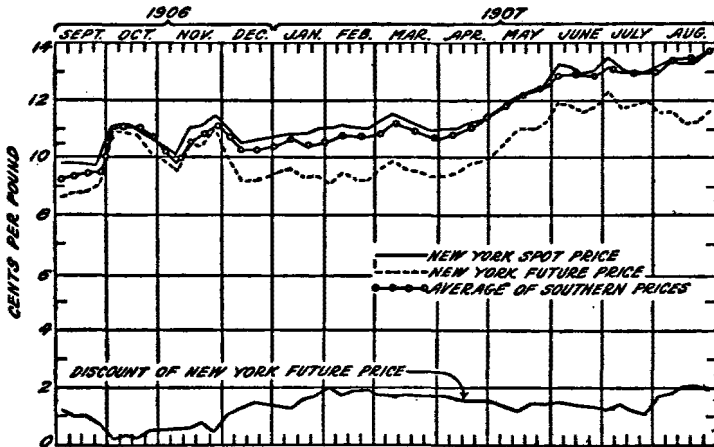


FIG. 36.—Comparison of spot price of middling cotton at New York and the average spot price of middling at New Orleans, Memphis, Galveston and Houston with the price of future contracts for the spot month on the New York Cotton Exchange, Fridays, September, 1906-August, 1907.

a limitation also of the fixed difference system. Applied to cotton where the relative changes in price are larger, the temptation becomes correspondingly greater to set the contract differentials where losses will be least. While this benefits some interests it must result in corresponding loss to others.

In Figure 36 there is reproduced a chart of cotton prices for the period, September 7, 1906 to August 29, 1907, from the investigation made in 1908 by the United States Bureau of Cor-

porations.¹¹ It clearly shows the effect upon the price of New York Cotton Exchange futures of not sufficiently widening the differentials on the lower grades in November, 1906. The commercial differences being wider, the future price ceased to reflect Middling cotton New York and began reflecting a lower grade plus the fixed differential. At the bottom of the chart is shown the amount of this discount in the future price. To those who had sold forward Middling cotton or better and hedged this sale by an equal purchase of futures, this spread caused a sizable loss. To those holding Middling hedged with an equivalent sale of futures a profit resulted.

Limitations of the Commercial Difference System.—Because it is impossible to accurately gauge spot differences any length of time in advance, and particularly for a period of a year, present-day differences for cotton are, as we have seen, determined daily. This eliminates at least any major maladjustment between actual spot differences and those applied on future contracts. In practical operation, however, the plan, as provided under the Cotton Futures Act, has proved somewhat defective in three respects. Committees at ten spot markets are asked to report daily. They are composed of men actively engaged in the cotton business and it may reasonably be supposed that their particular interests might at times influence their judgment. They are, however, chosen from both buying and selling trade groups and occasionally changed so that it is unlikely any large error could occur from this source.

The second limitation to the plan is that accurate spot quotations for each grade at each of these ten markets are difficult to obtain. This is particularly true during the latter part of each crop season. Periods of several weeks will pass during which few if any sales occur on some of the spot markets and the Committee finds it necessary to indulge in rather elaborate interpolations to obtain a figure for most of the grades.¹²

¹¹ *Report of the Commissioner of Corporations on Cotton Exchanges*, Part IV, opposite p. 47.

¹² See *Regulations of the Secretary of Agriculture under the U. S. Cotton Futures Act*, Regulation 15, Sec. 6.

Where this is the case the mean of the 10 markets is not likely to reflect precisely each commercial difference. Some members of the trade believe this error to be considerable at times while others think it of little practical importance.¹⁸

The third limitation deserving mention is that daily adjustments of the contract differentials continually create uncertainty in the minds of hedgers regarding the true value of their hedge. Suppose, for example, a merchant hedges 400 bales of Strict Low Middling by an equivalent sale of futures. He bought this cotton on the basis of prevailing future prices and figures that his hedge will not only protect him against any decline in price but will furnish an outlet for the disposal of the cotton in the event he cannot sell it in the spot market. Under a fixed difference system where changes are infrequent he knows at the time of purchase just how much discount he will have to allow the buyer if delivery on his future is made. But under a commercial difference (and to some extent under the periodic plan) this he cannot know until the day he tenders notice to the buyer. While this limitation might be thought to be a small one because deliveries on future contracts are small, it is important in the sense that continual uncertainty is created whether delivery is made or not and this uncertainty is highly undesirable.

Differences Based on Some Physical Factor.—Arguments were heard in the Bureau of Corporations investigation on the possibility of basing the differentials for cotton on the spinning outturn per bale for each grade of cotton. Thus an estimate might be made, after collecting data upon a large number of bales of just what the waste is in each grade, these figures reduced to percentages of Middling, and permanent differences established for each grade accordingly. If, for example, Low Middling revealed as a result of extensive tests an amount of waste sufficient to reduce it to an amount equal to 90 per cent

¹⁸ Cf. Hubbard, W. H., *Cotton and the Cotton Market*, p. 358-359. The many shades of this whole problem of differences are excellently reviewed by Hubbard from p. 349 to p. 373.

of Middling, then on future deliveries of Low Middling the contract price would be reduced 10 per cent. And if Good Middling had a spinning outturn of 110 per cent of Middling, it would be deliverable at a 10 per cent premium. The advantages of this plan are obvious. They remove the element of human judgment and the consequent pressure to establish preferential allowances. They provide a definitely known quantity which both buyer and seller can depend upon and plan accordingly. These are points of real merit in its favor.

Arguments advanced against the plan were that the value of cotton is not measured alone by its spinning content. Differences in staple are highly important and other elements composing what are sometimes referred to as the "character" of cotton also are of material importance. Without taking account of these factors, it is likely that the longer staples would never be delivered, and also that the quality aside from spinning outturn would be poor. This would most certainly have a depressing as well as uncertain effect upon the price of futures. It was also argued that representative percentages of outturn could not be obtained, but it appears at the present time that this difficulty could probably be handled with a fair degree of accuracy.²⁴ It might also be possible to make some allowance for staple which could also be made a part of the permanent percentages. These differentials could of course be changed from time to time as experience and manufacturing conditions suggested but only after due notice for a period of time. This plan has certain advantages over the others at any rate and deserves more serious consideration than has been given to it in the past.

A General Limitation.—One of the reasons that the subject of difference systems has received so much attention in the cotton trade is the wide variation in relative prices between the

²⁴ According to tests made by the Department of Agriculture in 1917. Cf. Hubbard, *op. cit.*, pp. 360 ff. who advocates this plan; also *Report of the Bureau of Corporations on Cotton Exchanges*, Part IV, pp. 196 ff. opposed to it.

various grades. Relative price changes are occasioned mainly by corresponding changes in the demand for each grade and in the supply of each grade produced each year. The supply in turn is determined largely by growing and harvest conditions. As the weather varies so the quantities produced in each grade vary. This is particularly true during the harvest time. Cotton is picked over a long period of time,—beginning in late August and extending into December. During this period weather conditions are all important in determining the state of the crop. When the crop is lowered in grade, many interests in the cotton trade are affected. Some have sold forward, some have not; some have sold at a definite price and some have large commitments on call; some have on hand unsold stocks of high grade and others of low grade cotton. Any changes in relative prices and especially when hedged on the future market are certain to cause loss to some. Too often it is hoped that in some manner the difference system may be so adjusted that this loss will be prevented.

This cannot, however, under any system of differentials be the case. In Figure 37 there are illustrated alternative situations in which buyers of cotton may find themselves as a result of a widening of the spot differences for cotton. Let us suppose that Mr. G. M. sold forward Good Middling cotton on October 20 at 16.00 cents per pound, that Mr. M. sold forward Middling at 15.20, that Mr. L. M. sold forward Low Middling at 14.10, and that each hedged his sale by an equivalent purchase of the December future at 15.00 cents per pound. About November 5 there occurred a widening of the spot differences between the various grades due to a fuller realization of an over-abundance of the lower grades and a rapidly diminishing supply of the better grades. In Case I the future price continues to reflect Middling cotton so that Mr. M., after the readjustment, is still able to fill his order for Middling cotton at 15.65 and sell his future at 15.45 or on the same basis upon which the hedge was placed and thus break even. Mr. G. M. who must now pay 16.95 for his Good Middling cotton and

sell his hedge at 15.45 sustains a basis loss of 50 points, while Mr. L. M. who can now buy his Low Middling at 12.85 and sell his future at 15.45 makes a basis profit of 170 points. Thus as a result of the widening of the commercial differences, one man lost, another remained unaffected and the third gained and this under the assumption that the difference system operated perfectly.

In Case II, a fixed differential of 90 points "off" for Low Middling and of 100 points "on" for Good Middling is as-

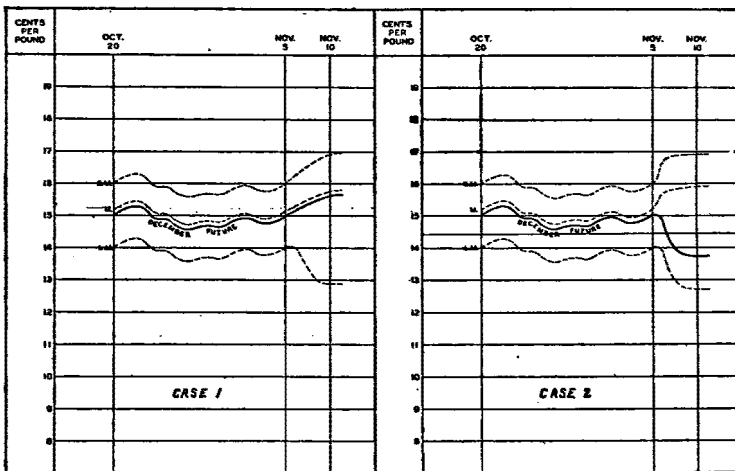


FIG. 37.—An illustration of the effect of a relative change in the spot prices of cotton.

sumed. Then as a result of the widening of the commercial differences, the threat of delivery of Low Middling causes the price of December futures to lower to a point equal to Low Middling plus the fixed differential of 90 points. In this situation Mr. G. M. must buy Good Middling cotton at 320 points on the December futures sustaining a loss of 220 points, Mr. M. must buy his Middling at 190 on the December with a loss of 170 points, while Mr. L. M. must now buy his Low Middling at 90 off December, his original limit in contracting

to sell, and thus breaks even. This illustration might be arranged in a score of ways,—e.g., each of the three parties might have first bought and later sold these particular grades in which profits and losses would be just reversed,—but in each situation the result would have been the same. In Case I, as a result of a realignment in the commercial differences, the various interests reaped profits or sustained losses which they had not planned upon. In Case II, these unexpected losses or gains were still further affected by the injection of an imperfect difference system with the result that where some gained others lost; in the illustration the interests gaining were those long the better grades of cotton and short in the future market as a hedge.

This illustration is designed especially to emphasize the two-fold point that large basis losses and gains can be sustained under a perfect difference system and that no difference system can do more than re-arrange these losses and gains.

Restatement.—We can now briefly generalize upon some of the points characterized by the various difference plans. (1) In any multi-grade contract, the basis grade or grades chosen should represent a quality of the commodity constituting as large a proportion of each year's supply as possible. (2) The difference system employed should be so adjusted that the future price will reflect this basis grade only, and as closely as possible. This point is all-important to the success of any difference system. (3) The attempt should not be made to provide a difference system upon which a maximum portion of the merchantable supply can be delivered on future contracts if this will result in introducing uncertainty into the future price. Futures are used mainly for hedging and through speculation as a price-directing device and only incidentally as a merchandising medium. (4) The basis upon which differences are measured should be one as free from the personal element as possible, the best system being one based upon some physical standard providing a suitable measure can be devised. (5) If the supply of the basis grade is sufficiently large year after year and the relative price changes between grades sufficiently

small, a fixed difference system is the best suited of the three in common use at the present time, in which the premium grades are arbitrarily placed at narrower intervals and the discount grades at wider intervals than prevailing spot differences. (6) If a periodic difference system is to be used, changes should be as few as possible and fixed always with a view to making the basis grade the most likely deliverable grade upon the contract. (7) If it is necessary to use a commercial difference system, the personal element should be reduced to a minimum and only those spot markets used which are fully representative of prevailing prices. In view of the importance of (2) above, these daily differences "on" and "off" might well be arbitrarily altered say 5 per cent each way,—the "on" differences being reduced 5 per cent and the "off" differences increased (raised) 5 per cent,—as an additional assurance that the future price will at all times reflect the basis grade.

4. SUMMARY

Difference systems are occasioned by the fact that not one but several grades of a commodity are usually deliverable upon future contracts. In order that both buyer and seller shall be fairly compensated if grades other than the basis grade are tendered, a plan of allowances or differences is set up in which carefully defined additions are made to the contract price if the seller elects to deliver a superior grade and carefully defined deductions are made from the contract price if the seller elects to deliver an inferior grade. Three systems for the determination of these differences are in use at the present time: the fixed difference plan, the periodic plan, and the commercial difference plan.

Under the fixed plan, as used for grain futures, the differentials are determined by the exchange, the "on" differences for premium grades being made somewhat smaller than those prevailing in the cash market and the "off" differences somewhat larger. The effect of this is to give assurance to both buyer and

seller in advance that the future price will reflect the basis grade. Under the periodic plan the differentials are also determined by the exchange but are revised at regular intervals. Here the differences are established as an average approximation of the probable commercial differences likely to prevail until the next date of change. Under both of these plans, the actual spot differences may at times get considerably out of line with those determined by the exchange with the result that future prices are affected causing loss or gain to various trade interests.

The commercial difference plan is designed to eliminate this difficulty by requiring that the differentials for future contracts be changed each day in accordance with changes actually taking place in the spot or cash market. It is used at the present time by the cotton future exchanges under the provisions set forth by the United States Cotton Futures Act. Ten spot cotton markets are employed to determine the differences each day and the average of these markets measures the amount of the future differentials.

Regardless of the difference system employed, many limitations are found in actual application. All three are subject to a human element of bias and error in judgment. The plan of fixed differences, while embodying the greatest element of certainty in its effect on the future price, is also at times unduly slow in making changes to fit new conditions in the cash market. The commercial difference system while prompt in changing as the trade changes, is frequently so uncertain in its course that this is reflected in future trading and future prices. The periodic plan falls upon a middle ground between these two. None of the systems will prevent loss from a realignment in commercial differences caused by some outside factor. At best they can only function to prevent any further shifting of gains and losses to those most affected. If it could be worked out in practical form, probably the best difference system would be based upon some physical factor free from any reflection of individual judgment.

CHAPTER XVI

DELIVERABLE CASH SUPPLIES AND FUTURE PRICES

No problems are of greater importance to the effective operation of future trading than those involved in the question of deliverable cash supplies. The buyer of a future has the right to demand delivery of the actual commodity during the delivery month; similarly, the seller has the right to make actual delivery if he so chooses. If at any time this right to take or make delivery is impaired or in any way threatened, an immediate effect will be shown in the price structure to the advantage of some and to the detriment of others. Such disturbances, whether occasioned by natural or by artificial forces, are always undesirable elements causing general dissatisfaction in the trade. In this chapter consideration will be given to some of the more important phases of this broad problem with particular reference to their price effects.

1. IDEAL CONDITIONS

The relation of deliverable supplies to prices has not received the amount of consideration in the past which the subject justifies. One of the reasons for this has been that problems involving the condition or position or amount of available supplies have been looked upon as problems of the cash market rather than of the future market. In fact, however, in their effect they are of much greater importance to the latter market. Price disturbances in the future market have often been traced to immediate though superficial factors when in fact the basic cause was to be found in the deliverable supply situation. This problem will be approached, then, by describing at the outset the fundamental position which supplies available for delivery upon future contracts occupy in future trading and future prices. This will require the assumption of conditions more

nearly ideal than are likely to exist at any given time in order that at a later point the factors occasioning irregularities may be more easily understood.

Relation of Cash to Future Prices,—A Restatement.—In approaching this problem it is necessary to have clearly in mind the relation which cash prices should bear to future prices under normal conditions. Two distinct relationships are to be noted: (1) cash prices should rise relative to future prices as each crop year advances reflecting the cost of carrying supplies forward; and (2) after an allowance has been made for this minor seasonal variation, cash and future prices should parallel each other in the larger and more uncertain movements occurring from day to day, from week to week and from year to year. The reason for this latter connection is the *right* to make or take delivery upon future contracts.

We have already seen that this ideal relation of cash to future prices never in fact exists for any one year and that it can be demonstrated only in a general way when a series of several years are included. We have also had occasion to observe some of the reasons why a perfect relationship is not in practice found. Chief among these are the continual variations in prices occurring between the various grades of cash grain and the influence these variations have upon the course of future prices.

The Place of Deliverable Supplies.—In order to bring out clearly the important position occupied by deliverable supplies, let us assume that the problem of a suitable difference system has been solved. We will assume that the future price at all times reflects just one grade and that at no time is it relatively more profitable to deliver some other grade or grades. Isolated in this way, the problem of deliverable supplies becomes one simply of assuring at all times that an *adequate* supply of the cash commodity be *available* during each delivery month. By adequate is meant (1) a sufficient quantity to meet the demands of all buyers and of all sellers of futures who choose to take or to make delivery upon their contracts; and (2) that the

condition and position of this quantity be generally and accurately known. By available is meant either at the market or markets where delivery is provided or within a convenient obtainable distance. These are conditions which in practice do not usually prevail in all particulars at any given time but all of which are necessary if the factor of deliverable supplies is not to have a disturbing influence upon prices.

Price Effects of Deliverable Supplies.—Under an ideal situation such as just described, prevailing price relationships will also be ideal. If available supplies are ample to meet maturing future contracts, current cash and future prices will not be subject to any element of uncertainty due to this one factor at least. If, on the other hand, deliverable supplies appear doubtful, uncertainty is injected into the minds of buyers or sellers or both and this in turn will be reflected in the current price structure. Perhaps the most common type of price mal-adjustment to result is a rapid advance in near-by positions compared with the more distant futures. The latter may reflect a new crop and in any event are farther away and thus less cause for worry than are the near-by futures. If carried to an extreme a corner of the short interest may result. If the scarcity turns out to be temporary, the near-by futures will decline relative to the more distant. If the disturbance is limited to one market, its effect will be to raise or lower prices in this market relative to other markets in the same commodity.

The solution to the problem of "squeezes" and corners, to the problem of all-important relative gains or losses to hedgers and spreaders, and of uncertainty to speculators both long and short is to be found in part at least in available deliverable supplies. The necessity of adequate requirements can be best demonstrated by considering situations in which they are in part or wholly lacking. Some of these situations are the result of factors natural in character and some are a product of artificial forces.

2. NATURAL FACTORS CAUSING ABNORMAL CONDITIONS

Small Deliverable Supply.—One of the most common defects in conditions of delivery is an inadequate supply. If the contracts standing open in any given future mount to a figure many times the available supply, a point may easily be reached where the short interest becomes uncertain regarding the possibility of fulfilling its contracts. The likelihood of this occurring at any given time is dependent upon a wide variety of conditions. Deliverable supplies both at the delivery point and in the channel of possible shipment may happen to be small that season or purchases of futures in which the buyer or buyers plan fulfillment by actual delivery may happen to be unusually large. Or it may be that speculative interest has been built up to unusually large proportions, or is not promptly liquidated as the delivery month approaches. These are situations which may develop through the natural sequence of marketing and trading at any time and may be entirely free from any manipulative intent on the part of either buyers or sellers.

It was said that during the World War certain of the allied governments bought wheat futures to an amount far in excess of the possibility of sellers to fulfill by delivery and in effect produced a natural corner upon the leading grain exchanges of this country.¹ Similar situations, but under the stimulus of private rather than governmental purchases, occurred in December corn, Chicago, in 1913, in May wheat, Chicago, in 1921 and in July wheat, Chicago, in 1926. While there was doubtless some measure of deliberate intent in each of these cases, the major influence was an unusually small deliverable supply occasioned by cash grain conditions at the time. In the 1913 December corn situation, "conditions unfavorable to the shelling of corn and shipping it to the market, combined with a crop rather shorter than had been expected, helped out by the levying of a duty on corn which prevented importations from Ar-

¹ Cf. *Report of the Federal Trade Commission on the Grain Trade*, Vol. VII, p. 243.

gentina"² developed an acute shortage during the latter part of the month. In May wheat, 1921, the major cause appears to have been a hedge purchase of 2,000,000 bushels by a German importer through a New York house and in which fulfillment was intended by delivery. It happened, however, that supplies in public store at Chicago during May were only a few thousand bushels and as a result the current future rapidly advanced.³ In the 1926 July wheat situation purchases were again made by a cash grain interest for the apparent purpose of accepting delivery, and again at a time when wheat in public store was abnormally small.

With reference to cotton, and particularly at New York, instances of inadequate supply have in the past been much more frequent. In fact prior to adoption of delivery at Southern points in 1928, the prevailing situation was one of doubt and uncertainty regarding the conditions of delivery with the result that cash-future and inter-future prices were frequently deranged. It has been claimed by some that available supplies at New York were deliberately controlled in amount and character for the profit of individual manipulators. In this light the situation cannot, of course, be classed as an example of natural causes. But fundamentally it was a product of the location of New York with reference to the movement and supply of actual cotton. New York City has for many years been somewhat out of the main channel of shipment particularly in the domestic market and for this reason has in the past often been an open invitation for manipulation by those in the spot cotton business. There are a number of possible solutions to the problem of a small deliverable supply. They can be outlined to better advantage after a consideration of other and important factors affecting conditions of delivery.

Supplies out of the Channel of Shipment.—A minor corollary to the question of supplies at the point of delivery is the

² *Ibid.*, p. 244.

³ See *Report of the Federal Trade Commission on Methods and Operations of Grain Exporters*, Vol. II, p. 22 ff.

availability of supplies elsewhere. If the market at which delivery is provided is favorably located, it may easily and quickly draw upon surrounding territory if need be to meet immediate requirements. And the knowledge that this is possible will frequently suffice to remove any element of uncertainty. If, however, the market or point of delivery is not located in a channel of economical shipment or if supplies have moved on to points nearer the consumers' market as is likely to be the case during the latter part of a crop season, then this additional source of supply will be of little value.

Supplies out of Condition.—With reference to grain and particularly corn, the element of condition is sometimes important. Grain contains a considerable amount of moisture and as the summer approaches is frequently hard to carry without souring or heating, though modern equipment has materially lessened this hazard in recent years. An illustration of the effect of this factor is to be found in corn at Chicago in the summer of 1927. During the month of May some uncertainty had been felt regarding the condition of local supplies and in June this uneasiness increased. Purchases of the July future were made only at increasing discounts under the September future. During June the July discount widened from $2\frac{7}{8}$ cents on the first to $8\frac{1}{4}$ cents on the thirtieth and increased in early July to 9 cents per bushel under the September. Such an unusual spread would appear to offer an excellent carrying charge to a merchant buying the July and selling the September but this is subject to a large loss in the event of deterioration. This element has an opposite effect upon the relation of near-by to distant prices to that of small deliverable supplies. Public elevators are required to advise owners and the trade generally of damage to grain; but long before this advice is posted the structure of prices may be expected to discount its announcement.

Other Natural Factors.—There are other and minor factors developing naturally out of the conditions of trade which play a part in determining the terms of delivery. Merchants and shippers, and particularly those likely to make or take delivery

upon futures, frequently have some knowledge of the character of the warehouse receipts they will get if delivery is taken. They may or may not prefer a particular elevator due to its location, construction or policy of operation. They may fear delivery of several parcels in widely scattered elevators, preferring a single lot at one elevator. They may or may not approve of other conditions likely to be present if delivery is accepted affecting the character and time of delivery of the commodity. To the extent that these minor factors as a group are cumulative in their influence, they are capable of exerting an appreciable effect upon the price structure. As a rule they cannot be discounted far in advance and are, therefore, of maximum importance during the delivery month. Their influence is most clearly shown in the premium which cash prices regularly command over future prices for the same grade of commodity during the delivery month. Cash prices reflect in grain country-run receipts and in cotton even-running lots; they are for a product of definitely known location, condition and time of delivery,—qualities for which a buyer is willing to pay a premium over uncertain receipts through a future contract.

Price Influence All-Important.—It should be emphasized that these and other abnormal factors are of importance mainly because of their effect upon the price structure. It was shown at earlier points that the future market is not used to any appreciable extent for the merchandising of commodities; rather, it serves as a medium for speculation and hedging. In fact the limitations of delivery together with those involved in the difference system constitute the principal reasons that futures are not used to any extent to take or make delivery. But though they are not so used, they *can* be; and it is this right or possibility that continually makes every condition of delivery of importance to those buying and selling futures. These conditions are continually reflecting themselves as a result in cash-future, inter-future and inter-market differences in price to the advantage of some and to the detriment of others.

An Illustration.—In Figure 38 there is shown an illustration

of the influence of deliverable supplies upon price. Corn in public and private store, Chicago, and corn future prices, Chicago Board of Trade, for the 10-year period, 1921-1930, have been used. The supply curve shows the deviations from the 10-year average of supplies in store for the fifteenth of July each year. The price curve shows the deviations from the 10-year average of price differences between the current July future and the September future on the fifteenth of each July.⁴ The measure of inverse relationship may be easily seen. Years of ample supply such as 1926 and 1927 were years in which the current future price was relatively low, and years of scarce supply such as 1923 and 1924 were years when the near-by future was relatively high.

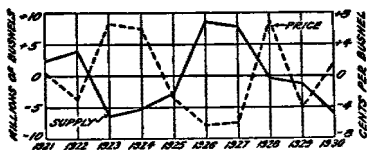


FIG. 38.—The influence of supplies of corn in store, Chicago, upon the relative levels of future prices, 1921-1930.

The inverse relationship is not, however, complete for every year. Thus in 1928 supplies were average but the July future carried a sizable premium over the September due to an unusually large long interest in the July by four leading speculators.⁵ Furthermore, the supply figures are not precisely the *deliverable* supplies for any of the years. They represent the nearest approximation obtainable and for a period in each crop year when deliverable supplies are most frequently of importance in their effect upon relative prices.

3. ARTIFICIAL FACTORS CAUSING ABNORMAL CONDITIONS

Those who have studied the relation of deliverable supplies to prices have, in the main, emphasized the manipulative as-

⁴ Supply and price data from *Annual Report of the Chicago Board of Trade*. Actual dates used were the nearest Saturdays to the 15th of July each year due to the weekly compilation of supply figures as of Saturday.

⁵ Cf. Hoffman, G. Wright, *Trading in Corn Futures*, U. S. Dept. of Agr. Tech. Bull. No. 199, pp. 78-80.

pects of the subject. These are fairly obvious in their effect as well as spectacular and as a result naturally attract attention. There are, however, very few abnormal conditions caused purely by an artificial factor, and in many cases the success of an apparent attempt to manipulate prices has been due in large measure to the aid of one or more natural factors. While emphasis in this section is placed upon the separate effect of artificial factors, they should be thought of as contributing or modifying influences to the broader natural factors just described.

The Threat of Making Delivery.—The vast majority of those trading in futures do not desire either to make or take delivery. As speculators they are interested in buying or selling at one level and reversing their transactions at a more profitable level; if prices move against them, they want to close out their position and take their loss; and in either case they wish to avoid the necessity of receiving or delivering the actual commodity. This known reluctance on the part of speculators offers an opportunity to those in a position to make delivery to force liquidation on more favorable terms.

An illustration will aid in understanding this process. We will suppose that during April a firm of grain merchants have open on the short side as a hedge 1,400,000 bushels. There must then be 1,400,000 bushels of May wheat carried forward on the long side to offset this position. We will assume that this long interest is held by commission house speculative trade. As the month of May approaches the long interests desire to close their position. This they can do in only one way: by selling to someone else. But prospective buyers become increasingly difficult to find as the delivery month draws nearer with the result that the May future declines relative to cash wheat prices. When it has declined to an amount sufficient to provide a carrying charge, the merchant firm can then buy in its May position and sell its cash holdings; or it may shift its hedge to advantage to the July.

While the theory of this process is simple enough, it is sub-

ject to many uncertainties in practice. It may well be that other cash grain interests will appear and willingly take up the speculative long interest so that actual delivery no longer appears as an unwelcome alternative. Not infrequently, too, speculative interests of a professional or semi-professional type will "stand on" their contracts and take delivery during the early part of a delivery month with the hope that they may later in the month sell and deliver at a higher figure.

It should be observed further that while this practice is here referred to as artificial, it is not necessarily manipulative in character and the effect produced if successful is not occasioned by any lack of available deliverable supplies. In its best setting, it is simply a situation in which a willingness to freely convert futures into cash is lacking; in its worst setting it may be a carefully developed plan to threaten delivery of an inferior quality of cash product and to carry it out on a scale and under conditions highly adverse to the prospective receivers.

The Threat of Taking Delivery.—Having greater possibilities of success and much more common is the threat of taking delivery. Here the long interests attempt to profit at the expense of the "shorts." By continuing long up to and into the delivery month, speculative short sellers find it increasingly difficult to buy in their contracts. The short interest, it will be recalled, has the option of choosing the day during the delivery month when the actual commodity will be delivered. This option only serves to postpone the time when an ultimate settlement will have to be made. With the hope that prices will break or that the long interest will take the initiative and liquidate, they may carry along their position well into the delivery month with little thought of acquiring the necessary supplies. At the end of the month when delivery must be made supplies may be scarce and, in a frantic effort to close out their position, the current future advances rapidly. This process may or may not be accompanied by any manipulative intent but in any event it is an artificial situation producing a temporary derangement in prices.

An Illustration.—Such situations as the one just described can hardly be dignified by the title of corner though they do have some of its earmarks. They are of rather frequent occurrence in both grain and cotton. Such a “congestion” occurred in the July wheat future upon the Chicago Board of Trade on July 31, 1926. A merchant-speculator in this instance had accumulated a rather large line which he carried forward to the end of July. Some advance had already taken place in the price of July wheat prior to the thirty-first and during trading on the final day additional warning was given of the scarcity of supplies and the necessity for the short interest to “cover.” Instead it continued open up to the close. With less than ten minutes left to trade the “shorts” began buying with the result that prices, already sensitive, immediately began advancing by steps of $\frac{1}{4}$ cent, $\frac{1}{2}$ cent and later 1 cent at a trade rising during the closing minutes from \$1.45 per bushel to \$1.60 per bushel. While all of the contracts were settled and without any defaults, a good many closed at the top price.

Frequently these so-called “squeezes” prove profitable to the operators without the necessity of carrying them so far. In the cotton market particularly, there have been a good many instances during the past ten years of sudden shifting by merchant interests of large long lines to markets having small deliverable supplies with the result that the near-by futures immediately begin to advance. If a profitable margin can be obtained without the necessity of carrying the position into the delivery month and accepting delivery, the result will be just that much clear profit. If prices do not respond as fully as expected they may take delivery and rely upon their merchandising facilities to let them out with a profit or at least a minimum of loss.

To be most successful, operations of this kind must be conducted in connection with an established merchandising business. Otherwise a lack of knowledge of probable receipts, together with an inability to economically handle supplies that must be taken in, will more than offset any probable profit.

There is the possibility also in merchandising to ship supplies away from markets where delivery is needed to deliberately create a scarcity. This practice is not unknown either to organized grain markets or to organized cotton markets. At other times only the more desirable lots may be moved on to leave the less desirable for delivery upon futures. Such tactics whether ultimately successful or not invariably cause uncertainty.

Corners.—Of a much more ambitious character in this same general field are the occasional attempts to corner the market in some one commodity and future. Not only is a large long line in the particular future acquired but, in addition, an attempt is made to control the entire deliverable cash supply. Such a venture to be successful requires an immense amount of buying and must be carried along for a good many months. It is certain to attract attention long before the delivery month arrives and with each advance in price to encounter increasing resistance. Supplies are likely to be attracted to the market from points far from the usual channels of shipment and in amounts larger in the aggregate than expected. To some extent these can be currently merchandised since the corner is likely to be attempted in the latter part of a crop year when supplies are scarce. But as a rule whether the short interests in the future market be cornered or not, those running the corner have left on their hands large supplies bought at advancing prices which must be disposed of. If a ready market is not to be found a few weeks will bring added competition from a new on-coming crop.

Corners are not popular among present-day market leaders as a method of manipulation. In the early days of grain trading they were of common occurrence and occasionally resulted in exacting large profits from the short interests unable to meet their contracts. But State and Federal laws together with exchange rules have made it difficult to carry an operation of this size through to a successful conclusion. Where manipulation is attempted it is on a smaller scale and for the purpose of creating

temporary price derangements,—a less spectacular but more certain means of profit.

4. REMEDIES

The problem of adequate deliverable supplies is as old as future trading. Its effect is continually felt by all classes of traders and at times it results in large profits to some and correspondingly large losses to others. There is perhaps no problem to which the exchanges have devoted a greater amount of time though not always with the result of definitely improving conditions. Upon every large exchange there are individuals who prefer uncertainty to certainty. Squeezes and corners are to them opportunities to profit, and any worth-while improvement is regarded as a partial elimination of this opportunity. There are many others who, lacking insight into the effect of a proposed change, resist it because they fear the result. Joined together, these two groups have frequently been able in the past to prevent worth-while changes for long periods of time. Nevertheless some notable improvements have been made and additional ones considered which taken together are capable of meeting most situations. Several of these remedies have already been described and they need only be mentioned to make their application clear.

Seller's Option.—One of the earliest changes made for this purpose was to give the seller the right to choose the day during the delivery month when delivery is to be made. Thus a period of a month is provided during which the seller, if he be short of the commodity, may make definite plans for fulfillment. This would appear to be adequate, yet as we have seen it is not uncommon for short sellers to make no provision whatever for actual delivery right up to the last day. The seller is also given the right to select among the deliverable grades the particular grade or grades he wishes to tender.

A Number of Grades Deliverable.—Future contracts have been made multi-grade in form mainly for the purpose of adding to the volume of deliverable supplies. Certainly this fea-

ture aids greatly in preventing corners or attempted corners and in so doing minimizes uncertainty regarding the possibility of delivery.

Rules Prohibiting Corners and Manipulation.—All of the important exchanges now have definite rules prohibiting its members from engaging in tactics designed to manipulate prices or to corner the market. But these rules are no stronger than their enforcement. Intent, too, is difficult of proof with the result that a mild rebuke is all too frequently substituted for worthwhile punishment.

Governmental and Exchange Supervision of Elevators, Grading, etc.—The conditions under which tenders are to be made, including the sampling, grading and weighing of the commodity, its condition and position with reference to the storage or elevator company, have all been improved and standardized partly under the direction of the exchange and partly through State and Federal supervision thus tending to minimize uncertainty in these details.

Track Delivery.—Some of the exchanges, and notably grain, have made provision in recent years for delivery of railroad receipts upon future contracts representing grain in cars. This is in addition to the usual delivery by warehouse receipt. The railroad receipt must be accompanied by a certificate of grade. This alternative is usually permitted only during the last three days of the delivery month and is designed to afford an additional outlet to those having the necessary supplies to meet their contracts but unable to place it in store in a regular warehouse and secure a receipt in time for delivery. It is not altogether satisfactory, however, as it sometimes results in a movement of grain of border-line quality out of private store into cars adding to the congestion in the local shipping yards and increasing the general uncertainty attending delivery.

Time Allowance for Delivery.—One of the proposals to improve the delivery situation is that of giving the seller a period of time in which to acquire his supplies following the close of trading in the current future. The rules of many of the com-

modity exchanges provide that the seller shall serve notice of delivery on the buyer several days before the warehouse receipt is actually tendered. For cotton this period is 5 business days. But notice cannot be served without the seller first having obtained the actual commodity so that the effect of this requirement so far as a possible squeeze is concerned is simply to move forward the probable date a few days.

If greater latitude in time is to be allowed the seller, it must be in the form of a period of time following the close of trading in the current future during which he can acquire supplies needed on his contracts. As an example the rules might provide that trading is to cease in the current future on the fifteenth of each delivery month but that actual delivery may continue until the last business day of the month. Contracts open at the close of trading on the fifteenth would then of necessity have to be fulfilled by actual delivery.

The advantage of this plan would be to remove from the minds of those short in the current future the hope that prices will decline so that they may buy in their contracts at a profit. Knowing that ample time is allowed following the last day of trading for the short interest to acquire the necessary supplies, there would also be less incentive for speculative longs to remain open as a threat of demanding delivery. Instead of the possibility of a clash for price advantage between the shorts and the longs rendering the current market sensitive and at times erratic, most of this open interest would be closed out or shifted to more distant months leaving only those interested in either making or taking actual delivery.

The opposition to this proposal comes from traders and brokers who feel that it would decrease their business profits. Fluctuations in price is the life of trading and to lessen this element of uncertainty would eliminate a source of possible profit (or loss) to scalpers and short-time speculators as well as commissions to brokers. Such an argument is decidedly weak, however, when the interests of the trade as a whole are considered. This proposal is not new to the grain trade nor to the cotton

trade but, with the exception of a brief period in 1925-26 upon the New York Cotton Exchange, it has not been able to command sufficient votes for adoption.

