Volume Title: Policies to Combat Depression

Volume Author/Editor: Universities-National Bureau Committee for

Economic Research

Volume Publisher: NBER

Volume ISBN: 0-87014-198-8

Volume URL: http://www.nber.org/books/univ56-1

Publication Date: 1956

Chapter Title: Types of Depressions and Programs to Combat Them

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Chapter URL: http://www.nber.org/chapters/c2797

Chapter pages in book: (p. 7 - 26)

TYPES OF DEPRESSIONS AND PROGRAMS TO COMBAT THEM

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History tells us that no two business cycles are alike. While there are essential features that we expect to find in all cycles, we know that past cyclical contractions (and expansions) have varied widely in amplitude and duration,[1] and even cursory study of past periods suggests that the causal factors at work in different cycles have also varied.

If business contractions can vary widely as to duration and amplitude, important questions for policy obviously arise. What causes these differences in cyclical behavior? How can we predict in advance or identify at an early stage the kind of downswing inherent in a particular situation? And what bearing do the answers to these questions have on the kinds of stabilization measures which are likely to be most effective in combating an incipient depression?

The most recent theoretical literature—with its emphasis on simplified models—provides us with but limited help when we try to classify and explain these differences in behavior from cycle to cycle. Recent theoretical models have been of much too simple a form—too few variables and equations, too simple a system of lags, and too much dependence on unchanging relationships—to reproduce the wide diversity of cyclical experience that we find in practice.

There is, however, a moderately large body of literature on the possibility of different kinds of cycles. Without attempting to be exhaustive, we may mention Schumpeter's three-cycle model, several variants of the major-minor cycle hypothesis, the view that the character of major cycles is influenced to an important degree by the course of the long building cycle, and the work done on the interrelation between secular trends or "long waves" on the one hand and business cycles on the other. Perhaps mention should also be made of the older view that some but not all booms lead to

I am indebted to the Bureau of Business and Economic Research of the University of California for assistance in the preparation of this paper.

[1] Cf. Arthur F. Burns and Wesley C. Mitchell, *Measuring Business Cycles,* National Bureau of Economic Research, 1946, Chaps. 9–12.

financial and monetary "crises" that generate unusually severe depressions.[2]

I do not think it is necessary to review this literature here. Instead I shall take the liberty of merely stating several conclusions that I have drawn from these writings and from a fairly intensive study of American business cycles since World War I. (1) There is considerable justification, both in theory and on empirical grounds, for a flexible version of the major-minor cycle hypothesis; and this distinction, if carefully drawn and applied, can help us in interpreting past and current fluctuations in economic activity. (2) The empirical evidence does not lend much support to rigid multi-cycle models, such as Schumpeter's. (3) Even those writers who use some variant of the two-cycle hypothesis have not drawn an adequately careful distinction between major and minor cycles. Too often in applied work the distinction rests merely on differences in statistical behavior (particularly the amplitude of downswings), although the basis of the distinction is supposed to be a difference in causation. (4) Not enough attention has been paid to the possibility of mixed or hybrid types which combine some of the characteristics of both major and minor cycles. (5) And, finally, there is some reason to believe that the effectiveness of various types of stabilization measures depends in part on the type of boom or downswing they are intended to combat.

In the pages that follow I shall attempt to develop an analytical framework that permits a more precise (and I think more useful) differentiation of cycles than is involved in the usual formulation of the two-cycle hypothesis. In the concluding sections of the paper I shall consider some of the implications of my analytical scheme for the formulation of an effective stabilization program.[3]

[2] Detailed references to this fairly familiar literature are scarcely necessary. See, however, Burns and Mitchell, *op. cit.*, Chaps. 10 and 11, for discussion of some of these views and an attempt to apply statistical tests to them. The best source for Joseph Schumpeter's exposition of his three-cycle model is his *Business Cycles*, McGraw-Hill, 1939, Vol. I, pp. 161–174; see also his essay "The Analysis of Economic Change," reprinted in *Readings in Business Cycle Theory*, Blakiston, 1944, esp. pp. 12–16. Alvin Hansen's position regarding different kinds of cycles is summarized in his *Business Cycles and National Income*, Norton, 1951, Part I. See also Moses Abramovitz, *Inventories and Business Cycles*, National Bureau of Economic Research, 1950, Chap. 21, and R. A. Gordon, "Cyclical Experience in the Interwar Period: The Investment Boom of the 'Twenties," in *Conference on Business Cycles*, National Bureau of Economic Research, 1951, pp. 163–168. Some of these sources contain references to earlier writings on the subject.

