

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Measuring Recessions

Volume Author/Editor: Moore, Geoffrey H.

Volume Publisher: UMI

Volume ISBN: 0-87014-375-1

Volume URL: http://www.nber.org/books/moor58-1

Publication Date: 1958

Chapter Title: OTHER APPLICATIONS

Chapter Author: Geoffrey H. Moore

Chapter URL: http://www.nber.org/chapters/c2595

Chapter pages in book: (p. 24 - 34)

recovery, as well as by events and policies that originate elsewhere. Historical patterns and relationships ought not to be transplanted mechanically. They can and should be used to help us formulate realistic appraisals of existing situations.

5. OTHER APPLICATIONS

So far, attention has been on the use of the measures provided in this report to indicate the severity of recessions and to judge the prospects of recovery. Another use may be mentioned briefly. By applying the measures to a wide variety of economic data one can determine some of the distinctive characteristics of each recession—what sectors or aspects of economic activity are strong and what are weak. For example, in both the 1953-54 and 1948-49 recessions residential building displayed great strength; in 1937-38 and 1929-30, notable weakness. These differences are sharply etched in the percentage changes in the volume of contracts (Appendix A). Six months after recession began, residential contract volume (seasonally adjusted) had dropped 40 per cent in 1929 and 21 per cent in 1937, but had risen 3 per cent in 1948-49 and 10 per cent in 1953-54. Consumer instalment credit advanced vigorously in 1948-49 (it was 28 per cent higher a year after the recession began), rose moderately in 1953-54 (4 per cent higher), but declined appreciably in 1929-30 (9 per cent lower), and 1937-38 (6 per cent lower). Such differentiation of the strong and weak sectors in the economy during a recession is essential to appropriate diagnosis and prescription of policies to encourage revival.

For this purpose, too, the type of measure presented here may well be extended to other data of strategic interest from a policy standpoint. Data on comparative changes in personal and corporate income tax payments, in unemployment benefits, in federal and in state and local expenditures, in public works contracts, in interest rates, in the money supply, and in Federal Reserve operations would enable one to appraise the strength and timing of either deliberate or "built-in" stabilization policies. The simple technique illustrated in this report can thus be adapted to provide an up-to-date, objective set of facts on which to judge not only the severity, scope, and unique character of a developing recession, but also the prospects for an early recovery and the vigor with which steps are being taken to bring recovery about.

In order to facilitate the application of this analysis an electronic computer program has been prepared for the IBM 704 which computes the percentage changes from peak month to the first, second, third and up to the twenty-fourth month after peak, for any given series and for any given list of peak dates. The program also makes a similar set of computations of percentage changes from trough months, so that it can be used to compare cyclical revivals as well as recessions. In addition, the total percentage change from peak to trough and trough to peak is computed, to provide a measure of the full amplitude of cyclical swings. Appendix A is, in fact, a photocopy of the print-out provided by the program (total peak to trough changes are omitted for lack of space).

6. 1957-1958 RECESSION

How does the current contraction in business activity compare with earlier contractions when measured by the methods described above? As already noted,

such a comparison requires that the date of the peak from which the contraction began be established, at least on a tentative basis. Accordingly, July 1957 was selected as the monthly business cycle peak date, and the third quarter of 1957 as the quarterly peak date. This determination was made in October 1957, when data through September were available for the more important economic series.

The selection of a peak date was difficult because a moderate decline in output and employment in manufacturing had been under way since late in 1956, while activity in most other sectors continued to advance. Indeed, some important factors, such as total personal income, had scarcely begun to decline by September 1957. Because of the continued rise in prices and wages, physical volume series on output, income, and trade reached peaks earlier than the corresponding value series. In general, during the first half of 1957 the physical volume of labor input (manhours) and output of the economy at large remained nearly constant or at best gently rising, while greater increases occurred in the pecuniary volume of output, trade, and income. Although declines in activity became widespread between August and September and have been extended since, it is difficult to say whether July or August should be considered the zenith. Subsequent revisions of the data may shift the weight of evidence to August, or, less likely, to an earlier month. It must be observed, too, that at the time the peak date was selected, the contraction had not yet become sufficiently pronounced, or lasted long enough, to qualify as a business cycle contraction in the National Bureau's chronology. The judgment that it was likely to become so has, of course, since been validated by events.