Maintain a Minimum Deliverable Supply.—Another possible solution to this problem is to collectively maintain at least a minimum amount of the commodity available for each delivery month. Such a plan to be successful would need to be under the direction of the exchange and would need the support of the entire market. It would involve considerable expense in excess of supplies privately carried forward just as a gold reserve carried as a basis of credit expansion involves expense. But if it resulted in added confidence in trading and prevented the temporary running up of prices during delivery months it might be worth the cost. Certainly it would not be advisable until other alternatives had proven ineffective.

Outside Delivery.—It occasionally happens that in the course of time established exchanges get out of the principal channel of shipment of the commodity traded in while continuing as important future markets. This is the case with the New York Cotton Exchange for cotton and to some extent with the Chicago Board of Trade for wheat. They continue, however, as important future markets because of credit facilities, trading facilities and an established clientele. Sometimes, too, future trading is initially undertaken in a commodity when it is known in advance that the location of the exchange is not at a natural point of shipment or reshipment. Where conditions of this kind prevail, the best solution is to trade in a contract providing delivery at some outside point or points definitely located in the channel of shipment. Thus the Chicago Board of Trade maintains a future market in cotton in which delivery is provided for at Houston or Galveston, the New Orleans Cotton Exchange provides for delivery at Houston and Galveston as well as at New Orleans, the Winnipeg Grain Exchange bases its trading on delivery at Fort William or Port Arthur, the New York Produce Exchange for grain upon delivery at Buffalo.

By far the most important example of outside delivery among commodity exchanges of this country is that of the New York Cotton Exchange. Effective January 2, 1929, the future contract of this exchange was broadened to include as delivery points not only New York but also Norfolk, Charleston, Galveston, Houston, Savannah, Mobile and New Orleans. As first arranged an allowance was made to the buyer of 35 points for delivery at any point other than New York but this differential was later removed,⁶ so that the seller may now choose any of the 8 markets for delivery at the contract price. While it is too early as yet to measure the full effect of these changes it is probable that deliveries at New York will be negligible and that they will be distributed among the various Southern points in accordance with variations in supplies from season to season and from year to year. It is also too early to measure the full effect of this change upon relative future prices. It should remove in large measure any threat of squeeze or corner and in so doing prevent the possibility of any pronounced manipulation. It is possible, however, that the uncertainty to the buyer of the specific point of delivery together with the possibility of receiving portions of the same contract (in units of 100 bales) at several different points may at times occasion some minor price adjustments.

5. SUMMARY

The problem of assuming an adequate deliverable supply upon future contracts is one of vital importance to the proper maintenance of future trading. If available supplies are inadequate during a delivery month, or threaten to be inadequate prior to a delivery month, this factor immediately reflects itself in maladjustments in price. Or if the condition or position of supplies is undesirable this, too, will be translated into price. Some of the factors causing uncertainty in the conditions of delivery are natural in origin while others are artificial. In either

⁶ Amendment passed on Feb. 26, 1930, the first future to be traded in on the new basis being the 1930 October.

event they are capable of having a very undesirable effect, in extreme cases developing into market "squeezes" or corners, to the detriment of some and to the advantage of others.

The solution of this problem is, of course, to provide ample facilities to the seller to fulfill his contracts. These usually include seller's option of the exact day of delivery and of the grade to be delivered, a provision allowing delivery of any one of a number of grades, rules prohibiting manipulation or corners, supervision of the conditions of delivery including track delivery, a time allowance for delivery after trading closes in the current future, and delivery at points outside the market where trading is maintained. All of these provisions are designed to assure to the seller an adequate available supply and to the extent that they do so they remove this one important element as a factor influencing prices.

CHAPTER XVII

MARKET OPERATIONS AND THEIR RELATION TO FUTURE PRICES

1. SOME GENERAL ASPECTS OF TRADING AND PRICE

Problems in economics are usually concerned with price: its causes, its effects, and its relation to human endeavor. In seeking for causal relationships, however, it usually happens that there are several and that they are themselves interrelated. Frequently there are sequences of causes and the question arises, which of these is to be regarded as the most efficient? This question is particularly pertinent in a study of commodity prices. The price of cotton, on the surface at least, represents the point of equilibrium between the bids and offers of those actively in the market. Yet it is only the most superficial who would regard the activities of buyers and sellers as the efficient or fundamental determinant of cotton prices. Some would go so far as to say that traders are mere mouthpieces and that the real causes lie in the factors making up the supply and demand for cotton. There are strata, however, among these underlying causes. Are prices low because of a large supply, a declining demand or both? Or are they low because weather conditions have been favorable? Or because the purchasing power of the ultimate consumer has declined? Purchasing power is an important element in determining demand as weather is in determining supply. Perhaps the cause of causes is to be found in the elements controlling the weather or in the elements causing variations in purchasing power. It should be clear that the answer to the question, what is the cause or group of causes underlying a given price structure, depends upon the number of steps the analysis is carried.

In the present chapter we will be concerned with the market operations of traders: a factor or cause which is immediate

rather than underlying in its effect upon prices. The market operations of traders constitute the balance wheel rather than the mainspring of commodity prices. We have at an earlier point touched upon the importance of the market in the determination of prices. It is the channel through which all factors must pass in order to register themselves in terms of price. If this part of the process functions effectively, the resulting price and the course of prices will be as accurate as the information currently acquired will warrant. If it does not function effectively, if the information currently passing through the market is unduly minimized or magnified or distorted, then the market operations of traders will mount in relative importance and the underlying factors will occupy a less important position.

Supply of Futures Indefinite.—A fact that should be recognized at the outset is that the quantity of futures available for purchase and sale is an indefinite amount. In this respect futures differ in degree at least from other media of trade. In buying or selling coal or apples or real estate, for example, dealers know, at least in a general way, the size of the existing and the potential supply. The volume of trade which can be carried on in these articles is limited by the available supply and the rapidity of turnover. It is true that by increasing the turnover the volume of trading will be correspondingly increased but the extent to which this can be done is limited by the physical and financial requirements of the trade.

In contrast to the usual media of trade, future contracts can be multiplied to almost any amount. Being rights to the commodity specified rather than the commodity itself and not usually requiring either the buyer or the seller at the time of contracting to make any provision for delivery, trading becomes simply a matter of setting up agreements in which one side assumes a long position and the other a short. Some of these contracts are closed five minutes after they are made to be replaced perhaps by other interests entering the market. Some are carried forward for longer periods of time and, as the month of delivery is approached, shifted to more distant futures.

In Table 23 there is shown the volume of trading in wheat futures upon the Chicago Board of Trade for the 6 crop years 1924-25 through 1929-30. There is also shown the average volume of open contracts carried forward in wheat futures. These two series are shown in contrast to the receipts of wheat at the principal markets of the United States and the volume of wheat carried forward in the United States visible supply. While the

TABLE 23.—THE VOLUME OF TRADING AND THE OPEN COMMITMENTS IN WHEAT FUTURES UPON THE CHICAGO BOARD OF TRADE COMPARED WITH THE RECEIPTS AND VISIBLE SUPPLY OF WHEAT AT PRINCIPAL MARKETS, FOR 6 CROP YEARS, 1924-1929.*
(In thousands of bushels, i.e., 000 omitted)

Crop Year beginning July 1	Wheat futures (Chicago Board of Trade)		Wheat (United States)	
	Volume of trading	Open commit- ments**	Receipts at principal markets	Visible supply†
1924	16,587,110	105,478	513,541	66,489
1925	15,869,025	99,693	355,112	37,095
1926	10,619,503	88,919	400,845	51,021
1927	9,203,164	86,633	491,717	65,800
1928	9,907,610	120,675	529,235	106,819
1929	16,598,849	183,297	425,394	156,297

* Data on wheat futures from U. S. Dept. of Agr., stat. bull. No. 31, *Wheat Futures*; receipts at principal markets from Howard, Bartels & Co., "*Red Book*"; visible supply from Chicago Board of Trade, *Annual Reports*.

** Average of commitments open on the first of each month.

† Average of visible supplies on or about the first of each month.

comparison here is by no means a perfect one, it shows clearly enough that the volume of trading in wheat futures is in no way limited by the amount of wheat passing through the important marketing centers nor by the current supply of wheat at these markets. It is many times larger than the receipts; and if one were to multiply the latter by 5 on the assumption that cash grain passed through as many hands as that (which is probably in excess of the facts), the volume of future trading

would still materially exceed the cash business. In particular, it should be observed that increases and decreases in future trading from year to year are in marked variance to the increases and decreases in receipts.

Some agreement is shown in Table 23 between the open commitments in futures and the visible supply, though the former is somewhat larger. The volume of future contracts carried forward is determined to a considerable measure by the hedges placed by cash grain interests and these hedges vary with the supply of grain in commercial channels.¹ But here again the relationship is not close and need not be since commitments can be and are freely set up at all times for speculative account and in no way grow out of the needs of hedgers.

Margin Requirements in Relation to Volume of Futures.—

The only practical restriction to the volume of future trading or to the market positions which traders may assume is the limitation of funds necessary for margins. This fact has an important bearing upon the possible influence which trading operations in futures may have upon prices. There being practically no physical limitation to the rapidity or to the extent to which purchases or sales may be made, trading can degenerate into a show of financial strength and nerve. If by circumstance one side can claim the support of one or more interests having trading assets in the millions while the other side does not have this support, it is likely that prices will move for the time being in response to the financially stronger interests. Those on the weaker side may have ample evidence to support their views but after they have matched the larger traders' position to the limit of their financial strength, and bids or offers continue to pour in, prices are certain to move and will continue to move until they reach a level where additional support or opposition is encountered.

The lack of limits to physical trading in futures makes possible at times a measure of public participation abnormally large. In situations of this kind, nerve (or foolhardiness) to-

¹ See Chapter XX below, Section 6 on the extent of hedging.

gether with financial strength become the limiting factors. Attracted by a prolonged upward movement in price and the prospect of unusual profits, an increasing number of traders are drawn into the market. Basic evidence, again, may point to lower prices but so long as enthusiasm mounts and buying support grows prices are likely to advance. When and as this public enthusiasm wanes, or financial support becomes inadequate, a radical readjustment is certain to follow. A market of this character in which an enormous buying power was built up occurred in wheat futures during the latter months of 1924 and the early months of 1925. Prices ultimately exceeded \$2.00 per bushel in the latter part of January, 1925, to collapse in early March to a figure below \$1.40.

Price Variations in Relation to the Volume of Futures.—Whether those actively or passively interested in the market speculate to the limit of their financial capacity depends largely upon the market movements in price. Fluctuations in price are the life of trade. Profits are not possible for the speculator unless prices either move up or down, and the wider the range of movement the greater the possible profit. This is a fact which every speculator recognizes and is eager to take advantage of. As we have seen, the important agricultural commodities in which future trading is maintained include important natural factors which from time to time cause large variations in price. These major cycles include many intermediate or minor ones and these in turn are accompanied by innumerable day-to-day and intra-day variations. To what extent the trade in futures built up by these price movements is of itself a factor in either limiting or increasing their magnitude we will need to consider presently. The point to be noted here is that the two are closely and directly related.

Figure 39 illustrates this relationship. It is a comparison of the fluctuations in the volume of future trading in wheat upon the Chicago Board of Trade with the fluctuations in wheat future prices. The average daily volume of trading for each

month and the average daily range in price² for each month are shown as relatives of their mean for the 6-year period. The degree of variation in price can be easily compared with the degree of variation in trading, the two series being reduced to a common base. It will be readily seen that the general courses of the two series correspond. Months during which the daily range in price was large were also months in which the volume of trading was large; and periods of small daily price range were

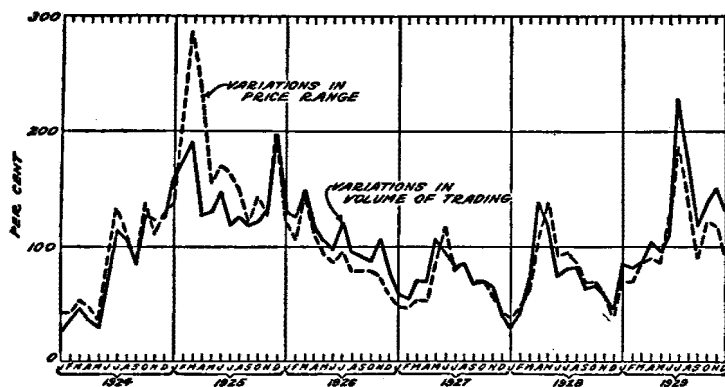


FIG. 39.—A comparison of the fluctuations in the volume of future trading in wheat with the fluctuations in wheat future prices, Chicago Board of Trade, by months, for 6 years, 1924-1929.

also periods of small volume of trading. The correspondence is not complete, due in part to the fact that the cumulative relation between a succession of upward or downward ranges in price and the volume of trading is not fully brought out. It is sufficiently close, however, to demonstrate the dependence of trading upon price fluctuations.

Importance of the Manner of Trading.—Before taking up

² Using the future each month in which trading interest is usually centered. For December, January, February, March and April of each year the May future price range was used; for May and June, the July future; for July and August, the September future and for September, October and November, the December future.

certain specific aspects of trading in their relation to price, one further qualification should be noted. It is sometimes said by critics of exchanges that the enormous trade in futures has of itself a pronounced effect upon prices. Most frequently this criticism emanates from agricultural interests in which the ill effects of short selling are emphasized. While trading may have an effect upon prices, this is not due to the trades as such, but rather to the manner of trading. For every purchase there is of necessity an equal and opposite sale. This being the case it follows that purchases and sales must at all times be in absolute balance.

It is the way in which these trades are executed that is the important consideration. While this fact is obvious it is surprising how often it is overlooked or misunderstood. If the daily volume of trading has increased from 25,000,000 bushels to 50,000,000 bushels there is no more reason to believe that the price has advanced than that it has declined. There has probably been a change in price but whether upward or downward depends upon the initiative or caution of traders, the sources from which orders appear to be coming and the financial strength of the various interests, these trading elements being in turn determined in large measure by the more important basic cash trade factors. Likewise the volume of customers' open contracts carried forward on the books of brokers may be large or small but this fact of itself is not necessarily a cause of price movements. If in being built up to large proportions an element of group psychology is introduced which renders the market unduly sensitive, or if in declining to very small proportions the narrowness of the market makes it subject to uncertain changes in price, then it is accurate to state that the size of the market makes possible and in this indirect way has an adverse effect upon the price structure. But before the size of the market as such can be thought of as causal it must be shown that the elements contributing to price instability are inherent in a broad or a narrow market.

2. INDIVIDUAL TRADING FACTORS IN THEIR RELATION TO PRICE

The Influence of Rumors and "Gossip."—One of the factors most frequently mentioned in its effect upon trading activity and price is that of ill-founded market news. Since we are concerned here with factors identified purely with trading activity, we may assume that the routine reporting of significant market events does no more than pass along this information so that its full force may be freely expressed in the price. In this case the event itself rather than the news of the event is the significant cause. But not infrequently it happens that in passing information along its original identity is lost or the item may be enlarged upon or perhaps unduly abbreviated to such a degree that it assumes a different significance. To the extent that this is the case and the information is lacking in accuracy, the news of itself through the market reporting machinery becomes a price factor.

Commission houses derive their income mainly from their customers' patronage. Times are prosperous when the market is moving and with many intermediate variations in price. It is perhaps but human at such times to hope for a continuation and to eagerly pass along information lending color to the market. When times are dull the search for evidence indicative of a significant change is even more intense. In this process the harmful as well as the helpful in news is frequently circulated.

Among the larger firms solicitors are employed, their positions being contingent either directly or indirectly upon the business brought to the firm. Their knowledge of the grain trade or of the cotton trade does not usually extend beyond a few "leads" concerning the technical condition of the market, what some star customer of this or another firm is supposed to be doing, and an opinion regarding the next market movement. It is here that the very latest "information" is to be had and unfortunately all too frequently it forms the basis of customer buying and selling. Pit brokers help along this process by guess-

ing, through the usual association of broker, commission house and customer, who the principal buyers and sellers are. News gathering agencies and private wire systems serve as collectors and broadcasters.

It is unnecessary here to review in detail the sort of material that is currently offered under this heading. A few samples were quoted in an earlier chapter (p. 129) in outlining the market facilities for future trading. Most of the daily newspapers include a column under the title of "News from the Pit" or "What the Brokers Say" which is fairly representative at least of the better strata of trade gossip. To what extent this material is inaccurate or is misleading due to an overemphasis of certain types of information to the exclusion of other types it is difficult to say. Were it possible to sort out the accurate from the inaccurate the question of the extent to which the inaccurate influences the judgment of traders still remains. That such material has some market influence, particularly in periods of high and uncertain prices, is undoubtedly a fact. For this reason it places upon the exchanges particularly, but also upon news gathering and distributing agencies, a very real and continuing obligation to currently supervise and censure the distribution of trade news. In this there is much that could be done.

The Influence of Large-Scale Trading.—We have emphasized the point that if prices are affected by trading activity it is due to the manner of trading rather than simply to the transactions as such. The work of the Grain Futures Administration of the United States Department of Agriculture³ has thrown some light upon the question of whether the trading methods of particular types of traders in any way affect the course of prices. The results of some of their studies will be summarized at this point. They are not entirely conclusive

³ The Grain Futures Act, was passed by Congress in 1922 granting authority to the Secretary of Agriculture to inquire into the nature of the trading upon grain future exchanges and to regulate these exchanges with respect to certain types of undesirable practice. See Chapter XVIII, *Governmental Regulation of Exchanges*.

since they rest upon evidence collected over a comparatively short period of time, but their conclusions are drawn from an examination of actual trading operations and in this respect bear greater weight than conclusions of students in earlier years who from force of circumstance had to depend largely upon deductive reasoning.

In Figure 40 there is shown the combined net position in wheat futures of 5 leading speculators for a period of eight months, April 30 to December 31, 1926. These 5 traders include all of the individual speculators having a position of

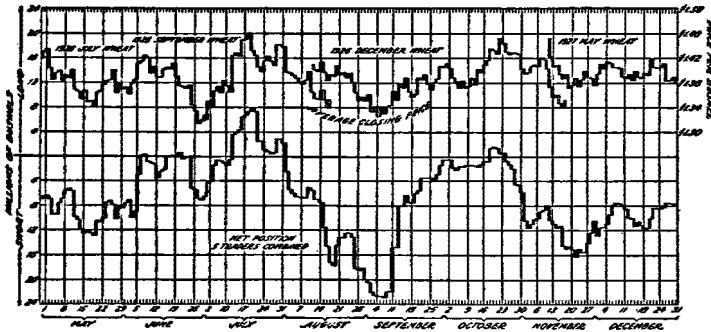


FIG. 40.—The combined position in wheat futures of 5 leading speculators, compared with the price of wheat futures, Chicago Board of Trade, by days, for the period April 30-December 31, 1926.—From U. S. Dept. of Agr. Tech. Bull. No. 79.

2,000,000 bushels or more at any time during this period in one or more wheat futures on the Chicago Board of Trade. They were, therefore, the speculative giants of this period judged purely by the standard of market position. What relation their trading bore to the course of future prices may be seen by reference to the price curve in which the principal futures during this period were used. In general as the traders increased their long position in the market or covered their short position the price advanced, and as they liquidated their long position or sold short the market declined.

A close inspection of Figure 40 will show a considerable

measure of correspondence between price and market position by individual days and particularly for days during which a large change in market position and price occurred. The relationship shown between the two series is by no means a perfect one. Some error is introduced by the fact that the data of trading operations are not as complete as might be desired. Important changes in positions at times grow out of transactions in grain privileges,—a market closely related to futures and over which the Grain Futures Administration does not exercise jurisdiction. Furthermore, aside from imperfections in the data, it is hardly to be expected that for every day of important price change the leading traders would also correspondingly change their position, nor would one expect that for every important change in the position of the traders the level of prices would correspondingly change.

In Table 24 the combined net trades of the leading speculators⁴ have been brought together in the form of a cumulative frequency table in which the trades are classified according to their size and whether or not, as net purchases or sales, they were accompanied by corresponding advances or declines in price. It will be seen that the larger the net trades the more certain it is that the price that day will move in the same direction: if a purchase, upward, if a sale downward. For the entire group of 374 trades, 257 or 69 per cent show a positive concurrence with the net changes in price. Above the 2,000,000 bushel level, price and net trades move concurrently in 82 per cent of the cases. Above the 7,000,000 bushel level the correspondence is 100 per cent though it should be noted net trades of this size are few in number.

That there is something more than just a casual relationship between the price and large-scale trading shown in Figure 40 and in Table 24 can hardly be doubted. Similar studies for other periods by the Grain Futures Administration show simi-

⁴For the periods Jan. 2 to Apr. 15, 1925 and Apr. 18, 1925 to May 29, 1926, the trades of the largest 8 were used. For the period June 1 to Dec. 31, 1926, the 5 largest were used.

lar results in which the closeness of the relationship is in general proportional to the size of the large-trader operations.⁵ However, granting the accuracy of this relationship, it still remains to be shown that the large-scale trading *causes* the price movements. Perhaps the price movements cause the trading or perhaps both are caused by some third factor.

TABLE 24.—NUMBER OF DAYS ON WHICH THE NET OF INDIVIDUAL PURCHASES AND SALES OF 500,000 BUSHEL OR OVER AND THE FUTURE PRICE MOVED IN THE SAME DIRECTION, FOR WHEAT, FOR LEADING SPECULATORS, ALL FUTURES* COMBINED, FROM JANUARY 2, 1925, TO DECEMBER 31, 1926.
(From U. S. Department of Agriculture Tech. Bull. No. 79.)

Net of purchases and sales (bushels)	Number of days	Number of days when price and net of purchases and sales moved in same direction				
		Jan. 2 to Apr. 15, 1925	Apr. 18, 1925 to May 29, 1926	June 1 to Dec. 31, 1926	Total	
					Number	Per cent
500,000 or over	374	37	156	64	257	69
1,000,000 or over	251	26	119	44	189	75
2,000,000 or over	125	17	62	24	103	82
3,000,000 or over	64	11	31	13	55	86
4,000,000 or over	38	7	19	8	34	89
5,000,000 or over	23	4	12	5	21	91
6,000,000 or over	11	—	8	2	10	91
7,000,000 or over	5	—	4	1	5	100
8,000,000 or over	3	—	3	—	3	100
9,000,000 or over	1	—	1	—	1	100

* For the study covering the period Jan. 2 to Apr. 18, 1925, only the 1925 May future was used. For this particular period of the year, however, practically all of the large individual trades were in the May future.

To answer this question additional evidence is needed. This is to be found in an examination of the individual trades and

* See *Fluctuations in Wheat Futures*, Sen. Doc. 135, 69th Cong., 1st Sess., 1926; *Speculative Transactions in the 1926 May Wheat Future*, Dept. Bull. 1479, 1927; *Major Transactions in the 1926 December Wheat Future*, Tech. Bull. 79, 1928; *Reports by Members of Grain Futures Exchanges*, Sen. Doc. 264, 70th Cong., 2nd Sess., 1929.

trading methods of these speculative leaders. The problem can best be approached by asking: do these speculators trade in anticipation of day-to-day changes in price? For example, in Figure 40 the September future advanced in price $2\frac{3}{4}$ cents from the close on June 4 to the close on June 5, while the upward change in the net position of the speculators from the close on June 4 to the close on June 5 amounted to approximately 6,000,000 bushels. One week later on June 12 the price declined $1\frac{1}{2}$ cents and the net sales of this group amounted to 2,255,000. On June 25, the price declined $1\frac{1}{4}$ cents and net sales of approximately 5,000,000 occurred. One week later, July 1, the price advanced 2 cents and net purchases amounting to 2,200,000 bushels were made. These were days of fairly large net change in price and trading position. For the entire period of 202 trading days, there were in all 31 days in which the price changed to a net amount of 2 cents or more and on 24 of these 31 days the net trading moved in the same direction as the prices.

The question is: did these 5 leading speculators foresee that the market was going to advance or decline from day to day with the degree of skill shown? In particular were they able to select out the days of unusual price movement with still greater skill and trade on those days to unusually large amounts? The answer to these questions is evident. No individual, however keen his insight, could average so high in forecasting these minor changes in price. Figure 41 is reproduced from this same report of the Grain Futures Administration showing the separate market positions of these 5 leading traders during this period. Considered individually these traders do not reveal unusual insight into probable price movements and there was certainly very little agreement among the 5 regarding the course of prices each day. One would have to assume, using the price forecasting theory, that the power of prophecy was in some way passed about from day to day from one speculator to another in as much as their positions when combined supplement each other in correlating with the price.

If then day-to-day changes are not foreseen by the leading traders, it must be that prices move as a result of trading operations or through the force of some third factor which affects both the price and the large-scale trading. This third factor must necessarily be the influence of the market news each day. It is probable that these day-to-day movements in price are a product of both the large-scale trading as such and the important news of the day reflected through the trading of the market as a whole. On certain days an examination of the

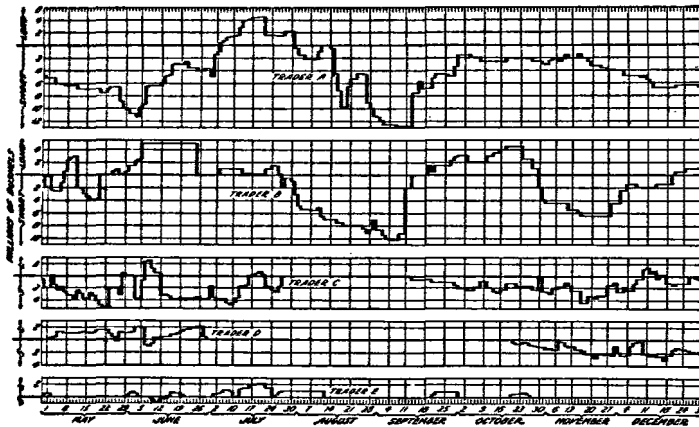


FIG. 41.—The net position, all wheat futures combined, of each of 5 leading speculators, Chicago Board of Trade, by days, for the period April 30-December 31, 1926.—From U. S. Dept. of Agr. Bull. No. 79.

principal news items will serve satisfactorily to account for the trend of the market upward or downward that day, and it is possible that one or more leading speculators traded that day either in response to the movement in price or in anticipation of it. But there are many times, as anyone at all familiar with stock or commodity markets well knows, when the news of the day does not supply an adequate explanation of the course of prices.⁶ On such days the market operations of trad-

⁶ Weaver, A. J., *The Organization and Dissemination of Market News in the Grain Trade*, a doctoral thesis, Univ. of Chicago, 1928.

ers *per se* mount in relative importance as a cause of price changes.

Figure 40 illustrates the type of period in which trading operations as such are most likely to be of importance. The preceding year, 1925, had been one of high and erratic wheat prices with a large public participation. With the rapid decline in prices, public participation disappeared to leave the market largely professional in character. At such times there are invariably many false starts staged for the purpose of attracting a public following but with poor results. In such a market any pronounced buying or selling will find little opposition with the result that prices respond promptly and freely. The point should be emphasized here again that the physical limits to which purchases or sales of futures can be carried are very indefinite so that as million after million is bid for or offered, opposition weakens and prices move in response.

The Influence of the "General Public."—A factor frequently mentioned in connection with organized markets is that of public participation. Just what constitutes the so-called "public" is not often clearly defined but it usually refers to individuals having three essential characteristics: (1) they trade only occasionally and are therefore not professionals, (2) they cannot afford to trade beyond small or moderate amounts and (3) they are bullish, i.e., hope prices will advance. This uncertain body of traders comes into greatest prominence during periods of rapidly rising prices. Each added advance adds new converts to the long side as well as permitting those having a profit to carry a larger line. In time, prices are carried to extremes, new capital is not forthcoming in sufficient quantities to maintain confidence and those already in the market have spread their capital over too wide an area in view of the high level of prices. A recession in price is all that remains to complete the cycle and once under way, liquidation will assure a complete collapse.

This is the usual theory of public participation in the market and as such its influence is to drive prices too high during the

boom to later decline to abnormally low levels. The winter of 1924-25 was a period in wheat futures in which most of these characteristics were manifest. But it is not a proven fact that those constituting the public act in this fashion at any time except those of extreme excitement. On the contrary in markets of moderate trading this group taken as a whole are more likely to be sellers than buyers as prices advance and they are more likely to be buyers than sellers as prices decline. This is con-

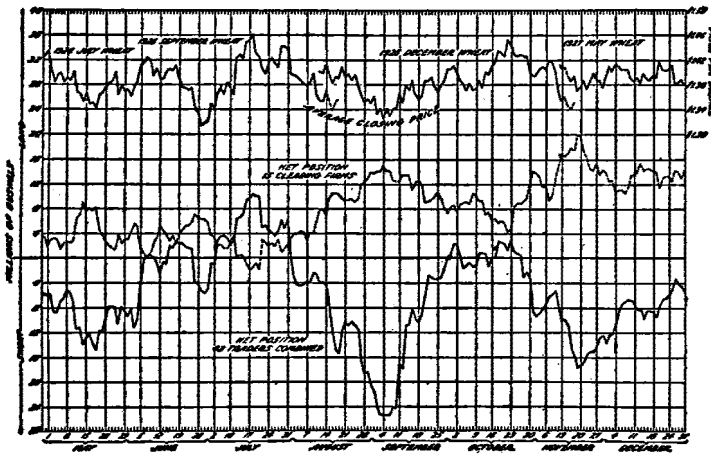


FIG. 42.—The combined position in wheat futures of the customers of 15 clearing firms, compared with the price of wheat futures, Chicago Board of Trade, by days, for the period April 30-December 31, 1926.—From U. S. Dept. of Agr. Tech. Bull. No. 79.

trary to the general belief that the public buys as prices advance, overstays the market and is forced to sell as prices decline. Some do act in this fashion but there is a larger group who do just the opposite so that taking the public as a whole they tend to liquidate their position as prices advance and to reinstate as they decline.

This fact is clearly shown in Figure 42 where the combined market position of the customers of 15 clearing firms of the Chicago Board of Trade is shown in contrast to the course of

prices and to the position of a group of 42 leading speculators. The customers of these fifteen firms were known to be small or medium-sized traders and representative of the speculative public group. It will be readily seen that their market position moved inversely to the course of prices throughout the period shown and inversely also to the course of trading of the group of leading speculators. Some evidence similar to this with reference to the public's trading is also to be found in the buying and selling of stocks,—purchases being made during recessions not by the wealthy but by people of very moderate means and liquidation by this latter group taking place as prices advance.⁷ Just why this should be the case is difficult to say. A possible explanation may be that, in temporary advances, selling occurs in the belief that the positions can be reinstated shortly at better figures; and as prices decline purchases are made believing that the "break" has run its course. In any event it seems apparent that except in periods of market excitement this trading is influenced by the fluctuations in price rather than being an influence upon price.

The Influence of Hedging and Arbitrating Operations.—Hedgers, consisting of mills, merchants, shippers and elevator companies, buy or sell futures as their cash commitments require. While it is frequently necessary for them to build up large positions in the future market, these positions are as a rule gradually acquired and, therefore, do not involve any sudden or large trading. It is generally believed that if their future operations as such affect prices they do so in exerting a broad pressure upon the market during the period when hedging operations are heaviest. This varies considerably between the various hedging interests and from year to year. In a season, for example, in which the crop moves forward freely at harvest time and forward orders are small, hedges in the form of future sales reach large proportions. This, in fact, is the usual situation in grain in the hands of the larger eleva-

⁷ Cf. Meeker, J. E., *Distribution of Securities through the Stock Market*, pub. by the New York Stock Exchange.

tors.* For the larger flour mills, the seasonal needs of hedging vary more widely; the volume of their forward business determining as a rule whether it will be necessary for them to go long of the future market or short. Substantially the same situation prevails for the large cotton merchants.

To what extent this concentration of hedge requirements is of itself a price factor is difficult to determine. Frequent reference is found in the news to the "absorbing of hedges" or to the "pressure of hedges." There are doubtless times when the influence of hedging is felt but there are also many other times when the term "hedge pressure" serves only as a guise for the real cause of price movement. The findings of the Grain Futures Administration do not as yet show any very conclusive evidence that this factor is of importance. Nor should one judge its influence by cash premiums and discounts since these are fundamentally a result of the costs of carrying the actual commodity forward.

Belonging to this same general field are the arbitrage operations of merchant interests and speculators. The theory upon which arbitragers are supposed to operate is that as prices between markets or between futures or between the cash commodity and the future get out of line they will buy that which is relatively too low in price and sell that which is relatively too high, an operation which in its effect should tend to bring the two prices back to their normal alignment. Here again the evidence is meager. Provided ample latitude is granted in defining the "normal" relationship, a fairly strong case can be made for this effect. But as a rule it is difficult to know what is the normal at any particular time. To an arbitrageur the normal is usually the spread or difference most likely to develop. Thus, if on February 1, it is believed that March cotton is likely to rise relative to the May due to temporarily scarce deliverable supplies, the arbitrageur will buy the March and sell the May and thus hasten the squeeze along. A series of straddle operations of this type were in fact carried out in cotton dur-

* See Figure 46, p. 415.

ing the first half of 1926 upon the New York Cotton Exchange.⁹ Granting the presence of ample deliverable supplies, however, there can be little doubt that the influence of arbitraging both as a potential and as an active force is to permit prices to more nearly reflect a normal parity based upon the cost of handling, shipping or holding the commodity.

The Influence of Scalping Operations.—Mention should also be made of the possible market influence of the scalping group. Their operations when true to type constitute round transactions within the limits of a trading day: if they go short of the market, then their position is covered before the close; if they go long, then it is liquidated before the close. If then their trading of itself is to have any influence upon prices it must grow out of the manner in which they trade either as individuals or as a group. There is little evidence available to throw light on this aspect of their operations. One would need to have an accurate timing of their trades and the prices involved both as individuals and as a group during the course of a considerable number of days in order to obtain any conclusive evidence upon their market influence. Were such a record made, it might be found that they tend to throw the weight of their trading *with* the minor intra-day movements in price with the result that the daily range in price is somewhat greater because of their trading. It is generally believed that because they even their positions before the close each day that the net effect of their trading upon the level of each day's price is relatively small. This may not, however, be true.

Other Technical Factors Affecting Price.—Organized commodity markets in common with organized stock markets are subject to many technical trading conditions which are minor factors in determining the precise price at which trades are made. Apparent market activity can be created, for example, by means of so-called *wash sales or matched orders*. Wash sales consist of trades made by two brokers in the pit in which it is

⁹ Cf. Hearings before a Sub-committee of the U. S. Senate Committee on Agriculture, 70th Cong., 1st Sess., entitled *Cotton prices*, Parts I, II, III.

understood between them that the trades are not to serve as the basis of measuring profits but only to stimulate interest. If they are long, for example, one might bid and the other promptly sell to him and later under the cover of other trading (or privately) they might enter into counter transactions and the result of their operations stimulate price to their mutual advantage. By means of matched orders, substantially the same effect is accomplished by a single interest operating off of the floor but sending opposite orders simultaneously through different brokers. While the various exchanges have strict rules prohibiting such fictitious trades, there is no practical means by which they may be detected.

The *types of orders* used by traders at times have some market effect. It is the general belief, for example, that stop-loss orders if they accumulate in large quantities at times add to the extent of price movements. When uncovered, in the case of "selling stops," they tend to accentuate the downward movement and in the case of buying stops to force prices upward more rapidly. Orders to buy or sell "at the opening" or "at the close" if there is a preponderance of one type may cause minor variations. Sometimes a large trader may place an order with a pit broker in whom he has confidence with instructions "do not force the market" or "sell, don't offer" or "buy don't bid" in which a skilled floor broker may materially aid his principal in profitably closing a position or favorably building up a position.

There are many varieties of so-called *accommodation trades* which under a very liberal interpretation are contrary to the rules of every exchange. Suppose pit trader A is long 50 May wheat and pit trader B short 50 May on the first day of May and that both desire to continue their positions without taking or making delivery. As an accommodation to A, trader B might agree to buy from him 50 May at the current price with the understanding that this trade can be reversed at any time. The effect of this nominal trade is to place each trader in an apparently even position thus avoiding for A the likelihood of

delivery. Sometimes this sort of an operation is employed between two clearing firms who are respectively long and short with the clearing house. Here the accommodation trade permits each to margin its position with the clearing house with much less capital. In the use of matched orders a customer may be long 500,000 bushels of July corn through firm K and short 500,000 through firm M. These two positions may be liquidated between the houses by firm K selling 500,000 July at some agreed figure to firm M. These accommodation trades are not made by open outcry in the pit and as such violate the rules of the exchange. They are common practice among firms and professional traders and tend to prevent the market from being an open and complete expression of the entire trading opinion.