[3] The next three sections are reproduced here only in summary form. For a more detailed presentation, representing a revision of these sections as originally presented at this conference, see my "Investment Behavior and Business Cycles," *Review of Economics and Statistics*, February 1955.

Minor Cyclical Movements

We know from past experience that, even without significant fluctuations in long-term investment, we can get mild cyclical movements in income and employment. It is not difficult to construct a dynamic model that will generate fluctuations in income, employment, prices, etc., even in the absence of fluctuations in long-term investment. If production plans are made in advance of sales and in response to factors partly different from those determining the subsequent demand for the planned output, businessmen will experience price changes or unplanned changes in inventories. As a result, production plans are subject to continuous revision; and, depending on the nature of the assumed relationships, cumulative movements result. Production plans may also need to be revised because of cyclical instability in the relation between consumption and income and because of induced changes in cost-price relations and in businessmen's attitudes toward liquidity.

Thus minor cyclical movements may occur even without fluctuations in long-term investment. Such fluctuations will tend to be of moderate amplitude and short duration; they will be reflected in fairly narrow fluctuations in consumption but in wide movements in inventory investment.

Investment Opportunities

We now turn to the determinants of investment behavior (exclusive of inventories). We begin with a distinction between "underlying investment opportunities," on the one hand, and inducements to exploit these opportunities, on the other. The *stock* of investment opportunities at any moment may be defined as the difference between the existing capital stock and that which businessmen would find it most profitable to have if they were well informed regarding all relevant cost and demand relationships and the forces making for long-run growth in the economy. Thus we may speak of an "appropriate" level *and composition* of the capital stock, and we may look on all investment (not based on mistaken expectations) as an attempt to modify the existing capital stock in the direction of what is appropriate.

The appropriate capital stock is always changing, thereby creating new investment opportunities. Investment opportunities arise because of technological change, population growth, changes in taste, governmental intervention, and other forces which may be considered exogenous from the point of view of the cycle. Investment opportunities are further widened or narrowed by purely cyclical changes, e.g. through innovations induced by changing cost-price relations, through movements in interest rates and prices of capital goods, and, most important, by the rate at which existing opportunities are exploited through current investment.

If investment opportunities were perfectly known, there would be, for any appropriate capital stock, an equilibrium rate of investment per time period, determined in effect by certain lags and the elasticity of supply both of loanable funds and of capital goods output. Actually, investment opportunities are not known with certainty. The inducement to exploit a given stock of investment opportunities varies with the cycle; it depends primarily upon profit and sales expectations and current attitudes toward liquidity. Thus the volume of current investment is a function of the (changing) state of investment opportunities, of other variables which also influence profit and sales expectations, and of the variables influencing liquidity attitudes.

Total investment is not a homogeneous aggregate with respect to the ways in which investment opportunities arise. One useful classification divides total investment into the following groups: (1) replacement expenditures, the opportunities for which are created by wear and tear and obsolescence (replacement because of obsolescence perhaps belongs in our third category); (2) expansions in capacity induced simply by a rise in aggregate income in the economy as a whole (this occurs particularly in older industries not subject to important technological changes); (3) net investment intended to exploit new opportunities which come about for reasons other than an increase in aggregate output (new processes, new products, changes in tastes, etc.); (4) residential building, which has a particularly high capital-output ratio and is intimately related to population growth and migration; and (5) inventory investment.

Three Types of Contraction

The cyclical forces described in the preceding sections can lead to different sorts of cyclical contractions, which we can conveniently group into three broad types.

First, we have the case of the "pure" minor recession, in which the cyclical response mechanism operates without affecting long-term investment. The downturn comes because of a downward revision of short-period production plans. The stock of investment opportunities remains large, and there is no significant deterioration in the inducements to exploit these opportunities. The necessary adjustments are brought about through moderate price declines, some contraction of short-term debt, and the curtailment of production in order to reduce inventories. Examples of minor-cycle contractions of this sort are those which occurred in 1923–1924, 1927, 1949, and 1953–1954.

The "pure" minor cycle becomes less pure as changes in production plans lead also to changes in investment plans. This brings us to our next case, which results in sharp but relatively short cyclical contractions. We may call this the "hybrid" case, intermediate between the pure minor and the pure major cycle.

A hybrid contraction may occur for either of two reasons. In the first place, once a downswing begins for any reason, the deterioration in short-term expectations may affect long-term expectations, even though investment opportunities remain large enough to support long-term investment at its previous peak rate. The second possibility is that, at the end of a particularly vigorous boom, a cyclically induced monetary or real capital shortage may temporarily reduce the stock of profitable investment opportunities.