Once the peak date was determined, we could construct the tables in Appendix A that show the extent of the decline after the July 1957 peak for many economic series, and compare this decline with what occurred during similar intervals of time in previous business contractions. The first comparisons were with the two relatively moderate postwar contractions, 1948–49 and 1953–54, and the two severe prewar contractions that began in 1929 and 1937. Later, with the aid of the computational program developed for the IBM 704 electronic computer, we extended the comparisons to earlier cycles and made the computations in several variant forms.

Appendix A presents the record of what these comparisons have shown about the current recession as it developed, and how it stood at the time this report went to press. Drawing upon that record, Table 284 compares the percentage changes for the first seven months of the current recession, i.e., July 1957 to February 1958, with those for the corresponding periods of the preceding recessions. The summary columns at the right show how many of the indicators experienced a smaller decline in this recession than in the earlier ones, and how many a larger decline. Both the indicators of aggregate activity and the leading indicators are decisive in recording a substantially smaller decline in 1957-58 than in the severe contractions of 1937-38 and 1929-30. In comparison with the severe contraction of 1920-21 the leading indicators also show a substantially smaller decline, while most of the aggregates show a larger decline currently. Historically, the leaders have been a more reliable guide at this stage (seven months after the peak), and hence are entitled to greater weight. Thus, our evidence points to a less severe contraction on this occasion than those experienced in 1920-21, 1929-30, or 1937-38.

TABLE 284

PERCENTAGE CHANGES DURING FIRST SEVEN MONTHS OF EIGHT BUSINESS CYCLE CONTRACTIONS, TWO GROUPS OF INDICATORS

-	. -	-	A. TEN	INDICATOR	S OF AGG	REGATE E	A. TEN INDICATORS OF AGGREGATE ECONOMIC ACTIVITY	CTIVITY				
		Unemploy-	Gross National	Industrial	Freight	Bank Debits	Personal	Retail	Corporate Profits	Wholesale	Number Showing that 1957-1958 Decline is	wing that Decline is
π O.	culturai Employ-	Rate	(1st 2 quarters)	Production	loadings	Outside N.Y.C.	Income	Sales	(1st 2 quarters)	Index	Smaller	Larger
					Percentag	Percentage Change						
	-3.4	(+8-4)	-3.4	-10.3	-17.8	-4.7	-1.3	-4.9	п.а.	+0.1	ı	ı
Q,	n.a.	n.a.	+1.1	-1.3	-4.1	+3.9	п.в.	-2.7	-14.7	0.9-	-	10
	2.3	(+8.7)	-2.7	-8.3	-11.6	8.0-	-1.0	-2.5	-26.4	-0.1	2	7
	-3.3	(+1.9)	-2.6	-8.4	-15.4	-6.9	-3.1	-0.7	-16.9	-5.0	က	6 0
Q,	n.a.	n.s.	-1.0	-8.2	-2.9	-4.1	п.а.	-1.0	-39.9	-7.4	-	ю
	n.a.	п.в.	п.в.	-3.9	+1.6	+0.7	п.в.	+6.5	-34.1	+14.2	0	ĸĢ
- 1	4.4	п.а.	8-1-	-27.3	-24.6	-8.1	-8.1	-9.2	-52.2	-3.0	80	0
7	-5.4	n.a.	-5.5	-12.6	-11.1	-16.5	-8.1	-3.5	-41.9	-3.6	9	7
			·	Ra	Ranking of Percentage Change	centage Char	· 86				Average Rank, Five Indicators ^o	Rank of Average Rank
	2	2	2	9	7	2	2	7	ı	2	4.0	5.5
•	ľ	1	1	-	က	1	١	ю	l	7	1.0	1
	-	က	4	₹	ū	ಣ	_	4	ı	က	2.6	က
	e	1	က	ıo o	9 (9	m	01 0	1	9	4.0	ις Co
•	1	ļ	N	m (N -	ન લ	I	თ -	I	× ×	0.0	⁴' (
•			1	77 0	٦ ،	N 1	-	۰ ۰	l 	٠,	0.2	N 1
	4 73		- 90	۸ ه	0 4	~ ∞	* 10	တ		# 1 0	0.0 0.7	~ 00
			i	;	į	1	•	8	8			ļ
_	 00:1	_ 	.71	 49.	-0.	.75	9.1	.29	68. —	١.29		•75