In this same general field belong so-called "*crossed orders*." It not infrequently happens that a commission house will receive orders from two different customers one to buy and the other to sell for the same amount, price and future. The convenient thing for the house to do in a case of this sort is to let one customer sell to the other. Upon this matter the rules of the Chicago Board of Trade provide: "When a member has an order to buy and an order to sell the same commodity or security he must offer such security or commodity at the unit of price higher than his bid before making a transaction with himself, if not already bid or offered, in which case he shall add to his name on his report, the words 'on order'." The import of this rule is that having offered to sell in the open market at an eighth better than the price asked by the customer and having failed to receive an acceptance, no injustice can be done to the seller by having him sell to the customer desiring to buy at that price. Just why the seller in this case is favored over the buyer is not clear. Where the rule is likely to break down in practice is in the actual offering in the pit at an eighth above the selling customer's offer. In the regular routine of executing orders a customer is fairly sure of an open execution at the market be-

cause he can obtain the name of the broker to whom sold or from whom bought. But in crossed orders the same house serves in this double capacity and whether his order is given the benefit of the open market he has no possible way of knowing. In view of this fact, the practice of crossing orders cannot easily be justified. It may be a saving of an eighth or a quarter to one or the other of the two customers, but in the long run they, together with everyone who benefits by an open public market, are the losers.

It is but a short step from the practice of crossing orders to a practice much worse: that of acting as *agent and principal in the same transaction*. Firms or individuals who will stoop to this practice can be very ingenious in setting up accommodation trades having the appearance of genuine executions. If the customer inquires to whom his trade was sold the books may disclose that the opposite party was the "Corn spread account" which upon further inquiry proves to be an account of the firm itself. If questioned further the firm may explain, "We gave your order to pit broker M. Pit broker S executes our orders for 'Corn spread account' and neither knew they were at the time representing the same house since both brokers also handle orders for other firms."

It is not unknown for a firm and more particularly a pit broker to act as both an agent and a principal in the same transaction but in addition to scalp a profit of an eighth to a half of a point. The art of *scalping orders* may involve any one of a number of plans of which the following is a comparatively simple type. Customer No. 42 places an order with Smith Brothers to "Sell 10 May wheat at $122\frac{1}{4}$ stop." The order is relayed to pit broker J. Later on in the day the market declines to $122\frac{1}{4}$ at which price J sells 10 May wheat to K. If the market stays at $122\frac{1}{4}$ or moves up, the order will be reported back as sold to K, account of No. 42, at $122\frac{1}{4}$. But if instead it declines to $122\frac{1}{8}$ or 122 within a few seconds, whether it stays there or not, J will have an opportunity to profit. He will

ask a confederate, pit broker Q, to whom similar favors are granted from time to time, to exchange 10 May wheat with him at 122. This broker Q agrees to do and writes on the bought side of his trading card "10 M.W., Smith Brothers at 122" and on the sold side "10 M.W. 'J' at 122." J also makes two entries on his trading card: on the bought side "10 M.W. Q at 122" and on the sold side "10 M.W. Q. at 122." J now reports back to Smith Brothers the order of customer No. 42 as sold to Q at 122. He has as his profit the difference between his purchase from Q at 122 and the sale to K at $122\frac{1}{4}$ in addition to his commission as a broker.

In a scalping trade of this type it is necessary that the price move quickly through the stop price of $122\frac{1}{4}$ and that the broker act promptly. This he will do and since the detail involved amounts to but a few second's work, No. 42's order is reported back to Smith Brothers, with little apparent delay. At-the-market orders are equally well adapted to operations of this type and are probably more frequently employed. The pit broker will make a legitimate trade as soon as he receives the order,—say to buy 10 May wheat. If the market shows any measure of strength, he will, a few seconds later, exchange 10 May wheat with his confederate at the higher price, report this less favorable price back to his firm for the account of the client and take the more favorable trade into his own account. In the illustration here it has been assumed that both pit brokers J and Q belong to the clearing house. If they do not, the name of the firm who clears their trades would appear on their trading cards followed by a notation showing the identity of the broker. Trades of this kind are a rank injustice to the customers involved and reflect discredit not only upon the pit brokers but also upon the firm through which the order was executed. Aside from the unfairness of such operations, however, it seems doubtful whether they have any noticeable effect upon the level of prices each day.

3. REMEDIES

There are tricks in all types of trade. It is a debatable question whether they are any more numerous upon organized exchanges than in other fields of economic endeavor and particularly whether they are far-reaching in their effect upon prices. They attract attention upon exchanges because of the public character of these markets; and to some extent because the markets are public they are difficult to eliminate. The following suggestions are made as possible means of improving the character of market operations upon commodity exchanges. They are not new nor are they free from defects. They are advanced by the author as a matter of personal opinion which if not practical in every case at least deserve thoughtful consideration.

Improve the Market News.—There is a wide field for improvement in the character of market news. Professional speculators are frequently pictured by students of organized markets as far-sighted individuals who buy when prices are unduly low and sell when they are unduly high thus lending stability to the market. There is very little in the form of worthwhile evidence to prove this point. But there is ample evidence that traders large and small absorb and act upon a multitude of transient and fragmentary bits of information from minute to minute and hour to hour. It is desirable, therefore, to bring together a more dependable and worthwhile body of current news and in so doing to broaden the general level of market intelligence. In this the exchanges must take the lead in building up a better quality of information through their own reporting channels and in preventing that which is sensational, false or misleading.

License Brokerage Firms.—It is believed that brokerage firms and individuals accepting business upon a commission basis should be licensed either by the State in which the exchange is located or by the Federal Government and should be subject to periodic audit. With respect to the financial aspects of the brokerage business this would throw an added safeguard about these firms in their handling of money and securities left

in trust by customers. With respect to the market operations of firms they could be held individually accountable in the event of irregular practices through the removal of or failure to renew their license.

For the vast majority of the firms, the granting of a license and the regular auditing and inspecting of books would be entirely a matter of routine. But, for the occasional firm whose methods of handling customers' funds and orders are questionable, it would serve as a definite safeguard and means of control. Under the present plan the duty of supervision falls largely upon the exchanges. They have without exception built up excellent codes of conduct to regulate their inter-broker and broker-customer dealings. But unfortunately they have not displayed the same zeal in enforcing rules and regulations as in passing them. All too frequently a colorless reprimand is substituted for genuine punishment, and irregularities of common knowledge are condoned because of an insufficient number of interested members willing to push a case and whose own dealings are entirely free from such practices.

Separate Broker-Trader Functions.—It is believed that much of the difficulty in properly supervising members and member firms grows out of the fact that they are permitted to change their status from that of broker to trader and from trader to broker freely at any time. We have touched upon this difficulty with respect to the scalping operations of pit brokers. There is always, for example, the temptation to a pit broker upon receiving a large order, say to buy 500 May wheat, to buy 50 May for his own account and then to execute the order for the customer after which his own 50 is sold at the then higher level of prices. Or to put the matter in another way, there is always the temptation when setting up contracts for oneself and for others—contracts which are in every respect alike except in price,—to select out the more favorably priced for oneself.

With respect to member firms doing a general brokerage business, to require them to act solely on this basis would produce no hardship to most of the larger firms since they al-

ready follow this practice. To make this a general requirement would simply supply the added assurance that any firm publicly offering to execute customers' orders for a commission is in no way financially interested in the market.

Limitation of Individual Trading Positions.—In view of the effect which large-scale trading can have upon prices, it would seem desirable to place some limits upon the operations of individual traders. Were there physical limits to serve as checks to the buying or selling of futures this doubtless would not be necessary, but as we have seen such physical limits are very indefinite. The limitation of speculative lines has been advocated by the Grain Futures Administration for some time and bills have been introduced in Congress but no action has as yet been taken. Such limits should be broad and in proportion to the individual character of the trade in each commodity. It has been suggested for wheat futures, for example, that an individual speculative interest be required to limit its holdings to an aggregate position of 2,000,000 bushels. Under a provision of this kind it would still be able to shift from a short position of 2,000,000 bushels to a long position of the same size, in which net purchases of 4,000,000 bushels would be involved. Similarly, a maximum of 4,000,000 bushels net in sales might be made in transferring from the long to the short side. To avoid too rapid a change in these larger positions it has been further suggested that net trades for a speculative account within the limits of one trading day be limited to 2,000,000 bushels. Such limits would work no hardship even upon the largest of speculators while they would tend to lessen the market effect of trading operations as such.

It is not believed that the remedies which have been suggested would serve to free the markets of purely trading influence. They are, however, remedies which it is believed would serve to minimize the importance of purely market operations upon price.

4. SUMMARY

Important trade factors are influential in accurately determining prices only to the extent that they are accurately interpreted by those who compose the market. The accuracy of this interpretation is dependent in part upon the way in which market information is prepared and distributed. To the extent that it is incompletely reported or misleading, it will not permit a true picture to be reflected in the level of prices; and to the extent that this is the case, the prevailing price becomes in part a product of defective market operations.

Market operations as such also become a factor in determining prices if they are not at all times an outgrowth solely of fundamental trade factors. If at any time trading is carried on purely for the purpose of influencing adversely the judgments of others, or to attract others into the market, or to force them out, then the extent to which such operations succeed in diverting prices, to that extent they become of themselves market influences. This is sometimes true of the operations of individual leading speculators and occasionally also of the mass operations of the public. Possible remedies for those aspects of market operations which adversely affect prices include (1) a more adequate censorship of market news, (2) the licensing of brokers, (3) a complete division between the broker function and the trader function and (4) a limitation of the extent to which individual speculative operations can be carried.

CHAPTER XVIII

GOVERNMENTAL REGULATION OF EXCHANGES

The exchanges of the United States are regulated by Governmental authority through two channels: by statute act and by court interpretations of common and statute law. We have at various points emphasized certain features of this regulation particularly through court decisions. Most of the earlier force of common law, in so far as it applied to this field, has been replaced by more specific acts, so that in the present chapter we will need to inquire in particular into the nature and results of State and Federal laws. These laws in the aggregate include a rather wide range of features, some of which relate to future trading directly and others only indirectly. Some are preventive in character, some regulative, and some are positive in specifically stating particular practices to be lawful.¹ They may also be classified according to the broad intent of the legislators into (1) acts designed to regulate or prohibit practices believed socially or morally undesirable and (2) acts designed to regulate or prohibit practices believed to be economically undesirable.² Here emphasis will be placed upon those aspects having economic rather than social or moral significance.

1. THE BACKGROUND OF REGULATION

Risk Regarded as Non-Productive.—Most of the present-day legislative proposals and enactments owe their existence to the widespread belief that a profit derived from risk-bearing is not a legitimate one. The basis for this belief is not difficult to find. In the main, it grows out of the fact that risk-bearing does not assume a material form. Utility imparted in goods

¹ Cf. Dewey, T. Henry, *Legislation against Speculation and Gambling in the Forms of Trade*, Baker, Voorhis and Company, 1905.

² Cf. Parker, Carl, "Governmental Regulation of Speculation," *Annals of the Amer. Acad. of Pol. and Social Science*, Sept. 1911.

such as that created by the grower or manufacturer can be seen and objectively demonstrated. The shoe manufacturer can say, "Where formerly there was leather, now there are shoes," and the farmer can say, "With one bushel of corn I have produced ten." So, to a somewhat lesser extent though still by a tangible demonstration, the creator of place utilities can point out that goods have been transported from points where they were not needed to points where they are.

The producer of time utilities, however, simply holds goods or supplies goods to a later date. And while it will be freely admitted that these goods may be needed much more at this later time, it is not as apparent that the one holding them has rendered a service commensurate with this higher value. The goods are exactly the same in form and in exactly the same location; and from all outward appearances at least, the prospective purchaser is being offered the same article as that in existence several months before. Quite naturally, therefore, he reasons, as does the grower or shipper, that this addition in value to pay the storeman is somewhat unwarranted. It is of course quite generally recognized that some reward is necessary to pay for the capital tied up in the goods but little consideration is given to the risks involved and particularly that of a decline in price. Quite generally it is assumed that the hazards involved are incidental deserving no separate consideration and in which losses sustained are overlooked and profits derived are regarded as windfalls. This attitude is kept alive, also, by the fact that unusual gains from speculative ventures are played up in the press and magnified in the popular mind while losses are quietly forgotten.

Forestalling, Engrossing, Regrating.—Holding this thought in mind that the creation of time utility in general and risk utility in particular are today popularly regarded as less productive than the creation of form and place utility, it is not difficult to account for past and present governmental regulation upon the matter. The earliest laws passed at the dawn of modern commerce were direct prohibitions against the engross-

ing or forestalling of goods from the market. While these acts, the earliest of which were passed in the reign of Edward I, were partly designed to prevent merchants from cornering or "squeezing" the market and are thus forerunners of our modern laws governing monopolies and trusts, they were in part designed to prevent profit from the holding of goods because this in itself was believed to be unjustified. Thus Cunningham writes: "English merchants were not to forestall wine in Gascony, or buy it up before the vintage, and the time of the common passages; nor were they to charge high for the wine on the pretence that they ran risks. Cost of carriage was a charge that could be checked, and this might, doubtless, be allowed for when sale was made in London; but remuneration for risk was obviously regarded as a mere excuse for arbitrary demands on the part of the merchant, and these were not to be permitted at all."^a

Common Law Concept of Gambling Applied to Commercial Dealings.—It is from reasoning of this same character that we find an early application of the English common law on gambling to certain types of contracts in stocks and commodities. While the harshness of the earlier laws against forestalling lessened somewhat in the course of time, the thought remained that transactions in goods to be legitimate must have some semblance of materiality to them. Thus while one might buy and store goods for a rise in price and later sell reaping the difference in price, it became a form of commercial gambling and contrary to public policy, to make a similar profit in a rise in prices without any direct or indirect connection with the actual handling of the goods. Here the element of materiality continues and this same concept is the basis of our present-day laws governing commercial wagers.

It is interesting to note that the first important English act passed to regulate exchanges was designed to prevent trading likely to cause a fall rather than an advance in price. It is

^a Cunningham, Wm., *English Industry and Commerce*, Vol. I, p. 294. Cited in Emery, H. C., *op. cit.*

known as Sir John Barnard's Act (7 Geo. II, c.8) and was passed in the year 1734⁴ to prevent "the infamous practice of stock jobbing." We have already reviewed the essential features of this act⁵ and it is necessary to mention it here only to adequately outline the evolution of present-day legislative thought in this field. It branded as commercial wagers all dealings in differences in stocks and attempted in particular to prevent short selling by declaring every sale null and void in which the seller did not actually own and possess the stock at the time of contracting. Here the thought is again clearly brought out, both with reference to dealing in differences and in short selling, that such intangible forms of trade should not be countenanced. This act, however, was not effective though it remained a law until 1860 when it was repealed. Short selling was in fact given definite approval by the highest English court in the famous case of *Hibblewhite v. McMorine* (6 M. and W. 462) in 1838⁶ several years before Sir John Barnard's Act was repealed and since that time has been well established under English common law. The concept of commercial gambling as the contracting to buy or sell goods with the express or implied intent of not fulfilling the contract but only settling by an adjustment of price differences has remained, however, and continues to be the basis of court decision in all such cases at the present time.

2. STATE REGULATION

Future trading did not develop in this country to any large extent until the latter part of the decade 1860-70. It thus became a practice subject to a body of existing court opinion as well as several statute acts. These had been developed primarily with reference to stock trading and had their origin

⁴ Stevens, A. C., (*Pol. Sci. Q.* VII, p. 420) cites an earlier act regulating stock jobbers passed in 1697 which, however, was of minor importance and allowed to lapse after a period of ten years. He also cites a Dutch law against short selling in securities passed in 1619.

⁵ *Supra.*, Chap. VI, p. 113.

⁶ See Chapter VI above.

in earlier English experience. As speculation in stocks and commodities grew, other states added statutes until at the present time over three fourths of the states have some specific legislation bearing upon one or more phases of this subject.

Development of State Legislation.—Following the lead of earlier English laws, our states have enacted legislation intended mainly to define and to prohibit transactions in which there is no intention of fulfillment and in which the basis of settlement is purely upon price differences. Contracts of this sort are usually made at so-called “bucket-shops” and for this reason much of the legislation is directed specifically at this institution. There have been, however, other and significant laws relating to future trading passed by various states and these, too, will need to be reviewed in order to indicate the trend of political thought.

One of the earliest of the state laws was passed by New York in 1812 declaring all contracts involving short-selling in securities null and void.⁷ It was re-enacted in 1830 but proved ineffective and in 1858 was repealed. Later in 1897 an act was passed specifically permitting short sales. It is interesting to note that this followed by 4 years a similar act by England authorizing short sales. In 1841 the State of Pennsylvania passed a law declaring all time contracts in securities extending beyond a period of five days void⁸ but this was subsequently repealed. As late as 1905, Arkansas had a law declaring that “the buying or selling or otherwise dealing in what is known as futures, either in cotton, grain or anything whatsoever, with a view to profit, is hereby declared to be gambling.”⁹ While the law is perfectly clear, its force was largely set aside by court opinion and in 1929 it was repealed.

⁷ 2 R.L. 187, sec. 18. Cited in Dewey, T. Henry, *A Treatise on Contracts for Future Delivery and Commercial Wagers*, p. 18.

⁸ *Laws of Pennsylvania*, 1841, p. 398, sec. 6. from Dewey, *op. cit.*, p. 20.

⁹ *Digest of the Statutes of Arkansas*, secs. 1634, 1635; from Dewey, *Legislation against Speculation and Gambling in the Forms of Trade*, p. 15.

In California a clause was included in the Constitution at the time of its original adoption in 1879 declaring that "All contracts for the sale of shares of the capital stock of any corporation or association, on margin, or to be delivered at a future day, shall be void, and any money paid on such contracts may be recovered by the party paying it by suit in any court of competent jurisdiction"; but this was modified in 1908 by inserting the clause "without any intention on the part of one party to deliver and of the other party to receive the shares, and contemplating merely the payment of differences between the contract and the market prices on divers days."¹⁰ The effect of this modification was to set aside the earlier provision making margin trading or future trading in stocks *per se* void or voidable and making the provision a regulation against commercial wagers.

Two points in particular should be emphasized as trends in the legislation by the various states. The first is that earlier laws designed to prohibit short selling have either been repealed or so modified that this particular practice is not of itself prohibited. In fact in several of the states separate acts have been passed specifically declaring short selling to be legal. Secondly, there has been a marked tendency among the various states either to repeal earlier acts declaring contract for future delivery null and void or to so modify them that they legalize those made in ordinary trade upon organized and established markets while prohibiting those created purely to trade in price differences.

Laws Prohibiting Bucket Shops.—Three fourths of the states have laws at the present time passed specifically to regulate bucket shops.¹¹ These laws are on the whole very much

¹⁰ *Constitution of California*, Art. IV, sec. 26.

¹¹ The laws of each state and of the District of Columbia together with the two major Federal laws relating to futures are to be found in loose-leaf form (and kept currently up to date) in *Business Laws of the World, United States Unit*, Vol. VII, published by Commerce Clearing House Inc., loose-leaf division of the Corporation Trust Company, Chicago. It is from this source that references in the present chapter to current laws have been obtained.

alike in their attempt to regulate this practice. All of them emphasize the feature of dealing in differences and define bucket shops as places or rooms in which contracts of this character are either bought or sold or offered for sale or purchase. They then prohibit the operation of such places within the state and provide a penalty of fine or imprisonment or both against an owner or operator. Under many of the laws, the mere exhibiting or displaying of quotations with the intent of offering or assisting in a plan of trade involving no genuine intent of delivery is a felony. An additional section requires that every brokerage firm executing orders for others shall supply upon written demand by any customer "a written statement containing the names of the persons from whom such property was bought or to whom it has been sold, . . . the time when, place where, the amount of and the price at which the same was either bought or sold" and any failure to supply such a statement is *prima facie* evidence of bucketing.

In addition to features directed against keepers of bucket shops, many of the states also have provisions in their acts making it an equal offense for any person as a principal to enter into or assist in making such contracts upon bucket shops and declaring all such contracts null and unenforcable in any court of the state.

The ways of bucket shops are, of course, many. But the principles underlying their operation are clear and the acts of the various states are sufficiently broad to permit prosecution of almost any sort of scheme. Their intent is to defraud their patrons. To accomplish this, they encourage their customers to enter into contracts promising profit if prices advance. However these contracts may be handled, whether nominally executed upon a recognized exchange or not, the house assumes an opposite position to the customer gaining if the customer loses and losing if the customer gains. They must have quotations from some source to operate. If they are to remain in business, (1) their trade must either include both buying and selling customers which offset each other thus permitting the house to profit from commissions without the costs of execu-

tion or the risk of the market or (2) the market must so move, where they are forced to take an opposite position to their customers, that they will gain and their customers lose. As a rule most of their customers are on the long side so that the bucket shop can flourish only in generally declining markets. If, on the other hand, the market chances to go against them they can as a last recourse close up and begin anew elsewhere.¹²

The Attitude of Organized Exchanges Toward Bucket Shops.—In the enforcement of laws prohibiting bucket shops, the various states have long had the active support of organized exchanges. In fact the exchanges have been the principal element in suppressing bucketing schemes and in advocating adequate legislation. By exercising strict control over the use of their quotations they have in large measure prevented the opening of bucket shops. To successfully launch this type of enterprise so that prospective customers will be encouraged to trade, it is essential for the place of business to have every earmark of the usual brokerage office and the quotation service is most important. But if he obtains a ticker, it is still necessary for the operator to handle his business so skillfully that he will avoid detection by the exchange and state authorities. This he is not likely to be able to do if his operations are carried on in any wholesale fashion. In recent years, because of the vigilance of the exchanges and of the various states, the older out-and-out bucket shop has become very scarce; if undertaken, this type of trade is more likely to appear as an occasional bucketing of individual orders or, what amounts to the same thing, the trading against a customer's position, either form of which is difficult to detect if carefully done.

In strenuously resisting the bucket shop movement, the exchanges are not, of course, interested solely in the welfare of society at large. To permit these private enterprises to operate all about them is not unlike the creating of so many rival exchanges all of which are bidding directly for the business of the

¹² Cf. Hill, John Jr. *Gold Bricks of Speculation*, Lincoln Book Concern, Chicago, 1904.

larger board. And in this the bucket shop keeper is situated very well since the quotations are already prepared for him and since he has little or no financial or disciplinary standards to maintain. But of greater importance is the fact that to permit open bucket shop operation is to continually jeopardize the business standing of the organized markets. The public does not sharply differentiate between the type of business done in a bucket shop and the open contracts executed on a public market through established brokers. And if they are victims of sharp practice the exchange system as a whole is blamed. In this light, the bucket shop is a kind of black sheep cousin among exchanges which if not killed will continue, though unwanted, as a part of the family.

Laws Prohibiting Trading Without Intent to Fulfill Contract.—Closely allied to the laws of the various states prohibiting bucket shops are those prohibiting trades involving no intention on the part of the buyer or seller or both to receive or deliver the actual commodity. Invariably coupled with this provision is its natural corollary that the buyer or seller or both shall not trade solely to benefit from price differences. We have already discussed the important legal and economic aspects of this problem in Chapter VI on *The Future Contract and Its Use* where it was suggested that usefulness rather than intent would serve as a better criterion to test whether contracts should be permitted or not. But the law as well as the courts have thus far placed principal emphasis upon intent.

We find accordingly that twenty of the States have at the present time specific legislation upon this matter. The law of New York State is fairly representative of that of other states. Here it is a felony for any person to make or offer to make any contract in securities or commodities: (1) with the intention that such contract shall be settled upon the basis of quotations on any board of trade or exchange without intending a bona fide purchase or sale, or (2) with the intention that such contract shall be settled when the price shall reach a certain figure and without intending a bona fide purchase or sale, or

(3) without intending actual bona fide receipt or delivery but intending a settlement based upon the difference in public market quotations prevailing between the time of purchase and of sale. These three provisions all contain the same basic thought that trading shall not be permitted in which there is no intention of delivery but instead a deliberate intent to settle each contract according to prevailing prices in the open market. Transactions in bucket shops when judged by this standard must necessarily be illegal. But this provision is somewhat broader than simply a bucketing act. It also makes illegal all transactions made through the usual channels of regularly organized exchanges if it can be proven that either buyer or seller did not contemplate delivery at the time of contracting but only a settlement in price differences. And as we have seen in connection with the subject of clearing future contracts, illegal intent may be presumed under a wide variety of conditions.

Other Features of State Laws.—In addition to the specific State laws regulating the trade in futures, other and more general statutes are to be found bearing upon the subject. Thus general acts relating to fraud may be applied to methods of trade in futures as in any other field. In a general way, too, the so-called blue sky laws of the various states exercise a beneficial effect upon irregular trading practices especially in the licensing and regulation of security dealers and salesmen. Those who are inclined to engage in sharp practice in stocks are often to be found in similar activities in commodities. Mention should also be made of the statutes of the various states governing gambling. They can be and are regularly used to nullify bucketed contracts and those based purely on price differences whether made through a bucket shop or elsewhere. Such trades are nothing more than commercial wagers and are invariably viewed as gambling by the courts. Eleven states at the present time rely entirely upon a general gambling act to prosecute cases involving bucket shops as well as all types of contracts in which no fulfillment is intended. Eighteen additional states have a bucket shop act but rely upon the gambling

laws to regulate commercial wagering through organizations and by methods other than those of bucket shops.

It is of interest to note here also that within the last few years quite a number of states, in revising their laws bearing upon this subject, have seen fit to insert a section specifically stating the type of future trading which is valid within that state. Thus the State of Arkansas (Act of 1929) provides:

Sec. 2. Contract for the Sale of Futures which are Valid.—That all contracts of sale for future delivery of cotton, grain, stocks, or other commodities (1) made in accordance with the rules of any Board of Trade, exchange or similar institution where such contracts of sale are executed and (2) actually executed on the floor of such Board of Trade, exchange or similar institutions and performed or discharged according to the rules thereof; and (3) when such contracts of sale are made with or through a regular member in good standing of a cotton exchange, grain exchange or similar institution organized under the Laws of the State of Arkansas, or any other state shall be, and they are hereby declared to be valid and enforceable in the courts of this State according to their terms, provided, that contracts of sale for future delivery of cotton . . . must also be made subject to the provisions of the United States Cotton Futures Act. . . .

A similar clause is to be found in the laws of Georgia, Mississippi, Oklahoma, South Carolina, Tennessee and Texas. Usually these laws have replaced earlier acts of a very restrictive character and indicate a definite movement among the Southern States to differentiate in the laws between transactions and exchanges which are economically useful and those which are not.

Illinois Statute.—Partly because of their importance in the regulation of future trading upon the Chicago Board of Trade and among brokers and others within the state and partly because of particular features in the law, special reference is here made to the statutes of Illinois. The laws of Illinois legislate against bucket shops as well as broadly cover transactions in the nature of commercial wagers. But in addition, they also include an act passed in its original form in 1874 regulating options, forestalling and corners. This latter act was amended

in 1913 and now reads as follows (portions in italics being the amendment of 1913):

SEC. 308. *Gambling in Grain, Other Commodities.*—Whoever contracts to have or give to himself or another the option to sell or buy, at a future time, any grain, or other commodity, stock of any railroad or other company, or gold, *where it is at the time of making such contract intended by both parties thereto that the option, whenever exercised, or the contract resulting therefrom, shall be settled, not by the receipt or delivery of such property, but by the payment only of differences in prices thereof,* or whoever forestalls the market by spreading false rumors to influence the price of commodities therein, or corners the market, or attempts to do so in relation to any such commodities, shall be fined not less than \$1,²³ or more than \$1,000, or confined in the county jail not exceeding one year, or both; and all contracts made in violation of this section shall be considered gambling contracts and shall be void.²⁴

The first part of this act relates to options (i.e., puts and calls) in futures and not to future trading itself.²⁵ Prior to the amendment of 1913 it stood as a direct prohibition of all option trading though in fact it was regularly disregarded. With the amendment of 1913 the trade in options was indirectly legalized by prohibiting only those contracts in which at the time of contracting it is the intention of the parties to settle by the payment of differences.

The latter part of this act is of interest in that it appears to be a remnant of the older English laws on forestalling. These provisions, too, have been more honored in the breach than the observance. It has long been recognized that the mere buying or accumulating of property to be later sold is not of itself injurious but more often beneficial to society. Corners or attempted corners can, however, be prosecuted on the ground of conspiracy under common law where it can be shown that

²³ In the earlier act this figure was \$10.

²⁴ A similar act is in force in Ohio. See Sections 13069 and 13070 of *Pages' Anno. General Code*, 1926.

²⁵ It has, however, been applied to futures where the intent of the parties was to settle by an adjustment of differences this being interpreted as an option. *Pearce v. Foote*, 113 Ill. 228 and others.

there existed a combination to control prices.¹⁶ Contracts may, also, be nullified as gambling transactions where it can be shown that the price was deliberately advanced to force the short sellers to settle by an adjustment of price differences.¹⁷

3. FEDERAL REGULATION

Additional Legislation Believed Necessary.—The laws passed by the various states relate more to the regulation of future trading than to the regulation of exchanges. Stated in another way, they relate only indirectly to organized exchanges. The statutes pertaining to bucket shops and to commercial gambling generally, while useful, do not attempt in any comprehensive fashion to regulate or even to supervise broadly the regular organized markets. In fact under the laws of several of the states these principal markets are given the definite approval of the state by legislative enactment. It has long been felt by certain groups, and particularly by the agrarian interests, that control should be extended over the organized exchanges and that this control should be of a positive rather than a passive nature.

We have touched upon the attitude of the farm element at earlier points. The commodities dealt in upon these exchanges are primarily farm products. The method of trade through the medium of future contracts is utterly foreign to the experience of the farmer and in addition is intricate and difficult to understand. At most, the average farmer is in a position to know only that future trading is closely related to the products he has for sale, that these products fluctuate widely in price, and that not infrequently they decline to his disadvantage. At such times he is naturally led to believe that the system of exchange trading is fundamentally at fault.

When an inquiry was attempted, either through govern-

¹⁶ *U. S. v. Patten*, 226 U. S. 525. See *Report of the Federal Trade Commission on the Grain Trade*, Vol. V, p. 322 ff. where it is also suggested that the Sherman Antitrust Act might be applied. On this latter point see *Albers v. Moffitt*, Mo. 187 S.W. 903.

¹⁷ Gilman, S. P., *Stock Exchange Law*, Ronald, 1923, p. 237.

mental action or privately, it was generally found that the exchanges had no accurate knowledge of the fundamental forces underlying the operation of their organization. Upon the principal markets not even a record of the total volume of trading was to be had, not to mention the individual operations of the principal traders. When questioned upon these matters, the answer of the exchange was that it does no business, that it is just a meeting place, and that the business of the individual member is strictly confidential. Of greater importance, however, is the fact that the leading exchanges usually did not want to look into their own business. The fact should never be lost sight of that the organization of exchanges permits just one vote for each member. As a result the constructive element, however much it may desire an improvement in methods of operation, cannot make a constructive change without a majority vote; and the majority has generally been satisfied to continue without change. Hearings either by governmental authority or by the exchange have thus generally ended with little more than the collection of an extensive array of opinion giving small satisfaction to anyone. It is from a background of this sort that agitation for Federal legislation has continued for the past forty years.

Development of Federal Legislation.—The earliest act of importance bearing upon Federal regulation of exchange trading was passed by Congress during the Civil War.¹⁸ It was an attempt to prohibit future trading in gold. All contracts “for the purchase or sale of gold coin or bullion to be delivered any day subsequent to the day of making such contracts” and all

¹⁸ *Stat. at L.*, 1864, Chap. 127 approved June 17, 1864. While this act is generally recognized as being the first Federal attempt to regulate future trading, Emery cites an earlier statute approved March 3, 1863, taxing all transactions in gold which have more than three days to run before maturity. This earlier statute (*Stat. at L.*, 1863, Ch. 74) also provided that any loan of currency or money on the security of gold or silver coin of the United States made in excess of the par value of coin pledged as security shall be void, this provision being obviously designed to prevent depreciation of United States notes in use at the time. This act in so far as it was covered by the act passed the following year was repealed at that time.

short sales in gold or bullion were made unlawful and void. It was further declared to be unlawful for any person to buy or sell gold coin or bullion at any other place than the ordinary place of business of either the seller or the buyer, the thought being in this last provision to break up the organized markets in gold flourishing at that time. Gold was at a premium or in other words the credit money of the Government (greenbacks) was at a discount and it was thought that this might be corrected by prohibiting speculation in gold. The act apparently had, however, the opposite effect and was repealed on July 2, 1864 just two weeks after its passage.¹⁹

It was not until 1883 that further consideration was given to future trading by the Federal government. In that year a bill was introduced into Congress "to prohibit the mailing of letters and money orders relating to future contracts."²⁰ In 1887, two bills were introduced to prohibit and punish those who deal in futures²¹ but none of these bills was reported out of committee and none given any extensive consideration. In 1890 Mr. Butterworth of Ohio introduced a bill²² which, if nothing else, served to stir up interest in the subject. It proposed to tax dealers in options and futures, was reported out of committee but did not come up for a vote.

In the First Session of the Fifty-second Congress (1891-92) a determined effort was made to enact legislation to prohibit future trading. Several bills were introduced into the House and the Senate. After extended consideration and hearings, the House Committee on Agriculture reported out a measure (popularly known as the Hatch Bill²³) which proposed to levy a prohibitive tax upon all future contracts made in a specified list of commodities including grain and cotton. Extended debates were held in the House and the bill finally passed by a vote of 167 to 46. It was later passed by the Senate with slight

¹⁹ *Stat. at Large*, 1864, Ch. 209.

²⁰ *H.R. 5007*, 48th Cong. 1st Sess. (1883-84).

²¹ *H.R. 5689* and *H.R. 7051*, 50th Cong., 1st Sess. (1887-88).

²² *H.R. 5353*, 51st Cong., 1st Sess. (1889-90).

²³ *H.R. 7845*.

amendments by a vote of 40 to 29. As reported out of Conference, it was necessary for the House to approve the amended bill. The time was then short as Congress was to adjourn in three days and in order to bring it to a vote it was necessary that the House suspend the rules. This required a two-thirds vote and was not obtained, the vote on the motion to suspend the rules being 172 to 124. Thus the amended bill was not voted upon by the House. In the following Congress the bill was re-introduced but was materially altered in Committee. It still remained a tax measure and failed of passage by a wider margin.²⁴

While one or more bills were introduced in at least one of the sessions of each Congress following the Fifty-second, interest waned somewhat until 1908 when another series of proposals began. In the Sixtieth Congress (1907-09), twenty-five bills were introduced almost all of which were designed to prohibit future trading; in the Sixty-first Congress (1909-11), 17 were introduced and in the Sixty-second, 42.²⁵ Some of these bills were regulatory in character while others were prohibitive; some were placed under the power of Congress to tax and others under the commerce clause; extended hearings were held but none of the bills was enacted into legislation.

Mention should also be made of the Report of the Commissioner of Corporations on *Cotton Exchanges* made in 1908 in response to a House resolution. This report in five parts was a comprehensive study of exchange methods in cotton with particular reference to the problem of difference systems and was the basis of legislation passed in 1914 under the title of the Cotton Futures Act. This act was considered in Chapter XV on *Difference Systems and Their Effect on Future Prices* and need not be considered further here. As we have already

²⁴ Emery, H. C., *op. cit.*, p. 219 ff. gives an excellent summary of this legislation. See also Stevens, A. C., "The Utility of Speculation in Modern Commerce" in *Pol. Sci. Quarterly*, Sept. 1892.

²⁵ From a tabulation made by Phillips, Louise "History of the Subject of Options and Futures in Congress as reported in the Congressional Record," U. S. Dept. of Agr. (typewritten), 1920.

seen it is not an act to broadly regulate or supervise trading practice but is designed to require a commercial difference system and the use of Federal standards for the grading of cotton. It did not, therefore, satisfy those who desired a comprehensive type of act.

The Future Trading Act.—During the World War, prices were regulated under an emergency measure,—the United States Food Control Act,—and the problem of permanent legislation was held in abeyance for a time. But in the fall of 1920, occasioned by the precipitant drop in grain prices, Congress again took up a series of proposals to regulate future trading. Early in 1921 hearings were held by the House Committee on Agriculture and later in the year by the Senate Committee on Agriculture and Forestry. For several years the Federal Trade Commission with the cooperation of the United States Department of Agriculture had been collecting material and conducting field studies into various phases of the whole problem of grain marketing and the knowledge derived from this source was freely drawn upon by those advocating legislation.²⁶ As a result, the Future Trading Act became a law on August 24, 1921.²⁷

This act was tested before the United States Supreme Court and on May 15 of the following year its principal provisions were declared unconstitutional.²⁸ It attempted to regulate grain future exchanges through the imposition of a prohibitive tax, freeing the exchange and the transactions made upon the exchange from its application if certain prescribed conditions were fulfilled. In rendering its opinion the Supreme Court stated in part: "The act is in essence and on its face a complete regulation of boards of trade, with a penalty of 20 cents a bushel on all 'futures' to coerce boards of trade and their

²⁶ See *Report of the Federal Trade Commission on the Grain Trade*, Volumes I and II of which were published in September, 1920. Also *Report of the Federal Trade Commission on Wheat Prices* published in December, 1920.

²⁷ 42 Stat. 187, Ch. 86.

