

HARVARD ECONOMIC STUDIES

- I. The English Patents of Monopoly. By William H. Price.
- II. The Lodging House Problem in Boston. By Albert B. Wolfe.
- III. The Stannaries: A Study of the English Tin Miner. By George R. Lewis.
- IV. Railroad Reorganization. By S. Daggett.
- V. Wool-Growing and the Tariff. By Chester W. Wright.
- VI. Public Ownership of Telephones on the Continent of Europe. By A. N. Holcombe.
- VII. The History of the British Post Office. By J. C. Hemmeon.
- VIII. The Cotton Manufacturing Industry of the United States. By M. T. Copeland.
- IX. The History of the Grain Trade in France. By Abbott Payson Usher.
- X. Corporate Promotions and Reorganizations. By A. S. Dewing.
- XI. The Anthracite Coal Combination in the United States. By Eliot Jones.
- XII. Some Aspects of the Tariff Question. By F. W. Taussig.
- XIII. The Evolution of the English Corn Market From the Twelfth to the Eighteenth Century. By N. S. B. Gras.
- XIV. Social Adaptation: A Study in the Development of the Doctrine of Adaptation as a Theory of Social Progress. By L. M. Bristol.
- XV. The Financial History of Boston, from May 1, 1822, to January 31, 1909. By C. F. Huse.
- XVI. Essays in the Earlier History of American Corporations. By J. S. Davis. 2 vols.
- XVII. The State Tax Commission. By H. L. Lutz.
- XVIII. The Early English Customs System. By N. S. B. Gras.
- XIX. Trade and Navigation between Spain and the Indies in the Time of the Hapsburgs. By C. H. Haring.
- XX. The Italian Emigration of Our Times. By R. F. Foerster.
- XXI. The Mesta: A Study in Spanish Economic History, 1273-1836. By Julius Klein.
- XXII. Argentine International Trade under Inconvertible Paper Money: 1880-1900. By J. H. Williams.
- XXIII. The Organization of the Boot and Shoe Industry in Massachusetts before 1875. By Blanche E. Hazard.
- XXIV. Economic Motives. By Z. C. Dickinson.
- XXV. Monetary Theory before Adam Smith. By Arthur E. Monro.
- XXVI. Canada's Balance of International Indebtedness, 1900-1913. By Jacob Viner.
- XXVII. The History of the United States Post Office to the Year 1829. By W. E. Rich.
- XXVIII. The Theory of International Prices. By James W. Angell.
- XXIX. Forests and Sea Power. By Robert G. Albion.
- XXX. Banking Theories in the United States before 1860. By Harry E. Miller.
- XXXI. Karl Marx's Interpretation of History. By Mandell Morton Bober.
- XXXII. Grain Growers' Coöperation in Western Canada. By Harald S. Patton.
- XXXIII. The Assignats. By S. E. Harris.
- XXXIV. Economic and Social History of an English Village. By N. S. B. Gras and E. C. Gras.
- XXXV. Direct Taxation in Austria. By John V. Van Sickle.
- XXXVI. The Greenbacks and Resumption of Specie Payments, 1862-1879. By D. C. Barrett.
- XXXVII. The Street Railway in Massachusetts. By Edward S. Mason.
- XXXVIII. The Theory of Monopolistic Competition. By Edward Chamberlin.
- XXXIX. Interregional and International Trade. By Bertil Ohlin.
- XL. The French International Accounts, 1880-1913. By Harry D. White.
- XLI. Twenty Years of Federal Reserve Policy. By S. E. Harris. 2 vols.
- XLII. The Illinois Central Railroad and Its Colonization Work. By Paul W. Gates.
- XLIII. American Treasure and the Price Revolution in Spain, 1501-1650. By Earl J. Hamilton.
- XLIV. German Monetary Theory, 1905-1933. By Howard S. Ellis.
- XLV. Wages in Eighteenth Century England. By Elizabeth W. Gilboy.
- XLVI. The Theory of Economic Development. By J. A. Schumpeter.
- XLVII. The Supply and Control of Money in the United States. By L. Currie.
- XLVIII. British International Gold Movements and Banking Policy, 1881-1913. By W. Edwards Beach.
- XLIX. State Control of Local Finance in Massachusetts. By Royal S. Van de Woestyne.
- L. Fluctuations in American Business, 1790-1860. By Walter B. Smith and Arthur H. Cole.
- LI. Money, Prices, and Wages in Valencia, Aragon, and Navarre, 1351-1500. By Earl J. Hamilton.
- LII. The Development of the Business Corporation in England, 1800-1867. By B. C. Hunt.
- LIII. Exchange Depreciation. By S. E. Harris.
- LIV. A Study of Fluid Milk Prices. By John M. Cassels.
- LV. Location Theory and the Shoe and Leather Industries. By Edgar M. Hoover, Jr.
- LVI. Federal Subsidies to the Provincial Governments in Canada. By J. A. Maxwell.
- LVII. Studies in Massachusetts Town Finance. By Eugene E. Oakes.
- LVIII. Market Control in the Aluminum Industry. By Donald H. Wallace.
- LIX. The New York Bond Market, 1920-1930. By Charles Cortez Abbott.
- LX. The Commercial Paper House in the United States. By Albert O. Greef.

HARVARD UNIVERSITY PRESS

HARVARD ECONOMIC STUDIES
VOLUME LIX

**THIS STUDY HAS BEEN AIDED BY A GRANT FROM THE HARVARD
UNIVERSITY COMMITTEE ON RESEARCH IN THE SOCIAL SCIENCES,
AND ITS PUBLICATION HAS BEEN FINANCED BY THAT COMMITTEE**

**THE STUDIES IN THIS SERIES ARE PUBLISHED BY THE DEPARTMENT OF
ECONOMICS OF HARVARD UNIVERSITY, WHICH, HOWEVER, ASSUMES
NO RESPONSIBILITY FOR THE VIEWS EXPRESSED**

COPYRIGHT, 1937
BY THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE

XG529.7311.N3

G7
68845

PRINTED AT THE HARVARD UNIVERSITY PRESS
CAMBRIDGE, MASS., U.S.A.

PREFACE

THE AID which the author has received from various sources in the preparation of this study has been of great assistance to him, and he welcomes this opportunity to express his gratitude and appreciation. He is much indebted to the National City Bank of New York and to the former National City Company for the way in which their facilities were placed at his disposal in the early stages of this study, and for the advice and suggestions given him by various members of their staffs. The collection and analysis of many of the statistics used has been made much simpler than it would otherwise have been through the courtesies accorded the author by the *Annalist*, the *Bond Buyer*, the Brookmire Economic Service, the *Commercial and Financial Chronicle*, the Harvard Economic Society, Moody's Investors' Service, the Standard Statistics Company, and, particularly, the *Wall Street Journal*. The help of Professor W. L. Crum has been of the greatest value, as has that of Professor C. J. Bullock, whose aid the author feels he can not overestimate. The form of this essay would have been very different without the generous interest and benevolent criticism of Professor Bullock, and such merits as it possesses would have been much smaller without the inspiration afforded by consultation with him. The author also wishes to thank those other persons who read portions of the manuscript during its preparation, whose suggestions he has found most helpful. Financial grants from the Committee on Research in the Social Sciences of Harvard University have assisted the author at times when he would have found further progress in this undertaking difficult, and have made the publication of this study possible. Finally, the author is under great obligation to his wife for her assistance in correction of the proofs, for the interest which she has taken in his work, and for her diligence in preventing intrusions upon the time which he has had for research.

CHARLES CORTEZ ABBOTT

Adams House
Cambridge, Massachusetts
March, 1937

CONTENTS

I.	INTRODUCTION	3
II.	THE BOND MARKET	5
	The position of the bond market in the economic structure, 5. Characteristics of a market, 6. The distinctive features of the New York bond market, 9. The component parts of the supply of bonds and the demand for bonds, 12. The price-determining forces of the bond market, 15. The influence of bond yields upon new flotations and upon the flow of funds seeking investment, 18.	
III.	MARKET MOVEMENTS — 1920–1930	27
	The basic statistical series used in this study, 27. The cyclical movement of the bond market in the years 1920–1930, 39. The particular fluctuations in this movement, 40.	
IV.	1919	43
	The financial situation in 1919, 43. Relaxation of war-time restrictions in the financial world, 45. Government finance after the Armistice, 46. The rise of stock prices and increase of business activity, 49. The behavior of the bond market, 49. Other factors affecting the financial situation, 50. Summary, 54.	
V.	1920–1922	56
	The important elements of this period, 56. The financial situation during the first nine months of 1920, 58. The financial situation from November, 1920, to the summer of 1922, 59. The behavior of the bond market in 1920, 61. The business revival in the summer of 1921, 64. The bond market during the revival, 66. Treasury operations, 68. Particular factors affecting the government bond market, 72. Summary, 73.	
VI.	1922–1924	76
	The important elements of this period, 76. The financial situation from the third quarter of 1922 to the third quarter of 1923, 77. The financial situation from the last quarter of 1923 to the latter part of 1924, 82. The bond market from the third quarter of 1922 to the third quarter of 1923, 84. The bond market from the last quarter of 1923 to the end of 1924, 86. Treasury policy, 88. Summary, 90.	

VII.	1925-1926	94
	Relative stability the chief characteristic of the bond market in this period, 94. The financial situation in 1925 and 1926, 95. The beginning of the five-year decline in long term interest rates, 99. The behavior of the bond market, 101. The decline of commercial loans, 104. Summary, 106.	
VIII.	1927	108
	The peak of the post-war bond market, 108. The financial situation in 1927, 109. Gold movements, money in circulation, and Federal Reserve policy, 109. The behavior of the stock market, 113. The retirement of the Second Liberty Loan, 114. The behavior of the bond market, 115. Summary, 116.	
IX.	1928-1930	117
	The behavior of the stock market the dominant element in this period, 117. The financial situation from December 1927 to May 1928, and the behavior of the bond market, 119. The financial situation in the latter half of 1928 and the behavior of the bond market, 124. The boom of 1929, 128. Federal Reserve policy in the first half of 1929, 129. The culmination of the boom, 135. The temporary recovery in the spring of 1930, 137. The decline subsequent to May, 1930, 138.	
X.	CONCLUSION	142
	The post-war decade and the bond market, 142. The bases for the increase in the volume of bond issues from 1920 through 1927, 143. The relationship of short and long term interest rates from 1919 through 1930, 146. The supply of funds available for investment in the bond market from 1920 through 1930, 148. Bond issues of business corporations and the total supply of new issues from 1920 through 1930, 152. The relationship of certain economic magnitudes, 1920-1930, 154.	
	APPENDICES	163
	BIBLIOGRAPHY	215
	INDEX	221

CHARTS

- I. Bond Yields, 1919-1930—by months 28
Average Yield of Moody's Aaa Bonds.
Average Yield of Moody's Baa Bonds.
Chart drawn from figures in Appendix A.
- II. Bonds Traded on the New York Stock Exchange, 1920-
1930—by months 29
Bonds Traded—Actual Volume.
Bonds Traded—Twelve-Month Moving Average.
Chart drawn from figures in Appendix B.
- III. Number of Bond Issues, 1923-1932—by months 30
Bond Issues—Actual Number.
Bond Issues—Corrected for Seasonal Fluctuation.
Chart drawn from figures in Appendix C.
- IV. Number of Bond Issues, 1923-1932—by quarters 31
Bond Issues—Actual Number.
Bond Issues—Corrected for Seasonal Fluctuation.
Chart drawn from figures in Appendix C.
- V. Volume of Bond Issues, 1919-1931—by quarters 32
Total Issues.
New Capital Issues.
Chart drawn from figures in Appendix D.
- VI. Volume of "Net" Bond Issues, 1920-1930—by quarters 35
Total Issues.
"Net" Bond Issues.
Chart drawn from figures in Appendix E.
- VII. Volume of Bond Issues, 1920-1930, Corrected for Seasonal
Fluctuation—by quarters 36
Total Issues.
New Capital Issues.
"Net" Issues.
Chart drawn from figures in Appendix F.

- VIII. Annual Totals of the "Net" Volume of Bond Issues, 1920-1930, Compared with Year-to-Year Changes in Bond Holdings of Various Types of Buyers 38
 Chart drawn from figures in Appendix G.
- IX. Indices of Business Activity and Wholesale Commodity Prices, 1919-1930—by months 57
 Federal Reserve Bank of New York Volume of Trade Index, I—Third Revision of Sept. 28, 1931.
 Business Index of the Brookmire Economic Service, Revised as of November 1930.
 United States Bureau of Labor Revised Wholesale Commodity Price Index, Relative 1926 = 100.
 Chart drawn from figures in Appendix H.
- X. Short Term Interest Rates, 1919-1930—by months . . . 59
 Average Daily Rates for Time Money, 90 Day, Mixed Collateral.
 Average Daily Rates for Prime 90 Day Commercial Paper.
 Weighted Average of Rates Charged Customers by Banks in New York City.
 Discount Rate of the Federal Reserve Bank of New York.
 Chart drawn from figures in Appendix I.
- XI. Money in Circulation, Stock of Money Gold, Federal Reserve Bank Credit, and Credit of Reporting Member Banks in Leading Cities, 1919-1931—by months . . . 60
 Money in Circulation.
 Stock of Money Gold, end of month figures.
 Federal Reserve Bank Credit, monthly averages of daily figures.
 Total Federal Reserve Credit.
 Bills Discounted.
 United States Government Securities.
 Bills Bought in the Open Market.
 Credit of Reporting Member Banks in Leading Cities, monthly averages of weekly figures.
 Total Loans and Investments.
 Loans on Securities.
 Total Investments.
 Chart drawn from figures in Appendix J.

CHARTS

xiii

XII. Total Volume of Bond Issues, 1919-1931 — by quarters 67

Classified as:

- United States Government Issues.
- Foreign Government Issues.
- Federal Farm Loan Issues.
- War Finance Corporation Issues.
- Municipal Issues.
- Corporate Issues.

Chart drawn from figures in Appendix L.

XIII. Different Classes of Total Volume of Bond Issues as Percentages of the Total, 1919-1931 — by quarters . . . 69

Classified as:

- United States Government Issues.
- Foreign Government Issues.
- Federal Farm Loan Issues.
- War Finance Corporation Issues.
- Municipal Issues.
- Corporate Issues.

Chart drawn from figures in Appendix L.

XIV. Stock Issues and Prices, 1919-1930 118

- Total Issues — by quarters.
- New Capital Issues — by quarters.
- Stock Prices, Standard Statistics Company Average, in relatives, 1926 = 100 — by months.

Chart drawn from figures in Appendix N.

