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ECONOMIC BACKGROUNDS OF THE
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ECONOMIC BACKGROUNDS OF THE RELIEF PROBLEM

by

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DIRECTOR'S PREFACE

No more serious economic and political question confronts the American people today than that arising from the twin problem of unemployment and relief. And the problem is peculiarly acute in the highly industrialized and urbanized areas, of which the Pittsburgh district is a conspicuous example. In its origins the problem is an economic one, but its inevitable repercussions are political as well as economic, as we have well learned during the past few years. In its essence the issue comes to this: Our economic system is operated primarily on a commercial basis. On the strictly commercial basis, the economic system provides nothing for unemployable persons or unemployed workers, except as they have consumable funds or funded income. An economic system, if it is to endure, must provide for all the people dependent on it a continued access to those goods and services essential to life. Isolated instances of starvation may perhaps be tolerated, but society cannot withhold that minimum access from a considerable body of its members without incurring the risk of social upheaval.

In recognition of the demonstrable fact that the commercial-economic system does not fulfill this essential function for all the population at any time and that the failure extends to vast numbers of the population in periods of depression, society has long accustomed itself to the operation of a supplementary system designed to provide essential goods and services, on a noncommercial basis, to those unprovided for on a strictly commercial basis. This supplementary distribution system works in various ways, through persons, religious and fraternal bodies, private and quasi-public social agencies, and local, state, and national governmental agencies. The trend has been pointing clearly toward increasing public participation; and in the recent years of profound depression the Federal Government was forced by economic, financial, and political circumstances to take over major responsibility for the relief load. Out of that assumption of major Federal responsibility has come a whole chain of problems involving our financial, economic, social, and political stability.

The present monograph represents an exploration of the relief problem in its economic setting. The statement and analysis of the problem in its basic aspects is national in scope and applies as forcefully to any other large industrial center as to Pittsburgh, but the statistical analysis is confined to the record for Allegheny County as a specific case study. Although the manifestations of distress are local, the major phases of the relief question find their origins in a broad national and even international setting; and it is at the present stage scarcely subject to debate that social solutions of this problem cannot be limited by regional bounds. Consequently, this study is presented by the Bureau of Business Research as a contribution toward an understanding of the problem in both its Pittsburgh district setting and its national setting with the hope that the analysis may be helpful in the local and national search for a constructive solution.

The author requests that special acknowledgment be made to two of his staff colleagues, Messrs. Wilbert G. Fritz and Theodore A. Veenstra, and to Mr. Emmett H. Welch, Director of Research and Statistics of the Pennsylvania State Emergency Relief Board. Mr. Fritz gave painstaking statistical assistance on the methods of making numerous estimates. Mr. Veenstra aided materially in the interpretation of the 1934 unemployment data used in Chapter 6 and in the compilation and interpretation of the 1929 family income data used in Chapter 12. Mr. Welch made available unpublished information from the unemployment survey of 1934. The tables were prepared in the Bureau's statistical laboratory under the supervision of Mr. Robert H. Nelson, and the statistical checking of the manuscript was done by Mr. Nelson and Mr. David Schenker. The charts were prepared in the Bureau's drafting room under the supervision of Mr. Charles W. Hammers. Proofreading was supervised by Mrs. Gladys M. Gardner.

A word is in point concerning the origin of this investigation. It was planned originally as the Bureau's contribution to the Social Survey of Pittsburgh and Allegheny County, which has been under way during the past two years under the direction of Dr. Philip Klein, of the New York School of Social Work, supported by a large committee of civic leaders in Pittsburgh, under a grant from The Buhl Foundation, of Pittsburgh. As the inquiry proceeded it became clear that the economic importance of the problem warranted a special Bureau monograph, and the plans were

DIRECTOR'S PREFACE

vii

expanded accordingly. A copy of the first draft of the manuscript was submitted, in the latter part of 1936, to Dr. Klein, who was given full permission to use whatever part of it might serve the purposes of the report arising from the Social Study. Because of subsequent revisions in the study here presented, there are minor differences between parts incorporated in Dr. Klein's report and the revised form of corresponding parts contained herein. The revisions, however, have been only in the direction of more refined estimates, fuller data, and clarified treatment, not in the basic story of need in its economic setting.

This study represents a part of the Bureau's program in regional economic research under a grant from The Buhl Foundation, of Pittsburgh.

RALPH J. WATKINS
Director

June, 1937

TABLE OF CONTENTS

	PAGE
DIRECTOR'S PREFACE	v
LIST OF TABLES	xi
LIST OF CHARTS	xiii
INTRODUCTION	1
CHAPTER 1. GENERAL CHARACTER AND SIGNIFICANCE OF ECONOMIC NEED	3
CHAPTER 2. LIMITS OF DIRECT ACCESS TO THE ECONOMIC SYSTEM	5
The Monetary Door to the Necessities of Life	5
Flows of Money to Individuals	6
Instability of the Opportunity to Work	8
Persons Not Employable on a Money Basis	11
Summary	14
CHAPTER 3. NONCOMMERCIAL DISTRIBUTION OF PURCHASING POWER	15
CHAPTER 4. MEANING OF UNEMPLOYMENT	18
Employables and Unemployables	18
Meaning of Unemployment	19
CHAPTER 5. UNEMPLOYMENT IN ALLEGHENY COUNTY IN APRIL, 1930..	23
Number of Gainful Workers in April, 1930	23
Number Unemployed in April, 1930	25
Differences among Industry Groups with Respect to Unemployment	26
Average Loss of Working Time	27
Part-Time Work in April, 1930	28
Summary	29
CHAPTER 6. UNEMPLOYMENT IN ALLEGHENY COUNTY IN FEBRUARY, 1934	31
Reported Data for 1934	31
Number Classed as Employables in the Enumerated Area	32
Number Classed as Employed in the Enumerated Area	32
Number Classed as Unemployed in the Enumerated Area	33
Adjustments to Attain Comparability of 1934 Data with 1930 Data	34
Adjustment for Area Not Enumerated	34
Adjustment for Age Groups Omitted	35
Number of Employables Assumed for February, 1934	36
Estimated Number Unemployed in February, 1934	37
Part-Time Work in February, 1934	38
Difference in Incidence of Unemployment in February, 1934	39
Difference among Industry Groups	40
Difference among Race-Nativity Groups	41
Difference between Unemployment of Males and Unemployment of Females	43
Difference among Age Groups	43
Difference among Areas	45
Summary	47
CHAPTER 7. MONTHLY ESTIMATES OF NUMBERS UNEMPLOYED IN ALLEGHENY COUNTY, 1929-1936	49
Monthly Estimates of the Number of Employables	49
Monthly Estimates of the Number Employed	50
Monthly Estimates of the Number Unemployed	53

TABLE OF CONTENTS

	PAGE
CHAPTER 8. APPROXIMATIONS OF LOSS OF WORKING TIME BY EMPLOYED PERSONS IN THE PITTSBURGH DISTRICT, 1929-1936	55
Index of the Amount of Gainful Work in the Pittsburgh District	56
Index of Average Amount of Work per Employed Worker in the Pittsburgh District	58
Estimated Per Cent of Full Time Worked by Employed Persons in the Pittsburgh District	59
Estimated Per Cent of Full Time Lost by Employed Workers in the Pittsburgh District	61
Summary	61
CHAPTER 9. IRREGULARITY IN THE OPPORTUNITY FOR EMPLOYMENT IN THE PITTSBURGH DISTRICT	63
Classes of Irregularities in Business Activity	63
Changing Trends of Business Activity in the Pittsburgh District	65
Boom and Depression	71
Seasonal Fluctuations	79
Summary	81
CHAPTER 10. UNEMPLOYMENT IN ALLEGHENY COUNTY AT THE NORMAL LEVEL OF BUSINESS ACTIVITY	83
CHAPTER 11. GAINFUL WORKERS AND FAMILY LOAD	87
CHAPTER 12. FAMILY INCOME	91
CHAPTER 13. SUMMARY	101
General Economic Background of the Relief Problem	101
Unemployment in Allegheny County	103
Family Load and Earnings	105
CHAPTER 14. SOCIAL POLICY TOWARD RELIEF	106
APPENDIX A. MEANING OF THE CENSUS TERM "GAINFUL WORKER" IN 1930	115
APPENDIX B. MEANING OF THE CENSUS TERMS "AT WORK" AND "UNEMPLOYED" IN 1930	119
APPENDIX C. INDEX OF EMPLOYMENT IN ALLEGHENY COUNTY	122
General Character of the Index	122
Relationship between Total Number and Average Number on Payrolls	123
Duplication as a Cause of Discrepancy	124
Change in Turnover	124
The Question of Bias in the Index	128
Use of the Employment Index to Measure Change in Number of All Gainful Workers Employed	128
APPENDIX D. MONTHLY ESTIMATES OF THE NUMBER OF EMPLOYABLES, 1929-1936	130
Employables in October, 1929	130
Employables in January, 1929	131
Employables in March, 1933	132
Employables in December, 1936	132
Summary	132
APPENDIX E. MEASUREMENT OF AVERAGE UNEMPLOYMENT IN THE PITTSBURGH DISTRICT, 1929-1936	133
Probable Average Working Time at the Peak in 1929	136
INDEX	139

LIST OF TABLES

TABLE	PAGE
1. Allegheny County Residents Aged 10 Years or More Classed as Gainful Workers, April 1, 1930, by Industry Group	24
2. Unemployed Gainful Workers, Pennsylvania and Allegheny County, April, 1930	24
3. Number of Persons in Classes A and B Unemployed in Pittsburgh, April, 1930, by Period of Idleness	25
4. Gainful Workers in Classes A and B Unemployed in Pittsburgh, April, 1930, by Industry Group	27
5. Summary Data on Employment and Unemployment in Allegheny County (Except Scattered Rural Areas) February, 1934	33
6. Per Cent of Employment and of Unemployment in Allegheny County by Nativity, Color, and Sex, February, 1934	39
7. Per Cent of Workers Employed and Per Cent Unemployed, Allegheny County, by Industry Group, February, 1934	40
8. Number of Employables, Per Cent Employed, and Per Cent Unemployed in Allegheny County, by Age Groups, February, 1934	44
9. Number of Employables and Per Cent of Employment and of Unemployment in Allegheny County Cities and Boroughs of 2,000 or More Employables Each, February, 1934	45
10. Number of Employables, Per Cent Employed, and Per Cent Unemployed in Pittsburgh, by Wards, February, 1934	46
11. Index of Average Numbers on Payrolls in Allegheny County, 1929-1936	51
12. Monthly Estimates of Number Employed and of Number Unemployed in Allegheny County, 1929-1936	52
13. Monthly Estimates of Per Cent of Employable Persons Unemployed in Allegheny County, 1929-1936	52
14. Monthly Index of the Amount of Gainful Work in the Pittsburgh District, 1929-1936	56
15. Monthly Index of Average Amount of Work per Employed Worker in the Pittsburgh District, 1929-1936	58
16. Monthly Estimates of the Average Per Cent of Full Time Worked and of Average Per Cent of Full Time Lost by Those Employed, Pittsburgh District, 1929-1936	60
17. Index of General Business Activity in the Pittsburgh District, 1919-1936 (Not Adjusted for Trend)	73
18. Index of General Business Activity in the Pittsburgh District, 1884-1936 (Adjusted for Trend)	76
19. Cyclical High Points and Low Points of Business Activity in the Pittsburgh District, 1885-1933	78
20. Ranges of Seasonal Fluctuations in the Pittsburgh District, 1929..	80

LIST OF TABLES

TABLE	PAGE
21. Number of Families According to Number of Persons per Family, Allegheny County, April, 1930	87
22. Number of Families According to Number of Gainful Workers per Family, Pittsburgh, April, 1930	88
23. Number of Families According to Total Family Income in 1929: Sample, Urban Portions of Allegheny County	98
A-1. Number of Gainful Workers in Pittsburgh, by Age, April, 1930..	117
A-2. General Composition of the Group Not Classed as Gainful Workers in Pittsburgh, April, 1930	118
C-1. Rates of Accession and Separation, Industrial Payrolls, United States	126

LIST OF CHARTS

CHART	PAGE
1. Estimated Monthly Number of Employables, Number Employed, and Number Unemployed, Allegheny County, 1929-1936	50
2. Monthly Indexes: Total Number Employed and Amount of Gainful Work, Pittsburgh District, 1929-1936	57
3. Estimated Monthly Per Cent of Working Time Lost by Employed Persons, Pittsburgh District, 1929-1936	59
4. Trend of Industrial Production and of Population, Pittsburgh District and United States, 1884-1936	64
5. Production Trends in Selected Industry Groups, Pittsburgh District, 1880-1935	67
6. Production Trends in Selected Industry Groups, Pittsburgh District, 1880-1935	68
7. Trend of Total Production, of Production of Finished Rolled Iron and Steel, and of Production of Coal, Pittsburgh District, 1884-1935	70
8. Monthly Indexes of General Business Activity, Not Adjusted for Trend, Pittsburgh District and United States, 1919-1936	72
9. Monthly Indexes of General Business Activity, Adjusted for Trend, Pittsburgh District, January, 1884, to January, 1937	74

INTRODUCTION

One of the impressive features of social development in the United States during recent decades has been the progress made in the organization of social work.¹ Correlation and integration of welfare and charity agencies were much in the foreground. Welfare federations and community funds founded earlier took on new strength, and new federations and funds sprang up. Public welfare activity was expanded. The marked extent of such development during the twenties seems especially impressive because of its revelation of how prevalent was the need for essential goods and services, how seriously prosperity failed to be general.

As the depression deepened after 1929, the continuing relief and welfare problem became more and more overshadowed by the magnitude of the emergency relief problem. Moreover, as state and local organizations staggered under the emergency load, the Federal Government came to overshadow the state and local organizations in the field of relief. In fact, Federal emergency actions became so closely identified with the relief problem that many hopeful persons, forgetting the grievous magnitude of want that prevailed before the great depression, looked forward to the end of emergency relief as if that would mean the end of relief.

To delude oneself with that sunny hope is to forget the history of the years preceding 1929 and to ignore the relief load carried by states, local governments, and private agencies—not to speak of private personal relief—during the depression. Moreover, to entertain such hopes is impossible without ignoring the disastrous effects of the depression itself. There was a relief problem of magnitude in spite of the relative prosperity of the twenties. Nothing has happened to the scheme of economic distribution to justify the expectation that a return to “prosperity” levels would leave a relief problem less in magnitude than that of the predepression years. On the other hand, the loss of savings, the demoralizing

¹ Sydnor H. Walker, “Privately Supported Social Work,” and Howard W. Odum, “Public Welfare Activity,” Chapter XXIII and Chapter XXIV, respectively, in *Recent Social Trends in the United States*, the report of President Hoover’s Research Committee on Social Trends (New York: McGraw-Hill Book Company, Inc., 1933).

2 *ECONOMIC BACKGROUNDS OF RELIEF*

effect of unemployment, and the physical damage done by destruction of health and decency standards may be expected to cause relief requirements to exceed for a long time the requirements known before the depression.

We have noted the development among relief and welfare agencies in the twenties in response to the growing national understanding of the relief problem. Such agencies are the existing machinery for dealing with relief and welfare. The strains on those agencies have been severe, and the impetus for revamping and reorientation is inevitable. No one can prophesy exactly what will be required of them; but one may confidently prophesy that they, or some revamped successor to them, will be part of the necessary social machinery. In succeeding pages, the term "social work agencies" refers merely to whatever organizations we have or may have for meeting the problems of need.²

This study is aimed, first, as a contribution toward an understanding of the reasons for the persistence of the relief problem and, second, as an aid toward understanding the magnitude of the relief problem in Allegheny County. With respect to the first objective, the general analysis in chapters 1, 2, and 3 is relevant to our whole industrial setting; it applies with special force in Allegheny County because that county is highly industrialized. The other chapters are focused on Allegheny County; but, because of the typically industrial character of the county, the findings have suggestive bearing on other highly industrialized areas.

² Changing form and function of the public relief agencies since 1929 is compactly reviewed in *Legislative Trends in Public Relief and Assistance*, Works Progress Administration, Division of Social Research, Research Bulletin, Series III, Number 2 (Washington, D.C., 1936).

CHAPTER 1

GENERAL CHARACTER AND SIGNIFICANCE OF ECONOMIC NEED

Prevalence of need has been suggested, in the Introduction, as the cause lying back of the development of social work agencies. There is no intent to oversimplify. Social work problems are of complex character, and they issue from a diversity of backgrounds. No simple formula explains poverty, sickness, injury, physical or mental incompetence, child dependency, family disorder, delinquency, or perversion. A multitude of influences in the backgrounds of biological inheritance, racial tradition, religion, morals, politics, education, economic environment, luck, and accident contribute to the peculiar manifestations of need, to individual behavior in circumstances of need, and to the community's reaction in the face of need. In fact, these things have a distinct bearing on what stage of ill-being is defined as need and on what aspects of behavior come to be "social problems."

It is permissible, however, to view the social work problem in terms of two broad categories of need:

Need for material things, such as food, clothing, fuel, shelter, household equipment, medical supplies, school supplies, and tools

Need for services, such as care of the sick or the injured, care of the permanently incapacitated, protection and guidance of dependent children, legal aid, counsel in family maladjustments, supervision of juvenile delinquents, provision of educational opportunity for adults, and special services for unadjusted population groups

These two broad categories, although distinguishable in character, are to a very great extent overlapping and interwoven. Want of material things is almost certain to indicate want of essential services. Want of services, to a considerable extent, reflects want of material things. Consequently, whatever the imponderable complexity of other backgrounds, most social work stands outlined against the backgrounds of human need for goods and services.

Need, as it concerns us here, means not enough goods and services *before* relief is provided. Of its total extent, there is no record.

Since some relief is provided from sources not within the framework of organized social work, need is more extensive than that actually confronting recognized relief agencies. Moreover, it seems clear that relief budgets regularly fall short of the requirements recognized by those expected to handle relief. Therefore, relief records, which are commonly offered to show the prevalence or the absence of need, in fact reflect nothing but the extent to which need has been recognized and recorded. Growth of relief budgets may reflect nothing but growing provision of recorded relief. Curtailment of relief budgets may mean nothing but dumping the burden on other doorsteps—a procedure which may get the burden off the budget record but does not get it off the map.

In the absence of full records of need, but in the face of incontestable evidence that need exists on a significant scale even in the best times, the study of the economic background of the relief problem becomes necessarily an exploration in the probability of need.¹

If our natural resources were scant, or if our production were carried on by primitive techniques, universal want would be unavoidable. But our resources are not scant, we have known rather high productivity, and our system is judged to be capable of producing substantially more than it has produced.² Therefore, need reflects lack of access to the productive capacity of the economic system. Need so prevalent as to necessitate an elaborate social work organization indicates that a significant portion of the people are not provided, through the ordinary commercial workings of the economic system, with sufficient access to the productive capacity of the economic system.

¹ There cannot be, of course, any close mathematical evaluation of this probability; hence, "exploration" rather than "evaluation."

² A conservative estimate of that additional possibility is given in Edwin G. Nourse and Associates, *America's Capacity to Produce*, The Brookings Institution (Washington, D.C., 1934). Much more optimistic estimates have been dramatized by the group commonly referred to as "technocrats."

CHAPTER 2

LIMITS OF DIRECT ACCESS TO THE ECONOMIC SYSTEM

Since lack of access to goods and services dictates the provision of relief, we should examine briefly the limits of access to the economic system. The term "direct access" will be used here to denote access provided by the ordinary commercial workings of the economic system.

THE MONETARY DOOR TO THE NECESSITIES OF LIFE

On the commercial basis, the ability of anyone to get goods and services depends on his having purchasing power, i.e., money (in the broad sense) or something having recognized money value. Under the commercial criterion, the system works for those who have money, regardless of how they get the money, but does not work for those who do not have money, no matter how much they want what the commercial system has to offer.

There is, of course, extensive public service—typified in most communities by schools, police protection, fire protection, roads, protection against dangerous communicable disease, recreational facilities, and some medical care—available to individuals without money.¹ And, in a significant measure, there is provision by private charitable organizations and benevolent foundations of services without cost to the individual receiving the service. Nevertheless, in industrial communities the immediate necessities of life—food, clothing, shelter, household equipment and supplies, fuel, and lighting—are usually not obtainable by the individual or the family without money. In spite of some development of free clinic and hospital service, and in spite of the significant amount of unpaid service of the physician, medical service is still mainly on a commercial basis. By and large, money, and nothing else, unlocks the door to the immediate personal necessities.

Because of this key significance of money in living, it is well to view in outline the ways in which money comes into the hands of

¹ See Carroll H. Woody, "The Growth of Governmental Functions," *Recent Social Trends in the United States*, pp. 1274-1330.

6 *ECONOMIC BACKGROUNDS OF RELIEF*

the individual, so that too limited direct access to the economic system, or complete lack of it, may be more easily comprehended.

FLOWS OF MONEY TO INDIVIDUALS

There is general familiarity with the following ways of getting money:

- To receive it for work
- To receive it as a gift
- To receive it as an inheritance
- To receive it as hire for the use of something owned
- To receive it in exchange for something owned
- To take it by theft or by other illegitimate methods

A receipt of money income, of course, may overlap two or more of these classifications; and it may be called one thing when in fact it is another. The wages of a mechanic having to furnish his own tools and equipment must cover hire of his property used in the service. The salary of the proprietor's son may be mainly a gift. A wage or a salary may represent blackmail or bribery. If it is collected under claim of due performance when there has not been fair service, it equals or closely approximates theft—though it is commonly given the more polite name of "graft." What is called a gift may be advance inheritance; it may be blackmail or bribery. So-called return on investment (hire for the use of money owned) may represent a merely delusive dividend from the capital of the owner, or it may represent an astute partitioning of income or of capital belonging to others. Receipts in exchange for something owned, such as securities, goods, land, buildings, or livestock, may be in part mere theft arising from sale under gross misrepresentation. What looks like receipts in exchange for property, on the other hand, may represent mainly a delayed realization of wages, as in the sale of wheat by the farmer or in the collection for a finished piece of furniture by the cabinetmaker.

The number of persons or families receiving a little in the form of gifts, inheritances, or return on capital may be large. But that little has only a little bearing on the question at hand. The significant question is whether any substantial part of the working people could carry themselves long without paid employment.²

² On the important point that by and large they do carry themselves when they can, see Ralph Carr Fletcher and Katherine A. Biehl, "Forecasting the Volume of Hospital and Dispensary Service for Allegheny County" and "The Trend in Care of Local Homeless and Transients," *The Federator* (published by the Federation of Social Agencies of Pittsburgh

It is estimated by The Brookings Institution that 80 per cent of all normally gainfully employed persons in the United States in 1930 were in the wage and salary group.³ Approximately 8 per cent of the grand total were farmers not on a wage or salary basis. Exclusive of these farmers, about 87 per cent of the gainfully employed were on a salary or wage basis—a rough average of conditions in industrial communities. From the same source comes the statement that

There are no appreciable savings among the families with incomes about \$800 or about \$1,300. Even in the \$1,800 and \$2,700 income groups savings are not large . . .⁴

In 1929 nearly two-thirds of the nonfarm families had incomes less than \$2,500 and nearly three-fourths had incomes less than \$3,000.⁵ Meanwhile, it appears that 86.7 per cent of all savings in that year were made by families having incomes over \$3,000; and it appears also that of 21,546,000 families having incomes up to \$3,000, there were 5,899,000 families which not only did not have savings but actually incurred deficits—deficits which were equal to the savings of all other families in income classes up to \$3,000 per year.⁶

Comparable facts for Allegheny County are not available. But the general significance cannot be lost: Industrial workers are almost wholly in those groups which at best have only small savings. Most of them must work or want. To be sure, some may both work and want, because of low rates of pay. It may be remarked, however, that in terms of the logic of competition low wages mean lack of jobs. It can, of course, be said that low wages represent labor surplus. But unless society expects to rid itself of the need attributable to labor surplus by executing the surplus laborers or by permitting them to starve, it must provide relief until it can conceive the remedy in terms of organizing work for

and Allegheny County), Vol. XI, No. 11, December, 1936, and Vol. XII, No. 1, January, 1937. Between business activity and free days of care at hospitals a correlation of $-.815$ was found; between business activity and days of pay care, $+.766$.

³ Maurice Leven, Harold G. Moulton, and Clark Warburton, *America's Capacity to Consume*, The Brookings Institution (Washington, D.C., 1934), p. 31.

⁴ *Ibid.*, p. 71.

⁵ *Ibid.*, p. 231.

⁶ *Ibid.*, p. 93. The 86.7 per cent is the ratio of estimated savings of income groups having \$3,000 or more to the total of estimated positive savings (not to total net savings).

them—and it cannot avoid construing surplus labor as lack of work.

Furthermore, even with stable work at high wages, the worker's access to the economic system may be inadequate, because of a large number of dependents. Society sternly holds to the tradition that a man should support his normal family dependents. But there is nothing whatever in our primary criteria of access to the economic system that adjusts the worker's opportunity to work or his rate of pay in accordance with the number of his dependents. Nor is it possible to conceive any such adjustments in a competitive wage system. Relief to supplement the income of large families, therefore, is always likely to be necessary. But opportunity for the family to stand on its own legs, i.e., to have reasonably full employment for the breadwinner, is the major factor setting limits on the necessity of supplementary income for large families.

INSTABILITY OF THE OPPORTUNITY TO WORK

Most work for pay goes on in connection with what we call business activity. Irregularity in business activity is well known to all capable of knowing. Those accustomed to the examination of such irregularity are familiar with seasonal changes, boom and depression changes, long-time trend changes, and occasional changes that seem to reduce to no standard classification and are called "random" changes.

Irregularity of business activity in the district of which Allegheny County is the center will be discussed in Chapter 9. Recognition of grave irregularity is necessary here, for business irregularity is in broad terms merely another way of saying irregularity of opportunity to make a living.

In the long-run view, the objective of the industrial or commercial employer in the proprietary profit system necessarily is to make profits. People are hired when the employer thinks it is good business to hire them; they are dropped from employment when he thinks it is good business to drop them. He is practically certain to drop workers when business declines. He may find it good business to drop part of them when business is sustained, or even when it is increasing, because of "improved" labor management or because of substitution of machines for men. There is no obligation to hire any specific person, nor is there any obligation to hire a specific portion of the employable persons. On the contrary, there is a compelling obligation not to hire any except

those who are worth something to the business at prevailing business levels and in the prevailing state of productive techniques. This is the rule of business, and whoever violates it does so at his peril. Because of business irregularity and changing methods, industrial and commercial employment is highly irregular. Aside from cyclical fluctuations and technological changes, important regional shifts, like that experienced in the textile industry and that in the bituminous coal industry, may vastly reduce employment in one area to the advantage of another.

Engagement in the activities of governmental, educational, religious, civic, or social work activities is subject to pressures that introduce into these activities a part of the irregularity of commercial activities. In good times, for example, the department of health may employ more nurses, the school board may employ more teachers, the church may have a secretary or an assistant pastor, the club may employ a director of recreation. In bad times, these organizations all have to pare budgets, directly and indirectly employing fewer people. There are, to be sure, social resistances which place limits on the extent to which such activities may be curtailed; but they do reflect somewhat the ups and downs of commercial activity, with respect to both amount of employment and rates of pay. Likewise, most persons engaged in an independent technical or professional capacity find their income expanding with the rise of business and business employment, contracting or ceasing with the fall of business and business employment.

Thus, to a very large part of the employable population, there is, within the working life—and, to many, within any year—a great irregularity in the opportunity to earn a living. But elemental human requirements do not cease when business is bad. Consequently, even to very competent workmen, need, like prosperity, is always “just around the corner”; and the wolf lives at the door of the less competent workman. Furthermore, with a major change in industrial techniques, a highly competent workman may become, in the new setting, an incompetent.

It is not uncommon to hear it implied, if not bluntly stated, that the industrial worker's unemployment is traceable to shiftlessness. In such representation, much is made of the sturdy frontier farmer who, with very little money, wrestled from the earth a living for himself and his family. Also, the aggressive independent craftsman of early days is recalled, turning out, through fair

weather or foul, the shoes, harness, furniture, implements, utensils, what not, that brought him a livelihood. As commonly presented, these mutually independent giants of the earth are unadulterated myth. That early farmer was the craftsman's market; and that early craftsman was the farmer's market. They were working for each other in a scheme of division of labor.

The lesson of these two pictures, however, should be taken to heart; for each represents a man somewhat independent in planning his work to meet his requirements, in making use of the abilities of employable members of his family, in speeding up his efforts in the face of expanding requirements, in diversifying his labor in response to changing demand, and in coming out with products which were his own. To a very large extent, modern industrialization has blotted out the independent craftsman and has massed his descendants and a large part of the descendants of the farmer in great industrial centers. There, they have been placed on jobs the operation of which they do not determine and the product of which they do not own. No matter how sturdy and independent in spirit they are, their welfare hinges on continued work at money wages, which, in turn, hinges on decisions not their own.

Data on the activities of the State Employment Office and thirteen private employment agencies show convincingly that in Pittsburgh the ratio of the number of jobs to the number of applications for jobs was falling drastically long before 1929.⁷ It was the opportunity to work, not the willingness to work, that dried up—and that was in "good" times.

The tendency of jobs to dry up in the roaring twenties probably is related to a very significant special feature of the uncertainty of industrial employment. In the long view, industries tend to start slowly, gather momentum, grow rapidly for a period, level off to slow growth or no growth at all, and then perhaps decline. Major technological changes may speed the growth of one industry or one process and depress or eliminate another. New industries or major improvements in old ones seem to be requisite to sustained growth.⁸ The bituminous coal section of western Pennsylvania has

⁷ Josephine McLaughlin, "Activities of Selected Employment Agencies in Pittsburgh," *Pittsburgh Business Review*, February, 1931, pp. 15-16.

⁸ Abstracted from a forthcoming study of comparative industrial trends, by Glenn E. McLaughlin, Bureau of Business Research, University of Pittsburgh. An advance segment of this study was published in the *Pitts-*

experienced the generally depressing effect of improved economy of combustion and of competing sources of energy on the coal industry, as well as the inroads of competitive fields on former markets for Pennsylvania coal. These inroads were notably sharp as the by-product coking process, utilizing various coals at many points near the markets, largely displaced the beehive coking process, located mostly in the Connellsville district.⁹ The iron and steel industry in the district, after a period of enormous growth, has tended more and more to level off in the face of rising production elsewhere.¹⁰

In view of the various irregularities in work opportunity, it is certain that the direct access of employable persons to the economic source of goods and services will often be restricted, often be closed entirely.

Much of this irregularity and disruption of working opportunity, of course, makes victims of employers as well as of their employes. Even the rosy roads of prosperity are strewn with bankruptcies, and former business men are not unknown to the bread lines. But the business man is, as business man, generally a purveyor of goods and services to the vastly larger numbers in the employed group. As an individual, he may prosper mightily in the midst of degradation. But to think of prosperity for business men as a group in the midst of unemployed industrial workers is nonsense. Therefore, in this study, irregularity of opportunity to make a living is considered mainly with reference to those who work for hire.

PERSONS NOT EMPLOYABLE ON A MONEY BASIS

It is, of course, impossible to make clear distinction between employables and unemployables. A two-year-old child, a paralytic, or a complete imbecile would be recognized as unemployable. On the other hand, many of those not employed might be employed

burgh Business Review in May, 1935, under the title, "Growth of Population and of Manufacturing Employment in the Pittsburgh Industrial Area in Comparison with Growth in Other Industrial Areas."

⁹ Wilbert G. Fritz and Theodore A. Veenstra, *Regional Shifts in the Bituminous Coal Industry*, Bureau of Business Research, University of Pittsburgh (Pittsburgh, 1935), pp. 2-5 and 145-146.

¹⁰ Glenn E. McLaughlin, "The Growth and Distribution of the Iron Industry in the United States," and "The Growth and Distribution of the Steel Industry in the United States," *Pittsburgh Business Review*, February, 1931, p. 12, and May, 1931, p. 12.

12 *ECONOMIC BACKGROUNDS OF RELIEF*

with complete propriety under proper guidance, inducement, or compulsion.

But it must be agreed that some people are never employable, because of physical or mental incapacity. Furthermore, it is obvious that every person is unemployable during part of his life, i.e., in early youth and in periods of disability from sickness or injury, and that many reach the unemployability of old age. Because of the disabling effect of disease or injury, any employable person may become unemployable. Because of a complex of physiological reasons, customary family division of labor, and reasons lying in ancient tradition regarding the proper place for women, the larger portion of the women are not available for commercial employment. Therefore, within the framework of existing custom and method, a very considerable part of the population is not employable.

Actual employment and unemployment will be considered later in some detail, but a general view is needed here, to make clear the extent to which, in practice, the population is unemployable. In April, 1930, when the number on payrolls was only a little below the average number in 1929 (Table 11), the number of persons in Allegheny County 10 years of age or more who usually had as much as one day of gainful employment per week comprised about 39 per cent of the total population of the county (Table 1). This percentage includes all sorts of gainful employment, part-time or otherwise, of children, of the aged, of women having "pin-money" jobs, of casual workers ambling from pillar to post, and of partially disabled persons doing what they could to make ends meet (Appendix A). Obviously, therefore, it includes a very substantial number who had only a small part of what could be called a gainful "job" in any thoroughgoing sense. If each fractional job of one day or more per week be counted as work, 61 per cent of the persons were not gainful workers. With allowance for those wholly unemployed (Table 13), and with the fractional gainful jobs reduced to their equivalent of full jobs (Table 16), it appears likely that the average number of man-days of work per day was about one-third as great as the number of people. This ratio would mean that on the average a full-time job or its equivalent had to support the worker and two persons not gainfully employed. The actual number of dependents per worker, of course, varied widely, as we shall see more clearly in Chapter 11; and an income that is

adequate for only the average number of dependents is clearly not adequate for five, six, or more.

Women engaged as homemakers are not classed in the census as gainful workers unless they are housekeepers on a paid basis. The exclusion, of course, does not mean that homemakers not on a paid basis are not engaged in useful work. But the distinction is very important in an industrialized community, for most housewives do not directly earn money. And no matter how diligently, how skillfully, a woman runs the household, and no matter how indispensable the service, generally there still must be a breadwinner with employment on a money basis. Meanwhile, although urbanization and industrialization have brought significant change in family life, living still goes on mainly in terms of family groups. Therefore, it seems likely that within the calculable future most women having family responsibility of homemakers will remain commercially unemployable.

The composition of the unemployable group is always changing. Children enter by birth, and others come in because of disablement by injury, disease, mental collapse, or advanced age. On the other hand, people leave the unemployable group by becoming employable and employed, and others are removed by death. Changes in social policy, such as that regarding child labor or that regarding employment of women, may enlarge or diminish the number. Sweeping changes in industrial character and in productive processes may alter the kinds of work opportunity, creating opportunity for some who did not fit into the work formerly available and making misfits of some who were formerly of strategic industrial importance.