²⁸ *Hill v. Wallace*, 259 U.S. 44.

members into compliance. When this purpose is declared in the title to the bill and is so clear from the effect of the provisions of the bill itself, it leaves no ground upon which the provisions we have been considering can be sustained as a valid exercise of the taxing power."

In rendering its decision the Court also raised the question of whether the Future Trading Act would permit of boards of trade being regulated under the commerce clause of the Constitution. Their conclusion was that it would not since nowhere in the act was any reference made to interstate commerce. They observed further that sales for future delivery on boards of trade could not come within the power of Congress to regulate interstate commerce under any act "unless they are regarded by Congress, from the evidence before it, as directly interfering with interstate commerce so as to be an obstruction or a burden thereon."

The Grain Futures Act,—Its Constitutionality.—This last point served as a strong suggestion to the proponents of the act to redraft it, placing it under the interstate commerce clause instead of the taxing power. This was done immediately following the adverse decision of *Hill v. Wallace*, the new bill was introduced into Congress at once, and was approved September 21, 1922. It is entitled "An act for the prevention and removal of obstructions and burdens upon interstate commerce in grain, by regulating transactions on grain future exchanges, and for other purposes" and is known as The Grain Futures Act.²⁹ In it a separate section (Sec. 3) is devoted to a careful recital of the importance of future trading and of the manner in which through speculation, manipulation, or control, unreasonable fluctuations in the prices of futures are an obstruction and a burden upon interstate commerce in grain. Otherwise the act remained the same as the earlier Future Trading Act.

The Grain Futures Act fared better than its predecessor when tested in court. It was brought before the Federal Su-

²⁹ 42 Stat. at L. 998, Ch. 369.

preme Court and was upheld in *Board of Trade v. Olsen*.⁸⁰ The plaintiff contended that the decision in *Hill v. Wallace* was conclusive against the constitutionality of the Grain Futures Act since the two acts were the same in substance and language with the exception of the enforcing feature and section 3 just mentioned. Upon this point the Court replied that these exceptions were the very features necessary to render the act constitutional. The enforcing feature had been changed from that of the taxing power to that of the power to regulate interstate commerce. While future trading is not of itself interstate commerce, Congress found that through manipulation it was a constantly recurring burden and obstruction to interstate commerce and was for this reason subject to Federal regulation.⁸¹

The plaintiff strongly urged that future trading is not in fact a burden and obstruction to interstate commerce and that for the Court to conclude that it is, simply because it is so stated in the law or so declared by the legislative body, is to yield to Congress its right and duty to decide such constitutional questions. In answer the Court reviewed at some length the facts and testimony submitted to Congress and presented for the Court's consideration throwing light upon the question of whether in fact the process of future trading is a recurring burden and obstruction to interstate commerce in grain. Their conclusion was that it is, stating: "It is clear from the citations, in the statement of the case, of evidence before committees of investigation as to manipulations of the futures market and their effect, that we would be unwarranted in rejecting the finding of Congress as unreasonable, and that in our inquiry as to the validity of this legislation we must accept the view that such manipulation does work to the detriment of producers, consumers, shippers and legitimate dealers in interstate commerce in grain and that it is a real abuse."

⁸⁰ *Board of Trade of the City of Chicago v. Olsen*, 226 U.S. 1.

⁸¹ *United States v. Fergar*, 250 U.S. 199 and later *Stafford v. Wallace*, 258 U.S. 521.

There were other points raised in the case such as taking the property of members without due process of law but these were not found to be valid objections by the court.

The Regulation of Option Trading.—The earlier Future Trading Act included a section levying a tax upon grain privileges, i.e., puts and calls. It also included a section stating that if any portion of the act is held invalid, the validity of the remainder of the act shall not be effected thereby. When tested in court, in 1921, no objection was raised to the section taxing options and hence it continued in force following the decision of *Hill v. Wallace*. Accordingly the framers of the Grain Futures Act left out the section relating to options. On October 23, 1923, a test case was begun in a Federal court to try the constitutionality of this section, it was carried to the United States Supreme Court and on January 11, 1926, was declared unconstitutional.³² Since that time the trade in grain privileges as such has been free from Federal regulation though, of course, those options which are exercised and become future contracts are then subject to the provisions of the Grain Futures Act.

*The Grain Futures Act,—Its Principal Provisions.*³³—*Section 2* of the act pertains to definitions and *Section 3* recites the provisions which we have just discussed under which future trading is found to be of national public interest and, through frequent speculation and manipulation in the prices thereof, an obstruction to and a burden upon interstate commerce in grain.

Section 4 makes unlawful the use of any means of interstate communication for the purpose of making or offering to make contracts for the future delivery of grain unless: (a) "the seller is at the time of the making of such contract the owner of the actual physical property covered thereby, or is the grower thereof, or in case either party to the contract is the owner or renter of land on which the same is to be grown, or is an as-

³² *Trusler v. Crooks*, 269 U.S., 459.

³³ See Appendix B for a copy of the Act.

sociation of such owners, or growers of grain, or of such owners or renters of land"; or unless (b) "such contract is made by or through a member of a board of trade which has been designated by the Secretary of Agriculture as a 'contract market' as hereinafter provided. . . ." This section is clearly designed to free from an application of the law all forward delivery contracts in which farmers or farm interests appear as sellers and all future contracts made upon "contract markets."

In Section 5 the Secretary of Agriculture is authorized and directed to designate any board of trade as a contract market when it complies with the following requirements:

(a) When located at a terminal market where cash grain of the kind specified in the future contracts is sold in sufficient volume to fairly reflect the general value of the grain and the differences in value between the various grades.

(b) When provision is made by the exchange, in such detail as the Secretary of Agriculture may by regulation direct, for the filing of reports of all transactions either cash or future made upon the board, and for the keeping of a permanent written record of transactions by the board or its members for a period of three years (or longer if directed), such record to be accessible for examination at any time by an authorized representative of the Department of Agriculture or of the Department of Justice.

(c) When provision is made by the exchange for the prevention or dissemination by the board or its members of false or misleading crop or market information.

(d) When provision is made by the exchange for the prevention of manipulation of prices or the cornering of any grain by the dealers or operators upon such board.

(e) When the exchange does not exclude any duly authorized representative of a farmers' cooperative association which agrees to comply with the rules of the exchange but returns to its membership on a patronage basis any excess of income over expenses.

A commission composed of the Secretary of Agriculture, the

Secretary of Commerce and the Attorney General is provided for in *Section 6*. It is the duty of the commission after a hearing to suspend for a period not to exceed six months or to revoke the designation of any board of trade as a "contract market" if it fails to comply with the provisions of *Section 5*. Or if the Secretary of Agriculture has reason to believe that any individual is violating the provisions of the act, he may bring him before the commission, present the evidence, and if guilty prohibit him from trading upon any contract market. An appeal is provided for, however, both for a contract market and for an individual to the circuit court of appeals, which upon review of the evidence and based thereon may affirm, modify or set aside the commission's order.

Section 7 simply provides that upon a 90-day notice any contract market may have its designation vacated.

In *Section 8* the Secretary of Agriculture is authorized to make investigations, prepare materials and publish reports upon such phases of the work of boards of trade and marketing generally as he may deem of interest to the public and of use to Congress provided such data does not disclose the business transactions or trade secrets of any person or names of customers. This last provision, however, does not apply to those who are found guilty of violating the act.

Section 9 makes a violation of the provisions of *Section 4* of the act a misdemeanor punishable by fine and/or imprisonment. *Section 10* provides that if any part of the act is held invalid, the remainder shall not be affected thereby. *Section 11* provides a waiver of fine or imprisonment for two months following the passage of the act. *Section 12* provides for the incurring of necessary expense for the enforcement of the act.

The Grain Futures Act,—Its Operation.—To carry out the provisions of the act, the Secretary of Agriculture has set up the Grain Futures Administration as a separate branch of the Department of Agriculture. Field offices have been established, the principal one being, of course, at Chicago. Those in charge of the field offices have the duty of maintaining immediate

supervision over the various exchanges designated under the act as contract markets. There are fourteen so designated at the present time though some of these do not maintain active trading.⁸⁴

To properly supervise these markets it was realized at the outset that the principal facts regarding their trading activity would need to be currently tabulated and analyzed. Provision was accordingly made for daily reports to the Grain Futures Administration by the clearing members of each exchange.⁸⁵ Since each member of an exchange must either clear his own trades or have some other member clear for him, by requiring all clearing members to report, a complete survey of the trading is assured. Each clearing member is required to report at the close of each day's business the volume of trading transacted through his firm that day. He is also required to report the total of all customers' contracts open on the books of his firm as of the close each day. These data are supplied as separate items for each grain and future and are then brought together by the Grain Futures Administration as totals by futures and all futures combined by grains. It is then possible to know each day the aggregate position in each future and how each is changing, particular interest being attached to the current or expiring future. Similarly the actual amount and the relative changes of the volume of trading can be closely followed both with respect to the market as a whole and with respect to each individual clearing member firm.

These data of aggregate trades and aggregate positions when considered with the movement of prices afford an excellent summary survey of the market each day. They are not, however, in sufficient detail even when analyzed by clearing firms to follow the market operations of individual interests. In some cases, of course, the trading of a clearing firm represents in large part the individual operations of that firm; but as a rule

⁸⁴ See Table 5 above, p. 54.

⁸⁵ See *General Rules and Regulations* of the Secretary of Agriculture with respect to Contract Markets. U. S. Dept. of Agr. Misc. Circular No. 10.

the firm also handles as a commission merchant many other accounts and as a result the identity of individual interests is lost. Those accounts or traders whose operations are likely to be of significance as a market factor either by causing unusual price fluctuations or by manipulation are as we have seen the larger ones. To currently follow these, each clearing firm is required to report daily the market position of all customers whose position in any one future equals or exceeds a designated amount. These amounts for the Chicago Board of Trade have been placed at 500,000 bushels for wheat, corn and oats and 200,000 bushels for rye though they can be changed by regulation to other limits if desired.

These reports of the principal individual customers of clearing firms are referred to as special accounts and constitute by far the most valuable source of information currently received by the Grain Futures Administration. They include all of the larger speculative accounts as well as all of the large hedging accounts. These can be followed in their individual relation to the current market situation or they can be combined into groups whose characteristics of operation are similar. If at any time it is found that the size or character of the trading of some one interest or group of interests is such that it threatens the stability of the market, action can at once be taken to limit or control further operations. This is usually done through the medium of an appropriate committee of the exchange in which the committee is advised of the situation and in turn, through its power to discipline members, takes the necessary steps to correct it.

In addition to these general supervisory duties, the Grain Futures Act provides for investigation and study of particular problems regarding boards of trade which may throw additional light upon their methods of operation. We have at various points in earlier chapters presented certain of the results of these investigations and need not consider them here. Some have been made in response to requests from Congress and some simply as independent investigations either in connection with some abuses brought to the attention of the Grain Futures

Administration or as problems promising worth-while results if broadly studied. In practical operation, the Grain Futures Act thus functions in the two-fold capacity of (1) immediate supervision over the various contract markets to meet problems currently arising which bear directly or indirectly upon the control or manipulation of prices and (2) conducting separate investigations into some of the more important problems which from time to time arise. In carrying out this two-fold function a broader insight into the operations and functions of organized futures market is afforded; and, in so far as this can be effectively passed on to Congress and the public generally, it will result in a better understanding of the place of future trading in our economic life.

4. SUMMARY

Organized exchanges in the United States are regulated through two channels: by statute act and by court interpretation of common and statute law. In earlier chapters, as occasion required, certain aspects of regulation have been emphasized especially as developed through court interpretation so that in the present chapter only those features of regulation as developed by State and Federal law are emphasized.

Most of the laws in force today regulating exchanges and future trading find their roots in the popular belief that the creation of time utility in general and risk utility in particular does not fully deserve a reward. Instead profits derived from risk-bearing are regarded in a measure at least as windfalls in which some are fortunate and others unfortunate. The present-day legal concept of commercial wagers is based upon this belief. The contracting for commodities, stocks or property of any sort without at the time intending or contemplating actual delivery of the commodity but intending only an adjustment in price differences is wagering under both common and statute law; and this is true whether the transaction is entered into through the machinery of an organized and established exchange or through a bucket shop.

In addition to general gambling statutes, many of the states

have enacted specific legislation prohibiting the operation of bucket shops and making null and void all contracts entered into at such places. At the same time the regular business carried on through recognized exchanges has been specifically declared valid.

Certain interests, and particularly the agrarians, long felt that these state laws prohibiting certain types of trade were not sufficiently comprehensive. It was believed that the regular and organized future exchanges should also be regulated and along positive lines, that their business while beneficial was at times subject to manipulation necessitating some type of broad supervision. After a legislative fight extending over 30 years, the Federal Future Trading Act was passed in 1921. It proposed to regulate grain exchanges through the power of Congress to levy taxes and was later declared unconstitutional.

In 1922, the Grain Futures Act was passed, repeating the regulatory provisions of the earlier law and placing the act under the interstate commerce clause by declaring upon evidence that the trade in futures, by rendering grain prices susceptible to repeated manipulation and control, is an obstruction to and burden upon interstate commerce. This act when tested in court was upheld. Under it, the Grain Futures Administration of the United States Department of Agriculture exercises general supervision over all grain exchanges trading in futures in the United States. Daily reports are received from the clearing members of these exchanges in sufficient detail to follow important trading activity and its effect upon prices. Where regulation is necessary, action may be taken through the officials of the exchange or directly against individual traders.

CHAPTER XIX

HEDGING

Since the origin of the practice, future trading has been the subject of repeated investigations. It has been attacked on legal and social grounds as offering inviting facilities for gambling; it has been attacked on economic grounds as being of doubtful value. Each time the defenders of future trading have come forward and presented their side of the case, naturally emphasizing those features which appear economically and socially most desirable.

The feature stressed as being of greatest value has usually been the practice of hedging. This has been due partly to the fact that it is widely used and partly because the value of this function can be clearly demonstrated. The market-making function is also far-reaching in its effect but its economic value is much more difficult to demonstrate. We will consider in this and the following chapter some of the fundamentals of the practice of hedging, its theory of operation, the extent of the practice, and some of the limitations trade interests encounter in its practical application.

1. REASONS FOR HEDGING

Origin of Hedging.—Hedging in grain in the United States became an established practice in the decade, 1870-1880.¹ Future trading began at Chicago in the late fifties and was greatly stimulated by the widespread speculation of the Civil War years, to emerge a well established practice following the War. Its prototype, the "to arrive" sale, was a popular method of marketing grain during this period and it is probable that hedging first began in connection with forward purchases or sales on a "to arrive" basis. Corn was frequently bought, during these

¹ Much of the material for this chapter is taken from the author's, *Hedging by Dealing in Grain Futures*, a doctoral thesis, 1925.

early years, in the fall of the year, stored in flat boats on the Illinois and Michigan canal or at country points and a May or June future sold against it. The following spring, upon the opening of navigation, the corn was in a position to be delivered on the future if necessary; or if the cash market offered a better opportunity it could be sold there and the future bought in.²

About this same time, also, hedging in wheat developed though it probably did not become a general practice until the eighties. An investigation of speculation upon the New York Produce Exchange was conducted by a Special Senate Committee of the New York State Legislature in 1882 relating to the period 1876 to 1881. In its report to the Senate the Committee describes the then novel practice of hedging. Their report also includes interesting marketing practices of this period.

A New York firm "A" corresponds with numerous merchants of moderate means who reside in towns and villages along the line of the Northern Pacific Railroad. The wheat grown in that region is valuable to millers because of the large percentage of gluten it contains. The quantity, comparatively speaking, is not large, and as navigation is closed during the winter and railroad freight rates from that remote district are expensive, it is purchased from the farmers by the merchants and allowed to accumulate at the country stations and Duluth elevators until navigation is resumed in the spring. But these accumulations may prove disastrous to the owners if the protective element of a sale for future delivery is not resorted to. "A" was therefore directed in January last to sell at a given price 150,000 of no. 2 hard wheat for delivery in New York after the opening of lake navigation. "B" is a shipper of grain to Great Britain, having milling customers in England who are anxious to be supplied with such wheat. They are always willing to pay 6 cents a bushel (when delivered on board ship at some American seaboard point), over and above the then market price of no. 2 red winter wheat (the standard grade of wheat that is principally used for speculative and shipping purposes), but they decline to forestall what that possible price might be in May when the Western owners directed their protective sale to be made. But in order that he may secure the wheat (because it is not always on the market) "B" must purchase it at the time it is offered and must pay a fixed price for it. . . . He therefore went to the Produce Exchange N.Y., and finding

² Cf. Taylor, *op. cit.*, Vol. II, p. 897; also Linsey, W. T., *Grain and Provisions* (pamphlet), Chicago, 1881; also Douglas, *Stuart and Forest v. Smith*, 74 Ia. 468 (1880).

that he could sell 150,000 bushels of red winter wheat for May delivery in New York at a price within 5 cents of that which "A" demanded for his wheat he sold it, then purchased "A's" wheat and stood protected.³

While this practice was doubtless resorted to only occasionally at this early date, it was at least of sufficient importance to be recognized. By 1890 hedging had become general among grain merchants and exporters. Stevens describes the practice (though not calling it by the name of hedging) as being very common and extensive in 1887⁴ and Emery writing in 1896 states that "hedging is now universal in the trade in grain and cotton. . . . Probably over 90 per cent of the great wheat holdings in the elevators of Duluth and Minneapolis are sold against in this way."⁵

Competitive Advantage in Hedging.—Production is defined by economists as the creation of utilities. One may create utilities by changing the *form* of goods as in agriculture or manufacturing, in changing the *place* of goods to locations where they are in greater demand as in shipping, or in changing the *time* when products are offered as in the storing of goods. In the production of agricultural commodities, the creation of form, place and time utility is usually necessary before the finished product reaches the consumer. Hedging has proven to be most useful to those steps in the productive process which involves the element of time. Leading cotton merchants and leading grain merchants buy at one season of the year and sell at another. During this interval of time large changes in the level of prices frequently take place, so large in fact that in the absence of hedging they would become the major source of profit or loss to the merchant. By hedging their purchases (or

³ *Testimony and Report of the Special Senate Committee Appointed to Investigate the System of Making Corners and Dealing in Futures*, N.Y. Senate Doc. No. 45, 1883, p. 934.

⁴ Stevens, A. C., "Futures in the Wheat Market," *Quarterly Journal of Economics*, October, 1887.

⁵ Emery, H. C., *op. cit.*, p. 162. Cf. also U. S. Industrial Commission, Vol. VI, *Report on the Distribution of Farm Products* and Vol. XIX, *Final Report*, 1900.

forward sales), they shift this price hazard to the shoulders of those assuming the opposite end of their hedges. This element of time utility, is thus shared with the speculator, the merchant being responsible for the storing of the commodity until needed and the speculator assuming the market price hazard.

The difference between the merchant who follows the policy of hedging and the one who does not is thus the difference between a much smaller but more certain profit and a much larger but much more uncertain one. It is too large a task to present here the wide variety of arguments for and against either policy. The problem involves a consideration of the added amount of capital needed by the nonhedger to safely carry this important price hazard, the additional insight needed to more accurately appraise probable market changes, and, in addition, a consideration of all of the problems involved in operating a business the profits of which are in part the result of merchandising skill and in part the product of pure speculation. Whatever their relative merits, it is clear that experience up to the present time has favored the separation of these two functions in those steps of the productive process where the market hazard is relatively large. The history of the grain and cotton trade is replete with instances of firms who have unsuccessfully attempted to join these two functions. The value of hedging having been demonstrated by some firms, others were forced through competition to follow the same plan and as a result the practice has become the accepted policy among the wholesale marketing interests.*

A Credit Requirement.—Mention should also be made of the practice of banks in accepting grain and cotton as collateral for loans only after it has been hedged. This is not an invariable practice but when the commodity is not hedged the percentage of its value which will be advanced by the bank is usually lower. In private banking practice these percentages vary somewhat, depending upon market conditions, but the proportions of 90 per cent and 75 per cent are fairly representative. There is thus

* See the following chapter, Section 6, "The Extent of Hedging."

an added incentive to hedge on the part of merchants because of more liberal credit accommodations by their banks.⁷ This and the competitive advantage of shifting the market price hazard to others, constitute the principal reasons for the practice.

2. THE PROCESS OF HEDGING

In this section we will outline the process of hedging as it operates or is expected to operate under ordinary conditions. The conditions surrounding the marketing of grain and cotton vary widely from year to year and there are for this reason few if any ordinary years. But some situations appear much less frequently than others and in this section we will consider only those which are usually expected, reserving for a subsequent section the more exceptional developments.

We have already described certain aspects of the problem of hedging. In the chapters relating to the market structure, the general characteristics of the hedger as a type of future trader were outlined and in a later chapter the inter-relation of cash and future prices was presented,—a highly important phase of the problem of hedging. Having these and other aspects of future trading and prices as a background, it is possible to approach the present problem more directly and also more effectively.

The Concept of Hedging.—Hedging is based upon the assumption that cash and future prices will parallel each other in movement after due allowance has been made for any seasonal trend in cash prices. In the broader price movements, this assumption, as we have seen, is substantially accurate.⁸ If then a merchant or miller or exporter, in the course of business, has acquired a cash supply of some commodity and as a result finds himself exposed to the hazard of a decline in market price, he

⁷ Cf. Carson, W. J., *Financing the Production and Distribution of Cotton*, Federal Reserve Board, Wash., 1923 pp. 51-52. Compare, also, testimony of bankers in *Hearings before the House Committee on Agriculture "to Prevent the Sale of Cotton and Grain in Future Markets,"* Jan., 1926.

⁸ Figure 33 in Chapter XIV.

may hedge himself by selling short in the future market an equal quantity of the same commodity. On the assumption that cash and future prices will advance or decline together, he is now in a position where any losses or gains due to unforeseen market changes resulting from his cash position will be offset by equal gains or losses from his future position. If prices should decline, he will lose on his cash holdings but gain equally on his futures; if they should advance he will gain on his cash position but lose correspondingly on his future.

The concept of hedging as it is applied to commodities is thus comparatively simple. There is an existing risk, viz., the hazard that market prices will unexpectedly move so that a substantial loss will be incurred. This risk is hedged or offset by setting up another, the counterpart of the first. A condition precedent to every hedging operation is that there be an existing market risk. This existing risk must in every case be one incurred in the cash or spot market and be hedged by a transaction in the future market. Hedging may then be defined as the practice of buying or selling futures to counterbalance an existing position in the trade market and thus avoid the risk of unforeseen major movements in price.

Hedging a Shifting of Risk.—The effect of setting up this counterbalancing position in the future market is to shift this major price risk formerly borne by the hedger to a second party. This point is highly important to an understanding of the usefulness of future trading. It may be conveniently illustrated by means of a diagram. In Figure 43 a trade interest is pictured as a buyer of 5000 bushels of wheat. As a result of this purchase he is long in the cash market by this amount and subject to the price hazard of an unforeseen decline in price. He hedges by selling short an equal quantity of wheat futures to a speculator. His position is now in balance with the effect of shifting to the shoulders of the speculator the hazard of a market decline.

As we shall see a little later, it is not always though usually the case that a speculator assumes the opposite end of a hedge

transaction. This speculator may continue to carry this long position as long as the trade interest requires a hedge. It is more than likely, however, that he will in turn sell to someone else taking his profit or loss and this third party carry forward the weight of the hedge. And so this particular position in the future market created by the hedger may be passed about from party to party a score of times before it is ultimately closed. But as we have seen from the process of clearing future contracts, there must at all times be an equivalent long interest in the future market so long as this hedge sale remains open. The process of hedging, therefore, not only creates a large proportion of the open commitments carried forward in the future market but also serves as the basis for much of the speculative trading.

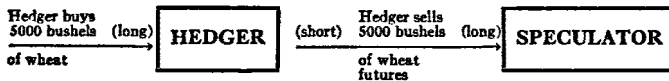


FIG. 43.—Illustration of the shifting of price risk by hedging.

An Illustration of Hedging.—Hedging is occasioned by a wide variety of situations no two of which are precisely alike. We will take as a starting point a comparatively simple illustration and move from this to a consideration of modifying conditions. Let us assume that a terminal elevator company located at Chicago buys 10 cars of No. 2 White oats on August 4, that these cars average 2500 bushels each, and that this purchase is hedged by the sale of 25,000 bushels of September oats. In Chapter XIV above the usual method of purchasing grain in car lot upon the Chicago market was described. Samples of each of these cars are displayed upon the cash grain tables if sold on consignment and the purchase price based upon the current future. We will assume in this case that the 10 cars were all purchased at the same price of one-half cent under the September and that the latter was sold as a hedge at one price, viz., 42 cents. Our elevator company then stands hedged: long 25,000 bushels of No. 2 White oats costing $41\frac{1}{2}$ cents per

bushel and short 25,000 bushels of September oats futures at 42 cents per bushel.

Three weeks after making this purchase a buyer is found for these oats, being an eastern client. He is willing to pay $1\frac{1}{2}$ cents over the September for them loaded out at Chicago. Our elevator company accordingly buys in his hedge at the then prevailing price of September futures at $40\frac{1}{4}$ cents and bills his client at $41\frac{3}{4}$ cents per bushel. Were this entire transaction separately handled on the elevator company's books it might appear somewhat as follows:

TABLE 25.—AN ILLUSTRATION OF A HEDGED TRANSACTION IN OATS.

Date	Cash grain	Amount	Date	Futures	Amount
Aug. 4	Bought 25,000 bu. 2 W. oats @ $41\frac{1}{2}$	\$10,375.00	Aug. 4	Sold 25 Sept. oats @ 42	\$10,500.00
25	Sold 25,000 bu. 2 W. oats @ $41\frac{1}{2}$	10,437.50	25	Bought 25 Sept. oats @ $40\frac{1}{4}$	10,062.50
	Gross (gain)	62.50		Gross (gain)	437.50
	Less cost of handling and storage (@ $1\frac{1}{2}\%$)*	437.50		Less commission at members' rates	31.25
	Net (loss)	375.00		Net (gain)	406.25

* Includes overhead of interest, salary and other expense items and competitive profit.

In our illustration, the market for oats has declined during this three-week period $1\frac{3}{4}$ cents as indicated by the future price. But the cash sale reveals an absolute gain of $\frac{1}{4}$ cent per bushel, and relative to the future price a basis gain of 2 cents per bushel has been obtained. The oats were purchased on a basis of $\frac{1}{2}$ cent discount under the September future and were sold at a premium of $1\frac{1}{2}$ cents over the future. It is this basis gain (or loss) that is all important to the hedger. Against any general movement in the market he is protected. If then he can so manage his purchases and sales that a basis gain results sufficient to cover his costs of operation and leave a profit, his business will be a success, and this regardless of whether the market is high, low, advancing or declining. In the above illustration costs of handling, storage, commissions and other minor items including a trade profit on the entire transaction amounted to \$468.75 which, compared with the basis gain of

2 cents per bushel on 25,000 bushels or \$500, leaves a net profit of \$31.25.

The Nature of Basis Gain or Loss.—We need to analyze more fully the character and causes of basis gains or losses. The term “basis” is a generic expression applied in business usage, and particularly in the cotton trade, to a number of closely related situations. Thus the “buying basis” refers to the amount bid or paid per unit over or under some specified future. The “selling” basis, similarly, refers to the amount over or under the future at which a sale of a cash commodity was made or offered. “Basis gains or losses” as we have seen refers sometimes to gross and sometimes to net profit or loss resulting from a round transaction relative to some future used as a hedge. The trade also refers, especially in cotton, to an “advancing basis” or a “declining basis” while in grain these changes are more often referred to as changes in premiums or discounts over or under the future.

We may render an account in the illustration presented above purely as a problem in basis. The items might be shown in the following form:

TABLE 26.—AN ILLUSTRATION OF A HEDGED TRANSACTION
AS A PROBLEM IN BASIS.

Date	Description	Amount
Aug. 4	Bought 25,000 bu. 2 W. oats @ $\frac{1}{2}$ cents under Sept.	
19	Sold 25,000 bu. 2 W. oats @ $1\frac{1}{2}$ cents over Sept.	
	Gross basis gain on 25,000 bu. @ 2 cents.....	\$500.00
	Less cost of handling, storage, commissions and trade profit (expected).....	468.75
	Net basis gain (unexpected).....	31.25

Here the gross basis gain is shown to amount to 2 cents per bushel or \$500, the costs of handling, etc., including a competitive trade profit amount to \$468.75 and the balance or net basis gain amounts to \$31.25.

Gross basis gain (or loss) is thus made up of two parts entirely different in character. The first consists of those items of expense and competitive trade profit which the company can estimate and which they attempt to obtain upon entering the business venture. The second consists of a fortuitous profit (or an unforeseen loss) which the company cannot estimate or account for except in a very general way at the time the trade is undertaken. The first we may designate as the *expected basis gain*; the second as the *unexpected basis gain or loss*. Together they account for the *gross gain or loss*. In actual practice it is, of course, impossible to precisely separate the expected from the unexpected basis gains or losses just as it is impossible to isolate the profit or loss on any one complete transaction. But from this fact it should not be implied that careful estimates are not made at the outset and during the duration of every trade transaction in an attempt to measure a necessary or expected basis gain. These estimates sometimes turn out too small and sometimes they are more than sufficient.

We have already given some consideration to the principal factors causing expected basis gains or losses. In Chapter XIV on the *Interrelation of Cash and Future Prices* the important influence of storage costs in causing cash prices to rise relative to future prices was considered. There is an expected basis gain, seasonal in character, due to this factor though as we have seen it does not always materialize and particularly in years during which commercial supplies are small. There is an expected basis gain whenever the quality or position of the cash commodity is improved. Cotton sorted into even-running lots commands a better basis than the same bales unassembled. Grain purchased in quantity from a terminal elevator will similarly command a better basis than the same quality purchased at country points with due allowance for freight and this again because of the expense in assembling. If storage charges have been paid for some time in advance or elevation charges met, these items will ordinarily place the commodity on a better basis. So also any improvement in quality such as drying or

cleaning is expected to and ordinarily will improve the selling basis.

Innumerable minor factors cause *unexpected* loss or gain on basis and supply the hedger with his chief concern. They constitute the principal limitation to a successful application of hedging. It is important to note here that loss or gain from this source should be measured only after allowance has been made for those gains or losses which may rightly be expected and accounted for in advance. In the illustration presented above, the elevator company sold the 25,000 bushels of oats at an advance of \$500 over the purchase price, \$468.75 of which was to be expected and \$31.25 of which was purely fortuitous. Had the sale price been at an advance of \$400, all of the basis gain would have been expected and in addition an unexpected basis loss of \$68.75 would have been sustained.

Protection Supplied by Hedging.—We are now in a position to summarize what the practice of hedging will accomplish and what it will not accomplish. Clearly it will not offset and should not offset expected basis gains or losses. As we have seen, cash prices normally rise relative to future prices as the crop year advances. They usually rise also with any improvement in the quality or position of supplies and it is through these sources that merchants derive the major part of their trade profit. It follows that if the cash commodity deteriorates in quality or position or is carried from an old crop year to a new in years when the on-coming crop is large, the hedge will not offset the loss sustained.

Hedging is designed to protect only against unforeseen major movements in price. After allowance has been made for any expected basis change in the relation of cash to futures, it should serve to offset these large and uncertain price movements. Figure 33 above (page 255) illustrates a period of ten years including a wide variety of situations for four different commodities and in which the major movements in cash prices are in general paralleled by the course of future prices. These are price movements which could not be foreseen in advance.

They are also movements caused by factors having a common influence upon both cash and future prices.

After due allowance has been made for those relative changes in the relation of cash to futures which may be expected,⁹ there remains a body of minor, unexpected changes in basis against which the future hedge will not protect. Sometimes these unexpected changes result in gains to the hedger and sometimes losses. Sometimes they are brought about by factors affecting the future price and sometimes by factors affecting the cash. As a rule they are comparatively small though occasionally a relative and unexpected change of large proportions occurs. To some extent these unexpected basis changes are neutralized by counter movements at other times thus minimizing their importance.

3. TYPES OF HEDGING IN GRAIN

Net Commitments Only Are Hedged.—Grain dealers and merchants derive their profit from an improvement in the basis of their cash operations growing out of storing, shipping, mixing, conditioning and the general merchandising of their product. For this purpose they are continually in the market buying and selling as opportunity affords. The hedging position which they will need to carry growing out of these operations will depend upon the size and character of their trade position. Thus a terminal elevator company may have in store 2,000,000 bushels of wheat but it may at the same time have forward sales on its books for 200,000 bushels. In this case its net trade commitments amount to only 1,800,000 bushels. It is net long by this amount and will therefore need to have a net position in the future market short 1,800,000 bushels. If later this company should sell forward 80,000 bushels more, this would require a reduction of the future position to 1,720,000 accomplished by buying in 80,000 bushels of futures. And so from minute to minute and day to day a company following a

⁹ This might be done in Figure 33 by using the 9-year average seasonal curves of Figure 35 though it is doubtful whether the latter are sufficiently representative to serve for this purpose.

consistent policy of hedging will buy or sell futures in line with its trade operations maintaining at all times a net future position equal and opposite to its net trade position.

If at any time the forward orders of a firm are just equal to the supplies it has on hand, it will not need to carry a position in the future market. This policy is definitely followed by certain products companies. Cash supplies of grain are purchased only as they are needed growing out of unfilled orders on their books. As orders are placed the supplies are purchased, thus maintaining a balanced trade position at all times. The seasonal and competitive character of most phases of grain merchandising will not, however, permit this policy to be followed.

It is in place here to observe, also, that while the net future position and the net cash position of a firm may be kept in close balance at all times, it is not possible in practice to allocate individual lots of the cash position with corresponding individual portions of the future position. Purchases of cash grain are bought or sold at varying prices as are also the hedges sold against them. The former are frequently made in car lots varying somewhat in size while the latter are made in even lots of 5000 bushels. An excellent illustration of these facts is to be found in Table 16 (page 261) above showing the individual car-lot purchases and sales of wheat and oats made by an elevator concern during a trading session and the hedges sold against these purchases. As grain is purchased it is usually merged with other lots and its individual identity largely lost. This is also true of individual purchases and sales of futures because of the clearing system employed.

Basis gain or loss, as presented in the illustration in the previous section, cannot ordinarily be measured, therefore, for individual transactions. Instead the company views its problem as one of buying and selling the general run of its supplies on a basis which experience has proven will usually yield a profit. If it can not buy or sell on this basis then it will buy and sell at prevailing prices so long as business can be done at a figure which promises to meet at least prime costs.

Country Elevator Hedging.—The practice of hedging among country elevators presents an interesting type in certain particulars. The size of country elevators ordinarily precludes the holding of grain for any length of time to earn a storage charge. Country elevators have a total capacity usually of only 25,000 to 50,000 bushels and this must be divided into a number of bins to provide for various grades and kinds of grain. Accordingly from time to time as grain comes in they make up car lots to be sold at an interior or terminal market. Their use of hedging, so far as their holdings of actual grain is concerned, is therefore limited mainly to the interval of time between the acquiring of grain from the farmer and its disposal, a period at most covering only a few weeks. Partly because of this short period of time and partly because it is difficult to hedge small quantities, basis loss (or gain) becomes relatively important. This is particularly true for firms operating but one or two elevators. The larger firms having their head office at a terminal point and operating a chain of elevators are better able to meet this problem and among these line companies, especially in the Northwest spring wheat territory, the regular hedging of supplies is the practice,—a net balance of supplies being determined toward the middle of each day by each country elevator and telegraphed to the central office there to be combined and the net total hedged. But among the smaller country elevator companies the practice of hedging long commitments of grain is less common.

It is not uncommon for a farmer to bring his grain to the country elevator and instruct the manager to hold it until told to sell. In an effort to obtain as much business as possible, the manager will accept the grain, issuing to the farmer a storage ticket indicating the amount and grade received. The elevator, however, cannot keep any sizable amount of such grain on hand and particularly in the fall of the year when it is most likely to be received. Accordingly, it is shipped out and sold, at the same time an equivalent amount of futures being bought as a hedge.

The theory of this operation is simple enough. The elevator, having disposed of the grain supposed to be held in store, becomes short of that amount of grain. Later when the farmer orders his "stored" grain sold, the manager will be called upon to pay the farmer the then prevailing price. If grain has gone up in price during this interval, the country elevator will lose heavily; if it has gone down it will correspondingly gain. To avoid this market hazard the elevator buys an equivalent amount of futures (or as near an equivalent amount as possible). Then if prices advance, the loss on the short position in "stored" grain will be offset by the gain on the long position in futures; and similarly, if the market declines the gain on the stored grain will be offset by a corresponding loss on the futures.

From this reasoning it would seem to follow that the elevator would be just as well off under the plan of hedging "stored" grain as in actually keeping the grain on hand until it is ordered sold. This is, however, usually not the case. As we have already observed in this and former chapters there is a normal tendency for the cash commodity to rise in price relative to the futures as the crop year advances reflecting a carrying charge. In most years this will amount to several cents through a period of 5 or 6 months. If then the farmer orders his grain "sold" in the spring the cash price will then be higher relative to the future than it was in the fall. To this extent the elevator will not be hedged and will be sure to lose whether the market in general advances or declines.¹⁰ The solution to this problem is for the country elevator to either charge the farmer a certain amount per month to "store" the grain,—an amount sufficient to offset this loss,—or to agree at the time the grain is accepted that when ordered sold the price to be paid will be at the same discount relative to the future that it was at the time received.