What is important about this hybrid case is that the revival of long-term investment is brought about endogenously through the operation of the cyclical response mechanism: as soon as excess inventories are liquidated, prices stop falling, interest rates and capital goods prices fall to lower levels, etc. Thus while contractions which arise in this way may be quite sharp, they are not likely to last very long. It is more useful to think of the depressions of 1907, 1937–1938, and (with some qualifications) 1921 in these terms, as hybrid contractions, rather than as "major" depressions.

Finally, we have the case of the major cycle proper, in which a high level of investment has been maintained for a long enough time so that long-term investment opportunities become seriously impaired, even without the advent of a capital shortage. When a depression develops for this reason, the forces making for revival that gradually emerge from the contraction will not be enough in themselves to restore the stock of investment opportunities. The severity of the depression will depend particularly on how much overbuilding went on during the preceding boom, on the strength of the forces making for further growth which open up new investment opportunities, and on the nature of the financial maladjustments resulting from earlier speculative excesses. To this category of prolonged (and usually severe) major depressions belong the depressions of the 1870's, 1890's, and 1930's and probably also that of 1882–1885.

Stabilization Policy

Let us turn now to a consideration of some of the apparent implications of the preceding analysis, so far as it is valid, for business cycle policy. Several rather obvious implications immediately emerge from the argument of the preceding sections. (1) There is no one kind of program which would be equally effective against all cyclical contractions. (2) An effective stabilization program needs to be flexible, and its details should to some extent be tailor-made to fit the changing character of the cycle. (3) Therefore, an essential requirement is continuing and careful diagnosis of current cyclical developments, both in order to influence the current phase of the cycle (if that is desired) and as preparation for prompt action in the most effective way if future developments should take an unfavorable turn. (4) A further conclusion, derived from the preceding ones, is that an effective stabilization program cannot rely exclusively on automatic stabilizers. Discretionary action, extending beyond the field of merely monetary policy, is necessary in all except relatively pure minor cycles.[4]

While I think we need to re-evaluate some of the conventional instruments of stabilization policy in terms of the types of depression they may be aimed at, certain minimal techniques are appropriate regardless of the type of instability anticipated. This is particularly true of the so-called automatic stabilizers and of monetary policy.

Two essential and familiar features of all cyclical contractions are the multiplier process whereby a decline in spending reduces incomes and therefore leads to still further reductions in spending, and the effect of the increased desire for liquidity on production and investment plans.

The automatic stabilizers—by reducing tax receipts and increasing transfer payments as the national income declines—moderate the cumulative contraction in disposable income and in consumers' expenditures. Undoubtedly, the effectiveness of the present stabi-

[4] Perhaps it is unnecessary for me to add that these conclusions follow only if the stabilization objective is paramount—or at least sufficiently so to outweigh objections that might be raised on other grounds to discretionary government intervention.

lizers could be improved,[5] but any retardation in the decline in disposable income and consumption will have some influence, in a degree depending on the circumstances, in ameliorating the deterioration in profit expectations and in liquidity attitudes and will reduce the decline in production necessary to bring about a given decrease in inventories. Some favorable effects on long-term investment, again in a degree depending on the circumstances, may also be expected.

The principal role of monetary policy, regardless of the type of depression, is to combat the increased desire for liquidity. To the extent that it is successful in doing so, it will hold back the liquidation of inventories and the consequently exaggerated decline in output, ameliorate the decline in commodity and security prices and the resulting further deterioration of expectations, and lend some support to the inducement to exploit existing investment opportunities. It is likely also to have some beneficial effect on consumers' expenditures, particularly for durable goods.

Let us now look at our three main types of depression to see what additional measures are best suited to each. A "pure" minor recession, with little or no decline in the sum of private long-term investment and government expenditure, does not, of course, cause a great deal of damage. For such mild and short-lived deflationary episodes, one might argue that no correctives are needed beyond the mechanical working of the automatic stabilizers and a prompt and strong dose of an easy money policy. The stronger the underlying trend toward secular inflation, the stronger the argument against going farther than this if one is confident that only a minor recession is involved.

Since we can never feel perfectly sure of our diagnosis, and particularly if the community is not prepared to tolerate an unemployment rate higher than, say, 5 per cent even for a short period, additional discretionary action might be taken to ameliorate a minor recession and hasten revival. "Formula flexibility" might be introduced into the system of unemployment insurance, so that payment provisions become more liberal as the unemployment rate rises. Expenditures on the lighter types of public works, which could be started quickly and completed within a short period, could be accelerated. It does not seem to me, however, that this sort of minor recession is the time for discretionary tax cuts, to be reversed later, or for an elaborate public works program.