XV. Growth of All Corporate Bond Issues and of "Net" Corporate Bond Issues, Compared with Growth of Interest Payments and Net Incomes of All Corporations Paying Income Taxes, and with Mills' Index of Production of Capital Elements, 1920-1930 155

- Annual Totals of All Corporate Bond Issues, in relatives, 1926 = 100.
- Annual Totals of "Net" Corporate Bond Issues, in relatives, 1926 = 100.
- Annual Totals of Interest Payments of All Corporations Paying Income Taxes, in relatives, 1926 = 100.
- Annual Totals of Net Incomes of All Corporations Paying Income Taxes, in relatives, 1926 = 100.
- Mills' Index of Production of Capital Elements, Shifted to 1926 = 100.

Chart drawn from figures in Appendix O.

- XVI. Growth of All Bond Issues and of "Net" Bond Issues,
1920-1930 160
 Annual Totals of All Bond Issues, in relatives, 1926
 = 100.
 Annual Totals of "Net" Bond Issues, in relatives,
 1926 = 100.
 Chart drawn from figures in Appendix P.
- XVII. Seasonal Indices 212
 The Volume of Total, New Capital, and "Net" Bond
 Issues — by quarters.
 Including Increases and Decreases in the Govern-
 ment Debt.
 Excluding Increases and Decreases in the Govern-
 ment Debt.
 The Volume of Bonds Called and Matured — by
 quarters.
 Including Decreases in the Government Debt.
 Excluding Decreases in the Government Debt.
 The Number of Bond Issues.
 By months.
 By quarters.
 Charts drawn from figures in Appendix Q.

APPENDICES

- A. Bond Yields, 1919-1930, by months 165
 Average Yield of Moody's Aaa Bonds.
 Average Yield of Moody's Baa Bonds.
- B. Bonds Traded on the New York Stock Exchange, 1920-1930,
 by months 169
 Bonds Traded on the New York Stock Exchange.
 Twelve-Month Moving Average of Bonds Traded.
 Average Volume of Bonds Traded per Year in Ten-Year
 Periods, 1911-1929.
- C. Number of Bond Issues, 1923-1932, by months and by quarters 173
 Number of Bond Issues, by months.
 Number of Bond Issues, Corrected for Seasonal Fluctua-
 tion, by months.
 Number of Bond Issues, by quarters.
 Number of Bond Issues, Corrected for Seasonal Fluctua-
 tion, by quarters.
- D. Volume of Bond Issues, 1919-1931, by quarters 176
 Commercial and Financial Chronicle Figures for New
 Capital Issues.
 Commercial and Financial Chronicle Figures for Refund-
 ing Issues.
 Government Issues of Maturity Longer than One Year.
 Total Issues.
- E. "Net" Volume of Bonds Issued, 1920-1930, by quarters . . . 178
 Total Issues.
 Total Issues Called and Matured.
 "Net" Issues.
- F. Total Issues, New Capital Issues, and "Net" Issues Corrected
 for Seasonal Fluctuation, 1920-1930, by quarters 180
- G. Annual Totals of "Net" Bond Issues, 1920-1930, Compared
 with Year-to-Year Changes in Bond Holdings of Various
 Types of Buyers, 1920-1930 182
 Annual Totals of "Net" Issues.
 Year-to-Year Changes in Bond Holdings of:
 Life Insurance Companies.
 Savings Banks.
 City Banks.
 Country Banks.

- H. Indices of Business Activity and Wholesale Commodity Prices, 1919-1930, by months 184
- Harvard Economic Society Index of Business, Curve B, as changed by the Revisions of May 1923, April 1926, and November 1928.
 - Federal Reserve Bank of New York Volume of Trade Index, I—Third Revision, Dated September 28, 1931.
 - Brookmire Economic Service Business Index, Revised as of November 1930.
 - United States Bureau of Labor Revised Wholesale Commodity Price Index-Relative, 1926 = 100.
- I. Short Term Interest Rates, 1919-1930, by months 188
- Average Daily Rates for Prime 90-Day Commercial Paper.
 - Average Daily Time-Money Rates, 90-Day Mixed Collateral.
 - Weighted Average of Rates Charged Customers by Banks in New York City.
 - Discount Rate of the Federal Reserve Bank of New York.
- J. Federal Reserve Bank Credit, Credit of Reporting Member Banks in Leading Cities, Stock of Money Gold, and Money in Circulation, 1919-1931, by months 192
- Credit of Reporting Member Banks in Leading Cities.
 - Total Loans and Investments.
 - Total Investments.
 - Security Loans.
 - Federal Reserve Bank Credit.
 - Total Federal Reserve Credit.
 - Bills Bought in the Open Market.
 - United States Government Securities.
 - Bills Discounted.
 - Stock of Money Gold.
 - Money in Circulation.
- K. Net Gold Movements, 1919-1931, by months 195
- Earmarkings included after 1922.
- L. Total Issues, 1919-1931, Classified by Types, by quarters . . . 196
- Classified as:
 - Corporate Issues.
 - Municipal Issues.
 - Foreign Government Issues.
 - United States Government Issues.
 - Federal Farm Loan Issues.
 - War Finance Corporation Issues.
 - Different Classes as Percentages of the Total.
- M. Number of Individual Bond Issues Listed on the New York Stock Exchange, 1919-1930 204

APPENDICES

xvii

- N. Stock Prices, by months, and Stock Issues, by quarters, 1919-1930 205
 Standard Statistics Company Average of Stock Prices, in relatives, 1926 = 100.
 Commercial and Financial Chronicle Figures for New Capital Stock Issues.
 Commercial and Financial Chronicle Figures for Total Stock Issues.
- O. Volume of All Corporate Bond Issues, Volume of "Net" Corporate Bond Issues, Mills' Index of Production of Capital Elements, Interest Payments and Net Incomes of All Corporations Paying Income Taxes, 1919-1930, by years . . . 209
 Volume of Corporate Bond Issues, in millions.
 Volume of Corporate Bond Issues, in relatives, 1926 = 100.
 Volume of "Net" Corporate Bond Issues, in millions.
 Volume of "Net" Corporate Bond Issues, in relatives, 1926 = 100.
 Mills' Index of Production of Capital Elements, Shifted to 1926 = 100.
 Interest Payments of All Corporations Paying Income Taxes, in millions.
 Interest Payments of All Corporations Paying Income Taxes, in relatives, 1926 = 100.
 Net Incomes of All Corporations Paying Income Taxes, in millions.
 Net Incomes of All Corporations Paying Income Taxes, in relatives, 1926 = 100.
- P. Volume of All Bond Issues and of "Net" Bond Issues, in millions, and in relatives, 1926 = 100, 1919-1930, by years 210
- Q. Seasonal Fluctuation in the Number and Volume of Bond Issues and in the Volume of Bonds Called and Matured, 1920-1930 211

APPENDICES

APPENDIX A
BOND YIELDS, 1919-1930, BY MONTHS *

Date	Average Yield of Moody's Aaa Bonds	Average Yield of Moody's Baa Bonds	
1919	Jan.	5.35	7.12
	Feb.	5.35	7.20
	Mar.	5.39	7.15
	Apr.	5.44	7.23
	May	5.39	7.09
	June	5.40	7.04
	July	5.44	7.06
	Aug.	5.56	7.13
	Sept.	5.60	7.27
	Oct.	5.54	7.34
	Nov.	5.66	7.54
	Dec.	5.73	7.77
1920	Jan.	5.75	7.78
	Feb.	5.86	7.94
	Mar.	5.92	7.97
	Apr.	6.04	8.17
	May	6.25	8.39
	June	6.38	8.39
	July	6.34	8.52
	Aug.	6.30	8.39
	Sept.	6.22	8.14
	Oct.	6.05	7.99
	Nov.	6.08	8.21
	Dec.	6.26	8.56
1921	Jan.	6.14	8.50
	Feb.	6.08	8.42
	Mar.	6.08	8.55
	Apr.	6.06	8.53
	May	6.11	8.52
	June	6.18	8.56
	July	6.12	8.48
	Aug.	5.99	8.51
	Sept.	5.93	8.34
	Oct.	5.84	8.34
	Nov.	5.60	7.88
	Dec.	5.50	7.61
1922	Jan.	5.34	7.70
	Feb.	5.29	7.55
	Mar.	5.23	7.45
	Apr.	5.15	7.14

* Source of figures: Moody's Investors Service.

THE NEW YORK BOND MARKET

Appendix A (Continued)

Date	Average Yield of Moody's Aaa Bonds	Average Yield of Moody's Baa Bonds
May	5.13	6.89
June	5.08	6.97
July	5.00	6.89
Aug.	4.96	6.85
Sept.	4.93	6.75
Oct.	4.97	6.78
Nov.	5.09	6.98
Dec.	5.08	7.02
1923 Jan.	5.04	6.98
Feb.	5.07	6.97
Mar.	5.18	7.09
Apr.	5.22	7.17
May	5.16	7.17
June	5.15	7.21
July	5.14	7.34
Aug.	5.08	7.38
Sept.	5.12	7.38
Oct.	5.11	7.46
Nov.	5.09	7.40
Dec.	5.09	7.38
1924 Jan.	5.09	7.24
Feb.	5.09	7.14
Mar.	5.10	7.08
Apr.	5.08	7.03
May	5.04	6.97
June	4.99	6.82
July	4.95	6.67
Aug.	4.95	6.69
Sept.	4.95	6.73
Oct.	4.92	6.62
Nov.	4.94	6.54
Dec.	4.95	6.46
1925 Jan.	4.95	6.44
Feb.	4.95	6.36
Mar.	4.91	6.36
Apr.	4.87	6.41
May	4.83	6.30
June	4.83	6.18
July	4.87	6.20
Aug.	4.90	6.24
Sept.	4.87	6.20
Oct.	4.85	6.17
Nov.	4.84	6.17
Dec.	4.85	6.15

APPENDICES

Appendix A (Continued)

Date	Average Yield of Moody's Aaa Bonds	Average Yield of Moody's Baa Bonds	
1926	Jan.	4.82	6.09
	Feb.	4.77	6.02
	Mar.	4.79	6.05
	Apr.	4.74	5.98
	May	4.71	5.86
	June	4.72	5.80
	July	4.71	5.79
	Aug.	4.72	5.81
	Sept.	4.72	5.79
	Oct.	4.71	5.81
	Nov.	4.68	5.77
	Dec.	4.68	5.68
1927	Jan.	4.66	5.61
	Feb.	4.67	5.59
	Mar.	4.62	5.54
	Apr.	4.58	5.48
	May	4.57	5.50
	June	4.58	5.55
	July	4.60	5.55
	Aug.	4.56	5.48
	Sept.	4.54	5.42
	Oct.	4.51	5.38
	Nov.	4.49	5.35
	Dec.	4.46	5.32
1928	Jan.	4.46	5.35
	Feb.	4.46	5.33
	Mar.	4.46	5.32
	Apr.	4.46	5.33
	May	4.49	5.42
	June	4.57	5.55
	July	4.61	5.58
	Aug.	4.64	5.61
	Sept.	4.61	5.59
	Oct.	4.61	5.58
	Nov.	4.58	5.55
	Dec.	4.61	5.60
1929	Jan.	4.62	5.63
	Feb.	4.66	5.66
	Mar.	4.70	5.79
	Apr.	4.69	5.80
	May	4.70	5.80
	June	4.77	5.94
	July	4.77	5.95
	Aug.	4.79	6.04

THE NEW YORK BOND MARKET

Appendix A (Continued)

Date	Average Yield of Moody's Aaa Bonds	Average Yield of Moody's Baa Bonds
Sept.	4.80	6.12
Oct.	4.77	6.11
Nov.	4.76	6.03
Dec.	4.67	5.95
1930 Jan.	4.66	5.92
Feb.	4.69	5.89
Mar.	4.62	5.73
Apr.	4.60	5.70
May	4.60	5.72
June	4.57	5.78
July	4.52	5.77
Aug.	4.47	5.73
Sept.	4.42	5.65
Oct.	4.42	5.94
Nov.	4.47	6.25
Dec.	4.52	6.71

APPENDIX B
BONDS TRADED ON THE NEW YORK STOCK EXCHANGE, 1920-1930,
BY MONTHS *

Date	Bonds Traded on the New York Stock Exchange	Twelve-Month Moving-Average of Bonds Traded †
<i>(in millions)</i>		
1920 Jan.	362	346
Feb.	300	344
Mar.	310	341
Apr.	342	341
May	367	342
June	320	340
July	238	329
Aug.	215	324
Sept.	286	318
Oct.	332	309
Nov.	320	302
Dec.	562	291
1921 Jan.	296	291
Feb.	225	291
Mar.	227	292
Apr.	231	296
May	243	298
June	311	306
July	243	294
Aug.	228	304
Sept.	338	311
Oct.	347	328
Nov.	412	347
Dec.	418	358
1922 Jan.	417	360
Feb.	315	365
Mar.	420	372
Apr.	461	368
May	382	369
June	333	358
July	307	342
Aug.	310	331
Sept.	296	328
Oct.	365	314
Nov.	272	296
Dec.	222	286

* Source of figures: *Analyst*, seriatim.

† Average centered on the first of the month.

THE NEW YORK BOND MARKET

Appendix B (Continued)

Date	Bonds Traded on the New York Stock Exchange	Twelve-Month Moving-Average of Bonds Traded †	
<i>(in millions)</i>			
1923	Jan.	288	279
	Feb.	261	268
	Mar.	268	256
	Apr.	242	244
	May	268	232
	June	244	228
	July	178	229
	Aug.	158	235
	Sept.	157	232
	Oct.	225	236
	Nov.	227	238
	Dec.	237	238
1924	Jan.	354	250
	Feb.	235	265
	Mar.	282	278
	Apr.	282	287
	May	279	292
	June	395	306
	July	349	319
	Aug.	314	320
	Sept.	263	327
	Oct.	291	329
	Nov.	395	329
	Dec.	388	335
1925	Jan.	364	326
	Feb.	319	318
	Mar.	313	310
	Apr.	276	308
	May	346	306
	June	284	293
	July	265	284
	Aug.	218	279
	Sept.	240	272
	Oct.	262	268
	Nov.	243	271
	Dec.	270	262
1926	Jan.	304	261
	Feb.	242	256
	Mar.	269	264
	Apr.	306	249
	May	239	246
	June	267	258

† Average centered on the first of the month.

APPENDICES

171

Appendix B (Continued)

Date	Bonds Traded on the New York Stock Exchange	Twelve-Month Moving-Average of Bonds Traded †
	(in millions)	
July	214	261
Aug.	182	268
Sept.	192	271
Oct.	227	275
Nov.	276	275
Dec.	311	279
1927 Jan.	382	282
Feb.	278	283
Mar.	317	284
Apr.	303	288
May	284	290
June	261	289
July	215	286
Aug.	245	278
Sept.	242	276
Oct.	255	276
Nov.	263	276
Dec.	277	275
1928 Jan.	290	275
Feb.	242	274
Mar.	320	270
Apr.	307	266
May	272	264
June	260	260
July	206	254
Aug.	181	251
Sept.	199	246
Oct.	235	236
Nov.	220	229
Dec.	207	226
1929 Jan.	248	220
Feb.	181	232
Mar.	213	238
Apr.	216	239
May	229	249
June	236	255
July	304	261
Aug.	258	258
Sept.	215	259
Oct.	352	271
Nov.	291	274
Dec.	277	274

† Average centered on the first of the month.