Hedging "To Arrive" Purchases.—Bids to the country on a

¹⁰ Subject to any income he may derive from the use of the money obtained from the sale of the stored grain which, however, will not approximate the loss on the hedge.

"to arrive" basis are regularly made each day by firms located at terminal markets. These are sometimes made during the trading session and subject to immediate acceptance, but usually at the close or 1:15 and good until 9:30 the following morning. A terminal elevator manager originating a bid is faced with the problem of possible acceptances by country elevators and cash commission houses and no market upon which his hedges may be placed. He has the alternative of anticipating these acceptances, making an estimate of their probable amount and hedging this amount before the market closes, or of waiting until the following morning and hedging upon the opening of the market at 9:30. As a rule the latter course is followed because of the difficulty of estimating probable acceptances. If the market opens down the following morning basis loss of that amount will result; if it opens up basis gain will accrue to the buyer. These minor gains or losses over a period of time tend, however, to offset each other.

Protective Effect of Hedging to Those Who Do Not Hedge.—It is in place at this point to observe the effect of hedging, particularly by large terminal houses, upon small buyers and sellers who do not themselves hedge. Country houses operating but one or two elevators usually do not follow a consistent policy of hedging. This is partly due, as we have seen, to the fact that the basis hazard is relatively large. It is partly due, also, to the fact that a wide variety of direct bids, either "on track" or "to arrive," are continually being received. If these are in amounts and for terms of shipment which the country elevator can meet, there is little need to hedge. As purchases are made from the farmer, car-lot sales can be made direct to interior or terminal buyers at a definite figure and thus the price hazard can be immediately passed on.

The point to be observed is that were it not for the fact that the larger terminal buyers can hedge their purchases on a future market, they would be much more reluctant to put out unlimited bids direct to country elevators. The effect, therefore, of an available future market is to broaden materially the cash

grain market at country points. In this connection it is significant to note that in the spring wheat area where consignment of grain by country elevators for sale at a terminal center is the regular practice, it is customary to hedge, while in the winter wheat area where direct selling prevails, hedging is not the regular practice.²¹

The availability of a hedging market extends its influence to farmers in a number of ways. As we have seen farmers not infrequently "store" their grain at country elevators to be sold later. The country elevator manager is willing to enter into this agreement only because he can hedge at the time of sale by a purchase of futures. At other times farmers sell their crop at a definite figure with the understanding that it will be delivered to the country elevator sometime within the following month. Here, again, the protective feature of a hedge or a "to arrive" sale makes it possible for the elevator to make such a forward purchase. A number of the larger flour mills also go to the country to secure in advance supplies of a quality which they are likely to need. While their purchases are made as a rule from country elevators rather than farmers they supply a market which would not be available were they unable to hedge their purchases. All of these advantages can be expressed in terms of buying or selling margins. In the absence of a hedging market, it is entirely possible that country elevators would continue to freely buy or store farmers' supplies and that terminal elevators and mills would also as freely bid the country for supplies. But if so they would most certainly need to operate on a wider margin of gross profit in order to weather unusual and unexpected movements in price.

Observations made with regard to those who sell to terminal elevators and mills are also equally true of those who buy from these larger dealers. Food products companies and particularly

²¹ See *Report of the Federal Trade Commission on the Grain Trade*, Vol. I, p. 215 which classifies the percentages of consignments to direct sales by states and compares these with the proportion of hedging. See also the hearings before the Committee on Agriculture, H. of R. on *Future Trading*, Jan. 1921, p. 33 for a similar comparison.

baking companies do not as a rule hedge their purchases of grain or flour. One reason is that their gross profit as well as their net profit is only partly dependent upon the course of grain prices. But another is that they have an ample market in grain and flour continually available to which they can turn at any time for necessary supplies. Here again, however, this market would either not be available to them in its present broad character or wider margins exacted were it not for ample hedging facilities. This indirect effect of hedging is a feature often overlooked in appraising the influence of the practice.

Giving Up a Future.—Among flour milling companies and terminal elevators and in the export trade, it frequently happens that a hedge is effected by means of a practice referred to in the trade as a "give up." An illustration will serve best as an explanation of this practice. Suppose that on February 4 an exporting house, X and Company, receives a bid from an English client, K and Company, for 80,000 bushels of No. 2 Hard Winter wheat c.i.f. Liverpool April delivery at 16 over the May Chicago future and that the exporting house accepts this bid. As a result X and Company will need to buy 80,000 bushels of wheat futures immediately as a hedge. The importing firm, K and Company, will doubtless also want to hedge its position, in this case by a sale of 80,000 bushels of wheat futures. The logical thing to do would be for K and Company to sell 80,000 May wheat to X and Company. Assuming this were done, K and Company would be said to have *given up* the future to X and Company.

The interesting feature of this arrangement is the price at which the future is turned over. This is purely a nominal figure. Since the export trade was made on the basis of a future,—16 cents over May, Chicago,—it is of no material importance just what the give-up price should be. If it is high then the importing firm will pay more for its cash wheat but realize correspondingly more upon its future sold as a hedge; if it is low it will pay less for its cash wheat but in turn realize correspondingly less upon its future. The same is true for X and Company, the exporting house.

To illustrate this point let us assume two different figures at which the future is turned over,—one at say \$1.20 and the other at \$1.30. Let us further assume that the exporting firm X and Company on January 20 had purchased the 80,000 bushels needed to fulfill this export contract at \$1.05 per bushel and hedged it by a sale of May wheat at \$1.08. Set up in the form of an account using \$1.20 as the future price in Case I and \$1.30 in Case II, the exporting company would then make the following gross profit:

TABLE 27.—AN ILLUSTRATION OF THE USE OF A "GIVE UP" IN HEDGING,
USING TWO DIFFERENT FUTURE PRICES.

CASE I					
Date	Cash wheat	Amount	Date	Wheat futures	Amount
Jan. 20	Bought 80,000 bu. @ \$1.05	\$ 84,000	Jan. 20	Sold 80,000 bu. May @ \$1.08	\$ 86,400
Feb. 4	Sold 80,000 bu. @ 16¢ over May or \$1.36	108,800	Feb. 4	Bought 80,000 bu. May @ \$1.20	96,000
	Gross profit	\$ 24,800		Gross loss	\$ 9,600

CASE II					
Date	Cash wheat	Amount	Date	Wheat futures	Amount
Jan. 20	Bought 80,000 bu. @ \$1.05	\$ 84,000	Jan. 20	Sold 80,000 bu. May @ \$1.08	\$ 86,400
Feb. 4	Sold 80,000 bu. at 16¢ over May @ \$1.46	116,800	Feb. 4	Bought 80,000 bu. May @ \$1.30	104,000
	Gross profit	\$ 32,800		Gross loss	\$ 17,600

In both cases the gross profit, after accounting for the loss on the futures, is the same, viz., \$15,200. This would be the case were any other future price chosen so long as the basis of 16 over remained the same. Similarly the importer is unaffected by the figure used to turn over the future. It is very much like the settlement price employed in the clearing of future contracts. Usually the figure agreed upon is the nearest round figure to the current future price at the time of acceptance.

In giving up a future, the general rules of the exchange that trades must be made in the pit by open outcry and subject to any acceptance are not observed. Special rules relating to give-

ups permit their use by private arrangement.¹² It should not be thought, however, that in shifting hedges in this fashion hedgers cease to rely upon the parallel relationship between cash and future prices for their success. In every case the success of the hedged transaction continues to depend upon the basis of purchase and sale of the cash commodity relative to the future.

The illustration of a give up as just described may be used to meet a wide variety of conditions. The buyer may be long in the future market and the seller short. In giving up a future in exchange for a cash trade both the buyer's and the seller's position in the future market will be liquidated. In other cases neither the buyer nor the seller may have a position in the future market in which an exchange of a future would result in giving each a position, one long and the other short. In still other cases the exchange may liquidate the future position of one party while increasing that of the other.

¹² *Rules and Regulations* of the Chicago Board of Trade, 1930, p. 209.

CHAPTER XX

HEDGING (Continued.)

4. TYPES OF HEDGING IN COTTON

Most of the aspects of hedging described in Section 3 are characteristic of both cotton and grain. In some particulars, however, hedging in cotton is unlike that in grain. It is not possible, for example, to mix cotton and to work off the inferior qualities with the good with the result that the poorer qualities or at least those for which there is little demand, often exert a strong influence upon the future market to the advantage of some and to the detriment of others.

Straddling and Hedging.—Spreading or straddling is closely related to the practice of hedging, both in grain and cotton. In cotton especially it plays a highly important part. As we have seen, the hedger is a dealer in basis or relative prices. His trading is in form, though not in purpose, identical to that of the straddler or spreader. He buys in one market and sells in another with the thought that later he will reverse this process to reap a trade profit. So also he will shift his future position from one market to another or from one future to another and perhaps a little later back again for the purpose of improving the basis upon which his hedges were originally placed. In doing this he is in reality spreading, though these transactions constitute a regular part of the hedger's operations. Among some of the larger firms both in cotton and grain this business is assigned to a separate department and set up as a distinct account. Prices upon each of the leading exchanges are closely followed, the factors likely to play a part in any relative change in price continually weighed, and from time to time market positions shifted accordingly. When a hedged position is ultimately closed, any basis gains (or losses) growing out of these spreading operations become a part of the general profits (or losses) growing out of the future position carried as a hedge.

It is the practice among the leading cotton firms to greatly enlarge their hedge position through the use of straddles. Thus suppose a firm to have on its books as of September 1 a volume of forward orders amounting to 16,000 bales and to have acquired by that date 3,000 bales of cotton preparatory to filling these orders. As a net figure, a long position in the future market of 13,000 bales would suffice to hedge the firm's trade position. Instead, however, it will likely carry a long position of 16,000 bales in some future as a hedge against its forward business and 3,000 bales short in some other future or perhaps in the same future in a different market as a hedge against its stock on hand. In addition it may add a straddle of 20,000 bales long and short distributed between various markets and futures.

The effect of this combination of straddles and hedges is to greatly enlarge the opportunities to the firm of shifting its future positions to meet changing trade or technical conditions and thereby to add to the ultimate profit of its business. It gives to the firm greater freedom of action or, to use a banking term, it adds liquidity to its commitments both in the spot market and in the future market. If a near-by future becomes unduly low relative to one more distant, a portion of the straddle can be shifted by buying the near and selling the far. If prices do not right themselves, delivery can be taken and carried over to meet the more distant sale. At other times it may appear advisable to straddle between markets. As we have seen in earlier chapters, widely distributed positions of this character also afford the firm an opportunity of threatening delivery where or when it is not wanted or of threatening to take delivery when conditions are adverse to the seller.

These are operations filled with pitfalls, of course, since they imply positions of a size large enough to cover several markets and futures, and if undertaken they are likely to meet with opposition by others. Ample capital is needed and, in addition, keen insight into probable developments in basis or relative prices during each season.

Anticipating Hedge Requirements.—Mention should be made of certain types of operations more common in cotton than in grain which while not hedging are commonly associated with hedging. Depending upon the character of the crop and the carryover together with mill conditions, a cotton merchant may be required to place a large volume of selling hedges or a large volume of buying hedges. Thus suppose that during the summer a large crop of good grade cotton is in prospect with very little forward business being placed. In a season of this kind it is almost certain that the bulk of the hedges will be sales to offset spot purchases. It will be necessary for the cotton merchant to "go short of the basis." If a firm plans to do a business of 150,000 bales during the coming season it will need to sell a much larger volume of futures than it will need to buy. If it waits to place its hedges as its actual cotton is bought it may find that future prices are weak because others are also selling in large quantities. Accordingly the merchant may decide to start selling the futures at once in small amounts each day with the belief that prices will later be lower. This is, of course, just an open speculation though in view of the type of business expected during the coming season it may ultimately prove to be a wise policy. As the season advances and cotton is acquired, the firm is then covered with respect to the general price movement and is not obligated to enter the future market under adverse conditions. Of course if the crop turns out to be of poor quality or demand develops, unless the firm promptly changes its policy, loss will be sure to result. In a year in which it is believed the volume of forward orders will be large and in which it will be necessary to go long of the basis, the merchant may anticipate this need by buying futures in advance of the crop movement. This is again an open speculation but may ultimately prove profitable.

In connection with the straddle-hedging operations of firms, it is sometimes advisable to place straddles before the crop moving season gets under way and then as forward orders are placed or as cotton is acquired to raise the appropriate end of

the straddle. This again avoids at times the necessity of forcing the market when the basis is temporarily adverse. It is also the practice among some firms to lift their hedges or fail to place them at the outset depending upon the general level of spot prices and crop outlook. This mixing of hedging and speculation is sometimes referred to as "speculative hedging." More properly it should be thought of as "speculation and hedging," and if not engaged in by a firm thoroughly familiar with futures, is likely to end by being solely speculation.

Call Cotton.—A practice distinctive of the cotton trade is the selling of cotton "on call." While not essentially a method of hedging, it is closely related to the hedging operations of merchants and being somewhat more involved than the usual forms of spot transactions its consideration has been deferred to this point. Selling cotton on call has developed largely since the World War due to hand-to-mouth buying by retailers and wholesalers of cotton goods. Because of this latter practice, cotton mills in turn have been loath to buy cotton until sure of sales in finished form. They accordingly contract with merchants for the quality and probable quantity of cotton they will need over a period of several months, the price to be determined some time during the duration of the call.

Thus a particular mill on October 10 might estimate its needs for the next 6 months to be 2000 bales of Strict Middling white $\frac{7}{8}$ inch Texas cotton. It would inquire of a dealer what it will quote this cotton for on call delivered at the mill. The merchant will note the prevailing basis for this grade of cotton on one or more markets which might be 40 points on May; it will estimate the cost to deliver or "land" the cotton at the mill with some allowance for profit; it will consider any likely changes in basis, the character of the crop, the ease with which business is being placed, the credit standing and reputation of the mill and more or less consciously many other factors. It may then offer to sell at 140 on May. Assuming that the mill accepts this offer, it will have the right to determine the price of the cotton at any time during the duration of the contract by

FORM NO. 10 1929

Sale No. 1472

CONTRACT OF SALE

TO L. A. Clark & Co.,
Fall River, Mass.

FROM L. W. Wade & Sons,
Houston, Texas.

October 10, 1929.

WE CONFIRM SALE TO YOU OF
(2000) BALES OF COTTON, GRADE: STRICT MIDDLING, 7/8", Texas,

PRICE: Price shall be fixed on or before noon April 1, 1930
at 140 points (1.4 cents) on the price of contracts for MAY
deliveries on New York Cotton Exchange as purchased by seller upon
receipt of notice from buyer to fix the price. Otherwise at 140 points
on price of Contracts for MAY deliveries on New York
Cotton Exchange as purchased by seller at expiration of time mentioned.

SHIPMENT (time) Prompt

SHIPMENT (to) "by rail and / or water and / or truck." L. A. Clark & Co.

FREIGHT: Paid or allowed to Fall River, Mass.

REIMBURSEMENT: By sight draft on L. A. Clark & Co.

Sight drafts for approximate value to be made at time of shipments and thereafter amounts
equivalent to market fluctuations exceeding one-half cent (1/2c) per pound to be remitted by
either party upon request, and final settlement to be made when price fixed.

REMARKS: B/L attached to draft - New York funds.

CONDITIONS:

Except as otherwise herein provided, it is agreed that the Rules known as New England terms
are to govern and are hereby made a part of this contract. The seller shall not be liable for delay in or
failure to make delivery or for damages caused by acts of God, fire, war, riots, strikes, embargo, quarantine or other causes
beyond his control. Insurance at buyer's risk from time of shipment except as covered by seller's fire and/or marine policy.

IN WITNESS whereof the parties have signed the instrument in duplicate.

(Seller)

L. W. Wade & Sons
Per W.W.

(Buyer)

L. A. Clark & Co.
S.B.

(Title)

FIG. 44.—Reproduction of a "call" contract for cotton.

calling it, i.e., notifying the merchant. The actual purchase price will be the price of the May future on the day called plus the "on" difference of 140 points. Figure 44 is a reproduction

of a call contract using the facts just described. If the cotton is not called by the mill some time during the period of the contract, it is automatically called on the last day. Usually, however, arrangement can be made to extend the period though this may be costly to the mill.

The advantages of this arrangement to the spinner are these: (1) It gives him definite assurance that he will have an adequate supply of the particular quality of cotton he needs. (2) It permits him to fix the price of this cotton in line with the sale value of the product. It thus meets the special needs of mills which are able to anticipate about what their volume of business will be during the next few months but which have not as yet made the sales. Cotton moves most freely in the fall of the year and to wait until sales are made before acquiring the necessary supplies might result in the mill not being able to find adequate supplies of the quality needed. As sales of goods are made the mill may call a portion of the cotton as needed or it may call it all at some particular time. If the general level of cotton prices declines, to meet competition it will probably have to sell at lower figures. But it will in turn obtain its supplies of raw cotton at a lower level by an amount equal to the decline in the futures. If prices advance, it will sell at higher levels but it will be necessary to call its supplies at a higher price. Viewed in this light this process has some of the aspects of a hedge. The trouble in practice is that many mills do not view their call contracts in this light. This phase of the problem is presented in the following section.

So far as the merchant is concerned he will need to hedge the supplies involved under his call contracts (by sales of futures) from the time the cotton is bought until the date it is called. In practice the purchase of the futures by the merchant on the day the cotton is called serves the double purpose of closing the merchant's hedge and establishing the basic price for the call contract to which is added or subtracted the agreed difference on or off the future.

Mill Speculation in Call Cotton.—The practice of buying

cotton on call which has developed so largely since the war has brought with it a considerable amount of speculation on the part of mills. A necessary part of the theory of buying on call is that the cotton be called as sales of goods are made. By so doing supplies of cotton are acquired at a price in line with prevailing prices for the finished product. The temptation, however, is to try to do better than this. If, for example, a sale is made based upon call purchases at 150 on the May with the price of the May future at 15 cents, then if the mill does not call the cotton at the time of the sale and later the May future declines to 14 cents, the cost of the cotton is one cent per pound less. If prices advance a loss is of course sustained.

What the mill is doing, therefore, is simply speculating on the course of the market and for this purpose it might just as well buy futures outright. If successful it will not need to operate its mills since it can do better in the future market and if unsuccessful it will not be able to operate. In some cases mills have been known to carry forward their calls for months after the cotton has been received, consumed and the product disposed of. As a protection to the merchant such contracts are treated in the same way as a margin account after the cotton has been delivered to the mill. Not infrequently they are extended to more distant futures as they approach the date of expiration.

5. TRADING IN BASIS

When a merchant or dealer or shipper hedges, he substitutes a smaller risk per unit of the article handled for a larger one. He eliminates the risk of an adverse change in the general level of prices of the commodity hedged while continuing to carry the risk of a relative change in price. In the usual explanation of hedging, attention is directed mainly to the fact that the risks involved in major movements in price have been eliminated. The question of basis or relative-price risk is dismissed with the statement that sometimes the basis moves against the hedger, sometimes in his favor, but over a period of time sufficient to permit the law of average to work he is likely to

neither gain nor lose due to this element. In fact, however, this may or may not be true. If a firm regularly uses its credit to the limit, it may lose enough on basis almost any season to entail financial ruin. The crop year 1929-30 was an excellent year for hedgers long wheat and short futures but for many flour milling companies having large volumes of forward orders outstanding and hedged by purchases of futures it was a year of large losses.

The Influence of Credit.—Basis risk assumes its greatest importance among the wholesale handlers of grain and cotton: dealers, merchants, elevator interests, shippers. It is at this stage in the merchandising process that hedging is most widely and effectively used. Partly because their volume of business varies widely from season to season and in part due to the fact that commodities in the process of being marketed constitute excellent collateral, these interests borrow heavily from banks. By following a policy of hedging they are able to command still larger extensions of credit relative to the size of their business. So long as business moves along smoothly and interest rates are not too high, profits will be large per dollar of capital invested by the firm. It is the familiar story of trading on the equity.

This point is emphasized here because it is extremely pertinent to the matter of basis risk. A firm having capital of its own of \$1,000,000 might do a yearly volume of business amounting to say \$5,000,000. If they borrowed \$4,000,000 they might then do a business of \$25,000,000 in which their profit per dollar of capital invested might be several times larger than without borrowing. But if their possible profit is larger so also is their possible loss. The basis risk involved in this problem affects the firm in precisely the same way that the market risk affects an individual when he decides to trade on margin in stocks or bonds instead of buying outright. The risk element increases rapidly as the commitment per dollar of owned capital increases.

Viewed in this light it will be readily seen that basis varia-

tions are not minor matters to the grain or cotton merchant which will iron themselves out over a series of years. They are a highly important element in determining whether the year will close with a profit or a loss. Losses or gains from this source are small per unit of commodity dealt in but they are large per dollar of capital invested and the latter is the important consideration to the company.

Profit or Loss from Basis.—The firms who are skilled as dealers in basis will grow and profit and will be able to outbid and outsell their competitors. Those who are not as skillful will operate under a distinct handicap. We have in earlier chapters touched upon the more important of the factors causing basis or relative changes between cash and future prices. Some of the elements are natural and some are artificial. Some can be foreseen fairly well and can be accounted for at the time of making purchases or sales. They have been referred to as *expected* basis gains or losses. Most important in this group are relative variations due to carrying the commodity forward in point of time within a given season, changes in the condition or quality of the commodity and changes in its position. Despite the fact that these elements can be estimated with some measure of accuracy, it is surprising how often they are not properly taken into account in buying and selling. Other factors are *unexpected*, cannot be foreseen and cannot be provided for in advance. Factors of weather are examples of this type. To an individual firm the dividing line between those changes which are expected and those which are not is largely a matter of experience and ability to appraise present and probable future conditions.

Hedging policy as it applies to the wholesale handling of grain and cotton may then be stated as follows: It consists of dealing in futures (1) to counterbalance a trade position for the purpose of avoiding the risks of adverse major movements in price; (2) to profit from expected basis changes in price; and in addition, (3) to profit if possible from unexpected changes in basis or to maintain a volume of business suf-

ficiently large and over enough years so that unexpected gains will at least offset unexpected losses. Some firms succeed in applying this policy and prosper while others do not and fail. Certainly the mere act of setting up a future position to counterbalance a trade position does not constitute an insurance or guarantee that a profit will appear at the end of the year or that loss will be avoided. Hedging insures against the single hazard of adverse major movements in price. It does not insure against inefficient management, deterioration in the commodity, changes in freight rates, handling costs, tariffs, carrying costs and many other factors despite the fact that it is sometimes expected to do so and after a loss has occurred is blamed as the cause of the loss.

Basis Risk in Inverted Markets.— It sometimes happens in grain and frequently in cotton that within a crop year the more distant futures will be lower in price at any given time than the near-by futures. The question is sometimes raised: can a firm effectively hedge its trade position in an inverted market of this type? The answer to the question depends upon the kind of a position which it is desired to hedge. A firm having forward sales in excess of supplies on hand can hedge effectively enough if it buys its supplies as they are needed. It is also possible for a firm to hedge a net long trade position by sales of futures in a market of this kind if the position hedged is small and the turnover rapid. But for the firm having large supplies on hand and no forward sales, and which expects to effectively hedge by sales of futures the outlook is poor. It is of course possible that cash or spot prices may advance to a still larger premium but there is a large element of chance in such an assumption.

We may state this matter in broader terms. In seasons in which the distant futures range lower than the near-by futures, there is a tendency for business to be carried on a hand to mouth basis; either commercial supplies or supplies deliverable upon future contracts or both are likely to be small. Mills will tend to buy their supplies when and as their customers buy,

and merchants in turn will tend to buy their supplies only as they place forward orders. This situation may continue throughout the season or possibly later on commercial supplies or deliverable supplies or both may increase and reverse the relative position of prices.

In seasons or periods of large commercial and deliverable supplies, the initiative must be taken by the merchants and elevator companies. But it is only taken because spot and current future prices are low relative to the more distant futures. Supplies are stored to await mill purchases and mill stocks are built up in prospect of orders. While certain types of hedging are thus difficult for certain interests and in certain years, good hedging practice tends to avoid these types and to adopt a policy which will fit into the prevailing situation as far as possible. This is but another way of saying that hedging is something more than simply setting up counter future transactions and hoping for the best.

An Illustration.—Figure 45 has been prepared to show the extent to which basis changes occur in cotton within each year and from year to year. Spot prices for Middling white cotton shown as “on” or “off” differences relative to future prices at New Orleans on Monday of each week during 9 crop years, 1921-30. At the bottom of the chart the average of corresponding weeks for the entire period is shown.¹ Considered by years, it will be seen that certain of the seasons were predominantly periods of premium prices for spot cotton. This was notably true for the years 1922-23 and 1923-24, years during which the boll weevil damage was large and current demand strong. The year 1925-26 was also a premium year for Middling and higher grades of cotton. During years of this type, hedging requirements are more likely to grow out of forward sales than supplies on hand, trade positions being kept in balance as far

¹The plan of preparation here is the same as that described above in Chapter XIV p. 269 ff. Each of the 6 principal futures were used, overlapped three weeks at transition points, and the price adjusted by the average difference.

as possible and hedges limited to periods of time as short as possible. Other years, such as 1924-25, 1926-27 and 1929-30 were years during which spot prices were at a discount during

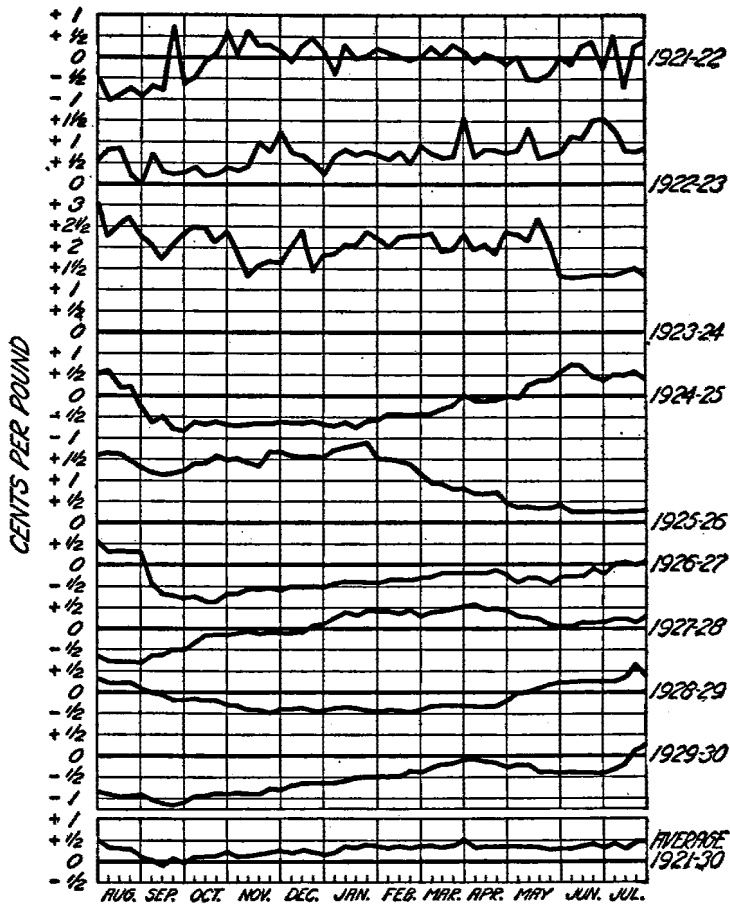


FIG. 45.—Changes in spot cotton prices relative to future prices, New Orleans Cotton Exchange, by weeks, for 9 crop years, 1921-1930.

the fore part of the season to advance relative to future prices as the season advanced. These were years during which wise hedging policy would dictate going short of the basis, i.e., sell-

ing futures against purchases of spot cotton in excess of forward sales.

An examination of fluctuations occurring from week to week within each crop year shows changes of large proportions when translated into profit or loss to the hedger. This was especially true during the years 1921-22, 1922-23 and 1923-24, years of high and uncertain prices. Variations of lesser amounts, and not attributable to the seasonal trend of spot prices relative to futures, are also to be found in the other years. The question may appropriately be raised whether these are typical years for cotton, particularly in view of the boll weevil. The answer is that considered as individual seasons, typical years are difficult to find. Similar comparisons over this same period for wheat, corn and oats, while showing more clearly defined seasonal movements, also show large week to week variations.

Do Hedgers Benefit by Hedging?—We have stated that hedging serves as insurance against major movements in price. Because of this fact, hedgers are able to do a larger business with the same amount of capital. This means smaller costs per unit of commodity handled, and if the same gross margin between purchases and sales prices can be maintained, larger profits to the hedger. It is a question, however, in a commodity in which hedging is the general practice, whether this increased profit has continued to redound to the benefit of hedgers. It seems more likely that through the force of competition the margin between purchase and sales prices has been reduced in proportion to the lower handling costs and that this initial benefit has long since been passed on either in the form of a lower price to the consumer or a higher price to the producer. Studies which have been made of the margin of gross profit per unit of commodity handled by grain and cotton merchants tend to substantiate this view. If this is the case, the only benefit which hedgers may be said to derive at the present time from hedging is the competitive one of being able to foresee and to some extent create relative changes in price.

This point is pertinent to the attitude which merchandisers of commodities assume regarding the usefulness to them of hedging. In grain and cotton where the practice is in common use these interests take the position that hedging is a great benefit to them and that to destroy this device would be tantamount to destroying their business. In other commodities such as wool and the metals, where the practice has little vogue, the wholesale handlers are quite generally opposed to the development of this plan and are equally sure that its adoption would throw their business into chaos and ruin.² It is clear, however, that under either system some will profit and some will not; and to the extent that there is a general advantage in either plan it is doubtless passed on through the force of competition to the benefit of others.³

6. THE EXTENT OF HEDGING

Some information is available on the extent to which hedging is currently practiced. Its use varies widely between commodities in which future trading is maintained as well as between the various interests engaged in the marketing and merchandising of any one commodity. Its widest application is in grain and cotton though it is employed to some extent also in certain of the other commodities. We have limited our definition of hedging to protective transactions made in futures so that the extent to which it is practiced in any one commodity may to some extent be judged by the importance of the future market or markets in that commodity. If the trade in futures is insignificant, the extent to which hedging is employed must necessarily be small.

Hedging in Commodities Other than Grain and Cotton.—There have been no attempts to quantitatively measure the

² Cf. Spurr, J. E. and Wormster, F. E., *The Marketing of Metals and Minerals*, N.Y., McGraw-Hill, 1925. Also "A Wool Futures Market Suggested," in *Bulletin of the National Assn. of Wool Manufacturers*, July, 1927.

³ Cf. Cox, Reavis, *Hedging Cotton*, being a series of articles appearing in the *New York Journal of Commerce* during May, June and July, 1929.

extent of hedging in any of the commodities except that of grain. Representatives of the various future markets, as well as commission firms members of these markets, have frequently stressed the importance of hedging commitments upon their exchanges and from these statements we may conclude that some hedging is done. But we have no way of judging how extensive the practice is and, since the wish is likely father to the thought, we may be fairly sure it is no more important than the statements suggest. We will have to rest content, therefore, with the statement that some hedging is done upon these smaller and newer commodity markets and that doubtless it is in a general way proportional to the size of their future trade.

Hedging Cotton Commitments—Although there have been no comprehensive surveys made of the extent of hedging in cotton, the question has been raised at various times in Congressional hearings and elsewhere to throw some light upon the extent of the practice. Among the cotton merchants, dealers, shippers, exporters, those who share in the wholesale handling of raw cotton, hedging is the general practice. There are, of course, times when some firms carry a trade position unhedged and there are differences between firms in the consistency with which their position is kept in balance but it is decidedly the rule rather than the exception for cotton merchants to keep their positions even.

Among the smaller local dealers in cotton and among the farmers, hedging is used very little. Street buyers, country merchants and other local dealers are able as a rule to pass on their purchases promptly to the representatives of larger dealers and in so doing avoid the risk of any major change in price. If they do not promptly sell each day's purchases it is likely because they desire to speculate on the trend of the market during the next few days or weeks in which case a hedge would defeat their purpose. Farmers do not hedge for obvious reasons. In most cases they have no knowledge of futures or hedging. If they had, the volume,

location, and mixed character of their cotton would be poorly adapted to a counter sale in futures. There is the additional reason, also, that in most cases farmers are inclined either from choice or necessity to speculate. Their crops are exposed to the possibility of an adverse downward movement in price from planting time until ultimately sold which not infrequently is far beyond the harvest time. Their outlook as a result is the outlook of a speculative long hoping for higher prices. Before hedging will ever appeal to the farmer this point of view will have to be changed to the more conservative one of being satisfied with something less than the highest price of the season. There are a few farmers who understand futures and who at a time of average prices will sell a future against their potential or actual supplies and be satisfied with the price. But these cases are rare exceptions.

On the other side of the cotton merchant are the mills buying cotton and selling goods. Hedging is the exception rather than the rule here also, although there is apparently more hedging among the mills than among the farmers and small local dealers. One student of mill practice observes: "For reasons that have been stated, real hedging is not practiced, so far as I know, by any of the New England mills. Such use of the futures market as is indulged in is merely one type of speculation. Sometimes this speculation is successful; at other times it results in losses."⁴ More and more mills have adopted the practice of buying on call which while not a hedge may serve to keep their position even if properly used. Where this is the case, they are shifting the responsibility of hedging upon the merchant. Aside from the fact that they do not need to hedge when buying on call, mill treasurers frequently feel that hedging cotton goods or forward contracts of cotton goods by transactions in cotton futures is ineffective because

⁴ Copeland, M. T., "Theory of Hedging," being a paper presented at the Annual Meeting of the National Association of Cotton Manufacturers, October 24-25, 1928. See also *Report of the Federal Trade Commission on the Cotton Trade*, Part I, p. 52 ff.

of a lack of close price relationship between the two. While this point is well taken so far as closeness of price relationship is concerned,⁵ it is doubtless true also that mill operators expect more from their hedges than is possible under ideal conditions.

Hedging Grain Commitments.—What has been stated regarding hedging in cotton is equally true of grain when applied to farmers. They frequently hold for higher prices but seldom hedge against lower prices. Among local dealers in grain, consisting mainly of country mills and elevators, hedging is fairly common though by no means a general practice. In a recent survey by the Department of Agriculture, replies returned from over 1200 country elevators revealed that approximately 44 per cent never hedge and that of the remaining 56 per cent, one-half do not maintain a consistent policy of hedging.⁶ Substantially the same results were obtained by the Federal Trade Commission in a survey made for the period, 1913-17.⁷

Among the handlers of grain upon the larger markets,—shippers, exporters, elevator concerns,—it is the rule to hedge. This is in line with the prevailing practice in cotton. It is at this stage in the marketing process that conditions are best adapted to the practice. The quantities involved, their position relative to the future market and the facilities for mixing, conditioning and handling are all elements of value in effectively hedging.

The practice is also widely used in the milling trade. Among the larger mills, and particularly those in the Minneapolis area, it is the general rule to hedge at all times, while the smaller and local mills vary considerably, some hedging at times when they fear an adverse market movement and some not hedging at all.

It is the practice, too, for certain of the larger food products companies to hedge though the number not hedging, particu-

⁵ Cf. Bureau of Business Research, Harvard Univ., *A Study of Cotton Hedging for a Grey Goods Mill*, Bulletin No. 70, February, 1928.

⁶ Mehl, J. M., *Hedging in Grain Futures*, U. S. Dept. of Agr. Circular No. 151, 1931.

⁷ *Report of the Federal Trade Commission on the Grain Trade*, Vol. I, p. 213 ff.

larly if the baking companies are included, is probably larger than those which do. The difficulty here is the same as that encountered in hedging cotton goods: a lack of close correspondence in price due to the fact that costs other than the raw material constitute the major part of the price of the finished product.

The Volume of Hedging Commitments in Futures.—We may also estimate the extent of hedging by observing the place it occupies in the future markets. Materials prepared by the Grain Futures Administration indicate that an important part of the open contracts currently carried forward originate out of hedging operations. Thus for the period January 1 to April 18, 1925, the separate accounts in wheat futures carried through members of the Chicago Board of Trade were classified according to their character and it was found that over 35 per cent of the contracts open on the short side of the market were for the account of hedgers. This 35 per cent was made up of accounts of 100,000 bushels or more and had the classification included hedge positions of smaller size, the proportion of short interest would certainly have exceeded 40 per cent. Hedging accounts open on the long side for this same period amounted to only 3 per cent of the total long commitments.⁸

In a more recent study,⁹ the position in the future market of a group of large hedging accounts in corn is compared with the visible supply of corn over a period of four years. This comparison is shown in Figure 46 in which the amount and the variations of the short hedge positions are shown on a negative scale and the corresponding amount and variations of the United States visible supply, being represented by a long mar-

⁸ *Fluctuations in Wheat Futures*, Sen. Doc. 135, 69th Cong., 1st Sess., 1926, p. 45. Cf. also *Reports by Members of Grain Futures Exchanges*, Part I, pp. 18-21, for a study covering the period January-October, 1927, for wheat and corn for Chicago, Minneapolis, Duluth, and Kansas City. The proportions of hedging interest in Minneapolis, Duluth, and Kansas City are considerably larger than at Chicago.

