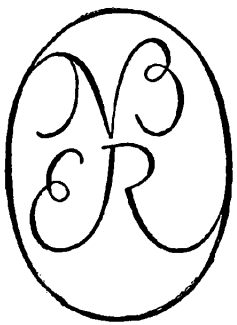
Personal Income during Business Cycles

BY DANIEL CREAMER

WITH THE ASSISTANCE OF

MARTIN BERNSTEIN



A STUDY BY THE

NATIONAL BUREAU OF ECONOMIC RESEARCH, NEW YORK

PUBLISHED BY

PRINCETON UNIVERSITY PRESS, PRINCETON

1956

L.C. CARD 55-5003

Printed in the United States of America
by Princeton University Press, Princeton, New Jersey

Personal Income during Business Cycles

NATIONAL BUREAU OF ECONOMIC RESEARCH

Studies in Business Cycles

1. *Business Cycles: The Problem and Its Setting*
   (originally published as No. 10 in the General Series)
   WESLEY C. MITCHELL
2. *Measuring Business Cycles*
   ARTHUR F. BURNS AND WESLEY C. MITCHELL
3. *American Transportation in Prosperity and Depression*
   THOR HULTGREN
4. *Inventories and Business Cycles, with Special Reference to Manufacturers' Inventories*
   MOSES ABRAMOVITZ
5. *What Happens during Business Cycles: A Progress Report*
   WESLEY C. MITCHELL
6. *Personal Income during Business Cycles*
   DANIEL CREAMER with the assistance of
   MARTIN BERNSTEIN

Relation of the Directors to the Work and Publications of the National Bureau of Economic Research

1. The object of the National Bureau of Economic Research is to ascertain and to present to the public important economic facts and their interpretation in a scientific and impartial manner. The Board of Directors is charged with the responsibility of ensuring that the work of the National Bureau is carried on in strict conformity with this object.

2. To this end the Board of Directors shall appoint one or more Directors of Research.

3. The Director or Directors of Research shall submit to the members of the Board, or to its Executive Committee, for their formal adoption, all specific proposals concerning researches to be instituted.

4. No report shall be published until the Director or Directors of Research shall have submitted to the Board a summary drawing attention to the character of the data and their utilization in the report, the nature and treatment of the problems involved, the main conclusions and such other information as in their opinion would serve to determine the suitability of the report for publication in accordance with the principles of the National Bureau.

5. A copy of any manuscript proposed for publication shall also be submitted to each member of the Board. For each manuscript to be so submitted a special committee shall be appointed by the President, or at his designation by the Executive Director, consisting of three Directors selected as nearly as may be one from each general division of the Board. The names of the special manuscript committee shall be stated to each Director when the summary and report described in paragraph (4) are sent to him. It shall be the duty of each member of the committee to read the manuscript. If each member of the special committee signifies his approval within thirty days, the manuscript may be published. If each member of the special committee has not signified his approval within thirty days of the transmittal of the report and manuscript, the Director of Research shall then notify each member of the Board, requesting approval or disapproval of publication, and thirty additional days shall be granted for this purpose. The manuscript shall then not be published unless at least a majority of the entire Board and a two-thirds majority of those members of the Board who shall have voted on the proposal within the time fixed for the receipt of votes on the publication proposed shall have approved.

6. No manuscript may be published, though approved by each member of the special committee, until forty-five days have elapsed from the transmittal of the summary and report. The interval is allowed for the receipt of any memorandum of dissent or reservation, together with a brief statement of his reasons, that any member may wish to express; and such memorandum of dissent or reservation shall be published with the manuscript if he so desires. Publication does not, however, imply that each member of the Board has read the manuscript, or that either members of the Board in general, or of the special committee, have passed upon its validity in every detail.

7. A copy of this resolution shall, unless otherwise determined by the Board, be printed in each copy of every National Bureau book.

(Resolution adopted October 25, 1926 and revised February 6, 1933 and February 24, 1941)

TO THE MEMORY OF
MY PARENTS

FOREWORD

BY GEOFFREY H. MOORE

IN THE experience of the 70 million wage earners, farmers, businessmen, landlords, and other recipients of income in this country, "business cycles" count as but one of the factors that cause their incomes to rise or fall. The ability or good fortune to hold a job, get a raise, avoid illness and accidents, pick a good spot for one's store, enlarge one's capital, and so forth, also is significant in the minds of many people. Indeed, the incomes of many individuals do not move in recognizable cycles; earnings are often fairly steady for long intervals but jump up or dip down every now and then as the vicissitudes of life unfold. Nevertheless, when the incomes of large numbers of individuals are added together these erratic variations largely disappear from sight, and instead we find that business cycles are a dominant factor, if not *the* dominant factor, causing fluctuations in aggregate income.

The layman, again from his individual point of view, has still less reason to reflect on the influence that changes in his income may have on the fortunes of other people. But economists have not neglected this aspect of the matter. Money is either spent or saved, and in the one case as in the other an increase or a cut in income will have repercussions on the economic actions of other individuals and of institutions. Moreover, most incomes are payments for current services of the individual or his property; hence they are "costs" to the individual or business firm or government agency that pays them. Changes in such costs also influence economic behavior.

Thus the ebb and flow in personal incomes is crucial from many points of view, and an investigation of the cyclical behavior of income cannot help but enlarge our knowledge of business cycles generally. In this Foreword to Dr. Creamer's study we select a few of his findings and attempt to show how they contribute to our understanding of this important feature of modern economic life.

In organizing the National Bureau's investigation of business cycles, Wesley Mitchell and Arthur Burns found it convenient to follow a plan that would yield answers to two questions. First, what typically happens during a business cycle? Second, what sorts of variation from this typical behavior have occurred? We shall consider Creamer's results in terms of these questions.

We start with the finding that recessions and revivals in general business have typically occurred at the same time as, or before, recessions and revivals in aggregate personal income for the country as a whole. In two instances since 1929 (namely, the 1933 and 1949 troughs) the turns in general business activity and in personal income came in the same month; in three instances (the 1938 and 1945 troughs and the 1948 peak) personal income turned one month earlier; and in three instances (the 1929, 1937, and 1945 peaks) income turned a month or so later. For earlier cycles, perhaps the most reliable indicator of cyclical turns in total personal income is factory payrolls (since 1929 the turns in payrolls have never differed from those in personal income by more than a month, except in the war period). The turn in factory workers' income came in the same month as that in business activity in 1924 and 1926, one month later in 1919 and 1923, two months later in 1918, three months later in 1921, and five months later in 1920 and 1927. For years before 1918 there is no dependable timing information on a monthly basis.