THE NEW YORK BOND MARKET

Appendix B (Continued)

Date	Bonds Traded on the New York Stock Exchange	Twelve-Month Moving-Average of Bonds Traded †
(in millions)		
1930 Jan.	208	274
Feb.	201	264
Mar.	348	256
Apr.	268	258
May	221	250
June	226	241
July	191	240
Aug.	170	244
Sept.	226	244
Oct.	268	234
Nov.	187	222
Dec.	266	224

† Average centered on the first of the month.

AVERAGE VOLUME OF BONDS TRADED PER YEAR IN TEN-YEAR PERIODS,
1911-1929 *

1911-20	1,552,369,260
1912-21	1,813,894,534
1913-22	2,156,342,637
1914-23	2,381,577,708
1915-24	2,717,489,882
1916-25	2,961,716,717
1917-26	3,148,522,662
1918-27	3,375,442,527
1919-28	3,460,079,552
1920-29	3,384,959,504

* Source of figures: *New York Stock Exchange Year Book, 1929-30.*

APPENDIX C

NUMBER OF BOND ISSUES, 1923-1932, BY MONTHS AND BY QUARTERS *

Date	By Months		By Quarters	
	Actual Totals	Corrected for Seasonal Fluctuation	Actual Totals	Corrected for Seasonal Fluctuation
1923	Jan.	94	91	
	Feb.	76	92	275
	Mar.	105	101	
	Apr.	61	57	
	May	106	99	288
	June	121	122	
	July	103	103	
	Aug.	59	75	238
	Sept.	76	78	
	Oct.	87	78	
	Nov.	127	113	314
	Dec.	100	99	328
1924	Jan.	96	93	
	Feb.	95	114	316
	Mar.	125	120	
	Apr.	120	111	
	May	129	121	388
	June	139	140	
	July	160	160	
	Aug.	85	108	369
	Sept.	124	128	
	Oct.	151	136	
	Nov.	126	112	437
	Dec.	160	158	455
1925	Jan.	167	162	
	Feb.	149	180	463
	Mar.	147	141	
	Apr.	155	144	
	May	152	142	479
	June	172	174	
	July	177	177	
	Aug.	112	142	428
	Sept.	139	143	
	Oct.	163	147	
	Nov.	169	151	481
	Dec.	149	148	500
1926	Jan.	138	134	
	Feb.	107	129	421

* Source of figures: A special compilation by the Standard Statistics Company.

THE NEW YORK BOND MARKET

Appendix C (Continued)

Date	By Months		By Quarters	
	Actual Totals	Corrected for Seasonal Fluctuation	Actual Totals	Corrected for Seasonal Fluctuation
Mar.	176	169		
Apr.	162	150		
May	147	137	481	450
June	172	174		
July	166	166		
Aug.	109	138	415	442
Sept.	140	144		
Oct.	156	141		
Nov.	146	130	440	459
Dec.	138	137		
1927 Jan.	197	191		
Feb.	156	188	544	528
Mar.	191	184		
Apr.	165	153		
May	199	186	527	491
June	163	165		
July	207	207		
Aug.	139	176	478	509
Sept.	132	136		
Oct.	160	144		
Nov.	184	164	476	496
Dec.	132	131		
1928 Jan.	82	80		
Feb.	189	239	419	406
Mar.	148	142		
Apr.	142	131		
May	249	231	541	505
June	150	152		
July	162	162		
Aug.	96	121	348	370
Sept.	90	93		
Oct.	135	122		
Nov.	122	109	341	356
Dec.	84	83		
1929 Jan.	156	151		
Feb.	97	117	340	330
Mar.	87	84		
Apr.	90	83		
May	79	74	253	236
June	84	85		
July	85	85		
Aug.	59	75	190	210
Sept.	46	47		

APPENDICES

Appendix C (Continued)

Date	By Months		By Quarters	
	Actual Totals	Corrected for Seasonal Fluctuation	Actual Totals	Corrected for Seasonal Fluctuation
1930	Oct.	51	46	
	Nov.	29	26	151
	Dec.	71	70	
	Jan.	72	70	
	Feb.	51	61	210
	Mar.	87	84	
	Apr.	88	82	
	May	63	59	211
	June	60	61	
	July	81	81	
	Aug.	28	35	166
	Sept.	57	59	
1931	Oct.	47	42	
	Nov.	38	34	113
	Dec.	28	28	
	Jan.	50	49	
	Feb.	32	39	137
	Mar.	55	53	
	Apr.	49	45	
	May	39	37	128
	June	40	40	
	July	27	27	
	Aug.	27	34	74
	Sept.	20	21	
1932	Oct.	7	6	
	Nov.	15	13	35
	Dec.	13	13	
	Jan.	13	12	
	Feb.	9	11	38
	Mar.	16	15	
	Apr.	14	13	
	May	9	8	28
	June	5	5	
	July	11	11	
	Aug.	15	19	38
	Sept.	12	12	
Oct.	18	16		
Nov.	9	8	38	
Dec.	11	11		

APPENDIX D
VOLUME OF BOND ISSUES, 1919-1931, BY QUARTERS
(in Millions)

Year	<i>C. & F. Chronicle</i> New Capital Figures	<i>C. & F. Chronicle</i> Refunding Figures	Government Issues of Maturity of Longer than One Year *	Total Issues
1919	514	189		703
	910	79	4,498	5,487
	1,031	241	657	1,929
	1,107	299		1,406
1920	578	109		687
	735	39		774
	533	128		661
	754	63		817
1921	720	134		854
	758	319	311	1,388
	766	59	391	1,216
	1,063	105		1,168
1922	1,067	184	1,220	2,471
	1,334	316	335	1,985
	690	241	487	1,418
	640	140	1,233	2,013
1923	1,167	210	367	1,744
	934	211	668	1,813
	547	161		708
	997	26		1,023
1924	1,049	208		1,257
	1,311	134		1,445
	1,076	224		1,300
	1,328	157	757	2,242
1925	1,356	259	340	1,955
	1,348	164		1,512
	1,039	254		1,293
	1,263	133		1,396
1926	1,329	184	619	2,132
	1,467	307		1,774

* Figures from the Annual Reports of the Secretary of the Treasury.

APPENDICES

177

Appendix D (Continued)

Year	C. & F. Chronicle New Capital Figures	C. & F. Chronicle Refunding Figures	Government Issues of Maturity of Longer than One Year *	Total Issues
1927	1,111	128		1,239
	1,256	330		1,586
1928	1,583	468	1,360	3,411
	1,790	614	467	2,871
	1,178	207	647	2,032
	1,730	589		2,319
1929	1,404	681		2,085
	1,551	521	607	2,679
	758	48	359	1,156
	1,331	71		1,402
1930	1,106	204		1,310
	1,250	221		1,471
	737	125		862
	1,004	27		1,031
1931	1,739	128		1,867
	1,881	182		2,063
	959	229		1,188
	915	76		991
1931	1,158	328	594	2,080
	845	414	871	2,130
	583	96	800	1,479
	210	39		249

* Figures from the Annual Reports of the Secretary of the Treasury.

APPENDIX E

"NET" VOLUME OF BONDS ISSUED, 1920-1930, BY QUARTERS *
(in Millions)

Year	Total Issues		
	Total Issues	Called and Matured	"Net" Issues
1920	687	578	109
	774	718	56
	661	915	254 †
	817	254	563
1921	854	516	338
	1,388	319	1,069
	1,216	669	547
	1,168	719	449
1922	2,471	489	1,982
	1,985	799	1,186
	1,418	762	656
	2,013	780	1,233
1923	1,744	597	1,147
	1,813	744	1,069
	708	771	63
	1,023	835	188
1924	1,257	379	878
	1,445	665	780
	1,300	672	628
	2,242	542	1,700
1925	1,955	698	1,257
	1,512	1,002	510
	1,293	779	514
	1,396	914	482
1926	2,132	690	1,442
	1,774	736	1,038
	1,239	1,261	22
	1,586	627	959
1927	3,411	1,410	2,001

* Source of figures: See footnote 7, p. 34.

† Italic figures are minus quantities.

APPENDICES

179

Appendix E (Continued)

Year	Total Issues		"Net" Issues
	Total Issues	Called and Matured	
1928	2,871	803	2,068
	2,032	838	1,194
	2,319	1,963	356
	2,085	1,099	986
	2,679	1,310	1,369
	1,156	1,742	586 †
1929	1,402	697	705
	1,310	579	731
	1,471	722	749
	862	945	83
1930	1,030	743	287
	1,867	644	823
	2,063	853	1,210
	1,188	600	588
	991	664	327

† Italic figures are minus quantities.

APPENDIX F

TOTAL ISSUES, NEW CAPITAL ISSUES, AND "NET" ISSUES CORRECTED FOR SEASONAL FLUCTUATION, 1920-1930, BY QUARTERS

(in Millions)

Year	Total Issues	New Capital Issues	"Net" Issues
1920	636	555	79
	666	655	46
	818	684	255 *
	861	718	1,061
1921	791	692	242
	1,195	675	882
	1,501	983	636
	1,230	1,012	847
1922	2,292	1,025	1,425
	1,710	1,190	970
	1,750	885	764
	2,140	610	2,314
1923	1,616	1,120	825
	1,566	833	882
	875	701	63
	1,080	948	355
1924	1,165	1,009	631
	1,245	1,170	640
	1,605	1,380	731
	2,360	1,263	3,210
1925	1,810	1,303	905
	1,305	1,201	418
	1,599	1,332	597
	1,470	1,202	910
1926	1,972	1,278	1,038
	1,530	1,309	851
	1,530	1,423	22
	1,670	1,197	1,809
1927	3,160	1,522	1,440

* Italic figures are minus quantities.

APPENDICES

181

Appendix F (Continued)

Year	Total Issues	New Capital Issues	"Net" Issues
	2,438	1,598	1,697
	2,502	1,510	1,389
	2,480	1,648	672
1928	1,930	1,351	710
	2,301	1,383	1,121
	1,440	973	586 *
	1,478	1,268	1,330
1929	1,211	1,062	526
	1,290	1,113	614
	1,064	945	83
	1,085	956	541
1930	1,729	1,670	592
	1,775	1,679	992
	1,468	1,228	684
	1,042	872	617

* Italic figures are minus quantities.

APPENDIX G

ANNUAL TOTALS OF "NET" BOND ISSUES, 1920-1930, COMPARED WITH
YEAR-TO-YEAR CHANGES IN BOND HOLDINGS OF LIFE INSURANCE COM-
PANIES, SAVINGS BANKS, CITY BANKS, COUNTRY BANKS *

(in Millions)

Year	Increases (or Decreases) during Year in Bond Holdings	Total "Net" Issues	Funds Necessary to Absorb "Net" Issues Furnished by Others
1920	Life Insurance Companies	95	
	Savings Banks	253	
	City Banks	641 †	
	Country Banks	69	
	Total	362	474
1921	Life Insurance Companies	21	
	Savings Banks	84	
	City Banks	134	
	Country Banks	7	
	Total	78	2,403
1922	Life Insurance Companies	246	
	Savings Banks	377	
	City Banks	1,141	
	Country Banks	386	
	Total	2,150	5,057
1923	Life Insurance Companies	99	
	Savings Banks	224	
	City Banks	248	
	Country Banks	246	
	Total	321	2,341
1924	Life Insurance Companies	231	
	Savings Banks	28	
	City Banks	902	
	Country Banks	257	
	Total	1,418	3,986
1925	Life Insurance Companies	278	
	Savings Banks	196	
	City Banks	131	
	Country Banks	210	
	Total	553	2,763

* Source of figures: See pp. 37-39.

† Italic figures are decreases in bond holdings.

APPENDICES

183

Appendix G (Continued)

Year	Increase (or Decrease) during Year in Bond Holdings	Total "Net" Issues	Funds Necessary to Absorb "Net" Issues Furnished by Others
1926	Life Insurance Companies	270	
	Savings Banks	129	
	City Banks	25 †	
	Country Banks	92	
	Total	466	3,417
1927	Life Insurance Companies	464	
	Savings Banks	33	
	City Banks	923	
	Country Banks	447	
	Total	1,867	5,619
1928	Life Insurance Companies	438	
	Savings Banks	236	
	City Banks	79	
	Country Banks	89	
	Total	842	2,474
1929	Life Insurance Companies	273	
	Savings Banks	21	
	City Banks	433	
	Country Banks	313	
	Total	494	1,684
1930	Life Insurance Companies	356	
	Savings Banks	93	
	City Banks	1,126	
	Country Banks	79	
	Total	1,654	2,948

† Italic figures are decreases in bond holdings.

APPENDIX H

INDICES OF BUSINESS ACTIVITY AND WHOLESALE COMMODITY PRICES, 1919-1930, BY MONTHS

Date	Harvard Economic Society — Index of Business Curve B *	Federal Reserve Bank of New York Volume of Trade Index, I †	Brookmire Economic Service — Business Index ‡	U. S. Bureau of Labor Revised Wholesale Com- modity Price Index, in Rela- tives, 1926=100	
1919	Jan.	— .88		98.0	134.4
	Feb.	—1.14		97.3	129.8
	Mar.	—1.46		94.0	131.3
	Apr.	—1.23		94.1	133.0
	May	— .40		93.3	135.3
	June	— .16		96.0	135.6
	July	.35		103.3	141.1
	Aug.	.54		105.8	144.3
	Sept.	.18		105.9	141.1
	Oct.	.26		103.8	141.6
	Nov.	.34		105.1	144.5
	Dec.	.76		107.3	150.5
1920	Jan.	1.07	109	111.0	157.7
	Feb.	.95	106	112.6	157.1
	Mar.	1.20	107	113.0	158.6
	Apr.	1.44	104	105.1	165.5
	May	1.76	105	104.7	167.2
	June	1.94	104	107.5	166.5
	July	2.02	104	106.0	165.8
	Aug.	1.68	103	105.8	161.4
	Sept.	1.50	99	100.1	155.2
	Oct.	.84	97	94.3	144.2
	Nov.	.35	97	90.6	133.4
	Dec.	— .01	95	86.1	120.7
1921	Jan.	— .58	92	78.9	114.0
	Feb.	— .88	90	80.3	104.9
	Mar.	—1.27	89	78.2	102.4
	Apr.	—1.25	90	78.7	98.9
	May	—1.09	90	78.8	96.2
	June	—1.14	91	79.3	93.4
	July	—1.42	91	77.9	93.4
	Aug.	—1.16	91	80.8	93.5
	Sept.	—1.08	91	79.4	93.4

* As changed by the revisions of May 1923, April 1926, and November 1928.

† Third revision, dated September 28, 1931.

‡ Revised as of November 1930.

