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Recent Economic Changes and the Agenda of Business-Cycle Research

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I

"A naturalist," wrote E. B. Wilson in an appraisal of Wesley Mitchell's studies of business cycles [34], is "one who is at great pains to go out into the world of concrete and detailed fact, to 'look see' what phenomena of a certain sort are really like, to find out in nature something that is new to knowledge." By this standard, Wilson felt, the work on business cycles that Mitchell had begun in the early 1900's and which the National Bureau of Economic Research had established, under Mitchell's leadership, as a continuing and important part of its research program in the 1920's, was the work of a naturalist.

"Few of us," Wilson went on to say, "fully realize the trouble to which the naturalist will go to get his material and to put it into some sort of order suggested to the experienced eye by the similarities and differences among its items. Indeed such pains . . . are widely regarded as pathologic by those who take the 'lazier way' of a priori theory or of exhortation to social action."

Whatever the views of others, Mitchell and those who assisted and followed him at the National Bureau have always been willing to go to "great pains" – the fact that impressed Wilson – to gather the concrete and detailed factual material needed to see what business cycles are "really like." They believed that such knowledge is required to deal effectively with the problem of economic instability.

This willingness to "go out into the world" is attested by the statistical series Mitchell himself, almost single-handedly, took the trouble to construct and study before sitting down to write the great monograph on *Business Cycles* he published in 1913. It is attested by the bushels of data sifted by

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Willard Thorp in order to build a strong base for the National Bureau's first chronology of business cycle expansions and contractions – a chronology that now, in its latest form, appears regularly in the Department of Commerce publication, *Business Conditions Digest.* It is attested by the National Bureau's file of well over a thousand time series compiled over many years from a multitude of sources (some extending back into the nineteenth century), annotated and adjusted for comparability, and analyzed by Macaulay, Kuznets, Burns, Moore, Stern, Hultgren, Schwartz, Lipsey, and many others – a file that constituted the forerunner of the computerized "data bank" currently operated by the National Bureau. It is attested, most recently, by Zarnowitz's collection of short-term economic forecasts; by the "realized" prices dug up by Stigler, Kravis, and their collaborators; by Juster's efforts (in a joint enterprise of the National Bureau and the Census Bureau) to develop a probability series on consumer expectations; and by the recently published National Bureau study, *New Series on Home Mortgage Yields Since 1951* by Guttentag and Beck.

However willing those who study business cycles may be to go into the field or delve into dusty records for their material, the number of observations on business cycles available for analysis must be severely limited. One reason is that business cycles are a type of fluctuation found in the aggregate economic activity only of industrialized nations "that organize their work mainly in business enterprises" [11, p. 3]. Such nations hardly existed prior to the nineteenth century. Further, business cycles last too long, on the one hand – in the United States they have averaged some four years – for the passage of even decades to yield many specimens. And they are, on the other hand, too short to be described adequately by observations less frequent than monthly or at least quarterly. Compounding this difficulty is that at the heart of the phenomenon of business cycles are interrelationships among the numerous parts of the economy. What is needed, then, if the interrelationships are to be traced empirically, are monthly or quarterly data on many different kinds of economic activities. Data approaching the requisite scale have become available only in relatively recent years. The early business cycles listed in the National Bureau's chronology are, so to speak, glimpsed only at a distance; they escape close analysis in the laboratory.

Nor is this all. Not the least difficulty confronting the student of business cycles stems from the fact that, unlike the phenomena studied in most other sciences, business cycles have changed their character over the years. Interrelationships among the parts of the economy have been altered by changes – sometimes deliberately planned – in the nation's economic

structure, organization, and institutions. An understanding of these changes and of their implications for policy is a major objective of business cycle analysis. To seek this objective requires empirical study of a complex and evolving economic system. This, in turn, surely requires "facts on a wholesale scale" [8].

It is for these reasons, although not for them alone, that we ask whether recent economic changes in the United States constitute another specimen of a turn in business from expansion to contraction; that is, whether the expansion that began in 1961 had finally come to an end – whether another peak should be listed in the National Bureau's chronology of business cycles – whether we have recently been experiencing a business-cycle "contraction," as it is called in the National Bureau's terminology or, in common parlance, a "recession."

We ask also what preliminary comparison of the recent experience with earlier experience tells us, and what this examination suggests for the program of research on business cycles.

II

Any doubts economists may have had in the spring of 1970, or even later, about the character of the economic slowdown already evident during the winter of 1969-70, have been largely resolved by subsequent events. We may now express the judgment that the business-cycle expansion which, according to the National Bureau's chronology, began in February 1961, came to an end during the second half of 1969.[1] Declines during and since 1969, though modest in most types of economic activity, have been widespread and persistent. Further, the declines appeared, as a rule, first among the "leading" indicators, then among the "roughly coincident" indicators, and finally among the "lagging" indicators. In these several respects, the economic changes of 1969-70 bear a family resemblance to the economic changes that have characterized business-cycle contractions of the past. The resemblance is sufficiently close to warrant designating the 1969-70 period as one of contraction.

To avoid any ambiguity, let us add an adjective to the designation. What has been experienced during 1969-70 is a "classical" contraction, that is, a

[1] A question may be raised whether economic changes between 1961 and 1969 constituted a single business-cycle phase. We defer this question to a later section.

contraction of the same general type as those listed in the National Bureau's business-cycle chronology. It is not merely the contraction (or recession) phase of a rate-of-growth cycle, the type of economic change analyzed by Ilse Mintz [26; 27].

Note, first, what is revealed by the seventy-odd cyclical indicators presented regularly in BCD. These, we should recall, were economically important series found by the National Bureau to conform well to business cycles and to stand high according to other criteria as indicators of current business conditions [31]. By the end of 1969, two-thirds of these indicators had reached their "current high values," as these are called in BCD, and had begun to decline. (Table 1; the tables are displayed at the end of this Supplement. The unemployment rate and other series that rise when general business conditions deteriorate are, of course, treated on an inverted basis.) By the middle of 1970, these indicators had been joined by others, pushing the fraction that had peaked to over 80 per cent of the total. And by the late autumn of 1970, over 90 per cent of the series had reached their highest levels at some earlier date.[2]

About half of the BCD indicators of economic activity happen to be leading indicators. These have sometimes declined without a contraction occurring later, as Mintz and others have pointed out. Let us, then, narrow our focus to the indicators that are of primary importance for the present purpose, namely, the roughly coincident ones. By the end of 1969, 14 of the 29 coincident indicators – half – had reached their current highs. By June or July 1970, the fraction had risen to three-quarters.