Of course, "general business activity" is a nebulous concept. Moreover, the measures of personal income are not beyond question. These results mean no more than that cyclical reversals in the movement of personal income have come at about the same time as, or a little later than, those in most other comprehensive measures of economic activity, such as production or employment or volume of trade. But that much is useful knowledge. Since we know that turns in many other types of time series typically precede the general turn, it appears that neither recessions nor revivals have ordinarily waited upon an actual reversal in the trend of aggregate personal income.[1] But such reversals have regularly *accompanied* general revivals and recessions, and no doubt have played a part in converting tentative and hesitant swings in economic activity into full-fledged cyclical expansions or contractions. The observer who wishes to identify the current stage of the business cycle surely cannot afford to ignore changes in income.

Creamer's analysis shows that most types or sources of income, like the total, rise and fall in fair conformity with the business cycle (Chart A and Table A). Some types may be relatively immune to

[1] We must leave open the question whether a slackening in the rate of rise or decline in income has regularly preceded the reversal—and what the consequences of this may have been. Ruth P. Mack's forthcoming monograph *Consumption and Business Cycles, a Case Study: The Shoe, Leather, Hide Industry*, to be published by the National Bureau of Economic Research, deals with this problem.

the shorter and milder cycles—e.g. wages and salaries from government, salary income in general, farm income, dividends, interest income, and rent—but even these usually fall in line in prolonged or severe phases. The component of total personal income that shows a closer association with the cycle, mild or severe, than any other major component is wage income in nonfarm commodity-producing industries (mining, manufacturing, and construction); it coincided precisely with the general business cycle turn in no less than six out of eight instances during 1929-1949, leading by two months at one turn (1948) and lagging by three months at another (1929). In 1953 it reached its peak precisely in the month (July) tentatively selected for the business cycle peak.[2]

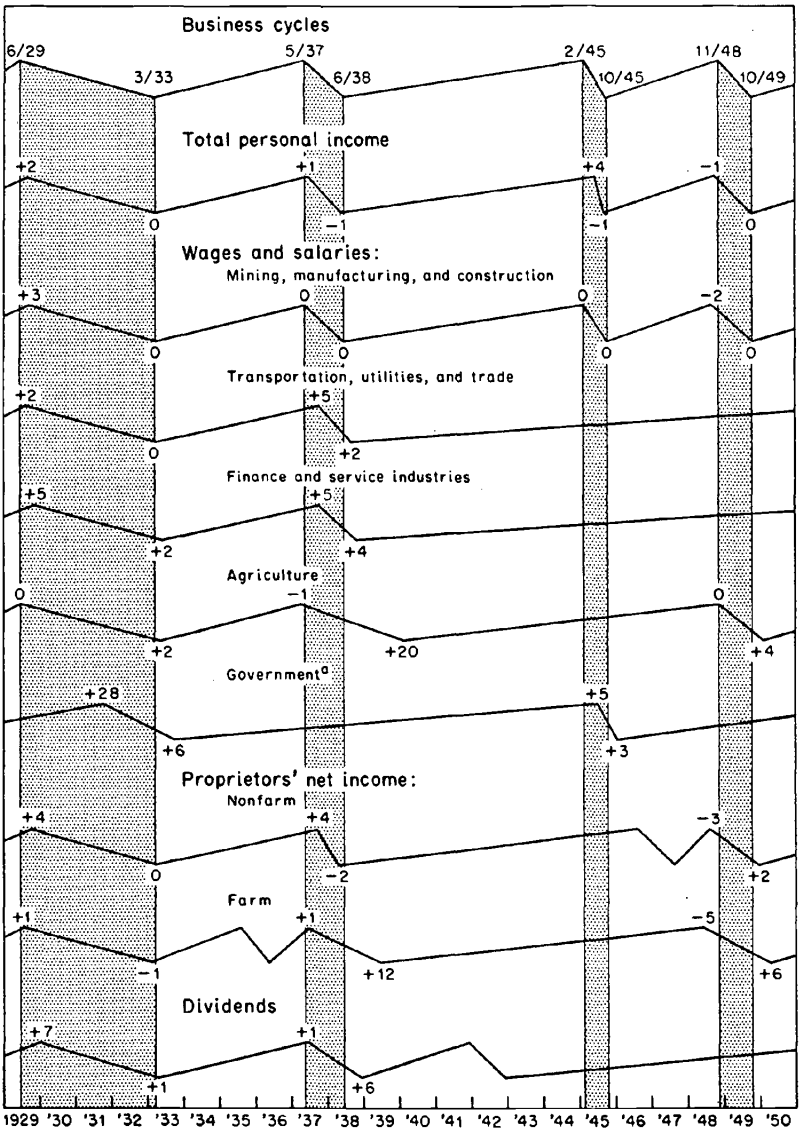
Table A also shows that were it not for the synchronous timing of wages and salaries in mining, manufacturing, and construction, aggregate income would clearly lag behind the business cycle. Every other major component has tended to lag. In fact, Creamer has discovered only one income source that typically appears to lead, and this is not a component of personal income as ordinarily defined—namely, the excess of realized capital gains over losses. The table does not reveal one other type of income that lags, namely, salary income, since salaries are combined with wages in the available comprehensive statistics. Nevertheless, it is quite clear from the sample series Creamer has brought together that income from salaries usually reaches cyclical turns later than wage income and later, too, than general business activity.

The second part of Table A shows how the typical lagging tendency in the several components of personal income has worked out at successive business cycle turns. At every turn but one, more components lagged than led; even at the 1948 peak, which marked the beginning of only a mild contraction, half the components lagged in the sense that they failed to contract at all. Thus business cycle recessions and revivals give rise to a sequence of changes in the various broad components of personal income. The sequences are by no means the same at every turn, but some are persistent, as Creamer's detailed review of the evidence demonstrates. In any event, it is clear that the process of change in the trend of income does not take place all at once, but is spread over a considerable

[2] So far as I am aware, this particular series was not used in determining any of the dates in the National Bureau's business cycle chronology, though of course close relatives of it, such as factory payrolls and total income, played a part, together with many other measures of economic activity.

CHART A

Specific Cycles in Total Personal Income and in Eight Components, in Relation to Business Cycles, 1929-1950



Shaded areas represent contractions of business cycles. Entries at specific cycle peaks and troughs are number of months lead (−) or lag (+) from corresponding business cycle peak or trough.

[a] Excluding work relief and military.

Source: Tables 4, 7, 20.