⁹ Hoffman, G. Wright, *Trading in Corn Futures*, U. S. Dept. of Agr. Tech. Bull. No. 199, 1930.

ket position, are shown on a positive scale. Attention is called to two significant points in the chart: (1) the short hedge position offsets in a general way the long visible position and (2) there is a pronounced seasonal variation in both the visible and the corresponding hedge requirements. The visible supply of grain is the amount in store at the principal terminal points of

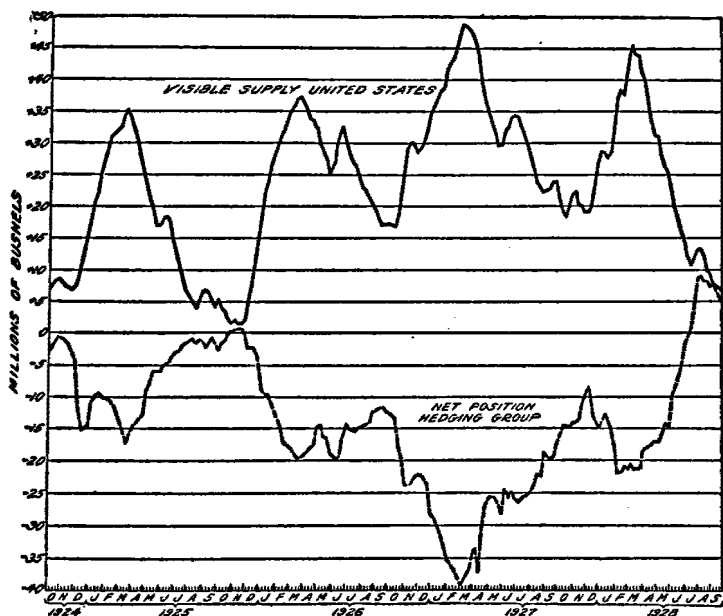


FIG. 46.—The United States visible supply of corn compared with the combined net position of 67 large hedging accounts, by weeks, for the period October, 1924-September, 1928. From U. S. Dept. of Agr. Tech. Bull. No. 199.

accumulation. Making allowance for the fact that only the large hedging accounts are included, and for only the Chicago Board of Trade, Figure 46 supports the statement that the terminal elevators regularly hedge their holdings and that for certain seasons and years their hedge requirements assume large proportions.

The Millers' National Federation has for several years compiled figures from its members, constituting approximately 60 per cent of the milling trade, showing its combined position in the future market growing out of hedging operations. In Table 28, the aggregate long position and the aggregate short position for quarterly dates for five crop years are shown. It will be readily seen that the hedging operations of this group like those shown in Figure 46, were large, and varied widely from season to season and from year to year.

TABLE 28.—AGGREGATE LONG AND AGGREGATE SHORT POSITIONS IN WHEAT FUTURES OF MEMBERS OF THE MILLERS' NATIONAL FEDERATION, FOR QUARTERLY DATES, 1926-1931.
(In thousands of bushels, i.e., 000 omitted)

Quarter ending:	Futures long	Futures short	Quarter ending:	Futures long	Futures short
Sept. 30, 1926	35,122	9,398	Mar. 31, 1929	7,643	12,293
Dec. 31, 1926	18,736	9,148	June 30, 1929	12,326	11,131
Mar. 31, 1927	10,891	7,286	Sept. 30, 1929	15,038	20,946
June 30, 1927	4,528	9,337	Dec. 31, 1929	11,506	19,042
Sept. 30, 1927	23,067	6,956	Mar. 31, 1930	10,567	9,609
Dec. 31, 1927	12,317	10,569	June 30, 1930	14,707	5,846
Mar. 31, 1928	11,359	11,199	Sept. 30, 1930	21,728	26,869
June 30, 1928	5,005	12,140	Dec. 31, 1930	7,026	28,595
Sept. 30, 1928	33,735	7,468	Mar. 31, 1931	7,982	22,191
Dec. 31, 1928	15,079	13,324	June 30, 1931	4,921	9,923

Data similar to this for cotton are not available though the hedging operations of leading merchants clearly reach large proportions. For a short while in 1914 the New York Cotton Exchange was closed and in order to equitably liquidate outstanding contract it was necessary for a detailed classification of all open contracts to be made. Hubbard states that this survey revealed "that about 85 per cent of the contracts outstanding on July 31, 1914 were for 'trade account,' hedges in one of the numerous ways in which hedges are created."¹⁰ He does not state whether the opposite ends of these trade accounts were

¹⁰ Hubbard, W. H., *Cotton and the Cotton Market*, p. 322.

carried by speculative interests or not, but on the assumption that they were the hedging element in the market would still be large.

Hedging Operations do Not Create a Balanced Market.—

The data compiled by the Grain Futures Administration as well as that of the Millers' National Federation, shown in Table 28, throw considerable light upon the question of whether a future market could be maintained which permitted only transactions growing out of cash grain operations. Such a market would clearly be handicapped in periods when hedging interests were either largely long of the future market or largely short. And one or the other of these situations prevails most of the time. It should further be observed that hedging positions change relatively slowly so that the amount of buying and selling which hedgers do each day is comparatively small. A future market composed purely of hedging operations would in all likelihood encounter considerable difficulty in timing its trading so that the buyers could find sellers and sellers buyers. It is sometimes suggested that in addition to hedging operations, speculators be permitted to enter the long side of the market but not the short side. This would be a material aid to those interests (mainly elevator concerns) and for those seasons requiring large short hedge positions. It would also improve the continuous character of the market compared to one devoid of speculative interest. But it would not supply the needs of hedgers requiring a long position such as millers; nor would it supply a balanced market to the same degree as supplied where equal opportunity is afforded to enter either the long or the short side.

7. SUMMARY

Hedging may be defined as the practice of buying or selling futures to counterbalance an existing position in the trade market and thus avoid the risk of unforeseen major movements in price. The risk of large adverse price movements is shifted to the shoulders of those taking the opposite end of the hedge with

the result that the interest of the hedger is centered entirely in the relative changes occurring between cash and future prices.

These relative price changes are referred to in the cotton trade as changes in "basis" and constitute the determining element in the hedger's profit or loss. His plan of procedure is to buy the actual commodity at as low a basis as possible (relative to the future used as a hedge) and to sell at as high a basis as possible. Some gain in basis may be expected at the time of making a commitment due to handling and carrying costs, but the actual basis change usually proves to be something other than the expected change with the result that the ultimate profit or loss includes as a rule an unexpected gain or loss. It is the business of hedgers, therefore, to foresee accurately and take advantage of gains in basis and to avoid as far as possible basis losses.

Hedging is most effectively used among grain and cotton merchants,—shippers, dealers, exporters and elevator concerns,—who buy and sell in large quantities, who are in a position to convert their future contracts into actual supplies if necessary or to deliver upon their futures when necessary, and who are able to follow closely the many factors continually causing changes in basis. Hedging is also commonly practiced in the flour milling trade and to some extent among cotton mills and country grain elevators. It is used very little by farmers.

CHAPTER XXI

THE MARKET-MAKING FUNCTION

Markets in which future trading plays an important part exhibit certain characteristics not found upon purely spot or cash markets. Trades occur with such frequency that they provide a fairly continuous series of prices; a considerable fraction of the traders composing the market consists of non-professional interests; elaborate equipment is employed for the prompt handling of orders and for the collection and dissemination of news; purely technical conditions frequently influence the course of prices. At various points in preceding chapters these and other aspects have been described as a part of the operations of future trading. Taken together they constitute the determinants of the market-making function of future trading, exerting an important influence upon the character and course of prices. It is now in place to bring together these various factors for the purpose of considering their joint market effect. The term "market-making" has been chosen to describe this group of causes and effects though in some respects "the market-influencing function" is a more accurate expression. This function is also sometimes referred to as the "price-making" or "price-directing" service, though these latter terms are less precise than the one chosen.

1. CONTINUOUS CHARACTER OF THE MARKET

One of the obvious effects of future trading is to render the market more continuous. Due to the convertibility of future contracts into cash contracts and to the close relation between the various futures, a continuous volume of trading in any one future makes itself felt throughout the market structure. As a result, bids and offers and actual transactions provide a market during each trading session upon which purchases or sales can be made promptly. Furthermore, the continuous character of

these quotations affords assurance that transactions both in the cash and the future market can be made fairly closely to the last price recorded.

This continuous feature is of special value to the cash or spot market. It regularly forms the basis of bidding for spot cotton or grain as well as the basis for bids or offers to arrive or for forward delivery.¹ It is quite true that in the absence of future trading offers at definite prices would be made, but it is doubtful whether they would be made as freely during and after each trading session as under the present system. The practice of hedging is also important in this connection. Bids and offers are freely made because it is definitely known that upon acceptance they can be promptly hedged. In the absence of a continuous market upon which bids and offers may be based and acceptances promptly hedged, it is probable that transactions in the cash market would need to be made at somewhat wider margins.

2. DISSEMINATION OF MARKET NEWS AND QUOTATIONS

Closely associated with the continuous feature is its natural corollary,—market news and quotations growing out of trading. Here again it is true there would be items of information and price quotations were future trading not maintained. But since they would relate only to cash transactions, they would be much less frequent in occurrence and circulated over a much more limited territory. At present, through the medium of city and local papers and trade bulletins, every country merchant or elevator manager as well as every farmer has available for his use daily quotations of cotton and grain. In addition all of the important current news can be had at local as well as interior markets.

Because this information is so accessible, all too frequently it is taken for granted and without an adequate appreciation of its value. It is particularly useful as a guide in the making or accepting of local bids or offers. While it is seldom possible for

¹ See Ch. XIV, *Interrelation of Cash and Future Prices.*

a farmer or country merchant to know whether prices upon the central markets are likely to advance or decline, he can determine whether local offers are comparable with terminal market prices and thus have the assurance that his sales are in line with prevailing prices. This will be true, however, only on the condition that proper allowance is made for special qualities. For example, a farmer may receive a price for his cotton in line with terminal market prices (after accounting for freight and handling charges) and still not receive full value if inadequate allowance has been made for staple. This may similarly be the case with grain with reference to protein content. This is, however, a limitation of the cash rather than the future market.

3. A TWO-SIDED MARKET,—SHORT SELLING

The practice of short selling constitutes a third important aspect of the market-making function. A highly standardized time contract is employed in future trading which can be used as easily for short selling as for purchases for long account. Brokers accept orders to sell short as freely as orders to buy. These orders follow the same routine in execution, require the same commissions, approximately the same margins and can be executed in the open market and later closed out with no greater cost or trouble than purchases for long account. As a result traders can make their opinions felt on the downward side of the market just as easily as on the upward side and in practice do freely shift from one side of the market to the other as their opinions change.²

Purely cash markets do not have this short selling feature

²In this connection it is instructive to compare the method of selling short in commodities with that in securities (in the United States). Upon stock exchanges, securities are borrowed for immediate delivery, a procedure involving adjustments for interest (or premium) and dividends, requiring the finding of a lender which is only possible for a limited number of stocks, together with continual adjustments growing out of the calling of loans from day to day. Partly due to these difficulties in method and partly due to the fact that stocks represent an income-producing asset, the markets in stocks are much less equally balanced than those in organized commodities.

and as a result do not afford an opportunity for those who are "bearish" to fully express their opinion. Real estate may be cited as an example of a cash market of this type. Because of the large element of uncertainty in future developments and values, speculation in land and improved property has always been widespread in the United States. But such speculation is possible only upon the long side of the market. If values appear low, one may buy and in so doing his influence is felt upon the long side of the market. He may borrow (i.e., assume a short position with respect to money) and buy still more and thus add to his original position. But if values appear unduly high his opinion on the downward side is limited to a liquidation of his present holdings. He cannot sell short though every indication points to inflated present prices. He can only stand by and await developments. The course of real estate prices both farm and city during the past fifteen years illustrates rather clearly the limitations of a one-sided speculative market of this kind. When inflation is under way developments continue and prices mount so long as a single buyer can be found, though it is clear to those in the market that demand is declining. When prices finally do recede, credit is immediately frozen and liquidation and failure follow to paralyze the industry for a period of years. While short selling would not be a panacea for these cycles it would afford an opportunity for free expression of market opinion and in so doing limit to some extent the present extremes.

Reasoning of this kind is the basis for the belief that constructive short selling is a definite aid in stabilizing prices in grain and cotton. In periods of high prices, short selling should appear in increasing amounts to be closed out by purchases "to cover" in periods of low prices. Were this in practice actually the case there could be little doubt of its beneficial effect. Frequently, however, short selling does not appear at the proper time or the short position is not carried to a period of low prices. Market conditions, as we have seen, change rapidly due sometimes to natural factors such as weather and sometimes to

purely trading factors such as unusually large market positions. These are conditions with which the short seller must contend and though he may be right in the long run he may not be able to carry out his plans and if not his operations may not have a leveling effect on prices.

The practice of short selling has long been criticized by the farmer as being inimical to his interest. It is believed short selling by speculators upon organized exchanges unduly depresses prices and that at most it should not be permitted beyond the needs of those engaged in the production or the merchandising of the actual commodity. There can be little doubt that short selling at times unduly depresses prices. And it is equally true that speculative buying at times unduly advances prices. The point of importance is whether these abnormal declines in price are caused by an element inherent in the mechanism of short selling and whether abnormal advances are caused by some element peculiar to buying. The answer to this question is not difficult. It is the manner in which short selling (or speculative buying) is used that is all important. It can be made a very effective instrument in lowering prices when they tend to advance to unusual levels just as speculative buying can be effectively used to advance prices when they are unduly low. But, as we have seen,⁸ both may also be used to carry prices to extremes under the influence of large scale trading or unusual public participation. What is desirable, therefore, is not to abolish short selling and speculative buying but to limit their application to useful purposes. When effectively used both tend to broaden and stabilize the market.

4. THE INFLUENCE OF ARBITRAGING

The practice of arbitraging consists of buying in one market or future and at the same time selling short an equal quantity in another to take advantage of what is believed to be a temporary disparity in prices. July corn in Kansas City is selling at $70\frac{1}{4}$ cents due to heavy local receipts while in Chicago the

⁸ Chapter XVII, *Market Operations and Their Relation to Future Prices.*

same future is selling at 79 cents. The total cost of shipping corn from Kansas City to Chicago is $6\frac{1}{2}$ cents per bushel. In this illustration there is an opportunity to spread between these two points by buying July corn, Kansas City, and at the same time selling short an equal quantity of July corn, Chicago. The spreader or arbitrageur would then watch the market for a readjustment in which the two futures would more nearly reflect the $6\frac{1}{2}$ cent differential. If later they did resume this difference, a gross profit of $2\frac{1}{4}$ cents would result by closing out the two positions. If they did not come closer together, the spread would probably be closed out to yield a loss. Sometimes it is possible in spreads of this type to accept delivery upon the purchase, ship the grain, and use it to deliver upon the sale. Thus in the illustration just given, if delivery is made at Kansas City in the fore part of the month of July, shipments can be made to Chicago for delivery and if the estimate of $6\frac{1}{2}$ cents for shipping costs proves accurate and no difficulties are encountered in handling and inspection, a profit of $2\frac{1}{4}$ cents will be made.

The plan of accepting delivery upon the long half of a spread and using the supplies acquired to fulfill the short half can be accomplished with less uncertainty where two different months are employed. With Chicago July corn selling at 79 cents, Chicago September might be selling at 82 cents. If the cost of storage from July to September were 2 cents, then by buying the July and selling the September, delivery might be accepted on the former, the supplies stored, and later tendered upon the latter to yield a gross profit of 3 cents and a net profit of 1 cent. Or the Kansas City July future might be bought and Chicago September sold and the grain received, shipped, stored and delivered to complete the arbitrage.

In these illustrations of arbitraging it is possible to complete the operation by actual delivery. The profit derived as a result is more nearly a merchandiser's profit and only in part speculative. In many situations, however, spreads cannot be completed by delivery. Thus suppose July corn and September corn,

Chicago, are both selling at 70 cents. Upon the assumption that the September should be 2 cents higher than the July, the latter might be sold and the former bought. If later they did spread to a 2 cent difference this amount less commissions would be the profit simply by reversing the operation. But if the September future did not advance relative to the July, delivery obviously could not be accepted on the long position to be tendered on the short sale and the only recourse would be to close out the spread and bear the loss. Similarly, between two markets the differential may be much less than the shipping costs offering an opportunity to spread but one which cannot be completed by actual shipment.

The arbitrage function serves as the connective tissue in the price structure. When intelligently employed, it aids in bringing prices into proper balance both with respect to time and position. If current supplies are being rapidly depleted and at the same time it appears likely that within a few months ample additional supplies will be available, intelligent arbitraging between the nearby and the more distant futures or between the spot market and the more distant futures will tend to raise immediate prices relative to the more distant prices. And if an opposite condition prevails, current prices should be low relative to the more distant, and if not arbitrage operations should tend to develop this relationship. So also with respect to position: if supplies are large at one point relative to another causing an abnormal price relationship, the buying in one market and simultaneous selling in another with occasional shipments as a last resort will tend to bring the two markets into proper alignment again. This instrument is, however, at times a two-edged sword. If some artificial factor threatens, such as a squeeze in a nearby future, a spreader will willingly help the matter along by buying this future and selling a more distant one if he is convinced that a further derangement in prices is likely.

In the absence of future trading the advantages of arbitrage would be possible only to a limited extent. Supplies could be

shipped from the interior to points nearer consuming centers or they could be stored to a later time when prices offered a profit and this would serve to some extent as a corrective force in keeping prices in balance. But this result could not be attained promptly in response to current market changes. Nor could it meet those situations in which it is desirable to sell short in one position or time and buy in another and in which actual delivery in closing the spread is impossible. Short selling is a prerequisite to a balanced system of arbitrating and as we have seen, it is a characteristic of future trading and not of cash trading. In its absence the measure of price balance possible would be limited by the extent and freedom with which actual supplies could be moved from one market to another or held from one time to another.

5. A SENSITIVE MARKET

The facilities necessary to make a future market continuous are also facilities which render it highly sensitive. These include a standardized contract assuring to traders maximum ease in assuming or passing on market commitments. They include also a network of private wires maintained for the purpose of promptly handling orders and of gathering and distributing current news and quotations. These facilities greatly aid in eliminating time and distance between ultimate traders; they also serve to stimulate interest in a market the importance and character of which would naturally include a wide following. In so doing they provide a highly mobile market keenly sensitive to every shade of opinion.

This sensitive quality of organized markets is most clearly reflected in the continual fluctuations in price. During the course of each trading session, there occur numerous minor price changes repeating in miniature the larger fluctuations occurring from day to day. These price variations, both intraday and interday, serve as the basis of much of the trading interest in organized markets. They tend to form fairly definite movements when traced consecutively and these movements in turn

tend to repeat themselves with some measure of regularity both in time and amplitude. Built upon these so-called cycles are the numerous trading theories employed by speculators, especially the "short-time" professional type, who attempt to profit from anticipated changes based upon some particular type of movement.

While these wave-like movements have their origin in the nature of the commodity dealt in, they are an outgrowth of the trading which they attract. Stated in another way, these variations in price occasion variations in trading, but trading in turn exerts an influence upon the character of prices. It is not possible to divorce the trading influence of itself from other influences affecting prices though it is possible to show that at times it exerts a strong influence upon prices and it is probable that the minor movements in price and particularly the characteristic wave-like variations are largely a product of trading activity.⁴ Commodity markets of a purely cash character lack these minor ups and downs in price. To this extent organized exchanges are more keenly competitive and much more responsive to every change in market opinion though this extreme sensitiveness makes possible the effective use of undesirable as well as desirable market influence. An organized market is like a highly-perfected and delicate machine which if manipulated by hands trained in its use will respond perfectly but if improperly operated will give poorer results than a model somewhat less complicated. Similarly in the routine of exchange operation, if only qualified market opinion is permitted to reflect itself in the price, it will function as perfectly as the limitations of human knowledge will permit; but if there is also included an undesirable element, to this extent prices will cease to fully reflect basic trade conditions.

6. PRICE LEVELING

There is presented in this and the following section two aspects of the market-making function about which consider-

⁴ Cf. Chap. XVII.

able difference of opinion prevails, viz., the price leveling influence and the price forecasting influence. The two are closely related and might conveniently be considered as one problem but it is believed that they can be more clearly understood by separate treatment. It is quite generally recognized that uncertainty regarding the course of prices in any field of economic endeavor is socially undesirable. While some gain by an unexpected turn in prices, their profit is in the nature of a windfall and likely to be lost soon, while those who lose are certain to feel the effect for a long period of time. Could price changes be foretold with a greater measure of certainty, preparation could be made now for an anticipated advance or decline later. In so doing, not only would the effect of price changes be alleviated but the changes themselves would be lessened somewhat. Prices would advance (or decline) now in anticipation of a later change, checking (or stimulating) current consumption, with the result that prices later would not need to rise (or fall) to the extent they otherwise would. It is not argued, of course, even by the most sanguine of exchange advocates that the result of future trading is to completely level prices over a period of time. To do so would be to remove the *raison d'être* of speculation. But it is claimed that in a measure at least the market in futures lessens the extent and the abruptness of price movements.

Studies Made to Test Price Leveling Influence.—There have been a number of studies made for the purpose of demonstrating objectively the truth or the falsity of this claim. One of the most extensive was completed in 1922, being a survey of wheat prices for 81 years and including over 100,000 entries.⁵ Here the writer divides his study into two periods: 1841-1860 and 1871-1913. During the earlier period there was no future trading in wheat while during the latter period it was an established practice. Using monthly data and averaging together the same months for each period he found that for the earlier period the average seasonal range in price was 17 cents while for the period

⁵ Boyle, J. E., *Chicago Wheat Prices for Eighty-one Years*, author, 1922.

1871-1913 it was only 9 cents. He concludes, "In the light of these facts, it cannot be said that future trading causes prices to fluctuate or increases the fluctuations in price. This evidence shows that future trading lessens price fluctuations—'puts on the brake' against bulges and breaks in price."⁶

This conclusion is, however, subject to question on the ground that important evidence was omitted from the study. During the period 1871-1913 the telephone, the telegraph, the cable, improved railroad and steamship service, improved methods of grading and handling, became an established fact. In the period 1841-1860 these facilities were largely lacking and particularly so in the then frontier town of Chicago. Grain traders gathered to await the arrival of the pony express from the East. If word was received that the latest boat from England wanted a cargo of wheat, prices advanced several cents a bushel; if no wheat was wanted a similar decline occurred. These variations were certainly in the main due to an imperfect system of communication and transportation (particularly communication) and not to a lack of future trading. Studies similar to the one just cited have been made at earlier times,⁷ but the results are not conclusive.

Price Variability of Wheat and Cotton.—Figure 47 shows the intra-annual variability of cotton prices and of spring wheat prices for a period of 63 years, from 1930 back to the beginning of future trading in these commodities. It is not presented for the purpose of determining whether or not future trading has leveled prices but rather to show the inconclusive character of the data upon this point. The chart shows each crop year's range in spot prices as a percentage of the average level of

⁶ *Ibid.*, p. 9.

⁷ Similar comparisons for wheat and cotton are to be found in Emery, H. C., *op. cit.*, p. 124 ff. The results are equally inconclusive and this fact Professor Emery carefully points out. The *Report of the Industrial Commission on the Distribution of Farm Products*, Vol. VI, Wash., 1901, pp. 192-198 also makes a comparison of this kind for wheat and cotton. See also the *Report of the Commissioner of Corporations on Cotton Exchanges*, Part IV, p. 302 for a study for cotton for the periods 1828-50 and 1877-1909.

spot prices that year. Monthly data were used in measuring the range and these same data used to calculate the mean for the crop year. By using monthly prices, the minor fluctuations

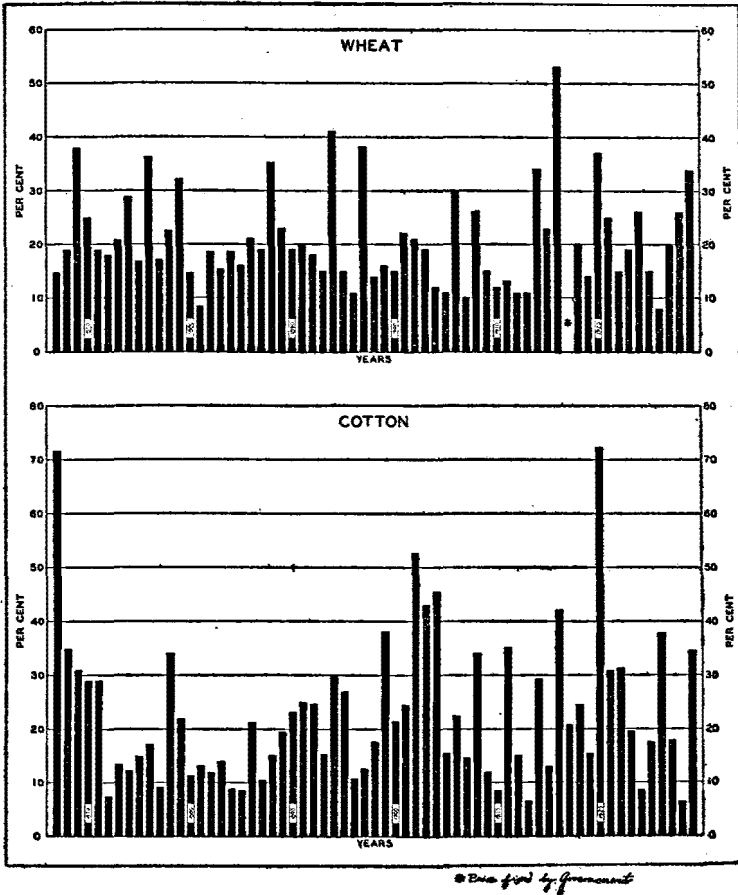


FIG. 47.—The intra-annual variability of wheat prices and of cotton prices, 1867-1930.

occurring from day to day were avoided as well as any extreme prices such as those appearing sometimes at the close of a delivery month. The range thus represents the maximum broad

"swings" in prices occurring during any given crop year.⁶ By dividing by the mean of the monthly prices, the factor of the general level of prices for that commodity has been removed.

As an additional improvement, each crop year includes only ten months beginning with October and including the following July. By limiting the range (and average) to this period the two transition months,—August and September,—from an old crop to a new, were omitted. This is a period during which cash prices both for wheat and cotton normally vary considerably due to the on-coming new crop and in which it is not to be expected that future trading could have much of a leveling effect. Beginning with October, however, the crop is known and fully discounted in the price. If, then, perfect insight could be had regarding market conditions for the following ten months, the range in cash prices would be limited to the small seasonal rise growing out of the costs of carrying supplies forward. Such insight is, of course, never attained; but it might be argued that it is more nearly attained through the assistance of future markets than without their aid.

Neither wheat nor cotton, judged by Figure 47, reveals any marked trend toward annual price stability. For cotton, the decades 1880-90 and 1890-1900 are less than for other periods, and if the influence of the Sully corner during 1903 and 1904 were removed one might include the years up to the World War. Since the war the boll weevil has played a large part in causing wide ranges in price. But with due allowance for these and other factors it is still difficult to draw any dependable conclusion regarding the influence of future trading.

⁶The range of the monthly prices rather than their mean deviation was used to measure the percentage of variation in each year's price in order to avoid the smaller fluctuations and to emphasize the outstanding price movement or group of movements occurring each year. Cf. Mills, F. C., *The Behavior of Prices*, National Bureau of Economic Research, pp. 60 ff. Dr. Mills used the mean of monthly deviation (1890-1925) giving somewhat different results for cotton and wheat, though due in part, also, to the use of different data and to 12-month rather than 10-month averages. When plotted by years, however, these figures do not show any more definite trend than those shown in Figure 47 for the corresponding periods.

Wheat shows slightly smaller fluctuations for the twenty years, 1893-1913, than for the twenty years prior to 1893. But since the World War, fluctuations have been somewhat larger though factors other than future trading have probably been the cause. In a careful analysis of post-war variations in wheat prices up to 1928, the Food Research Institute observes that "in view of the extraordinary nature of developments in the markets of the world since the war, it is rather surprising that the wheat price level has not shifted back and forth to a still greater extent."⁹ These developments include a greatly augmented international trade in wheat, the fact that the United States has been alternately on and off an export basis, the inauguration of Federal grades of wheat and the payment of premiums for protein. These are factors the force of which would be felt in large measure in the absence of future trading and make it difficult to state whether future trading has had a stabilizing influence in recent years or not.

Price Variability Between Commodities.—The question of whether future trading has a leveling tendency upon prices can be approached from other angles but they are equally unsatisfactory. One such approach is to compare the degree of price variability of commodities in which future trading plays an important rôle with other non-future commodities.¹⁰ Such a comparison is shown in Table 29. Here wheat and cotton are compared with other agricultural and industrial commodities for a period of 28 years in which the measure of price variability consists of an average of the monthly deviations from the mean of each year expressed as a percentage of the mean. The variability of wheat ranks comparatively low when compared with the other agricultural and food commodities and cotton is about average. But this fact is of no particular significance on the question of the influence of future trading since the numerous conditions of production and marketing are not uni-

⁹ Taylor, A. E. and others, "Variations in Wheat Prices," *Wheat Studies*, Vol. V, p. 289. Food Research Institute, Stanford Univ., 1929.

¹⁰ Cf. *Report of the Federal Trade Commission on the Grain Trade*, Vol. VI, p. 259.

TABLE 29.—THE AVERAGE MONTHLY FLUCTUATION (IN PER CENT) IN THE WHOLESALE PRICE OF A GROUP OF FOOD, FARM AND MISCELLANEOUS PRODUCTS FOR THE PERIOD 1890-1925 (EXCLUDING 1914-21).†

Foods and farm products	Aver. monthly price fluctuation	Other miscellaneous products	Aver. monthly price fluctuation
	(per cent)		(per cent)
Salmon	3.2	Cotton thread	.9
Tea	3.2	Flannel cloth	1.8
Rice	3.9*	Oak lumber: white	1.8
Flour: wheat	4.4*	Pine lumber: white	2.1
Wool: medium	4.9	Lead: carbonate of	2.2
Cattle	5.0	Muslin cloth	2.4
Beef: fresh	5.0	Broadcloth	2.5
Wheat	5.5*	Petroleum: refined	2.7
Sugar: gran.	5.6	Leather: sole, oak	2.7
Hay	6.1*	Ginghams cloth	2.9
Barley	6.2*	Sheetings cloth	3.1
Hams	6.2	Coal: anthracite	3.4
Lard	6.4	Spruce lumber	3.4
Coffee	6.7	Paper: newsprint	3.6
Rye	6.8*	Zinc: sheet	3.6
Meal: corn	6.8	Cottonseed meal	3.7
Pork: cured, mess	6.9	Lime	3.7
Oats	6.9*	Starch: laundry	4.0
Beans	7.1*	Silk: raw	4.7
Sugar: raw	7.1	Cotton yarns	4.8
Cotton	7.3*	Copper: ingots	4.9
Flaxseed	7.3*	Lead: pig	5.0
Hogs: heavy	7.8	Coal: bituminous	5.0
Cottonseed oil	8.6*	Tin: pig	5.1
Hides	8.7	Print cloths	5.7
Corn	8.9	Iron: pig	6.5
Prunes	9.0	Steel billets	7.2
Butter	9.7	Brick	7.5
Sheep	11.5	Petroleum: crude	7.6
Milk	12.6	Tar	8.2
Potatoes	12.7*	Jute	8.2
Apples	12.9*	Rubber	8.3
Hops	14.1*	Turpentine: spirits of	8.9
Eggs	23.0*		
Onions	24.4*		

† Data drawn from Mills, F. C., *The Behavior of Prices*, National Bureau of Economic Research, 1927, Appendix, Tables IV and VI. Original prices were taken from wholesale price bulletins of the U. S. Bureau of Labor Statistics. The monthly data of each year were averaged, the mean deviation of the monthly data from this average calculated for each year, these mean deviations were then shown as a per cent of their respective annual averages, and these percentages averaged to obtain one figure representative for the period 1890-1925 (omitting the war years).

* Crop years used; others, calendar years.

form. Compared with the non-agricultural and non-food commodities, the monthly variability of wheat and cotton appear somewhat high though here again it is very doubtful whether this is in any measure due to future trading since it will be observed that the food and farm products generally show greater variability than the non-food and non-farm products.

7. PRICE FORECASTING

Of more general interest to the student of organized speculation is the question of whether future trading in its effect serves to forecast and hence discount coming events. According to this theory the composite judgment of traders is superior to individual judgment and this should be reflected in advance movements in price. This should, of course, serve to stabilize prices in some measure at least; and thus in considering the leveling of prices, the question of the discounting function has been partially answered. But it may be appropriately argued that the discounting function can be observed without being able to show its separate effect in leveling prices. Thus in organized speculation in stocks, it has been repeatedly demonstrated that in the past the course of stock prices has preceded the course of general business¹¹ though it is extremely difficult to show that this has leveled prices or removed the extremes in business generally. Similarly it may be possible by comparing prices at different points in time to gain some insight into the problem of forecasting through organized trading in futures without being able to observe any price stabilizing effect.

A distinction should be made at the outset between the effect of speculation upon prices and the effect of future trading upon prices. Were there no future trading, speculation would continue. It would consist of buying and selling the actual commodity in an attempt to anticipate price changes likely to occur in the future. If supplies appeared more abundant three or six months hence, prices would fall now in response thereto, and if an impending scarcity developed it would most certainly be

¹¹ It is doubtful, however, whether it has in recent years.

discounted by rising prices. The question then is this, does speculation by means of future contracts forecast prices (1) any more clearly or (2) any more completely or accurately than would speculation in the actual commodity?

A Clearer Indication of the Probable Course of Prices.—

Upon the first phase of this question there is considerable evidence that future trading does more clearly forecast probable prices. By maintaining individual markets in spot and future trading, a clearer distinction can be drawn between those factors which are of current or local importance and those which are broader and more far-reaching in their effect. This difference is most clearly shown between spot prices and the prices of new-crop futures during the spring and early summer. While spot prices at this time of the year are strongly influenced by immediate demand and the existing supply of the old crop, they are also influenced by new-crop prospects. By referring to the new-crop future prices, some indication is to be had of the importance of this latter factor in current spot prices. In the absence of these future quotations this important new-crop factor could not be as clearly visualized and separately followed since its influence would be merged with other and current factors in determining spot prices. Thus if cash corn is selling on July 1 at 70 cents and the new-crop December future at 73 cents, it is evident at once that a small on-coming crop in relation to present supplies is being forecast, and if a month later the December future has declined to a discount of 3 cents under current cash prices, it is clear that new-crop supplies now appear larger relative to current supplies. In the absence of future prices, this relative change, as well as the importance of the new crop generally, could not be so clearly followed in the course of cash prices.

Future prices also more clearly indicate future conditions within any given crop year. In a price structure in which the more distant futures are higher than near-by or spot prices, there is said to be a carrying charge shown. In the future price there is imputed or forecast an expense item for the

carrying forward of the cash commodity to that point. As time passes and the carrying period shortens, cash prices rise relative to the future price. In the absence of future prices, the effect of this carrying charge would be less clearly shown at any given time. One can, of course, examine the changes in cash prices as each season advances and if enough years are averaged together a definite upward trend is evident.¹² But at any given time or for any one crop year, it is very difficult to tell from an examination of purely cash prices whether a large or small amount of seasonal advance is likely to occur. Discounting within a crop year is similarly shown when the more distant futures are even with or below current or spot prices. Here present supplies are temporarily scarce at least relative to probable supplies a few months hence. And the relation between cash and future prices far more clearly indicates this than would cash prices alone.¹³

Prices Not Accurately Forecast Months in Advance.—When we come to the second part of the question asked above, “Does speculation by means of future contracts forecast prices any more completely or accurately than would speculation in the actual commodity?” the problem becomes far more difficult. It is one thing to demonstrate that forecasting is *more clearly* shown by means of futures and quite another to show that it is more *accurate*. Future trading, as we have seen, is a two-edged sword and may at times drive prices farther out of line quite as easily as more nearly in line. And since it is impossible to know just what the course of cash prices would have been in the absence of future trading, it becomes equally difficult to measure the accuracy of discounting with future trading.

The most promising approach to this problem is to compare cash prices during a delivery month with future prices for that month as they prevailed at some earlier date. Thus cash prices

¹² See Figure 32, p. 248.