We may also limit our count in a rather different way, focusing on the indicators of "real" economic activity to avoid being misled in our judgment by the continuation of price inflation. The reasons for concentrating on indicators of real economic activity are discussed more fully in [18], from which two main points may be extracted:

1. When price levels change but slowly or recessions are of considerable amplitude, as was usually the case before World War II, the deflation question is of small importance. Pecuniary (that is, current dollar) indicators are only slightly affected by price level changes; they provide only slightly biased information of real changes. We may therefore safely ignore the bias. This is no longer true when price levels change rapidly and recession amplitudes are

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[2] By then, we should note, some indicators – all but one of them "leading" (and most of them also pecuniary) – had touched bottom and were already on the way up.

small. To follow the "traditional" procedure of using pecuniary as well as real indicators of economic activity in this case would mean a refusal to recognize that the assumption underlying the procedure was no longer tenable.

2. It is true that changes in price-cost relationships and fluctuations in the rate of change of the general price level constitute major elements in the process by which a business expansion attains momentum and gradually develops the restrictive forces that tend to bring it to an end. Similarly, prices and costs play a part in the process by which recessions breed revivals. We cannot adequately describe what happens during business cycles, or adequately explain what happens, without referring to price changes. However, we can take care of this need by deflating out only the *trend,* and particularly the trend in the general price level, and thus avoid deflating out the cyclical changes in prices and price-cost relations. In the case of aggregate economic activity, this procedure would yield results not greatly different from the full deflation procedure we follow here.

We find that all the indicators of "real" economic activity – whether leading, coincident, or lagging – were declining by the spring of 1970. Further, all but one continued to decline during the summer and fall.[3]

Another indication of the widespread character of the contraction is provided by the diffusion indexes included in Table 2. By the middle of 1970, about 85 per cent of all nonagricultural industries were reporting declines in employment, measured by the change over the preceding six months. The corresponding percentage for declines in production was about 80.

Because there is no unique measure of aggregate economic activity, and the various measures that might be constructed conflict in some degree –

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[3]We count a series as declining when it is in the contraction phase of its "specific cycle," that is, in the phase marked off by its own peak and trough. A series may occasionally rise for a month or so during its specific-cycle contraction phase, just as a series may occasionally fall during its specific-cycle expansion phase. An alternative count would exclude the occasional rises and include the occasional declines, that is, it would simply show the percentage of series falling between each pair of contiguous months [29, Chap. 8]. According to this "current-basis (1-month span) diffusion index," the fraction of indicators of real economic activity falling during the spring of 1970 was about two-thirds.

The reader's attention is called to a qualification stated in the note to Table 1. For nine of the indicators, it is the most recent figure available (as of March 31, 1971) that is the "current high." For another one, the current high is no farther back than one month from the most recent date. We cannot say that these series have in fact already entered their specific-cycle contraction phase. Note, however, that all are pecuniary indicators, and six of the twelve are lagging indicators.

more so when a turn in business conditions is gradual, as has been the recent case – it is not easy to date the turn in aggregate economic activity in terms of a single month. The indicators of real output began to decline shortly after the middle of 1969. For example, the high in GNP in constant prices was reached in the third quarter of 1969. In the industrial production index, the turn came in July 1969. The unemployment rate, both for all workers and for married males, reached its low even earlier, in February or March. (However, neither unemployment rate exceeded its low by more than one- or two-tenths of a percentage point until September 1969.) On the other hand, man-hours worked in nonagricultural industries turned down later, in December; and the number of employees on payrolls of nonagricultural establishments, later still – in March 1970.

As already indicated, the pecuniary indicators – those expressed in current-dollar terms, such as wage and salary payments, sales receipts, prices, and interest rates – turned down later, as a group, than the real economic indicators. A few of the pecuniary indicators, of which GNP in current prices and the industrial wholesale price index are notable examples, did not turn down at all. Reflecting these differences in timing of peaks in particular kinds of economic activity, the scatter reported in Table 1 is rather wide.

The difficulty posed by this scatter in settling on a single month as the turning point is not serious, however. Designation of a business-cycle peak date is made mainly in order to provide a reference point for use in comparing the timing of turns in different activities. Great precision is neither possible nor essential; and if an error is made in the choice, subsequent use of the reference point will suggest the need and provide the basis for its correction.[4]

A glance at Table 1 reveals that the great bulk of the leading indicators – even those expressed in pecuniary terms – turned down well before November or December 1969; that the lagging indicators (almost all of which are pecuniary) turned down well after these dates, if they turned at all; and that the coincident indicators, as already stated, are scattered around them.

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[4]Compare [11, p. 72], in which the chronology is described as a "reference scale of business cycles, conceived of as a tool of analysis that was to be tested, amended or, if need be, rejected in the course of further observation." Over the years a few amendments of peak and trough dates have in fact been made in the chronology. But no correction shifted a date by more than two months. (The tests were limited to the post-World War I chronology; work started on a review of the earlier years was not formally completed.)

The composites of these three classes of indicators, shown in Table 3, provide a helpful summary of the distribution of the peaks. The peak in the composite of twelve leading indicators before reverse trend adjustment, came in April 1969; after trend adjustment, in September 1969.[5] If the seven pecuniary series included in these composites were to be deflated in some way, or their relative weight reduced in computing the composites, the peaks would very likely come earlier in 1969. As for the composite of five coincident indicators, its peak came in December 1969, when allowance is made for the retroactive pay increases in April 1970. With deflation of personal income and sales receipts (the two pecuniary series included in the coincident composite), and adjustment of personal income for the retroactive pay increases, the peak is shifted back to October 1969. Finally, the peak in the six-series lagging composite (all but one component are pecuniary indicators) came in September 1970.

We have decided, at this writing, to put the tentative peak date at November 1969. (We view as trivial the objection that only one of the coincident indicators covered by Table 1 did in fact reach a peak in November 1969.) December, a month later (or even October, a month earlier), seems almost as tenable a choice. In any case, the difference is slight, data revisions will undoubtedly be made later, and our choice is clearly marked "tentative."

The expansion from February 1961 to November 1969 lasted, then, 105 months.[6] This is the longest expansion listed in the National Bureau's chronology (which begins with 1834). The previous longest expansion, which took place between 1938 and 1945, lasted 80 months. The average of all expansions after 1834 is about 30 months (Table 4).

Further, it is clear at this writing (when the relevant statistics that are available run mostly through the fourth quarter of 1970 or the first or second month of 1971) that the contraction that began in November 1969 continued to November 1970.[7] If subsequent developments should indicate that a business-cycle trough was in fact reached in November 1970 – we are too

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[5] As stated in BCD [33], the reverse trend adjustment involves replacing the original trend in the composite of twelve leaders by the much steeper trend in the composite of five coincident indicators.

[6] We remind the reader that a question will be raised whether 1961-69 should be regarded as a single cyclical phase.