TABLE A

Timing of Turning Points in Personal Income and in Eight Components at Business Cycle Turning Points, 1929-1949

1. Personal Income and Components, by Type of Income

	NUMBER OF BUSINESS TURNS AT WHICH INCOME:				AVERAGE LEAD (—) OR LAG (+) (*months*)
	Leads	*Exactly Coincides*	*Lags*	*Skips the Turn*	
Total personal income	3	2	3	0	+.5
Wage and salary disbursements					
Mining, manufacturing, and construction	1	6	1	0	+.1
Transportation, utilities, and trade	0	1	3	4	+2.2
Finance and service industries	0	0	4	4	+4.0
Agriculture	1	2	3	2	+4.2
Government[a]	0	0	4	4	+10.5
Proprietors' net income					
Nonfarm	2	1	3	2	+.8
Farm	2	0	4	2	+2.3
Property income	2	0	2	4	+2.8

2. Components, by Date of Business Turning Point

	NUMBER OF COMPONENTS THAT:			
	Lead	*Exactly Coincide*	*Lag*	*Skip the Turn*
Peak				
June 1929	1	1	6	0
May 1937	2	1	4	1
February 1945	0	1	1	6
November 1948	3	1	0	4
Trough				
March 1933	1	3	4	0
June 1938	1	1	5	1
October 1945	0	1	1	6
October 1949	0	1	3	4

[a] Excluding work relief and military.

Source: Business turns are from the National Bureau of Economic Research business cycle chronology; other data are from Tables 4 and 7.

period. In 1937, for example, the peak in total property income was reached in April; peaks in the other components listed in Table A were distributed over the six months from April to October. No doubt a finer subdivision by type of income would show still wider dispersion.

It is not difficult to find reasons for the lagging tendencies displayed by most components of personal income. A neat illustration of the process is afforded by Creamer's materials on wage income in manufacturing. The total wage bill is a function of the number of persons employed, the average number of hours they work per week, and their average hourly earnings. If these three factors moved synchronously, with each other and with business cycles, so would the wage bill. But the typical sequence in a business recession has been first a decline in the average workweek, then a decline in the number employed, and finally a decline in hourly earnings; and a similar sequence characterizes revivals. The upshot, as the accompanying figures show, is that total wages turned in the same month as general business on five occasions during 1921-1938, and lagged behind on four.

Timing of Wages and Related Series, Manufacturing Industries, at Nine Business Cycle Turning Points, 1921-1938

	Leads	*Exact Coincidences*	*Lags*	*Average Lead (—) or Lag (+) (months)*
Average workweek	6	1	2	—3.1
Total man-hours	5	2	2	—1.4
Number employed	2	3	4	—1.1
Total wages	0	5	4	+1.3
Average hourly earnings	0	0	9	+8.6

Source: Table 8.

So much for the sequences among cyclical turns. Another aspect of the cyclical behavior of personal income that Creamer examines is the extent, or amplitude, of change in different types or sources of income during swings in business activity. Such measures indicate the cyclical hazards attaching to various sources of income. And they help us to analyze the factors underlying shifts in the fortunes of low income and high income recipients.

Cyclical amplitudes may be measured and compared in a variety of ways, and Creamer provides a number of such measures and comparisons. We shall summarize his results in terms of the behavior of the "shares," or percentages, of various types of income in total income. Economists have long been concerned with the reasons why these shares attain certain levels and why these levels change, and particularly with the division of income between labor and capital.

Although the available data do not exactly fit economists' concepts, they provide a rough facsimile, and have at least the merit of being observable. Table B shows the average level of the shares of several types of income at the peak and trough years of business cycles during the past four decades. Table C records the number of times a given share moved upward or downward during eleven business cycle expansions and ten contractions.

One's first impression from Table B is that business cycles have had a rather modest influence on the proportion of income derived from the several major sources or types. In prosperity and depression years alike, labor income (employee compensation, social security benefits, etc.) has constituted, on the average, somewhat more than 60 per cent of total personal income; income accruing to proprietors (farmers, independent professional people, and other business owners) has constituted about 20 per cent; and property income (dividends, interest, and rent) 17 or 18 per cent. Table C reveals that far from conforming consistently to the cycle, the shares of most of the broad types have moved rather irregularly, sometimes rising and sometimes falling during a given phase of the cycle.

But some consistencies are worth noting. Transfer payments have risen in relation to aggregate income in every contraction since 1929, and have declined relatively in every expansion. Such behavior might result merely from stability in these payments while total income changed, but in fact the dollar figures rose in every contraction, declined in two expansions, and in the remaining two expansions rose at a slower pace than in the adjacent contractions. Thus they have performed a countercyclical function, a subject to which Creamer devotes the final section of his study.

The share of property income has also moved down in expansions and up in contractions more often than not, but for a different reason. Here relative stability in the dollar figures is responsible, and the stability is imparted by interest and rent payments. Dividends are more volatile and, except in short business cycles, have usually traced out wider swings than total income. Hence the exceptions to the rule that the property income share conformed invertedly are attributable, in part, to shifts in the relative importance of the different components. One may hazard the guess that refinement of the data to obtain a truer property income total (eliminating some "rent" that is really labor income, adding some proprietors' income that is really rent, and so on) might alter the rule. Moreover, the use of a concept of personal income that would, for example, count

TABLE B

Percentage Distribution of Personal Income by Major Type and Source of Income at Business Cycle Turning Points, 1909-1949

(*per cent*)

	AVERAGE AT:		
	Initial Troughs	*Peaks*	*Terminal Troughs*
1. Ten Cycles, 1909-1949			
Labor income, total	60.6	62.2	62.8
Wages and salaries, receipts[a]	58.4	60.3	60.0
Other labor income and transfer payments	2.3	1.9	2.9
Proprietors' net income, total	20.9	20.9	19.7
Nonfarm	12.1	11.6	11.5
Farm	8.8	9.3	8.2
Property income, total	18.5	16.9	17.5
Dividends	5.2	5.4	5.1
Interest	5.4	4.5	5.3
Rent	7.9	7.0	7.1
Total personal income	100.0	100.0	100.0
2. Three Cycles, 1932-1949			
Wages and salaries, disbursements[a]	64.6	67.3	65.1
Mining, manufacturing, and construction	22.0	27.1	24.4
Transportation, utilities, and trade	19.3	17.1	18.7
Finance and service industries	10.1	8.1	8.9
Agriculture, forestry, and fisheries	1.6	1.6	1.6
Government	11.6	13.4	11.4
Transfer payments	4.3	3.2	5.2
3. Five Cycles, 1919-1938			
Mining, manufacturing, and construction	22.8	24.8	22.0
Wages	17.6	19.7	16.8
Salaries	5.2	5.1	5.2

[a] Wage and salary receipts equal disbursements less employee contributions for social insurance.