APPENDICES

185

Appendix H (Continued)

Date	Harvard Economic Society—Index of Business Curve B *	Federal Reserve Bank of New York Volume of Trade Index, I †	Brookmire Economic Service—Business Index ‡	U. S. Bureau of Labor Revised Wholesale Commodity Price Index, in Relatives, 1926=100	
	Oct.	-1.09	92	81.8	94.1
	Nov.	-1.35	90	81.6	94.2
	Dec.	-1.44	91	80.5	92.9
1922	Jan.	-1.66	92	80.8	91.4
	Feb.	-1.34	93	82.9	92.9
	Mar.	-1.25	94	86.1	92.8
	Apr.	-1.20	95	86.4	93.2
	May	-.64	97	90.5	96.1
	June	-.38	100	97.4	96.3
	July	-.38	99	94.9	99.4
	Aug.	-.08	97	94.8	98.6
	Sept.	-.14	99	93.2	99.3
	Oct.	-.10	101	97.9	99.6
	Nov.	-.34	102	103.4	100.5
	Dec.	.10	104	105.8	100.7
1923	Jan.	.52	104	105.6	102.0
	Feb.	.71	104	103.3	103.3
	Mar.	.69	105	106.2	104.5
	Apr.	.72	106	109.5	103.9
	May	.98	106	109.4	101.9
	June	.62	104	111.7	100.3
	July	.20	102	108.3	98.4
	Aug.	.38	101	105.7	97.8
	Sept.	-.13	101	103.2	99.7
	Oct.	-.06	100	106.0	99.4
	Nov.	-.30	102	106.5	98.4
	Dec.	-.16	103	103.1	98.1
1924	Jan.	-.10	102	106.8	99.6
	Feb.	.22	103	107.0	99.7
	Mar.	.12	100	103.6	98.5
	Apr.	-.07	100	99.1	97.3
	May	-.29	98	93.0	95.9
	June	-.42	97	92.2	94.9
	July	-.36	97	90.1	95.6
	Aug.	.10	98	92.3	97.0
	Sept.	-.14	100	95.3	97.1
	Oct.	.20	100	97.8	98.2
	Nov.	.56	103	99.6	99.1
	Dec.	.79	103	100.9	101.5

* As changed by the revisions of May 1923, April 1926, and November 1928.

† Third revision, dated September 28, 1931.

‡ Revised as of November 1930.

THE NEW YORK BOND MARKET

Appendix H (Continued)

Date	Harvard Economic Society — Index of Business Curve B *	Federal Reserve Bank of New York Volume of Trade Index, I †	Brookmire Economic Service — Business Index ‡	U. S. Bureau of Labor Revised Wholesale Commodity Price Index, in Relatives, 1926=100	
1925	Jan.	1.36	104	103.0	102.9
	Feb.	1.32	105	103.9	104.0
	Mar.	1.51	104	104.9	104.2
	Apr.	.96	103	105.7	101.9
	May	1.04	103	102.8	101.6
	June	1.24	102	104.1	103.0
	July	1.40	103	103.8	104.3
	Aug.	1.47	103	100.9	103.9
	Sept.	1.40	104	102.5	103.4
	Oct.	1.48	106	111.7	103.6
	Nov.	1.43	108	113.2	104.5
	Dec.	1.31	108	113.5	103.4
1926	Jan.	1.65	107	110.4	103.6
	Feb.	1.28	105	109.1	102.1
	Mar.	1.12	104	108.5	100.4
	Apr.	1.07	104	108.7	100.1
	May	1.02	104	107.8	100.5
	June	1.00	104	109.2	100.5
	July	1.16	106	108.7	99.5
	Aug.	.84	106	110.1	99.0
	Sept.	.76	105	110.7	99.7
	Oct.	1.00	105	109.3	99.4
	Nov.	.55	104	109.2	98.4
	Dec.	.66	104	106.0	97.9
1927	Jan.	.82	104	107.6	96.6
	Feb.	.76	104	106.6	95.9
	Mar.	.72	105	107.7	94.5
	Apr.	.76	105	106.5	93.7
	May	.80	105	106.6	93.7
	June	.66	104	105.8	93.8
	July	.77	104	103.8	94.1
	Aug.	.64	105	104.2	95.2
	Sept.	.99	104	101.2	96.5
	Oct.	.90	102	98.8	97.0
	Nov.	.80	101	98.6	96.7
	Dec.	.84	101	97.9	96.8
1928	Jan.	.76	102	102.5	96.3
	Feb.	.66	102	104.0	96.4
	Mar.	.98	104	103.0	96.0

* As changed by the revisions of May 1923, April 1926, and November 1928.

† Third revision, dated September 28, 1931.

‡ Revised as of November 1930.

APPENDICES

187

Appendix H (Continued)

Date	Harvard Economic Society — Index of Business Curve B *	Federal Reserve Bank of New York Volume of Trade Index, I †	Brookmire Economic Service — Business Index ‡	U. S. Bureau of Labor Revised Wholesale Commodity Price Index, in Relatives, 1926=100
Apr.	1.23	105	104.2	97.4
May	1.50	106	105.8	98.6
June	1.52	105	106.3	97.6
July	1.14	104	107.7	98.3
Aug.	1.16	104	108.6	98.9
Sept.	1.46	107	111.2	100.1
Oct.	1.33	106	111.6	97.8
Nov.	1.20	107	109.3	96.7
Dec.	1.55	108	108.9	96.7
1929 Jan.	1.40	109	113.2	97.2
Feb.	1.31	109	112.8	96.7
Mar.	1.64	109	112.0	97.5
Apr.	1.54	108	114.2	96.8
May	1.26	108	114.3	95.8
June	1.39	109	115.0	96.4
July	2.04	110	114.2	98.0
Aug.	1.96	110	112.0	97.7
Sept.	1.74	109	110.8	97.5
Oct.	1.81	108	106.3	96.3
Nov.	1.28	102	98.4	94.4
Dec.	.56	98	93.9	94.2
1930 Jan.	.31	97	96.5	93.4
Feb.	.16	98	96.6	92.1
Mar.	.14	97	93.7	90.8
Apr.	.10	98	95.9	90.7
May	.02	96	92.9	89.1
June	-.33	95	90.4	86.8
July	-1.04	91	85.7	84.0
Aug.	-1.23	89	83.3	84.0
Sept.	-1.34	87	81.8	84.2
Oct.	-1.74	85	79.5	82.6
Nov.	-2.24	83	76.4	80.4
Dec.	-2.50	82	75.4	78.4

* As changed by the revisions of May 1923, April 1926, and November 1928.

† Third revision, dated September 28, 1931.

‡ Revised as of November 1930.

APPENDIX I
SHORT TERM INTEREST RATES, 1919-1930, BY MONTHS

Date	Average Daily Rates for Prime 90-Day Commercial Paper *	Average Daily Time-Money Rates 90-Day Mixed Col- lateral *	Weighted Average of Rates Charged Customers by Banks in New York City †	Discount Rate of the Federal Reserve Bank of New York ‡
1919	Jan. 5.50	5.25	5.54	4.75
	Feb. 5.31	5.25	5.36	4.75
	Mar. 5.31	5.50	5.46	4.75
	Apr. 5.25	5.50	5.56	4.75
	May 5.25	5.50	5.43	4.75
	June 5.50	6.00	5.45	4.75
	July 5.30	6.00	5.49	4.75
	Aug. 5.50	6.00	5.49	4.75
	Sept. 5.33	5.87	5.49	4.75
	Oct. 5.25	6.00	5.63	4.75
	Nov. 5.40	7.00	5.56	4.75
	Dec. 5.75	7.00	5.61	4.75
1920	Jan. 5.95	7.90	5.93	6.00 Jan. 23
	Feb. 6.62	9.25	6.00	6.00
	Mar. 6.87	8.87	6.00	6.00
	Apr. 6.65	8.50	6.09	6.00
	May 7.18	8.50	6.00	6.00
	June 7.75	8.50	6.00	6.00
	July 7.75	8.50	6.43	6.00
	Aug. 8.00	8.50	6.36	6.00
	Sept. 8.00	8.00	6.57	6.00
	Oct. 8.00	7.50	6.57	6.00
	Nov. 7.93	7.87	6.71	6.00
	Dec. 7.75	7.30	6.36	6.00
1921	Jan. 7.62	6.87	6.71	6.00
	Feb. 7.62	7.00	6.78	6.00
	Mar. 7.50	7.00	6.70	6.00
	Apr. 7.40	6.85	6.64	6.00
	May 6.87	6.75	6.68	6.00
	June 6.50	6.81	6.43	6.00
	July 6.25	6.00	6.21	5.50 July 21
	Aug. 6.37	6.00	6.25	5.50
	Sept. 6.25	5.80	6.11	5.00 Sept. 22
	Oct. 5.93	5.50	5.93	5.00

* Figures from *Facts and Figures*.

† Figures from *Annual Report of the Federal Reserve Board, 1930, p. 83*.

‡ Figures from *Standard Statistics Company Base Book; Facts and Figures*.

To July 21, 1921, the rate on 60/90 day commercial, agricultural, and livestock paper was used; thereafter the rate on all classes of paper.

APPENDICES

189

Appendix I (Continued)

Date	Average Daily Rates for Prime 90-Day Commercial Paper *	Average Daily Time-Money Rates 90-Day Mixed Col-lateral *	Weighted Average of Rates Charged Customers by Banks in New York City †	Discount Rate of the Federal Reserve Bank of New York ‡		
	Nov.	5.50	5.25	5.96	4.50	Nov. 3
	Dec.	5.50	5.00	5.68	4.50	
1922	Jan.	5.00	4.75	5.50	4.50	
	Feb.	4.82	5.00	5.48	4.50	
	Mar.	4.50	4.80	5.43	4.50	
	Apr.	4.31	4.50	5.46	4.50	
	May	4.31	4.25	5.06	4.50	
	June	4.10	4.25	4.93	4.00	June 22
	July	4.00	4.15	5.16	4.00	
	Aug.	4.00	4.15	4.66	4.00	
	Sept.	4.18	4.50	4.70	4.00	
	Oct.	4.50	4.94	4.74	4.00	
	Nov.	4.62	5.00	4.82	4.00	
	Dec.	4.68	5.00	4.86	4.00	
1923	Jan.	4.43	4.75	4.82	4.00	
	Feb.	4.58	4.84	4.91	4.50	Feb. 23
	Mar.	5.00	5.50	4.98	4.50	
	Apr.	5.00	5.50	5.32	4.50	
	May	5.00	5.25	5.27	4.50	
	June	5.00	5.00	5.21	4.50	
	July	4.86	5.25	5.29	4.50	
	Aug.	5.20	5.25	5.18	4.50	
	Sept.	5.30	5.50	5.33	4.50	
	Oct.	5.36	5.34	5.37	4.50	
	Nov.	5.00	5.25	5.39	4.50	
	Dec.	4.91	5.00	5.21	4.50	
1924	Jan.	4.75	4.79	5.21	4.50	
	Feb.	4.75	4.70	5.07	4.50	
	Mar.	4.75	4.67	5.06	4.50	
	Apr.	4.55	4.62	4.98	4.50	
	May	4.32	4.12	4.89	4.00	May 1
	June	3.94	3.31	4.64	3.50	June 12
	July	3.38	2.90	4.21	3.50	
	Aug.	3.19	2.92	4.09	3.00	Aug. 8
	Sept.	3.16	3.12	4.20	3.00	
	Oct.	3.04	3.12	4.41	3.00	
	Nov.	3.28	3.33	4.13	3.00	

* Figures from *Facts and Figures*.† Figures from *Annual Report of the Federal Reserve Board*, 1930, p. 83.‡ Figures from *Standard Statistics Company Base Book; Facts and Figures*.

To July 21, 1921, the rate on 60/90 day commercial, agricultural, and livestock paper was used; thereafter the rate on all classes of paper.

THE NEW YORK BOND MARKET

Appendix I (Continued)

Date	Average Daily Rates for Prime 90-Day Commercial Paper *	Average Daily Time-Money Rates 90-Day Mixed Col-lateral *	Weighted Average of Rates Charged Customers by Banks in New York City †	Discount Rate of the Federal Reserve Bank of New York ‡		
	Dec.	3.74	3.72	4.29	3.00	
1925	Jan.	3.12	3.52	4.16	3.00	
	Feb.	3.12	3.50	4.43	3.50	Feb. 27
	Mar.	4.00	4.00	4.53	3.50	
	Apr.	4.00	3.87	4.48	3.50	
	May	4.00	3.75	4.38	3.50	
	June	4.00	3.75	4.36	3.50	
	July	4.00	3.85	4.46	3.50	
	Aug.	4.00	4.18	4.36	3.50	
	Sept.	4.15	4.40	4.57	3.50	
	Oct.	4.25	4.50	4.62	3.50	
	Nov.	4.25	4.87	4.61	3.50	
	Dec.	4.25	4.87	4.70	3.50	
1926	Jan.	4.25	4.74	4.64	4.00	Jan. 8
	Feb.	4.25	4.52	4.68	4.00	
	Mar.	4.25	4.75	4.62	4.00	
	Apr.	4.21	4.39	4.62	3.50	Apr. 23
	May	4.00	4.00	4.66	3.50	
	June	4.00	4.13	4.58	3.50	
	July	4.00	4.39	4.38	3.50	
	Aug.	4.31	4.66	4.62	4.00	Aug. 13
	Sept.	4.46	4.90	4.81	4.00	
	Oct.	4.55	5.02	4.85	4.00	
	Nov.	4.53	4.74	4.79	4.00	
	Dec.	4.50	4.62	4.79	4.00	
1927	Jan.	4.36	4.55	4.66	4.00	
	Feb.	4.02	4.50	4.56	4.00	
	Mar.	4.19	4.50	4.56	4.00	
	Apr.	4.06	4.50	4.63	4.00	
	May	4.02	4.42	4.63	4.00	
	June	4.05	4.46	4.60	4.00	
	July	4.18	4.47	4.56	4.00	
	Aug.	4.00	4.20	4.41	3.50	Aug. 5
	Sept.	4.00	4.10	4.44	3.50	
	Oct.	4.00	4.23	4.49	3.50	
	Nov.	4.00	4.18	4.35	3.50	
	Dec.	4.00	4.11	4.50	3.50	

* Figures from *Facts and Figures*.

† Figures from *Annual Report of the Federal Reserve Board*, 1930, p. 83.

‡ Figures from *Standard Statistics Company Base Book; Facts and Figures*.

To July 21, 1921, the rate on 60/90 day commercial, agricultural, and livestock paper was used; thereafter the rate on all classes of paper.