[7] The bearing of the automobile strike of September-November 1970 on the dating of the trough is discussed later.

close to that month to be sure[8] – the contraction will have lasted 12 months. If so, the contraction was much shorter than the average of all contractions (19 months) and a little longer than the average of other post-World War II contractions (10 months).[9]

III

As already mentioned, the decline in aggregate economic activity during the contraction of 1969-70 has been mild. Measured by either total decline or rate of decline in such important "coinciding" indicators as production, physical volume of sales, employment, and unemployment, the contraction has been among the mildest in our record. Specifically, as Table 2 tells us, it has on the whole been as mild as, if not milder than, the very mild recession of 1960-61. It is definitely milder than the contraction of 1957-58. It may also have been as mild as or milder than the very mild contraction of 1926-27, to judge from the imperfect records available prior to World War II.[10]

It will be seen that the various comparisons presented in Table 2 yield results that are not entirely consistent. There are differences among the various indicators, and there are differences between comparisons made on a "specific-cycle" basis and those made on a "reference-cycle" basis. Comparisons of total change and those of rate of change also differ, as do

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[8]Note has already been taken of the revivals in a fair number – almost half – of the leading indicators. The leading indicator composite, with the reverse trend adjustment, reached a low in May 1970. However, after a small rise to July, the composite fell again to a level in October equal to that in May. Without the trend adjustment, the low in the composite came in November (Table 3).

[9]It should be kept in mind, when making these comparisons, that small differences may not be significant. A different dating of the peak, if this should be indicated when better information is available, would lengthen or shorten our present estimate of the minimum duration of the contraction of 1969-70, although probably by not more than a month or so.

[10]For the declines during other postwar and interwar contractions, see Table 1 in [18]. Some of the specific-cycle contractions shown in Table 2 are very short or very small. Following our standard procedures, the designation for these might have been "no specific cycle." But we have leaned backward, in this regard, in order to show the reader just how brief and modest in amount these declines have been.

comparisons based on one-month peak and trough standings and those based on three-month standings (which average out some of the erratic movements). The differences are generally minor, however, and we have therefore avoided cluttering up the table with a large number of alternative measurements.[11] However, by certain of the measurements, the declines in some economic activities during 1969-70 appear somewhat greater than the declines during other mild contractions. This is why we take care to say that the contraction of 1969-70 was "on the whole" very mild, "if not the mildest," in terms of the indicators presented in Table 2.

It should be mentioned, also, that the indicators in Table 2 do not tell the whole story about the contraction. In financial markets, particularly, the contraction of 1969-70 cannot be classified as especially mild. The prices of corporate stocks declined somewhat more than in other postwar recessions, though not nearly as much as in the two severe contractions of the 1930's. The prices of most long-term debt securities, which had been falling during the preceding expansion at an unusually rapid rate as interest rates on new issues rocketed to exceptionally high levels, continued to fall during the first half of the contraction.[12] And the liabilities of business failures more than doubled from levels already higher in November 1969 than at the beginning of earlier post-World War II contractions.

The contraction was exceptional also in that most categories of prices – and thus also the "general" price level – continued to rise throughout, and at a high rate. The pace of change seems to have stopped accelerating, as it had been doing before the recession began; and it may now be decelerating – the evidence is not yet conclusive. It is clear, however, that the rate of increase in the general price level during the recession was high by historical standards, averaging over 5 per cent per annum according to the GNP implicit price deflator. With real GNP falling only slightly, the continued rise in the general price level meant that GNP in current dollars also continued to rise

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[11] There could be other differences also, not always insignificant: (1) Examples of differences between the peak or trough dates of specific cycles (and therefore also between changes over specific-cycle phases), as determined by "mechanical" criteria applied by computer and as determined by "hand," are given by Bry and Boschan [6, Chap. II]. (2) On the results obtained by various ways of making seasonal adjustments of GNP, see Rosanne Cole [14]. (3) What is revealed by a published series will differ from what is revealed by the series as it might be adjusted – in the case of personal income, for example, for the influence of retroactive payments made in 1970.

[12] With respect to the lag in bond yields, the contraction of 1969-70 reverted to the pattern characteristic of business cycles prior to World War II. See Cagan [12].

throughout 1969 and 1970. This was true, as well, of some of the other important coincident indicators that are expressed in current dollars.

The continued rise in prices had its effect also on the leading and lagging indicators. It helps to explain the modest absolute amount and rate of decline in the composites during 1969-70 relative to earlier contractions, and also of the leading indicator composite during 1969-70 relative to the slowdown of 1966-67.

We shall have to say more about this exceptional price behavior at a later point. Here it is necessary to mention again the danger of being misled if we blink our eyes to the effects of inflation on the pecuniary indicators. True, had price levels also fallen, all other things the same, the contraction might have been classified as more severe than it seems to have turned out to be (if it is already over). But the question of how to handle pecuniary series in the measurement of aggregate economic activity need not be settled here. Even with most price indexes and some pecuniary series still rising, the contraction of 1969-70 was severe enough, widespread enough, and long enough, compared with earlier contractions, to warrant the designation of "classical contraction."

It is instructive to compare the contraction of 1969-70 also with the economic changes that took place during 1966-67, a period that stands out prominently in Ilse Mintz's chart of "growth cycles" in the United States [27]. The contrast is sharp. As Tables 2 and 3 make clear, the slowdown that occurred in 1966-67 was very brief.[13] It was also very modestly diffused through the economy. And it was very slight in terms of rate of decline, and thus even slighter in terms of total decline. For these reasons, 1966-67 was not included in the National Bureau's chronology of business-cycle contractions. It was viewed, rather, as an interruption in the expansion that began in 1961.

All contractions have their peculiarities. The contraction of 1969-70 was by no means identical with the contraction of 1960-61 and other mild contractions. But in the respects we have considered, 1969-70 was much

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[13]The choice made here of November 1966 and May 1967 to mark the beginning and end of the 1966-67 slowdown could easily be questioned. An alternative (unpublished) estimate, made at the National Bureau in August 1967, took January 1967-May 1967 as the period of the slowdown. Real GNP declined only from the fourth quarter of 1966 to the first quarter of 1967; industrial production, from December 1966 to May 1967; and man-hours in nonagricultural establishments, from January to April 1967. The number of employees on nonagricultural payrolls did not decline at all, though unemployment rose.

more like these contractions than it was like the slowdown of 1966-67. The contrast with 1966-67 is even greater than it appears in Table 3, especially with regard to the behavior of the leading indicator composite, when allowance is made, as we have suggested it should be, for the more rapid rate of price increase in the recent period.

The reasons for omitting 1966-67 from the list of contractions – the brevity of the decline, the narrowness of its spread, and its very shallow depth – may or may not be good reasons. This is another of the questions we shall have to raise later. But for us, now, the point is that the reasons for omitting 1966-67 do not apply to 1969-70. We include 1969-70 in the list of business-cycle contractions.

IV

We should not leave the decision on 1969-70 without a reference to the automobile strike of September-November 1970.

The strike involved over 300,000 auto workers directly and many more thousands indirectly. It also idled billions of dollars of plant and equipment in the automobile and related industries. That it had a substantial effect on aggregate economic activity can therefore not be doubted. Had the strike not occurred, we may ask, would not the contraction of 1969-70 have been much shorter, much less diffused, and much shallower – so much so as to appear more like the slowdown of 1966-67 than like the contraction of 1960-61 or the other mild contractions? And if so, should we not go on to conclude that our identification of 1969-70 as a contraction is incorrect or at least very doubtful?