Unemployables usually have no direct access to the economic system. In the family tradition, of course, the larger part of them share the access of the breadwinners. But, as we have noted before, the breadwinner's earnings may be low or his family load may be heavy. Therefore, for many of the unemployables attached to employables, there is a considerable probability that the access to the necessities of life will be sorely limited.

A very significant part of the unemployables have no normal family attachment to employables; and some employables dodge their normal family responsibility, leaving their dependents with no actual family attachment. Orphans, deserted children, deserted wives with small children, widows with small children, unattached

aged people, and physically or mentally handicapped people without family attachment are numerous. And only a small part of these could have funded income or consumable funds to carry them.

SUMMARY

In summary, then, to have access to the economic system for the necessities of life, one must have money. Numerous persons have a little money, and a few a great deal, by means other than working for pay; but in the commercial-economic scheme, the living of overwhelmingly the larger part of the people depends on the flow of wages or salaries. The opportunity for employables is highly irregular; consequently, their access to the economic system is highly unstable. Furthermore, since the worker's rate of pay may be low and his family load may be heavy, his income may be inadequate even if he works full time. Persons economically dependent on the worker, therefore, are subject to the limitation of access imposed by irregular work, low rate of pay, or large size of family. Most of the unemployables not attached to employables, of course, do not have even this limited degree of indirect access to the economic system, except as it is provided by noncommercial methods outside the sphere of family responsibility.

CHAPTER 3

NONCOMMERCIAL DISTRIBUTION OF PURCHASING POWER

It is possible to quibble at length over the exact extent to which workers lack employment, get low rates of pay, or have heavy family responsibilities. Economic statistics, including much of the Federal census, have developed largely around what the business system does. The fine question of what it fails to do in terms of social requirements is poorly measured; and conclusive settlement of disputes on the extent of that failure is impossible.

But there can be no blinking of the fact that these two things are true: First, on the commercial basis, there is vast uncertainty in the opportunity of employables to maintain direct access to the sources of goods and services necessary for themselves and their dependents. Second, on the strictly commercial basis, most unemployables without attachment to workers have no direct access to necessary goods and services.

Meanwhile, there is a widely operative social rule that people shall have at least a chance to survive, i.e., that at least the barest needs shall be met. To be sure, physicians and nurses know well of slow starvation, called by the less stark name of "undernourishment" or "malnutrition." But generally, even in very bad times, there is not much sudden starvation. Indeed, the ability of business to snap into action when the opportunity comes proves the presence of a labor reserve, idle, but not starved. That idle workers, their dependents, and unemployables without breadwinners do not starve signifies that noncommercial distribution of purchasing power is much more extensive than it is ordinarily thought to be.

Taxation is the most universal form of payment not on a commercial basis, i.e., not associated with direct receipt, or secured promise, of a *quid pro quo*. In ordinary times, most of the transfers by taxation are used for the support of "public functions" extending to the whole community—guarding against invasion, maintenance of internal order, protection of property rights, fire protection, sanitation, control of communicable disease, building and maintenance of highways, provision of educational opportunity, and provision of recreational spaces and facilities. Governmental

units have to buy commercially, but they do not take money from the taxpayer on a commercial basis; and they do not—could not—operate the police department, the highways, the schools, the fire department, or other public functions on the basis of direct pay for value received.

Part of the money taken by taxation always has been used in caring for the needy. Relief laws are very old. Public homes for needy orphans and public provision for foster care of dependent children are found widely. Public homes for the aged and for chronic invalids are common. Relief for the unemployed is much older than the depression. Public care of insane persons is commonplace. It is true that public assistance to the needy has often been outrageously small and atrociously administered; but the fact remains that some public provision is traditional practice, not some new turn of a world gone berserk.

On the other hand, private aid for the needy has prevailed and still prevails. To people at deficiency levels, help is often given by kinsmen, friends, churches, fraternal orders, or special charity groups. The total extent of such neighborly help is never known, but examples of it may be found in almost any neighborhood. The efficacy of the quiet neighborly method, however, is doubtful in an industrial community. Because of the uprooting and the shifting of population incident to industrialization, there are too many people who have no claim to the shield of neighborly kindness. Indeed, in an industrial community, the likelihood is great that kinsmen and neighbors willing to help each other will be in need at the same time.

Many business concerns have developed welfare plans for their own workmen. To a great extent, however, their main function has been promotion of health and morale among workmen usually at work. By and large, they have not served to protect livelihood in slack times except for workers of more than average worth to the going concern—and generally not for them without moral, if not legal, compromise of the workman's freedom.

Out of long trial and error, there has been an extensive development of public agencies and private agencies having community-wide responsibility for meeting human requirements not met by strictly commercial methods. These agencies are coming to be widely designated as social work agencies.¹

¹ The meaning of the term "social work" is not wholly settled, even among social workers. But growing recognition of the scope and the complexity of

Traditionally, the pleas of social work agencies for funds with which to meet the problems of need have been appeals to human generosity. There is no quarrel here with that plea, for surely it would be a hopeless outlook if humanity had not absorbed from its great philosophers, poets, statesmen, and religious teachers some recognition of direct social responsibility.

But altruism appears to fall short of the universal, and social compulsion enters more and more in the provision of funds to meet the shortcomings of commercial distribution. In part, that compulsion is manifest in the pressures placed on individuals and on business firms in private campaigns for charity and welfare funds. Increasingly it is being written into the tax laws of the land.

Whatever the mixed motives lying in the support of, or at least the tolerance of, those compulsions by the proprietary-profit system, their necessity rests in crass historical facts bearing on self-preservation: First, under the strictly commercial criteria, access to the economic system is highly uncertain for the employables and their dependents and is totally absent for most of the unemployables without attachment to workers. Second, privation and the prospect of starvation, when the necessities, or the means to get them, appear at hand, perpetuate and intensify disorder until social explosion is generated. Therefore, there seems to be no reason for supposing that the commercial system could survive without this large-scale distribution of purchasing power on a non-commercial basis.

The socialists, of course, insist that, in spite of all such measures, the capitalistic system is doomed because of its inherent inability to provide adequately for the general welfare. But the current American effort appears to be in the direction of saving as much of capitalism as can be saved. In that effort, the instrumentalities for noncommercial distribution of purchasing power are indispensable. In short, some sort of organization for relief is the inseparable social twin of our commercial system.

It will be assumed without argument that most unemployables without family support are an unavoidable social burden. In the following chapters, therefore, primary attention will be centered on the probability of unemployment and of resultant need among the employables and their dependents.

social work, suggested in Chapter I, has led to significant change in the outlook and the methods of these agencies. See Philip Klein, "Social Work," *Encyclopedia of the Social Sciences*, Vol. XIV, pp. 165-183.

CHAPTER 4

MEANING OF UNEMPLOYMENT

Discussions of unemployment are commonly vague on two major points. First, although it is recognized that unemployment relates to the lack of work of an employable person, there is no clear distinction between employables and unemployables. Second, there is lack of clear definition of what unemployment means. Not all the uncertainty of definition can be eliminated, but we shall be able to proceed better in a study of unemployment after some clarification of these terms.

EMPLOYABLES AND UNEMPLOYABLES

No simple distinction between employables and unemployables is possible. Being employable is determined in part by personal attributes, in part by economic opportunity, and in part by social tradition and policy. Personal attributes of those who are more or less employable are of enormous variety between the flanking extremes of youth and old age, giant strength and tragic weakness, superb skill and incurable fumbling, rich intelligence and foggy dim-wittedness, alertness and indifference, overstepping cocksureness and paralyzing cautiousness. The character of economic opportunity may be widely diversified or severely limited; the amount of economic opportunity may be growing, merely holding its own, or declining. Under determined legal policy, or under the prevailing social compulsions and taboos, there may be severe limits or very moderate limits on what persons may be employed or on conditions under which they may be employed.

Far the larger part of those not classed as gainful workers in 1930 were children and women. The general composition of the group not gainful workers in Pittsburgh is shown in Table A-2, in Appendix A. Children aged less than 17 comprised 51.7 per cent of the group; women aged 17 or more, 42.6 per cent. Men aged 17 or more comprised only 5.7 per cent of the whole group not classed as gainful workers. Age distributions in the county differ, but these proportions for the city give indications of the county proportions.

In the county, of a total population of 1,374,410, there were 537,097 classed as gainful workers. Those not gainful workers, therefore, numbered 837,313. Judged by the city ratio, with some allowance for the larger proportion of children in the county, perhaps 45,000 or 46,000 of these were males aged 17 or more. Among these were included students, men permanently disabled by disease, injury, or age, and men in prison.

In the discussion of the composition of the group called gainful workers, it is pointed out that the younger employable group—the normal new increment to the working group—probably is not fully represented among the gainful workers. Some allowance for this factor would reduce, by a small fraction, the proportion of women and of men not gainfully employed. But a major increase in the employable group would have necessitated the inclusion of a larger proportion of women or of children. The few who would argue for a significant increase in the employment of children probably could not get a social hearing. There has been some increase in the gainful employment of women, but a major gain of that sort is problematical.

For purposes of the analysis of employment and unemployment in 1930, in Chapter 5, the number of gainful workers will be taken as the number of employables, with the qualification that new employables probably were not fully represented. In the analysis of data for 1934, in Chapter 6, we shall follow the same definition as closely as we can.

There is no intent here to define what an employable might be, in terms of a scientific weighing of our actual total labor resources. The purpose is to consider as employable those who are actually employed and those who, though not at work, are able and willing to work. The intent is to appraise employment and unemployment within the existent scheme of things.

MEANING OF UNEMPLOYMENT

Unemployment is lack of work for employable persons. In periods of general business depression, a great many may temporarily be wholly out of work. Over a long period, however, employable persons have some work; and a person always wholly, or almost wholly, out of work is fundamentally unemployable in the existent economic setting. In other words, unemployment does

not in the long run mean total absence of work; it means insufficient work.

Every worker is likely to have occasional temporary periods of disability. At such times, although he is temporarily unemployable, we shall have to consider him merely an unemployed worker, for we are concerned with total loss of working time by the employables.

In addition to idleness explainable by disability, employes on a wage basis are subject, at any level of business activity, to loss of time because of breakdown, production jam, delay because of failure at some bottleneck in the production line or the supply line, shutdown because of lack of orders, and other reasons causing failure to utilize the time of men able to work and standing by ready to work.

Some jobs are regularly part-time jobs. The holder of a part-time job may be regularly unemployed part of the time, or he may splice together two or more part-time jobs to have something like full-time work. To some extent, persons holding part-time jobs do not want work the rest of the time. A student, for example, may be glad to have only Saturday work or two or three hours of work every day. But this sort of voluntary limitation is a fringe phenomenon, not a dominant characteristic of the labor market. The determinant type of part-time employment is lack of work for persons who would work more if there were more opportunity. And the term "part-time" in subsequent chapters will mean less than full-time work for an employable person.

No doubt the larger losses of time are due to the business irregularity associated with seasonal changes or with the swings of boom and depression. Neither a seasonal rush nor a boom peak can be handled without labor in excess of that used at lower levels of activity. But these peaks are far above the ordinary levels, and much labor used at the peak is necessarily idle at lower levels of business.

A special feature of the definition of unemployment is encountered with respect to idleness associated with strikes and lockouts. Generally, a dispute over wage rates is involved, whatever the other issues may be. Employes want wages increased or they want them maintained against a proposed reduction; employers want wages reduced or they want them maintained against a proposed increase. A similar question hinges about the refusal of unemployed workers

not on strike to accept work at rates which they consider unreasonably low.

The common classification of unemployment under such circumstances as "refusal to work" throws little light on the problem. It is merely that phase in which the argument follows a vicious circle. Generally it is true that at the time the worker is refusing to work for what the employer offers. It is equally true that the employer is refusing to hire for what the worker demands.

But we must go further. The employer refuses to hire presumably because he thinks his market would not justify the wages he must pay and allow the profit which he considers fitting. The worker, on the other hand, refuses to offer his services for a rate so low that the employer could afford to hire him, mainly because what the employer thinks he could afford to pay is considered too low to cover the laborer's cost of living and the safety or saving margin he considers proper. But the laborer's cost of living is made up of prices below which business refuses to sell. The business man reasons that if he must sell at a loss he might as well refuse to sell his product and fail without doing a lot of futile work. And, strange as it may seem, the worker reasons that if he must work at a loss, i.e., at a starvation wage, he might as well refuse to sell his labor and starve without the inconvenience of working while he starves. In fact, he may, for a time, decline to work even at wages which are at, or slightly above, subsistence (existence) levels, for he is schooled to believe that the normal expectation of American labor is a level of living substantially higher than mere existence.

At any rate, such unemployment is not only a reflection of refusal to work at offered rates; it is a reflection also of refusal to hire at demanded rates. If we indulge the fancy that business always employs all those who are employable at the prevailing levels of business, we reach the conclusion that there are never any employables out of work and therefore never any unemployment. Absurd, of course. Business decisions, except during the periods of labor scarcity in boom times, are made on the assumption that laborers then out of work are employable whenever business men find it desirable to employ them. We shall follow that businesslike assumption in this study.

In view of the main purpose of this study, to view unemployment as an explanation of need, one might object that some persons

22 *ECONOMIC BACKGROUNDS OF RELIEF*

idle have continued pay.¹ It is true that there are some vacations with pay, some allowance of continued pay during absences due to illness or injury, some compensation in periods of disability through insurance or compensation funds, and some allowances by unions to members on strike. On the other hand, we are concerned with the whole employable group. Among them are always some of the self-employed—independent business or professional groups who have nominal work but no earnings. We shall proceed, therefore, toward a statement of unemployment as an approximate equivalent of lack of earnings, it being assumed that those who are idle but receiving pay are roughly offset by those who are at work without earnings.

¹“Continued pay” from the employer. Unemployment compensation is embraced within the broad meaning of “relief,” as the term is used in this study.

CHAPTER 5

UNEMPLOYMENT IN ALLEGHENY COUNTY IN APRIL, 1930

Only one nation-wide Federal census—complete count—of all employed and all unemployed has ever been taken in this country. That census of employment was part of the regular decennial census taken in April, 1930. In that month, the average level of business in the Pittsburgh district was somewhat above the "normal" level (Table 18).

Available information on employment and unemployment in April, 1930, relates to "gainful workers." The composition of the group called gainful workers is explained in Appendix A of this study; the meaning of the terms "at work" and "unemployed" is explained in Appendix B.

In Chapter 4, it has been explained that unemployment must mean lack of work for employable persons. Those classed as "gainful workers" are accepted here as employables, and gainful workers not at work are the unemployed dealt with in this chapter. But, because of the omission of young people who were seeking work but who in fact had not previously been employed, it is believed that the census data on unemployment do not tell the whole story of unemployment. In other words, the record of unemployment which will be presented in this chapter is believed to err on the side of conservatism.

NUMBER OF GAINFUL WORKERS IN APRIL, 1930

In April, 1930, there were 537,097 persons aged 10 or more in Allegheny County who were reported as gainful workers. The total number of persons aged 10 or more was 1,109,331. The total population was 1,374,410 (Table 1). The listing of the population in the census and, therefore, of gainful workers, is according to residence. It will be assumed that the number of resident workers ordinarily employed outside the county was compensated by the number resident in other counties but ordinarily employed in Allegheny County (a point relevant mainly to those resident near the county line).

TABLE 1
ALLEGHENY COUNTY RESIDENTS AGED 10 YEARS OR MORE CLASSED AS
GAINFUL WORKERS, APRIL 1, 1930, BY INDUSTRY GROUP*

Industry Group	Total Number	Male	Female
Total population.....	1,374,410	694,816	679,594
Population aged 10 years or more.....	1,109,331	560,439	548,892
Gainful workers, total.....	537,097	421,298	115,799
Agriculture†.....	6,620	6,412	208
Extraction of minerals.....	15,010	14,867	143
Manufacturing and mechanical industries.....	241,785	218,957	22,828
Transportation and communication.....	56,330	49,478	6,852
Trade.....	97,635	70,614	27,021
Public service not elsewhere classified.....	13,522	12,330	1,192
Professional and semiprofessional service.....	39,221	19,376	19,845
Domestic and personal service.....	53,350	18,143	35,207
Industry not specified.....	13,624	11,121	2,503
Per cent of population classed as gainful workers...	39.1%	60.6%	17.0%
Per cent of those aged 10 or more classed as gainful workers.....	48.4%	75.2%	21.1%

* Adapted from the Fifteenth Census of the United States: 1930, *Population*, Volume III, Part 2, p. 709. Percentages computed.

† Includes 33 males and 2 females classified in "forestry and fishing."

TABLE 2
UNEMPLOYED GAINFUL WORKERS, PENNSYLVANIA AND
ALLEGHENY COUNTY, APRIL, 1930*

Class	Pennsylvania Total	Allegheny County Total
Total of gainful workers.....	3,722,428	537,097
Unemployed:		
Total, including unclassified†.....	392,086	55,511
Class A—Persons out of a job, able to work, and looking for a job.....	207,691	33,555
Class B—Persons having jobs but on lay-off without pay, excluding those sick or voluntarily idle.....	117,801	11,543
Class C—Persons out of a job and unable to work.....	13,056	1,864
Class D—Persons having jobs but idle on account of sickness or disability.....	28,347	4,934
Class E—Persons out of a job and not looking for work.....	5,391	699
Class F—Persons having jobs but voluntarily idle, without pay.....	6,720	804
Class G—Persons having jobs and drawing pay, though not at work (on vacation, etc.).....	4,816	942
Unclassified†.....	8,264	1,170

* Fifteenth Census of the United States: 1930, *Unemployment*, Vol. I, pp. 837 and 874. Data for classes C-G, inclusive, in the county were not published but were supplied directly by the Bureau of the Census.

† Class "h" of the rejected cases, shown for the state on page 878 of *Unemployment*, Vol. I, cited above. The county portion is estimated on the basis of the ratio of classified unemployed in the county to classified unemployed in the state. This group consisted of persons shown on the population schedule as unemployed but for whom data necessary for classification were not given.

NUMBER UNEMPLOYED IN APRIL, 1930

For the tabulations on the unemployed, the Bureau of the Census classified 54,341 persons as unemployed. In addition, it is estimated that 1,170 were among those who were shown by the census schedule of population to have been gainful workers unemployed but for whom data adequate for classification were not reported (Table 2). The estimated total number classifiable in census terms as unemployed in April, 1930, therefore, is 55,511. (Rounding of estimates will be deferred.) For reasons stated in Appendix B, this number is believed to be appreciably lower than the number idle on any one day representative of the period of enumeration. But, at any rate, more than one-tenth of the gainful workers were idle. An explanation is given in Appendix B for assuming that the census data were for April 15.

It will be observed that in Pittsburgh a considerable group of those in classes A and B unemployed had been unemployed less

TABLE 3
NUMBER OF PERSONS IN CLASSES A AND B UNEMPLOYED IN PITTSBURGH
APRIL, 1930, BY PERIOD OF IDLENESS*

Classification	Class A †	Class B †	Total Classes A and B	Per Cent of Total
Total.....	20,307	5,885	26,192	
Period of idleness‡				
Under 1 week.....	321	1,829	2,150	8.3%
1 or 2 weeks.....	1,681	1,155	2,836	11.0
3 or 4 weeks.....	2,224	763	2,987	11.6
5 to 8 weeks.....	2,860	587	3,447	13.3
9 to 13 weeks.....	3,475	596	4,071	15.8
14 to 17 weeks.....	2,256	295	2,551	9.9
18 to 26 weeks.....	3,028	305	3,333	12.9
27 to 39 weeks.....	1,172	62	1,234	4.8
40 to 52 weeks.....	1,738	58	1,796	6.9
53 to 104 weeks.....	923	18	941	3.6
105 weeks and over.....	490	6	496	1.9
Total of known period.....	20,168	5,674	25,842	100.0%
Unknown period.....	139	211	350	

* Fifteenth Census of the United States: 1930, *Unemployment*, Vol. I, p. 854.

† The classes are defined in Table 2.

‡ Enumerators were instructed to drop fractions of a week, periods less than one week being tabulated from the entry "0." The designations of time intervals are used here as published by the Bureau of the Census; but, by definition, the numbers 2, 4, 8 . . . 104, marking the more remote limits of the respective intervals, mean almost 3, almost 5, almost 9, etc. *Op. cit.*, Vol. II, pp. 606, 607, and 610-611.

than a month (Table 3). A similar distribution for the county is not available; but on the basis of proportions derived from the Pittsburgh data in Table 3 and from similar state data for classes C, D, F, and G, it is estimated that 17,061 of those idle at the middle of April had worked at least one day in the month ended

April 15.¹ Therefore, the estimated total of those who had no work at all in the month ended April 15, 1930, is 38,450.

For the purpose of making estimates to be presented in Chapter 7, it is desirable to have a figure for the calendar month of April. From the total of gainful workers, 537,097, and the estimate of 38,450 having no work in the month ended April 15, there follows the estimate of 498,647 as the number who had at least some work in the month ended April 15. Allowance for change in the employment index (Table 11) leads to the estimate of 504,331 as the total number having more or less work in the month of April.² It follows that an estimate of 32,766 had no work in April, 1930.

DIFFERENCES AMONG INDUSTRY GROUPS WITH RESPECT TO UNEMPLOYMENT

No complete distribution on an industry basis of the unemployed in April, 1930, is available. The distribution for Pittsburgh of classes A and B combined is given in Table 4. The total number unemployed in classes A and B comprised 9.4 per cent of all gainful workers in the city. In the professional service group, classes A and B unemployed comprised 2.9 per cent of the gainful workers. At the other extreme, in the group "industry not specified," classes A and B unemployed comprised 28.7 per cent of the gainful workers. In part, presumably, the latter group is composed of persons having industrial attachment for whom information adequate for classification was missing; but probably in large part the group consisted of unskilled and casual labor without any very definite usual attachment. The percentage in that group

¹ (a) Classes A and B combined for Allegheny County according to the proportion in classes A and B combined in Pittsburgh (Table 3). (b) Classes C, D, F, and G combined according to the proportion in these classes combined for the state. Fifteenth Census of the United States: 1930, *Unemployment*, Vol. I, pp. 840 and 876-877. (c) The sum of Class E and the unclassified according to the proportions reached in a combination of the results of estimates in (a) and (b). Note comment on meaning of time intervals in second footnote to Table 3.

² Estimated by straight-line interpolation between the March index and the April index, the index was 96.95 at the end of the third quarter of March and 98.25 at the end of the first quarter of April. Interpolated between the April index and the May index, the estimated index for the end of the third quarter of April was 99.175. With the total participating in the month ended April 15 as T and the three interpolated indexes just given as A, B, and C, respectively, the computation was as follows:

$$T - T \left(\frac{A}{A+B} \right) + T \left(\frac{A}{A+B} \right) \left(\frac{C}{A} \right) = \text{Total for calendar month}$$

was about ten times that in the professional group. Inasmuch as the professional group would generally have been called employed on the basis of spending time at a place of business, regardless of work or earnings, probably their real unemployment was higher than the percentage shown. Nevertheless, the true spread between the two groups must have been very wide.

TABLE 4
GAINFUL WORKERS IN CLASSES A AND B UNEMPLOYED IN PITTSBURGH
APRIL, 1930, BY INDUSTRY GROUP*

Industry Group	Total Gainful Workers	Classes A and B Unemployed †	
		Number	Per Cent of Industry Group
All industry groups.....	278,648	26,192	9.4 %
Agriculture, forestry.....	961	105	10.9
Extraction of minerals.....	1,200	267	22.2
Building industry.....	20,666	4,401	21.3
Manufacturing industries.....	88,146	9,740	11.0
Iron and steel group.....	37,093	5,428	14.6
Manufacturing except iron and steel.....	51,053	4,312	8.4
Transportation and communication.....	31,006	2,821	9.1
Trade.....	61,066	3,365	5.5
Public service not otherwise classified.....	8,696	375	4.3
Professional service.....	22,567	646	2.9
Domestic and personal service.....	36,172	2,125	5.9
Industry not specified.....	8,168	2,347	28.7

* Numbers from Fifteenth Census of the United States: 1930, *Unemployment*, Vol. I, p. 869.
† Caution: These are not totals unemployed, classes C-G not being available for Pittsburgh.

In manufacturing, classes A and B unemployed equaled 11 per cent of the gainful workers. In the iron and steel group, however, the corresponding percentage was 14.6, whereas in all other manufacturing combined it was 8.4.

With the scant data available, it is impossible at times to do more than state rough averages of employment and unemployment. But the variety of percentages and the wide range in the last column of Table 4 are a conclusive demonstration of an important point necessary in the interpretation of the averages of unemployment: The condition of some groups is far better than the average condition, and the condition of other groups is far worse than the average.

AVERAGE LOSS OF WORKING TIME

Mere numbers unemployed is a highly incomplete statement of unemployment. It is essential to know something of the extent

to which the amount of work going on falls short of being enough work. Estimates of amount of work will be considered later, but the estimates for April, 1930, may be noted here.

By methods explained in Appendix E, it is estimated that in April, 1930, those having some work in the Pittsburgh district were employed 86.4 per cent of full time (Table 16). Somewhat more than 6 per cent of the employables in Allegheny County had no work in April (Table 13). In terms of all employables, including those wholly idle, the average loss of time for the month is estimated to have been about 19 per cent of full time, i.e., nearly one-fifth (average loss of time for those employed in the county being assumed to have been about the same as for those employed in the district as a whole).

PART-TIME WORK IN APRIL, 1930

Part-time work, as it is to be considered here, relates to the whole group of workers who had some work but not full-time work in April, 1930. The estimated total of those who had some work numbered 504,300. Part-time work has been suggested in the preceding statement on loss of working time; it is suggested also in the discussion in Appendix B of what "at work" meant.

There are no available data showing directly the number of those who worked less than full time³ or the average unemployment in that group. But it would be accepted that some large part of those who had work were employed full time. Therefore, those having only part-time work experienced much more than the average loss of time. The estimated average loss of time was 13.6 per cent. If one-fourth of all who shared in the work were employed full time, the others had an average loss of approximately 18 per cent of full time. If one-half of all who shared the work were employed full time, the others were idle an average of more than 27 per cent of full time. If three-fourths worked full time the average loss for the others was more than 54 per cent of full time.

A rough visualization of the probability may be made on the basis of the assumption that the amount of work for the part-time

³The estimates on part-time work made by the Bureau of the Census were based only on persons in Class B unemployed who had worked 2, 3 or 4 days in the preceding week out of a full-time week of 5, 5½, or 6 days. Fifteenth Census of the United States: 1930, *Unemployment*, Vol II, p. 355.

group ranged in an even (straight-line) gradation from a little more than no work to a little less than full-time work, averaging 50 per cent of full time. If the part-time group, averaging a 50 per cent loss of time, was so large that the average loss of time for all participants was 13.6 per cent, then 27.2 per cent of all participants were in the part-time group.

From this assumption, there follows an estimate that, of the 504,300 who had some work in April, about 137,200 were employed less than full time. Of these, in accordance with the assumption, about 102,900 would have worked not over three-fourths of full time; 68,600 not over half of full time; 34,300 not over one-fourth of full time.

Direct data are not available on part-time work, and these proportions are offered only as rough probabilities.

SUMMARY

At the middle of the month of April, 1930, approximately 55,500 gainful workers, or more than one-tenth of the total number, were without work. In the whole month of April, 32,800, or about 6 per cent, of the gainful workers appear to have had no work at all. The census does not show how many new employables who had never been employed were then seeking work, but the evidence indicates strongly that the normal increment of new employables had not been taken into the working group. Therefore, it seems reasonably certain that the total number of unemployed at the middle of April was appreciably larger than 55,500 and that the total number without work throughout April was appreciably larger than 32,800.

It is estimated that those who had some work in the month were idle an average of 13.6 per cent of their time. For purposes of visualizing roughly the extent of part-time work, it is assumed that the work of the part-time group ranged in an even gradation from a little more than no work at all to a little less than full-time work, averaging half-time. Half-time work, of course, means 50 per cent idleness. From a roughly probable idleness of 50 per cent in the part-time group and an estimated average idleness of 13.6 per cent for the whole group sharing in the work, it is estimated that about 27 per cent of those who had some work in April, 1930, had less than full-time work. Large numbers must have been employed less than half of the time; considerable numbers,

less than one-fourth of the time. Whatever the exact proportions, there can be no denial that, even when business levels were still above normal, a large number of workers among those called employed had insufficient work and must, therefore, have been in a pinch.

These views of average conditions, bad as they were, must not obscure the fact that unemployment strikes very unevenly. In some industry groups in Pittsburgh, only a small per cent were unemployed in April, 1930; in other groups, a very high per cent. In some groups the percentage unemployed was two or three times the average per cent.

All in all, it is clear that large groups of workers were already in depression, in spite of the fact that business levels were still above the long-time trend level.

In brief tabular form, the estimates of employment and of unemployment in Allegheny County in April, 1930, are as follows:

Number of gainful workers, probably not including proper representation of new employables	537,100
Estimates of employment	
Number having some work	504,300
Number in employed classification, middle of the month	481,600
Average per cent of employment for those who had some work during the month	86
Average per cent of employment, all gainful workers	81
Estimates of unemployment	
Number in unemployed classification, middle of the month	55,500
Number having no work during the month	32,800
Average per cent of unemployment for those who had some work during the month	14
Per cent of the employed working less than full time	27
Average per cent of unemployment, all gainful workers	19

CHAPTER 6

UNEMPLOYMENT IN ALLEGHENY COUNTY IN FEBRUARY, 1934

An unemployment survey was made in Pennsylvania in 1934, the work being done as a part of the work-relief program set up under the Federal Civil Works Administration.¹ The survey covered all incorporated places in the county and, in general, the unincorporated industrial and mining villages. Scattered rural areas were not enumerated.

Exact comparison of the data from the 1934 with the 1930 census data is impossible, for the two counts were made under different administrative auspices, the definitions followed were not exactly the same, and part of the county was not covered by the 1934 survey. Adjustment will be made toward comparability, and the question of comparability will be further considered in Appendix C, where a test is sought for possible bias in the index of numbers employed. The main purpose here, however, is to examine the 1934 data with reference to the light thrown on part-time employment and on differences in the incidence of unemployment.

It should be kept in mind, however, that conditions revealed by the 1934 survey were not the worst conditions of the depression. By reference to chapters 7 and 8, it will be seen that employment conditions in 1932 and in most of 1933 were worse than those in February, 1934.

REPORTED DATA FOR 1934

A summary of the data for the area enumerated in the 1934 sur-

¹ Begun under the Civil Works Administration and carried out under the sponsorship of the Pennsylvania State Emergency Relief Board. In Allegheny County, the unemployment survey was made at the same time as the survey known as the Real Property Inventory. Cooperating with the Department of Research and Statistics of the State Emergency Relief Board, the Bureau of Business Research of the University of Pittsburgh provided staff supervision for the organization and direction of the combined surveys in Allegheny County, Mr. Theodore A. Veenstra, Statistician, and Mr. E. N. Montague, Industrial Engineer, being assigned by the Bureau to the task of joint supervision during the period of field work. The unemployment schedules were then turned over to the State Emergency Relief Board, Department of Research and Statistics, Social Surveys Section, for tabulation and publication.

vey is shown in Table 5. Before proceeding with adjustments, let us examine the meaning of terms and the numbers and the proportions shown in that table.²

Number Classed as Employables in the Enumerated Area

"Employables" were defined as persons aged 16 or more who were working for money or its equivalent or attempting to get work that would yield them money or its equivalent. Those on payrolls but temporarily idle were included. Those without jobs but prevented by minor illness from seeking work also were included, but those whose disability appeared likely to necessitate their being inactive for some time were not called employables. The number classified as employables in the enumerated area was 544,357 (Table 5). Of these, 504,639 were working or had previously worked, and 39,718 had not previously worked but were seeking work.

Number Classed as Employed in the Enumerated Area

For purposes of the 1934 survey, "employed" meant (a) at work, including those on work-relief projects, or (b) carried on payrolls, though temporarily idle, except those idle because of labor disputes. There seems not to have been any significant number in the county idle then because of labor disputes.³ In other words, being "employed," in terms of the 1934 definition, meant having a job connection, not necessarily being at work on a specific day. In view of the great extent of work-staggering then prevalent, the number actually at work on a day representative of the period in which the field canvass was carried out must have been considerably smaller than the number classified as employed.

In the enumerated area, there were 368,180 classified as employed (Table 5). That number was 67.6 per cent of the whole number called employables, including those not previously employed; it was 73 per cent of the employables exclusive of those not previously employed.

²For source of definitions, refer to first footnote of Table 5. Mimeographed reports similar to those cited in Table 5 were released for all counties. Printed summary data for the state, in part by counties, were published in *Census of Employable Workers in Urban and Rural Non-Farm Areas, Pennsylvania—1934* (Pennsylvania State Emergency Relief Administration, Harrisburg, 1936).

³Tabulations revealed only 24 persons reported on strike. From unpublished data furnished by Mr. Emmett H. Welch, Director of Research and Statistics, Pennsylvania State Emergency Relief Board.

TABLE 5

SUMMARY DATA ON EMPLOYMENT AND UNEMPLOYMENT IN ALLEGHENY COUNTY (EXCEPT SCATTERED RURAL AREAS) FEBRUARY, 1934*

Group	Employ-ables†	Employed			Unemployed Seeking Work		
		Total	30 Hours or More a Week‡	Less than 30 Hours a Week‡	Total	Previ-ously Em-ployed	Not Previ-ously Em-ployed
Number							
All nationalities‡ ...	544,357	368,180	264,895	103,285	176,177	136,459	39,718
Male.....	406,885	279,907	193,655	86,252	126,978	106,153	20,825
Female.....	137,472	88,273	71,240	17,033	49,199	30,306	18,893
Native white ...	415,558	283,117	213,588	69,529	132,441	95,569	36,872
Male.....	297,730	206,432	150,754	55,678	91,298	71,852	19,446
Female.....	117,828	76,685	62,834	13,851	41,143	23,717	17,426
Native colored...‡	36,444	18,947	11,311	7,636	17,497	15,918	1,579
Male.....	26,322	14,400	8,525	5,875	11,922	11,163	759
Female.....	10,122	4,547	2,786	1,761	5,575	4,755	820
Foreign born....	86,594	61,969	36,931	25,038	24,625	23,794	831
Male.....	78,795	56,160	32,324	23,836	22,635	22,259	376
Female.....	7,799	5,809	4,607	1,202	1,990	1,535	455
Per Cent							
All nationalities....	100.0	67.6	48.6	19.0	32.4	25.1	7.3
Male.....	100.0	68.8	47.6	21.2	31.2	26.1	5.1
Female.....	100.0	64.2	51.8	12.4	35.8	22.1	13.7
Native white....	100.0	68.1	51.4	16.7	31.9	23.0	8.9
Male.....	100.0	69.3	50.6	18.7	30.7	24.2	6.5
Female.....	100.0	65.1	53.3	11.8	34.9	20.1	14.8
Native colored...‡	100.0	52.0	31.0	21.0	48.0	43.7	4.3
Male.....	100.0	54.7	32.4	22.3	45.3	42.4	2.9
Female.....	100.0	44.9	27.5	17.4	55.1	47.0	8.1
Foreign born....	100.0	71.6	42.7	28.9	28.4	27.5	0.9
Male.....	100.0	71.3	41.0	30.3	28.7	28.2	0.5
Female.....	100.0	74.5	59.1	15.4	25.5	19.7	5.8

* Pennsylvania State Emergency Relief Board, Department of Research and Statistics, Social Surveys Section, *Unemployment in Allegheny County, February 15, 1934* (issued in mimeographed form as Bulletin 44-A, October 1, 1934), p. 4. Most of the definitions of terms, given in succeeding footnotes and in the accompanying text, were contained in the earlier release entitled *Unemployment in Philadelphia County, February 15, 1934* (issued as Bulletin 1-A, August 14, 1934), pp. 9-11. The survey covered all incorporated places and, in addition, unincorporated communities of an industrial or commercial character.