Source: Appendix A; data for overlapping years 1919 and 1929 are averaged. Wage and salary disbursements by industry are from *National Income Supplement, 1951, Survey of Current Business*, Dept. of Commerce, and *Survey of Current Business*, July 1953. Data for wages and salaries in mining, manufacturing, and construction, 1919-1938, are from Simon Kuznets, *National Income and Its Composition, 1919-1938*, National Bureau of Economic Research, 1941. For business cycle chronology see Table 2. Data for 1909 instead of 1908 are used for the initial trough of the first cycle.

capital gains and losses and undistributed corporate profits as property income would also change the result.[3] It is possible, too,

[3] Cf. Jesse Burkhead, "Changes in the Functional Distribution of Income," *Journal of the American Statistical Association*, June 1953, pp. 192-219.

TABLE C

Conformity to Business Cycles of Percentage Shares of Major Types and Sources of Personal Income, 1909-1953

	BUSINESS EXPANSION		BUSINESS CONTRACTION		TOTAL INSTANCES OF:	
	Share Rises (1)	*Share Falls* (2)	*Share Rises* (3)	*Share Falls* (4)	*Positive Conformity*[a] (5)	*Inverted Conformity*[a] (6)
1. 1909-1953 (Eleven Business Expansions, Ten Contractions)						
Labor income, total	8	3	7	3	11	10
Wages and salaries, receipts[b]	8	3	7	3	11	10
Other labor income and transfer payments	4	7	7	3	7	14
Proprietors' net income, total	4	7	3	7	11	10
Nonfarm	4	7	4	6	10	11
Farm	6	5	3	7	13	8
Property income, total	4	7	8	2	6	15
Dividends	9	2	4	6	15	6
Interest	4	7	9	1	5	16
Rent	2	9	6	4	6	15
2. 1929-1953 (Four Business Expansions and Contractions)						
Wages and salaries, disbursements[b]	3	1	3	1	4	4
Mining, manufacturing, and construction	4	0	0	4	8	0
Transportation, utilities, and trade	1	3	4	0	1	7
Finance and service industries	1	3	4	0	1	7
Agriculture, forestry, and fisheries	2	2	2	2	4	4
Government	2	2	3	1	3	5
Transfer payments	0	4	4	0	0	8
3. 1919-1938 (Five Business Expansions and Contractions)						
Mining, manufacturing, and construction						
Wages	4	1	0	5	9	1
Salaries	3	2	4	1	4	6

[a] Column 5 is the sum of columns 1 and 4. Column 6 is the sum of columns 2 and 3.
[b] See Table B, note a.
Source: See Table B, source note. Data for 1953 are from *Survey of Current Business*, Dept. of Commerce, February and May 1954.

that if monthly instead of annual data were available to measure the cyclical behavior of the several types of income, the change in one type relative to another, particularly in the shorter cycles, would be altered. Thus the conclusion that property income has usually been more stable than other income during business cycles, forming a larger percentage of the total in depressed than in prosperous years, must be qualified. We can say only that this relative stability

appears for property income as it is defined and measured in this study.

If the property income share moves inversely with the cycle, one might expect the labor income share to move positively. But Tables B and C belie that expectation. The labor income share has risen almost as often during business contractions as during expansions. This is true whether one takes wage and salary receipts alone or includes supplements and transfer payments, although, as already noted, the supplements and transfer payments do impart some cyclical stability.

However, if the wage and salary total could be subdivided to show wages separately from salaries, there is little doubt that the wage share would decline more frequently during contractions. That is to say, the share of wages per se in total income has probably been higher at peaks in business activity than at troughs, as a rule. This is clearly the case in mining, manufacturing, and construction, as Part 3 in Tables B and C demonstrates. Aggregate income of salaried personnel is more stable than that of wage earners, both because salary rates usually vary less than wage rates and because salaried-worker employment varies less than wage-earner employment. Although other factors are partly responsible, the relative stability of salary income is reflected in the distribution of wage and salary disbursements by industry (Part 2). In agriculture and in mining, manufacturing, and construction, wages are the dominant form of payment, and in these industries the share of wages conforms positively to the cycle in most instances. Salary payments are more important, on the whole, in the other sectors (distributive and service industries and government), and here inverse conformity of the shares is the rule. To some extent, of course, stability in an industry *permits* a salary form of payment, though many other considerations also apply.

Again, it must be recalled that the behavior of the labor income share in Tables B and C applies only to labor income as there defined. If we could include the part of proprietors' income that is a return for labor services rather than for capital, the share not only would be larger but might behave differently. Farm operators' income, which surely includes some "labor income," has moved more violently than other income more often than not, a fact that may surprise nonfarm readers. The income of nonfarm proprietors, in which group a diligent statistician would find the "typical businessman" as well as lawyers, doctors, and other professional people, has

moved in swings roughly as large, percentagewise, as those in total personal income.

Changes in the distribution of income by type have far-reaching influences on the distribution of income by size, and Creamer does not neglect this aspect of the matter. Drawn from the extensive researches of Simon Kuznets, his figures suggest that some of the typical cyclical changes in the distribution of income by size can be inferred from those in the distribution of income by type. From the evidence we have just reviewed one would expect that (1) groups whose incomes depend heavily on wages or on receipts from farming would experience income fluctuations somewhat larger than those in the grand total of all incomes, so that their share in total income would conform positively to business cycles; (2) groups whose incomes consist largely of salaries plus receipts from other sources in roughly the average proportions would have relatively stable incomes, with a share in the total that would move inversely with the cycle; (3) groups whose main sources of income are salaries, dividends, and nonfarm proprietorships would have a mixed experience, since the first source would tend to moderate and the second to amplify fluctuations in income, while the third would sometimes moderate and sometimes amplify. Now our description of group 1 applies to the mass of the population, or in terms of Kuznets' statistics, the lower 93 per cent ranked according to per capita income; the income sources we have ascribed to group 2 are characteristic of those income groups just below the top—the 2nd to 7th percentage band; and our group 3 is the top income group—the upper 1 per cent (Table D).[4] And Chart B and Table E, drawn up

[4] Table D does not distinguish farm from nonfarm proprietors' income, or wage from salary income. However, the income of the lower 93 per cent comprehends virtually all farm income (Simon Kuznets, *Shares of Upper Income Groups in Income and Savings*, National Bureau of Economic Research, 1953, Chapter 8). On this assumption the share of proprietors' net income in total income of the lower 93 per cent would be split as follows:

	1920	*1929*	*1937*	*1948*
Farm	14	10	11	11
Nonfarm	7	6	7	6

Hence in these years 72 to 78 per cent of the income of the lower 93 per cent consisted of labor income and another 10 to 14 per cent was income from farming.