It is not quite certain that, with the strike over, the contraction also is over. Should the contraction be resumed in the months ahead, the questions posed would fall by the wayside. But the available evidence suggests that, along with the strike, the decline in aggregate economic activity did in fact end in November. If we assume this to be the case, what can we then say?

It is not clear, first, how much shorter, less diffused, and shallower the decline would have been had the union-management negotiations in the automobile industry been settled without a strike. Yet even if the decline subsequent to August 1970 was entirely due to the strike – that is, even if the turn would otherwise have come in August – a case can be made for labeling the decline in aggregate economic activity between November 1969 and August 1970 as a contraction and not merely as a pause in the expansion under way since 1961.[14]

[14] A more detailed discussion of the decline to August 1970 appears in [18].

The contraction through August would then have lasted only 9 months, not 12 (or more).[15] This is not outside the range of previous experience, however. Two of the recognized contractions (1957-58 and 1960-61) also lasted only 9 months; and three (1945, 1918-19, and 1860-61) lasted only 7 or 8 months. The "pause" during 1966-67, which was not recognized as a contraction, lasted no more than 6 months, as we had dated it, and an estimate of even shorter duration would not be unreasonable.

Next, the decline that began in November 1969 was already widely diffused by the summer of 1970, as we have seen. The percentage of industries declining then was already as high as, or higher than, it had been in some of the earlier contractions.

On the other hand, the total decline in aggregate economic activity from November 1969 to August 1970 was, of course, less than the decline to November 1970. It was also less than the decline during 1960-61, hitherto tagged as the mildest post-World War II contraction, and perhaps also 1926-27, the mildest interwar contraction. Further, if the effect of inflation on the indicators of pecuniary activity were to be ignored, and these indicators given as much weight relative to the indicators of real activity as had been given to them in earlier decisions on business-cycle expansions and contractions (when inflation was less of a problem), the decline in aggregate economic activity so measured would be milder still. Indeed, the case for identifying 1969-70 as a business-cycle contraction could then not be sustained. But grounds have already been stated for not ignoring the effect of inflation on the economic indicators.

There is a second reason for not excluding the effects of the strike. When earlier business-cycle contractions were identified, no effort was made to exclude the effects of substantial strikes, wars, acts of government, or other factors usually labeled "exogenous." The procedure followed does involve limited amount of smoothing of individual series when erratic changes are large, before we decide on specific-cycle turning points; and we construct our cycle patterns from averages of nine stages. But these adjustments of the data can have had only a minor effect on the determination of business-cycle peaks and troughs. The only substantial adjustment of any general importance to the dating of specific-cycle peaks and troughs is that made by

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[15] Were the peak to be dated December 1969, the duration would be only 8 months.

our exclusion of seasonal fluctuations. These fluctuations, we judge, are not "rooted" principally in business cycles, as we conceive them.[16]

When, as in the case of the steel strike of 1959, an expansion is only interrupted – in the sense that aggregate economic activity reaches a higher level soon after the strike than it had reached before – we ignore the interruption in our determination of the reference peak date. That is, we count the fluctuation associated with the strike not as a business cycle but rather as an incident within a business cycle. The same procedure is followed in dealing with interruptions during business recessions. An example is the "double bottom" in 1932-33. Especially apt is the case of 1949. Aggregate economic activity fell consistently from November 1948 until July 1949. Between July and August, and August and September, activity revived. But then, in. September, the coal miners struck, and in October so did the basic-steel workers. During October, almost a million workers in these and some other industries were out on strike. With the steel strike over in November, economic activity in that month exceeded the October level and went on to expand further in subsequent months. We placed the business cycle trough month in October, not July, 1949.[17]

If, then, we were to try to exclude the effects of the automobile strike when we determine the character of economic changes during 1969-70, we would be applying a procedure we have not applied in the past. Our comparisons with earlier recessions would be suspect, and perhaps invalid.

But "tradition" hardly provides a good justification for continuing to apply procedures of the past. The justification for the procedure we have followed, and continue to follow, is that we do not try to separate the effects of strikes from the effects of other factors that determine the level and rate of change in aggregate economic activity when we identify business-cycle expansions and contractions. We think of business cycles as resulting from economic processes "that of themselves tend to generate cyclical movements" [10], but we recognize also that these movements can originate under or be sustained by the cumulative impact of past erratic or episodic disturbances; and that the movements generated can be strengthened or opposed, speeded up or slowed down (sometimes even reversed) by subsequent episodic or erratic disturbances. Our peak and trough dates identify turns that reflect the

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[16] We recognize that seasonal fluctuations are not altogether independent of business cycles. Seasonal patterns in production and employment tend to be flatter when business is strong and employment high [11].

[17] For a detailed exposition of the National Bureau's methodology, see [11]. On the particular question of dating business cycles, see also [37].

effects of both endogenous and exogenous factors. In other words, we prefer to say that the 1969-70 contraction may have been extended, or deepened, by the strike, rather than to say that the contraction ended before the strike began. Much the same reasoning applies, naturally, to the effects on business conditions of the reductions in defense contract awards and expenditures during 1970; and on unemployment, of the release of men from the armed forces.

Of course, this should not be read to imply that we do not care what the effects of strikes, wars, changes in government policy, or other "disturbances" are on business cycles. We do ask why business cycles, or the expansion and contraction phases of business cycles, or even the successive stages of these phases, differ. And surely strikes and the other factors mentioned are part of the explanation.[18] But the question, we feel, is better dealt with after we have identified and assembled our specimens of business cycles, when we can compare them and determine their similarities and differences.[19]

V

Before turning to the other part of our discussion, we may recall the question already raised about 1966-67. If a cyclical movement can be opposed and slowed down, sometimes even reversed, may not 1966-67 have been an "aborted" contraction? If so, should we exclude it from our chronology of business cycles?

Unemployment fell from 1961 to 1966, reaching a low level of about 3.5 per cent of the labor force during 1966. GNP (in 1958 dollars) rose until it was substantially above the Council of Economic Advisers estimate of

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[18] And surely, also, stabilization policy must take into account the effects on the current economic situation of strikes and the other factors mentioned, if the policy is to be appropriate to the situation.

[19] Sometimes the presence of important exogenous factors can be identified well before this stage is reached. In our chronology, to cite an obvious example, we distinguish between peacetime and wartime expansions and contractions. But this is a far cry from excluding the effects of wars or estimating the quantitative importance of the onset and termination of a war.

It may be worth noting, also, that what is and is not an exogenous factor, or to what extent a factor is exogenous is not always clear, as is indicated by the continuing controversy over this aspect of monetary policy. On the causes of strikes, and their relationship to business cycles, see [3] and the other studies cited there.

potential GNP. These and other developments during the expansion from 1961 to 1966, as in earlier expansions, must have been generating restrictive forces that tend to slow down and eventually reverse the course of aggregate economic activity. In addition, the credit crunch of 1966 was disturbing to financial (and also other) markets. We know that the leading indicators began declining early in 1966 (Table 3). A contraction could indeed have been under way at the close of 1966. Had not the Federal Reserve promptly and drastically altered its policy, and the federal budget gone rapidly into deficit, the slowdown and then slight decline evident in the coincident indicators around the turn of the year might have continued and worsened.