† *Employables*: persons aged 16 or more employed for money or its equivalent or seeking such employment. *Employed*: at work or carried on payrolls and merely away for a few days, except those idle because of labor disputes; but persons employed on relief-work projects were not called employed. The terms "full-time" and "part-time" used in the report from which this table is taken have been changed, in accordance with the definition cited, to "30 hours or more a week" and "less than 30 hours a week," respectively.

‡ All nationalities include unspecified, not shown separately.

Number Classified as Unemployed in the Enumerated Area

"Unemployed," of course, meant "employable" but not "employed." By reference to the definition given above of the term "employed," one sees that not all the employables idle on a representative day were called unemployed. Those idle but having a job connection were called employed.

Special mention must be made of one group classed as unemployed, namely, those not previously employed but able to work and seeking work (Table 5). There was no such group covered by the Federal census definitions of 1930, a gainful worker being one who was then working or one who had previously worked and was then able—except for temporary disability—and willing to work (Appendix A).

There were 176,177 in the enumerated area classed as unemployed. Of these, 136,459 had worked previously and 39,718 had not previously been employed. Of all employables previously employed, 27 per cent were classed as unemployed. The number classed as unemployed comprised 32.4 per cent of the number classed as employables, inclusive of those not previously employed.

ADJUSTMENTS TO ATTAIN COMPARABILITY OF 1934 DATA WITH 1930 DATA

The 1930 data were for the whole county, and gainful workers included persons aged 10 years or more who otherwise fell under the definition of "gainful worker." The survey of 1934 did not cover the scattered rural areas of the county and relates to persons aged 16 or more.

Adjustment for Area Not Enumerated

In the enumerated area, the population, exclusive of persons in institutions (prisons, asylums, etc.), numbered 1,309,891. In the area not enumerated in 1934, it is estimated that the population, exclusive of institutions, numbered about 20,000 in 1930.⁴ The same number is assumed as the most likely approximation for 1934 in the area not enumerated. In the enumerated area, it is true, there was a decline of population from 1930 to 1934. Both because a pinch had long been felt in the western Pennsylvania coal industry⁵ and because the drop for this district in the depression period was more severe than the average drop for the nation,⁶ it may be

⁴ Estimate by Theodore A. Veenstra, Statistician, Bureau of Business Research, University of Pittsburgh, who, jointly with E. N. Montague, supervised the field work for the unemployment survey and the Allegheny County Real Property Inventory. Mr. Veenstra later supervised tabulations of the Real Property Inventory for the same area as that to which the unemployment figures relate.

⁵ Discussed by Wilbert G. Fritz and Theodore A. Veenstra in *Regional Shifts in the Bituminous Coal Industry*, Bureau of Business Research, University of Pittsburgh, 1934.

⁶ Refer to Chart 8, in Chapter 9.

supposed that part of the workers from the county had gone to industrial areas which were suffering less severely. On the other hand, the drift back to the farm was noted throughout the country during the slump—and a great deal of the area not enumerated in Allegheny County was farm area. The assumption followed here is that drift to farms in the area not enumerated offset drift of miners or industrial workers from that area.

For the whole county, then, the estimated total population, exclusive of institutional population, in February, 1934, is 1,329,891.⁷

It is assumed (a) that employables, as defined for the 1934 survey, constituted the same proportion of total population (except institutions) in the area not enumerated as in the enumerated area and (b) that employables in the area not enumerated were employed or unemployed in accordance with the proportions in the enumerated area.

In the enumerated area, of a total population of 1,309,891, there were 544,357 classed as employables aged 16 or more. In a like proportion, in the estimated total population, 1,329,891, it is estimated that there were 552,668 employables, in accordance with the definitions of the 1934 survey.

Of these 552,668 employables, it is estimated, on the basis of the proportion derived from Table 5, that there were 512,344 aged 16 or more approximately comparable to those aged 16 or more among "gainful workers" in 1930, i.e., persons who were working or who had worked before and were then willing to work and able to work, except for temporary disabilities. The remainder of the total estimate, numbering 40,324, were persons aged 16 or more who had not been previously employed but were then able to work and seeking work.

Adjustment for Age Groups Omitted

The 1930 data included persons aged 10 or more; the 1934 data are for persons aged 16 or more. Those aged 10-15, inclusive, in the county are not segregated in published county data. On the basis of 1930 data for Pittsburgh (Table A-1, in Appendix A), this group is estimated to have numbered 1,315 in the county. For purposes of this estimate, it is assumed that this age group was the

⁷ Estimates will be used without rounding of numbers until the estimates for 1934 are completed.

same proportion of employables who were at work or had previously worked in the county in 1934 as it was of gainful workers in Pittsburgh in 1930. It is recognized that age distribution in the county differed in 1930 from that in the city and that age distribution may have changed somewhat from 1930 to 1934. The estimate, however, is believed to be toward greater accuracy of the total.

It will be noted that the method of estimate for the group aged 10-15 comprehends no allowance for those aged 10-15 who had not previously been employed but were seeking work. The number so omitted could hardly have been significant.

We have, then, an estimated total of 513,659 employables aged 10 or more who were working or had worked and 40,324 who had not previously worked but were then seeking work. The estimated total classifiable as employables in accordance with the definitions of the 1934 survey, except with a lower age limit of 10 instead of 16, is 553,983.

NUMBER OF EMPLOYABLES ASSUMED FOR FEBRUARY, 1934

We have noted, above, an estimated population numbering approximately 1,329,891, exclusive of institutions, in Allegheny County in February, 1934. It is estimated that institutional population at that time numbered 18,866.⁸ Inclusive of institutions, then, the population in the county is estimated to have numbered 1,348,757.

Our estimate of those classifiable as employables in terms of the definitions used in the survey of 1934, except the lower age limit, is 553,983, which number is equal to 41.1 per cent of the estimated total population. The estimated employables who had worked previously numbered 513,659, or 38.1 per cent of the estimated total population.

We have noted, in Chapter 5, that those classed as gainful workers in the 1930 census comprised 39.08 per cent of the population. In view of the hardships of the depression, which caused persons other than the usual breadwinners to seek work, it is not surprising to find that the group classed as employables, including

⁸ Mr. Ralph C. Fletcher, Director of the Bureau of Social Research of the Federation of Social Agencies of Pittsburgh and Allegheny County, provided directly an estimate of 17,609 for institutions other than the Association for the Improvement of the Poor. As reported to the enumerators of the Real Property Inventory, the Association for the Improvement of the Poor then had 1,257 inmates.

those who had not worked but were seeking work, constituted a larger part of the population than did the gainful workers in 1930. It is doubtful, however, that all those seeking work should be considered among the unemployed part of the normal working force.⁹ On the other hand, in view of the grave difficulty of finding work, it is not surprising that the number that had previously worked constituted a smaller part of the population than did the gainful workers in 1930. But it is doubtful that the normal working force should be assumed to include a smaller part of the population in February, 1934, than in April, 1930. For purposes of this study, it will be assumed that 39.08 per cent of the population in February, 1934, should be considered employables—the same proportion as that in April, 1930. On this basis, the number of employables assumed for February, 1934, is 527,100.

ESTIMATED NUMBER UNEMPLOYED IN FEBRUARY, 1934

The number classed in the 1934 survey as employables who had worked previously was 504,639; by adjustments explained above, that number has been raised to 513,659. Of those previously employed, 73 per cent in the enumerated area were classed as employed. A like proportion of the adjusted total is 374,971.

The adjusted total of all persons classed as employables is 553,983. Therefore, the estimated total number unemployed was 179,012. Of these, the estimated total of 40,324 had not been employed previously. The number who had previously been employed but were then classed as unemployed numbered 138,688.

It was explained in the preceding section that the number of employables appeared to be unduly high if all those who were seeking work but had not worked previously were included but that the number of employables exclusive of those who had not worked before appeared unduly low. And it was decided that a preferable choice was to assume for February, 1934, that the proportion of the population to be considered employable was the same as the proportion classed as gainful workers in April, 1930.

⁹ The number of male gainful workers was close to 4 times the number of female gainful workers in 1930 (Table 1). Among those classed in 1934 as employables who had not previously worked, the number of males was only about 1.1 times the number of females (Table 5). The abnormal inclusion of girls and women, therefore, is obvious. Unpublished data from which Table 8 was prepared show definitely the abnormal inclusion of the younger group.

The estimate on the basis of this assumption was 527,100 employables. With approximately 375,000 classed as employed, the estimated number classifiable as unemployed in February, 1934, was 152,100. That is, about 71 per cent of the number of employables assumed for that month were employed, according to the definition of the survey, and about 29 per cent were unemployed according to those definitions.

Exact comparability between the number classed as employed in the census of 1930 and the number so classed in the survey of 1934 cannot be established, because of differences in definition and because of the necessity of estimating for the area not enumerated. Approximate comparability, however, is believed to have been attained in Appendix C, where an attempt is made to check the index of numbers employed with respect to bias. Aside from that test, the 1934 total is not used in subsequent pages, the estimates in Chapter 7 being made directly from the data for 1930.

In some of the classifications of 1934, however, there is useful information on part-time work and on the difference in incidence of unemployment.

PART-TIME WORK IN FEBRUARY, 1934

It was a widely prevalent practice in the district during the depression to keep numbers on payrolls far out of proportion to the amount of available work. The practice was commonly referred to in terms of "work-staggering" or "spread-the-work." In part, no doubt, it was due to the necessity of having a large force available for even the occasional operation of large and complex mills. In part it was due to a deliberate policy of dividing available work, even though the prevailing operations might have been carried out with a much smaller group on payrolls.

Of all employables, exclusive of those who had never been employed, 27 per cent were classed definitely as unemployed, 20.5 per cent were reported to be working less than thirty hours a week, and 52.5 per cent were reported to be working thirty hours or more a week (Table 6).

The total number classed as employed constituted 73 per cent of the employables who were working or had worked previously. Of this group, those employed less than thirty hours a week comprised 28.1 per cent, and the group employed thirty hours or more a week comprised 71.9 per cent.

TABLE 6
PER CENT OF EMPLOYMENT AND OF UNEMPLOYMENT IN ALLEGHENY COUNTY
BY NATIVITY, COLOR, AND SEX, FEBRUARY, 1934*

Classification	Per Cent Employed			Per Cent Unem- ployed †
	Total Employed †	30 Hours or More a Week	Less than 30 Hours a Week	
All nativities				
Total.....	73.0%	52.5%	20.5%	27.0%
Male.....	72.5	50.2	22.3	27.5
Female.....	74.4	60.1	14.3	25.6
Native white				
Total.....	74.8	56.4	18.4	25.2
Male.....	74.2	54.2	20.0	25.8
Female.....	76.4	62.6	13.8	23.6
Native colored				
Total.....	54.3	32.4	21.9	45.7
Male.....	56.3	33.3	23.0	43.7
Female.....	48.9	30.0	18.9	51.1
Foreign born				
Total.....	72.3	43.1	29.2	27.7
Male.....	71.6	41.2	30.4	28.4
Female.....	79.1	62.7	16.4	20.9

* Based on numbers given in the upper part of Table 5, exclusive of the group not previously employed.

† Note that in the accompanying text, employment of about 71 per cent and unemployment of about 29 per cent are estimated on the basis of a somewhat different assumed number of employables. If employables in 1934 were about the same proportion of population as gainful workers in 1930, the employment percentages here are too high and the unemployment percentages are too low. The group percentages here and those in Tables 7 and 8 have not been adjusted, nor have the area percentages in Tables 9 and 10 been adjusted.

In terms of customary working time, thirty hours, of course, is far below full time. Nothing in the available data reveals how many of those working thirty hours or more were fully employed. In view of the known wide prevalence of the practice of dividing the work as well as the wide prevalence of lack of work at mills and shops requiring a large force when they did operate, a large portion of this group must have fallen short of full-time employment.

Under circumstances in which a great part of those at least nominally employed could not possibly have had enough work to meet their needs, it is obvious that mere numbers unemployed were not a proper indication of the likelihood of need.

DIFFERENCE IN INCIDENCE OF UNEMPLOYMENT IN FEBRUARY, 1934

Most estimates of unemployment are averages or over-all totals, because the data generally are not adequate for classified estimates. That there was very wide variation in April, 1930, was noted in Chapter 5 (Table 4). Some of the data from the 1934 survey

TABLE 7
PER CENT OF WORKERS EMPLOYED AND PER CENT UNEMPLOYED, ALLEGHENY COUNTY, BY INDUSTRY GROUP, FEBRUARY, 1934*

Industry Group	Number of Employables Attached to Group	Per Cent Employed†			Per Cent Unemployed
		Total	30 Hours or More a Week	Less than 30 Hours a Week	
Manufacturing					
Food products	11,194	77.7%	62.6%	15.1%	22.3%
Textiles	2,901	69.1	39.5	29.6	30.9
Metal products, primary	76,902	73.0	25.9	47.1	27.0
Metal products, fabricated	35,817	68.8	37.0	31.8	31.2
Lumber and wood products	3,760	70.0	54.1	15.9	30.0
Paper and printing	7,932	77.2	57.4	19.8	22.8
Leather, rubber, and composition products	701	69.9	58.9	11.0	30.1
Clay, glass, and stone products	7,665	66.8	38.6	28.2	33.2
Chemical and allied products	6,219	80.8	71.0	9.8	19.2
Total manufacturing	153,091	72.4	36.4	36.0	27.6
Wholesale trade	19,764	74.9	64.0	10.9	25.1
Retail trade	67,719	73.0	60.7	12.3	27.0
Transportation	29,229	73.7	50.6	23.1	26.3
Public utilities	12,711	80.6	68.3	12.3	19.4
Mines and quarries	14,974	78.9	61.3	17.6	21.1
Construction	20,710	30.3	17.0	13.3	69.7
Contracting	5,662	31.2	17.2	14.0	68.8
Hotels and restaurants	15,025	68.7	58.4	10.3	31.3
Banking and other finance	16,993	82.9	78.2	4.7	17.1
Service shops and trades	20,556	71.6	56.7	14.9	28.4
Agriculture	3,074	73.3	64.4	8.9	26.7
Government	40,686	89.6	72.0	17.6	10.4

* Unpublished data, subject to revision. Furnished by Mr. Emmett H. Welch, Director of Research and Statistics, Pennsylvania State Emergency Relief Board. Those not previously employed were not included here.

† Refer to second footnote of Table 6.

reveal this variation strikingly. It must be remembered, however, that the available data are group data, i.e., group totals and averages; the variation among individual industries is no doubt much wider than that among industry groups.

Difference among Industry Groups

Among the manufacturing groups shown in Table 7, the percentages classed as employed ranged from 67 to 81. Among the nonmanufacturing groups, the range was from a little more than 30 per cent to nearly 90 per cent. But the amount of employment of those reported as employed varied so widely that these ranges tell little.

With respect to those employed thirty hours or more a week, the manufacturing groups ranged from 26 per cent to 71 per cent. But roughly half of the manufacturing workers were in the group showing the lowest percentage working thirty hours or more, namely, the classification "Metal products, primary." And the next percentage above this low one was that for the fabricated

metal products group, to which more than one-fifth of the employables classified industrially were attached. Only a misunderstanding can result if we note that about seven-tenths of the workers attached to plants manufacturing metal and metal products were employed and do not observe that less than three-tenths were employed thirty hours or more.

Of those classed as employed in the group designated "Metal products, primary," nearly 65 per cent were working less than thirty hours a week. For all manufacturing combined, slightly more than half of those classed as employed were working thirty hours or more and nearly half were employed less than thirty hours a week.

Among the nonmanufacturing groups, the most complete paralysis of employment appeared in the two construction groups, "Construction" and "Contracting." Only a little more than three of every ten attached to these pursuits were classed as employed, and, of these, more than four-tenths had work less than thirty hours a week.

We need not labor the details of these differences. It is well known that some industries suffer far worse than others in depression, and large numbers of workers are likely to suffer destitution which is not at all suggested by data on mere industrial averages of employment and unemployment.

Difference among Race-Nativity Groups

Percentages of employment and of unemployment are given in the lower part of Table 5. These percentages are based on totals which include persons not previously employed. Among those classed as employables, 8.9 per cent of the native white, 4.3 per cent of the native colored, and only 0.9 per cent of the foreign born were persons not previously employed but then seeking work.

It is not clear from any direct evidence why the three groups differed so much with respect to the proportion of those then seeking work who had not previously worked. It may be observed, however, that the foreign-born workers and the colored workers are to a very large extent unskilled labor heavily concentrated in those lines of activity which were more nearly paralyzed during the depression, such as heavy manufacturing and construction. The foreign born are greatly concentrated in communities in which opportunities for girls and women are limited. For Negro girls

and women also, gainful opportunities are limited, existing largely in domestic service and related menial tasks in which, with the crash of both family income and business income, curtailment was severe. Among those seeking work who had not worked before, the proportion of women was exceptionally high; and the males in the group were mostly very young.¹⁰ Probably the essential futility of their search for work at that time led the younger group among both the foreign born and the colored to a defeatist attitude.

In view of the wide difference in proportion of those classed as employables who had not worked before, let us consider the percentages of employed and of unemployed among those who had previously worked (Table 6). In terms of the total number classed as employed, the widest difference among the race and nativity groups was between the colored workers and the white workers. Nearly 46 per cent of the colored employables were unemployed, but less than 28 per cent of the foreign born¹¹ and about 25 per cent of the native white were unemployed. That unemployment and need in the county were much higher among the colored workers was recognized and pointed out early in the depression.¹²

Although in terms of proportion of the total classed as employed, the high contrast was between the colored group on the one hand and the two white groups on the other, a different light is thrown on the relationship by consideration of loss of working time. Among those reported as working thirty hours or more a week were 56.4 per cent of the native whites, only 43.1 per cent of the foreign born, and only 32.4 per cent of the colored. In terms of the employed groups only, the proportions working thirty hours or more a week were as follows: native white, 75 per cent; foreign born and colored, each 60 per cent. And it may well be noted that the foreign born and the colored, because of their greater dependence on heavy industry and unskilled pursuits, were more

¹⁰ In April, 1930, of 537,097 classed as gainful workers in the county, 115,799, or less than 22 per cent, were female (Table 1). Of those in February, 1934, who had not worked before but were seeking work, 18,893 of a total of 39,718 in the enumerated area, or close to 48 per cent, were female (Table 5). Moreover, in excess of 25,000 were less than 20 years old and in addition about 12,500 were less than 25 years old. (Unpublished data furnished by Mr. Emmett H. Welch, Director of Research and Statistics, Pennsylvania State Emergency Relief Board.)

¹¹ The number of foreign-born colored is not large enough to have a significant effect on the proportion.

¹² "Two Groups of the Unemployed in Allegheny County in the Winter of 1930-1931," *Pittsburgh Business Review*, October, 1931, p. 13.

likely than the native-white workers to be affected by work-staggering and irregular jobs. That is, thirty hours or more a week was more likely to mean only thirty or thirty-five hours a week, whereas the chance of the native white for more nearly full-time work probably was better, on the average.

Difference between Unemployment of Males and Unemployment of Females

The proportion of females unemployed was a little lower than the proportion of males unemployed among the native white and the foreign born. Among the colored workers, the females were unemployed in a higher proportion than the males (Table 6).

In both the white groups of workers, a much larger proportion of the females than of the males had employment thirty hours or more a week. The percentages for females in these two groups were almost equal. The wide disparity between the native white and the foreign born with respect to employment of thirty or more hours a week was attributable to difference between native-white males and foreign-born males.

Among colored workers, of course, unemployment was far higher than among white workers, both for male and for female.

Difference among Age Groups

In Table 6, we note that 73 per cent of the employables who were working or had worked were classed as employed; that 52.5 per cent were employed thirty hours or more a week; that 20.5 per cent were employed less than thirty hours a week; and that 27 per cent were classed as unemployed. Among the age groups shown in Table 8, the ranges of these respective percentages were as follows: employed, 56.1 to 77.9; employed thirty hours or more a week, 43.0 to 56.6; employed less than thirty hours a week, 12.4 to 23.8; unemployed, 22.1 to 43.9.

The general tendency was rising probability of employment, with corresponding rise in the likelihood of employment for thirty hours or more a week, to the age group 35-39; among the higher age groups, the general tendency was a fall in the likelihood of employment.

The age group 20-24 seems to be out of line among the lower age groups. There appears to be no explanation of this inconsistency in the available data.

The age group 75 or more is out of line among the older age groups. Probably the enumerators were disposed to class as unemployable a very high percentage of the elderly persons who were not actually employed. At any rate, the number of such elderly persons was comparatively small.

For a man having a large family, there is a likelihood of the growth of the family until he is well along in his forties. The fact that before that age his probability of employment began to decline

TABLE 8
NUMBER OF EMPLOYABLES, PER CENT EMPLOYED, AND PER CENT
UNEMPLOYED IN ALLEGHENY COUNTY, BY AGE GROUPS
FEBRUARY, 1934*

Age	Number of Employables*	Per Cent Employed†			Per Cent Unemployed
		Total Employed	30 Hours or More a Week	Less than 30 Hours a Week	
16-17.....	4,177	66.4%	45.0%	21.4%	33.6%
18-19.....	19,354	67.2	48.8	18.4	32.8
20-24.....	78,241	66.7	48.9	17.8	33.3
25-29.....	71,449	72.5	53.7	18.8	27.5
30-34.....	60,901	76.2	56.6	19.6	23.8
35-39.....	61,265	77.9	56.3	21.6	22.1
40-44.....	57,483	77.7	54.6	23.1	22.3
45-49.....	48,685	75.9	52.1	23.8	24.1
50-54.....	41,115	74.6	51.6	23.0	25.4
55-59.....	26,209	71.8	49.7	22.1	28.2
60-64.....	18,956	67.8	48.2	19.6	32.2
65-69.....	9,867	60.5	45.1	15.4	39.5
70-74.....	4,218	56.1	43.0	13.1	43.9
75 or more.....	1,591	62.7	50.3	12.4	37.3

* Numbers shown and those from which the percentages were computed are from unpublished tables furnished by Mr. Emmett H. Welch, Director of Research and Statistics, Pennsylvania State Emergency Relief Board. Those not previously employed were not included here.

† Refer to second footnote of Table 6.

strongly suggests a tendency rendering the larger family with only one worker more likely to be without a breadwinner than the smaller family with only one worker. Of all families in 1930, less than 35 per cent had two or more gainful workers each (Table 22). No doubt the proportion having two or more is larger among larger families than among the smaller ones, but the large families with only one worker each, as we shall see in Chapter 12, are numerous.

With increasing employment, the tendency just discussed suggests that many with large families would be among the later ones re-employed. There seems to be little doubt that this likelihood helps to explain why the drop in relief rolls has not corresponded very closely to the rise in employment.

Difference among Areas

To one having moderate familiarity with the county, a glance at the percentages unemployed, in Tables 9 and 10, reveals a general tendency for greater proportions to be unemployed in

TABLE 9
NUMBER OF EMPLOYABLES AND PER CENT OF EMPLOYMENT AND OF UNEMPLOYMENT IN ALLEGHENY COUNTY CITIES AND BOROUGHES OF 2,000 OR MORE EMPLOYABLES EACH, FEBRUARY, 1934*

Political Subdivision	Number of Employables	Per Cent Employed†			Per Cent Unemployed‡
		Total Employed	30 Hours or More a Week	Less than 30 Hours a Week	
Pittsburgh.....	264,551	68.1%	53.1%	15.0%	31.9%
Avalon.....	2,195	85.9	73.2	12.7	14.1
Bellevue.....	4,043	82.3	70.9	11.4	17.7
Brackenridge.....	2,098	84.1	54.2	29.9	15.9
Braddock.....	6,278	63.0	30.8	32.2	37.0
Brentwood.....	2,287	84.3	68.6	15.7	15.7
Carnegie.....	4,589	74.8	50.0	24.8	25.2
Clairton.....	4,974	84.0	49.9	34.1	16.0
Coraopolis.....	3,696	80.0	63.2	16.8	20.0
Crafton.....	2,902	83.7	73.6	10.1	16.3
Dormont.....	5,540	87.8	79.4	8.4	12.2
Duquesne.....	6,964	80.2	26.6	53.6	19.8
Etna.....	2,733	78.6	48.5	30.1	21.4
Glassport.....	2,796	80.2	41.3	38.9	19.8
Homestead.....	6,791	72.1	27.8	44.3	27.9
McKeesport.....	19,376	77.3	37.0	40.3	22.7
McKees Rocks.....	5,938	65.9	44.9	21.0	34.1
Millvale.....	2,733	72.8	51.3	21.5	27.2
Mt. Oliver.....	2,705	71.9	56.0	15.9	28.1
Munhall.....	4,746	82.7	38.5	44.2	17.3
North Braddock..	5,069	71.0	28.0	43.0	29.0
Oakmont.....	2,151	79.6	64.9	14.7	20.4
Rankin.....	2,426	60.0	23.3	36.7	40.0
Sewickley.....	2,481	86.5	68.5	18.0	13.5
Sharpsburg.....	2,912	69.8	39.9	29.9	30.2
Swishevale.....	5,950	78.5	44.1	34.4	21.5
Tarentum.....	3,440	84.8	56.2	28.6	15.2
Turtle Creek.....	3,628	75.0	33.9	41.1	25.0
West View.....	2,618	83.8	67.6	16.2	16.2
Wilkesburg.....	11,543	79.4	61.9	17.5	20.6
Wilmerding.....	2,055	77.5	39.4	38.1	22.5

* Source: Bulletin 44-A of the State Emergency Relief Board, cited in full in first footnote to Table 5. Employables who had not worked before were excluded. Only cities and boroughs each having 2,000 or more employables who had worked were included.

† Refer to second footnote of Table 6.

communities that are composed predominantly of industrial workers. But more instructive distinctions lie in the percentages which relate to the two broad groups into which the employed were divided on the basis of the amount of employment they had. For example, in Duquesne, Homestead, North Braddock, Rankin, and the third ward of Pittsburgh, the proportion of employables work-

TABLE 10
 NUMBER OF EMPLOYABLES, PER CENT EMPLOYED, AND PER CENT
 UNEMPLOYED IN PITTSBURGH, BY WARDS, FEBRUARY, 1934*

Ward Number	Number of Employ- ables*	Per Cent Employed†			Per Cent Unem- ployed‡
		Total Employed	30 Hours or More a Week	Less than 30 Hours a Week	
All wards	264,551	68.1%	53.1%	15.0%	31.9%
1	6,216	45.6	37.0	8.6	54.4
2	2,578	47.0	37.5	9.5	53.0
3	9,116	43.2	29.7	13.5	56.8
4	11,542	74.4	59.3	15.1	25.6
5	12,345	61.2	45.4	15.8	38.8
6	6,068	59.2	40.1	19.1	40.8
7	8,215	83.0	74.0	9.0	17.0
8	8,422	73.5	61.8	11.7	26.5
9	7,344	66.1	50.5	15.6	33.9
10	9,301	66.0	50.5	15.5	34.0
11	10,334	77.0	66.4	10.6	23.0
12	10,453	61.3	43.7	17.6	38.7
13	11,153	66.7	51.1	15.6	33.3
14	18,232	88.5	83.2	5.3	11.5
15	10,932	69.8	46.3	23.5	30.2
16	8,893	68.6	38.9	29.7	31.4
17	8,083	58.0	40.2	17.8	42.0
18	8,491	66.1	49.8	16.3	33.9
19	16,083	73.2	60.5	12.7	26.8
20	9,271	70.8	54.3	16.5	29.2
21	8,352	61.1	40.3	20.8	38.9
22	7,834	63.6	50.3	13.3	36.4
23	6,794	61.9	48.0	13.9	38.1
24	5,907	68.4	51.4	17.0	31.6
25	6,296	59.3	41.7	17.6	40.7
26	9,154	73.6	60.7	12.9	26.4
27	10,320	67.2	53.6	13.6	32.8
28	3,239	75.5	56.6	18.9	24.5
29	6,176	74.4	59.3	15.1	25.6
30	3,288	73.1	61.2	11.9	26.9
31	2,074	72.6	39.3	33.3	27.4
32	2,045	74.2	62.0	12.2	25.8

* Numbers shown and those from which the percentages were computed are from unpublished tables furnished by Mr. Emmett H. Welch, Director of Research and Statistics, Pennsylvania State Emergency Relief Board. Employables who had not worked previously are not included.

Refer to second footnote of Table 6.

ing thirty hours or more a week was less than 30 per cent; but in Avalon, Bellevue, Crafton, and Dormont, and in the seventh ward and the fourteenth ward of Pittsburgh, more than 70 per cent were employed thirty hours or more a week. Among those working less than thirty hours a week were the extremes of more than one-half of the workers in Duquesne but less than one-tenth of those in Dormont.

In view of the wide difference among localities with respect to proportions unemployed, obviously the probability of need cannot be considered in terms of a mere over-all proportion unemployed. And since, among those at least nominally employed, the variation

is very wide in the actual extent of employment, it is obvious that even area figures on nominal employment do not reveal the wide range of difference in the probability of need.

SUMMARY

From the survey made in February, 1934, 67.6 per cent of those classed as employables were reported as employed and 32.4 per cent were reported as unemployed. In view of the definitions used, it seems clear that considerably more than 32.4 per cent of those called employables were idle at the time of the survey.

With allowance for the area not enumerated, it is estimated that, according to the definitions used in the 1934 survey, there were 552,668 employables aged 16 or more in the county in February, 1934, including 40,324 who had not previously worked. Thus, there was an estimated total of 512,344 aged 16 or more who were then at work or had worked before and remained able and willing to work. Allowance for the age group 10-15, included among gainful workers in 1930 but not enumerated as employables in 1934, raises the total at work or able and willing to work to 513,659.

To include all who had not been employed but were then seeking work leads to a proportion of employables in the total population considerably higher than the proportion gainful workers comprised in 1930. To exclude all those who had not been employed but were then seeking work leads to a proportion lower than that of 1930. For this study, the proportion of 1930 was assumed. On this basis, the estimated number of employables was 527,100.

About 375,000 were classed as employed. Therefore, it is estimated that 152,100 of the normally employable population were unemployed in February, 1934. The unemployed constituted approximately 29 per cent of the employables.

Of those called employed, however, about 28 per cent were working less than thirty hours a week, and the conditions of the times lead to the conclusion that a very large part of those working thirty hours or more a week were underemployed.

The extent of unemployment, including loss of time by those classed as employed, was greatest among the colored and least among the native white. Nominal employment was nearly as high among the foreign born as among the native white, but part-time work was far more prevalent among them. Among the manufacturing groups, the metal products classifications, to which very

48 *ECONOMIC BACKGROUNDS OF RELIEF*

large numbers of workers are attached, showed the largest percentages of workers employed less than thirty hours a week. Among the nonmanufacturing groups, construction and contracting had exceedingly high percentages totally unemployed, and a very high proportion of those called employed in those groups had only part-time work.

From community to community in the county, there was wide range of variation in the proportion of workers totally unemployed and in the proportion working part time. Very high percentages of unemployment and of part-time work were found in communities made up largely of industrial workers, such as Duquesne, Homestead, North Braddock, and Rankin. Distinctly higher employment appeared in the more well-to-do communities, such as Avalon, Crafton, and Dormont.

CHAPTER 7

MONTHLY ESTIMATES OF NUMBERS UNEMPLOYED IN ALLEGHENY COUNTY, 1929-1936

We have noted, in Chapter 4, that unemployment must be stated not merely in terms of numbers unemployed but also in terms of loss of time on the part of those having jobs. The purpose of this chapter is to present monthly estimates of numbers unemployed for the period 1929-1936. In the following chapter, average employment and average loss of time will be considered.

There being no direct monthly record of numbers unemployed, only estimates are possible. Because of the character of the available data, the estimates of numbers unemployed represent the difference between the estimated number of employable persons and the estimated number employed.

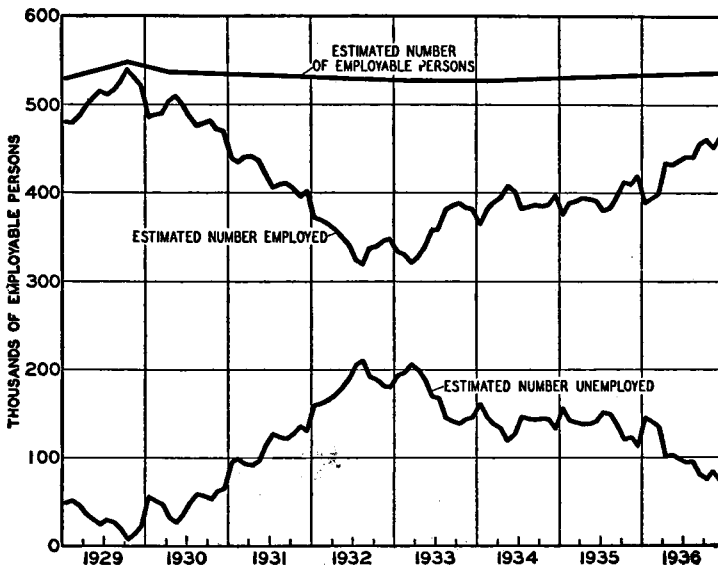
MONTHLY ESTIMATES OF THE NUMBER OF EMPLOYABLES

The number of gainful workers in the county in April, 1930, was 537,097 (Table 1). The method of estimating numbers of employables at other times in the period 1929-1936 is explained in Appendix D. What seem to be the more plausible assumptions indicate an increase from January, 1929, to October, 1929; a decline from October, 1929, to March, 1933; no change from March, 1933, to February, 1934; and an increase from February, 1934, to December, 1936. It will be understood that only the figure of April, 1930, is derived from an actual census, and even with respect to that number there are doubtful points of definition raised in Appendix A. In short, the estimated number of employables is necessarily subject to some uncertainty.