No comprehensive data are available to distinguish wage from salary income, but the proportion consisting of salaries is surely larger in the higher income brackets. Some indirect evidence is provided by Kuznets' data, which show that employee compensation of the upper groups is a larger fraction of total employee compensation at business cycle troughs than at peaks, thereby

TABLE D

Percentage Distribution of Total Income by Type,
Three Income Groups and Total Population,
Selected Years, 1920-1948

(*per cent*)

	TOP 1 PER CENT				2ND TO 7TH PER CENT				LOWER 93 PER CENT				TOTAL POPULATION			
	1920	*1929*	*1937*	*1948*	*1920*	*1929*	*1937*	*1948*	*1920*	*1929*	*1937*	*1948*	*1920*	*1929*	*1937*	*1948*
Labor income	31	28	35	32	64	58	70	60	72[a]	74	73	78	66[a]	65	68	72
Proprietors' net income	24	20	17	36	20	21	15	29	21[a]	16	18	17	21[a]	17	17	20
Dividends	28	36	35	24	5	7	7	6	1[a]	1	2	1	5[a]	7	7	4
Interest	13	13	10	5	6	8	5	3	3[a]	5	4	2	5[a]	7	5	2
Rent	4	4	3	4	5	6	3	2	3[a]	3	3	2	4[a]	4	3	2
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

[a] Not precisely comparable with entries for later years.

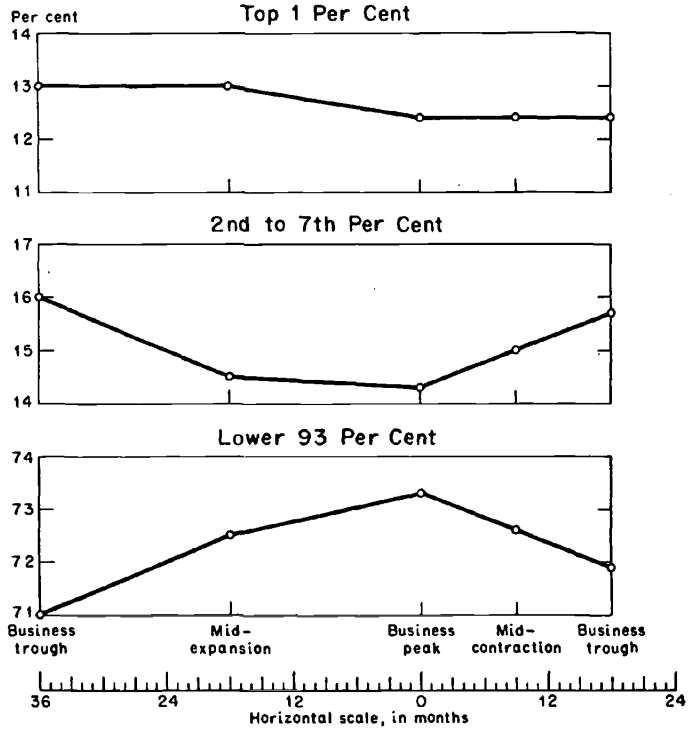
Note: Details may not add to totals because of rounding.

Source: Simon Kuznets, *Shares of Upper Income Groups in Income and Savings*, National Bureau of Economic Research, 1953, Tables 114, 123, and 125. The income variant used is the "basic variant."

along the lines of Tables B and C, reveal how nicely the inferences stated above are realized. As a rule during business expansions, when employment, hours of work, wage rates, and farm prices and

CHART B

Average Percentage Shares of Three Income Groups in Total Income during Six Business Cycles, 1919-1946



Source: See Table E.

incomes rise, the total income of the lower income group rises more rapidly than the total income of the whole population; during contractions the opposite situation prevails.[5] As we go up the income

exhibiting the stability characteristic of salary income (cf. Table 26 below and Kuznets' Table 23).

It is unfortunate that data are not available to make these distinctions in types of income properly, for without them one might well conclude, as Kuznets does in Chapter 3, that intertype shifts in income distribution are of relatively little consequence in accounting for cyclical shifts in the size distribution of income.

[5] We are speaking of the lower income groups in the aggregate, i.e. the lower 93 per cent. Kuznets' data, based on income tax returns, unfortunately do not

TABLE E

Percentage Shares of Three Income Groups in Total Income during Business Cycles

1. Average Percentage Shares (Six Cycles, 1919-1946)

	AVERAGE AT:		
	Initial Troughs	*Peaks*	*Terminal Troughs*
Top 1 per cent	13.0	12.4	12.4
2nd to 7th per cent	16.0	14.3	15.7
Lower 93 per cent	71.0	73.3	71.9
Total	100.0	100.0	100.0

2. Conformity (Seven or Eight Business Expansions and Contractions)

	BUSINESS EXPANSION		BUSINESS CONTRACTION		TOTAL INSTANCES OF:	
	Share Rises (1)	*Share Falls* (2)	*Share Rises* (3)	*Share Falls* (4)	*Positive Conformity*[a] (5)	*Inverted Conformity*[a] (6)
Top 1 per cent, 1913-1948	3	5	5	3	6	10
2nd to 7th per cent, 1918-1948	2	5	7	0	2	12
Lower 93 per cent, 1918-1948	5	2	1	6	11	3

[a] Column 5 is the sum of columns 1 and 4. Column 6 is the sum of columns 2 and 3.

Source: Simon Kuznets, *Shares of Upper Income Groups in Income and Savings*, National Bureau of Economic Research, 1953, Table 116, col. 1. The income variant used is the "basic variant."

scale greater stability in income appears, evidently due in large part to the stability of salaries; this leads to an inverted cyclical pattern in the shares of the income groups just below the top. But at the very top, dividend income becomes an important source, and imparts a certain degree of instability, particularly during the major cycles; hence the share of the top income group is less consistently inverted. This is the broad picture revealed by the statistics; the reader does not need to be reminded of the infinite variation in detail.

So far we have been concerned with the typical behavior patterns of income during business cycles revealed by Creamer's study. All this is grist for the mill of the business cycle analyst. With it he will be better prepared to describe and account for various other eco-

permit further subdivision of this group, and we therefore cannot determine how groups at various lower levels of income fare during business cycles.

nomic processes—the volume of savings, its distribution among the various investment outlets open to savers, the volume of consumer expenditures and their distribution among different classes of goods, the behavior of prices at retail, even the sources and strengths of pressures for increases in wages, in farm prices, and in interest rates. But the analyst will soon find himself needing more than the typical patterns, particularly if he is concerned with the business cycles of the future. For the mold in which business cycles are cast is neither simple nor static. Each new cycle seems to possess some of the characteristic features of its predecessors; but each also enjoys some peculiar features of its own.