In short, we may be overlooking a specimen – a very unusual specimen, it is true – of the phenomena in which we are interested, if we omit 1966-67 from our chronology, and thereby designate 1961-69 as a single business cycle phase. Should not our concept of business cycles and our procedures for studying them be redesigned or extended to avoid this loss of valuable information? This is a question already raised by Mintz's analysis of growth cycles in the United States and Germany. It is another item for the agenda of business-cycle research.

VI

Perhaps the main thing to be said about the agenda of business-cycle research, after our brief review of recent economic changes, is that business cycles are still with us – that they continue to be worth investigation – that to discuss the agenda of business-cycle research is not a profitless undertaking.

This did not seem as obvious some years ago when economists too often seemed to be saying that if only their advice were taken, there would be no problem of business cycles. After the contraction of 1969-70, if not also after the credit crunch and economic slowdown of 1966-67, economists are less likely to plan a discussion, as they did during the winter of 1964-65, around the question, "Is the business cycle obsolete?" [5]. And it may even turn out that the postwar slump in courses on business cycles offered by university departments of economics, which was noted by Okun a couple of years ago [32], will be slowed down.

If the business cycle is not the obsolete phenomenon it seemed to be some years ago, neither is the trouble it makes for many workers and businessmen, consumers and investors, governmental bodies and financial institutions – and the hazards it imposes on everyone – a thing of the past.

True, our generation knows more about what happens during business cycles than did earlier generations. We are better able to recognize and even,

to a degree, to foresee the troubles these fluctuations bring; and we are better armed to deal with them. Not of least importance, we are better prepared to help those on whom the burden falls when business recession begins. The problem of economic instability, in short, is not as grave as it used to be. To this progress, it is fair to say, research on business cycles, on business-cycle indicators, and on business-cycle policy, has contributed. The research has more than returned its costs.

But the job is not yet finished, as the economic changes during recent years indicate. While we know more about business cycles, we do not know enough. We need to improve still further our knowledge of what generally happens during business cycles, of the differences among business cycles, and of the patterns these differences have traced over time. And we need to know not only "what," but also "why," if analysts of current business conditions and makers of public and private policy are to come closer to meeting present-day expectations.

These are very broad questions. We can appreciate them better if we narrow them down somewhat and address the more specific questions to a few of the notable aspects of the recent economic changes we have surveyed.

VII

We start with some current, and highly controversial, questions on policy. Just what is the connection between the contraction of 1969-70 and the economic policy pursued by the present Administration? Is the contraction of 1969-70 solely or even largely the result of that policy, as many people seem to take for granted? This may be put in hypothetical terms: Had the shift early in 1969 been to a "neutral" rather than an "anti-inflationary" policy, would developments already under way in the economy prior to the shift have eventually caused a widespread and persistent decline in economic activity – that is, a contraction – and one that might have been more serious than the decline that actually occurred? Or, stated in still another way, could a contraction have been avoided, and for how long and at what cost in inflation and in other ways, had a different course of action been taken? It is too much to expect that any amount of research could ever provide unequivocal answers to questions like these, especially about particular historical periods. But we can reasonably expect to get closer to such answers if we try to learn more than is now known about the respective roles of endogenous processes and exogenous factors in determining the course of economic conditions. The policy issues troubling the country today force us to confront this fundamental question of business-cycle theory.

The attack on the question can be and needs to be from various directions. One is that taken by Friedman and Schwartz when they began their studies of money and business cycles [19]. Another is illustrated by the current National Bureau investigation, begun by Zarnowitz, Boschan, and Moore, of the cyclical properties of short-term econometric models of the U.S. economy [36].

The subject was a major topic of discussion at two conferences held in 1969 and 1970 under the auspices of the National Bureau's Conference on Research in Income and Wealth and the Committee on Economic Stability of the Social Science Research Council. With the aid of high-speed electronic computers – the task would have been quite impossible otherwise – "simulations" were performed with the models by Zarnowitz and his co-workers. The simulations, together with similar experiments by scholars in other institutions, suggest the existence of a "damped cyclical response mechanism" kept going by outside "disturbances" – which, of course, include changes in economic policy. To decide that these results reflect the properties of the real world, rather than merely the properties built into the models, would be premature, however. It remains an open and intriguing question which will undoubtedly be pursued further.

To turn to another point, an outstanding feature of the 1969-70 contraction, assuming that it ended in November 1970, has been its mildness and brevity, judged by historical standards. A combination of mildness and brevity has been a feature also of the other contractions of the post-World War II period, with one partial exception, 1957-58, in which the decline in aggregate economic activity, though unusually brief, was only barely below the median of all the declines since 1882.[20] There was a run of no more than two mild recessions in earlier periods: 1887-91, 1899-1904, and 1923-27. After 1948, in contrast, there were five – or six, if for this purpose we count 1966-67 as a recession. In more telling terms, what we see in the post-World War II record is an unusually long period – more than twenty years – free of anything like a serious depression.

This raises two questions: One question is whether the postwar experience signifies the establishment of a "new era." The answer cannot be taken for granted without close study of the differences between the postwar cycles

[20] See Table 156 in [11], extended in Table 3.6 in [29]. The measure is the average of the total percentage falls in three indexes of business activity, adjusted for trend. Prior to 1882, only one of the indexes of business activity is available. It suggests that during 1857-70, a period that includes the Civil War, there may have been a run of as many as four relatively mild recessions.

and those of earlier years, and of the factors accounting for these differences. This task still remains to be done; most of the business-cycle research of recent years has been concentrated on the postwar business cycle. Comparisons with prewar cycles, as already mentioned, would be difficult because the quantity and quality of the statistical data become thinner as we go back in time. Only since 1947, for example, have official quarterly national accounts been compiled. Nor is a monthly measure of unemployment available prior to 1929. Yet if we are to avoid, or at least lessen, the dangers of extrapolation from a limited experience, these difficulties must be recognized or somehow overcome.

This leads to the second question, which is closely related also to others raised above. To what extent is postwar economic stability the result of a deliberate and active stabilization policy? How much has been contributed by unplanned developments in the economy, for example, the rise in the service industries and in the proportion of salaried workers in other industries? And how much by developments designed in whole or in part to reach objectives other than the stabilization of the economy, such as the introduction of the progressive income tax and the spread of public and private pension systems? Are there, on the other hand, potential developments, or developments already in motion, that might work in the other direction, a question that recently discharged salaried workers might not consider wholly academic? Burns has provided the list of developments we have just summarized [9], but their quantitative importance is largely still to be investigated. Fuchs' discussion of the cyclical characteristics of the increasingly important service industries [20] marks a step along this line of research, and so does Mintz's study of changes in export cycles [25].