The largest estimated number of employables in the period here considered was 548,200, estimated for October, 1929. The smallest number was 527,100, estimated for the period March, 1933, to February, 1934, inclusive. This estimated decline of 21,100 took place in the period in which the general tendency of employment was downward. Its effect, therefore, was to reduce materially the number of unemployed below what the number would have been without the loss of population. It appears plausible, moreover, to

assume that at least part of the loss was not a true decline; for it seems likely that at least part of the workers who had left were temporarily in the outlying farm belt waiting for recovery of the chance to work, i.e., essentially they "belonged" in Allegheny County.

CHART 1
ESTIMATED MONTHLY NUMBER OF EMPLOYABLES, NUMBER EMPLOYED, AND NUMBER UNEMPLOYED, ALLEGHENY COUNTY, 1929-1936*



* Number of employables explained in Appendix D. Number employed and number unemployed given in Table 12.

The estimated number of employables is plotted in Chart 1 in comparison with the estimates of numbers employed and of numbers unemployed.

MONTHLY ESTIMATES OF THE NUMBER EMPLOYED

In Table 11 is an index of the total number on payrolls in Allegheny County. That index, based on industrial and commercial employment, will be used to represent change in the total number employed. The index is explained in Appendix C, where also its

MONTHLY NUMBERS UNEMPLOYED 51

use as an approximate measure of change in total number employed is considered.

The estimated total number sharing more or less in the available work in April, 1930, was 504,331. From that number and the index shown in Table 11, the monthly estimates of the number employed in Allegheny County are made. Those estimates, rounded, are given in Table 12, and they are plotted in Chart 1

TABLE 11
INDEX OF AVERAGE NUMBERS ON PAYROLLS IN ALLEGHENY COUNTY
1929-1936*
(Average month 1929 equals 100)

Month	1929	1930	1931	1932	1933	1934	1935	1936
January.....	94.2	95.4	86.1	72.9	65.5	71.3	73.3	76.2
February.....	94.1	95.9	85.3	72.4	64.9	74.3	75.8	77.1
March.....	95.6	96.3	86.4	71.6	63.0	76.4	76.3	78.9
April.....	97.9	98.9	86.6	70.4	64.2	77.3	76.9	85.0
May.....	99.5	100.0	85.6	68.7	66.4	79.9	76.7	84.7
June.....	101.0	98.4	82.0	66.7	70.1	78.7	76.2	85.7
July.....	100.3	95.5	79.6	63.6	70.5	75.4	74.6	86.5
August.....	101.2	93.5	80.3	62.6	74.7	75.5	75.1	86.5
September.....	103.2	93.8	80.6	66.2	75.7	75.7	77.7	89.4
October.....	106.1	94.4	79.4	66.7	76.2	75.6	80.9	90.4
November.....	104.4	92.6	77.6	68.0	75.2	75.8	80.4	88.7
December.....	102.3	92.1	78.7	68.3	74.8	77.9	82.3	91.6
Average.....	100.0	95.6	82.4	68.2	70.1	76.2	77.2	85.1

* The employment indexes regularly published in the *Pittsburgh Business Review* are for an eleven-county district, heavily weighted, of course, by Allegheny County. For this table, an all-firms index has been computed for Allegheny County, the several industry groups being assigned weights in accordance with their importance in the county. Refer to Appendix C.

in comparison with the estimates of number of employables and the estimates of number unemployed.

In terms of the base figure, it should be noted, the estimated number employed in any month is the estimated total number having any work in that month. In view of turnover, the total number having some work in the month is materially larger than the number at work on any representative day.

The largest estimated number employed in any month of the period 1929-1936 was 541,000, in October, 1929; the smallest number was 319,200, in August, 1932. That decline alone should need no supporting evidence as a revelation of the catastrophe of the depression. But, as we shall see in the following chapter, the 319,200 employed in August, 1932, probably had an average of less than two-thirds as much work as the average in October, 1929.

The number employed exceeded 500,000 in 11 of the 96 months in the years 1929-1936, i.e., in the last eight months of 1929 and in

TABLE 12
MONTHLY ESTIMATES OF NUMBER EMPLOYED AND OF NUMBER
UNEMPLOYED IN ALLEGHENY COUNTY, 1929-1936*

Month	1929	1930	1931	1932	1933	1934	1935	1936
Estimated Number Employed (Thousands)†								
January	480.4	486.5	439.1	371.7	334.0	363.6	373.8	388.6
February	479.9	489.0	435.0	369.2	331.0	378.9	386.5	393.2
March	487.5	491.1	440.6	365.1	321.3	389.6	389.1	402.3
April	499.2	504.3	441.6	359.0	327.4	394.2	392.1	433.4
May	507.4	509.9	436.5	350.3	338.6	407.4	391.1	431.9
June	515.0	501.8	418.2	340.1	357.5	401.3	388.6	437.0
July	511.5	487.0	405.9	324.3	359.5	384.5	380.4	441.1
August	516.1	476.8	409.5	319.2	380.9	385.0	383.0	441.1
September	526.3	478.3	411.0	337.6	386.0	386.0	396.2	455.9
October	541.0	481.4	404.9	340.1	388.6	385.5	412.5	461.0
November	532.4	472.2	395.7	346.8	383.5	386.5	410.0	452.3
December	521.7	469.7	401.3	348.3	381.4	397.2	419.7	467.1
Estimated Number Unemployed (Thousands)†								
January	49.0	56.2	95.5	159.4	193.7	163.5	156.5	145.3
February	51.6	51.8	99.3	161.6	196.4	148.2	144.1	141.0
March	46.1	47.9	93.4	165.4	205.8	139.8	141.8	132.1
April	36.4	32.8	92.1	171.2	199.7	133.5	139.1	101.3
May	30.4	26.9	96.9	179.6	188.5	120.5	140.4	103.1
June	24.8	34.7	114.9	189.5	169.6	127.0	143.2	98.3
July	30.5	49.2	126.9	205.1	167.6	144.1	151.7	94.5
August	28.0	59.2	123.0	209.9	146.2	143.9	149.4	94.8
September	19.9	57.3	121.2	191.2	141.1	143.1	136.5	80.3
October	7.2	54.0	127.1	188.4	138.5	143.9	120.4	75.5
November	14.0	62.9	136.0	181.5	143.6	143.2	123.3	84.5
December	22.8	65.2	130.1	179.7	145.7	132.8	113.9	70.0

* For explanation of estimates, refer to accompanying text.

† The number employed relates to the total number having at least some work in the month, and the number unemployed relates to the number having no work whatever during the month. It should be observed that, in view of turnover and lag of re-employment, the number sharing in the work during the month is materially larger than the number at work on any representative day of the month. Conversely, the number without work during the month is generally much smaller than the number idle on any representative day of the month.

TABLE 13
MONTHLY ESTIMATES OF PER CENT OF EMPLOYABLE PERSONS
UNEMPLOYED IN ALLEGHENY COUNTY, 1929-1936*
(Estimated number of employables each month equals 100%)

Month	1929	1930	1931	1932	1933	1934	1935	1936
January	9.3%	10.4%	17.9%	30.0%	36.7%	31.0%	29.5%	27.2%
February	9.7	9.6	18.6	30.4	37.2	28.1	27.2	26.4
March	8.6	8.9	17.5	31.2	39.1	26.4	26.7	24.7
April	6.8	6.1	17.3	32.3	37.9	25.3	26.2	18.9
May	5.6	5.0	18.2	33.9	35.8	22.8	26.4	19.3
June	4.6	6.5	21.6	35.8	32.2	24.0	26.9	18.4
July	5.6	9.2	23.8	38.7	31.8	27.3	28.5	17.6
August	5.1	11.0	23.1	39.7	27.7	27.2	28.1	17.7
September	3.6	10.7	22.8	36.2	26.8	27.0	25.6	15.0
October	1.3	10.1	23.9	35.6	26.3	27.2	22.6	14.1
November	2.6	11.8	25.6	34.4	27.2	27.0	23.1	15.7
December	4.2	12.2	24.5	34.0	27.6	25.1	21.3	13.0

* For explanation of estimates, refer to accompanying text.

April, May, and June, 1930. In November, 1931, it fell below 400,000 but exceeded 400,000 again in the following month. In the 28 successive months, January, 1932, to April, 1934, inclusive, the number employed was less than 400,000; and in 12 of those months it was less than 350,000. In May and June, 1934, there were somewhat more than 400,000 employed; thereafter, for 15 successive months there were less than 400,000—as there were again in the first three months of 1936.

In the month having the largest number employed, all except one or two per cent of the employables had at least some work. At the worst stages of the depression, only about 60 per cent had any work—and many of those had little.

MONTHLY ESTIMATES OF THE NUMBER UNEMPLOYED

In terms of the method of estimate, the monthly numbers unemployed shown in Table 12 are monthly estimates of the number without work throughout the month. In view of turnover and lag in the re-employment of those dropped, the number unemployed throughout any month is materially smaller than the number idle on any representative day of the month.

In October, 1929, it is estimated that as a minimum there were about 7,200 unemployed in the county. The number may have been larger, but it is hardly logical to accept a smaller number. The use of this number is explained in Appendix D. If it is too small, the assumed number of employables in October, 1929, is too small. If so, the number unemployed in other months of 1929 and in the first three months of 1930 probably is understated.

The estimated number unemployed rose above 100,000 for the first time in June, 1931, and remained above 100,000 for 60 successive months—five years thereafter, not again falling below 100,000 until June, 1936. In July and August of 1932 and in March of 1933, the number exceeded 200,000, about 4 workers of every 10 having no work in those months. In ten other months of this five-year period, the number was more than 175,000. Beginning with January, 1932, the number unemployed exceeded 150,000 for 19 successive months; also in January, 1934, and in January and July, 1935, the number exceeded 150,000.

In the month having the lowest unemployment, only one or two per cent were wholly without work. At the worst stages of the depression, in spite of the departure of a substantial number—pre-

sumably for the most part unemployed—about 40 per cent were wholly without work (Table 13).

Monthly estimates of the number unemployed in the period 1929-1936 are given in Table 12. Even if the devastation of depression were fully represented in the number unemployed, adequate explanation of an enormous relief problem would be at hand. But such numbers reflect only in part the loss of employment, for those called employed suffered an enormous loss of working time. Let us consider approximations of the loss of working time.

CHAPTER 8

APPROXIMATIONS OF LOSS OF WORKING TIME BY EMPLOYED PERSONS IN THE PITTSBURGH DISTRICT, 1929-1936

Unemployment of a considerable number of workers in most of 1929, in spite of the extraordinarily high business levels of that year, has been noted (Table 12). From unemployment of only a few thousand to unemployment of over 200,000 was the record of collapse after the peak. In terms of numbers employed, most of the loss from average levels of 1929 was recovered by the end of 1936. There remained, however, a large group unemployed at the close of 1936.

Disaster enough is written in the record of numbers unemployed. But the record of unemployment is by no means complete without consideration of the loss of time by those having jobs. In view of the character of the available information, it is not practical to attempt the direct measurement of loss of time in Allegheny County; for the data which may be used in approximating loss of working time are for the Pittsburgh district, an eleven-county area. Allegheny County, however, constitutes so great a part of the district and has so much in common, industrially and commercially, with the rest of the district that the broad measure of loss of working time in the Pittsburgh district should serve to indicate roughly the loss of time in Allegheny County.¹

¹ About 55 per cent of the gainful workers in the eleven-county district in 1930 were in Allegheny County. The proportion of gainful workers attached to major industry groups in Allegheny County and in the eleven-county district, respectively, were as follows: manufacturing and mechanical industries, 45.0 and 40.9; transportation and communication, 10.5 and 10.0; trade, 18.2 and 14.8; professional and semiprofessional service, 7.3 and 6.6; domestic and personal service, 9.9 and 8.1. In mining, there was a marked difference in proportion, the percentages in order being 2.8 and 10.0, but to a very great extent the welfare of mining in the district is linked with the industrial welfare of Allegheny County. Comparative figures, based on the Federal census, cited from Bureau of Business Research, University of Pittsburgh, *Industrial Databook for the Pittsburgh District*, pp. 8 and 13.

INDEX OF THE AMOUNT OF GAINFUL WORK IN THE
PITTSBURGH DISTRICT

The construction of the index of the amount of gainful work is discussed in Appendix E. Briefly, the district index of man-hours worked by wage earners in manufacturing was placed on the basis of a standard month, variations due to differences in number of days per month being eliminated, and was then adjusted on the basis of the spread between the district index of total payrolls and the district index of manufacturing payrolls. At its lowest point, in March, 1933, this index, shown in Table 14, stood at 40.1 per cent of the 1929 average. The peak of this index, in September,

TABLE 14
MONTHLY INDEX OF THE AMOUNT OF GAINFUL WORK IN THE
PITTSBURGH DISTRICT, 1929-1936*
(Average month 1929 equals 100)

Month	1929	1930	1931	1932	1933	1934	1935	1936
January.....	97.2	91.9	68.2	50.3	43.3	49.7	56.0	65.0
February.....	95.5	92.1	69.2	47.2	41.7	52.3	58.4	65.3
March.....	94.6	91.8	71.5	45.8	40.1	56.3	60.5	64.2
April.....	98.0	94.1	71.1	47.2	44.1	59.2	56.4	75.1
May.....	101.1	96.3	70.0	47.6	52.1	62.6	58.3	76.5
June.....	101.5	96.4	62.7	45.3	59.4	62.9	59.2	73.8
July.....	103.6	90.3	62.3	42.0	64.7	54.9	56.5	77.9
August.....	101.8	86.2	58.6	41.3	60.9	52.8	58.5	78.8
September.....	108.8	87.8	61.2	47.4	54.2	54.1	62.1	84.9
October.....	105.6	83.8	60.5	47.4	53.2	52.9	67.6	82.0
November.....	100.3	78.8	57.9	45.8	53.0	52.8	66.3	82.6
December.....	92.0	70.0	53.6	43.0	52.5	53.7	66.8	80.4

* Explained in Appendix E.

1929, was 8.8 per cent above the average for the year. The lowest level, therefore, represented less than 37 per cent of the peak level.

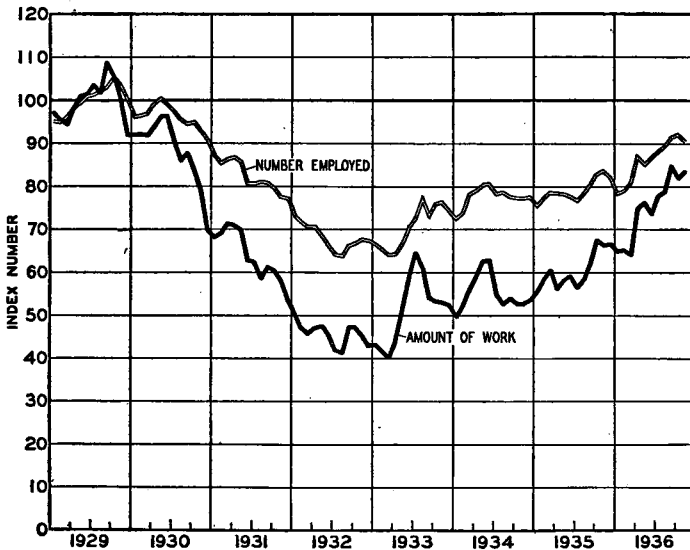
The index of numbers on payrolls in the Pittsburgh district reached its lowest point in August, 1932, standing then at 63.8 per cent of the 1929 average; in March, 1933, the level was only a shade higher, namely, 64.1. The peak of this index, in October, 1929, was 5.5 per cent above the 1929 average.² The lowest level was about 60 per cent of the highest level.

The index of total amount of work is shown in Chart 2. In large part, the over-all picture of the tragedy of workers in the Pittsburgh district may be read at a glance in the drop of that index from 109 to 40.

² *Pittsburgh Business Review, Annual Statistical Supplement, February, 1936, p. 3.*

For purposes of comparison, the index of numbers employed in the Pittsburgh district also is shown in Chart 2. The two indexes being equated at the average level of 1929, the drop of the index of work below the index of numbers employed reveals strikingly

CHART 2
MONTHLY INDEXES: TOTAL NUMBER EMPLOYED AND AMOUNT OF GAINFUL
WORK, PITTSBURGH DISTRICT, 1929-1936*
(Average month 1929 equals 100)



* See Table 14 and citation in footnote 2, p. 56.

that workers lucky enough to get some work fell far short of full employment.³

It is desirable, therefore, to consider the average employment and average loss of time of those who were more or less employed.

³The Index of General Business Activity in the Pittsburgh District adjusted for seasonal change but not for trend (1923-1925 average equals 100) dropped from 125.5 (July, 1929) to 42.7 (March, 1933). This index is shown in Table 17. In terms of the 1929 average, the drop was from 106.7 to 36.3.

INDEX OF AVERAGE AMOUNT OF WORK PER EMPLOYED WORKER
IN THE PITTSBURGH DISTRICT

By allowance for change in number employed, the index of total amount of work (Table 14) is translated into an index of average amount of work per employed worker (Table 15 and Chart 3). Since the number employed fell severely, the average amount of work per employed worker did not drop nearly so much as did the total amount of work.

In terms of the 1929 average, the lowest level of the index of average work per employed worker was 62.6, in March, 1933. The

TABLE 15
MONTHLY INDEX OF AVERAGE AMOUNT OF WORK PER EMPLOYED
WORKER IN THE PITTSBURGH DISTRICT, 1929-1936*
(Average month 1929 equals 100)

Month	1929	1930	1931	1932	1933	1934	1935	1936
January	102.2	95.6	78.2	68.7	65.0	68.6	74.2	83.0
February	100.6	95.4	80.8	65.6	63.9	70.8	75.5	82.7
March	98.5	94.6	82.9	63.9	62.6	71.9	77.0	79.4
April	99.8	95.0	82.0	66.9	68.7	74.7	71.8	86.6
May	101.7	96.0	81.6	69.5	78.1	78.0	74.5	89.8
June	100.7	97.6	77.7	68.3	84.4	78.1	76.2	85.1
July	102.3	92.6	77.3	65.4	88.9	70.1	73.6	88.3
August	99.7	90.2	72.3	64.7	78.9	67.2	74.8	88.1
September	105.5	92.8	75.7	71.5	73.9	69.6	77.5	92.8
October	100.1	88.3	75.9	70.9	70.1	68.4	81.6	89.1
November	96.9	84.9	74.6	67.7	69.5	68.3	79.2	92.4
December	92.0	77.0	69.4	63.8	70.6	69.3	81.3	88.6

* Explained in Appendix E.

peak of this index was 5.5 per cent above the 1929 average. The lowest level was 59.3 per cent of the highest level.

The index of average amount of work remained above 90 per cent of the 1929 average through September, 1930. In October, 1930, it fell below 90 and did not again rise above 90 until September, 1936, only one month short of six years later. In 1931, it was above 80 in four months, between 70 and 80 in seven months, and below 70 in one month—December. In 1932, it was above 70 in only two months; in five months of 1933 and in six months of 1934, this index was below 70.

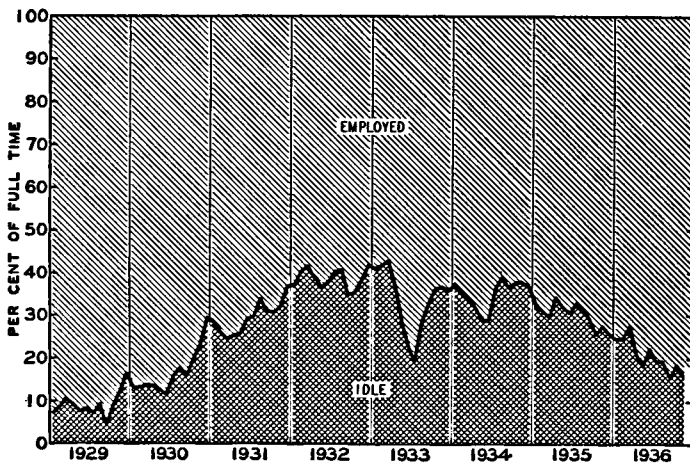
It will be realized at once that not all employed workers share equally in the available work. Considerable numbers had full-time work; for all others, then, the average amount of work fell substantially more than the index of average amount of work. Of those not working full time, some lost comparatively small percentages of time; others far more. Employers often were unable

to call their workers for more than a few days in the month. In view of the recognizedly wide differences among industries—and even among firms in the same industry—with respect to the severity of the depression, it is permissible to suggest that the drop in the average amount of work of employed workers to about 63 per cent of the 1929 average undoubtedly carried with it the drop of large groups to 50 per cent or 40 per cent of the 1929 average, or even to lower levels.

ESTIMATED PER CENT OF FULL TIME WORKED BY EMPLOYED
PERSONS IN THE PITTSBURGH DISTRICT

Thus far in this chapter, the interpretation has been mainly in terms of the average levels of 1929. It is advisable to give more concrete meaning to the estimates of average work by translating them into percentages of full time.

CHART 3
ESTIMATED MONTHLY PER CENT OF WORKING TIME LOST BY EMPLOYED
PERSONS, PITTSBURGH DISTRICT, 1929-1936*



* Data in Table 16.

Interpretation of the index of average work hinges on an interpretation of what per cent of full time the average probably repre-

sented at the maximum. In Appendix E, it is explained that after allowance for turnover, for inevitable absenteeism among those remaining on payrolls, and for inevitable loss of time due to breakdown and other interruptions at the place of employment, the maximum average work for those on payrolls seems likely to have been not over 96 per cent of full time. The peak figure of 105.5, in

TABLE 16
MONTHLY ESTIMATES OF THE AVERAGE PER CENT OF FULL TIME WORKED AND
OF AVERAGE PER CENT OF FULL TIME LOST BY THOSE EMPLOYED
PITTSBURGH DISTRICT, 1929-1936*
(Average of total normal working time for those employed equals 100)

Month	1929	1930	1931	1932	1933	1934	1935	1936
Estimated Average Per Cent of Full Time Worked, Employed Workers								
January.....	93.0	87.0	71.2	62.5	59.1	62.4	67.5	75.5
February.....	91.5	86.8	73.5	59.7	58.1	64.4	68.7	75.3
March.....	89.6	86.1	75.4	58.1	57.0	65.4	70.1	72.3
April.....	90.8	86.4	74.6	60.9	62.5	68.0	65.3	78.8
May.....	92.5	87.4	74.3	63.2	71.1	71.0	67.8	81.7
June.....	91.6	88.8	70.7	62.1	76.8	71.1	69.3	77.4
July.....	93.1	84.3	70.3	59.5	80.9	63.8	67.0	80.4
August.....	90.7	82.1	65.8	58.9	71.8	61.1	68.1	80.2
September.....	96.0	84.4	68.9	65.1	67.2	63.3	70.5	84.5
October.....	91.1	80.3	69.1	64.5	63.8	62.2	74.3	81.1
November.....	88.2	77.3	67.9	61.6	63.2	62.1	72.1	84.1
December.....	83.7	70.1	63.2	58.1	64.2	63.1	74.0	80.6
Estimated Average Per Cent of Full Time Lost, Employed Workers								
January.....	7.0	13.0	28.8	37.5	40.9	37.6	32.5	24.5
February.....	8.5	13.2	26.5	40.3	41.9	35.6	31.3	24.7
March.....	10.4	13.9	24.6	41.9	43.0	34.6	29.9	27.7
April.....	9.2	13.6	25.4	39.1	37.5	32.0	34.7	21.2
May.....	7.5	12.6	25.7	36.8	28.9	29.0	32.2	18.3
June.....	8.4	11.2	29.3	37.9	23.2	28.9	30.7	22.6
July.....	6.9	15.7	29.7	40.5	19.1	36.2	33.0	19.6
August.....	9.3	17.9	34.2	41.1	28.2	38.9	31.9	19.8
September.....	4.0	15.6	31.1	34.9	32.8	36.7	29.5	15.5
October.....	8.9	19.7	30.9	35.5	36.2	37.8	25.7	18.9
November.....	11.8	22.7	32.1	38.4	36.8	37.9	27.9	15.9
December.....	16.3	29.9	36.8	41.9	35.8	36.9	26.0	19.4

* Explained in Appendix E.

terms of the 1929 average, is construed to represent 96 per cent of full time. The level of the index numbers shown in Table 15 has been lowered in accordance with the interpretation that 105.5 per cent of the 1929 average was equal to 96 per cent of average full time. The resulting figures are given in the upper half of Table 16 as estimated percentages of full time worked.

At the lowest level, the estimated average per cent of full time worked was 57, in March, 1933. In five months of 1932 and three months of 1933, the percentage was below 60. From the peak of

96 per cent of full time, it fell below 90 in November, 1929, and, with all the recovery, had not again reached 90 at the end of 1936. Beginning with November, 1930, the estimated percentage was below 80 in every month but one until May, 1936. The one exception was July, 1933, when there was a temporary bulge in activity.

ESTIMATED PER CENT OF FULL TIME LOST BY EMPLOYED
WORKERS IN THE PITTSBURGH DISTRICT

In order that the lack of employment reflected in the percentages just discussed may be better visualized, the complementary percentages, i.e., estimated percentages of full time lost by employed workers, are set up in the lower part of Table 16. From the interpretation of maximum employment, previously explained, we derive the minimum estimate of lost time, namely, 4 per cent of full time in September, 1929. The maximum average loss of time for those employed was that in March, 1933, estimated at 43 per cent of full time.

Beginning with November, 1930, the estimated loss of time by those employed exceeded 20 per cent of full time in every month but one through April, 1936; it exceeded 30 per cent in the last five months of 1931, in every month of 1932, in eight months of 1933, in ten months of 1934, and in seven months of 1935. In the trough of the depression, there were eight months in which the estimate of time lost by those having jobs averaged more than 40 per cent.

As we have observed above, these estimated percentages are averages. In view of the wide variation in the effect of depression, it is reasonable to suppose that an average loss of 30 per cent or 40 per cent may have meant, for large numbers, losses of 50 per cent or 60 per cent of full time, or more.

SUMMARY

In addition to the total idleness of 20, 30, or 40 per cent of the employable workers, there was a tremendous loss of time by those having jobs during the depression. Although the number employed at the lowest level was about 60 per cent of the 1929 average, the estimated amount of work fell to about 40 per cent of the 1929 average.

In Chapter 2, it was shown that far the larger part of the population must generally have work or fall very soon into want.

When we note that in the depths of depression about 40 per cent of the workers had no work (Table 13) and that the amount of gainful work probably was about 60 per cent less than the amount at the average levels of 1929 (Table 14), it should not be difficult to understand the gravity of the local relief problem in the depression years. Catastrophe would be obvious in those figures even if it were assumed that all workers fared well in 1929 and began to be pinched only with the advance of the depression. But not all workers fared well in 1929. In most of the months of 1929, from 5 to 10 per cent of the workers were without jobs (Table 13). Moreover, those who had jobs suffered appreciable loss of working time in that banner year, being idle in various months from 4 to 16 per cent of the time.

In short, so far as working time is a measure, there was considerable depression for workers in that year of extraordinarily high business levels. It helps little to say that there also were numerous business firms in the pinch in 1929. Indeed, it is not possible to conceive the crash without visualizing weak spots both numerous and at vital points in business. But the fact remains that the relief problem did not begin after 1929; it existed in 1929 and spread like a plague thereafter.

Since by no means all was well when business was at the high levels of 1929, one faces the troublesome question of what conditions are at more nearly normal levels. In the following chapter, consideration is given to business irregularity and the range of fluctuations, so that employment in 1929 and in other "good" years may be seen in better perspective.

CHAPTER 9

IRREGULARITY IN THE OPPORTUNITY FOR EMPLOYMENT IN THE PITTSBURGH DISTRICT

There was significant lack of employment at the average level of 1929. There was an appearance of relatively full employment only at or near the highest point of activity. Such peak levels are a rarity. Therefore, relatively full employment is a rarity. On the other hand, the depth of the depression which came after 1929 was the worst known. Over the long period, somewhere between the best conditions known and the worst conditions known is an average or normal condition. In the absence of comprehensive long-time records of employment and unemployment, it is necessary to deal with the indirect evidence on the probable extent of unemployment at normal business levels.

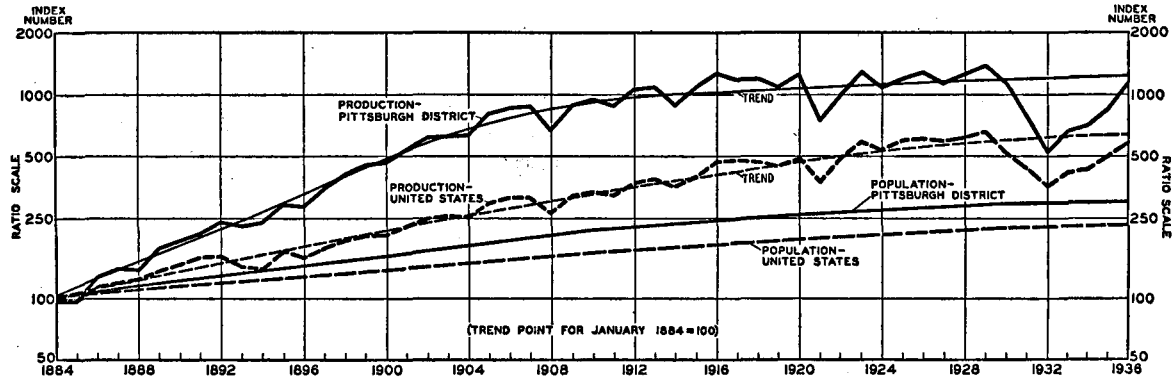
The purpose in this chapter is to describe briefly the characteristic irregularities of business activity in the district, as reflections of like irregularities in the opportunity to work. After such consideration of irregularities, an attempt will be made in Chapter 10 to give an approximate statement of normal unemployment.

CLASSES OF IRREGULARITIES IN BUSINESS ACTIVITY

There is wide familiarity with these everyday facts: (a) Industries and localities grow, level off to holding their own, or decline, and the rate of growth or the rate of decline may change a great deal. (b) Whatever be the stage of growth or decline, the levels of activity may shift quickly in what are called boom periods or depression periods. (c) Some changes of considerable significance are expected at fairly regular times each year, because of seasonal influences. (d) Significant shifts in the levels of activity come sometimes because of great fires, floods, earthquakes, or other violent shock not in any immediate way related to growth or decline, to boom or depression, or to seasonal influences.

The raw data reflecting changes, of course, do not automatically reveal the kinds of change reflected; and the cautious statistician makes no pretense of being able to say exactly how much of a

CHART 4
TREND OF INDUSTRIAL PRODUCTION AND OF POPULATION, PITTSBURGH DISTRICT
AND UNITED STATES, 1884-1936*



* This chart was originally prepared for use on the desk chart entitled "Index of Business Activity in the Pittsburgh District, 1884-1936," published by the Bureau of Business Research, University of Pittsburgh. Comparison of the production index for the Pittsburgh district with that for the United States was discussed briefly by Wilbert G. Fritz, in "Long-Time Trend of Production in the Pittsburgh District," *Pittsburgh Business Review*, November, 1934.

stated shift in business levels is of this or that class. He has to deal with average patterns as frames of reference. Sometimes the variations are so irregular that classification of change is impossible. But there are so many records with so much consistency of pattern that approximations may be made with confidence. In the following sections, changes of the pattern types will be illustrated. Random changes, an example of which was the severe jolt felt in this district in March, 1936, as a result of the flood, are merely noted here. They are not subject to general treatment.

CHANGING TRENDS OF BUSINESS ACTIVITY IN THE PITTSBURGH DISTRICT

The "trend of business activity" means the long-time average tendency of growth, of sustained levels, or of decline (Chart 4). Because of change in efficiency, it is assumed that the trend of the amount of gainful work is not an exact parallel of the trend of business activity. And because of the change in average working hours, it is recognized that the trend of numbers employed is not an exact parallel of the trend in amount of work. Shortening of average working time, as a quantitative offset to increased efficiency, presumably has caused the trend in numbers employed and the trend in volume of business activity to be more nearly parallel than they would have been with increased efficiency but with no reduction of hours.

The Pittsburgh district had a period of very rapid industrial growth in the latter part of the past century, and the growth has continued; but the rate of growth has slowed down so much that the district has the appearance of practical maturity. The district has been known as a center of industrial production. For several decades, the growth of production in this area was much faster than the growth of production in the country as a whole and faster than the growth of population in this area.¹ In the later years, the

¹The material used here on business trends, unless otherwise noted, is abstracted from numerous articles published in the *Pittsburgh Business Review*, some directly presenting trend analyses, the others containing materials relevant to the discussion. Because of the large measure of staff cooperation in all studies of the Bureau of Business Research, it is needless to burden the discussion with the numerous references that would be required in a meticulous acknowledgment of each author's contribution. The following articles are drawn upon, most of them specifically, but some merely in terms of the general perspective:

Wilbert G. Fritz, "The Trend of Business in the Pittsburgh District," December, 1932, p. 13; "The Trend of Trade and Shipments in the Pitts-

trend of production in the Pittsburgh district has become more nearly parallel with national production and with population in the district (Chart 4). With recognized growth of efficiency in production, a parallel between the trend of production and the trend of population would mean a decline in work per capita in the productive industries. Except as working hours were reduced, the result would be a decline in the number of jobs relative to the number of people.

It is a common assertion that expansion of "service" industries and occupations has taken up the slack resulting from retardation of opportunity in the productive industries. An outstanding instance is the expansion of employment at garages and filling stations. The decennial census of gainful occupations indicates, for the country as a whole, that the proportion of persons aged 10 or more reporting gainful occupations declined from 1910 to 1920 and also from 1920 to 1930. The same thing was true for Pennsylvania and for Pittsburgh. Similar information for Allegheny County is not available, but there is no clear reason to doubt that the same general tendency held for the county.

If it could be shown that there had been a general rise in the purchasing power earned by the principal breadwinners sufficient to lessen the number of workers per family required to maintain

burgh District," February, 1933, p. 18; "Fifty Years of Business Activity in the Pittsburgh District," October, 1933, p. 16; "Monthly Production of Pig Iron in the Pittsburgh District, 1884-1933," November, 1933, p. 17; and "Long-Time Trend of Production in the Pittsburgh District," November, 1934, p. 17.

Theodore A. Veenstra, "Real Estate Finance in Allegheny County—The Statistical Position," October, 1932, p. 13.

Wilbert G. Fritz and Theodore A. Veenstra, "Bituminous Coal Resources and Production in Pennsylvania," December, 1935, p. 22.

Glenn E. McLaughlin, "Growth and Distribution of the Iron Industry in the United States," February, 1931, p. 12; "Growth and Distribution of the Steel Industry in the United States," May, 1931, p. 12; and "Growth of Population and of Manufacturing Employment in the Pittsburgh Industrial Area in Comparison with Growth in Other Industrial Areas," May, 1935, p. 19.