Yet even the changing features of cycles are subject to analysis, and we should overlook an important contribution of Creamer's study if we did not review some of his results from this point of view. As to the fact of variation, there is no lack of evidence, as indeed we have already seen. And some knowledge of its extent is useful, whatever we can say about its ultimate causes. Consider, for example, the data on changes in total personal income during business cycles in Chart C and Table F. A noticeable uniformity appears in the rates of growth of income during business expansions. The average rate of growth during ten expansions since 1909 has been about 8 per cent per year, the most rapid growth less than twice this average, and the slowest about half. Contrast this with the business contractions. The average rate of change has been smaller than in expansions, the range of variation far wider. Of course, in some or all of the contractions in which the annual data rise, monthly data would decline and perhaps reduce the dispersion (1944-1946 is an example). But monthly (and quarterly) income data give similar results for the period they cover and so do monthly bank clearings and debits outside New York City, which move like total income and cover a much longer period. The rate of change varies much more widely from one contraction to another than from one expansion to another.

In other words, what the level of personal income will be after a year of business contraction is far more uncertain than what it will be after a year of expansion. This proposition is attested more directly in the last two columns in Part 1 of Table F.

If this phenomenon were peculiar to personal income, it would demand a special explanation. But it seems to be characteristic of a wide variety of economic processes. Consider, for example, the analyses of thirty-seven comprehensive economic series given in

TABLE F

Changes in Personal Income and in Bank Clearings or Debits during Business Cycles, 1879-1953

1. Total Personal Income, Annual, 1909-1953

BUSINESS TROUGH	BUSINESS PEAK	BUSINESS TROUGH	CYCLE BASE[a] (*billions*)	CHANGE PER YEAR DURING: *Expansion* (*per cent of cycle base*)	*Contraction*	CHANGE DURING FIRST YEAR OF: *Expansion*	*Contraction*
1908	1910	1911	$ 30.4[b]	+5.3[c]	+.3		+.3
1911	1913	1914	33.6	+5.5	−1.8	+6.2	−1.8
1914	1918	1919	48.0	+12.4	+17.1	+4.8	+17.1
1919	1920	1921	65.0	+5.5	−20.6	+5.5	−20.6
1921	1923	1924	64.1	+10.5	+1.3	+6.5	+1.3
1924	1926	1927	74.8	+4.4	+.5	+5.2	+.5
1927	1929	1932	72.3	+4.4	−16.3	+2.5	−11.9
1932	1937	1938	57.6	+8.6	−9.5	−4.2	−9.5
1938	1944	1946	119.6	+13.5	+4.8	+3.5	+4.8
1946	1948	1949	193.2	+8.0	−2.1	+6.7	−2.1
1949	1953		235.1[d]	+8.2		+8.4	
Average, 1911-1949			80.9	+8.1	−3.0	+4.1	−2.5
Average deviation			33.5	2.8	8.4	2.3	7.7

2. Income Payments, 1921-1927; Personal Income, 1927-1953

BUSINESS TROUGH	BUSINESS PEAK	BUSINESS TROUGH	CYCLE BASE[a] (*billions at annual rate*)	CHANGE[e] PER YEAR DURING: *Expansion* (*per cent of cycle base*)	*Contraction*
3rd 1921	2nd 1923	3rd 1924	$ 61.7	+11.4	+.8
3rd 1924	3rd 1926	4th 1927	72.7	+5.5	+.7
4th 1927	2nd 1929	1st 1933	70.9	+5.5	−15.5
Mar. 1933	May 1937	May 1938	61.6	+12.7	−14.1
May 1938	Feb. 1945	Oct. 1945	116.6	+13.6	−9.3
Oct. 1945	Nov. 1948	Oct. 1949	194.1	+7.7	−5.0
Oct. 1949	July 1953		243.6[d]	+9.1	
Average, 1921-1949			96.3	+9.4	−7.1
Average deviation			39.4	3.2	5.9

Wesley Mitchell's *What Happens during Business Cycles: A Progress Report* (National Bureau of Economic Research, 1951, pp. 326-328). Three of the series are annual estimates of gross and net national product and personal income; the rest are monthly or quarterly measures of the physical volume of production, transportation,

TABLE F (continued)

3. Bank Clearings outside New York City, Monthly, 1879-1919; Bank Debits outside New York City, Monthly 1919-1953

BUSINESS TROUGH	BUSINESS PEAK	BUSINESS TROUGH	CYCLE BASE[a] (*billions at annual rate*)	CHANGE[e] PER YEAR DURING: *Expansion* (*per cent of cycle base*)	*Contraction* (*per cent of cycle base*)
Mar. 1879	Mar. 1882	May 1885	$ 13.1	+15.5	−3.8
May 1885	Mar. 1887	Apr. 1888	16.1	+16.9	−.4
Apr. 1888	July 1890	May 1891	21.2	+14.0	−9.8
May 1891	Jan. 1893	June 1894	23.7	+11.9	−19.1
June 1894	Dec. 1895	June 1897	22.6	+9.2	−2.8
June 1897	June 1899	Dec. 1900	30.3	+17.2	+5.9
Dec. 1900	Sept. 1902	Aug. 1904	41.3	+9.0	+1.9
Aug. 1904	May 1907	June 1908	53.3	+10.5	−13.1
June 1908	Jan. 1910	Jan. 1912	64.3	+14.5	+2.8
Jan. 1912	Jan. 1913	Dec. 1914	73.8	+8.1	−5.6
Dec. 1914	Aug. 1918	Apr. 1919	118.3	+20.8	+10.5
Apr. 1919	Jan. 1920	Sept. 1921	220.8	+31.5	−13.6
Sept. 1921	May 1923	July 1924	212.4	+11.3	−2.9
July 1924	Oct. 1926	Dec. 1927	264.0	+7.2	+8.3
Dec. 1927	June 1929	Mar. 1933	254.4	+7.7	−19.8
Mar. 1933	May 1937	May 1938	194.4	+12.9	−19.7
May 1938	Feb. 1945	Oct. 1945	337.2	+11.9	−4.8
Oct. 1945	Nov. 1948	Oct. 1949	602.4	+11.9	−6.5
Oct. 1949	July 1953		804.0[d]	+11.1	
Average, 1879-1949				+13.4	−5.1
Average deviation				4.0	7.3

[a] Average of all years, quarters, or months from trough to trough, trough values weighted one-half each.

[b] Average for incomplete cycle 1909-1911.

[c] Change from 1909 to 1910.

[d] Average for inverted cycle 1948-1953.

[e] Changes in monthly data are computed from three-month averages centered on business cycle trough and peak months.