APPENDICES

191

Appendix I (Continued)

Date	Average Daily Rates for Prime 90-Day Commercial Paper *	Average Daily Time-Money Rates 90-Day Mixed Col-lateral *	Weighted Average of Rates Charged Customers by Banks in New York City †	Discount Rate of the Federal Reserve Bank of New York ‡	
1928 Jan.	3.94	4.30	4.56	3.50	
Feb.	4.02	4.45	4.44	4.00	Feb. 3
Mar.	4.21	4.51	4.59	4.00	
Apr.	4.15	4.85	4.72	4.00	
May	4.46	5.22	4.97	4.50	May 18
June	4.70	5.70	5.09	4.50	
July	5.71	5.94	5.38	5.00	July 13
Aug.	5.37	6.35	5.56	5.00	
Sept.	5.50	7.03	5.63	5.00	
Oct.	5.50	7.11	5.63	5.00	
Nov.	5.25	7.00	5.56	5.00	
Dec.	5.49	7.48	5.63	5.00	
1929 Jan.	5.00	7.50	5.74	5.00	
Feb.	5.00	7.64	5.73	5.00	
Mar.	5.72	7.87	5.81	5.00	
Apr.	5.88	8.63	5.85	5.00	
May	5.80	8.53	5.88	5.00	
June	6.00	7.95	5.93	5.00	
July	6.00	7.66	5.88	5.00	
Aug.	6.09	8.79	6.05	6.00	Aug. 9
Sept.	6.00	8.85	6.06	6.00	
Oct.	6.01	8.64	6.08	6.00	
Nov.	5.42	5.51	5.86	5.00	Nov. 1
				4.50	Nov. 15
Dec.	5.00	4.72	5.74	4.50	
1930 Jan.	4.81	4.57	5.64	4.50	
Feb.	4.52	4.50	5.35	4.00	Feb. 7
Mar.	4.12	3.82	5.22	3.50	Mar. 14
Apr.	3.75	3.78	4.91	3.50	
May	3.52	3.25	4.74	3.00	May 2
June	3.43	2.74	4.59	2.50	June 20
July	3.05	2.59	4.48	2.50	
Aug.	3.00	2.25	4.41	2.50	
Sept.	3.00	2.33	4.29	2.50	
Oct.	2.73	1.93	4.26	2.50	
Nov.	2.75	2.00	4.17	2.50	
Dec.	2.77	2.24	4.16	2.00	Dec. 24

* Figures from *Facts and Figures*.† Figures from *Annual Report of the Federal Reserve Board*, 1930, p. 83.‡ Figures from *Standard Statistics Company Base Book; Facts and Figures*. To July 21, 1921, the rate on 60/90 day commercial, agricultural, and livestock paper was used; thereafter the rate on all classes of paper.

APPENDIX J

FEDERAL RESERVE BANK CREDIT, CREDIT OF REPORTING MEMBER BANKS IN LEADING CITIES, STOCK OF MONEY GOLD, AND MONEY IN CIRCULATION, 1919-1931, BY MONTHS

Date	Reporting Member Banks in Leading Cities — Monthly Averages of Weekly Figures (in billions)*			Federal Reserve Banks — Monthly Averages of Daily Figures (in millions)†				Stock of Money Gold —	Money in Circulation (in mil- lions) ‡
	Total Loans and Investments	Total Investments	Security Loans	Total Federal Reserve Credit	Bills Bought in the Open Market	U. S. Gov't. Securities	Bills Dis- counted	End of Month Figures (in mil- lions) †	
1919									
Jan.	14.23	4.30		2,359	278	200	1,731	3,162	4,919
Feb.	14.31	4.54		2,341	274	186	1,765	3,165	4,922
Mar.	14.63	4.80		2,480	261	195	1,863	3,165	4,948
Apr.	14.61	4.76		2,451	207	213	1,920	3,177	4,943
May	14.94	4.91		2,498	187	228	1,976	3,177	4,918
June	15.02	4.36		2,467	247	236	1,840	3,113	4,877
July	14.86	4.06		2,599	358	249	1,864	3,064	4,870
Aug.	15.26	4.29		2,559	372	270	1,798	3,125	4,948
Sept.	15.63	4.29		2,636	351	341	1,776	3,147	5,037
Oct.	16.01	4.11		2,847	343	296	2,068	3,103	5,127
Nov.	16.19	4.00		3,038	455	307	2,140	3,044	5,269
Dec.	16.39	3.98	4.70	3,203	549	327	2,115	2,994	5,378
1920									
Jan.	16.68	3.94	4.74	3,205	570	326	2,136	2,930	5,177
Feb.	16.65	3.76	4.50	3,314	541	309	2,207	2,887	5,360
Mar.	16.85	3.61	4.45	3,413	480	344	2,377	2,850	5,391
Apr.	16.98	3.64	4.39	3,364	413	332	2,431	2,841	5,409
May	16.99	3.64	4.30	3,385	411	302	2,536	2,856	5,452
June	16.97	3.55	4.25	3,382	400	347	2,456	2,865	5,468
July	16.92	3.41	4.18	3,344	362	319	2,513	2,862	5,454
Aug.	16.91	3.39	4.08	3,353	324	304	2,596	2,851	5,548
Sept.	17.06	3.37	4.11	3,495	310	339	2,667	2,873	5,616
Oct.	17.19	3.30	4.16	3,522	303	305	2,780	2,868	5,698
Nov.	16.87	3.29	4.07	3,467	276	320	2,762	2,897	5,643
Dec.	16.74	3.31	4.11	3,442	242	339	2,718	2,926	5,612
1921									
Jan.	16.45	3.28	4.04	3,110	200	298	2,523	2,966	5,303
Feb.	16.18	3.25	3.96	2,918	169	287	2,400	3,000	5,273
Mar.	16.07	3.28	3.92	2,798	137	266	2,297	3,086	5,124
Apr.	15.78	3.27	3.85	2,564	110	207	2,129	3,164	5,080
May	15.51	3.24	3.84	2,386	84	303	1,959	3,231	5,015
June	15.36	3.33	3.81	2,211	54	302	1,811	3,275	4,911
July	15.07	3.21	3.74	2,040	26	261	1,719	3,347	4,797
Aug.	14.92	3.23	3.67	1,863	38	249	1,548	3,439	4,740
Sept.	14.90	3.23	3.67	1,767	40	254	1,442	3,519	4,744
Oct.	14.94	3.28	3.72	1,669	56	207	1,371	3,572	4,695
Nov.	14.84	3.43	3.72	1,544	79	208	1,228	3,627	4,651
Dec.	14.84	3.42	3.77	1,548	105	226	1,180	3,660	4,690
1922									
Jan.	14.69	3.49	3.71	1,326	98	238	962	3,685	4,441
Feb.	14.69	3.66	3.67	1,233	88	357	769	3,723	4,491
Mar.	14.62	3.58	3.64	1,207	92	459	658	3,750	4,497
Apr.	14.69	3.69	3.66	1,210	93	520	572	3,764	4,468
May	14.97	3.92	3.83	1,208	103	603	479	3,771	4,455
June	15.24	4.22	3.91	1,192	136	591	437	3,785	4,463
July	15.25	4.30	3.90	1,170	153	547	425	3,820	4,424
Aug.	15.27	4.43	3.86	1,102	159	497	396	3,855	4,480
Sept.	15.45	4.38	3.91	1,180	212	486	417	3,873	4,608
Oct.	15.73	4.39	4.06	1,246	252	448	486	3,888	4,646

* Source of figures: *Annual Report of the Federal Reserve Board, 1931, Table 2, 1928 Revision.*

† Source of figures: *ibid.*, Table 57, 1929 Revision.

‡ Source of figures: *Standard Statistics Company Base Book.*

APPENDICES

193

Appendix J (Continued)

Date	Reporting Member Banks in Leading Cities — Monthly Averages of Weekly Figures (in billions)*			Federal Reserve Banks — Monthly Averages of Daily Figures (in millions)†				Stock of Money Gold — End of Month Figures (in mil- lions) ‡	Money in Circu- lation (in mil- lions) ‡
	Total Loans and Invest- ments	Total Invest- ments	Security Loans	Total Federal Reserve Credit	Bills Bought in the Open Market	U. S. Gov't. Securities	Bills Dis- counted		
Nov. 15.82	4.42	4.10	1,265	260	325	623	3,906	4,704	
Dec. 16.01	4.56	4.12	1,377	259	380	660	3,929	4,817	
1923									
Jan. 16.23	4.67	4.19	1,249	218	421	547	3,953	4,614	
Feb. 16.23	4.63	4.12	1,205	190	356	608	3,963	4,703	
Mar. 16.37	4.57	4.12	1,228	234	316	628	3,970	4,747	
Apr. 16.44	4.52	4.17	1,214	272	229	658	3,982	4,759	
May 16.49	4.49	4.22	1,222	271	193	705	4,028	4,797	
June 16.43	4.52	4.16	1,178	224	153	741	4,050	4,823	
July 16.40	4.49	4.15	1,179	186	97	834	4,079	4,787	
Aug. 16.20	4.41	3.99	1,127	175	90	809	4,111	4,876	
Sept. 16.31	4.38	4.03	1,184	174	102	802	4,136	4,945	
Oct. 16.38	4.35	4.05	1,204	185	91	873	4,167	4,929	
Nov. 16.20	4.31	4.06	1,204	265	83	799	4,207	5,018	
Dec. 16.32	4.33	4.14	1,260	324	106	771	4,244	5,044	
1924									
Jan. 16.32	4.33	4.25	1,041	300	118	574	4,289	4,777	
Feb. 16.32	4.32	4.17	955	273	135	514	4,323	4,887	
Mar. 16.44	4.31	4.18	990	228	244	476	4,364	4,899	
Apr. 16.57	4.35	4.22	981	170	274	489	4,411	4,853	
May 16.62	4.46	4.22	879	80	324	433	4,455	4,905	
June 16.82	4.57	4.31	886	50	416	370	4,488	4,840	
July 17.13	4.73	4.68	879	44	467	315	4,511	4,755	
Aug. 17.45	4.85	4.58	881	30	539	268	4,521	4,859	
Sept. 17.76	5.03	4.68	983	92	575	262	4,511	4,863	
Oct. 18.22	5.26	4.73	1,057	180	585	240	4,509	4,942	
Nov. 18.36	5.39	4.74	1,135	268	588	228	4,527	5,052	
Dec. 18.47	5.38	4.92	1,288	358	554	301	4,499	5,047	
1925									
Jan. 18.50	5.32	5.00	1,125	329	464	267	4,423	4,802	
Feb. 18.44	5.21	5.06	1,094	314	384	340	4,369	4,853	
Mar. 18.52	5.20	5.12	1,122	298	376	390	4,346	4,818	
Apr. 18.55	5.26	5.10	1,110	287	355	403	4,350	4,789	
May 18.53	5.23	5.17	1,100	279	361	397	4,361	4,821	
June 18.64	5.27	5.20	1,118	263	345	437	4,365	4,815	
July 18.72	5.25	5.37	1,118	231	338	480	4,370	4,795	
Aug. 18.78	5.22	5.38	1,143	205	329	545	4,383	4,867	
Sept. 18.98	5.18	5.45	1,227	226	335	594	4,382	4,916	
Oct. 19.24	5.18	5.56	1,321	298	328	619	4,407	4,969	
Nov. 19.33	5.15	5.70	1,352	352	332	597	4,397	5,044	
Dec. 19.41	5.17	5.84	1,507	369	359	688	4,399	5,104	
1926									
Jan. 19.36	5.16	5.87	1,270	324	368	520	4,412	4,821	
Feb. 19.32	5.18	5.77	1,218	305	335	526	4,423	4,904	
Mar. 19.42	5.25	5.65	1,216	268	336	557	4,442	4,860	
Apr. 19.39	5.25	5.58	1,204	234	371	537	4,438	4,907	
May 19.50	5.34	5.59	1,200	232	398	511	4,433	4,923	
June 19.60	5.36	5.69	1,185	243	408	473	4,447	4,885	
July 19.56	5.32	5.74	1,221	230	380	549	4,471	4,909	
Aug. 19.59	5.28	5.77	1,203	245	353	555	4,473	4,930	
Sept. 19.78	5.28	5.85	1,278	265	316	640	4,466	4,978	
Oct. 19.78	5.23	5.74	1,322	295	306	663	4,473	5,021	
Nov. 19.67	5.19	5.63	1,318	348	309	615	4,477	5,037	
Dec. 19.74	5.17	5.77	1,445	385	322	688	4,492	5,095	
1927									
Jan. 19.69	5.15	5.92	1,186	343	310	487	4,564	4,826	
Feb. 19.56	5.21	5.78	1,043	304	307	393	4,586	4,885	
Mar. 19.99	5.43	5.87	1,055	253	345	425	4,597	4,862	
Apr. 20.07	5.50	5.93	1,087	248	341	447	4,610	4,891	
May 20.27	5.61	6.02	1,041	233	291	473	4,608	4,893	

* Source of figures: *Annual Report of the Federal Reserve Board, 1931, Table 2, 1928 Revision.*

† Source of figures: *ibid.*, Table 57, 1929 Revision.

‡ Source of figures: *Standard Statistics Company Base Book.*

THE NEW YORK BOND MARKET

Appendix J (Continued)