E. N. Montague, "Industrial Electric Power Consumption in Western Pennsylvania," July, 1931, p. 14; "The Pig Iron Industry in Allegheny County, 1872-1931," February, 1933, p. 14; and "The Pig Iron Industry in the Western Pennsylvania and Shenango Valley Districts," April, 1933, p. 14.

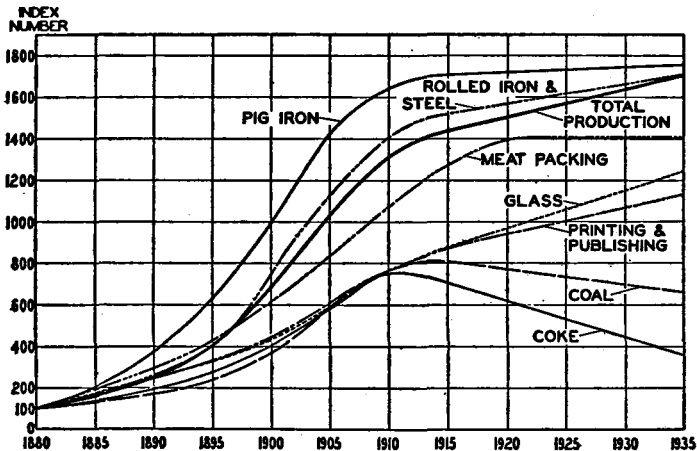
Staff (of the Bureau of Business Research, University of Pittsburgh), "Department Store Sales in Pittsburgh, 1919-1933," December, 1933, p. 17.

J. P. Watson, "Assessed City Valuation of Taxable Real Estate in Pittsburgh," July, 1934, p. 17.

Scott Keyes, "Fluctuations in Land Development in Allegheny County," March, 1935, p. 17.

accepted standards, one might explain the drop in the proportion of the population gainfully occupied in terms of voluntary withdrawal from, or voluntary abstention from, employment. But one finds in the census records that, although there was a decline in the employment of children, the increase in the employment of women greatly exceeded the decrease in the employment of children. Furthermore, we have seen in Chapter 2 that the records of

CHART 5
 PRODUCTION TRENDS IN SELECTED INDUSTRY GROUPS, PITTSBURGH
 DISTRICT, 1880-1935*
 (Trend point for 1880 equals 100)



* Original presentation by Wilbert G. Fritz, *Pittsburgh Business Review*, November, 1934, p. 18.

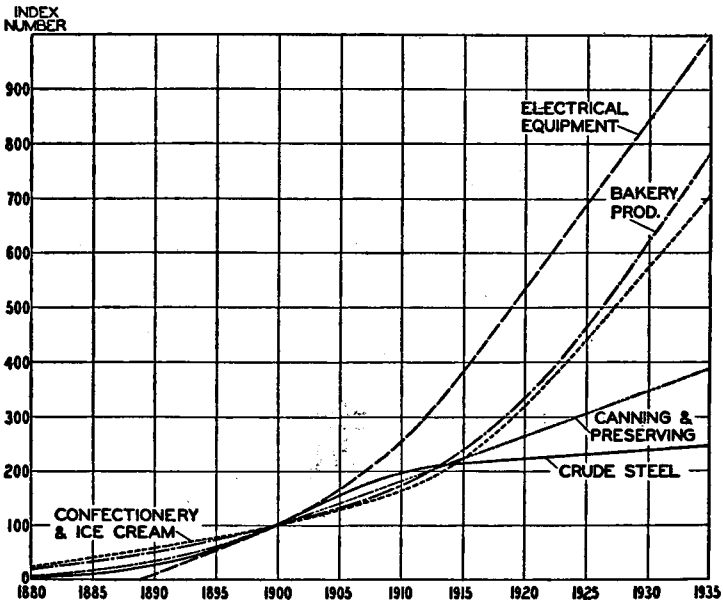
employment agencies in Pittsburgh indicated a declining ratio of number of available jobs to number of applications for several years before 1929. Surely, then, not all of the decline in the proportion of the population having gainful occupations was the result of voluntary withdrawal or abstention, if any of it was. To some extent at least, it must have been due to a net retardation in the growth of the average opportunity to become and continue to be a gainful worker.

Aside from the probable general tendency toward lessening of opportunity, a major point of hardship for workers lay in the

shifts that took place within the scope of the total field of employment.

The key importance of employment in manufacturing in Allegheny County is well recognized, both because of its great volume and because of the degree of dependence of other activities on

CHART 6
 PRODUCTION TRENDS IN SELECTED INDUSTRY GROUPS, PITTSBURGH
 DISTRICT, 1880-1935*
 (Trend point for 1900 equals 100)



* Original presentation by Wilbert G. Fritz, *Pittsburgh Business Review*, November, 1934, p. 18.

manufacturing. In the county, the average number of wage earners employed in manufacturing industries was materially smaller in 1929 than in 1919. In the four-county Pittsburgh Industrial Area (so designated by the Bureau of the Census) the largest average number of wage earners in manufacturing probably was in 1923.²

² Glenn E. McLaughlin, "Growth of Population and of Manufacturing Employment in the Pittsburgh Industrial Area in Comparison with Growth in Other Industrial Areas," *Pittsburgh Business Review*, May, 1935, p. 28.

With respect to various manufacturing groups, the trends are mixed (Chart 5 and Chart 6). Production of electrical equipment rose sharply in the postwar period. In the foods group, production of bakery products and of confectionery and ice cream showed marked growth; the canning and preserving industry gained very substantially; and meat packing appeared to level out. The glass industry experienced a substantial gain, as did printing and publishing. But iron and steel production is of outstanding importance. The growth in iron and steel production slowed down very much; production of pig iron still more—because of increasing use of scrap metal. The index of total iron and steel production in the district, not adjusted for trend, was only a little higher in 1929 than in 1916 (Chart 7).

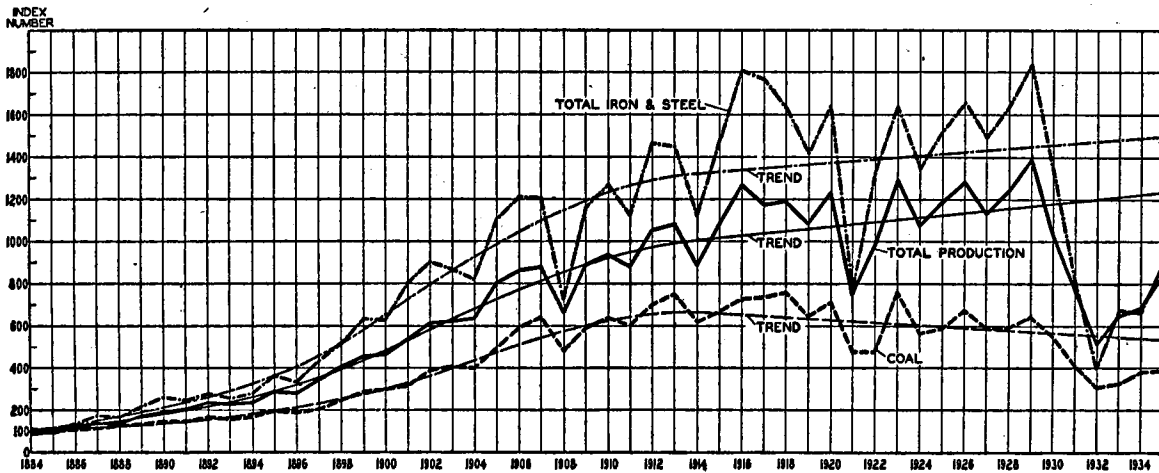
In coal production the district peak was reached in 1918.³ The Pennsylvania coal fields were subject, along with other fields, to the effect of increasing efficiency of combustion and the increased use of competitive fuels. In addition, the Pennsylvania fields have at times suffered severely from the inroads of competitive fields in their former markets. A significant part of this shift came as a result of the decentralization of the coke industry with the growth in the use of by-product coke. Part of it was related to differences in labor conditions; part, to the advantage of competitive fields in transportation costs.

The annual index of total production in the district, not adjusted for trend, stood in 1923 and 1926 at almost the same level as in 1916, and in 1929 the level was very little above that of 1916 (Chart 7).

Because of the sustained rise in population, against a falling off of wage earners in manufacturing and in mining, one faces the question regarding the over-all trend of employment. Direct records on all types of employment are not available. We have noted that there was a decline in the proportion of persons aged 10 or more engaged in gainful occupations. There was, however, an increase in total. Against retardation in productive industries, there were gains in the service industries and occupations; but this gain was not enough to prevent a drop in the proportion of the population reported as gainful workers.

³ By "district" is meant here the 16-county area in western Pennsylvania in which almost all the state's bituminous coal production takes place.

CHART 7
TREND OF TOTAL PRODUCTION, OF PRODUCTION OF FINISHED ROLLED IRON AND
STEEL, AND OF PRODUCTION OF COAL, PITTSBURGH DISTRICT, 1884-1935*



* Original presentation by Wilbert G. Fritz, *Pittsburgh Business Review*, November, 1934, p. 19.

In summary, then, the changes in trends have been such as result in a significant change in the relative importance of various industry groups in the districts, some growing fast, some settling toward a level, some declining. In total, the employment trend has not kept pace with the growth of population.

Even if the net effect had been a sustained rate of growth, there would have been hardships, for only part of the workers displaced in a retarded industry could be readily absorbed in an expanding industry. The fact that the printing and publishing group was expanding, for example, was little comfort to a displaced miner. In view of the availability of new employables, not absorbed by general expansion, training *de novo* would in many instances have been simpler than retraining workers displaced in other industries. All in all, then, the several retardations and declines in industrial trends could have meant only that every few years another group of workers suffer the shock of displacement. For many of the older workers, it probably has meant practically permanent displacement. For others, it has meant a trek to other places, remaining to share in declining work, or the often difficult process of vocational revamping.

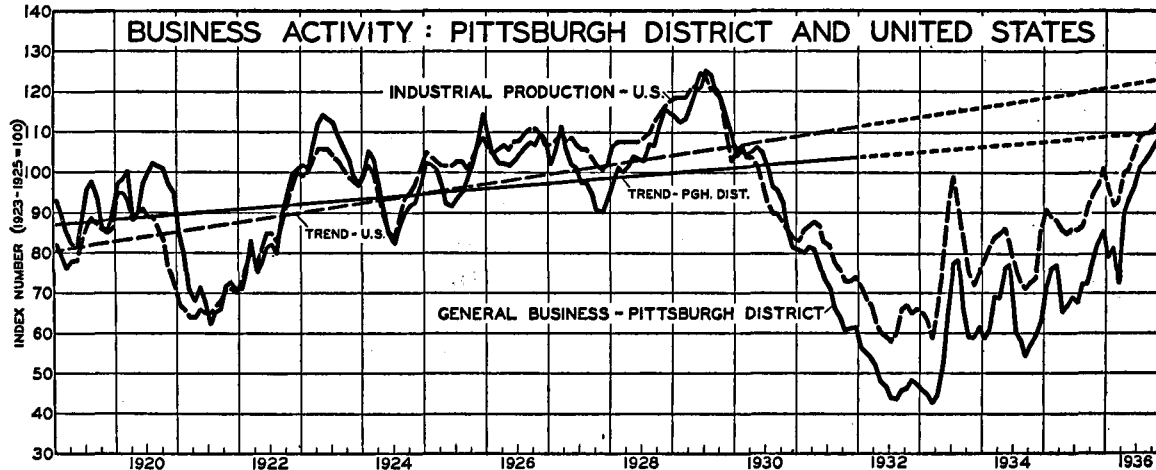
BOOM AND DEPRESSION

The production indexes shown in Chart 4 and Chart 7 swing in wide fluctuations above and below the respective trends. Differences between the Pittsburgh district indexes and the national indexes can be detected in Chart 4, but the broad similarity of fluctuations is much more obvious than the differences. The great irregularity in the combined index of business activity in the Pittsburgh district is seen more readily in Chart 8, because of the larger scale and of the use of monthly data.

The actual readings in the three charts just mentioned are affected by trend and do not show boom and depression only. The index shown in Chart 9, however, is adjusted for trend and for normal seasonal variation; and the fluctuations revealed there are the swings of boom and depression.

Chart 9 shows clearly that no easy and compact statement on cyclical fluctuations of business activity in this district can be made. But the chart itself stands as a long visual record of instability. Since it is recognized that a boom in business means a boom in employment and that a depression in business means a depression in employment, one may read the chart as a rough picture of

CHART 8
MONTHLY INDEXES OF GENERAL BUSINESS ACTIVITY, NOT ADJUSTED FOR
TREND, PITTSBURGH DISTRICT AND UNITED STATES, 1919-1936*
(Average month 1923-1925 equals 100)



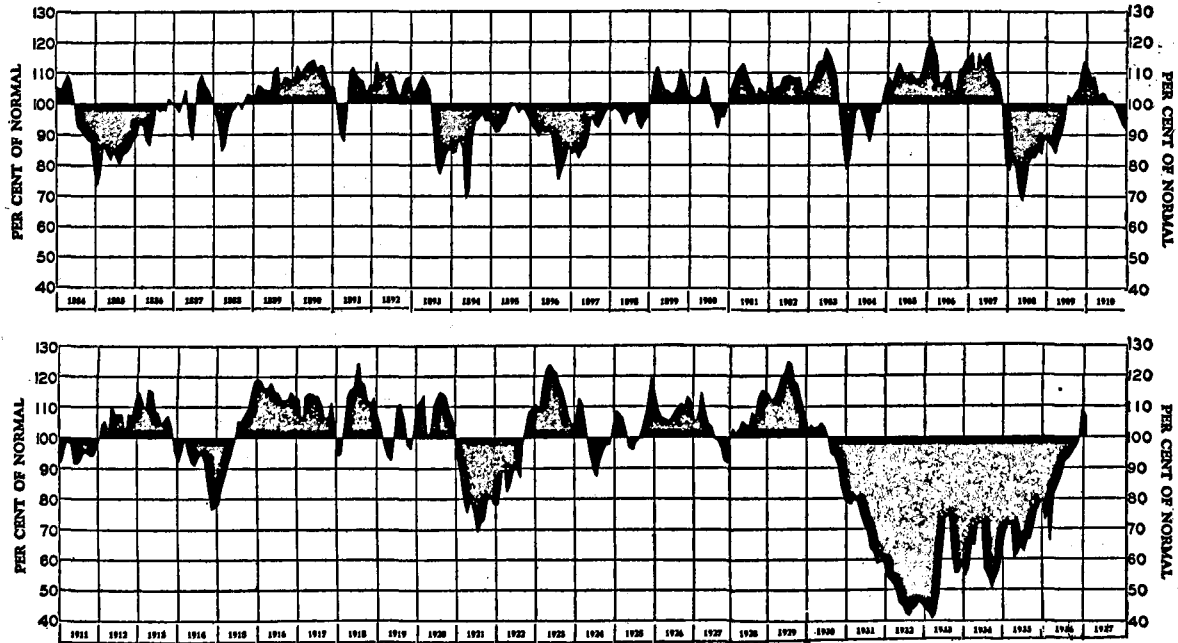
* Regularly presented as the first chart in the "General Review" section of the *Pittsburgh Business Review*. The indexes are adjusted for seasonal variation but not for trend. Pittsburgh district index is that shown in Table 17. United States index by the Federal Reserve Board. Both trends computed by the Bureau of Business Research.

TABLE 17
INDEX OF GENERAL BUSINESS ACTIVITY IN THE PITTSBURGH DISTRICT, 1919-1936*
 (Adjusted for seasonal variation, but *not* for trend; average month 1923-1925 equals 100)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1919	93.2	89.8	85.4	82.5	81.1	87.8	96.0	98.0	93.9	86.1	85.2	90.5	89.1
1920	97.4	98.3	100.3	89.4	90.2	97.6	100.1	102.2	101.7	100.9	97.2	94.8	97.5
1921	84.8	79.6	71.0	68.2	71.4	67.9	62.3	65.5	66.2	72.0	72.8	70.9	71.0
1922	71.0	76.4	83.2	75.2	77.4	81.5	82.4	80.0	90.2	94.9	99.9	101.1	84.4
1923	102.1	101.2	107.4	112.7	114.5	113.3	112.4	109.6	106.4	103.3	99.0	97.1	106.6
1924	100.8	105.5	103.3	96.2	89.8	84.7	82.4	86.7	90.0	92.2	92.6	96.9	93.4
1925	102.6	102.2	101.0	97.2	92.4	91.7	93.9	95.2	98.5	102.5	108.1	114.7	100.0
1926	108.7	104.5	102.6	102.4	102.0	103.0	104.9	106.6	107.7	107.0	110.0	108.4	105.6
1927	102.2	105.6	111.5	105.9	102.2	101.3	97.8	97.7	95.3	90.8	90.4	93.2	99.5
1928	97.9	101.7	100.4	101.8	104.3	103.6	103.1	107.3	107.0	112.6	115.1	114.9	105.8
1929	114.1	112.6	113.4	116.4	120.6	121.5	125.5	124.5	119.9	118.5	114.1	109.6	117.6
1930	104.3	105.7	104.8	105.3	106.6	105.2	101.5	96.7	95.7	92.7	86.0	81.6	98.8
1931	80.9	80.2	81.8	81.1	77.5	73.5	71.3	65.9	64.0	60.9	61.3	61.6	71.7
1932	56.4	55.2	53.8	51.9	48.0	46.8	44.0	43.7	45.9	46.5	48.5	47.4	49.0
1933	45.8	45.0	42.7	44.6	52.2	66.5	77.7	78.4	65.0	59.1	58.9	61.5	58.1
1934	58.2	60.9	69.2	68.8	76.2	77.0	60.4	58.3	54.3	57.1	59.5	63.3	63.6
1935	72.1	76.3	76.9	65.6	66.9	69.1	67.6	72.2	72.3	77.4	82.2	85.6	73.7
1936	79.7	81.8	72.5	90.0	93.3	96.5	101.5	102.8	104.5	106.7	109.4	120.0†	96.6†

* Index computed by the Bureau of Business Research, University of Pittsburgh. This index and that in Table 18 were in process of revision when this chapter was written. The changes will not be great enough to have significant effect on the substance of the chapter.
 † Preliminary.

CHART 9
 MONTHLY INDEXES OF GENERAL BUSINESS ACTIVITY, ADJUSTED FOR TREND
 PITTSBURGH DISTRICT, JANUARY, 1884, TO JANUARY, 1937*
 (Computed normal equals 100)



* Index 1884-1936 shown in Table 18.

change in the amount of employment (not, however, of numbers sharing in the work, because of wide variation in the extent of part-time employment).

In the interpretation of this cyclical irregularity in its bearing on employment, a point of crucial importance must be emphasized. The peak of a boom period can be reached only by the use of labor not used at lower levels, and the availability of labor sufficient to reach the occasional very high peaks suggests that full use of labor does not take place even in the lesser booms, and certainly not at normal business levels. Whether we can attain peaks higher than the highest reached heretofore is in the realm of prophecy; but at least, in view of the necessity of additional labor in any swell of activity, it may be deduced that only in the peaks of major booms is fairly full use of available labor at all likely. It has been pointed out, in Chapter 7, that the year 1929 as a whole, in spite of the record high average level, was a year of very significant unemployment.

Trend fitting for the index shown in Chart 9 was done for the 48-year period 1884-1931.⁴ Of those 48 years, 21 averaged below normal and 27 above normal. If the normal level be taken as the dividing line between boom condition and depression condition, 21 years on the average were depression years and 27 years on the average were boom years. The depression areas, being shorter on the average, extend farther below normal than the boom areas extend above normal. Of the 576 monthly index numbers for the period, 248 were below normal, 1 exactly normal, and 327 above normal (Table 18).

Full amplitude of swings may be read between the low point of January, 1885, and the low point of March, 1933. In that period the index rose from levels below normal to levels above normal 19 times and fell from levels above normal to levels below normal 19 times. The successive bottoms and peaks are shown in Table 19. The extent of each rise from bottom to peak and of each drop from peak to bottom is shown in terms of percentage of normal. The median rise from bottom to peak was equivalent to 25.6 per cent of normal. The median drop from peak to bottom was equivalent to 26.4 per cent of normal. The 19 rises ranged from 6.7 per cent of normal to 54.5 per cent of normal. The 19 drops ranged from 2.0 per cent of normal to 84.0 per cent of normal. The arithmetic

⁴Not strictly one fitting. The trend for the period 1884-1919 and that for the period 1919-1931 were joined.

TABLE 18
INDEX OF GENERAL BUSINESS ACTIVITY IN THE PITTSBURGH DISTRICT, 1884-1936*
(Adjusted for seasonal variation and for trend; computed normal equals 100)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
1884.....	105.1	104.5	107.1	109.2	106.8	100.0	92.6	91.0	89.7	88.3	87.6	79.3	96.8
1885.....	73.7	77.5	86.1	83.4	81.5	83.6	82.0	80.3	83.6	84.1	85.3	87.5	82.4
1886.....	89.3	93.4	92.6	88.2	86.6	92.6	98.7	97.5	98.1	98.0	101.4	100.1	94.7
1887.....	98.6	97.4	100.5	104.1	93.2	89.3	99.1	107.0	109.3	106.0	104.4	102.0	100.9
1888.....	97.1	92.5	84.9	86.8	93.3	97.1	98.7	100.2	98.2	100.9	103.0	102.6	96.3
1889.....	102.3	105.9	105.4	104.4	104.4	104.3	110.3	111.5	105.6	108.5	108.3	107.7	106.6
1890.....	108.6	112.0	109.9	111.3	112.8	113.2	114.0	111.4	112.2	112.1	108.0	105.2	110.9
1891.....	105.3	98.3	90.2	87.6	96.2	110.1	111.3	109.1	107.7	107.2	103.6	106.0	102.7
1892.....	106.0	113.2	109.0	110.2	108.1	109.9	108.8	104.1	102.4	106.0	108.0	108.6	107.9
1893.....	104.0	104.8	107.0	109.1	106.9	104.9	94.6	80.7	77.3	80.1	83.7	85.1	94.8
1894.....	83.9	84.2	88.3	85.8	69.5	72.4	88.7	94.4	95.2	96.8	94.4	94.8	87.4
1895.....	92.8	90.7	90.9	93.0	94.0	97.3	99.6	99.7	97.1	98.6	97.8	95.9	95.6
1896.....	92.6	91.8	89.6	91.2	90.5	91.0	90.0	82.5	75.7	79.1	81.4	85.9	86.8
1897.....	83.8	84.7	82.3	84.8	85.9	89.6	95.8	93.2	92.3	94.2	96.6	98.4	90.1
1898.....	97.7	98.9	97.7	96.4	93.8	96.3	96.7	97.4	93.7	92.0	94.4	95.4	95.9
1899.....	102.9	109.4	111.9	107.7	104.6	104.1	103.3	103.3	105.4	110.7	109.2	104.0	106.4
1900.....	102.1	101.8	102.3	103.5	108.5	105.6	99.8	97.2	91.8	95.8	95.7	98.4	100.2
1901.....	104.8	107.0	110.4	111.2	111.9	109.9	106.9	105.6	102.5	105.2	104.0	103.8	106.9
1902.....	110.2	104.8	105.5	105.8	108.6	108.8	109.3	108.8	108.2	108.6	103.6	104.9	107.2
1903.....	107.0	108.2	112.2	113.5	114.0	117.7	115.5	112.4	108.2	100.2	85.8	78.7	106.1
1904.....	82.2	91.5	97.5	98.6	95.3	91.6	87.9	91.5	97.4	97.2	100.8	105.5	94.8
1905.....	108.5	106.8	110.8	112.9	110.1	109.3	109.6	109.2	108.0	108.3	111.1	116.1	110.1
1906.....	121.3	118.1	115.1	106.6	107.0	108.9	110.1	104.6	104.0	110.7	111.5	113.8	111.0
1907.....	115.0	116.5	109.8	116.1	113.8	115.5	116.5	111.4	108.3	107.5	100.2	80.6	109.3
1908.....	78.3	81.4	79.1	72.1	68.5	73.0	80.4	82.5	82.4	84.4	83.5	88.4	79.5

1909.....	87.1	86.1	84.0	88.0	90.3	96.1	102.9	101.6	103.9	104.7	110.3	113.6	97.4
1910.....	110.9	108.5	108.6	102.8	103.3	103.0	100.8	100.6	99.5	97.7	94.2	92.2	101.8
1911.....	92.1	95.7	98.6	98.0	91.8	91.8	92.6	94.9	95.0	94.2	94.1	95.7	94.5
1912.....	98.8	104.2	105.2	102.5	110.1	107.7	107.5	107.6	102.4	107.7	106.9	111.0	106.0
1913.....	114.9	112.1	109.1	115.5	114.6	108.7	108.0	104.7	106.0	107.1	103.4	95.6	108.3
1914.....	92.5	95.1	99.9	95.0	92.0	91.0	93.5	94.4	91.7	83.4	76.8	77.2	90.2
1915.....	78.3	84.0	87.4	91.3	94.7	99.1	105.1	105.2	107.5	109.6	114.9	118.2	99.6
1916.....	119.1	118.4	116.2	116.4	118.0	115.0	114.7	112.3	112.2	112.6	114.3	113.2	115.2
1917.....	112.9	105.0	113.1	114.0	114.3	113.3	113.4	110.8	106.9	106.5	111.1	105.0	110.5
1918.....	94.1	94.9	104.4	113.2	115.4	116.4	124.1	118.6	117.7	112.4	111.1	112.9	111.3
1919.....	107.1	103.0	97.9	94.4	92.7	100.2	109.4	111.6	106.7	97.8	96.7	102.5	101.7
1920.....	110.2	111.1	115.2	100.8	101.6	109.8	112.5	114.6	114.0	113.0	108.7	105.8	109.6
1921.....	94.6	88.7	79.0	75.7	79.2	75.3	69.0	72.4	73.1	79.4	80.2	78.0	78.7
1922.....	78.0	83.9	91.2	82.4	84.7	89.1	89.9	87.2	98.2	103.2	108.4	109.6	92.2
1923.....	110.7	109.5	116.2	121.6	123.5	122.0	120.9	117.8	114.2	110.7	106.1	103.8	114.8
1924.....	107.7	112.6	110.1	102.4	95.5	90.0	87.4	91.9	95.3	97.5	97.8	102.2	99.2
1925.....	108.2	107.6	106.2	102.0	96.9	96.1	98.3	99.5	102.8	106.9	112.7	119.3	104.7
1926.....	112.9	108.5	106.4	106.0	105.6	106.5	108.4	109.9	110.9	110.1	113.0	111.3	109.1
1927.....	104.8	108.2	114.2	108.2	104.4	103.4	99.6	99.4	96.9	92.2	91.7	94.4	101.4
1928.....	99.0	102.8	101.3	102.6	105.1	104.3	103.7	107.8	107.3	112.8	115.2	114.9	106.4
1929.....	114.0	112.3	113.1	115.9	119.9	120.8	124.5	123.4	118.7	117.2	112.7	108.2	116.7
1930.....	102.8	104.1	103.1	103.4	104.6	103.2	99.5	94.6	93.5	90.6	83.9	79.5	96.9
1931.....	78.7	78.0	79.5	78.6	75.1	71.2	68.9	63.7	61.8	58.7	59.1	59.3	69.4
1932.....	54.2	53.0	51.6	49.7	45.9	44.8	42.0	41.7	43.7	44.3	46.1	45.1	46.8
1933.....	43.5	42.7	40.5	42.2	49.4	62.8	73.3	73.9	61.2	55.6	55.4	57.7	54.8
1934.....	54.6	57.0	64.7	64.3	71.1	71.9	56.3	54.3	50.5	53.1	55.2	58.7	59.3
1935.....	66.8	70.6	71.1	60.5	61.7	63.7	62.2	65.4	66.5	71.1	75.4	78.4	67.9
1936.....	73.0	74.8	66.2	82.1	85.1	87.9	92.4	93.4	94.9	96.8	99.1	108.6†	87.9†

* Refer to first footnote of Table 17.

† Preliminary.

IRREGULARITY OF EMPLOYMENT

mean of the 19 rises was 28.0 per cent of normal; the arithmetic mean of the 19 drops was 29.7 per cent of normal.

In choosing only the rises that extended from levels below normal to levels above normal and the drops from levels above normal to levels below normal, we are including only the smaller part of the ups and downs. One may see readily, by reference to Chart 9, that there are scores of fluctuations wholly within the

TABLE 19
CYCLICAL HIGH POINTS AND LOW POINTS OF BUSINESS ACTIVITY
IN THE PITTSBURGH DISTRICT, 1885-1933
(Index numbers from Table 18)

Date	Index: Cyclical High Points and Low Points (Normal=100)	Rise as Per Cent of Normal	Drop as Per Cent of Normal
January 1885	73.7		
November 1886	101.4	27.7	
February 1887	97.4		4.0
April 1887	104.1	6.7	
June 1887	89.3		14.8
September 1887	109.3	20.0	
March 1888	84.9		24.4
August 1888	100.2	15.3	
September 1888	98.2		2.0
July 1890	114.0	15.8	
April 1891	87.6		26.4
February 1892	113.2	25.6	
May 1894	69.5		43.7
March 1899	111.9	42.4	
September 1900	91.8		20.1
June 1903	117.7	25.9	
December 1903	78.7		39.0
January 1906	121.3	42.6	
May 1908	68.5		52.8
December 1909	113.6	45.1	
June 1911	91.8		21.8
April 1913	115.5	23.7	
November 1914	76.8		38.7
January 1916	119.1	42.3	
January 1918	94.1		25.0
July 1918	124.1	30.0	
May 1919	92.7		31.4
August 1919	111.6	18.9	
November 1919	96.7		14.9
August 1920	114.6	17.9	
July 1921	69.0		45.6
May 1923	123.5	54.5	
July 1924	87.4		36.1
January 1925	108.2	20.8	
June 1925	96.1		12.1
December 1925	119.3	23.2	
November 1927	91.7		27.6
July 1929	124.5	32.8	
March 1933	40.5		84.0

areas above normal and scores wholly within the areas below normal. For example, all months in 1920 were above normal, but the index rose from 110 to 113, fell to 101, rose to 115, and fell to 106 within the year (Table 18). All the months of 1926 were

above normal, but there was a decline in the first five months, a rise in the next four months, a drop in October, a rise in November, and another drop in December.

The exact relationship between employment and business activity cannot be determined, for the simple reason that comprehensive long-time measures of employment are nonexistent. Since reasonably adequate employment indexes for the Pittsburgh district are available only for the extraordinary period since the beginning of 1929, no attempt has been made to determine the correlation in this district. The essential parallelism between business activity and amount of work, however, is a common-sense datum. Since a tremendous boom-depression variation in business activity is obvious, a similarly tremendous boom-depression instability in the opportunity to work is likewise obvious.

SEASONAL FLUCTUATIONS

Most working people know of seasonal irregularities, at least those related to their own work. The sales people in the department store know well the great rush before Christmas and the dullness of January. Workers in the steel mills know the likelihood of the letdowns of midwinter and midsummer and of the more brisk activity of spring and fall. Coal miners are quite familiar with the letdown of spring and the pickup of fall. The season for new models is drama for both the automobile salesman and the prospect with "new car fever."

There is not, of course, a rigid pattern of seasonal change in any type of activity. Department store sales, for example, normally are much greater in December than in November; but they may be 60 per cent greater one year and 50 per cent greater the next. These seasonal changes that are normally in the same direction are studied over a period of time and some sort of average change is computed.

In Table 20, there are given for each of a number of seasonal indexes for the Pittsburgh district (a) the seasonally high monthly level, (b) the seasonally low monthly level, and (c) the difference between the high and the low, in terms of per cent of the average monthly level. The indexes are designated for 1929, because shifting seasonality would make some of the indexes differ for other years.

Only one of the indexes, that of man-hours of manufacturing wage earners, is directly an index of seasonality in employment.

In considering the others, which are indexes of seasonal change in business volume, one should keep in mind two important facts bearing on the relation between business volume and employment for the same group. First, there is more or less of "overhead" labor required for going-concern operations; consequently, amount of employment should vary somewhat less than business volume varies. Second, there is at least some possibility of shifting from

TABLE 20
RANGES OF SEASONAL FLUCTUATIONS IN THE PITTSBURGH DISTRICT, 1929*
(Seasonal indexes: average month equals 100)

Item	Seasonal High		Seasonal Low		Seasonal Range: Per Cent of Monthly Average
	Month	Index	Month	Index	
Pig iron production.....	March	108.9	July	90.7	18.2
Rate of steel operations.....	March	109.0	December	85.4	23.6
Rail shipments of iron and steel....	May	111.2	December	84.5	26.7
Total iron and steel production†..	April	108.3	December	88.7	19.6
Man-hours, manufacturing wage earners.....	May	105.4	December	90.6	14.8
Plate glass production.....	April	107.6	December	84.3	23.3
Slaughterhouse activity.....	January	118.6	August	87.9	30.7
Rail shipments of miscellaneous products.....	September	118.0	December	78.0	40.0
Rail shipments of coke.....	February	108.4	August	93.0	15.4
Total manufacturing†.....	April	106.0	December	89.3	16.7
Total coal production.....	October	110.0	June	91.3	18.7
Total production†.....	October	103.5	December	92.3	11.2
Total shipments†.....	September	109.5	December	87.6	21.9
Retail trade.....	December	141.8	January	82.1	59.7
Wholesale trade.....	May	108.5	February	85.0	23.5
New motor car registrations.....	May	155.6	January	51.8	103.8
Produce receipts.....	October	134.7	February	70.4	64.3
Total trade†.....	December	118.6	January	78.7	39.9
General business activity†.....	May	106.3	January	94.0	12.3

* The seasonal indexes of which high points and low points are given have not been published. They were computed by the Bureau of Business Research, University of Pittsburgh, the computations being made under the direction of Mr. Wilbert G. Fritz. These indexes are designated for 1929 because in some of them there is shifting seasonality.

† Weighted averages of component indexes.

seasonally low industries to seasonally high industries, with the result that seasonal instability for the individual may vary less than opportunity in his usual occupation. In spite of these factors of limitation on fluctuation of employment, it seems obvious that if the high month is 20, 40, or 60 per cent, or more above the low month, there must be a tremendous variation in the amount of work; there must be, also, a tremendous slack of employment in many industry groups most of the year even in boom times. And, it should be noted that weekly figures or daily figures would show wider variation than do the monthly figures.

The index of seasonal fluctuations in man-hours is a direct index of seasonality in the amount of work of wage earners in manufacturing. The indexes being on the basis of a standard month (one-twelfth of the working days in the year), the difference may be considered as difference in the monthly averages of daily man-hours. In the high month, the rate of activity for this group averaged nearly 15 per cent above the average rate in the low month. This range, moreover, relates to all manufacturing combined. In some industries the range probably is less; but in some it is undoubtedly much more.