Another outstanding feature of the 1969-70 recession has been the persistence of a rapidly rising general price level. As a rule, we have learned from our studies, the general price level has not conformed well to business cycles.[21] Whether the price level went up or down often depended on its long-term trend. This is not to say that there was no response by indexes of the general price level to changes in business conditions. As Moore has pointed out, a response is usually visible in the rate of change of the price level [30]. When a decline in the rate of change of the price index, in response to a contraction, culminated in an absolute decline in the index, the decline came with a long lag. To be specific, the consumer price index,

[21] See [31, p. 42], where the consumer price index is given a low score on cyclical conformity and timing, too low to warrant including it in the list of cyclical indicators.

excluding foods,[22] kept on moving up for eleven months after the business-cycle peak in 1920, for ten months after the peaks in 1923 and 1953, and for seven months after the peak in 1937. It failed to decline at all during the contractions that began in 1945, 1957, and 1960, as well as 1969. In two cases (the contractions that began in 1926 and 1929), when the price trend was downward, the index fell even during the preceding expansion. Only in 1948 did the retail price index move down promptly with the decline in aggregate economic activity. As for the GNP deflator, available on a quarterly basis beginning with 1947, it responded even less promptly than the CPI to changes in current business conditions [30, Table 4].

Even longer lags, and a more frequent absence of any decline, have characterized wage rates and hourly earnings during business contractions. This was surmised by Mitchell on the basis of very scanty data many years ago [28], long before labor unions became important in the United States. And Creamer has confirmed the surmise with an analysis of wage data beginning with the 1920's [15].

What has been unusual about the 1969-70 experience has been the persistently high rate of increase in the price indexes and in the index of wage rates during the contraction – 5.3 per cent per annum for the GNP implicit price deflator, with the consumer price index rising a bit faster, and average compensation per man-hour in the private economy, faster still, 6.6 per cent. Undoubtedly some of the explanation is to be found in the mildness of the recession and the efforts of the Administration to pursue an anti-inflation policy that would avoid a serious decline in output and employment.[23] But

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[22]Food prices are excluded because they are sensitive to short-term conditions of supply that are only distantly related to business cycles. As a result, the timing of turns in food prices tends to be somewhat erratic in relation to business-cycle peaks and troughs. On the average, food prices conform fairly closely to business cycles.

For the period prior to 1947, the consumer price index is the only available monthly or quarterly index that approximates a general price index level. But even the CPI excluding food is mostly semiannual between 1918 and 1935. It is only annual between 1913 (when it begins) and 1918.

[23]Mention should also be made of the possibility that the mildness of the contraction may itself have been a function, though only in small part, of the upward drift in the general price level. For some evidence on the association between secular price trends and the length and amplitude of business cycles and business-cycle phases, see [11, pp. 432-440].

part, also, will surely be found in what happened during the years between 1961 and 1969, if not also earlier. A concrete example, which bears on the recent spurt in wage rates, is the reduction in the number of escalator clauses in labor-management contracts before the consumer price index began its accelerated rise [4].

This line of thought underscores the need, not always recognized by noneconomists, to look to processes set in motion in the past, as well as to new developments, when trying to understand current economic changes. Successive phases of the business cycle are not disconnected episodes. This, of course, is essentially the problem which, in one of its aspects, is now dealt with by economists under the heading of "distributed lags." Technical aspects of this problem were very recently discussed at the National Bureau-National Science Foundation Time Series and Distributed Lags Seminar, one of several meetings organized around the country as part of the National Bureau's larger Conference on Mathematical Economics and Econometrics.

The point just raised has even broader implications. "As various theories of long waves or major cycles have sought to suggest, no business-cycle movement can be understood solely in terms of what happened during that phase or the one just preceding it" [10]. This view may be helpful in explaining some of the other peculiar features of the 1969-70 contraction. An obvious example is the unusually rapid rise in the labor force which caused the rate of unemployment to go up more during 1969-70 than would otherwise have resulted from the relatively slight decline in employment. This was the consequence, in part, of the high birth rate shortly after World War II. Another and more complicated example is provided by the severity of the changes in the financial sphere during 1969-70, compared with the very mild declines in output, sales, and employment. The sharp break in stock prices during 1969-70, to illustrate, needs to be viewed against the background of a twenty-year bull market during which declines were modest and the average price-earnings ratio more than doubled.

Here, too, recent economic changes remind us of broad questions for research that have been too often neglected. One relates to the financial aspects of business cycles. This means not only money supply and demand but also business and consumer finance and cost-price relationships. Another relates to the long waves or major cycles to which, at the National Bureau, Kuznets, Abramovitz, and Easterlin paid attention some years ago [23; 1; 16]. There are, as Abramovitz pointed out more recently [2], reasons for believing that the causes of "major cycles" – which he views as a concatenation of mild business cycles culminating in a serious depression –

and the mechanisms through which these causes work their effects, have changed in character; but not that long cycles are therefore things of the past. It remains to be seen what conclusion will be reached by Friedman and Schwartz on this question in their monetary studies. They are working with the hypothesis that major cycles may be interpreted primarily as episodic – particularly, as due to exogenous changes in the money supply – rather than as mainly reflecting an underlying cyclical mechanism. The major cycle is not yet ready to be scratched off the agenda of research.

The mildness of the 1969-70 contraction and other contractions in the United States in the postwar period, as well as in other industrialized economies "that organize their work mainly in business enterprises," raises many other questions. One is how the Mitchell-Burns analytical description of business cycles can be adapted to apply to an economy in which contractions in aggregate economic activity are marked by a rate of growth that is inferior to the trend rate but not necessarily negative; or, alternatively, an economy in which contractions consist of a widening of the gap between potential GNP and actual GNP while actual as well as potential GNP continue to grow. There is no reason to suppose that the Mitchell-Burns exposition cannot be applied to growth cycles, but the question requires some attention, along with the effort, begun by Chow and Moore [13], to express the Mitchell-Burns theory in the form of an econometric model amenable to testing in the usual way.[24] Another question bears on the conceptual and statistical problems of defining and measuring potential GNP, if growth cycles are to be identified in terms of the gap between potential and actual GNP. These problems concern the behavior, and determinants of the behavior, of the labor force, hours of work, and output per man-hour [32; 18]. A third question concerns the National Bureau's chronology of business cycles – not whether to drop it, but whether it should be extended to date not only peaks and troughs in classical business cycles, but also in growth cycles. This would mean including the 1966-67 episode and other slowdowns. And a fourth question relates to the economic instability associated with seasonal movements in production and employment. These may or may not have grown in relative importance as business cycles have become milder, but in any case seasonals cause a substantial amount of unemployment. There has been no comprehensive survey of this type of fluctuation since Kuznets's treatise of almost forty years ago [22].

[24] Note that when they came to estimate the parameters of the equations in their model, Chow and Moore expressed the equations in terms of rates of change. This meant eliminating trends and, in effect, formulating the model in terms of growth cycles.