Source: Business turns: National Bureau of Economic Research business cycle chronology. Personal income, annual: Appendix A. Income payments, quarterly: *Historical Statistics of the United States, 1789-1945*, Bureau of the Census, 1949, p. 321 (but note that imputed rentals, as given in Harold Barger's *Outlay and Income in the United States, 1921-1938*, National Bureau of Economic Research, 1942, Table 42, are here omitted). Personal income, quarterly and monthly: 1927-1928, estimated from income payments; 1929-1953, *National Income Supplement, 1951, Survey of Current Business*, Dept. of Commerce, and later monthly issues of *Survey of Current Business*. Bank clearings and debits: *Historical Statistics of the United States, 1789-1945*, pp. 324-325, and *Federal Reserve Bulletins*. Adjusted for seasonal variation by NBER.

wholesale prices, trade, employment and incomes, investments, dealings in securities, business profits and failures, bank clearings or

debits, and business activity in general. Eleven series cover 3 to 5 cycles; 12 series, 6 to 14 cycles; and 14 series, 15 to 21 cycles. From the average deviations about the mean rate of change per month in successive cycles we find that:

1. The mean average deviations of the per month rates of change for all thirty-seven series are (in per cent):

Expansion	
First half	1.5
Second half	1.4
Contraction	
First half	2.2
Second half	2.0

2. Thirty series show greater variability from cycle to cycle (larger average deviations) in rates of change during the first half of a contraction than during the first half of an expansion, one series shows the same variability, and six show less variability.

3. Thirty series show greater variability in the second half of a contraction than in the second half of an expansion, two show the same variability, and five show less variability.

4. Thirty-three series show greater variability in an entire contraction than in an expansion, and four series show less. The four are an index of production of fuel and electricity, an index of wholesale trade sales, the value of corporate security issues, and an index of deposit activity.[6]

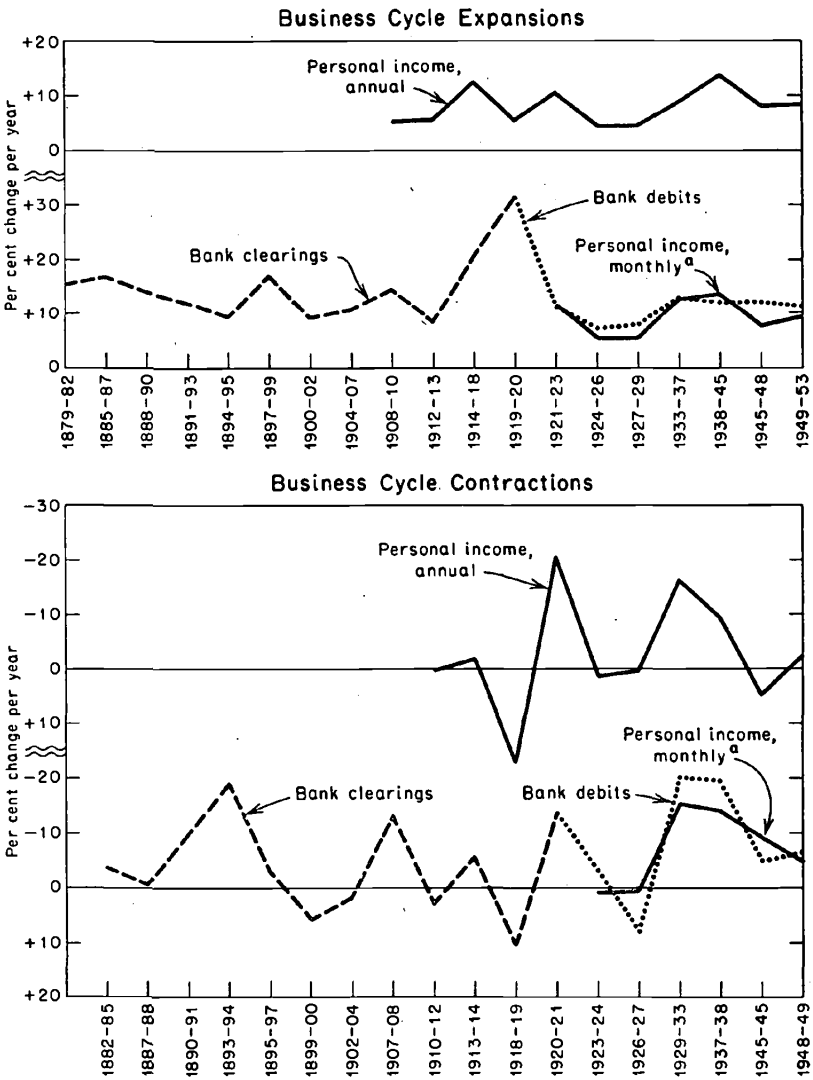
Does this mean that the American economy possesses an inherent tendency to expand at a rather definite rate, whereas its rate of contraction, when circumstances converge to produce a contraction, is in some sense adventitious? One additional feature of the data in Table F and Chart C is consistent with this hypothesis. The rate of change in income during an expansion seems to be correlated with the rate of change during the *preceding* contraction, but not the other way around. A sharp contraction is likely to be followed by a rapid

[6] One other exception to the rule appears when the series in Table F are deflated by price indexes. The average deviations of the rates of change per year are (in per cent):

	Expansion	*Contraction*
Deflated income (annual), 1911-1949	4.1	3.1
Deflated income (quarterly and monthly), 1921-1949	4.2	5.5
Deflated clearings and debits (monthly), 1879-1938	2.4	4.8

CHART C

Rates of Change per Year during Business Cycle Expansions and Contractions: Personol Income, and Bank Clearings or Debits outside New York City, 1879-1953



[a] Quarterly before 1929.
Source: Table F.

expansion and a mild contraction by a slow expansion, but no such rule applies when contractions are compared with preceding expansions.[7] Does this suggest that were it not for the variation in rates of contraction, the rates of expansion would have been even more uniform than they actually were? We cannot pursue this question here, but it would seem to merit the attention of business cycle theorists as well as economic forecasters.

There are other kinds of variation in the behavior of personal income during business cycles, and Creamer's record helps to account for some of them. At the beginning of the study he reviews secular trends in the types or sources of income. As we have seen, there are certain typical differences in both the timing and the amplitude of the several sources of income. If, then, these sources undergo secular change in relative importance, the behavior of the combination of sources comprised in total income may change also. Have fluctuations in total income in the United States become less marked on this account, or have they become more severe?

The principal secular changes in income sources that Creamer brings to our attention are:

1. The relative rise in labor income, particularly that part provided by transfer payments and that part provided by wage and salary disbursements of government.
2. The relative decline in aggregate income of farmers.
3. The relative decline in property income (dividends, interest, and rent).

The fact that transfer payments are highly stable or even countercyclical, and that government payrolls are more stable than private payrolls, suggests that the effect of the first trend would be to make labor income and total personal income more stable in the business cycle. The decline in the relative importance of farm income might

[7] The rule is by no means infallible, however, as the following rank correlation coefficients, based on the rates of change during expansion and contraction, indicate:

	Number of Observations	*Expansion with Preceding Contraction*	*Contraction with Preceding Expansion*
Personal income (annual), 1909-1953	10	+.71	−.55
Personal income (monthly and quarterly), 1921-1953	6	+.87	+.03
Outside clearings and debits (monthly):			
1879-1953	18	+.14	−.15
1908-1953	10	+.20	−.05
1921-1953	6	+.84	+.41

be expected to have a similar effect. But the decline in property income, insofar as it is due to the decline in interest and rent, would have a destabilizing influence on aggregate personal income.