In the preceding section, we considered cyclical swings from levels above normal to levels below normal and vice versa, thereby choosing generally the wider cyclical swings. Among those generally larger swings chosen for the purpose, the median rise was equivalent to 25.6 per cent of normal and the median drop was equivalent to 26.4 per cent of normal. If all the cyclical fluctuations in the period had been considered, the median would no doubt have been much smaller. In terms of seasonality alone, there can be no doubt that large numbers of workers are subject every year to irregularity of work as great as that represented in a rather severe business cycle.

SUMMARY

Because of the slowing down of the rate of growth in business activity, the general expansion of work related to the earlier sharp growth has been greatly curtailed in the district. Some industry groups, to be sure, have continued notable growth; others have leveled off; some have declined in the recent period. The iron and steel industry, of very great influence, has very distinctly leveled off. With acknowledged improvements in efficiency, the amount of work appears to have slowed down more than the general trend of production. On the other hand, shortening of normal working hours has tended to prevent a decline in the rate of growth of the number of jobs as great as the decline in growth of the total amount of work. But the census of occupations reflects a decline in the proportion of the population having gainful work.

At various trend levels, business activity is subject to fluctuations of considerable amplitude—sometimes violent in character—of the sort associated with boom and depression. In the period 1884-1931, the change in magnitude of business activity in the complete swings

from high points above normal to low points below normal meant a succession of bulges and contractions averaging over one-fourth as great as the normal volume of activity. Moreover, in the course of the total upward swing or downward swing of the cycle, there were scores of intermediate fluctuations, some of them of very significant proportions.

The cyclical irregularity of business activity reflects a continued cyclical irregularity of employment. Since comparatively full employment is likely only at very high levels, full employment is rare, and extensive unemployment is the average condition.

At various trend stages and at various phases of the business cycle, seasonal irregularity is present. In fact, the normal seasonal fluctuations in very important lines of activity in the district are wider than many of the cyclical swings.

All types of instability considered, and their inevitable bearing on employment opportunity being recognized, it is obvious that in the opportunity to work there is nothing that could be truly called stability of opportunity. Practically full employment is the exception, not the rule.

CHAPTER 10

UNEMPLOYMENT IN ALLEGHENY COUNTY AT THE NORMAL LEVEL OF BUSINESS ACTIVITY

At the time of the census in April, 1930, the number of gainful workers classified as unemployed exceeded one-tenth of the gainful workers; and it is pointed out in Chapter 5 and Appendix B that those classed as employed must have included, according to census definitions, an appreciable number who could not have been at work on any one day representative of the period of enumeration. Therefore, the number of man-days of work going on, i.e., actual employment, must have been substantially less than 90 per cent of full time for all gainful workers.

Meanwhile, the seasonally adjusted index of general business activity (Table 18) was 3.4 per cent above normal.¹ For 1929, the April seasonal index (comparable with those used in Table 20) was 103.8. The composite April seasonal for 1930 is not available but probably would not differ much from that for 1929. Therefore, without seasonal adjustment, business activity in April, 1930, was more than 7 per cent above trend. In the fact that average employment was substantially less than 90 per cent of full time when business activity was more than 7 per cent above trend, there is an indication that the average employment at trend level could not have been much above 80 per cent of full time and might have been less than 80 per cent.

For those who shared the available work, it is estimated (Table 16) that average employment in the Pittsburgh district in April, 1930, was 86.4 per cent of full time. But 6.1 per cent of the employables in Allegheny County had no share in that employment (Table 13). The estimated average amount of work for the district being assumed for the county, the average amount of employment in the county was about 81 per cent for all gainful workers. Business in the district then being about 7 per cent above trend, and presumably about that level being true also for the county, the

¹The use of the district data in the broad evaluation of average employment in the county is discussed in Appendix E.

indication is that at trend level average employment would have been around 76 per cent of full time.

In other words, judged by the experience in April, 1930, it appears that unemployment at normal business levels, all gainful workers being considered, would be around 24 per cent of full time.

In Chapter 8, for reasons explained in Appendix E, it was estimated that the average amount of work per person employed in the county in September, 1929 (the peak of the estimated index of average work), was about 96 per cent of full time (Table 16). In that month, the estimated number employed was 96.4 per cent of the estimated number of gainful workers (Table 13). The estimate of 96 per cent for the employed, therefore, is equivalent to an estimate of about 92.5 per cent of full time for all gainful workers. The seasonally adjusted general level of business in September, 1929, was 18.7 per cent above normal (Table 18). The composite seasonal index for September, 1929, was 102.6 (comparable with seasonal indexes in Table 20). Without seasonal adjustment, the general business level in that month was about 22 per cent above trend level. An average employment equal to 92.5 per cent of full time at a business level 22 per cent above trend suggests an average employment of about 76 per cent of full time at the trend level.

In other words, judged in terms of the experience in September, 1929, it appears likely that at trend levels average unemployment would be equivalent to about 24 per cent of full time.

For the period of the twenties prior to 1929, there are no comprehensive measures of employment in the district. But there are indirect measures by means of which an instructive approximation may be made. Let us consider the years 1920-1928.

First, in the period 1920-1928, the general level of business activity in the Pittsburgh district, not adjusted for trend, averaged about 96 per cent of the 1923-1925 average (Table 17). The average level in 1929 was 117.6 per cent of the 1923-1925 average. The 1920-1928 average was equivalent to about 82 per cent of the 1929 average. That is, as measured by this index, the average annual volume of business in the period 1920-1928 was about 82 per cent as great as in 1929. Second, the number of gainful workers in the county on April 1, 1930, was 537,097 (Table 1). The corresponding number on January 1, 1920, was 473,918.² Interpolated

² Not published. Furnished directly by the Bureau of the Census.

by straight-line method, the average number of gainful workers in the period 1920-1928 was 501,700. The average of the monthly estimates of employables in 1929 is approximately 539,900.⁸ That is, the estimated number of gainful workers in the period 1920-1928 averaged approximately 93 per cent of the number in 1929.

Since the volume of business in the period 1920-1928 was 82 per cent of that in 1929 and the number of gainful workers averaged 93 per cent of the number in 1929, the volume of business per gainful worker was about 88 per cent as large in the period 1920-1928 as in 1929.

Meanwhile, the general business level in the years 1920-1928 averaged close to 2 per cent above normal. There is the indication, therefore, that at the normal level of business the volume of business per worker would have been, in terms of the experience of that period, around 86 per cent as large as the actual volume per worker in 1929.

The next question, of course, is what light this estimate throws on the average opportunity to work and average unemployment. The two major factors of uncertainty in the link between change in average volume of business and change in the average opportunity for employment are increase of efficiency and shortening of normal working hours.

Increased efficiency reduces the number of man-hours required for a given volume of business. Reduction of the number of man-hours in the normal working day tends to prevent the reduction which rising efficiency would otherwise cause in number of man-days of work required to do a given volume of business. Shortening of the working day, of course, might increase the number of days of work, in spite of rising efficiency.

Let us suppose, for the moment, that increased efficiency was exactly offset by shortening of the working day. Under that condition, the trend of the number of man-days of work would be the same as the trend of business volume. Average employment for those employed is estimated to have averaged about 91 per cent of full time in 1929 (Table 15). The average number employed in 1929 was approximately 509,900 (Table 12). The estimated average number of gainful workers in 1929, as we have noted

⁸ It is pointed out in Appendix D that straight-line interpolation between census levels was used for January, 1929, but was not otherwise followed in 1929, because of the extraordinary conditions of the year.

above, was 539,900. That is, on the average, 94.4 per cent of the gainful workers were employed more or less. The estimate of 91 per cent employment for those employed, therefore, is equivalent to an estimated average of about 86 per cent employment for all gainful workers in 1929. If, in the period 1920-1928, business volume per worker at the normal level of business was about 86 per cent of the corresponding volume in 1929, and if the average employment in 1929 averaged about 86 per cent for all gainful workers, then, in terms of the nine years of experience, it appears that average employment at the normal level of business, all gainful workers being considered, would have been around 74 per cent of full time.

The economic statistician will readily understand, and others most certainly should note, that such estimates can be claimed to have only broad value as approximations. But these approximations are believed to provide something near the truth. And an average unemployment equal to roughly one-fourth of full time at normal levels—trend levels—is of grave significance in any appraisal of the relief problem.

CHAPTER 11

GAINFUL WORKERS AND FAMILY LOAD

In Table 1 it is shown that the number of persons in the county reported as having gainful occupations in April, 1930, was equal to a little over 39 per cent of the county population. Thus, the average number of persons to be supported per gainful worker (including the gainful worker himself) was a little over two and one-half. Since a substantial number of gainful workers are un-

TABLE 21
NUMBER OF FAMILIES ACCORDING TO NUMBER OF PERSONS PER FAMILY
ALLEGHENY COUNTY, APRIL, 1930*

Number of Persons. per Family	Number of Families	Per Cent of Families	Number of Persons in Families
Total families, all sizes.....	312,202	100.0%	1,268,547†
1.....	15,441	4.9	15,441
2.....	64,200	20.6	128,400
3.....	65,611	21.0	196,833
4.....	58,324	18.7	233,296
5.....	41,649	13.3	208,245
6.....	27,626	8.9	165,756
7.....	16,863	5.4	118,041
8.....	10,382	3.3	83,056
9.....	5,914	1.9	53,226
10.....	3,276	1.1	32,760
11.....	1,628	0.5	17,908
12 or more.....	1,288	0.4	15,585†

* Number and distribution from Fifteenth Census of the United States: 1930, *Population* Vol. VI, p. 1136.

† For families of 12 or more each, an average of 12.1 per family was assumed, for it appears unlikely that the number having 13 or more per family is large enough to have an important effect on the average.

attached individuals, the average number of persons per gainful worker in a family undoubtedly was larger than the average in terms of all workers and all persons.

A distribution of families in the county according to size of family is shown in Table 21. There are more families of three persons each than of any other size. The number having two each is not very different from the number having three, and the number having four is roughly nine-tenths as large as the number of three each. But somewhat more than one-third of all families have five or more persons each, and over one-fifth have six or more each.

The number of gainful workers in families of various sizes cannot be determined from any available data. A distribution of number of families according to number of gainful workers per family is shown for Pittsburgh in Table 22. Although age distribution and family size for the whole county differ somewhat from that for the city, the percentages in Table 22 will serve as rough indications for the county.

First, it will be noted that 5 per cent of the families in the city had no gainful workers. A similar ratio for the county would indicate about 15,600 families in the county without gainful

TABLE 22
NUMBER OF FAMILIES ACCORDING TO NUMBER OF GAINFUL WORKERS
PER FAMILY, PITTSBURGH, APRIL, 1930*

Number of Gainful Workers per Family	Number of Families	Per Cent of Families	Number of Gainful Workers in Families
All families	155,079	100.0%	229,839†
No gainful workers.....	7,786	5.0	none
1 gainful worker.....	93,612	60.4	93,612
2 gainful workers.....	32,799	21.1	65,598
3 gainful workers.....	13,625	8.8	40,875
4 or more.....	7,257	4.7	29,754†

* Fifteenth Census of the United States: 1930, *Population*, Vol. VI, p. 1129.

† For the group having 4 or more per family, an average of 4.1 workers per family was assumed on the ground that, although a few family groups had five or more, the number could hardly be large enough to have an important effect on the average for the group.

workers in April, 1930. This number, it must be kept in mind, is in addition to the number of families having gainful workers who were at that time unemployed. No accurate description of the families without gainful workers is possible. Part, no doubt, were in the one-person per family classification; of these, one may reasonably suppose that some were living on independent means and some by some sort of relief. But mere neighborhood observation and report leads one to understand that a substantial number of these families without gainful workers were of two or more persons without either earnings or adequate independent means—aged couples, families whose breadwinner had become disabled by illness or injury, and widows with small children.

Second, 60.4 per cent of all families had only one gainful worker each. Suppose for illustrative purposes that families without gainful workers were distributed proportionally among all sizes, i.e., comprised 5 per cent of each size group. Now let us suppose,

further, the lightest possible family load, that is, a family of the smallest possible size among the actual families for each of the workers in families having only one worker each. In order to account for all families having one gainful worker each we should have to take all the remaining families having one, two, or three persons, and about nine-tenths of those of four persons each. In other words, we should have, in the lightest possible arrangement of family load for them, close to 113,000 gainful workers with a support load of three or four each, i.e., distinctly above the over-all average of two and one-half previously given.

Actually, the number of workers who had sole responsibility for a family each and who had more than the average load was undoubtedly much larger than the number indicated in that lightest possible arrangement of load. Probably a much larger portion than 5 per cent of the one-person "families" would be in the group without gainful workers—lone aged persons, lone persons incapacitated, lone beggars in their hovels. Therefore, in the lightest possible arrangement of load in families having gainful workers, the one-worker families would necessarily include a considerable portion of the families of five members each. Moreover, it is certain that there is normally a substantial number of two-person families with both members working and of three-person and four-person families with two or three members each working. Consequently, it appears likely that our one-worker families would necessarily reach into the six-person group. And it is perfectly well recognized that numerous families of seven or more persons have only one worker each.

Moreover, it must be understood that a one-worker family, as classified under census definition, may in fact have a worker of very low earnings and may have only a part-time worker.¹ And the family with this very restricted earning possibility may be a large one.

Somewhat more than one-third of the families in Pittsburgh had two or more workers per family. Only 13.5 per cent had three or more. Less than one out of twenty had four or more. And among the families having two or more, as well as among those having only one, there is likelihood of low-paid workers or part-time workers.

¹ The census definition of a gainful worker is explained in Appendix A.

The "average" size of family is difficult to discuss, for families are made up of entire persons, whereas averages yield fractions. It is helpful, however, to view the averages for a moment. The theoretical median size of family in Allegheny County in April, 1930, as computed by the Bureau of the Census, was approximately 3.7 persons.² Actually, in the distribution from smallest to largest, the "middle" family is in the four-person group. The arithmetic mean size of family was slightly more than 4 persons per family.³ The number of persons in four-person families is considerably larger than the number in any other size group.

From consideration of the average, one may derive a useful general point of reference. But, after all, only 18.7 per cent of the families are in the group of average size (four persons). Families smaller than the average constituted 46.5 per cent of all families; larger families, 34.8 per cent (Table 21). But even such percentages must be used guardedly, for the families larger than the average include more than twice as many people as the families smaller than the average.

Now in the best times some large families and some small ones have a high ratio of worker support; some large ones and some small ones have none at all. And the average load may be usefully considered only if at the same time one envisions, on the one hand, large numbers with ample support, and, on the other, large numbers with meager support or no support at all.

² Fifteenth Census of the United States: 1930, *Population*, Vol. VI, p. 1136.

³ Impossible of exact computation, because persons not belonging to resident family groups are not segregated in the census data for the county. In this computation of the arithmetic mean, use was made of the estimated number of persons in families, shown in Table 21. The difference between that number of persons and the total county population can be accounted for approximately by allowance for lodgers, institutional population, and residents in hotels and rooming houses, estimated on the basis of Pittsburgh data.

CHAPTER 12

FAMILY INCOME

Consideration of family load has been given in Chapter 11. Unemployment and low wage rates indicate that a large number of families must receive very low income. That likelihood will be made clearer by data bearing on probable family income.

The quarterly averages of weekly earnings of wage earners in manufacturing in the United States in 1929, as computed by the National Industrial Conference Board, ranged from \$28.06 to \$28.70; the comparable quarterly averages in the period 1923-1928 ranged from \$25.35 to \$28.03.¹ The average weekly earnings of factory employes, both office and shop, in the state of New York in 1929 averaged \$29.99; and the annual averages of these weekly figures in the years 1923-1928 ranged from \$27.24 to \$29.44.²

If the average worker in manufacturing could have sustained throughout the year a rate of earnings as high as that indicated by the average weekly earnings, he might have attained total earnings of about \$1,400 to \$1,500. But, in view of sickness, injury, separation from jobs and lag in re-employment, replacement of those who died or were retired because of permanent disability, seasonal idleness, breakdown or loss of plant time for other reason, the total number sharing in the work must have been materially larger than the average number on weekly payrolls. In the month of highest employment in 1929, the average number of factory employes on payrolls in the United States was nearly 4 per cent higher than the average number for the year.³ As we note in Appendix C, in view of the reported accessions and separations, the total number sharing in the work in any month is materially larger than an average number based on weekly, fortnightly, or semimonthly payrolls. The actual average earnings for all par-

¹ National Industrial Conference Board, *Wages in the United States, 1914-1930*, p. 52.

² Standard Trade and Securities, *Basic Statistics*, Vol. 80, No. 29, Sec. 4, June 5, 1936, p. D-55.

³ Revised Index of Employment of the United States Bureau of Labor Statistics, *Federal Reserve Bulletin*, December, 1936, p. 953.

ticipants, then, must have been materially less than that suggested by the weekly figures.

According to the Bureau of the Census, the "average number" of wage earners in manufacturing in Allegheny County was 155,374, and the total of wages paid amounted to \$243,281,167 for the year.⁴ The monthly average of total wages was \$20,273,431. It is a common fallacy to jump at once to the conclusion that the average earnings of wage earners in manufacturing amounted to a little more than \$130 per month, or about \$1,566 per year. There is sufficient evidence to make it clear that the actual average for all individuals sharing in the work was lower.

The average number of all employes in manufacturing in Allegheny County, including salaried workers, was 180,384 in 1929.⁵ Firms in the county with an output valued at less than \$5,000 are not covered; but this omission in 1921 reduced the national total of wage earners by less than one per cent.⁶ The number of employes reported in the Census of Manufactures relates to persons on payrolls, i.e., does not include proprietors working but not carried on payrolls.

In April, 1930, there were 204,410 gainful workers resident in the county who were considered attached to manufacturing industries.⁷ There is no direct evidence on the number resident in the county but working outside the county nor on the number resident outside the county but working in Allegheny County. It seems reasonable to assume that these are approximately compensated numbers and that the number attached to manufacturing in the county was about equal to the number of manufacturing workers resident in the county. But establishments of all sizes are covered, and proprietors actively engaged in their business are included. We have noted above that plants turning out a product of less than \$5,000 in 1921 employed less than one per cent of the wage earners. The number of proprietors active but not on payrolls is not likely to have been over 2,000 or 2,500.⁸ Judged by

⁴ Fifteenth Census of the United States: 1930, *Manufactures, 1929*, Vol. III, p. 442.

⁵ Fifteenth Census of the United States: 1930, *Manufactures, 1929*, Vol. III, p. 458.

⁶ Biennial Census of Manufactures, 1921, p. 5.

⁷ Summarized from Fifteenth Census of the United States: 1930, *Population*, Vol. III, Part 2, p. 709.

⁸ There were 1,959 establishments reported by the Bureau of the Census, including, as we have noted, those with a product of \$5,000 or more.

Pittsburgh data (Table 3, in Chapter 5) only a fraction of one per cent had been unemployed so long that they had no work in 1929. In short, it appears that around 200,000 salary and wage employes shared, at least to some extent, the available manufacturing employment in Allegheny County in 1929.

If, against an "average" of 180,384, there were in fact around 200,000 participants, the total number exceeded the average number by nearly 11 per cent. In view of the greater turnover among wage earners than among salaried workers, the actual average for wage earners probably was under 90 per cent of the \$1,566 mentioned above.

But let us approach by a different method. In Table 4 it is shown that in April, 1930, the unemployed manufacturing workers in classes A and B constituted 11 per cent of all gainful workers attached to manufacturing in Pittsburgh. For rough purposes, let us assume the same per cent for the county. Classes A and B comprised 45,098 of a total of 54,341 unemployed, exclusive of those not classified (Table 2). The proportions suggest that 13.3 per cent of all gainful workers attached to manufacturing were unemployed, i.e., that 86.7 per cent were employed.⁹ In April, 1930, the index of numbers employed in manufacturing in the Pittsburgh district stood at 95.9 per cent of the 1929 average.¹⁰ The average number employed in manufacturing in 1929, then, was equal to 90.4 per cent of the number of gainful workers attached to manufacturing in April, 1930. But the average number of gainful workers in the county in 1929 appears to have been somewhat larger than the total number of gainful workers, including the unemployed, in April, 1930 (Appendix D). Somewhat the same conditions presumably held for manufacturing. In other words, the average number employed by manufacturing firms in the county probably was less than 90 per cent of the average number of gainful workers attached to manufacturing.

Judged by either of these two methods, the average number of

Manufactures, 1929, Vol. III, p. 458. With the inclusion of smaller manufacturing companies and with mines and quarries included, the state reports showed 2,435 establishments in 1929. Pennsylvania Department of Internal Affairs, *Productive Industries, 1929-1930*, pp. 186-190.

⁹ For reasons explained in Appendix B, the total number classed as unemployed seems to have been too low. Presumably that understatement held for the manufacturing group.

¹⁰ *Pittsburgh Business Review*, January, 1934, p. 23.

manufacturing employes in Allegheny County in 1929 was probably less than 90 per cent of the total number sharing in the total wages paid in manufacturing.

The average earnings of wage earners in manufacturing, then, appear likely to have been, not \$1,566, but about \$1,400 for the year. All workers being considered, it must be supposed that at least some additional earnings came from other industries. But, because of the very great importance of manufacturing in the district, there is likely to be widespread slack of opportunity in other pursuits when opportunity is slack in manufacturing. The likelihood of substantial earnings in other industries for those whose main work was in manufacturing, therefore, seems small.

In Pittsburgh, the average number of "full-time" employes of all grades, including paid executives, in retail trade was 41,518 in 1929, this being an average of the numbers employed in April, July, October, and December; the total payroll, exclusive of pay for part-time workers, was \$59,876,569.¹¹ If the average employe classed as full time in retail trade had received for the year a quota indicated by these figures, he would have had about \$1,440. But, for the four months enumerated, the variation in number of all retail trade employes in Pennsylvania, including part-time workers, was from 97 to 105 per cent of the average for these months. Full-time employes, constituting 87 per cent of the total in April, July, and October, made up 85 per cent of the total in December, the seasonally high month.¹² Judged by these data, the total number of employes on a full-time basis exceeded the average number on that basis by more than 3 per cent in the state as a whole. If the state seasonal data be applied to Pittsburgh, then, the conclusion is reached that the average earnings of full-time employes would at best have been slightly under \$1,400. Since metropolitan trade is likely to be more subject to seasonal oscillation than that in small towns and rural areas, the average in Pittsburgh is likely to have been materially less than that reached by the use of the state seasonal. The exact county average cannot be determined, because part-time payrolls outside Pittsburgh are not segregated;

¹¹ Fifteenth Census of the United States: 1930, *Distribution*, Vol. I, Retail Distribution, Part 3, p. 802, interpreted in the light of definitions and schedule instructions shown on p. 12 of volume cited and on p. 983 of Vol. I, Retail Distribution, Part 1.

¹² Fifteenth Census of the United States, 1930, *Distribution*, Vol. I, Retail Distribution, Part 1, p. 58.

but, even without exclusion of part-time payrolls outside the city, the county average is below the city average. The (unpublished) index of variation in retail sales in Pittsburgh suggests that the full range of variation in employment may not be covered by the census data and that the average for the four months enumerated was above the average for the year. The excess in the seasonally high month over the average is likely to have been greater than that indicated by the census data. The average, therefore, is likely to have been definitely below \$1,400.

Thus it appears that manufacturing wage earners and full-time employes in retail trade, considered together, had, at best, an average around \$1,400.

Typically, difference in income does not grade evenly from individual to individual. The higher the income rate, the fewer persons receiving it. Median income, that is, the income of the middle person in order from smallest income to largest income, is substantially below the average income of all recipients; and this difference occurs within a range in which many incomes fall.

Judged by typical income distributions, then, an average around \$1,400 indicates that considerably more than half of the combined total of manufacturing wage earners and full-time employes in retail trade had earnings less than \$1,400. How much more than half could be judged only in terms of the probable distribution and of the relationship of median to average.

Some light on the median may be gained by reference to national data. Estimates made by The Brookings Institution of incomes of gainfully employed persons in the United States in 1929 yield an average of \$1,465 of earnings from regular occupations; and the distributions roughly suggest a median around \$1,100 to \$1,125 (the intervals being too wide for a close estimate of the median).¹⁸ In arriving at this average and this median, gainful workers without income in 1929 are included. For those having income, both average and median would be somewhat larger. Judged by the relation of median to average in the national figures, the average of somewhat less than \$1,400 for manufacturing wage earners and full-time employes in retail trade suggests a median of \$1,050 to

¹⁸ Computed from tables given in Leven, Moulton, and Warburton, *America's Capacity to Consume*, pp. 219 and 221. Small estimated deficit of group having negative income not deducted. For all personal incomes from all sources, the median was approximately \$1,200. *Op. cit.*, p. 204.

\$1,075 for the two groups combined. There being no intent here to overstate poverty, let us take the upper figure as a likely median for these groups.

Now it will be noted, in Table 22, that in Pittsburgh about 60 per cent of all families had only one worker each. If half the workers had less than \$1,075 and 60 per cent of the families had only one worker each, there is an indication, in terms of one-worker families, that 30 per cent of the families had less than \$1,075 each of earned income. And in view of low rates of pay and irregularity of employment, it is likely that at least some families of two gainfully employed members were below \$1,075, in view of the inclusion of children and part-time workers as gainfully employed (Appendix A). Moreover, 5 per cent of the families had no gainful workers (Table 22). Thus, over 35 per cent of the families appear from these data to have had earned income below \$1,075 each. Nationally, the nonoccupational cash income in groups below \$3,000 is estimated to have been almost negligible,¹⁴ and presumably the same was true locally. Practically, then, 35 per cent or more of the families in these groups probably had in total less than \$1,075 each.

One may question whether the groups considered are a reasonably representative indication for all groups in the county. Fortunately, corroborative evidence of this heavy bunching of families at low income levels is found in available sample data on family incomes in Allegheny County.

Data bearing directly on family income in the county in 1929 are available only from the Financial Survey of Urban Housing, conducted on a sample basis in close connection with the Real Property Inventory early in 1934.¹⁵ In the sample financial survey, one-seventh of the city blocks were selected for enumeration, random choice being made in each census tract. Each family in the sample blocks was asked to report, among other things, total family income received in 1929.

¹⁴ Leven, Moulton, and Warburton, *op. cit.*, p. 220.

¹⁵ Federal work-relief projects, begun by the Pennsylvania Civil Works Administration and carried out under the sponsorship of the Pennsylvania State Emergency Relief Board. Local staff supervision in Allegheny County was provided by the Bureau of Business Research of the University of Pittsburgh. Messrs. Theodore A. Veenstra, Statistician, and E. N. Montague, Industrial Engineer, jointly supervised the field work. Tabulations from the Financial Survey were made under the direction of Mr. Veenstra, to whom the author acknowledges special credit for aid and counsel in the use of the family income data.

Since few families keep careful financial records, they reported their 1929 income, of course, mainly from memory. There were numerous refusals. Because of several interruptions in the Federal work-relief program, under which the work was done, and because of inadequate resources for prompt machine tabulations, final revisions and tests have not been made.

In the areas sampled, the data from the Real Property Inventory showed 242,087 occupied dwelling units. One-seventh of the blocks should have shown around 34,584 units. The total number of usable returns was 28,091. In a tentative test of the reports of tenant families in Pittsburgh against the rent distribution of occupied dwelling units from the Real Property Inventory in Pittsburgh, it was found that in the upper rent brackets the sample thinned materially below the average proportion. Presumably, therefore, the representation was weak among the upper income groups. From field reports, it seemed certain that predominantly the refusals of financial information were from families living in circumstances suggestive of moderately high to very high incomes. A considerable part of the reduction of sample, of course, resulted from rejection of incomplete reports.

The probable bias in the distribution must be kept in mind as we view the crude data. There were 25,994 families which reported in 1934 that they had more or less income in 1929. The middle family in the order from smallest to largest income had about \$1,500. In view of the thinness of the sample in the higher brackets, the middle family in this distribution was somewhat below the true median; but because of the much smaller numbers in the upper brackets, the true median probably would not differ greatly from the median in the available distribution shown in Table 23. Therefore, it may be said that approximately half of the families having income reported that they had less than \$1,500 each of total income in 1929. Moreover, about 4 per cent reported that they had no income. Thus, 54 per cent of the families reported less than \$1,500.

From trade and manufacturing data and information on families without gainful workers, it was estimated above that around 35 per cent of the families had less than \$1,075 each of earnings in 1929. In Table 23, 33 per cent of the families are in groups having less than \$1,050 each of total income and 35 per cent in groups below \$1,150. But some will not be impressed by a limit around \$1,100. Let us look further.

TABLE 23

NUMBER OF FAMILIES ACCORDING TO TOTAL FAMILY INCOME IN 1929:
SAMPLE, URBAN PORTIONS OF ALLEGHENY COUNTY*

1929 Income (Dollars)	Number of Families in Sample	Cumulative Total Number of Families in Sample
No income	1,198	1,198
1- 50	35	1,233
51- 149	232	1,465
150- 249	541	2,006
250- 349	461	2,467
350- 449	648	3,115
450- 549	834	3,949
550- 649	797	4,746
650- 749	735	5,481
750- 849	985	6,466
850- 949	757	7,223
950-1,049	1,765	8,988
1,050-1,149	568	9,556
1,150-1,249	2,147	11,703
1,250-1,349	747	12,450
1,350-1,449	1,052	13,502
1,450-1,549	1,311	14,813
1,550-1,649	905	15,718
1,650-1,749	658	16,376
1,750-1,849	1,431	17,807
1,850-1,949	561	18,368
1,950-2,049	1,235	19,603
2,050-2,149	557	20,160
2,150-2,249	457	20,617
2,250-2,349	327	20,944
2,350-2,449	871	21,815
2,450-2,549	644	22,459
2,550-2,649	306	22,765
2,650-2,749	213	22,978
2,750-2,849	267	23,245
2,850-2,949	162	23,407
2,950-3,049	789	24,196
3,050-3,149	118	24,314
3,150-3,249	142	24,456
3,250-3,349	116	24,572
3,350-3,449	109	24,681
3,450-3,549	288	24,969
3,550-3,649	302	25,271
3,650-3,749	61	25,332
3,750-3,849	81	25,413
3,850-3,949	66	25,479
3,950-4,049	308	25,787
4,050-4,549	272	26,059
4,550-5,049	387	26,446
5,050-7,549	459	26,905
7,550 or more	287	27,192
Total	27,192	

* The sample was chosen by city blocks, not by families. Every seventh block in each census tract was chosen. The areas sampled included Pittsburgh, practically all incorporated places in the county except a few small ones rather remote from Pittsburgh, and the township of Mt. Lebanon, which is thoroughly urban. The areas sampled included about five-sixths of the occupied dwelling units in the county (the exact proportion not being determinable because an estimated population of 20,000 was not covered by the Real Property Inventory, on the basis of which tests of the sample were made). Refer to text on page 97.

There were 7,223 families reporting less than \$950 each per year. One-seventh of the blocks were enumerated; the useful reports constitute about one-ninth of the number of families in the area sampled. The probable minimum total number of families

in the area sampled was seven times the number so classified in the sample; the probable maximum was nine times the number so classified in the sample. That is, there was a probable minimum of 50,500 families and a probable maximum of 65,000 families in the sampled area having in 1929 less than \$950 each. Meanwhile, the sampled area included approximately five-sixths of the families in the county. From 61,000 to 78,000 families in the whole county then are suggested as receiving less than \$950 each. There were 312,000 families (Table 21). In other words, probably a fifth to a fourth of the families had incomes less than \$950.

There were 3,949 families reporting that they received less than \$550 of income each in 1929. In terms of the interpretation used in the preceding paragraph, this number suggests a minimum of 33,000 families and a maximum of 43,000 in the county receiving less than \$550 each.

There were 1,198 families in the sample reporting that they had no income in 1929.¹⁶ In terms of the interpretation used, this suggests from 10,000 to 13,000 families in the county with no income in 1929.

How much might be required for a family to live in reasonable decency and comfort is a moot question. Indeed, all sorts of disputes rage over whether the economic system is capable of producing a decency and comfort standard. We may note, however, that The Brookings Institution estimates

At 1929 prices, a family income of \$2,000 may perhaps be regarded as sufficient to supply only basic necessities.¹⁷

The statement, of course, is a broad national average. The average family in Allegheny County was larger than the average for the country.¹⁸ And it would generally be conceded that the cost of living in a large urban industrial area like Allegheny County is higher than the average cost of living in the United States.

In the sample on reported family incomes for 1929, there were 18,368 families which reported that their total income from all

¹⁶ Exclusive of 614 which reported no rent in 1929 and were judged to be mainly new families coming into existence after 1929.

¹⁷ Leven, Moulton, and Warburton, *op. cit.*, p. 56.

¹⁸ For the United States, the computed median was 3.4 and the arithmetic mean was 3.8; for the county, the computed median was 3.7. Fifteenth Census of the United States: 1930, *Population*, Vol. VI, pp. 16, 1136. In the preceding chapter, it was estimated that the arithmetic mean for the county was slightly more than 4. Refer to comment in footnote 3 in Chapter 11.

sources was less than \$1,950. Following the limits and the adjustment for county area used above, we reach a minimum of 154,000 families and a maximum of 199,000 families in the county having incomes less than \$1,950 each. In other words, we reach a minimum a little under 50 per cent and a maximum somewhat over 60 per cent reporting their incomes to have been below what The Brookings Institution considered "perhaps . . . sufficient to supply only basic necessities" at 1929 prices.¹⁹

The difficulty of exact statement on family incomes is well known to every student of the distribution of income. The broad approximations offered in this chapter are offered only as broad approximations. They are believed to be close enough to the truth to have major significance in an evaluation of the relief problem in Allegheny County. Let it be observed that the average level of the general business index shown in Table 18 was nearly 17 per cent above normal in 1929. With reference to that extraordinary level, we find that 4 or 5 per cent of the families had no income, that one-tenth to one-seventh had less than \$550, and that one-fifth to one-fourth had less than \$950.

The short of it obviously is that poverty was rampant in the most prosperous period known. Relief did not begin with the depression. The depression merely brought into the open and enlarged the relief problem that existed in prosperity.

¹⁹ The Brookings Institution estimates, for the United States, that 53.4 per cent of the nonfarm families and 82.3 per cent of the farm families had less than \$2,000 of income each in 1929. These estimates relate to families of two or more persons each. Leven, Moulton, and Warburton, *op. cit.*, p. 231. Nearly 5 per cent of the census "families" in 1930 were of one person each (Table 21). The sample data in Table 23 also include one-person "families." Only a very small proportion of the Allegheny County population is agricultural, 1.2 per cent of the gainful workers being so classified in 1930. Refer to Table 1 in Chapter 5, *supra*.