A word must be said also about the problem of forecasting. The considerable range of postwar experience analyzed by Zarnowitz and his co-workers [35], and the very recent experience known to every reader of the daily press, indicates that it is still very much of a problem. An especially interesting finding of the analysis of the forecasting properties of econometric models by Evans, Haitovsky, and Treyz [17] – one of the papers discussed at a 1969 NBER conference mentioned earlier – is the importance of "judgmental inputs" when using econometric models to forecast. These judgmental inputs relate not only to the selection of values for the exogenous variables, sometimes on the basis of a "naive" forecast, but also to allowances for known or presumed structural changes after the model had been constructed, and to corrections designed to bring the preliminary forecasts into closer line with the forecasters' conception of what is reasonable. As Hickman (who was the conference chairman) commented [21], anyone who assumes that "an econometric model is simply a black box used to convert *ex ante* predictions of exogenous variables into *ex ante* forecasts of endogenous variables" is mistaken.

Indeed, it is becoming clear that in many efforts at forecasting, whether based on econometric models, or on sequences of leading, coincident, and lagging indicators, or on "naive" projections, or wholly on "feel and judgment," the whole battery of inputs is put to use. The so-called naive forecasts, for example, may seem to be based simply on an extrapolation of the series to be forecast. However, there is often much more. The forecaster may drop, from the observations available in the historical series, the "extreme" items or observations during war periods or observations no longer considered relevant because of presumed structural changes. Equal weights may not necessarily be assigned to the observations that are finally used; and whatever the explicit weight scheme, there is an implicit scheme in the method of fitting a trend line to the observations. Further, the algebraic formula used in the extrapolation may be selected on grounds that are sometimes extraneous. And, as in other methods, the projection may be adjusted up or down if it falls outside the range of reasonableness.

This suggests another comment, which must be our last, on the agenda of business-cycle research.

VIII

Economists today are in closer agreement on how to tackle the problem of business cycles than they were twenty-five years ago. More economists

emphasize process analysis rather than the comparative equilibrium analysis once popular. And the crucial importance of empirical study is now more generally recognized.

Of course, in pursuing empirical research on business cycles, each economist follows his own particular bent. Some concentrate on investment or savings or unemployment or prices and the factors impinging on them, or on some other individual equation or less formally stated link in the model of the economy they all have in their minds; others concentrate on the model as a whole. Some work with mathematical models; some, with more flexible but also looser "literary" models; some follow an historical approach. Some devote themselves to unearthing and improving statistical data or information on the technological and institutional factors that constrain economic decisions; some, to using these data to design and test large or small models. The study of business cycles enlists a variety of talents.

When he reviewed the historical and econometric approaches to business cycles two decades ago [7], Burns emphasized that they were complements of one another and of still other approaches, and expressed the conviction that economists pursuing one or another approach would come to appreciate this, if they stuck to the job of analyzing the cycles of the real world. Only a few years later, following a meeting on the business cycle in the postwar world, Lundberg [24] commented on the absence of controversy over the relative merits of different approaches. The economists present had already reached a better understanding of the complementary character of their approaches. Further progress in this direction was revealed, it is fair to say, in the Conference on Econometric Models of Cyclical Behavior held in 1969 and early in 1970, and in the colloquium on "The Business Cycle Today," held in late 1970 as part of the National Bureau's fiftieth anniversary celebration. Economists are better prepared than ever before to work together – and also individually – on the questions raised here and on the many more questions we have been unable to mention.

TABLE 1

Frequency Distribution of Cyclical Indicators by Month of "Current High" During 1968–71 (as of March 31, 1971)

	Type of Indicators								
	Leading		Roughly Coincident		Lagging		All Indicators		
	Real	Pecuniary	Real	Pecuniary	Real	Pecuniary	Real	Pecuniary	Total
1968									
Jan.	2						2		2
Feb.									
Mar.									
Apr.									
May		2	1				1	2	3
June									
July	2						2		2
Aug.									
Sept.									
Oct.	1	2					1	2	3
Nov.	1	1					1	1	2
Dec.		3						3	3
1969									
Jan.	5	1					5	1	6
Feb.	1		2				3		3
Mar.	1		1				2		2
Apr.									
May		3	1	1			1	4	5
June	2						2		2
July	1		1	1			2	1	3
Aug.		1	1				1	1	2
Sept.		2	2			1	2	3	5
Oct.	1	1	1		1		3	1	4
Nov.	1			1			1	1	2
Dec.		1	1				1	1	2

(continued)

TABLE 1 (concluded)

	Type of Indicators								
	Leading		Roughly Coincident		Lagging		All Indicators		
	Real	Pecuniary	Real	Pecuniary	Real	Pecuniary	Real	Pecuniary	Total
1970									
Jan.		1	1	1			1	2	3
Feb.		1				2		3	3
Mar.			2	1			2	1	3
Apr.									
May				1				1	1
June				2				2	2
July				1				1	1
Aug.						1		1	1
Sept.						2		2	2
Oct.									
Nov.				2		1		3	3
Dec.						1		1	1
1971									
Jan.				1		1		2	2
Feb.				3		1		4	4
Total	18	19	14	15	1	10	33	44	77

Note: The series tabulated include all the indicators listed in BCD [33, Part IB], plus four indicators (series 52, personal income; 56, manufacturing and trade sales; 54, sales of retail stores; and 53, wages and salaries in mining, manufacturing, and construction) deflated by the NBER. (Series 52 was also adjusted to smooth out the effects of retroactive wage and salary increases.) "Current highs" are based on one-month standings. In all but five cases (series 56, manufacturing and trade sales; 72, commercial and industrial loans outstanding; 98, change in money supply and time deposits; 93, free reserves; and 112, change in business loans) the current high value is as indicated in BCD. In nine cases the most recent available figure is the high. Series that move counter to movements in general business activity (such as the unemployment rate) are treated on an "inverted" basis. The figure for January 1968 refers to the two series that reached their highs before 1968.