¹³ Cf. Smith, J. G., *Organized Produce Markets*, London: Longmans, Green, 1922, (p. 139-143) for various other relationships which may prevail.

during the month of May might be compared with the May future prices prevailing in January on the theory that January prices of the May future constitute the composite judgment of the market at that time of what cash prices are likely to be in the month of May. We will consider presently the validity of this theory. It has been tested from time to time but the results have been very inconclusive.¹⁴ Killough has carried the comparison further than others by correlating the two sets of prices for a series of years. His results relating to oats are summarized in the following table.

TABLE 30.—CORRELATION OF SEPTEMBER FUTURE PRICES OF OATS DURING THE GROWING SEASON WITH CASH PRICES IN SEPTEMBER.—FROM U. S. Dept. of Agr. Bull. No. 1351, 1925.

September cash price correlated with:	coefficient
May prices of September futures	-0.03
June " " " "	+0.25
July " " " "	+0.79
August " " " "	+0.95

They show that as the delivery month is approached the relationship rapidly improves and that during the month prior to delivery, it is quite close. But at a distance of three or four months little or no relationship is shown and regarding this fact Killough appropriately observes, "May prices of September futures appear in fact to be influenced more by prevailing cash prices than by any other factor."

The obvious shortcoming of this theory is that conditions change between the time of forecast and the time of fulfillment of the forecast. A perfect estimate may have been made in the month of May of probable prices in September; but since weather conditions cannot be foretold beyond the limits of a

¹⁴ Cf. *Report of the Industrial Commission on the Distribution of Farm Products*, Vol. VI, pp. 198-213 being an examination of future prices with spot prices realized 2 to 5 months hence for cotton and wheat. See also *Report of the Federal Trade Commission on the Grain Trade*, Vol. VI, p. 219 ff. Cf. also Ashby, F. B., "Cotton Futures as Forecasters of Cotton Spot Prices," *Jol. American Stat. Assn.*, Dec., 1929.

few days, it follows that this forecast must fail if growing conditions change. Chapman and Knoop in analyzing the various approaches to this problem conclude with reference to this particular method: "The price of April-May 'futures' in January may be affected by anticipation of prices in April and May in a degree in which 'spot' prices cannot be (which we hold to be the case), but it is practically futile to contrast the price of the April-May 'future' in January with 'spot' prices in April and May for though a steadying 'bearing' of the market might have been at work in January unsteady influences may have been at work after January. The point is that the effect of anticipation in January cannot be read in 'spot' prices after some time has been allowed for the play of other influences."¹⁵

Speculative Interest Extends Over Only a Few Weeks.—Further reflection upon the quality of discounting done by future markets leads one to the belief that it could hardly be expected to extend into the future much beyond a month or two. It is true that futures are traded in eight or ten months in advance of maturity. But this does not necessarily mean that future prices fully reflect what buyers and sellers believe the actual commodity will be worth at this distant point. Trading interest centers largely in one future at any given time and this future is usually from one to four months away. Thus for grain, trading is most active in the December future from August to November, in the May future from November to April, in the July future from April to June and in the September future from June to August.¹⁶ With trading centered largely in one future, the forces affecting prices are most likely to be first reflected in this future; it, in turn, becomes the standard to which the level of cash prices and the prices of other futures are adjusted.

This point is highly important to an understanding of what

¹⁵ Chapman, S. J. and Knoop, D., "Dealings in Futures on the Cotton Market," *Jol. Royal Statistical Society*, Vol. 69 (1906), p. 328.

¹⁶ Cf. Grain Futures Administration, *Wheat Futures*, U. S. Dept. of Agr. Stat. Bull. No. 31 (p. 42) and Hoffman, G. Wright, *Trading in Corn Futures*, U. S. Dept. of Agr. Tech. Bull. No. 199 (p. 8), for periods during which each future was dominant in wheat and corn for a period of years.

may logically be expected of the future market in forecasting prices. Purchases and sales of the May wheat future on October 1, for example, do not constitute an independent estimate of what wheat will likely be worth the following May but rather represent an estimate of how much May wheat should be above or below the prevailing level of prices of December wheat. Viewed in this light the determination of prices for the more distant futures is largely a problem in arbitraging or, in the language of the grain and cotton trade, of spreading or straddling. As the December future moves up or down, spot prices and the more distant futures move similarly, with such minor adjustments between futures and spots as are necessary to meet factors more vital to one future than to the others.

One further point should be observed regarding the outlook and operations of traders in forecasting prices. This point can best be developed by continuing our illustration of trading in wheat futures as of October 1. While trading at this time of the year is centered in the December future, it does not follow that the center of interest among traders is in what wheat will be worth in December. There are thousands of traders currently following the market whose outlook in buying or selling does not extend beyond two or three weeks and still more who are interested in the probable course of prices only during the next day or two. They buy December wheat because it affords the broadest medium through which to enter or leave the market. But their interest is only in the most likely direction of prices during the next few days or at most the next few weeks. This fact is clearly shown in the operations of scalpers and scalping speculators, but it is also true of most of those who speculate for longer periods of time. Their interest in the market is not of long duration in the sense at least of periods of time running into months. In a report prepared by the Grain Futures Administration in 1924, a summary of available data for wheat indicates that the average "life" of speculative trades is about a week and for hedged trades two or three weeks.¹⁷

¹⁷ *Report of the Grain Futures Administration, U. S. Dept. of Agr., 1924, p. 37.*

These are average figures and at best only approximations, but they are sufficiently accurate to indicate that the focus of trading interest is at most not more than a few weeks ahead. If then an inquiry is to be made into the question of whether

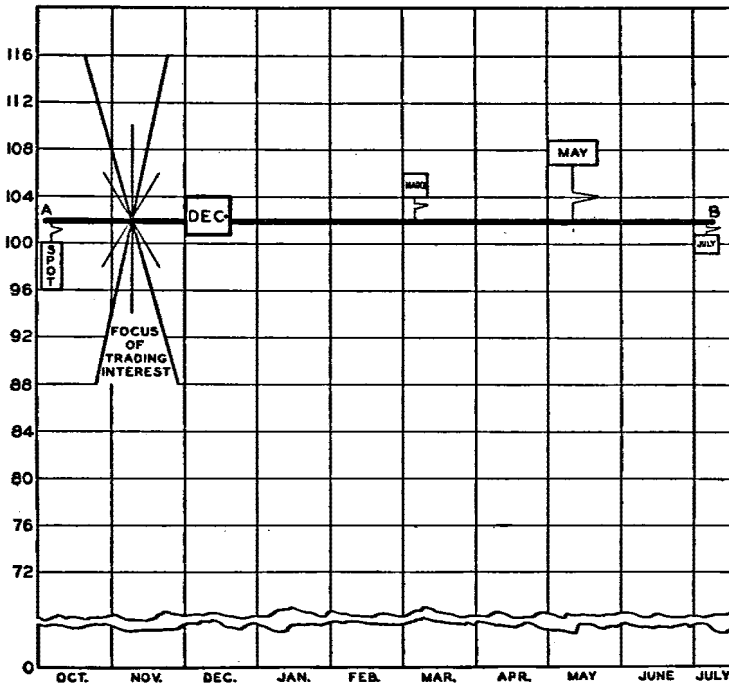


FIG. 48.—Diagram of price forecasting as of October 1, in which the general level of prices is shown as an expression of probable market conditions a few weeks hence, with specific future and spot prices adjusted to this general level.

future trading more accurately forecasts prices than would purely cash trading it should be for the period immediately ahead and not for a period of time involving several months.

Figure 48 is designed to illustrate this point of view. The market in wheat is pictured as of October 1, in which spot prices and the various future prices are described with refer-

ence to their price relationship, their trading relationship and their time relationship. Spot prices are below the December future, the more distant March and May futures somewhat above, and the July future representing the new crop somewhat below the December future. While most of the trading is being done in the December future, the focus of trading interest is shown as centering in the forepart of November. It is from this point of view involving factors likely to be of market importance during the next few weeks, that the general level of prices will be advanced or lowered.

There may, however, be excellent reasons for the March or May future to advance or decline *relative* to the general level of prices (as reflected in the line A-B), and this is possible through a realignment in relative values or through the force of arbitraging. This may also occur with respect to other price relationships such as in the July future or in spot prices. But the making of these adjustments for the more distant futures due to special factors is a much simpler thing than to directly estimate the level of prices several months hence.

Restatement.—We will restate the results of this section.

- (1) Through the medium of future trading a clearer insight is to be had into the probable course of prices than would be available were speculation maintained only in the cash market.
- (2) While future prices may indicate the market outlook at any given time, this indication soon becomes inaccurate because of new and unforeseen factors.
- (3) Simply because futures are traded in as far as a year in advance is not proof that speculators attempt to predict prices that far in advance.
- (4) The focus of speculative interest does not, in fact, extend beyond a few weeks ahead and it is this center of trading interest which determines at any given time the general level of prices. The more distant as well as current future and spot prices are then adjusted to reflect factors causing *relative* differences in prices from this general level.
- (5) Accuracy of forecasting through the medium of future trading as at present maintained cannot be expected to extend beyond a few weeks. It is possible, how-

ever, through a better knowledge of meteorology, through a wider and more accurate collection of trade information and generally through an improvement in the average strata of speculative intelligence that the focus of trading interest may, at some future time, be extended to a point several months in advance.

8. SUMMARY

The character of a market built up and maintained through the influence of future trading is in many particulars different from an ordinary cash market. It employs an elaborate structure of news gathering and price transmission. In the form of contract required and in the trading technique employed, opportunity is afforded for types of trading and trading influence not found elsewhere. In the present chapter an attempt has been made to outline the effect of these distinctive trading characteristics upon the character of the market. Collectively considered, they constitute the market-making function of future trading.

One outstanding feature of a market based upon future trading is its continuous character. Through the large volume of future transactions, prices as well as bids and offers form the basis for the making of cash purchases or sales as well as hedges at any time during the day and at figures not far from the last report. Closely associated with this feature is its natural corollary—the wide dissemination of market news and quotations, of special value to those not located in the immediate vicinity of an important market.

A third important feature of this market-making function grows out of the practice of short selling. Because of short selling in futures, the market is a two-sided and on the whole a more evenly balanced affair. This is in contrast to purely cash speculative markets such as the real estate market in which a full expression upon the short side is not possible. By means of short selling (as well as by means of speculative buying) prices can be abnormally driven out of line but this is not inherent in the practice of short selling.

A fourth characteristic of the market-making function is

the advantages gained in the practice of arbitraging. Through the facilities for convenient purchase and sale in the various markets and futures, prices are more nearly held in their normal time, place and grade relationship. In this way the arbitrage function serves as the connective tissue in the price structure.

A fifth feature of this market-making function is the sensitive character of the market. The elaborateness of the trading structure in futures together with the greatly enlarged circle of trading interest renders the market highly sensitive to every shade of opinion. This is most clearly seen in the many minor fluctuations in price. While this feature renders organized markets keenly competitive and responsive to every corrective influence, it also makes possible the effective use of undesirable influences.

It has frequently been said that the effect of future trading upon organized markets is to level and thus stabilize prices. But this is difficult to prove statistically. It is also claimed of future trading that its prices may be used as a guide or forecaster of probable prices several months hence. But here, too, conclusive data are lacking. Future prices do serve to indicate, when compared with current spot prices, the probable course of prices in the future; but conditions change rapidly so that it is doubtful whether any effective discounting or forecasting is done beyond the limits of a very few weeks. Is it doubtful, too, whether the focus of trading interest by speculators as a group falls much beyond two or three weeks ahead. If this be true it could hardly be expected that prices would be discounted far in advance. The market-making function of future trading thus widens the trading interest in the market rendering it more keenly competitive and more sensitive than it otherwise would be; through short selling and arbitrage it makes of the market a two-sided and more evenly balanced affair; through its numerous quotations and its news facilities it offers a much more continuous means of following the condition of the market and of freely buying and selling as conditions demand.

CHAPTER XXII

SUMMARY AND OUTLOOK

It is in place at this point to epitomize the essential features of future trading. By avoiding matters of minor detail and emphasizing the principal aspects, it is now possible to more clearly picture and appraise the process as a whole than was possible at any one point in the preceding chapters. To those reading only the summary, this will also serve as an outline description of the more important phases of future trading though it should be clear that the validity of statements made at this point is dependent upon a more detailed analysis in the body of the study.

Future Contracts are not Commodities.—Much of the mystery of future trading grows out of a lack of a clear understanding of the relation which future contracts bear to transactions in the actual commodity. Futures are contracts to buy or to sell a commodity during some specified period of time (usually one month). They are highly standardized agreements, being for even amounts in quantity, based upon a uniform set of grades, uniform delivery points and subject to closely defined rules governing the place, time and conditions of trading. They are used to speculate upon or hedge against the course of prices. As a rule they are later offset by other and opposite contracts avoiding the necessity of fulfillment by delivery. In contrast, transactions in the commodity itself are fulfilled by actual delivery either at once or at a specified date. They are used primarily to merchandise the commodity and not as a medium of speculation or hedging. They are not highly standardized in the details of position, grade and quantity. They are usually contracts of purchase or of sale rather than contracts to buy or to sell.

While the character, conditions, purpose and place of trading in futures are distinct from those of so-called cash or spot trad-

ing, it should be observed that the two types of trade are closely related through the right granted to those who trade in futures to convert their contracts into spot transactions. The buyer of a future has the privilege of leaving his contract open and permitting its ultimate fulfillment by actual delivery; and the seller also has the privilege or right to ultimately fulfill his contract by delivery. While in practice this right is not often used, it can be used and the knowledge of this fact together with actual conversions when profitable hold the prices of cash and future contracts in general alignment. This connection between cash and future contracts is not unlike the relation which a convertible bond bears to the stock into which it may be converted. It serves as the basis for the practice of hedging and in addition permits the trade in futures to play an important part as a market-making influence.

The Value of the Hedging Function.—Of the various features of future trading believed to be of value, none is mentioned more often than hedging. By setting up equal and opposite positions in futures to those held in the actual commodity, the hedger is able to avoid possible losses occasioned by major movements in price. As the price advances or declines in the cash commodity to cause a gain or loss in his cash position, it also advances or declines in the future market to supply him with a compensating loss or gain from his future position. The first effect of this practice is the substitution of a smaller but more certain gain for a larger but more uncertain one, thus serving as a form of price insurance to the hedger.

In its ultimate effect, however, it is doubtful whether hedgers as a group retain the benefit of this insurance. By hedging they are able to borrow more freely and to extend their capital over a wider area, to reduce their per unit cost of operation. It is likely that the benefit of this lower cost, through the force of competition, is passed on either to the consumer in the form of lower prices or to the producer in the form of higher prices or partly to both. The narrowness of the margin between purchase and sales prices in both grain and cotton strongly suggests that

this is the result. There is some evidence, also, that future contracts carried by hedgers not only serve as a means of insurance but also as a source of considerable profit principally through spreading operations between markets and between futures. If this is reflected in a narrower merchandising margin, it means in effect that speculators as a group are also contributors to the cause of lower prices to consumers or higher prices to producers.

The interests most successful in following a policy of hedging include mainly the wholesale dealers or merchants,—terminal elevator companies, shippers and exporters. It is at this stage in marketing that the maximum latitude in the shifting of both cash and future positions is possible. Hedging is the general practice here partly because it minimizes loss from adverse major movements in price, but in part also because by this means advantage can be taken of relative price changes continually occurring. These firms are in fact dealers in relative prices, buying cash and selling futures, or selling for forward delivery and buying futures, or spreading between futures or between markets, always with the object of later closing their positions at a better price basis. There are certain types of relative price change which hedgers can foresee with a fair degree of certainty such as expected gains due to improvement in the position, time or quality of the cash commodity. In these situations, the problem is one of obtaining a basis gain large enough to meet the costs involved. In many other situations, relative price changes are encountered which can not be foreseen to yield an unexpected gain or loss to the hedger.

To those interests following this plan of operation, hedging is just a trade practice, profitable to some and unprofitable to others. And were hedging not the practice, so far as profits or losses between firms are concerned, some would continue to profit while others would lose. It is of economic value only to the extent that it minimizes the margin needed to market the commodities involved, and this after allowance is made for any contributions made by the speculative group carrying the hedges.

The Value of the Market-Making Function.—Because future contracts may be converted into cash commitments, they play an important role in determining the character of the markets upon which they are traded. Markets composed purely of cash trading lack as a rule the continuous character of trading found in futures. Bids and offers as well as purchases and sales are of frequent occurrence in future markets to afford facilities for the prompt handling of commitments and to supply to the trade generally a continuous series of quotations. As a collateral effect, mention should also be made of the news gathering and news distributing service, the expenses of which are borne largely by the future trade.

Short selling is a market-making feature supplied by futures. Upon purely cash or spot markets, one may speculate by buying if prices are believed to be unduly low; but if they appear unduly high, there is no means by which one can actively express his opinion in the market beyond the liquidation of any holdings he may have. By adding the feature of short selling, a two-sided and more evenly balanced market is provided, permitting the free expression of all opinion. The practice of arbitrage between markets, between futures, and between cash and futures is dependent in part upon this feature and to that extent short selling is an aid in maintaining a close relationship between the various phases of the market. It should be observed, also, that this feature is a contributing factor in making markets sensitive to the slightest change. There are disadvantages in broadening the market by this means, some of which are mentioned in the following section. They are not, however, peculiar to short selling nor are they inherent in the practice.

It is believed by some students of the subject, and generally stated to be the case by representatives of exchanges, that future trading has a leveling effect upon prices. Speculators are interested in so timing their purchases and sales that they will profit by advances or declines in price. If intelligently done, the combined effect of their efforts should be to cause prices to rise or fall in advance of changing conditions and thus remove the extremes in price which would otherwise result. There is

ample evidence that future conditions are discounted considerably in advance of their occurrence both in the cash market and in the future market. It can also be shown that the future market more *clearly* indicates probable developments in the market than does cash trading alone. But evidence is lacking on the question of whether prices are in any measure leveled purely as a result of future trading. Because futures are dealt in for periods several months in advance is not proof that present prices constitute forecasts of prices to prevail at this future date. The focus of trading interest in futures does not in fact extend at most beyond a period of a few weeks and at times not more than a few days. Forecasting of this sort is not likely to exercise much more of a leveling influence upon prices than that which can readily be done through cash trading. It should be observed, furthermore, that in broadening the market by means of futures, the poor in judgment as well as the capable are admitted, making possible at times the driving of prices farther out of line than they otherwise would go.

Some Special Problems of Future Trading.—Markets in which future trading plays a prominent part are characterized by a number of rather distinctive features. The volume of trading, for example, is not controlled by any physical limits such as the amount of product available to be bought or sold or the rapidity of turnover. As a matter of fact, the volume of future trading bears no dependable relationship whatever to the trade in the actual commodity upon which it is based. Instead, its limits depend largely upon the willingness or enthusiasm of the trading public to participate together with the ability of these traders to meet margin requirements. Of these two limits, the former is as a rule the controlling one since the meeting of margin requirements is usually a matter of those forced out being replaced either by new entrants or by larger commitments on the part of those who for the time being are profiting. Since the burden of maintaining the market rests largely upon the shoulders of commission firms, they are naturally interested in fostering a wide and continuing public interest. To this end,

an elaborate private wire and brokerage office system is currently maintained and items of news and gossip of every sort found by experience to successfully enlist the interest of traders are continually being collected and circulated.

No adverse criticism could be levied against these features were they in every instance used in the proper way. There is no inherent defect in a large volume of trading as such nor in the widespread circulation of news. Both are in fact to be desired if they result in making the market a more dependable reflector of fundamental conditions. But all too frequently an inferior quality of street gossip is substituted for worth-while information, the quality of trading is dominated by the sheer force of large-scale buying or selling,—sometimes by one or two manipulative giants, sometimes by a mob-crazed public,—to drive the price for the time being beyond the bounds of intelligent judgment. It is not often, however, that these trading factors occasion large fluctuations in proportion to the general level of prices, though they are factors of some importance most of the time.

Every student of these highly organized markets will agree that there is a great deal of room for improvement in the general level of speculative intelligence. The question is how to raise this level. At the present time the only guide seems to be the school of experience in which as a rule a knowledge of the laws of chance is dearly paid for. Unfortunately this does not serve to temper and improve the quality of market opinion since a continual stream of new recruits supplants those who lose. Individuals with little or no knowledge of the grain trade or of the cotton trade and lacking in the poise that accompanies ample financial resources and training constitute an undesirable element in the future markets in these commodities. There are brokerage firms who recognize this defect and attempt to exclude this element. But there are many others whose business is entirely dependent upon it.

There is something to be said in favor of a federal or state system of licensing of brokerage firms in which their licenses

would be contingent upon the quality of financial and business standards they maintain. As a condition upon which a license would be granted, they should not be permitted to have any interest in the market, either as a firm or as individuals; their financial resources should exceed a minimum standard; the marginal deposits of their customers should exceed a minimum amount and should be treated as trust funds. If the standards were high, it might result in eliminating a margin of poorly equipped firms and traders. But those that continued should give to the exchanges and to the speculative trade generally a better standing in the business world.

Speculation and Gambling.—The question of raising the standards of exchange trading is very closely related to the problem of gambling in futures. We have differentiated between speculation and gambling on the economic ground of usefulness rather than on the basis of the usual legal concept of intent to deliver. Transactions upon recognized exchanges are well established from a legal point of view. Judged by the standard of economic usefulness, however, there is a sizable fraction of their trade which is nothing more than mere commercial wagers. Those, for example, whose training is in a field foreign to cotton or grain or the other commodities and who occasionally attempt to outguess the market do not in their net effect serve a useful purpose. To this group should be added those who lack adequate financial capacity. It is true they may serve to lend continuousness to the market, they may pay a part of the cost of maintaining an extensive news service, and they may carry a part of the hedges of trade interests. Some, too, may from time to time successfully anticipate probable market developments. But against these advantages are to be listed the losses of those who could not afford to trade, the adverse effect upon the market of those who fail to anticipate probable price changes, and the ill effect of occasional widespread public participation. In many cases, too, those who do profit in their initial ventures pyramid their paper profits to lose ultimately. It is trading of this quality which encourages

the plunger with a financial backing of millions to keep the market in a continual turmoil. Were it possible to do so, it would certainly be desirable from a social as well as an economic point of view to rid the market of the small and uninformed as well as the large market operator.

This gambling aspect of future trading has long been recognized as one of the weaknesses of the organized exchange system. It is in fact considered by some to be of sufficient magnitude to condemn this plan of marketing altogether. This is, however, an extreme view if argued apart from other important aspects of future trading and of alternative plans to take its place. The present exchange system has many desirable features. There is ample evidence, too, that the type of trader and trade practice prominent today is of a higher quality than that found thirty or forty years ago; and it seems reasonable to assume that at least a gradual improvement will continue. Most of the defective features in future trading are not inherent in the practice and this fact should be carefully considered in proposals to substitute some other plan. Finally it should be recognized that the borderline between speculation and gambling is difficult to determine and for this reason care should be taken to assure that efforts to prevent the latter do not also destroy the former. Speculation in the form of intelligent initiative and foresight is a highly important asset to any society, a characteristic to be given every opportunity for full expression and not to be retarded by close regulation.

Conditions Essential to Future Trading.—Closer insight into the place of future trading in our economic structure is to be had in a consideration of the conditions requisite to its successful development and operation. It is an interesting fact that the number of really successful commodity exchanges in this country does not exceed a dozen and that frequent attempts have been made to establish exchanges and have failed. The reasons for this are not hard to find. To be successful an exchange must trade in contracts based upon a commodity which can be accurately graded and measured or weighed. The com-

modity must be sufficiently durable to permit it to be held for some time if necessary. It must be fungible. These qualities are common to grain and cotton and to a considerable list of other commodities, some of which have markets in futures and some of which do not.

There are, however, additional features essential to a successful market in futures. It must have fluctuations in price of considerable amplitude and frequency. Speculation is an attempt to profit from advances or declines in price and it can be easily demonstrated that the volume of trading is largely dependent, other factors being favorable, upon the extent of the price movements in the market.¹ The value of hedging is also dependent upon the extent of the price movements, there being little incentive to hedge in markets where the likelihood of loss is small.

Whether a future market is successful or not is also dependent upon the conditions underlying the market causing or influencing its movements in price. These conditions, and the price movements growing out of them, should be fundamentally natural,—as free from artificial or man-made influence as possible. We do not have a future market in iron, petroleum, refined sugar, lumber or coal in this country at the present time due in no small part to a lack of a sufficiently wide distribution of buying and/or selling interest in these commodities. The fluctuations in price are doubtless wide enough and of sufficient frequency to warrant a market. These products can be graded, measured, stored and interchanged lot for lot fairly easily. But the control of the supplies in the wholesale channels of the industry is quite limited and this fact would have a restraining effect upon contracts for their purchase or sale purely for speculative purposes. Billion dollar corporations do not care to have their price policy determined for them upon a market the fluctuations of which they are unable to momentarily anticipate. And were markets formed in these commodities, it is altogether doubtful whether they would flourish because of

¹ See Figure 39, page 329.

the active or potential influence of these large interests. Their buying or selling, either as a speculation or as a hedge, could rather easily upset a market, assuming that they did not openly oppose it. And a knowledge that this is possible would exercise a very restraining influence upon all but the most foolhardy of the smaller interests in the trade. Markets have been attempted in this country in some of these commodities but without success. In contrast, it should be observed that in the markets where future trading has been successful, the control of supplies is widely distributed among both buyers and sellers. Price is less likely to be controlled for any length of time by any single interest or group of interests, reflecting more fully the natural factors growing out of the trade.

The Outlook for Future Markets.—Whether future markets continue to occupy their present position or grow in importance or decline in importance will doubtless depend upon several rather than some one factor. At the present time (1931), their position in the United States is being seriously challenged by the farmer-cooperative movement sponsored by the Federal Government. What the ultimate outcome of this movement will be cannot be foretold; but it is clear that the extent to which it succeeds in mobilizing and controlling the commercial supplies of grain and cotton will measure the extent to which future trading in these commodities will decline. There is little difference in the eyes of the speculator between control of an industry under governmental direction or under a cooperative organization and control by a board of directors holding the balance of power through stock ownership. Both are anti-competitive; both include elements of monopoly; in both cases the human factor is given a prominent place in the day-to-day determination of prices.

The Agricultural Marketing Act and its operation is but one part of a larger movement in this and other countries. It is the tendency in many lines of industry to integrate and where necessary to ask the aid of governmental power. We have come to believe that our railroads should consist of a few systems

of lines and that the Federal Government should come forward and aid in bringing this about. Where twenty-five years ago the evils of oil trusts furnished grist for presidential campaigns, today we are inclined to believe the Government should take the initiative in minimizing competition, conserving supplies and incidentally raising prices. Cooperation by the Government in raising tariffs to prohibitive levels continues a popular means of private subsidy. More and more, we have come to depend upon the cooperation of the Federal Reserve Board, the Treasury Department and other governmental or quasi-governmental units in handling important problems in our credit structure.

This may or may not prove a wise policy in the long run. It has in its favor the elimination of waste and duplicated effort. It has against it the de-energizing effects which come from a dependence upon political aid and the assurance that one's competitors will not cause trouble. But it should be clear that this trend toward integration and control is in direct conflict with the highly organized type of competition found upon exchanges.

The outlook for future markets presents the alternatives of continued growth as a competitive system with improvements in methods of operation, or of gradual decline in which one or a few leading interests will ultimately come to dictate the policy of the trade. If the competitive plan is to be followed with future markets continuing to play an important part in the wholesale distribution of commodities, these markets will need to improve materially the quality of their speculative judgment and to reduce materially the part now played by purely technical forces. It is possible for these markets to function far more perfectly than they now do both in their effect upon price and as a means of hedging, while at the same time minimizing the purely gambling aspects. To accomplish this, however, will require something more than memorials to Congress and campaigns to "keep the Government out of business." It will require a quality of market conduct which will leave no doubt about the fundamental character of the prices made thereon.

It will require an adequate code of rules and more particularly a rigid enforcement of these rules. Were substantial reform effected it seems likely that the exchange system would come to occupy an even larger place in commodity marketing than it now holds. Without substantial reform the system will undoubtedly continue a subject of political attack with the possibility of ultimate replacement by some other plan of marketing.

APPENDIX A

FIRST 12 SECTIONS OF THE UNITED STATES COTTON FUTURES ACT

(Approved August 11, 1916, as amended March 4, 1919, U. S. C., Title 26, Secs. 731-752; May 31, 1920, 41 Stat. 725; and February 26, 1927, U. S. C., Supp. IV, Title 26, Sec. 736)

That this act shall be known by the short title of the "United States cotton futures act."

SEC. 2. That, for the purposes of this act, the term "contract of sale" shall be held to include sales, agreements of sale, and agreements to sell. That the word "person," wherever used in this act, shall be construed to import the plural or singular, as the case demands, and shall include individuals, associations, partnerships, and corporations. When construing and enforcing the provisions of this act, the act, omission, or failure of any official, agent, or other person acting for or employed by any association, partnership, or corporation within the scope of his employment or office, shall, in every case, also be deemed the act, omission, or failure of such association, partnership, or corporation as well as that of the person.

SEC. 3. That upon each contract of sale of any cotton for future delivery made at, on, or in any exchange, board of trade, or similar institution or place of business, there is hereby levied a tax in the nature of an excise of 2 cents for each pound of the cotton involved in any such contract.

SEC. 4. That each contract of sale of cotton for future delivery mentioned in section 3 of this act shall be in writing plainly stating, or evidenced by written memorandum showing, the terms of such contract, including the quantity of the cotton involved and the names and addresses of the seller and buyer in such contract, and shall be signed by the party to be charged, or by his agent in his behalf. If the contract or memorandum specify in bales the quantity of the cotton involved, without giving the weight, each bale shall, for the purpose of this act, be deemed to weigh 500 pounds.

SEC. 5. That no tax shall be levied under this act on any contract of sale mentioned in section 3 hereof if the contract comply with each of the following conditions:

First. Conform to the requirements of section 4 of, and the rules and regulations made pursuant to, this act.

Second. Specify the basis grade for the cotton involved in the contract, which shall be one of the grades for which standards are estab-

lished by the Secretary of Agriculture, except grades prohibited from being delivered on a contract made under this section by the fifth subdivision of this section, the price per pound at which the cotton of such basis grade is contracted to be bought or sold, the date when the purchase or sale was made, and the month or months in which the contract is to be fulfilled or settled: *Provided*, That middling shall be deemed the basis grade incorporated into the contract if no other basis grade be specified either in the contract or in the memorandum evidencing the same.

Third. Provide that the cotton dealt with therein or delivered thereunder shall be of or within the grades for which standards are established by the Secretary of Agriculture except grades prohibited from being delivered on a contract made under this section by the fifth subdivision of this section and no other grade or grades.

Fourth. Provide that in case cotton of grade other than the basis grade be tendered or delivered in settlement of such contract, the differences above or below the contract price which the receiver shall pay for such grades other than the basis grade shall be the actual commercial differences, determined as hereinafter provided.

Fifth. Provide that cotton that, because of the presence of extraneous matter of any character, or irregularities or defects, is reduced in value below that of low middling, or cotton that is below the grade of low middling, or, if tinged, cotton that is below the grade of strict middling, or, if yellow stained, cotton that is below the grade of good middling, the grades mentioned being of the official cotton standards of the United States, or cotton that is less than seven-eighths of an inch in length of staple, or cotton of perished staple or of immature staple, or cotton that is "gin cut" or reginned, or cotton that is "repacked" or "false packed" or "mixed packed" or "water packed," shall not be delivered on, under, or in settlement of such contract.

Sixth. Provide that all tenders of cotton under such contract shall be the full number of bales involved therein, except that such variations of the number of bales may be permitted as is necessary to bring the total weight of the cotton tendered within the provisions of the contract as to weight; that, on the fifth business day prior to delivery, the person making the tender shall give to the person receiving the same written notice of the date of delivery, and that, on or prior to the date so fixed for delivery, and in advance of final settlement of the contract, the person making the tender shall furnish to the person receiving the same a written notice or certificate stating the grade of each individual bale to be delivered and, by means of marks or numbers, identifying each bale with its grade.

Seventh. Provide that all tenders of cotton and settlements therefor under such contract shall be in accordance with the classification thereof made under the regulations of the Secretary of Agriculture by such officer or officers of the Government as shall be designated for the

purpose, and the costs of such classification shall be fixed, assessed, collected, and paid as provided in such regulations. All moneys collected as such costs may be used as a revolving fund for carrying out the purposes of this subdivision, and section nineteen of this act is amended accordingly.

The provisions of the third, fourth, fifth, sixth, and seventh subdivisions of this section shall be deemed fully incorporated into any such contract if there be written or printed thereon, or on the memorandum evidencing the same, at or prior to the time the same is signed, the phrase "Subject to United States cotton futures act, section 5."

The Secretary of Agriculture is authorized to prescribe regulations for carrying out the purposes of the seventh subdivision of this section, and the certificates of the officers of the Government as to the classification of any cotton for the purposes of said subdivision shall be accepted in the courts of the United States in all suits between the parties to such contract, or their privies, as prima facie evidence of the true classification of the cotton involved.

SEC. 6. That for the purposes of section 5 of this act the differences above or below the contract price which the receiver shall pay for cotton of grades above or below the basis grade in the settlement of a contract of sale for the future delivery of cotton shall be determined by the actual commercial differences in value thereof upon the sixth business day prior to the day fixed, in accordance with the sixth subdivision of section 5, for the delivery of cotton on the contract, established by the sale of spot cotton in the spot markets of not less than five places designated for the purpose from time to time by the Secretary of Agriculture, as such values were established by the sales of spot cotton, in such designated five or more markets: *Provided*, That for the purpose of this section such values in the said spot markets be based upon the standards for grades of cotton established by the Secretary of Agriculture: *And provided further*, That whenever the value of one grade is to be determined from the sale or sales of spot cotton of another grade or grades, such value shall be fixed in accordance with rules and regulations which shall be prescribed for the purpose by the Secretary of Agriculture.

SEC. 6A. That no tax shall be levied under this act on any contract of sale mentioned in section 3 hereof if the contract provide that, in case cotton of grade or grades other than the basis grade specified in the contract shall be tendered in performance of the contract, the parties to such contract may agree, at the time of the tender, as to the price of the grade or grades so tendered, and that if they shall not then agree as to such price, then, and in that event, the buyer of said contract shall have the right to demand the specific fulfillment of such contract by the actual delivery of cotton of the basis grade named therein and at the price specified for such basis grade in said

contract, and if the contract also comply with all the terms and conditions of section 5 hereof not inconsistent with this section: *Provided*, That nothing in this section shall be so construed as to relieve from the tax levied by section 3 of this act any contract in which, or in the settlement of or in respect to which, any device or arrangement whatever is resorted to, or any agreement is made, for the determination or adjustment of the price of the grade or grades tendered other than the basis grade specified in the contract by any "fixed difference" system, or by arbitration, or by any other method not provided for by this act.

Contracts made in compliance with this section shall be known as "section 6A contracts." The provisions of this section shall be deemed fully incorporated into any such contract if there be written or printed thereon, or on the memorandum evidencing the same, at or prior to the time the same is signed, the phrase "Subject to United States cotton futures act, section 6A."

Section 10 of this act shall not be construed to apply to any contract of sale made in compliance with section 6A hereof.

SEC. 7. That for the purposes of this act the only markets which shall be considered bona fide spot markets shall be those which the Secretary of Agriculture shall, from time to time, after investigation, determine and designate to be such, and of which he shall give public notice.

SEC. 8. That in determining, pursuant to the provisions of this act, what markets are bona fide spot markets, the Secretary of Agriculture is directed to consider only markets in which spot cotton is sold in such volume and under such conditions as customarily to reflect accurately the value of middling cotton and the differences between the prices or values of middling cotton and of other grades of cotton for which standards shall have been established by the Secretary of Agriculture: *Provided*, That if there be not sufficient places, in the markets of which are made bona fide sales of spot cotton of grades for which standards are established by the Secretary of Agriculture, to enable him to designate at least five spot markets in accordance with section 6 of this act, he shall, from data as to spot sales collected by him, make rules and regulations for determining the actual commercial differences in the value of spot cotton of the grades established by him as reflected by bona fide sales of spot cotton, of the same or different grades, in the markets selected and designated by him, from time to time, for that purpose, and in that event, differences in value of cotton of various grades involved in contracts made pursuant to section 5 of this act shall be determined in compliance with such rules and regulations: *Provided further*, That it shall be the duty of any person engaged in the business of dealing in cotton, when requested by the Secretary of Agriculture or any agent acting under his instructions, to answer correctly to the best of his knowledge, under oath or other-

wise, all questions touching his knowledge of the number of bales, the classification, the price or bona fide price offered, and other terms of purchase or sale, of any cotton involved in any transaction participated in by him, or to produce all books, letters, papers, or documents in his possession or under his control relating to such matter. Any such person who shall, within a reasonable time prescribed by the Secretary of Agriculture or such agent, willfully fail or refuse to answer such questions or to produce such books, letters, papers, or documents or who shall willfully give any answer that is false or misleading, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not exceeding \$500.