Date	Reporting Member Banks in Leading Cities — Monthly Averages of Weekly Figures (in billions)*			Federal Reserve Banks — Monthly Averages of Daily Figures (in millions) †				Stock of Gold — End of Month Figures (in mil- lions) ‡	Money in Circu- lation (in mil- lions) ‡
	Total Loans and Invest- ments	Total Invest- ments	Security Loans	Total Federal Reserve Credit	Bills Bought in the Open Market	U. S. Gov't. Securities	Bills Dis- counted		
June	20.51	5.66	6.22	1,081	205	398	429	4,587	4,851
July	20.40	5.62	6.19	1,115	190	381	454	4,580	4,846
Aug.	20.36	5.53	6.20	1,093	173	439	409	4,588	4,854
Sept.	20.65	5.59	6.30	1,187	216	501	422	4,571	4,948
Oct.	20.92	5.66	6.40	1,254	282	506	424	4,541	4,946
Nov.	21.11	5.80	6.49	1,377	336	579	415	4,451	4,952
Dec.	21.33	5.93	6.68	1,568	378	606	529	4,379	5,003
1928									
Jan.	21.49	6.05	6.81	1,388	373	512	465	4,373	4,677
Feb.	21.32	6.09	6.61	1,264	360	406	471	4,362	4,690
Mar.	21.50	6.13	6.59	1,295	343	415	513	4,305	4,749
Apr.	21.94	6.14	6.62	1,405	358	351	661	4,226	4,748
May	22.15	6.19	7.08	1,472	349	257	836	4,160	4,744
June	22.06	6.19	6.96	1,531	244	232	1,019	4,109	4,797
July	22.01	6.11	6.96	1,531	185	213	1,090	4,113	4,701
Aug.	21.81	5.98	6.82	1,485	178	210	1,061	4,123	4,803
Sept.	21.87	5.97	6.84	1,581	226	240	1,064	4,125	4,846
Oct.	21.94	5.93	6.87	1,621	368	237	975	4,143	4,807
Nov.	21.98	5.89	7.08	1,653	471	238	897	4,128	4,990
Dec.	22.19	5.94	7.20	1,824	483	263	1,013	4,141	4,973
1929									
Jan.	22.32	6.02	7.51	1,613	473	229	859	4,127	4,657
Feb.	22.26	6.08	7.52	1,502	385	184	889	4,153	4,698
Mar.	22.37	5.98	7.58	1,481	265	197	969	4,188	4,748
Apr.	22.39	5.92	7.59	1,377	196	165	1,004	4,259	4,676
May	22.11	5.84	7.22	1,303	145	153	956	4,301	4,738
June	22.23	5.75	7.33	1,317	99	179	978	4,324	4,746
July	22.48	5.53	7.72	1,380	75	147	1,096	4,341	4,717
Aug.	22.47	5.50	7.58	1,376	124	155	1,043	4,360	4,840
Sept.	22.65	5.45	7.65	1,427	229	165	969	4,372	4,819
Oct.	23.12	5.42	8.10	1,450	337	154	885	4,386	4,838
Nov.	23.66	5.62	8.25	1,631	296	315	953	4,367	4,929
Dec.	23.01	5.57	7.97	1,643	320	446	803	4,284	4,865
1930									
Jan.	22.37	5.55	7.79	1,357	314	485	501	4,293	4,562
Feb.	22.08	5.54	7.67	1,181	285	480	378	4,355	4,579
Mar.	22.35	5.61	7.96	1,095	246	540	274	4,423	4,549
Apr.	22.66	5.70	8.27	1,072	226	530	231	4,491	4,470
May	22.66	5.84	8.31	996	182	529	247	4,517	4,551
June	23.02	5.98	8.56	1,000	141	571	251	4,534	4,522
July	23.10	6.19	8.39	1,003	154	583	226	4,517	4,426
Aug.	23.13	6.29	8.35	998	153	599	214	4,501	4,533
Sept.	23.22	6.36	8.38	1,016	197	597	189	4,511	4,501
Oct.	23.41	6.58	8.24	1,020	185	662	196	4,525	4,493
Nov.	23.46	6.78	7.90	1,033	184	599	221	4,571	4,660
Dec.	23.12	6.78	7.78	1,273	257	644	338	4,593	4,890
1931									
Jan.	22.66	6.77	7.50	1,129	206	647	253	4,643	4,610
Feb.	22.66	7.10	7.32	936	102	603	216	4,665	4,620
Mar.	22.84	7.39	7.30	921	123	604	176	4,697	4,608
Apr.	22.94	7.75	7.16	952	173	600	155	4,726	4,652
May	22.71	7.82	7.00	926	144	599	163	4,798	4,702
June	22.44	7.82	6.77	945	121	610	188	4,956	4,822
July	22.39	7.80	6.63	954	79	674	169	4,949	4,837
Aug.	22.09	7.71	6.48	1,107	135	712	222	4,995	5,052
Sept.	22.08	7.80	6.41	1,313	259	736	280	4,741	5,246
Oct.	21.43	7.78	5.97	2,088	692	733	613	4,292	5,549
Nov.	21.02	7.58	5.86	2,635	560	727	695	4,414	5,536
Dec.	20.75	7.55	5.76	1,950	340	777	774	4,460	5,647

* Source of figures: *Annual Report of the Federal Reserve Board, 1931, Table 2, 1928 Revision.*

† Source of figures: *ibid.*, Table 57, 1929 Revision.

‡ Source of figures: *Standard Statistics Company Base Book.*

APPENDIX K
NET GOLD MOVEMENTS, 1919-1931, BY MONTHS *

	(in millions)						
	1919	1920	1921	1922	1923	1924	1925
Jan.	- 1 †	-36	31	25	24	45	-76
Feb.	1	-38	42	38	10	34	-59
Mar.	7	-30	87	27	7	41	-25
Apr.	5	4	80	14	12	47	3
May	- 1	8	57	7	46	44	15
June	-57	21	43	14	22	33	3
July	-53	- 2	61	44	29	23	7
Aug.	-43	-10	84	26	32	10	15
Sept.	-28	22	64	18	25	-10	0
Oct.	-39	91	40	15	31	- 2	25
Nov.	-49	37	61	18	40	18	-10
Dec.	-33	28	30	23	37	-28	2
	1926	1927	1928	1929	1930	1931	
Jan.	13	72	- 6	-14	7	50	
Feb.	11	22	-11	26	62	22	
Mar.	19	11	-57	35	70	32	
Apr.	- 4	13	-39	72	68	29	
May	- 5	- 2	-106	41	26	72	
June	14	-21	-51	23	18	158	
July	24	- 7	4	17	-18	- 7	
Aug.	2	8	10	19	-16	46	
Sept.	- 7	-17	2	12	10	-254	
Oct.	7	-30	17	14	24	-449	
Nov.	4	-90	-14	-19	36	122	
Dec.	15	-72	13	-83	22	46	

* Source of figures: United States Department of Commerce and Harvard Economic Society. Earmarkings included after 1922.

† Minus signs indicate exports.

APPENDIX L
TOTAL ISSUES, 1919-1931, CLASSIFIED BY TYPES, BY QUARTERS

Type	Totals (in millions)	As Percentages of the Whole
1919		
	First Quarter	
Corporate	569	81
Municipal	106	15
Foreign Government	28	4
United States Government		
Farm Loan		
	Second Quarter	
Corporate	545	10
Municipal	209	4
Foreign Government	35	
War Finance Corporation	200	4
United States Government	4,498	82
Farm Loan		
	Third Quarter	
Corporate	844	44
Municipal	301	16
Foreign Government	120	6
United States Government	657	34
Farm Loan	7	
	Fourth Quarter	
Corporate	781	56
Municipal	180	13
Foreign Government	332	24
United States Government		
Farm Loan	103	7
1920		
	First Quarter	
Corporate	452	66
Municipal	184	27
Foreign Government	50	7
United States Government		
Farm Loan		
	Second Quarter	
Corporate	558	73
Municipal	166	21
Foreign Government	50	6
United States Government		
Farm Loan		

APPENDICES

197

Appendix L (Continued)

Type	Totals (in millions)	As Percentages of the Whole
Third Quarter		
Corporate	330	50
Municipal	186	28
Foreign Government	145	22
United States Government		
Farm Loan		
Fourth Quarter		
Corporate	555	68
Municipal	216	28
Foreign Government	46	6
United States Government		
Farm Loan		
1921		
First Quarter		
Corporate	559	66
Municipal	216	25
Foreign Government	79	9
United States Government		
Farm Loan		
Second Quarter		
Corporate	635	46
Municipal	274	20
Foreign Government	128	9
United States Government	311	22
Farm Loan	40	3
Third Quarter		
Corporate	386	32
Municipal	348	28
Foreign Government	83	7
United States Government	391	32
Farm Loan	8	1
Fourth Quarter		
Corporate	531	45
Municipal	473	40
Foreign Government	90	8
United States Government		
Farm Loan	74	7
1922		
First Quarter		
Corporate	629	26
Municipal	329	13
Foreign Government	189	8
United States Government	1,220	49
Farm Loan	104	4

Appendix L (Continued)

Type	Totals (in millions)	As Percentages of the Whole
Second Quarter		
Corporate	842	43
Municipal	502	25
Foreign Government	159	8
United States Government	335	17
Farm Loan	147	7
Third Quarter		
Corporate	513	36
Municipal	293	21
Foreign Government	22	2
United States Government	487	34
Farm Loan	103	7
Fourth Quarter		
Corporate	465	23
Municipal	221	11
Foreign Government	62	3
United States Government	1,233	61
Farm Loan	32	2
1923		
First Quarter		
Corporate	894	51
Municipal	277	16
Foreign Government	75	4
United States Government	367	21
Farm Loan	132	8
Second Quarter		
Corporate	603	33
Municipal	349	19
Foreign Government	31	2
United States Government	668	37
Farm Loan	162	9
Third Quarter		
Corporate	340	48
Municipal	266	38
Foreign Government	95	13
United States Government		
Farm Loan	7	1
Fourth Quarter		
Corporate	660	65
Municipal	230	22
Foreign Government	41	4
United States Government		
Farm Loan	92	9

APPENDICES

199

Appendix L (Continued)

Type	Totals (in millions)	As Percentages of the Whole
1924		
	First Quarter	
Corporate	654	52
Municipal	309	25
Foreign Government	218	17
United States Government		
Farm Loan	76	6
	Second Quarter	
Corporate	755	52
Municipal	532	37
Foreign Government	103	7
United States Government		
Farm Loan	54	4
	Third Quarter	
Corporate	751	58
Municipal	424	33
Foreign Government	100	7
United States Government		
Farm Loan	25	2
	Fourth Quarter	
Corporate	811	36
Municipal	292	13
Foreign Government	357	16
United States Government	757	34
Farm Loan	25	1
1925		
	First Quarter	
Corporate	1,111	57
Municipal	345	18
Foreign Government	99	5
United States Government	340	17
Farm Loan	60	3
	Second Quarter	
Corporate	832	55
Municipal	474	32
Foreign Government	154	10
United States Government		
Farm Loan	50	3
	Third Quarter	
Corporate	650	52
Municipal	414	31
Foreign Government	215	16
United States Government		
Farm Loan	14	1

Appendix L (Continued)

Type	Totals (in millions)	As Percentages of the Whole
Fourth Quarter		
Corporate	833	60
Municipal	322	23
Foreign Government	178	13
United States Government		
Farm Loan	63	4
1926		
First Quarter		
Corporate	1,030	49
Municipal	394	19
Foreign Government	50	2
United States Government	619	29
Farm Loan	39	1
Second Quarter		
Corporate	1,083	61
Municipal	463	26
Foreign Government	153	9
United States Government		
Farm Loan	76	4
Third Quarter		
Corporate	851	69
Municipal	254	20
Foreign Government	122	10
United States Government		
Farm Loan	12	1
Fourth Quarter		
Corporate	1,017	64
Municipal	374	24
Foreign Government	190	12
United States Government		
Farm Loan	5	
1927		
First Quarter		
Corporate	1,390	41
Municipal	417	12
Foreign Government	211	6
United States Government	1,360	40
Farm Loan	32	1
Second Quarter		
Corporate	1,558	54
Municipal	538	19
Foreign Government	199	7
United States Government	467	16
Farm Loan	110	4

APPENDICES

201

Appendix L (Continued)

Type	Totals (in millions)	As Percentages of the Whole
Third Quarter		
Corporate	922	45
Municipal	320	16
Foreign Government	138	7
United States Government	647	32
Farm Loan	5	
Fourth Quarter		
Corporate	1,676	72
Municipal	382	16
Foreign Government	229	10
United States Government		
Farm Loan	32	2
1928		
First Quarter		
Corporate	1,423	68
Municipal	374	18
Foreign Government	283	14
United States Government		
Farm Loan	5	
Second Quarter		
Corporate	1,382	52
Municipal	439	16
Foreign Government	219	8
United States Government	607	23
Farm Loan	32	1
Third Quarter		
Corporate	498	43
Municipal	220	19
Foreign Government	85	8
United States Government	350	30
Farm Loan	3	
Fourth Quarter		
Corporate	878	63
Municipal	426	30
Foreign Government	65	5
United States Government		
Farm Loan	24	2
1929		
First Quarter		
Corporate	1,016	77
Municipal	258	20
Foreign Government	36	3
United States Government		
Farm Loan		

Appendix L (Continued)

Type	Totals (in millions)	As Percentages of the Whole
Second Quarter		
Corporate	1,014	69
Municipal	451	31
Foreign Government	6	
United States Government		
Farm Loan		
Third Quarter		
Corporate	572	66
Municipal	267	31
Foreign Government	23	3
United States Government		
Farm Loan		
Fourth Quarter		
Corporate	503	49
Municipal	523	51
Foreign Government	4	
United States Government		
Farm Loan		
1930		
First Quarter		
Corporate	1,438	77
Municipal	337	18
Foreign Government	70	4
United States Government		
Farm Loan	22	1
Second Quarter		
Corporate	1,270	61
Municipal	479	24
Foreign Government	305	15
United States Government		
Farm Loan	9	
Third Quarter		
Corporate	775	65
Municipal	300	25
Foreign Government	98	8
United States Government		
Farm Loan	15	2
Fourth Quarter		
Corporate	421	43
Municipal	519	52
Foreign Government	10	1
United States Government		
Farm Loan	41	4

APPENDICES

203

Appendix L (Continued)

Type	Totals (in millions)	As Percentages of the Whole
1931		
First Quarter		
Corporate	856	41
Municipal	448	22
Foreign Government	152	7
United States Government	594	29
Farm Loan	30	1
Second Quarter		
Corporate	757	36
Municipal	404	19
Foreign Government	67	3
United States Government	871	41
Farm Loan	31	1
Third Quarter		
Corporate	307	21
Municipal	287	19
Foreign Government	50	4
United States Government	800	54
Farm Loan	35	2
Fourth Quarter		
Corporate	108	43
Municipal	111	44
Foreign Government		
United States Government		
Farm Loan	30	12

APPENDIX M
NUMBER OF INDIVIDUAL BOND ISSUES LISTED ON THE NEW YORK STOCK
EXCHANGE, 1919-1930 *

1919	1,131
1920	1,114
1921	1,115
1922	1,156
1923	1,234
1924	1,262
1925	1,332
1926	1,367
1927	1,420
1928	1,491
1929	1,534
1930	1,607 †

* Source of figures: *New York Stock Exchange Year Book*, 1929-30.

† As of October 1.

APPENDIX N
STOCK PRICES, BY MONTHS, AND STOCK ISSUES, BY QUARTERS, 1919-1930

Date	Stock Prices by Months in Relatives, 1926=100 *	Stock Issues — by Quarters (in Millions) †	
		New Capital Issues	Total Issues
1919	Jan.	63	
	Feb.	63	122
	Mar.	65	
	Apr.	68	
	May	72	172
	June	74	
	July	77	
	Aug.	71	531
	Sept.	73	
	Oct.	76	
	Nov.	74	530
	Dec.	72	
1920	Jan.	71	
	Feb.	65	422
	Mar.	70	
	Apr.	69	
	May	65	401
	June	64	
	July	64	
	Aug.	61	96
	Sept.	63	
	Oct.	63	
	Nov.	60	116
	Dec.	55	
1921	Jan.	57	
	Feb.	57	88
	Mar.	55	
	Apr.	56	
	May	57	37
	June	53	
	July	53	
	Aug.	52	101
	Sept.	53	
	Oct.	54	
	Nov.	57	43
	Dec.	59	

* Standard Statistics Company average.

† Figures from *Commercial and Financial Chronicle*.