CHAPTER 13

SUMMARY

In the examination of the economic backgrounds of the relief problem in Allegheny County, two major lines of analysis have been followed. First, Allegheny County is merely one of the numerous great industrial centers in a commercially operated economic system. Therefore, the general backgrounds have been explained in terms of the broad characteristics and typical operations of that commercial-economic system. Second, the relief problem in Allegheny County must be planned for and dealt with in the light of the specific form and extent of its appearance in Allegheny County. Therefore, the examination of factors reflecting the tremendous uncertainty of a livelihood have been examined in terms of data representing, as nearly as possible, the specific conditions of Allegheny County.

GENERAL ECONOMIC BACKGROUND OF THE RELIEF PROBLEM

Life depends on sustained access to economic goods and services. Our economic system, particularly with respect to the production of food, clothing, and shelter, is operated mainly on a commercial basis. Those necessities are available from that system only to those who can offer money or its equivalent in exchange. Only a small percentage of the people have living income wholly on a proprietary basis. Most of the money needed by most of the people can be had from the commercial system only for paid employment.

But only about four-tenths of the people are commercially employable, in terms of the ordinary economic experience reflected by the census. In fact, that proportion is reached only by the inclusion of part-time workers and employed children. In other words, six-tenths or more of the people, judged by the ordinary economic experience, are not commercially employable. Large numbers of these unemployable people do not have family attachments giving them access to economic goods and services through breadwinners. The greater part of the unemployable persons do have family attachment to employable persons; but the irregu-

larity of employment is so great for enormous numbers of workers that earnings are restricted and uncertain.

Moreover, even if the worker has steady employment, his earnings may be too small to provide for himself and his dependents. Society demands that a breadwinner be primarily responsible for the livelihood of his family. But there is nothing in the strictly commercial method to make his opportunity match his responsibility. Indeed, the industrial system is under no specific obligation to employ him at all.

In short, under the commercial workings of the economic system, goods and services are not available to any but a small part of the unemployables without family attachment to workers. To workers and to their dependents, the flow of goods on the commercial basis is always highly irregular, usually very much restricted, without any consistent relationship to family requirements, and often cut off entirely.

Consequently, it is always necessary that purchasing power be distributed by noncommercial methods to unemployable people without attachment to workers. For workers and their dependents, such noncommercial distribution is likely to be necessary to a considerable extent even in good time, is certain to be necessary on an extensive scale at average levels of business, and is imperative on a huge scale in severe depression.

Within the normal working of the economic system, widespread failure to provide economic necessities by commercial methods seems to be inevitable. But, as the record stands in history, sustained widespread privation, when the means of providing necessities appear at hand, seems inevitably to lead to social explosion. Therefore, as long as we choose to operate our economic system by commercial methods, extensive noncommercial distribution of purchasing power appears to be a social necessity. In other words, the social organization for relief purposes is inseparably the social twin of the commercial-economic system.

Unemployable persons without attachment to employable persons are assumed to be recognizedly an inevitable relief load. The major uncertainty regarding the scope of the relief problem lies in the likelihood of need among employable persons and their dependents. That likelihood rests in the uncertainty of employment and in the fact that earnings, even with full employment, often will not meet the worker's family requirements.

UNEMPLOYMENT IN ALLEGHENY COUNTY

Business levels in 1929 were extraordinarily high, and employment was likewise at unusually high levels. The year as a whole being considered, probably all or nearly all the employables had at least some work; but it appears likely that only at the very peak or near it did nearly all available employables have work at the same time. In that year, the average loss of time probably was equal to about one-tenth of full time. Inasmuch as all or nearly all employables participated in work that was equal to only about nine-tenths of full time, part-time work was very extensive, probably a fifth or a fourth of the employable group having less than full-time work for the year.

The record of instability in business activity is such that peak activity, of which the 1929 peak was an extreme example, is rare. Consequently, workers are rarely employed as fully as they were at the high levels of 1929. Unemployment usually is much more extensive than it was in 1929.

The growth in total business activity in the district was very rapid during the latter part of the last century, much more rapid than the growth of population. In recent decades, the rate of growth has slowed down very much. Several industry groups have shown rapid growth in these later years; but the district has at the same time witnessed setbacks in significant industries, particularly in coal mining and in the coking industry. Of vast importance has been the flattening out in the trend of iron and steel production. From this diversity of changing industrial trends, the net result has been that the work opportunity of group after group has been upset. The trend of combined business activity in the district rose very slowly in the period 1919-1931—only a little more than the trend of population.

In addition to the disturbances arising from severe changes in trend, business activity has been subject to violent fluctuations representing a succession of booms and depressions. In the 48 years from early 1885 to early 1933, business activity in the district rose from levels below the long-time normal to levels above normal 19 times and fell from levels above normal to levels below normal 19 times. The median rise from bottom to peak was equivalent to a little less than 26 per cent of normal; the median drop from peak to bottom was a little over 26 per cent of normal. In addition,

there were many business fluctuations of great significance wholly among the levels above normal and many others wholly among the levels below normal. At any trend level, the cyclical fluctuations are so great and so continuous that sustained instability of employment is clearly reflected in the record of the business cycles.

Aside from the upsetting effect of changing trends and cyclical fluctuations, there are typical seasonal irregularities within a year, some of which are of a magnitude as great as that in a number of the lesser business cycles. The effect is that at various trend levels and at various cyclical levels, a very large group of workers are subject to serious annual unemployment.

The combined effect of these various irregularities is such that very good opportunity is rare and is followed by recessions into periods of great unemployment. Only in major peaks is relatively full employment likely. Full employment, if ever attained, is the exception, not the rule. The average level of employment is far below the peak levels, and conditions at the very low levels are extremely bad.

The worst known level of business activity was that in March, 1933. In that month, the number of workers having some employment in the county was 63 per cent of the average monthly number having some work in 1929. The amount of work going on in the district was only about 40 per cent of the monthly average amount in 1929. In other words, for every 100 employed at the average levels of 1929, there were 37 without work and the other 63 had only the amount of employment that 40 had in 1929. Because the amount of work was low in relation to the number participating, probably the larger part having jobs were on a part-time basis.

Somewhere far below the extraordinary peak of 1929 and far above the extraordinary bottom of 1933, lies the average condition of employment and unemployment. In the absence of direct employment data for a long period, average unemployment can be determined only in rough fashion from other data. From analyses based on the general business index for the Pittsburgh district, with regard for change in number of employables, it seems likely that as an average condition in the nine-year period 1920-1928 there was employment, at normal business levels, equal to about three-fourths of the full time of the employable group. That is, when business was at long-time trend levels, there was an average condition of unemployment in the Pittsburgh district of around a fourth of full time.

FAMILY LOAD AND EARNINGS

All gainful workers and all the population being considered, in terms of 1930 data, the average number of persons per gainful worker is a little more than two and one-half. Many of the workers, however, are without family attachment, being responsible only for their own support. For those having family responsibility, therefore, the average number of persons undoubtedly exceeds two and one-half.

There were in 1930 more families of three persons each than of any other size. The number having two each was not greatly different. The number having four each was about nine-tenths as large as the number having three each. More than one-third of the families were of five or more persons each, and more than one-fifth were of six or more persons.

Of all families, five per cent had no gainful workers and 60.4 per cent had only one each. If it could be assumed that the lightest possible family load per gainful worker existed, there would have been about 113,000 families of three or four persons each containing only one worker each. This assumption of the lightest possible load being impossible, it is necessary to visualize a very large number of families of five, six, or more, with only one worker each.

Meanwhile, although the general level of business in the Pittsburgh district averaged 17 per cent above normal in 1929, available evidence indicates that 50 to 60 per cent of the families had in 1929 less than the \$2,000 considered by The Brookings Institution to have been "perhaps . . . sufficient to supply only the basic necessities"; 4 or 5 per cent had no income; between one-tenth and one-seventh had less than \$550; between one-fifth and one-fourth had less than \$950.

CHAPTER 14

SOCIAL POLICY TOWARD RELIEF

Most unemployable people all the time and large numbers of working people most of the time are not provided for by the strictly commercial workings of the economic system. That, in epitome, is the economic background of the relief problem. With respect to that background, "to do or not to do" long ago ceased to be the question.

In broad terms, what must be done, under the existing commercial-economic system, is obvious and has been stated in preceding pages. Extensive distribution of purchasing power by non-commercial methods cannot be avoided. That is, relief cannot be avoided.

Relief methods and standards of relief, showing significant changes prior to 1929, have been thrown into violent change since 1929. As the temporary lull of 1930 became the depression of 1931 and the disaster of 1932, the pitiful inadequacy of the existing disorganized relief organizations with their puny funds became obvious. Older schemes were submerged in the methods imposed with Federal assumption of the larger part of the relief load. Then as we emerged from our rendezvous with catastrophe, the question of social security assumed a character and a proportion hitherto envisioned only by the "impractical idealist."

What brew will develop from the current ferment cannot be definitely foretold. It seems hardly open to doubt, however, that a large measure of Federal and state participation in provision for relief and in the integration of relief administration will remain. Chronic economic jeopardy and occasional economic disaster in our industrial system are local only in the sense of being local manifestations of general ills.

Comparatively greater instability, and consequently greater jeopardy to livelihood, in one community than in another is largely a reflection of greater relative dependence on unstable industries. But comparatively greater instability in one industry than in another is largely a reflection of the fact that the instability charac-

teristic of the whole economic structure is more intensely focalized at some spots than at others. A productive operation tied in some way or other to the seasonal weather cycle might possibly be more nearly stable than it has been but cannot be stable in any economic system. A productive operation which reflects the generally unstable character of demand for capital goods cannot be stable in a social system in which freedom for individual initiative is thought to be more important than stability. A productive operation subject to whim, fad, and fashion cannot be stable if freedom to be whimsical, to follow fads, and to be in fashion is to be preserved.

The jeopardy to livelihood inherent in the economic structure cannot be confined in those geographic spots, those industrial groups, or those occupational classes in which the extreme focal instability appears. Indeed, it cannot be confined to any one nation. Not a national capital on earth is free, or ever has been free, from the necessity of seeking international solution of world-sprawling economic ills.

But the largest political unit in terms of which relief problems can be directly faced is the nation. The logic of Federal participation in relief is not debatable, and, in spite of probably foolish provisions, the Social Security Act was one of the major American advances out of blind-alley relief. The Federal function of "welfare" is a fact; to debate about a Federal Department of Welfare is but to make a national issue of an administrative problem.

Within the nation, much of the power remains vested in the states. Although the argument for state rights no doubt frequently is used to prevent the remedying of state wrongs, there appears to be a real fear of a too highly centralized national government, a fear that is not allayed by the record of regimentation in Russia, Italy, and Germany. Great powers are likely to remain vested in the states for a long time. Unless states are to retain powers merely to keep those powers from being exercised, the state governments must share heavily in a nationally integrated program of alleviating economic need.

Federal participation and state participation in the broad relief program are necessary because of the great differences among localities, industries, and occupations with respect to the severity and the frequency of their economic need. Moreover, the participation of these larger jurisdictions is necessary because of the obvious fact that competition inevitably embraces competitive

evasion of social costs, and only the larger governmental units can cope with that evasion.

In spite of increasing Federal and state participation in the relief program, great responsibility in that program rests, and must rest, on local communities, with respect to both administration and financing.

In the first place, local organizations must carry the brunt of the administrative burden involved in a relief program—that of dealing directly with large numbers of individuals and of families. Unemployable persons will have to be identified locally, in spite of state or national standards of identification. With reference to workers, the facts on unemployment, underemployment, and inadequacy of earnings for the family load must be brought to light by local recording. Relief administration without that direct local identification and inventory is impossible. Indeed, the setting up of a sound program of state and national participation in the provision of relief is inconceivable without the pooled understanding of local administrations. That enlightenment on national and state policy and sound implementation of national and state policy begin at home is beyond doubt. To conceive any other possibility is to expect democracy to work in reverse.

To understand the financial role of the local governments in the relief program, it is necessary to consider with some care the broad outlines of present responsibility for relief.

Relief policy until recent times has, at best, related largely to the more permanently destitute of the unemployables, not commonly extending to workers except as they fell into acute stages of distress. Growth and integration of welfare activity during the past decade were largely in the field of relief for unemployable persons—the destitute aged, needy orphans, widows with small children, the blind, mental incompetents without support, and those who were too severely crippled to work and were without attachment to breadwinners.

The new Federal program, under the Social Security Act, will in time make at least partial provision for large numbers of the aged; and it provides some assistance in state programs of caring for the blind and for children. But large groups of the aged are not provided for; many of those covered by the provisions of the Act will not receive enough. The Federal provisions for the blind and for dependent children are hardly more than financial stimuli

for state action. And the states are tending to build their programs merely to the minimum standards required for them to receive Federal aid.

The Federal plan for unemployment compensation excludes several large classes of working people. For many of those, relief is certain to be necessary. Moreover, both the waiting period and the measurement of unemployment compensation in terms of wages ordinarily received, no matter how low, leave a problem of supplementing the unemployment compensation plan.

Now we may insist with some justice that the Federal Government and the state governments ought to shoulder a larger part of the relief load than they have shouldered. Perhaps in time circumstances will force them to do so. The hard fact, however, is that a substantial part of the responsibility with respect to relief for both unemployables and unemployed workers has not been taken over by the larger jurisdictions but remains a local responsibility.

That this local responsibility for relief entails a financial burden cannot be doubted. That division of responsibility among numbers of public agencies and numbers of private agencies makes a complex job more complex and more costly is highly probable. With respect to multiplicity of local governmental units, sanity points in the direction of consolidation; and opinion seems to be increasingly crystallizing toward that end. With respect to multiplicity of local charitable agencies, evolution has been in the direction of unification, both among like organizations operating in the separate local governmental areas and among various organizations operating within the same governmental area.

Regardless of the extent to which simplification may be brought about in local governmental structure and in the structure of private relief and welfare organization, one cannot escape the question involved in the division of local responsibility between public relief agencies and private relief agencies. Development from merely personal benevolences to organized private charities represented a long step in the evolution of cooperation. And there is no doubt that private social work agencies should continue and will continue at the tasks of exploring and pioneering, as well as in supplementing the actions of public agencies. But the increasing transfer of recognized local relief loads to public budgets has reflected increasing acknowledgment that assured provision and equitable distribution of cost cannot be left merely to the more

philanthropic and others who, for a multitude of mixed reasons, are sensitive to the pressure of private campaigns for charity. The basic relief program must be a public program accomplished through the public instrumentality of government.

With the probability that a considerable share of the relief burden must be carried locally and that the carrying of the local burden must be mainly on the public budget, one comes squarely to face the common contention that local tax burdens cannot be increased—that added local functions are impossible.

The first obvious answer is that most states have materially relieved local taxpayers by placing a larger part of the local cost, particularly of roads and schools, on the state budgets. Furthermore, the Federal Government, through the states, has instituted a social security program which will aid materially in carrying a burden, most of which, except in the period of Federal emergency relief, has been carried locally to whatever extent it was carried at all.

The other obvious answer is that the economic inability of local governments to finance their ordinary relief programs, and even to enlarge their contribution in an emergency, has been overstated.

That helplessness is commonly stated in terms of the flighty tendency of incomes, accumulated funds and securities, when the tax gatherer looms on the horizon. These things are flighty. The state can reach them much more easily than can the local government, and the Federal Government can reach them more easily than the states. The necessity of Federal and state governments sharing liberally in the financing of relief has been explained in part on these grounds. Furthermore, it is rightly contended that a necessary social cost should be equitably levied on the social income, and local governments cannot successfully tax income. Grants and aids from the larger governmental units to the local governments are proper for just this reason.

But the tax millennium has not come. A burden remains for local governments. And in the division of taxing power, taxation of land and of fixed property on land has generally been left almost solely to local governments. There is no magic by which economic production can go on except through the use of land, buildings, equipment, and machinery. In other words, although local governments cannot tax income directly, they do tax and can continue to tax the concrete and distinctly localized objects

of wealth through the use of which income arises.

In brief, then, liberal participation by the Federal Government and by state governments is essential, both because of the great variation in the extent to which different communities suffer the effects of economic instability and because of the necessity for larger jurisdictions to cope with competitive evasion of social costs. But a heavy burden of responsibility rests on the local governments. The underlying job of administration—direct discovery of need and final handling of relief—is necessarily local. A substantial part of the financing of relief remains, and seems likely to remain for a long time, the responsibility of local communities; and, in the evolving clarification of local community functions, the basic provisions for relief should be carried in public budgets.

APPENDIXES

APPENDIX A

MEANING OF THE CENSUS TERM "GAINFUL WORKER" IN 1930

A "gainful worker," under the census definitions in 1930, was a person aged 10 or more who was considered to "follow" a "gainful occupation," although he may not have been employed when the census was taken.¹

A "gainful occupation" meant an occupation by which the person who pursued it earned money or the equivalent of money or in which he assisted in the production of marketable goods. An occupation, even though yielding some earnings, was not included if it did not then provide or had not in general provided at least the equivalent of a day of work per week; but paid part-time work equivalent to a day or more a week was a "gainful occupation."

A person who had previously followed a gainful occupation but had been, even for a long time, out of work because of change in industry, introduction of machinery, or decline of production in his industry was to be considered a gainful worker if he was able and willing to work. Persons, such as common laborers or longshoremen, following highly irregular and uncertain occupations, were considered to be gainful workers, even though they had been idle a long time and had no immediate prospects of finding work.

Enumerators were instructed not to class as gainful workers those who had retired from active service; those who were physically or mentally so incapacitated that they seemed unable to work; those who were living on income or accumulated funds, without working; and those who for any other reason declined to work or did not choose to work. Women and children doing household work or other domestic chores, not on a wage basis, were not to be classed as gainful workers. All these exclusions appear to have been proper ones, in terms of the (presumable) purpose of finding the number of persons who either (a) then had at least partial work at gainful occupations or (b) had previ-

¹The description of "gainful worker" is abstracted from Fifteenth Census of the United States: 1930, *Population*, Vol. V, pp. 3 and 29-30, and *Unemployment*, Vol. II, pp. 604-608.

ously had such work and were at the time of the census able and willing to work.

Another exclusion, however, seems very doubtful, namely, the exclusion of the young employables who were not then employed and had not previously had gainful employment. In a growing population, it is a normal expectation that the number of new workers will somewhat exceed the number of persons passing out of the employable group, the result of the difference being an increase in the total number of workers. The Federal census shows that from 1920 to 1930 there was a significant increase in the population of the county; and data available from the local school censuses indicate that the growth took place throughout most, if not all, of the decade. But records of employment offices indicate that for several years prior to 1929 the number of jobs offered failed to keep pace with the number of applications for work.² It is reasonably certain, therefore, that there was in April, 1930, a significant number of young people who had not succeeded in getting gainful work and, therefore, were not included among the gainful workers. Consequently, it seems reasonably certain that the number classed as gainful workers was too low to represent properly the total number of employables. Inasmuch as data are not adequate to make possible an accurate adjustment, the number of gainful workers reported in the census will be used without adjustment. It will be used, however, with the understanding that it is probably too low.

In Allegheny County, the total population on April 1, 1930, was 1,374,410; persons aged 10 years or more numbered 1,109,331 in the county; and the number classified as gainful workers was 537,097.

The number of gainful workers in Allegheny County, total, male, and female, according to industry groups, is shown in Table 1, presented in Chapter 5. Of the total population, 39.1 per cent were classed as gainful workers; 48.4 per cent of all those aged 10 or more were so classified. Of all males, 60.6 per cent were gainful workers; 75.2 per cent of the males aged 10 or more were so classified. Of all females, 17.0 per cent were gainful workers; 21.1 per cent of the females aged 10 or more were gainful workers.

² Josephine McLaughlin, "Activities of Selected Employment Agencies in Pittsburgh," *Pittsburgh Business Review*, February, 1931, p. 15; and data on the Junior Employment Service in an unpublished manuscript from which the cited article was abstracted.

TABLE A-1
NUMBER OF GAINFUL WORKERS IN PITTSBURGH, BY AGE, APRIL, 1930*

Age at Preceding Birthday	Total †			Male			Female		
	Population in Age Group	Gainful Workers		Population in Age Group	Gainful Workers		Population in Age Group	Gainful Workers	
		Number	Per Cent of Age Group		Number	Per Cent of Age Group		Number	Per Cent of Age Group
10-13.....	49,617	40	0.1	24,520	30	0.1	25,097	10	0.4
14.....	12,298	118	1.0	6,198	65	1.0	6,100	53	0.9
15.....	12,198	555	4.5	6,024	261	4.3	6,174	294	4.8
16.....	12,699	3,062	24.1	6,205	1,563	25.2	6,494	1,499	23.1
17.....	12,061	5,538	45.9	5,879	2,838	48.3	6,182	2,700	43.7
18-19.....	25,424	15,985	62.9	11,842	8,236	69.5	13,582	7,749	57.1
20-24.....	62,497	42,647	68.2	29,110	25,551	87.8	33,387	17,096	51.2
25-29.....	57,304	36,833	64.3	27,765	26,849	96.7	29,539	9,984	33.8
30-34.....	54,388	33,670	61.9	27,398	26,825	97.9	26,990	6,845	25.4
35-39.....	54,996	33,967	61.8	28,066	27,514	98.0	26,930	6,453	24.0
40-44.....	46,867	28,918	61.7	24,276	23,769	97.9	22,591	5,149	22.8
45-49.....	41,473	25,009	60.3	21,423	20,844	97.3	20,050	4,165	20.8
50-54.....	34,316	20,231	59.0	17,686	16,980	96.0	16,630	3,251	19.5
55-59.....	25,663	14,077	54.9	12,815	11,883	92.7	12,848	2,194	17.1
60-64.....	19,679	9,597	48.8	9,750	8,253	84.6	9,929	1,344	13.5
65-69.....	13,618	5,203	38.2	6,509	4,503	69.2	7,109	700	9.8
70-74.....	8,359	2,111	25.3	3,831	1,829	47.7	4,528	282	6.2
75 and over.....	6,844	886	12.9	2,754	781	28.4	4,090	105	2.6
Unknown.....	268	144	53.7	132	92	69.7	136	52	38.2
Total.....	550,569	278,591	50.6	272,183	208,666	76.7	278,386	69,925	25.1

* Fifteenth Census of the United States: 1930, *Population*, Vol. V, pp. 240-245. Figures under "Total" supplied.

† Less than 0.05 per cent.

MEANING OF "GAINFUL WORKER"

Inclusion of children down to 10 years of age and of persons in the higher age groups raises the question of the extent to which children and aged persons were actually included. The available data for Allegheny County do not show the number of gainful workers according to age. Approximate proportions may be noted in the Pittsburgh data, given in Table A-1. Children aged less than 16 years constituted only a minor proportion. About one-fourth of those aged 16 are included; about 46 per cent of those aged 17; nearly 63 per cent of the combined group 18-19 years of age. Of all gainful workers in Pittsburgh, only 3.3 per cent were less than 18 years of age—about one of every thirty. Among the adults, of course, were some rather aged persons. Somewhat

TABLE A-2
GENERAL COMPOSITION OF THE GROUP NOT CLASSED AS GAINFUL
WORKERS IN PITTSBURGH, APRIL, 1930*

Classification	Number	Per Cent of Those Not Gainful Workers
Total population	669,817	
Gainful workers	278,591	
Not gainful workers	391,226	
Not gainful workers, age not reported †	124	
Not gainful workers, age reported	391,102	100.0%
Not gainful workers aged 16 or less—total	202,285	51.7
Children aged less than 10 years	119,248	30.5
Children aged 10-16 not gainful workers	83,037	21.2
Not gainful workers aged 17 or more—total	188,817	48.3
Women aged 17 or more not gainful workers	166,368	42.6
Men aged 17 or more not gainful workers	22,449	5.7

* Based on census data. All figures except total population derived from Table A-1.

† A few of these, presumably, belong in each of the age groups used; but their allocation would have no significant effect.

less than 3 per cent, however, were aged 65 or more—about one of every thirty-four. In short, the gainful workers with which we are dealing were predominantly in the age range 18-64.

Since only about 39 per cent of the people are included among gainful workers, a proper question relates to the general composition of the group not classed as gainful workers. Age distributions of gainful workers in the county are not available, but approximate proportions may be shown by the use of Pittsburgh data. The Pittsburgh data on those not gainfully employed are summarized in Table A-2. Of all those who were not gainful workers, 51.7 per cent were children aged not over 16, and 42.6 per cent were women (aged 17 or more). In other words, 94.3 per cent were women and children, and only 5.7 per cent were men (aged 17 or more).

APPENDIX B

MEANING OF THE CENSUS TERMS "AT WORK" AND "UNEMPLOYED" IN 1930

These terms applied only to gainful workers, defined in Appendix A. In general, with qualifications to be noted presently, a gainful worker was considered "at work" if he worked "any part" of his last preceding regular working day.¹ A professional man, a business man, or one in other pursuits who was not on a salary basis or a wage basis but was self-employed was "at work" if he spent any part of the latest regular working day at his place of business, even though he may not have made any sales nor have done any work for which he received pay. Indeed, a man in charge of an office, store, shop, or factory was "at work" if his business continued to run under his orders, even though he may have been absent in the preceding regular working day. And teachers, highly skilled workmen, salesmen, foremen, superintendents, and managers—groups having jobs on a salary basis and not losing pay for occasional absence from work—were "at work" without respect to whether they actually worked in the preceding working day. Thus, at least some were "at work" without earnings and some were idle with pay.

All part-time workers having work ordinarily equivalent to a day or more a week, whether limited to one or more full days or done a few hours each day,² were included if they did the usual day or the usual number of hours of work on their latest working day. If the backward time limit for employment in this group be assumed to have been one week prior to the visit of the census enumerators, being "at work," for any person in the group, would relate to any day of the preceding week. And if the work of part-time workers be assumed (a) to have been spread evenly through-

¹ Definitions from Fifteenth Census of the United States: 1930, *Unemployment*, Vol. II, pp. 1-3 and 603-608.

² Specific examples given are (a) waitress working regularly three hours a day, and (b) seamstress or laundress working regularly one or more days a week. *Op. cit.*, p. 604.

out the week³, and (b) to have averaged half-time,⁴ only half of them would have been at work on any specific day. The actual effect of the method of dealing with part-time workers, of course, cannot be measured. But at least, in the face of the general rule applicable to the preceding work day, inclusion of the part-time workers who did not actually work on the workday preceding the visit of the enumerator resulted in overstatement of the number "at work."

Thus, the characteristics of the data justify two reasonably certain conclusions: First, the number actually earning money on any day at the employment levels prevailing when the census was taken was somewhat smaller—perhaps considerably smaller—than the number called "employed" under the census definition, the consequence being an understatement of unemployment.⁵ Second, the average daily number of man-days of work going on when the enumeration was made must have been materially smaller than the number called "employed."⁶

One further question is involved in the meaning of "at work." At what time should the data be considered applicable? The enumeration of the total population was meant to represent the number on April 1. Presumably, therefore, the enumeration could not have been begun until April 2. The probable volume of work per enumerator suggests that the enumeration required a number of days.⁷ And the question whether one was at work did not relate to April 1 but to the last regular working day preceding the visit of the enumerator. According to information received directly from the Bureau of the Census (by letter), the instructions called

³ Assumed by the Bureau of the Census in its estimates of part-time work from data on Class B unemployed in 1930. Fifteenth Census of the United States: 1930, *Unemployment*, Vol. II, p. 355.

⁴ That is, an even gradation from a little more than no work to almost full-time work. Cf. section entitled "Part-time Work in April, 1930," in Chapter 5.

⁵ Cf. Robert R. Nathan, "Estimates of Unemployment in the United States, 1929-1935," *International Labor Review*, Vol. XXXIII, No. 1, January, 1936, p. 63. Nathan concluded for other reasons that there was national understatement. The Brookings Institution had access to Nathan's estimates prior to publication and agreed, on the basis of their own calculations, that Nathan's conclusion regarding the understatement of unemployment was fully justified. Edwin G. Nourse and Associates, *America's Capacity to Produce*, pp. 493-495.

⁶ The probable average level of work is considered in Chapter 8.

⁷ For the country as a whole, there were about 100,000 enumerators. Fifteenth Census of the United States: 1930, *Population*, Vol. V, p. 3.

for the completion of the enumeration in incorporated places by the middle of April. Presumably at least part of the unincorporated territory was enumerated after the middle of April. In the incorporated places it is likely that results were accelerated toward the middle of the month, as untrained enumerators got into the swing of their job. It seems likely, therefore, that the data on employment represent conditions centered near the middle of the month. They are used in this study as if the enumeration had been made on April 15, 1930.

APPENDIX C

INDEX OF EMPLOYMENT IN ALLEGHENY COUNTY

It is common practice to estimate employment at a given time by the use of (a) a known total and (b) change in an employment index from the date of the known total to the date for which an estimate is sought. This method is employed in Chapter 5 for some short-time adjustments and is used in Chapter 7 for monthly estimates over the period 1929-1936.

In the examination of the census data in Chapter 5, attention is called to the necessity of distinguishing between the number classified in the census as employed and the total number having more or less employment in a given period. It is in point to consider the character of the available index, what change it reflects, and what types of error the use of the index may introduce into estimates made therewith.

GENERAL CHARACTER OF THE INDEX

The index of employment in Allegheny County is computed from industry group indexes for the Pittsburgh district, special weights being used for Allegheny County. The weights will be noted presently.

Over 350 firms in the Pittsburgh district make confidential reports on employment to the Bureau of Business Research of the University of Pittsburgh. Each firm is asked to report (a) the number on the payroll for the payroll period ended on or nearest the 15th day of the month and (b) the number on the payroll for the payroll period ended on or nearest the last day of the month. Firms having one payroll for the whole month report one number; that number is the total number of persons on the payroll in the whole month. Firms having two or more payroll periods report the two numbers requested, and the average of these two numbers is used in the construction of the index.

The construction of the Pittsburgh district indexes was explained in the *Pittsburgh Business Review* in April, 1931, and

May, 1933; and the explanation need not be extended here. Each index number for an industry group is a percentage of the corresponding 1929 average. No adjustment is made for trend or for seasonal variation. The indexes for the several manufacturing groups are combined into a weighted average index for manufacturing, the weights being assigned on the basis of Federal census data, supplemented by state reports; the manufacturing index and the several nonmanufacturing indexes are combined into a weighted average index of employment by all firms.

The special Allegheny County index of employment was computed from the district group indexes with special weighting for the county. The county weights, assigned on the basis of Federal census data and state industry data, are as follows, the district weights being given for comparison:

Industry Group	Weights ¹	
	Allegheny County	Pittsburgh District
Manufacturing	48.8	50.5
Public utilities	5.1	4.3
Railroads	9.2	9.6
Mines and quarries	3.5	14.0
Construction	8.9	8.6
Department stores	13.0	4.8
Wholesale trade	4.4	1.5
Banking	1.8	1.5
Miscellaneous	5.3	5.2
Total weights	100.0	100.0

RELATIONSHIP BETWEEN TOTAL NUMBER AND AVERAGE NUMBER ON PAYROLLS

A payroll period less than a month is ordinarily a week, two weeks, or one-half of a month. Because of turnover, an average of two weekly payrolls, two fortnightly payrolls, or two semi-monthly payrolls is less than the total number on all payrolls in the month. On the other hand, an average based on any of these periods is larger than the average daily number having payroll attachment. Therefore, the average on which the index of employment is based, being made up in part of monthly totals

¹ Weights for the district index were published in the *Pittsburgh Business Review*, May, 1933, p. 15. The weights used for the special county index have not been published previously.

and in part of averages for periods shorter than a month, lies somewhere between the total number on the payroll in the month and the number having actual payroll attachment on the average day.

Variation in the relationship between the average on which the index is based and the total number or the average number may be caused by inter-payroll duplication of names, by turnover, or by bias resulting from faulty construction of the index.

Duplication as a Cause of Discrepancy

The likelihood of distortion in the proportion as a result of a significant change in the extent of duplication seems small. When slack appears in one plant there is a considerable likelihood of slackness in other plants having similar work. Both the search of the employer for men acquainted with his type of work and the search of the worker for a job he understands seem likely to impede shifting to other kinds of jobs. In April, 1930, the median period since the last employment for classes A and B unemployed in Pittsburgh was in the interval 9 to 13 weeks. Only about one-twelfth of the number in these groups had been unemployed less than a week. More than four-fifths had been unemployed three weeks or more.² As we have noted in Chapter 5, of an estimated total of 55,500 unemployed at the time of the census, about 17,100 appear to have had some work in the preceding month. Because, fortunately, a large part of employment is on jobs lasting through a number of pay periods, the last job of a member of that group is likely to have been on work which had extended for some weeks or months. In other words, the extent of duplication, in relation to the total working force, probably was small in April, 1930.

Whatever the extent of inter-payroll duplication, the distortion resulting therefrom could not exceed the total possible distortion reflected in reported average turnover, for reported average turnover rates for groups of companies reflect the full influence of inter-payroll duplication.

Change in Turnover

The total number of persons having more or less work in a month is the initial number plus the number of accessions during

² Distribution in Table 3, in Chapter 5.

the month. The initial number is the number whose payroll attachment is carried over from the preceding pay period. Reported monthly accessions for any company are subject to the duplicating effect of rehiring old employes who had been on an earlier payroll in the same month. For all companies combined in the index, slight further inflation of the accession rate may be assumed because some workers transfer from one firm to another in the same pay period and, therefore, are represented twice in the group total. In consequence of these inflations in reported accessions, the difference between the true total of different individuals and the initial number is less than the reported number of accessions.

Complete information on payroll periods used is not available. It seems likely, however, that, although a significant number of firms report monthly total numbers on payrolls or weekly numbers, probably the greater part of the employes reported are on two-week or half-month payrolls. Therefore, the average on which the index is based probably does not differ greatly from an average based on two semimonthly payrolls.

For the purpose of exploring the relationships between this average and other numbers in which we are interested, let us use the following designations:

N = average of number on first payroll and number on second

E = initial number at the beginning of the month, i.e., carry-over from preceding payroll

T = total number having some work during the month

A = total accessions to payrolls

S = total separations from payrolls

In the absence of satisfactory data on the distribution of accessions and separations during the month, we shall assume that they are each equally divided between the two payroll periods. The two payroll periods will be assumed to be equal—differences in length of month being disregarded.