SEC. 9. That the Secretary of Agriculture is authorized, from time to time, to establish and promulgate standards of cotton by which its quality or value may be judged or determined, including its grade, length of staple, strength of staple, color, and such other qualities, properties, and conditions as may be standardized in practical form, which, for the purposes of this act, shall be known as the "Official cotton standards of the United States," and to adopt, change, or replace the standard for any grade of cotton established under the act making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1909 (Thirty-five Statutes at Large, page 251), and acts supplementary thereto: *Provided*, That any standard of any cotton established and promulgated under this act by the Secretary of Agriculture shall not be changed or replaced within a period less than one year from and after the date of the promulgation thereof by the Secretary of Agriculture: *Provided further*, That, subsequent to six months after the date section 3 of this act becomes effective, no change or replacement of any standard of any cotton established and promulgated under this act by the Secretary of Agriculture shall become effective until after one year's public notice thereof, which notice shall specify the date when the same is to become effective. The Secretary of Agriculture is authorized and directed to prepare practical forms of the official cotton standards which shall be established by him, and to furnish such practical forms from time to time, upon request, to any person, the cost thereof, as determined by the Secretary of Agriculture, to be paid by the person requesting the same, and to certify such practical forms under the seal of the Department of Agriculture and under the signature of the said Secretary, thereto affixed by himself or by some official or employee of the Department of Agriculture thereunto duly authorized by the said Secretary.

SEC. 10. That no tax shall be levied under this act on any contract of sale mentioned in section 3 hereof, if the contract comply with each of the following conditions:

First. Conform to the rules and regulations made pursuant to this act.

Second. Specify the grade, type, sample, or description of the cotton involved in the contract, the price per pound at which such cotton is contracted to be bought or sold, the date of the purchase or sale, and the time when shipment or delivery of such cotton is to be made.

Third. Provide that cotton of or within the grade or of the type, or according to the sample or description, specified in the contract shall be delivered thereunder, and that no cotton which does not conform to the type, sample, or description, or which is not of or within the grade specified in the contract shall be tendered or delivered thereunder.

Fourth. Provide that the delivery of cotton under the contract shall not be effected by means of "set-off" or "ring" settlement, but only by the actual transfer of the specified cotton mentioned in the contract.

The provisions of the first, third, and fourth subdivisions of this section shall be deemed fully incorporated into any such contract if there be written or printed thereon, or on the document or memorandum evidencing the same, at or prior to the time the same is entered into, the words "subject to United States Cotton Futures Act, section 10."

This act shall not be construed to impose a tax on any sale of spot cotton.

This section shall not be construed to apply to any contract of sale made in compliance with section 5 of this act.

SEC. 11. That the tax imposed by section 3 of this act shall be paid by the seller of the cotton involved in the contract of sale, by means of stamps which shall be affixed to such contracts, or to the memoranda evidencing the same, and canceled in compliance with rules and regulations which shall be prescribed by the Secretary of the Treasury.

SEC. 12. That no contract of sale of cotton for future delivery mentioned in section 3 of this act which does not conform to the requirements of section 4 hereof and has not the necessary stamps affixed thereto as required by section 11 hereof shall be enforceable in any court of the United States by, or on behalf of, any party to such contract or his privies.

[Sections 13 to 22 relate mainly to the collection of the tax provided for in Section 3.—Author.]

APPENDIX B

THE GRAIN FUTURES ACT

[PUBLIC—No. 331—67TH CONGRESS.]

[H. R. 11843.]

An Act For the prevention and removal of obstructions and burdens upon interstate commerce in grain, by regulating transactions on grain future exchanges, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, This Act shall be known by the short title of "The Grain Futures Act."

SEC. 2. (a) For the purposes of this Act "contract of sale" shall be held to include sales, agreements of sale, and agreements to sell. The word "person" shall be construed to import the plural or singular, and shall include individuals, associations, partnerships, corporations, and trusts. The word "grain" shall be construed to mean wheat, corn, oats, barley, rye, flax, and sorghum. The term "future delivery," as used herein, shall not include any sale of cash grain for deferred shipment or delivery. The words "board of trade" shall be held to include and mean any exchange or association, whether incorporated or unincorporated, of persons who shall be engaged in the business of buying or selling grain or receiving the same for sale on consignment. The act, omission, or failure of any official, agent, or other person acting for any individual, association, partnership, corporation, or trust within the scope of his employment or office shall be deemed the act, omission, or failure of such individual, association, partnership, corporation, or trust, as well as of such official, agent, or other person. The words "interstate commerce" shall be construed to mean commerce between any State, Territory, or possession, or the District of Columbia, and any place outside thereof; or between points within the same State, Territory, or possession, or the District of Columbia, but through any place outside thereof, or within any Territory or possession, or the District of Columbia.

(b) For the purposes of this Act (but not in any wise limiting the foregoing definition of interstate commerce) a transaction in respect to any article shall be considered to be in interstate commerce if such article is part of that current of commerce usual in the grain trade whereby grain and grain products and by-products thereof are sent from one State with the expectation that they will end their transit, after purchase, in another, including, in addition to cases with-

in the above general description, all cases where purchase or sale is either for shipment to another State, or for manufacture within the State and the shipment outside the State of the products resulting from such manufacture. Articles normally in such current of commerce shall not be considered out of such commerce through resort being had to any means or device intended to remove transactions in respect thereto from the provisions of this Act. For the purpose of this paragraph the word "State" includes Territory, the District of Columbia, possession of the United States, and foreign nation.

SEC. 3. Transactions in grain involving the sale thereof for future delivery as commonly conducted on boards of trade and known as "futures" are affected with a national public interest; that such transactions are carried on in large volume by the public generally and by persons engaged in the business of buying and selling grain and the products and by-products thereof in interstate commerce; that the prices involved in such transactions are generally quoted and disseminated throughout the United States and in foreign countries as a basis for determining the prices to the producer and the consumer of grain and the products and by-products thereof and to facilitate the movements thereof in interstate commerce; that such transactions are utilized by shippers, dealers, millers, and others engaged in handling grain and the products and by-products thereof in interstate commerce as a means of hedging themselves against possible loss through fluctuations in price; that the transactions and prices of grain on such boards of trade are susceptible to speculation, manipulation, and control, and sudden or unreasonable fluctuations in the prices thereof frequently occur as a result of such speculation, manipulation, or control, which are detrimental to the producer or the consumer and the persons handling grain and products and by-products thereof in interstate commerce, and that such fluctuations in prices are an obstruction to and a burden upon interstate commerce in grain and the products and by-products thereof and render regulation imperative for the protection of such commerce and the national public interest therein.

SEC. 4. It shall be unlawful for any person to deliver for transmission through the mails or in interstate commerce by telegraph, telephone, wireless, or other means of communication any offer to make or execute, or any confirmation of the execution of, or any quotation or report of the price of, any contract of sale of grain for future delivery on or subject to the rules of any board of trade in the United States, or for any person to make or execute such contract of sale, which is or may be used for (a) hedging any transaction in interstate commerce in grain or the products or by-products thereof, or (b) determining the price basis of any such transaction in interstate commerce, or (c) delivering grain sold, shipped, or received in interstate commerce for the fulfillment thereof, except—

(a) Where the seller is at the time of the making of such contract the owner of the actual physical property covered thereby, or is the grower thereof, or in case either party to the contract is the owner or renter of land on which the same is to be grown, or is an association of such owners, or growers of grain, or of such owners or renters of land; or

(b) Where such contract is made by or through a member of a board of trade which has been designated by the Secretary of Agriculture as a "contract market," as hereinafter provided, and if such contract is evidenced by a record in writing which shows the date, the parties to such contract and their addresses, the property covered and its price, and the terms of delivery: *Provided*, That each board member shall keep such record for a period of three years from the date thereof, or for a longer period if the Secretary of Agriculture shall so direct, which record shall at all times be open to the inspection of any representative of the United States Department of Agriculture or the United States Department of Justice.

SEC. 5. The Secretary of Agriculture is hereby authorized and directed to designate any board of trade as a "contract market" when, and only when, such board of trade complies with and carries out the following conditions and requirements:

(a) When located at a terminal market where cash grain of the kind specified in the contracts of sale of grain for future delivery to be executed on such board is sold in sufficient volumes and under such conditions as fairly to reflect the general value of the grain and the differences in value between the various grades of such grain, and where there is available to such board of trade official inspection service approved by the Secretary of Agriculture for the purpose.

(b) When the governing board thereof provides for the making and filing by the board or any member thereof, as the Secretary of Agriculture may direct, of reports in accordance with the rules and regulations, and in such manner and form and at such times as may be prescribed by the Secretary of Agriculture, showing the details and terms of all transactions entered into by the board, or the members thereof, either in cash transactions consummated at, on, or in a board of trade, or transactions for future delivery, and when such governing board provides, in accordance with such rules and regulations, for the keeping of a record by the board or the members of the board of trade, as the Secretary of Agriculture may direct, showing the details and terms of all cash and future transactions entered into by them, consummated at, on, or in a board of trade, such record to be in permanent form, showing the parties to all such transactions, including the persons for whom made, any assignments or transfers thereof, with the parties thereto, and the manner in which said transactions are fulfilled, discharged, or terminated. Such record shall be required to be kept for a period of

three years from the date thereof, or for a longer period if the Secretary of Agriculture shall so direct, and shall at all times be open to the inspection of any representative of the United States Department of Agriculture or United States Department of Justice.

(c) When the governing board thereof provides for the prevention of dissemination by the board or any member thereof, of false or misleading or knowingly inaccurate reports concerning crop or market information or conditions that affect or tend to affect the price of grain in interstate commerce.

(d) When the governing board thereof provides for the prevention of manipulation of prices or the cornering of any grain by the dealers or operators upon such board.

(e) When the governing board thereof does not exclude from membership in, and all privileges on, such board of trade, any duly authorized representative of any lawfully formed and conducted cooperative association of producers having adequate financial responsibility which is engaged in cash grain business, if such association has complied, and agrees to comply, with such terms and conditions as are or may be imposed lawfully on other members of such board: *Provided*, That no rule of a contract market shall forbid or be construed to forbid the return on a patronage basis by such cooperative association to its bona fide members of moneys collected in excess of the expense of conducting the business of such association.

(f) When the governing board provides for making effective the final orders or decisions entered pursuant to the provisions of paragraph (b) of section 6 of this Act.

SEC. 6. Any board of trade desiring to be designated a "contract market" shall make application to the Secretary of Agriculture for such designation and accompany the same with a showing that it complies with the above conditions, and with a sufficient assurance that it will continue to comply with the above requirements.

(a) A commission composed of the Secretary of Agriculture, the Secretary of Commerce, and the Attorney General is authorized to suspend for a period not to exceed six months or to revoke the designation of any board of trade as a "contract market" upon a showing that such board of trade has failed or is failing to comply with any of the above requirements or is not enforcing its rules of government made a condition of its designation as set forth in section 5. Such suspension or revocation shall only be after a notice to the officers of the board of trade affected and upon a hearing: *Provided*, That such suspension or revocation shall be final and conclusive unless within fifteen days after such suspension or revocation by the said commission such board of trade appeals to the circuit court of appeals for the circuit in which it has its principal place of business by filing with the clerk of such court a written petition praying that the order of the said commission be set aside or modified in the manner stated in the

petition, together with a bond in such sum as the court may determine, conditioned that such board of trade will pay the costs of the proceedings if the court so directs. The clerk of the court in which such a petition is filed shall immediately cause a copy thereof to be delivered to the Secretary of Agriculture, chairman of said commission, or any member thereof, and the said commission shall forthwith prepare, certify, and file in the court a full and accurate transcript of the record in such proceedings, including the notice to the board of trade, a copy of the charges, the evidence, and the report and order. The testimony and evidence taken or submitted before the said commission duly certified and filed as aforesaid as a part of the record shall be considered by the court as the evidence in the case. The proceedings in such cases in the circuit court of appeals shall be made a preferred cause and shall be expedited in every way. Such a court may affirm or set aside the order of the said commission or may direct it to modify its order. No such order of the said commission shall be modified or set aside by the circuit court of appeals unless it is shown by the board of trade that the order is unsupported by the weight of the evidence or was issued without due notice and a reasonable opportunity having been afforded to such board of trade for a hearing, or infringes the Constitution of the United States, or is beyond the jurisdiction of said commission: *Provided further*, That if the Secretary of Agriculture shall refuse to designate as a contract market any board of trade that has made application therefor, then such board of trade may appeal from such refusal to the commission described therein, consisting of the Secretary of Agriculture, the Secretary of Commerce, and the Attorney General of the United States, with the right to appeal as provided for in other cases in this section, the decision on such appeal to be final and binding on all parties interested.

(b) If the Secretary of Agriculture has reason to believe that any person is violating any of the provisions of this Act, or is attempting to manipulate the market price of any grain in violation of the provisions of section 5 hereof, or of any of the rules or regulations made pursuant to its requirements, he may serve upon such person a complaint stating his charge in that respect, to which complaint shall be attached or contained therein a notice of hearing, specifying a day and place not less than three days after the service thereof, requiring such person to show cause why an order should not be made directing that all contract markets until further notice of the said commission refuse all trading privileges thereon to such person. Said hearing may be held in Washington, District of Columbia, or elsewhere, before the said commission, or before a referee designated by the Secretary of Agriculture, who shall cause all evidence to be reduced to writing and forthwith transmit the same to the Secretary of Agriculture as chairman of the said commission. That for the purpose of securing effective enforcement of the provisions of this Act the provisions, in-

cluding penalties, of section 12 of the Interstate Commerce Act, as amended, relating to the attendance and testimony of witnesses, the production of documentary evidence, and the immunity of witnesses, are made applicable to the power, jurisdiction, and authority of the Secretary of Agriculture, the said commission, or said referee in proceedings under this Act, and to persons subject to its provisions. Upon evidence received the said commission may require all contract markets to refuse such person all trading privileges thereon for such period as may be specified in said order. Notice of such order shall be sent forthwith by registered mail or delivered to the offending person and to the governing boards of said contract markets. After the issuance of the order by the commission, as aforesaid, the person against whom it is issued may obtain a review of such order or such other equitable relief as to the court may seem just by filing in the United States circuit court of appeals of the circuit in which the petitioner is doing business a written petition praying that the order of the commission be set aside. A copy of such petition shall be forthwith served upon the commission by delivering such copy to its chairman or to any member thereof, and thereupon the commission shall forthwith certify and file in the court a transcript of the record theretofore made, including evidence received. Upon the filing of the transcript the court shall have jurisdiction to affirm, to set aside, or modify the order of the commission, and the findings of the commission as to the facts, if supported by the weight of evidence, shall in like manner be conclusive. In proceedings under paragraphs (a) and (b) the judgment and decree of the court shall be final, except that the same shall be subject to review by the Supreme Court upon certiorari, as provided in section 240 of the Judicial Code.

SEC. 7. Any board of trade that has been designated a contract market in the manner herein provided may have such designation vacated and set aside by giving notice in writing to the Secretary of Agriculture requesting that its designation as a contract market be vacated, which notice shall be served at least ninety days prior to the date named therein as the date when the vacation of designation shall take effect. Upon receipt of such notice the Secretary of Agriculture shall forthwith order the vacation of the designation of such board of trade as a contract market, effective upon the day named in the notice, and shall forthwith send a copy of the notice and his order to all other contract markets. From and after the date upon which the vacation became effective the said board of trade can thereafter be designated again a contract market by making application to the Secretary of Agriculture in the manner herein provided for an original application.

SEC. 8. For the efficient execution of the provisions of this Act, and in order to provide information for the use of Congress, the Secretary of Agriculture may make such investigations as he may deem necessary to ascertain the facts regarding the operations of boards of trade,

whether prior or subsequent to the enactment of this Act, and may publish from time to time, in his discretion, the result of such investigation and such statistical information gathered therefrom as he may deem of interest to the public, except data and information which would separately disclose the business transactions of any person and trade secrets or names of customers: *Provided*, That nothing in this section shall be construed to prohibit the Secretary of Agriculture from making or issuing such reports as he may deem necessary relative to the conduct of any board of trade or of the transactions of any person found guilty of violating the provisions of this Act under the proceedings prescribed in section 6 of this Act: *Provided further*, That the Secretary of Agriculture in any report may include the facts as to any actual transaction. The Secretary of Agriculture, upon his own initiative or in cooperation with existing governmental agencies, shall investigate marketing conditions of grain and grain products and by-products, including supply and demand for these commodities, cost to the consumer, and handling and transportation charges. He shall likewise compile and furnish to producers, consumers, and distributors, by means of regular or special reports, or by such methods as he may deem most effective, information respecting the grain markets, together with information on supply, demand, prices, and other conditions in this and other countries that affect the markets.

SEC. 9. Any person who shall violate the provisions of section 4 of this Act, or who shall fail to evidence any contract mentioned in said section by a record in writing as therein required, or who shall knowingly or carelessly deliver for transmission through the mails or in interstate commerce by telegraph, telephone, wireless, or other means of communication false or misleading or knowingly inaccurate reports concerning crop or market information or conditions that affect or tend to affect the price of grain in interstate commerce, shall be deemed guilty of a misdemeanor, and, upon conviction thereof, be fined not more than \$10,000 or imprisoned for not more than one year, or both, together with the costs of prosecution.

SEC. 10. If any provision of this Act or the application thereof to any person or circumstances is held invalid, the validity of the remainder of the Act and of the application of such provision to other persons and circumstances shall not be affected thereby.

SEC. 11. No fine or imprisonment shall be imposed for any violation of this Act occurring before the first day of the second month following its passage.

SEC. 12. The Secretary of Agriculture may cooperate with any department or agency of the Government, any State, Territory, District, or possession, or department, agency, or political subdivision thereof, or any person; and shall have the power to appoint, remove, and fix the compensation of such officers and employees, not in conflict with existing law, and make such expenditures for rent outside the District

THE GRAIN FUTURES ACT

469

of Columbia, printing, telegrams, telephones, law books, books of reference, periodicals, furniture, stationery, office equipment, travel, and other supplies and expenses as shall be necessary to the administration of this Act in the District of Columbia and elsewhere, and there are hereby authorized to be appropriated, out of any moneys in the Treasury not otherwise appropriated, such sums as may be necessary for such purposes.

Approved, September 21, 1922.

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INDEX

- Accommodation trades, as a price factor, 343
"Account sales," 170
Accounting, inter-broker, 216
Approach, to study of future trading, 6
Arbitraders, characteristics of, 139
Arbitrating: as a market-making function, 423; as a price factor, 340; *see* Spreading
Arbitration of disputes, 158
"At the market" orders, 175
- Barley futures, trade in, 33, 54
Barnard's Act, Sir John, 113
Basis: as influenced by credit needs, 404; as influenced by inverted market, 406; trading in, 403
Basis gain or loss: expected and unexpected, 386, 405; nature of, 385, 405
Bibliography, 470
Board of Trade of the City of Chicago, *see* Chicago Board of Trade
Brokerage license, 347
Brokerage offices, 122
Brokers: often traders, 134; types of, 133
Bucket shops: attitude of exchanges regarding, 358; laws prohibiting, 356; rules regarding, 155
Bulk handling of grain in relation to development of future trading, 24
Business conduct of members, 154
Butter futures: development of trading, 48; volume of trading, 55
- Call cotton: nature of, 400; speculation in, 402
Cash contract, contrasted with future, 105, 109
Cash and future prices: compared, 254; determined by factors common to both, 259; effect of deliverable supplies on, 308; effect of difference system on, 300; effect of spreading on, 257; influence of cost of carrying cash commodity, on, 267; influence of grades on, 266; reasons for variations between, 265, 273; seasonal variation in, 269-73; why similar in price movement, 256
Character of cotton, *see* Classification of cotton, character
Chicago, growth as a grain center, 15
Chicago Board of Trade: adoption of rules for futures, 29; early grain grading by, 26; early opposition to future trading upon, 29; forms used in clearing, 210; importance of, 9; organization of trade in cotton futures upon, 44
Chicago Live Stock Exchange, trade in live hog futures upon, 53
Chicago Mercantile Exchange: trade in butter futures, 48, 55; trade in egg futures, 48, 55; trade in potato futures, 53
Chicago Open Board of Trade: development of, 33; volume of future trading, 54
Classification of cotton: 81, character, 88; grade, 83; staple, 87; U. S. standards, 84
Clearing: affected by margins, 188; between brokers, 185; complete method adopted, 198; confirmation of transactions, 204; by direct settlement, 189; handling of deliveries, 213; legality of, 221; money balances, 195; need for,

- 186; original margin required, 208; the process of, 211; purchase and sales sheet used in, 205; resistance to, 199; results in daily adjustment of profits and losses, 212; by ring settlement, 190; by transfer, 191; by transferable notice, 193; use of call variation margin in, 211; use of the recapitulation sheet in, 207; use of settlement price in, 196; variation margin used in, 207, 209
- Clearing house: financial responsibility of, 215; form of organization, 201; relation to its members, 202
- Cocoa futures: development of trading, 49; volume of trading, 55
- Coffee futures: early trading in, 46; volume of future trading, 55
- Commercial difference system: 284, 288; limitations of, 297
- Commission broker, work of, 133
- Commission rules of exchanges, 156
- Commodity markets: inter-memberships, 123; *see* Exchanges
- Confirmation of future trades, 204
- Consignment of grain, 67
- Continuous market, 419
- Contract, future: for cotton, 100; for grain, 99
- Cooperation in relation to future trading, 10
- Cooperative marketing of cotton, 92
- Copper futures: development of trading, 51; volume of trading, 55
- Corn: seasonal variation in the price of, 248, 272; supply-price relationship for, 244
- Corners: due to deliverable supplies, 317; minimized by difference systems, 277
- Cost of production as a price factor, 234
- Cotton: buying price at country points, 264; classification of, *see* Classification of cotton; consumption of American crop, 80; demand inelastic, 238; extent of hedging in, 411; international trade, 80; production, 79; sale by description, 97; sale by sample, 96; sale by type, 96; seasonal variation in the price of, 248, 272; supply-price relationship for, 243
- Cotton futures: contract, 100; early development in New York, 40; early growth of trading, 42; early standardization of the contract, 42; influence of Civil War speculation, 38; importance of trade in, 9; "to arrive" sale as a basis for, 37
- Cotton Futures Act: analyzed, 285; text, 456
- Cotton marketing: cooperative associations, 92; through a factor, 93; by the farmer, 89; local buyers, 90; local trading, 91; by merchants, 95; the sorting of cotton, 93; warehousing, 94
- Cotton merchant, *see* Cotton marketing, by merchants
- Cotton trade, development of, 35
- Cottonseed futures: development of trading, 52; volume of trading, 55
- Cottonseed meal futures: development of trading, 52; volume of trading, 55
- Cottonseed oil futures: development of trading, 47; volume of trading, 55
- Country elevator hedging, 390
- Credit improved by hedging, 380
- "Crossed orders," as a price factor, 344

- Curb trading in grain futures, 18
- Definition of future contract, 118
- Deliverable supplies: artificial factors affecting, 313; out of channel of shipment, 310; out of condition, 311; effect of distant delivery, 321; effect on price, 308, 312; ideal conditions, 306; natural factors affecting, 309; remedies, 318; "squeezes," 316
- Deliveries: in clearing trades, 213; cotton future contracts, 108; by customers, 173; on grain future contracts, 106
- Delivery notice, *see* Transferable notice as a method of clearing
- Delivery period, evolution in grain futures, 27
- Demand: elastic and inelastic, 237; for grain and cotton, 237; as a price factor, 235; a schedule of prices, 236
- Departments of exchanges, 153
- Difference systems: to avoid corners, 277; based on some physical factor, 299; to broaden market, 278; commercial, 284, 288; to compensate fairly buyer and seller, 279; Cotton Futures Act, 286; fixed, 280; limitations of commercial differences, 297; limitations of fixed differences, 290; limitations of periodic differences, 294; occasion for, 277; periodic, 283
- Direct settlement as a clearing method, 189
- Duluth Board of Trade: development of, 33; trade in flaxseed futures, 47, 55; volume of future trading, 54
- Elevators, terminal, *see* Terminal elevators
- Exchanges: conditions of membership, 150; the Governing Board, 151; incorporated, 148; intermembership, 123; legal status, 148; location and number of, 119; objects of association, 149; the outlook for, 453; rules of, 154; standing committees, 152
- Extent of future trading, 8
- Extent of hedging: in cotton, 411; in grain, 413
- Factor, cotton sales through a, 93
- Fixed difference system: 280; limitations of, 290
- Flaxseed futures: development of trading, 47; volume of trading, 55
- Floor broker, work of, 133
- Forecasting, *see* Price forecasting
- Forecasting services, as a trading facility, 130
- Forestalling, engrossing, regrating, 352
- Future and cash prices, *see* Cash and future prices
- Future contract: based on a "basis" grade, 102; contrasted with spot and "to arrive" contract, 104, 109; for cotton, 100; definition of, 118; essential elements of, 101; an executory contract, 110; for grain, 99; highly standardized, 104; and intent to deliver, 114; its use essential, 115; legality of, 112; not a commodity, 444; right to actual commodity, 111; for seller's option, 103; size of, 101
- Future prices: as affected by accommodation trades, 343; as affected by arbitraging, 340; as affected by "crossed orders," 344; as affected by "general public" trading, 338; as affected by hedging, 340; as affected by large-scale trading, 332; as affected by the manner of trading, 329; as affected by matched orders, 342;

- as affected by rumors and "gossip," 331; as affected by scalping, 342; as affected by the scalping of orders, 345; as a basis for cash prices, 262; compared to cash prices, 254; control by license of brokers, 347; control by limiting lines, 349; control by separating broker-trader function, 348; do not determine cash prices, 259; precede cash prices, 259; as related to volume of trading, 328
- Future trading: approach to study of, 6; bills in Congress, 6; compared to trading in stocks, 9; conditions essential to, 451; and the cooperative movement, 10, 453; declared valid by State laws, 361; developed from "to arrive" trading, 20; early growth in volume of, 30; early opposition by the Chicago Board of Trade, 29; evolution of, 28; extent of, 8; on the floor of the exchange, 163; and the grading of grain, 25; importance of trade in grain and cotton, 9; large-scale trading influences price, 332; limits to study of, 7; a political football, 5; relation to risk and insurance, 4; relation to speculation, 4; some special problems of, 448; volume of hedging commitments, 414; volume influenced by margins, 327; since the World War, 48; for the year 1929, 54
- Future Trading Act, 367
- Futures, supply indefinite, 325
- Gambling: in relation to commercial dealings, 353; and speculation, 450
- General level of prices as a price factor, 235
- "General public" as a price factor, 338
- General rules of exchanges, 155
- "Give up" used in hedging, 394
- "Gossip": in its effect on future prices, 331; as a trading facility, 129
- Governing Board of exchange, 151
- Governmental regulation: background of regulation, 351; of bucket shops, 356; development of Federal legislation, 364; Federal agitation, 363; the Future Trading Act, 367; the Grain Futures Act, 368, 370, 372; Illinois statute, 361; of option trading, 370; on short selling, 355; by States, 354
- Governmental reports, as a trading facility, 125
- Grading of cotton, *see* Classification of cotton, grading
- Grading of grain: exchange regulations, 76; as a factor in developing future trading, 25; Federal supervision, 77; State regulation, 76
- Grain: demand inelastic, 238; extent of hedging in, 413; methods of sale by country elevators, 66; methods of sale by farmers, 64; sale by consignment, 67; sale "on track," 68; sale on terminal markets, 73; sale "to arrive," 68; terminal markets for, 70
- Grain balance, 218
- Grain futures: contract, 99; curb trading in, 18; early growth in volume of trading in, 30; evolution of trade in, 28; influence of speculation in developing, 16; importance of trade in, 9; product of early American grain trade, 13
- Grain Futures Act: its constitutionality, 368; its operation, 372; its principal provisions, 370; text of act, 462
- Grain Trade Association of the

- San Francisco Chamber of Commerce, *see* San Francisco Chamber of Commerce
- Hedgers, characteristics of, 142
- Hedging: in advance of requirements, 399; and basis gain or loss, 385; competitive advantage in, 379; among country elevators, 390; does not create a balanced market, 417; do hedgers benefit?, 409; extent of in cotton, 411; extent of in grain, 413; by flour mills, 416; illustration of, 384; to increase credit, 380; net commitments, 388; origin of, 377; as a price factor, 340; protection supplied by, 387; a shifting of risk, 382; and straddling, 397; theory of, 381; "to arrive" transactions, 391; use of call contract, 400; use of a "give up," 394; value of, 445
- Hide futures: development of trading, 52; volume of trading, 55
- Hutchinson, B. P., as a grain trader, 18
- Illinois statute on future trading, 361
- "In store" sale of grain, terminal markets, 74
- Insurance, relation to risk, 3
- Intention to deliver upon future contracts: 114; laws requiring, 359
- Intermembership of commodity markets, 123
- Inverted market, 406
- Irregular trading, 154
- Job-lot trades, 182
- Journals, trade, as a trading facility, 128
- Kansas City Board of Trade: development of, 33; importance of, 9; volume of future trading, 54
- Legal status of exchanges, 148
- Legality of clearing process, 221
- Legality of future contract, 112
- License brokers, 347
- Limitation of trading positions, 349
- Limited orders, 176, 180
- Live hog futures, trade in, 53
- Liverpool, early cotton trading in, 36-40
- Liverpool Cotton Association, early developments of, 43
- Liverpool Cotton Brokers' Association, 38
- Los Angeles Grain Exchange, development of, 33; volume of future trading, 54
- Margin: call variation used in clearing trades, 211; card, 172; original, used in clearing trades, 208; variation, used in clearing trades, 207, 209
- Margins: in future contract, 103; as an influence upon the volume of future trading, 327; occasioned by an order, 167; related to clearing, 188
- Market reports, 124
- Market-making function: arbitraging, 423; continuous market, 419; news and quotations, 420; price forecasting, 434; price leveling, 427; a sensitive market, 426; short selling, 421; value of, 447
- Markets: information focused on exchange, 251; future, highly competitive, 250; nature of, 250; organized, *see* Exchanges
- Matched orders, as a price factor, 342
- Membership on exchanges, 150
- Memphis Merchants Exchange: development of trading in futures, 52; volume of trading, 55
- Merchants' Exchange of St. Louis *see* St. Louis Merchants' Exchange

- Mill feed futures, trade in, 52, 55
- Milwaukee Chamber of Commerce: development of, 32; volume of future trading, 54
- Minneapolis Chamber of Commerce: adopts complete clearing plan, 198; development of, 33; volume of future trading, 54; importance of, 9; trade in flaxseed futures, 47, 55
- Molasses futures, trade in, 53
- Money balances, clearing of, 195
- National Raw Silk Exchange, trade in silk futures, 51, 55
- News and quotations, 420
- News as a trading facility, 124
- New Orleans Cotton Exchange: development of, 44; importance of, 9; trade in cottonseed oil futures, 47, 55; volume of future trading, 55
- New York Cocoa Exchange, trade in cocoa futures, 49, 55
- New York Coffee and Sugar Exchange: development of, 45; importance of, 9; trade in molasses futures, 53; trade in sugar futures, 46
- New York Cotton Exchange: early development of, 43; importance of, 9; trade in wool top futures, 53
- New York Hide Exchange, trade in hide futures, 52, 55
- New York Mercantile Exchange; trade in butter futures, 49, 55; trade in egg futures, 49, 55
- New York Metal Exchange: development of market, 51; trade in metals, 55
- New York Produce Exchange: development of, 32; trade in cottonseed oil futures, 47, 55; volume of future trading, 54, 55
- Oats: seasonal variation in the price of, 248, 272; supply-price relationship for, 243
- Oats futures, importance of trade in, 9
- Omaha Grain Exchange: development of, 33; volume of future trading, 54
- "On track" sale of grain: country points, 68; terminal markets, 74
- Option ledger, customers, 172
- Option trading, regulation of, 370
- Orders: "at-the-market," 175; discretionary, 180; execution of, 162; job-lots, 182; legal conditions, 165; limited, 176, 180; margins required, 167; nature of, 161; short sales, 181; spreading, 179; stop-loss, 178; subject to rules and usages, 165; switching, 180, 182
- Organized commodity markets, *see* Exchanges
- Original margin used in clearing trades, 208
- Periodic difference system: limitations of, 294; nature of, 283
- Pit, of trading floor, 121
- Portland Grain Exchange: began future trading, 33; volume of future trading, 54
- Potato futures, trade in, 53
- Price: a comparison of cash and future prices, 254; as influenced by cost of production, 234; as influenced by demand, 235; as influenced by the general level of prices, 235; as influenced by supply, 239, 242; a record of market opinion, 253; seasonal variations in, 246
- Price forecasting: 434; clearer indication of, 435; not accurate months in advance, 436; only a few weeks in advance, 438
- Price leveling: 427; of a list of

- commodities, 432; tests of, 428; for wheat and cotton, 429
- Private reports, as a trading facility, 127
- Private wire systems, 122
- Production of cotton, *see* Cotton, production
- Provision futures, evolution of trading in, 30
- Purchase sheet used in clearing trades, 205
- Recapitulation sheet used in clearing trades, 207
- Regulation of exchanges: *see* Governmental regulation; *see* Rules of exchanges.
- "Ring" settlement as a clearing method, 190
- Risk: and insurance, 2; nature of, 2; as non-productive, 351
- Rubber Exchange of New York, trade in rubber futures, 50, 55
- Rubber futures: development of trading, 50; volume of trading, 55
- Rules of exchanges: arbitration, 158; bucketshops, 155; commissions, 156; general, 155; irregular trading, 154
- Rumors, as a price factor, 331
- Rye futures: importance of trade in, 9; trade in, 54
- St. Louis Merchants' Exchange: development of, 33; volume of future trading, 54; trade in mill-feed futures, 52, 55
- Sales sheet used in clearing trades, 205
- San Francisco Chamber of Commerce: organized, 33; volume of future trading, 54
- Scalpers, characteristic of, 135
- Scalping, as a price factor, 342
- Scalping orders, as a price factor, 345
- Seasonal price movements: 246, 269; for wheat, cotton, oats and corn, 248, 272
- "Seat" on an exchange, 151
- Seattle Grain Exchange: began future trading, 33; volume of future trading, 54
- Seller's option, in future contracts, 103
- Sensitive market, 426
- Settlement price, used in clearing, 196
- Short selling: by borrowing warehouse receipts, 22; form of order, 180; legality of, 112; as a market-making function, 421; State legislation regarding, 355
- Signals used in trading, 164
- Silk futures: development of trading, 51; volume of trading, 55
- Silver futures, plans for, 51
- Southern delivery, 321
- Speculation: in call cotton, 402; in cotton during the Civil War, 38; early forms in cotton, 36, 39; and future trading, 4; and gambling, 450; importance of, 1; influence in developing future trading in grain, 16
- Speculators, characteristic of, 137
- Spot contract contrasted with future, 104
- Spot prices, built up from future prices, 262
- Spreaders, characteristics of, 139
- Spreading, effect on cash and future prices, 257
- "Squeeze," due to deliverable supplies, 316
- Standardization of cotton future contract, 42
- Standing committees of exchanges, 152
- Staple, in commercial differences, 289
- Staple cotton, 87

- State regulation: development of, 355; of future trading, 354
- Statement of customer's account, 171
- Stocks, trade in, compared to trade in futures, 9
- Stop-loss orders, 178
- Straddlers, characteristics of, 139
- Straddling: and hedging, 397; *see* Spreading
- Street book used in accounting, 216
- Sugar futures: importance of trade in, 9; trading in, 46; volume of future trading, 55
- Supply: in agricultural commodities, 240; as a price factor, 239; as price factor measured, 242
- Terminal elevators: 71; functions of, 72
- Terminal markets, grain, 70
- Terminology, market, 183
- Theory of hedging, 381
- Ticker news and tape as a trading facility, 128
- Time contracts, 105
- Tin futures: development of trading, 51; volume of trading, 55
- "To arrive" contract: contrasted with future, 104; forerunner of future contract, 20; standardization of, 24; used as a speculative medium, 21
- "To arrive" sale: in cotton, 37; in grain, 68
- "To arrive" transactions, hedging of, 391
- Toledo Board of Trade: origin of, 45; volume of future trading, 55
- Traders: classification of, 135; as hedgers, 142; as scalpers, 136; as speculators, 137; as spreaders or straddlers, 139
- Trading in basis, 403
- Trading floor, of Chicago Board of Trade, 121
- Transfer method of clearing, 191
- Transferable notice as a method of clearing, 193
- Variation margin used in clearing trades, 207, 209
- Volume of future trading: compared to receipts and visible supply, 326; indefinite, 325; as influenced by margin requirements, 327; related to price variations, 328; in wheat, 326; used for hedging, 414
- Warehouse Act, United States, 95
- Warehouse receipt: for cotton, 175; for grain, 174
- Warehousing of cotton, *see* Cotton marketing, warehousing
- Wheat: commercial importance of, 60; movement of the crop, 61; seasonal variation in the price of, 248, 272; spot price at terminal markets, 262; supply-price relationship for, 244
- Wheat futures: importance of, 10; volume of trading, 326
- Wool top futures, trade in, 53