THE NEW YORK BOND MARKET

Appendix N (Continued)

Date	Stock Prices by Months in Relatives, 1926=100 *	Stock Issues — by Quarters (in Millions) †	
		New Capital Issues	Total Issues
1922	Jan.	59	
	Feb.	60	92
	Mar.	62	
	Apr.	66	
	May	69	159
	June	68	
	July	68	
	Aug.	71	212
	Sept.	73	
	Oct.	75	
	Nov.	71	110
	Dec.	71	
1923	Jan.	72	
	Feb.	75	212
	Mar.	76	
	Apr.	73	
	May	70	164
	June	67	
	July	65	
	Aug.	65	65
	Sept.	66	
	Oct.	65	
	Nov.	67	234
	Dec.	69	
1924	Jan.	71	
	Feb.	71	177
	Mar.	70	
	Apr.	68	
	May	68	322
	June	69	
	July	73	
	Aug.	75	111
	Sept.	74	
	Oct.	73	
	Nov.	78	220
	Dec.	82	
1925	Jan.	85	
	Feb.	86	245
	Mar.	84	
	Apr.	83	
	May	85	296

* Standard Statistics Company average.

† Figures from *Commercial and Financial Chronicle*.

Appendix N (Continued)

Date	Stock Prices by Months in Relatives, 1926=100 *	Stock Issues — by Quarters (in Millions) †	
		New Capital Issues	Total Issues
	June	87	
	July	89	
	Aug.	91	253
	Sept.	93	300
	Oct.	96	
	Nov.	99	418
	Dec.	100	432
1926	Jan.	102	
	Feb.	102	468
	Mar.	96	
	Apr.	93	
	May	93	281
	June	97	285
	July	100	
	Aug.	103	184
	Sept.	104	196
	Oct.	102	
	Nov.	103	248
	Dec.	105	357
1927	Jan.	106	
	Feb.	108	463
	Mar.	109	
	Apr.	111	
	May	114	327
	June	115	390
	July	117	
	Aug.	122	263
	Sept.	128	347
	Oct.	127	
	Nov.	130	457
	Dec.	133	532
1928	Jan.	134	
	Feb.	132	422
	Mar.	138	
	Apr.	146	
	May	152	814
	June	145	1,073
	July	144	
	Aug.	148	401
	Sept.	157	455
	Oct.	159	

* Standard Statistics Company average.

† Figures from *Commercial and Financial Chronicle*.

THE NEW YORK BOND MARKET

Appendix N (Continued)

Date	Stock Prices by Months in Relatives, 1926=100 *	Stock Issues — by Quarters (in Millions) †		
		New Capital Issues	Total Issues	
1929	Nov.	171	1,434	1,541
	Dec.	171		
	Jan.	185		
	Feb.	187	1,743	1,872
	Mar.	189		
	Apr.	187		
	May	188	1,334	1,662
	June	191		
	July	207		
	Aug.	218	2,318	2,587
1930	Sept.	225		
	Oct.	202		
	Nov.	151	703	811
	Dec.	154		
	Jan.	156		
	Feb.	166	405	406
	Mar.	172		
	Apr.	181		
	May	171	838	850
	June	153		
	July	149		
	Aug.	148	189	190
Sept.	149			
Oct.	128			
Nov.	117	114	122	
Dec.	109			

* Standard Statistics Company average.

† Figures from *Commercial and Financial Chronicle*.

APPENDIX O

VOLUME OF ALL CORPORATE BOND ISSUES, VOLUME OF "NET" CORPORATE BOND ISSUES, MILLS'S INDEX OF PRODUCTION OF CAPITAL ELEMENTS, INTEREST PAYMENTS AND NET INCOMES OF ALL CORPORATIONS PAYING INCOME TAXES, 1919-1930, BY YEARS

Date	Annual Totals of All Corporate Issues (in Millions)	Annual Totals of All Corporate Issues (in Relatives, 1926=100)	Annual Totals of "Net" Corporate Issues (in Millions)	Annual Totals of "Net" Corporate Issues (in Relatives, 1926=100)	Mills's Index of Production of Capital Elements, (Shifted 1926=100) *	Interest Payments of All Corporations Paying Income Taxes (in Millions) †	Interest Payments of All Corporations Paying Income Taxes (in Relatives, 1926=100)	Net Incomes of All Corporations Paying Income Taxes (in Millions) ‡	Net Incomes of All Corporations Paying Income Taxes (in Relatives, 1926=100)
1919	2,739	60				2,207	55		
1920	1,895	48	1,091	41		2,835	71	6,190	74
1921	2,111	53	998	38		3,141	79	970	11
1922	2,449	62	775	29	70	3,069	72	5,420	65
1923	2,497	63	1,354	52	62	3,278	82	7,060	84
1924	2,971	75	2,102	80	62	3,445	86	6,200	74
1925	3,426	87	1,894	72	85	3,617	91	8,490	101
1926	3,981	100	2,647	100	100	3,989	100	8,400	100
1927	5,546	139	3,229	125	101	4,375	110	7,470	89
1928	4,181	105	1,604	61	106	4,581	115	9,340	111
1929	3,105	78	1,357	51	111	4,925	123	9,860	118
1930	3,904	98	2,380	90		4,861	122	3,100	37

* Figures from F. C. Mills, *Economic Tendencies in the United States*.

† Figures from Statistics of Income.

‡ Figures from S. H. Nerlove, *A Decade of Corporate Income*. These figures are defined by Nerlove as "The difference between 'gross' incomes as defined by the Revenue Act and all deductions allowed from these incomes by the Act. . . . Corporate net incomes, then, are profits, as usually defined by the economist, plus interest and rent charge on owned capital and land" (p. 12). These figures have been adjusted to include the net incomes of personal service corporations in 1920 and 1921, and the special deductions allowed life insurance companies since 1921.

APPENDIX P

VOLUME OF ALL BOND ISSUES AND OF "NET" BOND ISSUES, IN MILLIONS, AND IN RELATIVES, 1926 = 100, 1919-1930, BY YEARS

Date	Annual Totals of All Bond Issues Including Refunding Issues <i>(in Millions)</i>	Annual Totals of All Bond Issues Including Refunding Issues <i>(in Relatives, 1926 = 100)</i>	Annual Totals of "Net" Bond Issues <i>(in Millions)</i>	Annual Totals of "Net" Bond Issues <i>(in Relatives, 1926 = 100)</i>
1919	9,525	141		
1920	2,939	44	474	14
1921	4,626	69	2,403	71
1922	7,887	117	5,057	148
1923	5,288	78	2,341	69
1924	6,244	93	3,986	117
1925	6,156	92	2,763	81
1926	6,731	100	3,417	100
1927	10,633	158	5,619	165
1928	7,322	109	2,474	73
1929	4,673	69	1,684	49
1930	6,109	91	2,948	86

APPENDIX Q

SEASONAL FLUCTUATION IN THE NUMBER AND VOLUME OF BOND ISSUES AND IN THE VOLUME OF BONDS CALLED AND MATURED, 1920-1930

The statistical series of the number of new bond issues and of the volume of total, new capital, and "net" bond issues used in this study contain pronounced seasonal elements. Through the use of seasonal indices constructed by the link relative method an attempt was made to eliminate this type of fluctuation, in order that the cyclical movements of these series might be more clearly discerned, and the adjusted series are plotted in Charts III and VII. The character of the seasonal fluctuation in the number and volume of issues, however, possesses a certain interest of its own.

Both monthly and quarterly indices for the number of new issues were constructed.¹ The configuration of these is shown in Chart XVII, D. The monthly index has two low points, in the middle of the first and third quarters, and two high points, at the beginning of the second quarter and in the fourth quarter. The quarterly index is slightly above 100 in the first quarter, rises in the second quarter, falls below 100 in the third quarter, and recovers in the fourth quarter, though it does not return to the levels of the first two quarters.

Quarterly indices were also constructed for the total volume of offerings and for new capital offerings.² They are plotted in Chart XVII, A. Their configuration is very like that of the quarterly index of the number of bond issues. No difficulty was experienced in effecting these indices, and there is no reason to suspect that they are not approximately accurate.

A satisfactory index for "net" offerings was more difficult to obtain.

¹ Seasonal indices for the number of bond issues:

	By Months	By Quarters
Jan.	103	
Feb.	83	103
Mar.	104	
Apr.	108	
May	107	107
June	99	
July	100	
Aug.	79	94
Sept.	97	
Oct.	111	
Nov.	112	96
Dec.	101	

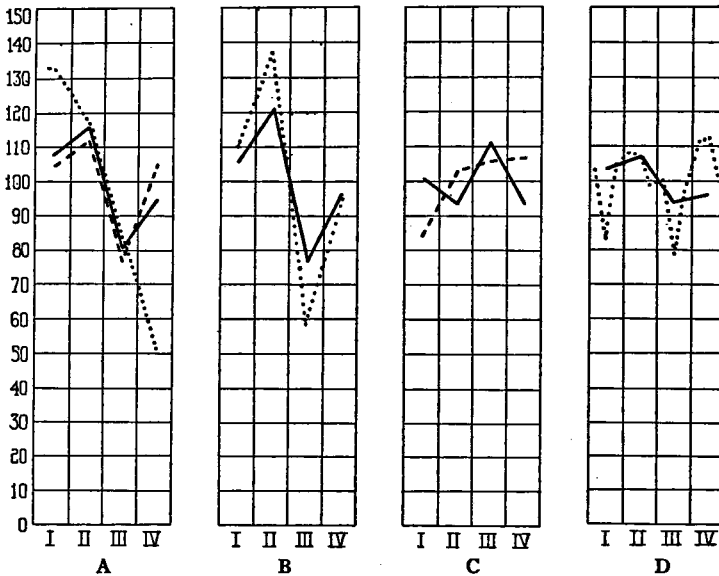
² Seasonal indices:

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Total Issues	108	116	81	95
New Capital Issues	105	112	77	105
"Net" Issues	133	117	84	51

This series was subject to wider fluctuations than were the other two. It contained five negative amounts, which occasioned wide gaps in the chain relatives, and the distribution of the relatives was not always such as to

CHART XVII

SEASONAL INDICES FOR THE VOLUME OF TOTAL, NEW CAPITAL, AND "NET" BOND ISSUES, BY QUARTERS; THE VOLUME OF BONDS CALLED AND MATURED, BY QUARTERS; THE NUMBER OF BOND ISSUES



- A: The Volume of Total, New Capital, and "Net" Bond Issues, Including Increases and Decreases in the Government Debt.
 — Total Issues.
 ---- New Capital Issues.
 "Net" Issues.
- B: The Volume of Total, and of "Net" Bond Issues, Excluding Increases and Decreases in the Government Debt.
 — Total Issues.
 "Net" Issues.
- C: The Volume of Bonds Called and Matured.
 — Excluding Decreases in the Government Debt.
 ---- Including Decreases in the Government Debt.
- D: The Number of Bond Issues.
 By months.
 — By quarters.

indicate the precise seasonal relationship. Various experiments were made in order to find as satisfactory an index as possible. The index finally chosen was one in which the relatives for three quarters only were used, the index for the other quarter (the third quarter which contained all the negative

amounts) being estimated. The configuration of this index, plotted in Chart XVII, A, is quite different from that of total and new capital issues. It declines steadily from quarter to quarter, and appears to indicate that in the ordinary year in this period progressively greater amounts of bonds were called or matured from quarter to quarter, with the result that progressively smaller amounts of new funds were required by the market in each quarter. In adjusting the original series of "net" offerings with this index the negative amounts were not changed. Although this adjusted series appears fairly satisfactory in most years, the index has obviously produced exaggerated results in certain quarters, and great reliance can not be placed on it. It is by no means as satisfactory as are the other indices.

The wide divergence of the configuration of the seasonal index of "net" offerings from the configuration of the indices for total offerings and for new capital offerings involves consideration of the whole question of seasonal influence in this eleven-year period. The principal foreign factor in the bond market during this time, one not subject to influences which normally affect bond financing, was the debt operations of the Treasury. Neither flotations nor redemptions of government securities are primarily motivated by the same forces which affect similar operations for other types of bonds. The financial activity of the Treasury is in a category different from that in which the operations of private industry, or even those of municipalities and foreign governments, are to be placed. An attempt to estimate the influence of the Treasury's operations on the seasonal fluctuation, and to eliminate it, was made by constructing indices for the total volume of issues and for the "net" volume of issues exclusive of increases or decreases in the government debt.^a The configuration of these indices, plotted in Chart XVII, B, is similar, though of a wider spread, to that of the index for total offerings that includes government financing and to the index for new capital. It seems, therefore, roughly accurate to say that what may be termed the normal seasonal influences affecting the bond market in these years tended to bring forth a large quantity of issues in the first quarter of the year, a somewhat larger quantity in the second quarter, a much reduced volume in the third quarter, which is followed in the fourth by an amount that is approximately equal to that of the first quarter; that this seasonal tendency was not seriously affected in the case of total issues by government financing, but that in the case of "net" offerings the activities of the Treasury completely changed the seasonal index.

This last conclusion is supported by the configuration of two seasonal indices which were constructed for called and matured bonds, one includ-

^a Seasonal indices, exclusive of increases or decreases in the government debt:

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Total Issues	106	121	77	96
"Net" Issues	110	137	59	94

Since the new capital series did not contain any government issues an additional seasonal index was not made for it.

ing, one excluding, decreases in the government debt.⁴ These indices are also plotted in Chart XVII, C. The index that includes Treasury redemptions advances steadily throughout the year. The index that excludes them has a configuration approximately the reverse of that of the indices for total issues and for new capital issues.⁵

Elimination of the Treasury's operations in these years, and omission of government flotations and redemptions from these series of bond issues, would not give a result that could be called normal, nor one as significant as that obtained when such activities are included. The Treasury's operations were too important and formed too integral a part of the post-war bond market. Although there were no government issues in certain quarters, in other quarters the government issues amounted to over fifty per cent of the total offerings. However, as may be seen in Chart XII, where total issues are subdivided into types, the outline of these eleven years given by the series of total issues would be changed through the omission of government offerings mainly by a leveling of certain peaks.

⁴ Seasonal indices for bonds called and matured:

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Including decreases in the government debt	84	103	106	107
Excluding decreases in the government debt	101	94	111	94

⁵ Ellsworth computed seasonal indices of bond offerings for the years 1907 through 1930. For the period 1907-1918 he used the *Journal of Commerce* figures; for the period 1919-1930 he used the figures of the *Commercial and Financial Chronicle* for long term, new capital, corporate financing. Issues other than corporate, and short term bonds and notes which are included in my new capital series, he did not use; nor did he use the figures for total financing, which include refunding issues. He notes: "The indices computed for the quarterly figures for 1907-16, by the median-link-relative method, are, in order: 151, 130, 46, 72. The same method applied to the post-war figures revealed a much smaller seasonal movement, the quarterly figures being: 117, 109, 79, 96. In both cases, though the distribution of the original link relatives was widely scattered, the deviation from 100 per cent was sufficiently great to warrant taking the median as fairly representative of the movement. It is worth remarking that for the later period, which exhibits a much less violent seasonal fluctuation, the scatter was notably less" (Ellsworth, "Investments," p. 113). His post-war index is to be contrasted with my index of new capital issues for 1920-1930; 105, 112, 77, 105. The greatest difference is that in my index the figure for the second quarter is slightly larger than the figure for the first quarter; in Ellsworth's index the figure for the second quarter is slightly smaller than the figure for the first quarter. This and other discrepancies are presumably to be attributed to the fact, noted above, that my index included other than corporate issues and also short term financing, and to the fact that his index is based on a period longer by one year than mine.