æ

Change in rate, not percentage change in rate. Unemployment rate and layoff rate are ranked invertedly, with smallest increase given a rank of 1.
 See Tables 273 and 274. Coefficients are based on contractions prior to 1957-58.
 Nonagricultural employment, gross national product, industrial production, bank debits, personal income; corporate profits omitted because data for first quarter of 1958 not avail-

	Number Showing that 1957–1958 Decline is	Larger		1	10	∞	6	6	63	•	-	Rank of	Average Rank		20	-	က	4	63	9	œ	7	, ;	98.
	Number S 1957–195	Smaller		1	0	7	1	1	2	10	6	Average	Rank, Ten Indicators		4.9	2.1	3.2	3.5	2.9	6.9	7.1	6.2		1
	Industrial Stock	Prices		-11.6	+8.2	+8.3	9.8-	-2.2	-17.0	-28.2	-21.5	-			ю	73	1	4	က	ဗ	∞	7	į	.8 9
	Basic Commodity	Prices		-4.6	-2.5	10.04	-25.4	-1.2	-10.6	-24.9	-11.3				4	က	-	∞	8	10	7	ę	;	.46
	Business Failures,	Liabilities		+14.7	+13.1	+16.1	+13.6	-5.3	+283.3	+39.8	+36.0				4	83	2	က	-	∞	7	9	,	.61
ORS	New Incorpo-	rations		-6.5	-0.5	+4.5	-1.6	-4.7	-16.1	-11.2	-10.0		ge Se		ıΩ	73	-	က	4	œ	7	9	;	.82
G INDICAT	Comm. & Indus. Con-	Struction	e Change	-21.9	-1.6	-20.8	-14.8	-5.2	-63.6	-36.2	-27.2		entage Chan	1	ъ	-	4	က	81	œ	7	9	i	.71
B. TEN LEADING INDICATORS	Residential Construc-	tion Contracts	Percentage Change	-23.3	-20.3	+9.7	+31.2	+11.9	-46.6	-33.4	-44.0		Ranking of Percentage Change		10	4	က	-	8	•	9	7		.67
B. T.	New Orders,	Goods		-19.7	+5.7	-11.5	-16.6	+27.5	-22.2	-37.7	-29.8		Z.		20	2	က	4	1	9	œ	7		.75
	Gross Accession	Rate		(9-0-)	(-0.5)	(-1.2)	(+.0-)	(-6.3)	(+0.5)	(-1.3)	(-2.3)				4	က	10	7	œ	-	9	7		.36
	Layoff	Kate"		(+1.2)	(+0.1)	(+1.1)	(+0.8)	(+0.1)	(+0.3)	(+4.1)	(+0.6)				7	-	9	2	63	က	00	4		.32
	Average	Workweek		-3.9	-0.5	-2.5	-2.2	-3.2	п.в.	-14.6	-7.1				20	-	က	73	4	п.а.	7	9		8 6.
	Business Cycle Contraction,	First Seven Months		July 1957-Feb. 1958	Oct. 1926-May 1927	July 1953-Feb. 1954	Nov. 1948-June 1949	May 1923-Dec. 1923	Jan. 1920-Aug. 1920	May 1937-Dec. 1937	Aug. 1929-Mar. 1930				July 1957-Feb. 1958	Oct. 1926-May 1927	July 1953-Feb. 1954	Nov. 1948-June 1949	May 1923-Dec. 1923	Jan. 1920-Aug. 1920	May 1937-Dec. 1937	Aug. 1929-Mar. 1930	Rank Correlation	Coefficient