TABLE 2

Selected Measures of Duration, Depth and Diffusion, of Four Business Contractions, 1957–70
(all data are monthly, except GNP, which are quarterly)

	Reference Contraction Dates			
	7/57–4/58	5/60–2/61	11/66–5/67[a]	11/69–11/70[b]
	Duration of Contraction (months)			
Reference cycle	9	9	6	12
Specific cycle[c]				
GNP (current $)	6	6	*	*
GNP (constant $)	6	12	3	15
Indus. prod. index	14	13	5	16
Employees in nonag. estab.	14	10	*	8
Man-hours in nonag. estab.	16	8	3	14
Personal income (current $)	4	*	*	*
Personal income (constant $)	8	*	*	7
Retail sales (current $)	7	12	3	*
Retail sales (constant $)	7	12	3	21
Mfg. & trade sales (current $)	13	12	5	4
Mfg. & trade sales (constant $)	14	12	5	14
Unemployment rate, civilian workers (inverted)	16	23	11	22

(continued)

TABLE 2 (concluded)

	Reference Contraction Dates							
	7/57–4/58		5/60–2/61		11/66–5/67[a]		11/69–11/70[b]	
	Ref.	Specific	Ref.	Specific	Ref	Specific	Ref.	Specific
	Total Percentage Change[c,d]							
GNP (current $)	−1.8	−2.6	−0.2	−0.3	+1.8	*	+4.0	*
GNP (constant $)	−3.4	−3.9	−1.4	−1.6	+0.5	−0.2	−1.2	−1.5
Indus. prod. index	−14.1	−14.3	−5.7	−7.2	−2.2	−2.4	−5.8	−7.5
Employees in nonag. estab.	−4.0	−4.3	−1.8	−2.2	+1.0	*	−1.0	−1.6
Man-hours in nonag. estab.	−5.2	−6.1	−2.0	−3.2	0.0	−0.8	−2.1	−2.6
Personal income (current $)	+0.4	−0.5	+1.0	*	+2.6	*	+5.5	*
Personal income (constant $)	−1.8	−2.1	0.0	*	+1.7	*	−0.2	−1.1
Retail sales (current $)	−1.6	−3.8	−2.4	−4.6	+1.6	−1.1	+2.5	*
Retail sales (constant $)	−3.5	−5.4	−3.1	−5.0	+1.3	−1.2	−1.6	−5.0
Mfg. & trade sales (current $)	−6.8	−8.2	−3.2	−5.2	+0.2	−1.5	−0.6	−3.2
Mfg. & trade sales (constant $)	−7.9	−10.2	−3.6	−5.7	+0.1	−1.3	−3.9	−5.3
Unemployment rate, civilian workers[e]	+3.2	+3.8	+1.8	+2.1	+0.3	+0.5	+2.4	+2.9
	Diffusion							
Maximum per cent of industries declining (6-month span)								
Nonfarm empl. (30 indus.)	88		82		63		83	
Indus. prod. (24 indus.)	100		88		73		88	
Number of consecutive months when 75 per cent or more industries declining (6-month span)								
Nonfarm empl. (30 indus.)	13		7		0		6	
Indus. prod. (24 indus.)	8		5		0		2	

Notes to Table 2

Source: Same as in [18], Table 1.

*No specific cycle.

[a]Not identified as a business-cycle contraction in the National Bureau's chronology.

[b]Assumed trough.

[c]The duration of a specific-cycle contraction is the number of months elapsing between the specific-cycle peak and the specific-cycle trough or the last available figure (if it is the lowest). The total percentage change over a specific-cycle contraction is measured from the specific-cycle peak to the specific-cycle trough (or the last available figure).

[d]The peaks and troughs are based on one-month standings of seasonally adjusted data. Use of three-month averages centered at one-month standings generally yields smaller total percentage declines, but these are only slightly different in relation to one another.

[e]In percentage points.

TABLE 3

Changes in Composite Indexes During Four Business Contractions, 1957–70

	Reference Contraction Dates			
	7/57–4/58	5/60–2/61	11/66–5/67[a]	11/69–11/70[b]
	Dates of Corresponding Specific-Cycle Contractions			
12 Leading indicators				
Reverse trend adj.	11/56–2/58	1/60–12/60	3/66–2/67	9/69– 5/70
Prior to trend adj.	9/55–4/58	5/59–12/60	3/66–4/67	4/69–11/70
5 Coincident indicators	8/57–4/58	2/60–2/61	*	12/69–11/70
6 Lagging indicators	9/57–8/58	5/60–7/61	*	9/70–11/70
5 Coincident indicators, deflated	3/57–4/58	2/60–2/61	*	10/69–11/70
	Duration of Corresponding Specific-Cycle Contractions (months)			
12 Leading indicators				
Reverse trend adj.	15	11	11	8
Prior to trend adj.	31	19	13	19
5 Coincident indicators	8	12	*	11
6 Lagging indicators	11	14	*	2
5 Coincident indicators, deflated	13	12	*	13

(continued)

TABLE 3 (concluded)

	Reference Contraction Dates							
	7/57–4/58		5/60–2/61		11/66–5/67[a]		11/69–11/70[b]	
	Ref.	Specific	Ref.	Specific	Ref.	Specific	Ref.	Specific
	Total Percentage Change							
12 Leading indicators								
Reverse trend adj.	−8.3	−9.5	−1.9	−4.9	+1.2	−4.6	−2.7	−4.0
Prior to trend adj.	−11.2	−16.8	−5.2	−10.5	−1.0	−8.5	−6.9	−9.8
5 Coincident indicators	−11.2	−11.7	−4.8	−5.3	+0.9	*	−3.4	−3.5
6 Lagging indicators	−7.5	−14.2	−5.1	−6.9	+1.2	*	−0.6	−2.2
5 Coincident indicators, deflated	−12.5	−13.4	−5.4	−6.1	+0.6	*	−5.9	−6.0
	Percentage Change per Month (at annual rate)							
12 Leading indicators								
Reverse trend adj.	−11.1	−7.6	−2.5	−5.3	+2.4	−5.0	−2.7	− 6.0
Prior to trend adj.	−14.9	−6.5	−6.9	−6.6	−2.0	−7.8	−6.9	− 6.2
5 Coincident indicators	−14.9	−17.6	−6.4	−5.3	+1.8	*	−3.4	− 3.8
6 Lagging indicators	−10.0	−15.5	−6.8	−5.9	+2.4	*	−0.6	−13.2
5 Coincident indicators, deflated	−16.7	−12.4	−7.2	−6.1	+1.2	*	−5.9	− 5.5

Note: Source of basic data is [33]. The deflation of the composite of five coincident indicators was done at the NBER.

*No specific cycle.

[a]Not identified as a business-cycle contraction in the National Bureau's chronology.

[b]Assumed trough.

TABLE 4

Dates and Durations of Business-Cycle Expansions and Contractions in the United States, 1945–1970, with Average Durations, 1854–1970

Business-Cycle Reference Dates		Contraction (trough from previous peak)	Expansion (trough to peak)	Cycle	
Trough	Peak			Trough from Previous Trough	Peak from Previous Peak
		(duration in months)			
Oct. 1945	Nov. 1948	8	37	88	45
Oct. 1949	July 1953	11	45	48	56
Aug. 1954	July 1957	13	35	58	48
Apr. 1958	May 1960	9	25	44	34
Feb. 1961	Nov. 1969[a]	9	105	34	114
Nov. 1970[b]		12		117	
Average, all cycles:					
27 cycles, 1854–1970		19	33	52	52[c]
16 cycles, 1854–1919		22	27	48	47[d]
6 cycles, 1919–1945		18	35	53	60[e]
5 cycles, 1945–1970		11	49	60	59[f]

Source: NBER.
[a]Tentative.
[b]Assumed.
[c]26 cycles, 1857–1969.
[d]16 cycles, 1857–1920.
[e]5 cycles, 1920–45.
[f]5 cycles, 1945–69.

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