Then

$$T = E + A$$

$$N = E + 3A/4 - S/4$$

Therefore,

$$T - N = 1/4 (A + S)$$

TABLE C-1
RATES OF ACCESSION AND SEPARATION, INDUSTRIAL PAYROLLS, U. S.*
 (Percentages of average numbers on payrolls)

Item	Jan.	Feb.	March	April	May	June
1929						
Accession.....	4.98	4.36	5.20	5.77	5.09	5.01
Separation.....	3.06	3.20	4.17	4.58	4.42	4.20
½ of sum.....	2.01	1.89	2.34	2.59	2.38	2.30
1930						
Accession.....	3.95	3.94	4.15	3.55	3.28	2.92
Separation.....	5.09	4.72	5.37	5.21	5.17	5.31
½ of sum.....	2.26	2.16	2.38	2.19	2.11	2.06
1931						
Accession.....	2.97	2.82	3.67	3.06	2.79	2.41
Separation.....	2.88	2.69	2.95	3.41	3.83	5.09
½ of sum.....	1.46	1.38	1.66	1.62	1.66	1.88
1932						
Accession.....	4.15	2.75	2.75	2.76	2.59	2.70
Separation.....	3.35	3.32	4.37	5.73	5.11	5.63
½ of sum.....	1.88	1.52	1.78	2.12	1.92	2.08
1933						
Accession.....	3.48	2.56	2.22	4.87	7.21	10.21
Separation.....	3.56	4.40	4.60	2.78	2.36	2.47
½ of sum.....	1.76	1.74	1.70	1.91	2.39	3.17
1934						
Accession.....	5.81	6.71	6.33	5.18	4.19	3.58
Separation.....	3.43	2.89	3.22	3.38	4.88	4.60
½ of sum.....	2.31	2.40	2.39	2.14	2.27	2.04
1935						
Accession.....	6.33	4.23	3.79	3.63	3.01	3.18
Separation.....	3.04	2.79	3.24	3.73	4.38	4.49
½ of sum.....	2.34	1.76	1.76	1.84	1.85	1.92

Item	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1929							
Accession.....	5.21	4.61	4.91	3.91	1.95	1.24	4.35
Separation.....	3.94	4.12	4.16	3.62	3.15	2.49	3.76
½ of sum.....	2.29	2.18	2.27	1.88	1.28	0.93	2.03
1930							
Accession.....	2.51	2.71	3.27	2.56	2.05	2.13	3.08
Separation.....	5.84	5.75	5.00	4.49	3.91	3.79	4.97
½ of sum.....	2.09	2.12	2.07	1.76	1.49	1.48	2.01
1931							
Accession.....	3.02	2.60	3.58	2.75	3.63	3.29	3.05
Separation.....	4.67	3.67	5.62	6.22	3.92	3.43	4.03
½ of sum.....	1.92	1.57	2.30	2.24	1.89	1.68	1.77
1932							
Accession.....	3.01	4.21	5.04	3.72	3.07	3.07	3.31
Separation.....	5.24	3.85	4.47	3.46	3.39	4.06	4.29
½ of sum.....	2.06	2.02	2.38	1.80	1.62	1.78	1.90
1933							
Accession.....	9.48	8.59	5.53	3.97	3.71	3.37	5.48
Separation.....	3.49	3.40	4.26	4.58	4.79	4.69	3.83
½ of sum.....	3.24	3.00	2.45	2.14	2.12	2.02	2.33
1934							
Accession.....	3.71	3.24	3.61	4.09	4.32	6.14	4.74
Separation.....	3.85	4.50	5.12	5.30	4.55	3.45	4.10
½ of sum.....	1.89	1.94	2.18	2.35	2.22	2.40	2.21
1935							
Accession.....	4.17	4.60	4.95	5.23	3.63	3.30	4.17
Separation.....	3.67	3.77	3.19	3.13	3.55	3.76	3.56
½ of sum.....	1.96	2.09	2.04	2.09	1.80	1.76	1.93

* Source of separation and accession rates: *Monthly Labor Review*, June, 1930, p. 115; December, 1931, p. 153; February, 1932, p. 346; February, 1935, p. 388; March, 1936, p. 695. The general character of the accession rates and separation rates is explained in *Monthly Labor Review*, December, 1935, pp. 1584-1586.

In other words, the total number having work exceeds the average of two semimonthly totals by one-fourth the sum of accelerations and separations.

Accession rates and separation rates of extensive coverage are not available for Allegheny County. National figures of wide coverage will be used to illustrate roughly the margin of error that may arise in using the index. These figures are presented in Table C-1.

Two things should be noted about these rates. First, reporting companies are requested to omit office employes, when practicable. Because of the greater stability of office employment, these rates probably vary somewhat more than would comparable rates based on numbers including all office employes. Second, reporting companies are requested to report (a) the number of factory workers at the beginning of the month and (b) the number at the end of the month. Some plants, however, furnish the average of daily counts and some furnish an average of numbers on weekly payrolls.³ The resulting base number probably is less than the average of the numbers on two semimonthly payrolls. Therefore, the rates, which are percentages of that base number, are probably a little higher than comparable rates applicable to the average which underlies the Allegheny County employment index.

For the group of companies on whose employment the rates in Table C-1 are based, the monthly values of $\frac{1}{4}(A + S)$ are given in the third line of the data for each year. The maximum value was 3.24, in July, 1933. The minimum value was 0.93, in December, 1929. For the seven-year period, the arithmetic mean value of $\frac{1}{4}(A + S)$ was 2.03; the median, 2.04. The maximum value exceeded the mean by 1.21 per cent of the average number employed. The minimum value fell below the mean by 1.10 per cent of the average number employed. There was only one other month (June, 1933) in which the actual value exceeded the mean by more than one per cent of the average number employed; and there was no other month in which the actual value was below the mean by more than one per cent of the average number employed. If one knew the average of two payroll periods for one month and had an index truly representative of change in that average, he could have estimated for each month the total number

³ *Monthly Labor Review*, December, 1935, pp. 1584-1586.

having some work with the expectation that his estimates could differ from the actual numbers by more than one per cent of the average number in only 3 of the 84 months. In 73 of the 84 months the estimated numbers would have differed from the actual by not over one-half of one per cent of the average number on payrolls.

Cyclical variation in business activity in the Pittsburgh district is somewhat wider than in the nation as a whole.⁴ That difference, if not counterbalanced by other influences, would cause turnover rates to be somewhat higher in this district than in the nation. Difference between the district average and the national average with respect to seasonal variation or with respect to policy of employers or policy of labor cannot be determined from available data. But if accessions and separations in this district were twice as high as those shown in Table C-1, the errors in estimates for the district similar to those discussed in the preceding paragraph would generally be less than one per cent.

The Question of Bias in the Index

In the absence of occasional full totals of commercial and industrial employment, a complete test of the index for bias is impossible. Preliminary tests have been made by the Bureau of Business Research on the basis of the Census of Manufactures and the Census of Distribution. Some bias has been found, and revisions are being made. The revisions, however, are not so great as to affect the broad purposes of this study.

USE OF THE EMPLOYMENT INDEX TO MEASURE CHANGE IN NUMBER OF ALL GAINFUL WORKERS EMPLOYED

The only possible direct test of whether change in the index of employment, based on commercial and industrial employment, represents change in the number of all employed persons is the test with 1930 census data and data from the 1934 survey.

In Chapter 6, we have estimated that 374,971 were classed as employed in the survey of February, 1934. That classification, as we there noted, appeared to include practically everybody on payrolls or otherwise having a job connection, whether at work

⁴ Wilbert G. Fritz, "Fifty Years of Business Activity in the Pittsburgh District," *Pittsburgh Business Review*, October, 1933, p. 20.

or not. Apparently, the most nearly comparable total in the 1930 classifications would be the sum of those classed as employed and classes B, D, F, and G of the unemployed (Table 2, in Chapter 5). The sum of those groups (without allocation from the unclassified group) is 499,809.

The "employed" group in February, 1934, therefore, appears to have been 75 per cent of the comparable group in 1930. Meanwhile, the employment index (Table 11, in Chapter 7) stood at 98.9 in April, 1930, and at 74.3 in February, 1934, the latter level being 75.1 per cent of the former. It seems conclusive, therefore, that no serious error is introduced by use of the employment index as a measure of change in the number of all employed persons.

APPENDIX D

MONTHLY ESTIMATES OF THE NUMBER OF EMPLOYABLES, 1929-1936

The number classed as gainful workers in the Federal census of 1930 was 537,097 (Table 1, in Chapter 5). That number probably was somewhat too low, because of the omission of younger persons who had not previously had employment but who constituted a normal increment to the employable group (Appendix A).

For reasons already explained,¹ the number of employables assumed for February, 1934, is 527,100, that number constituting the same proportion of the population as did gainful workers in April, 1930. Because of the shift of population during the depression, it is impossible to determine to what extent the probable understatement in the 1930 class of gainful workers is carried forward by the use of the 1930 ratio in 1934. No serious distortion, however, seems likely in this 1934 estimate.

Only a rough general judgment is possible regarding what happened to the number of employables (a) from the beginning of 1929 to April, 1930; (b) between April, 1930, and February, 1934; and (c) after February, 1934. The decisions made will be explained briefly.

EMPLOYABLES IN OCTOBER, 1929

There appears to have been an abnormal bulge in number of employables in 1929. The peak of the employment index (Table 11, in Chapter 7) was reached in October, 1929. We have estimated, in Chapter 5, that 504,331 persons had at least some work in April, 1930. From this number and the employment index, it is estimated that 541,046 had some work in October, 1929. By mere interpolation between the number of gainful workers in the county in January, 1920, and the number in April, 1930, we should reach a number of employables decidedly below the estimated number having work.

¹ Chapter 6, section entitled "Number of Employables Assumed for February, 1934."

Meanwhile, one may suppose, for two reasons, that there were some employables without work at the peak, i.e., that the number of employables appreciably exceeded the number employed. First, the distribution of the unemployed in April, 1930, according to period of idleness shows that a substantial number had been unemployed long enough to have been idle in October, 1929. Second, the peaks of employment for the various industry groups in the Pittsburgh district² came at various times in the year; and the weighted average³ of those peaks is materially higher than the peak of the composite index.

No doubt, an appreciable shifting of workers took place from industries of slack opportunity to industries requiring labor in the month of highest employment; but there must have been numerous workers who found no opportunity to shift. Of the unemployed in Pennsylvania at the time of the census in April, 1930, 12.9 per cent had been unemployed 27 weeks or more.⁴ We have noted in Chapter 5 that an estimated total of 55,511 were in the group classed as unemployed in April, 1930. On the basis of the state ratio, it is estimated that 7,160 of the unemployed in Allegheny County had been unemployed in October, 1929.

With 541,046 estimated to have been employed and 7,160 unemployed in October, 1929, the number of employables assumed (as a minimum) for October, 1929, is 548,200.

EMPLOYABLES IN JANUARY, 1929

It is assumed that the abnormal bulge in number of employables noticeable at the peak was confined to 1929. For January, 1929, an estimate was made by straight-line interpolation between the census of January, 1920, and the census of April, 1930. In the 1920 census, the number classed as gainful workers was

² The reference is to the several indexes of employment in the Pittsburgh district computed by the Bureau of Business Research of the University of Pittsburgh and published monthly in the *Pittsburgh Business Review*.

³ Weighted as the indexes are weighted in the composite. The weights are given in Appendix C.

⁴ Fifteenth Census of the United States: 1930, *Unemployment*, Vol. I, pp. 840 and 876-877. For classes A, B, C, D, E, and G, the number unemployed for periods of 27 weeks or more was 47,000; the number for whom period of idleness was reported was 364,527. If the median date of the census enumeration in 1930 was as late as April 15 (refer to concluding paragraph of Appendix B), the number unemployed at the beginning of the preceding October and continuously thereafter through the enumeration date was presumably a little smaller than the number unemployed 27 weeks or more.

473,918.⁵ The corresponding number in April, 1930, was 537,097 (Table 1, Chapter 5). The interpolated figure for January, 1929, is 529,392.

EMPLOYABLES IN MARCH, 1933

Business levels in the district had already risen considerably above the bottom levels when the survey of 1934 was made. The lowest level of the general business index of the Pittsburgh district was reached in March, 1933. It is assumed that the decline in population which appears to have taken place between April, 1930, and February, 1934, had taken place by March, 1933.⁶ Therefore, the number of employables estimated for February, 1934, is assumed also for March, 1933.

EMPLOYABLES IN DECEMBER, 1936

By December, 1936, the index of general business activity in the Pittsburgh district had risen above the April, 1930, level. The employment index, however, was still somewhat below the April, 1930, level; but the generally sharp rise of business activity is likely to have drawn labor back to the county somewhat in excess of the actual re-employment. On this point, of course, no certainty is possible. But it is believed to be reasonable to assume that the number of employables in the county in December, 1936, was about the same as the number in April, 1930, namely, 537,100.

SUMMARY

The several monthly figures, then, from which the monthly estimates of employables used in the preparation of Table 12 (Chapter 7) were made are as follows:

Month	Number of Employables
January, 1929	529,392
October, 1929	548,200
April, 1930 (Census)	537,097
March, 1933	527,100
February, 1934	527,100
December, 1936	537,100

Estimates for intervening months were made by straight-line interpolation.

⁵ Figure not published; furnished directly by the United States Bureau of the Census.

⁶ There may have been greater decline, with subsequent rise, but there is no available test.

APPENDIX E

MEASUREMENT OF AVERAGE UNEMPLOYMENT IN THE PITTSBURGH DISTRICT, 1929-1936

Data relating specifically to Allegheny County are not adequate to provide a basis for estimating average employment and unemployment. The estimates of amount of work, discussed in Chapter 8, were made mainly through the use of Pittsburgh district data. The primary steps involved were (a) the computation of an index reflecting the change in total amount of work from the average level of 1929 (Table 14); (b) adjustment of change in total amount of work to allow for change in number employed, leading to the index of average amount of work per person employed (Table 15); and (c) interpretation of the latter index in terms of its probable significance at its highest level in 1929, with the result of translating the index of average amount of work on the basis of the 1929 average (Table 15) into estimated percentages of full time worked (Table 16).

In the computation of an index of total amount of work, each monthly index of man-hours worked by wage earners in manufacturing industries in the Pittsburgh district was multiplied by the ratio of (a) the index of total payrolls, all firms, to (b) the index of payrolls in manufacturing, for the corresponding month.

The respective levels of the total payrolls index and the manufacturing payrolls index are equated as 100 at the average level of 1929. It is assumed that for the period here considered the difference between the actual levels of these indexes, i.e., difference in deviation from a common base, is attributable approximately to difference in aggregate working time. This assumption necessarily involves the assumptions (a) that change in the average actual hourly earnings of all manufacturing employes was approximately proportional to change in average actual hourly earnings of manufacturing wage earners and (b) that change in average actual hourly earnings of all employes represented in total payrolls was approximately proportional to change in average actual hourly earnings of all manufacturing employes combined.

In the competitive economy, it is an accepted assumption that the change in compensation rates for one large employed group will be in the same direction as the change for another large employed group. Since adjustments in rates of pay are slow, change in comparative levels of compensation among different groups is slow. And a combined index of payrolls for two large groups would reflect only a part of a slowly cumulative difference.

In the four-county Pittsburgh Industrial Area in 1929, the average number of all manufacturing employes was 260,271; and, of these, 33,050, or only 12.7 per cent, were salaried employes. Salaried employes were not reported for all the counties of the area; but, for 26 Pennsylvania counties which are so reported, in an average of 1,033,389 employes, 129,458, or 12.5 per cent, were salaried employes.¹ In 1930, the four-county Pittsburgh area included about 84 per cent of all gainful workers attached to manufacturing in the eleven-county area² to which the payrolls indexes used in this analysis are related; and the ratio of salaried workers to total employes in the eleven-county area is not likely to differ materially from the comparable ratio for the four-county area. Therefore, the index of total manufacturing payrolls is not likely to reflect more than about one-eighth of whatever slowly cumulative difference there may have been between the change in average hourly earnings of salaried employes and change in average hourly earnings of wage earners. In other words, change in the index of combined manufacturing payrolls may be read, for purposes of estimate, to represent approximately the change in the payrolls of manufacturing wage earners.

In the construction of the index of total payrolls in the district, manufacturing payrolls have a weight of 50.5 per cent (Appendix C). Therefore, the total payrolls index reflects less than half the slowly cumulative difference, if any, between change in average hourly earnings of manufacturing employes and the comparable change for nonmanufacturing employes. Since change of average hourly earnings for the manufacturing group seems unlikely to have been much out of proportion to the comparable change for the nonmanufacturing group, the divergence between the total

¹ Fifteenth Census of the United States: 1930, *Manufactures, 1929*, Vol. I, pp. 242 and 247.

² Bureau of Business Research, University of Pittsburgh, *Industrial Databook for the Pittsburgh District*, pp. 1-2 for description of areas, and p. 10 for data from which the percentage is computed.

payrolls index and the manufacturing payrolls index is believed to represent approximately the divergence between total man-hours for all workers and man-hours for manufacturing wage earners.

The other major assumption is that an index constructed to show change of average employment per person on the payroll in the district may be used to represent approximately the change in average employment in Allegheny County. The district is predominantly industrial and commercial, and the indexes used here are weighted in accordance with that predominant characteristic. Not only is Allegheny County akin in industrial and commercial character to the rest of the Pittsburgh district, but this county is a financial, trading, and management center for much of the district outside the county. Change in Allegheny County, therefore, should be similar to that in the district outside the county not only because of similarity of composition but also because of direct sensitivity to change in areas financed, supplied, and managed. In addition, more than half of the gainful workers enumerated in the eleven-county district in 1930 were in Allegheny County. In the total employment index and the total payrolls index, therefore, only about half, or less than half, of the difference between change in Allegheny County and change in the district outside the county should appear. Finally, about 60 per cent of the gainful workers attached to manufacturing and mechanical industries in the district are in Allegheny County. Therefore, the district index of man-hours should reflect only about four-tenths of the difference between change in man-hours in Allegheny County and the comparable change in the district outside the county.

It has been noted in Appendix C that the index of number employed by business firms may be taken as a reasonably close measure of change in number of all gainful workers employed. The reasons should be considered for assuming that our estimated index of total gainful work may be used as if it covered all gainful workers. First, time worked by all gainful workers is in very large part time worked in industry and commerce. Second, the working days and hours in noncommercial pursuits are much in accord with commercial practice. Third, as we have pointed out in Chapter 2, irregularities of commerce and industry are reflected to a great extent in noncommercial pursuits. Of course we should prefer a direct measure. But, lacking that, we shall probably not miss the general truth very far by using the estimated index of

total work in industry and commerce as an index of total work for all gainful workers.

With the index of employment and the index of total work construed in terms of all gainful workers, the index of average work per worker is construed as average work per employed gainful worker, not merely per industrial or commercial worker.

PROBABLE AVERAGE WORKING TIME AT THE PEAK IN 1929

In the absence of direct measures, an approximate interpretation of the index of average work may be made by reference to what it probably signified in the month of best working time.

The peak of the index of average employment, in September, 1929, was 105.5, i.e., 5.5 per cent above the average for 1929 (Table 15). A decision regarding what the maximum probable percentage of full time was in that month immediately gives significance to the indexes for other months.

In the report of President Hoover's Research Committee on Social Trends, it was estimated that about 3,000,000 persons in the United States are disabled by sickness on almost any day.³ That number amounted to approximately 2.4 per cent of the population. For industrial workers alone, the rate undoubtedly is lower. The Brookings Institution, in estimating the practical labor force in manufacturing, deducted 2 per cent of the theoretical labor force to allow for sickness and other temporary disability.⁴ From statistics covering a seven-year record of the Boston Edison Electric Illuminating Company, it was found that respiratory troubles causing absences of a half-day or more each caused average losses of 3.2 days a year for men and 5.5 days a year for women. Diseases of the respiratory system caused about half of the absences from sickness and nonindustrial accidents.⁵ Other diseases and injuries being allowed for, the losses might easily be twice as large, and the losses of time might exceed 2 per cent.

Industrial accidents which resulted in only temporary disability caused, in 1930, a loss of time equal to about one-fourth of one

³ Harry H. Moore, "Health and Medical Practice," which is Chapter XXI of the Report of the President's Research Committee on Social Trends, entitled *Recent Social Trends in the United States*. Citation from pp. 1069-1070.

⁴ Edwin G. Nourse and Associates, *America's Capacity to Produce*, p. 515.

⁵ Dean K. Brundage, "Incidence of Illness Among Wage Earning Adults," *Journal of Industrial Hygiene*, November, 1930, p. 343, and December, 1930, p. 399.

per cent of full time; the loss from permanent partial disability was much larger.⁶ The total accident severity rate in that year (for wage earners) was somewhat higher than it was in any of the years 1926-1929.⁷

The estimates of monthly numbers employed, in Chapter 7, have been made in terms of the total number having at least some work in the month. It will be observed in Table C-1 (Appendix C) that total accessions to industrial payrolls in the United States in September, 1929, were 4.91 per cent of the average number on payrolls. But separations were 4.16 per cent of the average on payrolls. An even spread of accessions and of separations being assumed, the average number having active payroll connection was less than the total number having work in the month by a total equal to 4.54 per cent of the average on payroll.⁸

Allowance of 2 per cent or more for sickness and disability after deduction of something like 4.5 per cent because of turnover suggests that, in evaluating probable employment for all persons sharing in the work, a deduction close to 6.5 per cent of full time should be made. It is recognized, however, that there probably was a considerable amount of overtime. Overtime would be a rapidly diminishing factor after the peak was passed. Unless some allowance is made in the estimate of average employment for overtime at the peak, the level of the estimates after the practical disappearance of overtime would be too low. The decision was to assume an average deduction of 4 per cent of full time, i.e., an average employment of 96 per cent of full time at the peak.

⁶ Reports covered 2,236,629 employees; there were 1,700,000 days of loss for those suffering temporary disability only. *Monthly Labor Review*, October, 1931, p. 93.

⁷ *Monthly Labor Review*, May, 1932, p. 1029.

⁸ In Appendix C, section entitled "Change in Turnover," it is shown that, under the assumption of two equal payroll periods a month and an even distribution of accessions and of separations, the total number exceeds the average of the numbers on the two payrolls by one-fourth the sum of accessions and separations. Under the same assumptions, the difference between the total and the daily average number actively on payrolls (i.e., with daily adjustments for ins and outs) is one-half the sum of accessions and separations.

INDEX

- Age groups, employment by, 43-44
Amount of work, Pittsburgh district
per employed worker, index of, 58
total, index of, 56
See also Employment; Part-time
work
At work, meaning, 1930, 119-21
See also Employed; Part-time
work
Bituminous coal industry, *see* Coal
industry
Boom and depression, *see* Business
activity
Brookings Institution
income estimates, 95
income required for necessities, 99
savings, by income groups, 7
sickness and other disability, 136
understatement of unemployed,
120 n.
wage and salary group, 7
Business activity
irregularity
effect on employment, 8-9, 20,
63-81
relation to other activity, 9
seasonal, 79
trend, 65
types, 63
Pittsburgh district
boom and depression
effect on employment, 75, 79
high points and low points, 78
magnitude of variation, 75
rarity of full employment, 75
coal production, 69, 70
index, per cent of 1923-25 aver-
age, 73
relation to national index, 71,
72
index, per cent of normal, 74,
76-77
mixed trends, 67-71
effect on employment, 71
seasonal fluctuations, 79-81
effect on employment, 80-81
seasonal range, 80
steel production, 69, 70
trend, 65-71, 72
declines, displacement by, 71
industry groups, 67, 68, 69
production, 64, 65-66, 69
relation to employment, 66-69
relation to national trends, 64,
65, 72
United States
index of production, 72
trend of production, 64, 72
See also Industrial production;
Trend
Capitalistic system
current American effort toward,
17
socialist attitude toward, 17
See also Commercial system
Charity agencies, *see* Relief agencies
Children
decrease of employment, 67
gainful workers, Pittsburgh, 1930,
117-18
not gainful workers, Pittsburgh,
1930, 118
Coal industry, Pittsburgh district
factors affecting trend, 11, 69
index of annual production, 70
regional shifts, 9, 69
trend, 11, 69, 70
Colored workers, 1934
employment data, 33, 39
relative unemployment, 41-43

- Commercial system
 flows of money, 6
 general necessity of earnings, 7, 10, 96
 limits of access to, 5-14
 monetary door to necessities, 5
 necessity of noncommercial distribution, 17
 relation to unemployables, 13
See also Capitalistic system
- Displacement of workers, 8-9, 71
- Earnings
 average, 1929, 95
 dependence on, 6-7, 10, 96
 manufacturing, average
 Allegheny County, 1929, 92-94
 U.S., 1929, 91
 median, 1929, 95
 relation of median to average, 95
 retail trade and manufacturing
 average, Allegheny County, 1929, 94-95
 median, Allegheny County, 1929, 95-96
 retail trade, average, Pittsburgh, 1929, 94-95
See also Income; Wages
- Economic need
 categories, 3
 definition, 3-4
 factors determining
 instability of opportunity, 8-11
 number of dependents, 8, 87-90
 rates of pay, 7
 unemployability, 13
 lack of record of total, 4
 relation to productive capacity, 4
- Economic system
 commercial basis, 5, 8-9
 limits of access, 5-14
 for dependents, 12, 13
 for unemployables, 11-14
 for workers, 7-11
See also Capitalistic system; Commercial system
- Emergency relief problem, 1, 106
- Employability, factors, 18
- Employables
 Allegheny County
 census, 1920, 131-32
 census, 1930, 23
 by industry group, 24
 by sex, 24
 per cent of females, 116
 per cent of males, 116
 per cent of population, 116
 young omitted, 116
 estimates, 1929-36, 130-32
 Allegheny County except rural, 1934
 by age, 44
 by color, 33
 by employment status, 33
 by industry, 40
 by nativity, 33
 by sex, 33
 not previously employed, 33
 per cent of population, 36
 selected areas, 45, 46
 decline of proportion, 66
 definition, 23, 115-18
 dependence on work, 7, 10
 family load, 8, 87-90
 limits of access to necessities, 5-14
 Pittsburgh
 1930, by age and sex, 117
 children included, 118
 per cent, by age, 117
 per cent of females, by age, 117
 per cent of males, by age, 117
 1934, by ward, 46
See also Unemployables
- Employed
 Allegheny County
 census, 1930, 24
 estimate, April, 1930, 26
 estimates, 1929-36, 52
 index of number, 1929-36, 51
 manufacturing, 1929, 92-93
 part-time, 1930, 28-29, 115
 retail trade, 1929, 94

Employed—*Continued*

Allegheny County except rural,
1934

definition, 32

difference among groups, 39-47
number, 33

by color, 33

by nativity, 33

by sex, 33

part-time, 38-39

per cent of all employables, 33

by age, 44

by color, 33

by industry, 40

by nativity, 33

by sex, 33

selected areas, 45, 46

per cent of previously employed,
39

definition, census, 119-21

overstatement probable, 120

Pittsburgh, 1934, by ward, 46

relation of total to average, 123-28
See also Employment; Unem-

ployed; Unemployment

Employers

company welfare plans, 16

profits objective, 8

victims of instability, 11

Employment

Allegheny County

April, 1930, 23-29

at normal business levels, 83-86

estimates, 1929-36, 52

relation to Pittsburgh district,
55, 135

Allegheny County except rural,
1934, 31-47

decline of opportunity, 66-67

instability, 8-11, 63-81

of children, decrease, 67

of women, increase, 67

Pittsburgh district

at normal level, 83-86

index of average work, 58-59

index of number, 57

index of total work, 56-57

per cent of full-time, 59-61

relation to Allegheny County,
55, 135

See also Employed; Unemployed;
Unemployment

Families

Allegheny County, 1930

average size, 90

by size, 87

estimated number without work-
ers, 88

median size, 90

Pittsburgh, 1930, by number of
workers, 88

See also Family income; Family
load

Family income, 91-100

Allegheny County, urban sample,
1929

families at various levels, 97-100

median approximated, 97

relation to adequate income, 99-
100

sample discussed, 96-97

See also Earnings; Families;

Family load

Family load

number of employables, 88-90

size of family, 88-90

See also Earnings; Families;

Family income

Federal participation in relief, 1,
106-11

Federal Reserve Board

index, industrial production, U.
S., 72

Female

Allegheny County, 1930

gainful workers, by industry, 24

per cent gainful workers, 116

Allegheny County except rural,
1934

employables, 33

employed, 33

excess of not previously em-
ployed, 37 n.

- per cent employed
 - of previously employed, 39
 - of total employables, 33
 - relative unemployment, 43
 - unemployed, 33
- See also* Women
- Foreign-born workers
 - employment data, 33, 39
 - relative unemployment, 41-43
- Gainful workers, *see* Employables
- Income
 - noncommercial distribution, 15-17
 - statistics, 1929, 7, 91-100
 - types, 6
 - uncertainty, 5-14
 - See also* Earnings; Family Income; Wages
- Index of numbers on payrolls
 - Allegheny County, 51
 - explanation, 122-23
 - Pittsburgh district, 57
 - use to measure total employed, 128-29
- Industrial production
 - Pittsburgh district
 - mixed trends, 67, 68, 69-71
 - relation to national trend, 64, 65
 - trend, total, 64, 65-69
 - trend of industry groups, 67, 68, 69-71
 - United States
 - trend, 64, 72
 - See also* Business activity; Trend
- Industry groups, employment data, 24, 27, 40
- Iron industry, *see* Steel industry
- Labor reserve
 - assumed by business, 21
 - dependence on, 15
 - lack of work reflected, 7-8
 - relation to low wage, 7
 - usual except at peaks, 20, 75
- Labor surplus, *see* Labor reserve
- Local responsibility in relief, 108-11
- Lockouts, *see* Strikes and lockouts
- Male
 - Allegheny County, 1930
 - gainful workers, by industry, 24
 - per cent gainful workers, 116
 - Allegheny County except rural, 1934
 - employables, 33
 - employed, 33
 - per cent employed
 - of previously employed, 39
 - of total employables, 33
 - relative unemployment, 43
 - unemployed, 33, 39
 - Pittsburgh, not employables, 1930, 118
- Money
 - access to economic system, 5-6
 - dependence on work, 7
 - general lack of saving, 7
 - methods of getting, 6
 - See also* Earnings; Income; Family income; Purchasing power; Wages
- Part-time work, 20
 - Allegheny County, 1930, 28-29
 - Allegheny County except rural, 1934, 38-39
 - included for number employed, 115
 - Pittsburgh district, 1929-36, 55-61
- Population
 - per cent gainful workers, 116
 - trend
 - Pittsburgh district and U. S., 64
 - relation to business, 65-67
 - See also* Employables
- Profit system, *see* Capitalistic system and Commercial system
- Public relief program, *see* Relief
- Purchasing power, noncommercial distribution
 - channels, 15-16
 - necessity under commercial system, 17
 - See also* Relief

- Relief**
 administrative responsibility, 16, 108
 channels, 15-16
 costs, competitive evasion, 107-8
 emergency, and continuing, 1-2
 financing
 compulsory support, 17
 Federal aid, reasons, 106-8
 local ability, 110-11
 local necessity, 108-9
 Social Security Act, 108-9
 state responsibility, 107
 inadequacy of record, 4
 present responsibility, 108-9
 public, traditional, 16
 social policy toward, 106-11
 standards changing, 1-2, 106, 109
See also Relief agencies; Relief problem
- Relief agencies**
 development, 1-2, 16, 106, 109
 necessity, 2, 17
 variety, 15-16
- Relief problem**
 categories of need, 3
 complexity of origins, 3
 continuing, 1-2, 15-17
 policy toward, 106-11
See also Relief; Relief agencies
- Salaries, see** Wages
- Savings, data, 7**
- Seasonal fluctuations, 79-81**
- Service industries, expansion, 66**
- Social policy toward relief, 106-11**
- Social Security Act**
 groups not covered, 108-9
 significance, 107
- Social work**
 complexity, 3, 16
 development, 1-2, 16, 106, 109
 relation to economic need, 3
See also Relief; Relief agencies
- Social work agencies, see** Relief agencies
- State participation in relief, 106-8**
- State rights, and relief program, 107**
- Steel industry, Pittsburgh district, 11, 67, 68, 69, 70**
See also Business activity; Industrial production; Trend
- Strikes and lockouts, unemployment, 20-21**
- Taxation**
 factor in relief, 16, 17, 109-10
 local powers, 110-11
 transfers of local burden, 110
- Trend, business activity**
 Pittsburgh district
 coal production, 69, 70
 effect on employment, 65-71
 industry groups, 67, 68, 69-71
 production, total, 64, 65-67, 69
 relation to national trend, 64, 65
 relation to population trend, 64, 65-66
 steel production, 67, 68, 69, 70
 relation to employment trend, 66
- United States**
 production, 64, 72
 relation to population trend, 64
 relation to Pittsburgh district trend, 64, 65
See also Business activity; Industrial production
- Turnover rates**
 effect on number employed, 124-127
 industrial, U. S., 126, 127
- Unemployables**
 changing group, 13
 classes, Pittsburgh, 1930, 18, 118
 composition of group, 11-12, 18-19, 115-16, 118
 condition under commercial system, 13, 15
 limits of access to economic system, 13-14
 proportion of population, 12
 women, 13, 115, 118
See also Employables
- Unemployed**

- Allegheny County
 census, 1930, by class, 24
 estimate, April, 1930, 26
 estimates, 1929-36, 52
 part-time, 1930, 28-29, 115
 per cent of employables, 1929-36,
 52
- Allegheny County except rural,
 1934
 definition, 33-34
 differences among groups, 39-47
 number, 33
 by color, 33
 by nativity, 33
 by sex, 33
 not previously employed, 33
 part-time work, 38-39
 per cent of all employables, 33
 by age, 44
 by color, 33
 by industry group, 40
 by nativity, 33
 by sex, 33
 selected areas, 45, 46
 per cent of previously employed,
 39
- census, 1930
 classes defined, 24
 date of enumeration, 120-21
 definition, 119-21
 part-time, 28-29, 115, 120
 understatement, 23, 120
- Pennsylvania, 1930, by class, 24
- Pittsburgh
 classes A and B, 1930
 by industry group, 27
 by period of idleness, 25
 total, 1934, by ward, 46
 understatement, 25, 32, 120
See also Employed; Employment;
 Unemployment
- Unemployment
 Allegheny County
 April, 1930, 23-29
 at normal business levels, 83-86
 estimates, 1929-36, 52
- Allegheny County except rural,
 1934
 difference in incidence, 39-47
 part-time, 38-39
 definition, 19-22
- Pittsburgh district
 at normal business levels, 83-86
 time lost, employed workers,
 1929-36, 55-61
- related factors
 disabilities, 20, 136
 instability of opportunity, 8-11,
 63-81
 strikes and lockouts, 20-21
See also Employed; Employment;
 Unemployed
- Unemployment compensation, *see*
 Social Security Act
- Wages and salaries
 dependence on, 6-7, 10, 96
 significance of low rates, 7, 91
See also Earnings; Family in-
 come; Income
- Welfare agencies, *see* Relief agen-
 cies
- White, native, relative employment,
 1934, 41-43
- Women
 home work not on wage basis, 13,
 115
 increase of gainful employment,
 67
 not gainful workers, Pittsburgh,
 1930, 118
See also Female

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