On the other hand, nearly all the leading series, and a majority of the aggregate indicators, registered larger declines in the seven months since July 1957 than in the corresponding periods of each of the four milder business contractions, namely, 1926–27, 1953–54, 1948–49, and 1923–24. The 1957–58 contraction appears, therefore, to be of intermediate proportions, not the mildest on record nor yet the most severe (see Chart 287). The rankings shown in the bottom section of the table confirm this indication.¹⁴

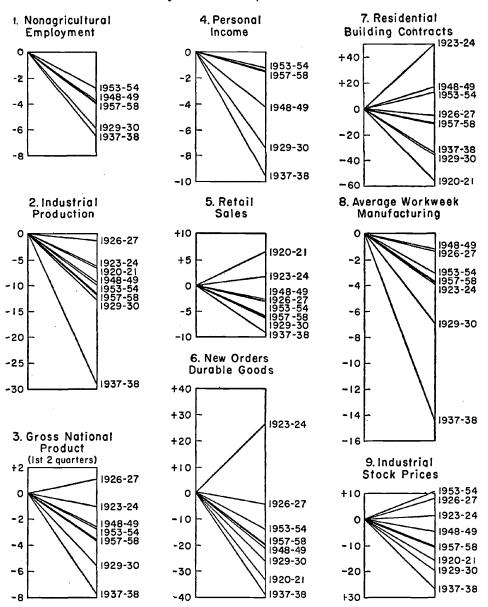
This evaluation of the severity of the 1957-58 contraction began emerging from the leading series when data became available for the fourth month after the July peak, i.e. for November 1957 (Tables 288 and 289). As we have seen in the preceding pages, a historical ranking of the recessions based on changes in the leading series during the first four months accords fairly well with their ultimate ranking according to severity. Hence when it became apparent (in late December) from data covering the four-month span July-November 1957 that declines in most of the leading series were larger than in the milder recessions in our list but smaller than in the most severe recessions, this bit of evidence helped to support other indications pointing to a recession of this general character. Data for five-, six-, seven and eight-month spans have provided further support.

On the other hand, the historical analysis of the indicators of aggregate economic activity suggested that a ranking of the recessions even moderately consistent with their ultimate severity would not emerge until at least six months had elapsed. Thus a comparison of the declines in these aggregates in the current recession with their declines in earlier recessions was not likely to yield consistent results during the first six months. This was indeed the case. Changes in the aggregates over a six-month span showed that the current decline was substantially smaller than in the severe contractions of 1929 and 1937, and slightly smaller than in the mild contractions of 1926 and 1953. But most of them also showed larger declines than in the contractions of 1923 and 1920, which rank fourth and fifth respectively in our list according to severity. This inconsistency is not likely to be erased until data for the aggregative indicators for the first nine months (i.e., through April 1958) are available. If the leading series turn out to be a reliable guide in this respect, the aggregates should then show larger declines than in the 1926-27, 1953-54, 1948-49, and 1923-24 contractions but smaller declines than in the 1920-21, 1937-38, and 1929-30 contractions.

The business contraction that began in mid-1957 rapidly engulfed most of our indicators, as its predecessors had done also. Table 278 shows that by October, the third month after the peak, eight of the ten aggregates and eight of the ten leading series had moved down from their levels at the peak. The

If August 1957 were selected as the business cycle peak instead of July, the current contraction would appear somewhat more severe relative to the earlier contractions, because the six-month decline from August to February in many of the indicators of aggregate activity would be nearly the same as the seven-month decline from July to February (since the three-month averages centered on July and August would be nearly alike), but the decline would be compared with six-month declines in the earlier contractions instead of with seven-month declines. The average ranks for the aggregate indicators in Table 284 would be only slightly altered, however, and those for the leading series scarcely changed at all. Thus the shift would not affect the conclusions given above.