To assess the net effect of these trends is no easy matter. One approach is illustrated by the hypothetical calculations in Table G. In 1937-1938, total personal income declined $5.5 billion, from $71.4 billion in 1937 to $65.9 billion in 1938. Using an income distribution by source that distinguishes the three trends mentioned above, and assuming the same percentage changes in income from each source that actually occurred in 1937-1938, we find that if these sources had

TABLE G

Estimated Effect of Shift in Income Distribution by Major Type and Source on Change in Total Personal Income, 1937-1938 and 1948-1949

	PERCENTAGE DISTRIBUTION OF DOLLAR TOTALS				PERCENTAGE CHANGE IN DOLLAR AMOUNTS	
	1913	*1937*	*1948*	*1953*	*1937-1938*	*1948-1949*
Wages and salaries, private industry	48.0	53.5	55.8	58.2	−10.2	−2.2
Wages and salaries, government	4.6	10.2	8.6	11.5	+11.0	+9.0
Other labor income and transfer payments	.9	3.4	6.4	6.4	+20.8	+10.5
Farm proprietors' net income	10.1	7.9	8.6	4.5	−21.4	−27.7
Nonfarm proprietors' net income	15.2	9.3	10.8	9.6	−4.5	−2.3
Dividends	6.0	6.6	3.5	3.3	−31.9	+4.2
Interest	4.0	5.0	2.5	2.7	−2.8	+9.8
Rent	11.2	4.3	3.7	3.8	+6.5	+2.7
Total	100.0	100.0	100.0	100.0	−7.7	−1.9

Estimated Change in Total Personal Income

	ABSOLUTE CHANGE[a] (*billions*)		PERCENTAGE CHANGE	
	1937-1938	*1948-1949*	*1937-1938*	*1948-1949*
Using 1913 weights (1st col. above)	$−5.9	$−5.5	−8.3	−2.7
Using 1937 weights (2nd col. above)	−5.5[b]	−2.9	−7.7[b]	−1.4
Using 1948 weights (3rd col. above)	−4.8	−4.0[b]	−6.7	−1.9[b]
Using 1953 weights (4th col. above)	−4.0	−1.0	−5.6	−.5

[a] Derived by applying the estimated per cent changes to total personal income at the peak, in billions, i.e. 1937: $71.4; 1948: $205.1.

[b] Actual change.

Source: Tables A-1, A-2, and A-3. For sources of 1953 data see Table C; data on employee contributions for social insurance for 1953 were supplied directly by the Department of Commerce.

had the same relative importance they had in 1913, the decline in aggregate income in 1937-1938 would have been $5.9 billion. If, on the other hand, total income had been derived as it was in 1948, the 1937-1938 decline would have been only $4.8 billion. And it would have been still smaller, $4.0 billion, if the respective sources had had the same relative importance as in 1953. Compared with 1913, the 1953 distribution effected an offset of nearly $2 billion, or about one-third of the actual decline. Results even more striking are obtained when the 1948-1949 decline is reconstructed on the basis of the 1913 and 1953 distributions, as the table shows. In dollars, the 1948-1949 contraction came to 4.0 billion; with the 1913 distribution, it might have been 5.5 million; with that of 1953, only 1.0 billion.

When the calculation is confined to labor income (divided into three components: wages and salaries, private industry; wages and salaries, government; and other labor income and transfer payments) the results are:

ESTIMATED CHANGE IN TOTAL LABOR INCOME
(*billions of dollars*)

	1937-1938	*1948-1949*
Using 1913 weights	—5.6	—2.1
Using 1937 weights	—3.9 (actual)	+.2
Using 1948 weights	—3.4	+.6 (actual)
Using 1953 weights	—3.1	+1.2

Here we find that the rise in importance of government payrolls and of transfer payments has clearly tended to offset the cyclical declines in private payrolls. In 1948-1949, indeed, the countercyclical movement of these two components, at their then level of importance, was sufficient to cause a rise in total labor income; whereas if they had had only the size they had in 1913, aggregate labor income would have declined. The stabilizing influence of these elements in labor income evidently continued to grow after 1948.

Such hypothetical calculations may be helpful in assessing the trends and cyclical characteristics disclosed by Creamer's study. They must, however, be interpreted with caution. Our calculations do not take into account all aspects of the distribution of income by source or type, and some neglected aspects might alter the conclusion. For example, the growing relative importance of durable-goods manufacturing industries as a source of income may have operated to enhance the variations in total income. Furthermore, in judging the influence of trends in the distribution of income by source it may

be important to take account of rates of remuneration separately from volume of input. Finally, the neglect of possible indirect effects of changes in the distribution of income by source (via consumption or investment, for example) imperils any conclusion drawn from the figures.

Moreover, if the relative rise in the more stable sources of income had been a potent factor, one would have expected to see some evidence of it in Chart C. The chart reveals no clear trend toward a reduction of the swings in personal income during either expansions or contractions. However, before reaching a final judgment on whether some moderation of the cyclical swings in income is in prospect for the future, the reader should consider Creamer's analysis in Chapter 8 of certain governmental programs that offset cyclical losses in personal income. These have only recently flowered. The combined power of the unemployment compensation system, the progressive personal income tax, and the farm price-support program will not be negligible. If our estimate that shifts in the sources of income have made at least a slight contribution in the same direction is correct, there may be ground for believing that the fluctuations in income that accompany business cycles will be moderated in some degree.

ACKNOWLEDGMENT

We owe a special debt to Arthur F. Burns, Geoffrey H. Moore, and Millard Hastay; their comments have given shape to the inquiry and saved us from error at numerous points. We are also obligated to the National Income Division, United States Department of Commerce, for making their unpublished estimates available; without their gracious assistance much of the detail of our analysis would be lacking. We are under a similar obligation to our colleagues Daniel M. Holland, Lillian Epstein, and Elizabeth Jenks for permitting us to draw on their unpublished materials and to Harry Eisenpress for permitting us to draw on his detailed knowledge of the National Bureau's techniques for cyclical analysis of time series.

We have benefited also from comments by Lawrence Klein, Frederick C. Mills, and Anna Jacobson Schwartz. The manuscript has gained much in clarity from the work of our editorial staff and from H. Irving Forman's charts. To all our sincere thanks.

Daniel Creamer

CONTENTS

APPENDIXES

TABLES

CHARTS