BIBLIOGRAPHY

BIBLIOGRAPHICAL NOTE

THIS bibliography makes no pretense of being complete or exhaustive. The literature concerned with the financial history of the United States in the post-war decade has so developed, even in the short space of seventeen years, and the number of sources of pertinent statistics has become so great, that it has not seemed feasible to include every title or statistical source connected with the bond market in the 1920-1930 period. Listed here are only those publications and statistical data which have been referred to in the text, and those others which seem to be of particular moment. For the sake of convenience the items have been divided into two parts. The first includes original material and statistical sources, notably those referred to in the appendices; the second includes secondary material, such as books and specific magazine articles.

BIBLIOGRAPHY

ORIGINAL SOURCES AND SOURCES OF STATISTICS

- Abstract of Condition Reports of State Bank and Trust Company Members and of All Member Banks, 1919-1925.
- American Underwriting of Foreign Securities in 1929* (Trade Information Bulletin, no. 688, United States Department of Commerce. Washington, D. C.).
- Analyst*, 1919-1931.
- Annual Reports of the Comptroller of the Currency, 1919-1930 (Washington, D. C.).
- Annual Reports of the Federal Reserve Board, 1919-1930 (Washington, D. C.).
- Annual Reports of the Secretary of the Treasury, 1919-1931 (Washington, D. C.).
- Annual Reports of the Superintendent of Insurance, State of New York, 1919-1930 (Albany).
- The Balance of International Payments of the United States in 1922, 1924, 1926, 1928, 1929, 1930 (Trade Information Bulletins, nos. 144, 340, 503, 625, 698, 761; United States Department of Commerce. Washington, D. C.).
- Barron's*, 1919-1930.
- Bond Buyer*, 1919-1930.
- Bradstreet's*, 1919-1930.
- Brookmire Economic Service.
- Cleveland Trust Company Bulletin*, April 15, 1924.
- Commercial and Financial Chronicle*, 1919-1931.
- Currie, L. B., "Bank Assets and Banking Theory" (MS. in Widener Library, Harvard University).
- Ellsworth, P. T., "Some Aspects of Investment in the United States, 1907-1930" (MS. in Widener Library, Harvard University).

- Facts and Figures Relating to the American Money Market* (American Acceptance Council, New York, Boston, 1931).
Federal Reserve Bulletin, 1919-1930.
 Harvard Economic Society.
Hearings before a Subcommittee of the Committee on Banking and Currency of the United States Senate, Seventy-First Congress, Third Session, Pursuant to Senate Resolution 71 (Washington, D. C., 1931).
Journal of Commerce, March 16, 1929.
 Member Bank Call Reports, 1926-1931.
 Moody's Investors Service.
National City Bank of New York Monthly Letter, 1919-1930.
New York Stock Exchange Year Book, 1928-1929, 1929-1930.
New York Times, July 13, 1931.
Review of Economic Statistics, 1919-1930.
 Standard Statistics Company.
 Statements of the Public Debt of the United States, 1920-1930.
 Statistics of Income, 1919-1930.
Wall Street Journal, 1920-1930.

ADDITIONAL REFERENCES

- Abbott, Charles C., "A Note on the Government Bond Market, 1919-1930," *Review of Economic Statistics*, XVII, 7-12 (January 1935).
 "An Analysis of the Condition of the Central Banks of England, France, and the United States, 1911-19," *Review of Economic Statistics*, I, 13-25 (Monthly Supplement, September 1919).
 Arens, H. F., and Bancroft, J. R., "Causes Affecting the Value of Bonds," *Annals of the American Academy of Political and Social Science*, LXXXVIII, 200-212 (March 1920).
 Beckhart, B. H., *The New York Money Market*, 4 vols. (New York, 1931-1932).
 Burgess, W. R., "The Money Market in 1929," *Review of Economic Statistics*, XII, 15-20 (February 1930).
 —, *The Reserve Banks and the Money Market* (New York and London, 1927).
 Carles, Frederick, *Essentials of Investment* (Philadelphia, 1919).
 Chamberlain, Lawrence, *Principles of Bond Investment* (New York, 1911).
 Chamberlain, Lawrence, and Edwards, G. W., *Principles of Bond Investment* (New York, 1927).
 Childs, C. F., "United States Government Bonds," *Annals of the American Academy of Political and Social Science*, LXXXVIII, 43-50 (March 1920).
 Crenshaw, R. P., "The Bond Market in Perspective," *Magazine of Wall Street*, XL, 844-845 (Sept. 10, 1927).
 Currie, L. B., *The Supply and Control of Money in the United States* (Cambridge, Mass., 1934).
 "Cycles of Business Activity, Stock Prices, Money Rates and Bond Yields, 1880-1929," *Annalist*, XXXV, 110-111 (Jan. 17, 1930).
 Dewing, A. S., *The Financial Policy of Corporations* (New York, 1926).

- "Economic Conditions Since the Armistice," *Review of Economic Statistics*, I, 9-28 (Monthly Supplement, December 1919).
- Epstein, Ralph C., *Industrial Profits in the United States* (New York, 1934).
- Fabricant, Solomon, *Recent Corporate Profits in the United States* (National Bureau of Economic Research, Bulletin 50, April 18, 1934).
- Flynn, John T., *Security Speculation* (New York, 1934).
- Hardy, C. O., *Credit Policies of the Federal Reserve System* (Washington, D. C., 1932).
- Harris, Seymour, *Twenty Years of Federal Reserve Policy* (Cambridge, Mass., 1933).
- Keynes, J. M., *A Treatise on Money* (New York and London, 1930).
- King, W. I., *The National Income and Its Purchasing Power* (New York, 1930).
- Kirshman, J. E., *Principles of Investment* (Chicago and New York, 1924).
- Kuznets, Simon, *Gross Capital Formation, 1919-1933* (National Bureau of Economic Research, Bulletin 52, November 15, 1934).
- Lagerquist, W. E., *Investment Analysis* (New York, 1921).
- Leven, Maurice, Moulton, H. G., and Warburton, Clark, *America's Capacity to Consume* (Washington, D. C., 1934).
- Lownhaupt, Frederick, *Investment Bonds* (New York and London, 1908).
- McCabe, E. F., "Fluctuations in Short-Time Bonds," *American Bankers Association Journal*, XXIII, 209-211 (September 1930).
- Means, G. C., "The Growth in the Relative Importance of the Large Corporation in American Economic Life," *American Economic Review*, XXI, 10-37 (March 1931).
- Meeker, J. Edward, *The Work of the Stock Exchange* (New York, 1922).
- Mills, Frederick C., *Economic Tendencies in the United States* (New York, 1932).
- Mitchell, Wesley C., "Rates of Interest and the Prices of Investment Securities: 1890-1909," *Journal of Political Economy*, XIX, 269-308 (April 1911).
- , "Security Prices and Interest Rates in 1910-12," *Journal of Political Economy*, XXI, 500-522 (June 1913).
- Moody, John, "The Paradox of the Bond Levels," *Burrough's Clearing House*, XV, 12-13 (January 1931).
- Motelle, A., "Bond Holdings of Insurance Companies," *Analyst*, XXVI, 701 (December 4, 1925).
- Nerlove, S. H., *A Decade of Corporate Incomes* (Chicago, 1932).
- Nourse, Edwin G. and others, *America's Capacity to Produce* (Washington, D. C., 1934).
- Owens, R. N., and Hardy, C. O., *Interest Rates and Stock Speculation* (Washington, D. C., 1930).
- Persons, Warren M., "The Basis for Credit Expansion under the Federal Reserve System," *Review of Economic Statistics*, II, 21-27 (January 1920).
- , "Money Rates, Bond Yields, and Security Prices," *Review of Economic Statistics*, IX, 93-102 (April 1927).

- Persons, Warren M., and Edwin Frickey, "Money Rates and Security Prices," *Review of Economic Statistics*, VII, 29-46 (January 1926).
- Recent Economic Changes in the United States—Report of the Committee on Recent Economic Changes of the President's Conference on Unemployment*, 2 vols. (New York, 1929).
- Reed, Harold L., *Federal Reserve Policy, 1921-1930* (New York, 1930).
- Richter, F. E., and Standish, A., "Investments of Banks and Insurance Companies," *Harvard Business Review*, III, 414-423 (July 1925).
- Riefler, Winfield W., *Money Rates and Money Markets in the United States* (New York and London, 1930).
- Robbins, Lionel, *The Great Depression* (London, 1934).
- Shaffner, F. L., *The Problem of Investment* (New York and London, 1936).
- Snider, John L., "Security Issues in the United States, 1909-1920," *Review of Economic Statistics*, III, 98-102 (May 1921).
- Spahr, W. E., *The Federal Reserve System and the Control of Credit* (New York, 1931).
- Strong, Benjamin, *Interpretations of Federal Reserve Policy* (New York and London, 1930), ed. by W. Randolph Burgess.
- "Ten Year Profile of Average Prices on New York Stock Exchange," *Analyst*, XIX, 72-73 (Jan. 9, 1922).
- Warburg, P. M., *The Federal Reserve System* (New York, 1930).
- Whitney, Caroline, *Experiments in Credit Control* (New York and London, 1934).
- Whitney, W., "Bond Market a Victim of Circumstances," *Magazine of Wall Street*, XLIII, 642-643 (Feb. 9, 1929).

INDEX

INDEX

- Armistice, the financial situation after, 43 ff., 50, 54, 58, 144
- Bank of England, 135
- Bonds, called and matured, 34, 35; demand and supply, 11 ff., 20 ff.; nature and functions, 9 ff.; new issues, 24, 29 ff., 32 ff., 34 ff., 39 ff., 50, 63, 64, 66 ff., 85 ff., 101, 102, 108, 114, 115, 117, 122, 126, 127, 134, 135, 137 ff., 150, 151; new issues compared with new stock issues, 53, 127, 134; refunding, 32, 33, 64, 87, 88, 102; seasonal fluctuations in new issues, 36 ff., 211 ff.; yields, 19, 27, 39 ff., 49, 50, 61 ff., 84 ff., 99 ff., 103, 108, 114 ff., 122, 123, 126, 136, 137, 140, 146 ff., 151
- Bond holders, number, 52
- Bond market, activity, 24, 27, 28, 39 ff., 50, 63 ff., 66, 85, 87, 94, 103, 108, 114, 117, 123, 151; description, 5 ff., 9, 52
- Brokers' loans, 113, 115, 119, 120, 122, 126, 127, 132, 133, 135 ff.
- Business activity, 44, 58 ff., 64, 77, 95 ff., 109, 119, 122, 128, 135, 136, 138, 140, 141
- Capital Issues Committee, 45
- Commercial loans, changing position, 104 ff., 153 ff.
- Corporate bond issues, compared with total issues, 63, 68 n., 90, 103, 105, 127, 152 ff., 157 ff.
- Credit conditions, 18 ff., 43 ff., 52, 59 ff., 64, 76 ff., 82, 83, 86, 95 ff., 101, 109 ff., 119 ff., 123, 125, 128 ff., 134, 137, 138, 140, 143 ff., 148, 151, 152
- Federal Farm Loan Bonds, 32, 68
- Federal Land Bank Bonds, 116
- Federal Reserve Advisory Council, 130, 131, 132
- Federal Reserve Banks, *see* Federal Reserve System
- Federal Reserve Bank of New York, 130 n., 132
- Federal Reserve Bank of New York, rediscount rate, 59, 64, 77, 79, 81, 82, 93, 96, 98, 114, 115, 119, 120 ff., 131 n., 133, 136, 137, 138 n.
- Federal Reserve Board, 124, 131 ff., 147, 148
- Federal Reserve System, 3, 9, 22 ff., 44 ff., 50 ff., 56, 59-66, 71, 72, 74-84, 91, 92, 94 n., 95, 98, 106, 107, 110-145, 152, 160
- Federal Reserve System, Open Market Committee, 73, 76; open market operations, 23, 24, 82, 95, 96, 110 ff., 116, 119, 121, 123 ff., 129, 136, 138, 139, 141, 151, 160; policy of "direct pressure," 129 ff.
- Foreign bonds, 32, 51, 62, 63, 65, 74, 76, 84 ff., 88, 102, 108, 110, 127, 128, 137, 139, 140
- Fourth Liberty Loan, 46, 47
- Glass, Carter, 45, 47 ff.
- Government bond market, 71, 72, 87, 114, 148
- Government Bonds, 32, 41, 85 ff., 113, 114, 120, 123, 124
- Government debt, 43 ff., 46 ff., 52, 55, 68 ff., 76, 78, 88, 89, 102 ff., 113, 124 n., 144
- Harding, Warren G., 44
- Hatry failure, 135
- Interest rates, long term, *see* Bonds, yields; relation of short and long term, 16 ff., 61, 66, 86, 99 ff., 114, 115, 123, 126, 136 ff., 145 ff.; short term, 59 ff., 64, 65, 76, 77, 81 ff., 83, 84, 96, 98 ff., 109, 114, 115, 119, 120, 123, 125, 126, 134 ff., 145 ff.
- International payments, balance, 44, 45, 51, 64 n., 84, 98, 99, 110, 127 ff.
- Keynes, J. M., 144, 145, 149 ff.
- Liberty Bonds, 50, 52, 62, 84, 85, 120
- Liberty Loans, 52, 53, 61, 62, 68, 72, 153

- McAdoo, William Gibbs, 46, 48
 Mellon, Andrew, 70
 Member banks, 3, 22, 23, 37, 51, 60, 61, 66, 78 ff., 82, 83, 97, 98, 106, 111, 120 ff., 125, 128, 132, 133, 136, 138, 139, 144, 148, 153
 Money Committee of the Stock Exchange, 45

 National City Bank, 132 n.
 National City Company, 3

 Second Liberty Loan, 108, 113, 114, 116
 Stocks, new offerings, 122, 126, 132, 134, 136 ff.; prices, 49 n., 96, 113, 116, 117, 119, 126, 127, 132, 133, 135 ff.

 Stock market, booms, 49, 94, 96, 108, 113, 116, 117, 119, 120, 126, 127, 133, 135; breaks, 64, 77, 99, 102, 122, 135 ff.
 Strong, Benjamin, 45, 52, 88 n.

 Third Liberty Loan, 89, 120, 124
 Transportation Act, 70
 Treasury, 3, 9, 26, 45 ff., 56, 58, 68 ff., 75 ff., 86, 88, 89, 92, 94 n., 102, 103, 113, 114, 120, 124, 128, 141
 Treasury bills, 30, 134 n.

 United States government sinking fund, 71, 89, 124 n.
 Victory Loan, 46 ff., 53, 54, 71
 War Finance Corporation, 45, 50
 War loan organization, 45, 48