CHART 287. Comparative changes during first eight months of business cycle contractions, selected indicators.



Percentage changes are computed from the three-month average of each indicator centered on the business cycle peak. The eight-month intervals are: Jan. 1920-Sept. 1920, May 1923-Jan. 1924, Oct. 1926-June 1927, Aug. 1929-Apr. 1930, May 1937-Jan. 1938, Nov. 1948-July 1949, July 1953-Mar. 1954, July 1957-Mar. 1958.

wide scope of the decline was maintained in succeeding months. More recently, a slight narrowing of the scope of the contraction has appeared, especially in the leading series, when the measurement is made in terms of changes over a

TABLE 288

SUMMARY COMPARISON OF 1957-1958 CONTRACTION WITH EARLIER BUSINESS CYCLE CONTRACTIONS, FOR SUCCESSIVE MONTHS AFTER PEAKS, TWO GROUPS OF INDICATORS	A. TEN INDICATORS OF AGGREGATE ECONOMIC ACTIVITY	Number Registering Smaller or Larger Declines in 1957-1958 Contraction than in Same Interval in Earlier Contractions	1 Mo. after Peak 2 Mos. after Peak 3 Mos. after Peak 4 Mos. after Peak 5 Mos. after Peak 6 Mos. after Peak 7 Mos. after Peak 7 Mos. after Peak 1957) (Decomber 1957) (Decomber 1957) (Decomber 1957) (September 1957) (February 1958)	Smaller Larger Smaller Larger Smaller Larger Smaller Larger Smaller Larger Smaller Larger Larger	6 4 1 4 3 4 1 4 4 1 4 4 1 4 4 1 4 4 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 1 4 4 1 1 1 4 4 1 1 1 4 4 1 1 1 4 4 1 1 1 4 4 1 1 1 1 4 4 1	8 7 1 6 2 7 2 6 2 6 2 6 3 3 5	3 2.6 2.6 4 1 2 5 2 3 2 3 1 6 1 4		7 6 2 1 6 1 7 2 5 5 2 8 0 7 0	9 6 1 5 2 6 2 5 2 6 1 7 1 5 2	DROUGH PARTAE VALUE TA VALUE OF
SUMMA			Earlier Contraction, Starting in		Oct. 1926	July 1953 Nov. 1948	May 1923	Jan. 1920	May 1937	Aug. 1929	

Source: Table 284 and Appendix A.

Oct. 1926 July 1953 Nov. 1948 May 1923 Jan. 1920 May 1937 Aug. 1929

three-month span (see Chart 290).¹⁵ The improvement has not yet carried as far as the similar improvement had at the end of the first six months of 1953–54 contraction. At that time (January 1954) four of the ten leading series had already moved above their level at the peak, whereas none had achieved this position by January 1958. Moreover, as is evident from the chart, reversals in these measures are not infrequent. Nevertheless, if the modest improvement that has occurred is sustained and extended, it may signal the beginning of the end of the 1957–58 contraction.

TABLE 289

RANKING OF 1957-1958 CONTRACTION IN RELATION TO SEVEN EARLIER BUSINESS CYCLE CONTRACTIONS, FOR SUCCESSIVE MONTHS AFTER PEAKS, TWO GROUPS OF INDICATORS

Months		Rank of Average Rank Contraction beginning													
after Peak	July 1957 (1)	Oct. 1926 (2)	July 1953 (3)	Nov. 1948 (4)	May 1923 (5)	Jan. 1920 (6)	May 1937 (7)	Aug. 1929 (8)	Correlation with Severity ^b						
		Six Ind	licators o	of Aggree	gate Eco	nomic A	ctivitya								
3 6	6 4.5	2 1	4 4.5	8	3	5 2	1 7	7 8	.18						
	<u>-</u> '		Ten	Leading	g Indicat	ors°	<u> </u>		<u> </u>						
1	1	2	3	7	4.5	6	8	4.5	.32						
2	1	2	3	8	5	7	6	4	.50						
3	3.5	1.5	1.5	6	3.5	5	7	8	.88						
4	5	1	2	3	4	7	6	8	.96						
5	4	- 1	2	3	5	6	8	7	.96						
6	5	1	3	4	2	6	. 8	7	.86						
7	5	1	3	4	2	6	8	7	.86						

Source: Tables 275 and 284, and Appendix A. The seven business contractions before 1957-1958 are arrayed from left to right according to their over-all severity (see text). A rank of 1 indicates a small decline, a rank of 8 a large decline.

It is well, however, to recall that in business contractions of the dimension that the 1957-58 contraction has so far exhibited, the interval from the business cycle peak to the date when economic activity in general regained the peak level has been at least a year and a half. If the contraction turns out to be more severe than any of the four mild or moderate contractions since 1920, as is presently suggested by the leading indicators, this interval may be exceeded.

^a Nonagricultural employment, gross national product, industrial production, bank debits, personal income, corporate profits. Not all series are available for all cycles—see Table 284.

b See Table 275. Correlation coefficients are based on contractions prior to 1957-58.

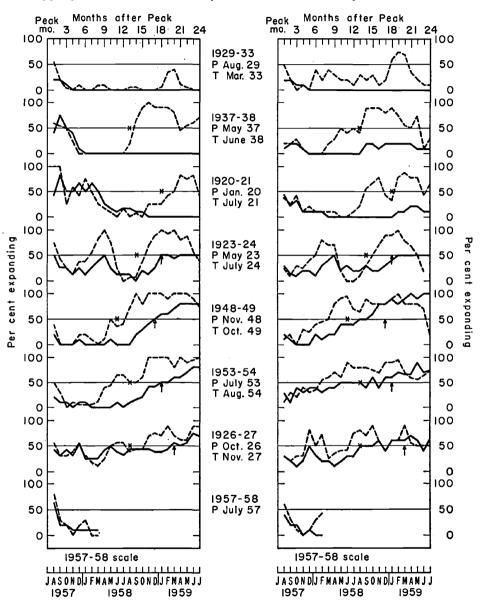
⁶ See Table 276.

¹⁵ Julius Shiskin pointed out (in February 1958) a similar development in several diffusion indexes compiled at the Bureau of the Census for the Council of Economic Advisers, and it has appeared in some other diffusion indexes compiled at the National Bureau of Economic Research. These indexes show, for example, that there has been a slight increase in the number of manufacturing industries reporting an advance in the workweek since autumn 1957, and a slight increase in the number reporting a rise in new orders.

CHART 290. Measures of the scope of business cycle contractions.

Ten Indicators of Aggregate Economic Activity

Ten Leading Indicators



Asterisks represent business cycle troughs.

Arrows represent dates when half of ten indicators of aggregate economic activity exceeded level reached at business cycle peak. For 1920–21 this date is December 1922, 35 months after the January 1920 peak; for 1937–38 it is December 1939, 31 months after the May 1937 peak (see Table 278).

On the other hand, these measures do not suggest that the period of less than peak activity will extend to the two and a half years that characterized the severe contractions of 1920–21 and 1937–38. In any event, a great deal depends on the governmental and private actions undertaken to bring about an early and rapid recovery.

Some of the distinctive characteristics of the 1957-58 contraction, as it has developed so far, may be observed in Table 284. One of the outstanding facts is the relatively small decline in personal income. The decline of 1.3 per cent, July 1957 to February 1958, is only one-sixth as large as the 8.1 per cent declines during the first seven months of the 1937 and 1929 contractions. Yet the current decline in employment is more than half as large as in 1937 and 1929, and the current decline in gross national product is also a substantial fraction of the corresponding declines in 1937 and 1929. The greater stability of personal income is partly attributable to the larger role of unemployment compensation and other transfer payments, partly to the growth of employment in government, distributive trades, and other service industries where rates of pay and the volume of employment are typically more stable. In terms of disposable personal income (that is, income after federal income taxes), the contrast between the current recession and those of the thirties would be even greater.

Another unusual and perhaps not unrelated feature of the 1957–58 recession is the fact that the wholesale price index after eight months of recession is still above its level when the recession began. Except for 1920, this is the only recession in which this index, which covers all commodities except farm products and foods, has not declined, although in 1953–54 the decline during the first eight months was minute. In the case of the consumers price index, the rise during the current recession is less exceptional, as the following figures indicate:

		Per	centage C	hange during		
Business Cycle	First	Eight Month	S	First	Twelve Month	18
Contraction, beginning	Basic Commodity Price Index	Wholesale Price Index, Excl. Farm & Food	Consumers' Price Index	Basic Commodity Price Index	Wholesale Price Index, Excl. Farm & Food	Con- sumers' Price Index
July 1957	-4.6	+0.1	+2.6			
Oct. 1926 July 1953 Nov. 1948 May 1923 Jan. 1920 May 1937 Aug. 1929	$ \begin{array}{r} -2.8 \\ +2.0 \\ -24.3 \\ -2.1 \\ -15.0 \\ -23.9 \\ -12.4 \end{array} $	$ \begin{array}{r} -6.0 \\ -0.3 \\ -5.3 \\ -4.7 \\ +9.7 \\ -3.2 \\ -4.0 \end{array} $	+0.6 +0.4 -2.1 +1.2 +3.8 -0.9 -0.7	+4.5 $+4.2$ -22.1 -8.1 -39.2 -32.4 -17.4	$ \begin{array}{r} -5.9 \\ -0.2 \\ -5.1 \\ -7.0 \\ -18.6 \\ -5.3 \\ -8.6 \end{array} $	$ \begin{array}{r} -1.4 \\ +0.3 \\ -1.9 \\ +0.4 \\ -1.2 \\ -1.7 \\ -4.4 \end{array} $

¹⁶ Cf. Daniel Creamer, Personal Income during Business Cycles (National Bureau of Economic Research, 1956). Another factor is the secular decline in the proportion of total income derived from farming, which has in the past declined more sharply than total nonfarm income during business recessions. Indeed, in the current recession farm income has been increasing rather than declining. The increasing number of wage contracts that tie rates of pay to the cost of living, which has risen in the first eight months of this recession, may have imparted some stability to incomes currently, although this hinges on the question whether the resulting increases in wage rates may not have brought about some reduction in hours or in employment.

On the other hand, the price index of basic commodities (cotton, wool, copper, steel scrap, etc.) has declined during the first eight months of the current recession as it has in every other recession except 1953-54.

In the more severe recessions, all three price indexes declined further in the first twelve months than they had in the first eight. But in the milder recessions an interesting gradation appears. The basic commodity price index showed a smaller decline or an actual increase after twelve months in the 1926–27, 1953–54, and 1948–49 recessions. The decline in the wholesale price index remained about the same. The consumers' price index showed further weakness, so that the declines after twelve months were somewhat greater than after eight (or the increases were less), even in the mild recessions. Thus our figures reflect some of the lagging relations among prices, as well as the influence of mild or deep recessions upon the entire price structure.

Other facets of the 1957-58 contraction are well worth study and reflection when set against the corresponding pattern of events in previous contractions. The "forward look" that these previous contractions provide is illuminating. We have been able to touch on only a few of the many strategic economic variables and relationships that can usefully be analyzed during the course of a business contraction, a fact that underlines the tentative and preliminary character of the experiments reported above.