[5] A. G. Hart offers some suggestions for improvement in *Money, Debt, and Economic Activity*, Prentice-Hall, 1948, pp. 480 ff.

In all probability, something can be done to eliminate or offset the specific maladjustments that might bring on a minor downswing. Let me suggest one or two illustrations. Assume that consumers' stocks of durable goods rise to the point that sales of such goods decline and initiate a general downswing, the underlying investment situation, however, remaining favorable in these and other industries.[6] Special credit facilities can be extended to the affected industries to permit easier credit terms to consumers, to assist these industries in carrying inventories, and to reduce the rate of repossessions. Efforts might also be made to bring about significant price reductions. Or to take another example, if the major difficulty seems to be the impact of a drop of wholesale commodity prices on short-term expectations and production plans, government purchases of strategic and farm commodities could be accelerated to the extent permitted by legislative enactment, and, within the framework of an easy money policy, special efforts could be made to encourage bankers to help business firms carry their existing inventories.

Let us now look at our second and more interesting type of contraction, the "intermediate" or "hybrid" case. I think most discussions of depression policy envisage this sort of recession—i.e. a contraction of considerable amplitude, associated with a fairly sharp drop in private long-term (as well as inventory) investment, but with no significant impairment of underlying investment opportunities. Under these circumstances the right kind of expansionary measures can well have the desired pump-priming or "leverage" effects.

Clearly, the measures suggested above for a minor recession are suitable here also. The more successfully income and consumption can be maintained through the operation of the automatic stabilizers and a discretionary increase in government expenditures, the less serious will be the impairment of inducements to exploit existing investment opportunities. In this type of sharp contraction, also, it is particularly essential that everything possible be done to combat the rapid and cumulative deterioration in attitudes toward liquidity.[7] A vigorous use of the conventional instruments of

[6] I suspect that periodic saturation of consumers' demands for durables and perhaps semidurables will play a more important role in creating minor fluctuations in the future than it did before World War II.

[7] To the extent that capital shortage was responsible for the downturn, the contraction process will provide an automatic correction; but it then becomes imperative to combat a new deflationary force—the recession-inspired scramble for liquidity.

monetary policy can flood the system with excess reserves, the purpose being not only to reduce interest rates but, more important, to minimize the increase in credit rationing resulting from the reevaluation of risks by lenders and to satisfy the increased desire for liquidity by business firms. One result I think it is important to aim at is the maintenance of replacement demand. In a depression this demand is likely to be sensitive to an increased desire for liquidity. An easy money policy, particularly if promptly initiated, should also help to hold back the decline in security and commodity prices and therefore further bolster business confidence.[8]

Beyond these minimal measures, something can be done directly to stimulate the inducements for exploiting existing investment opportunities and possibly, also, to create new opportunities. Lower interest rates will obviously help. A proposal frequently suggested is some form of tax remission or direct subsidy for private investment undertaken during periods of depressed activity.[9] While I have no great confidence that this could be done promptly and and without great friction, government-induced reductions in the prices of capital equipment and building materials, beyond what can normally be expected in a cyclical decline, would provide some additional stimulus to investment, chiefly by leading some firms to maintain or increase expenditures and to anticipate future investment needs. It is not clear that a moderate cut in this category of prices would have a bad effect on short-term expectations, but I suspect that it might create some difficult wage problems in these generally highly organized industries.[10]

[8] The need, through both general monetary policy and more specific measures, to increase the availability of funds for investment in depression periods is emphasized by N. H. Jacoby and J. F. Weston in their paper "Financial Policies for Regularizing Business Investment," in *Regularization of Business Investment*, Princeton University Press for National Bureau of Economic Research, 1954.

[9] For some discussion of the possibilities here see E. C. Brown, "Business Income Taxation and Investment Incentives," in *Income, Employment, and Public Policy: Essays in Honor of Alvin H. Hansen*, Norton, 1953, pp. 300–316; H. M. Groves, *Postwar Taxation and Economic Progress*, McGraw-Hill, 1946; R. S. Brown, Jr., "Techniques for Influencing Private Investment," in *Income Stabilization in a Developing Democracy*, Max Millikan, editor, Yale University Press, 1953, pp. 416–432; and J. P. Shelton and G. Ohlin, "A Swedish Tax Provision for Stabilizing Business Investment," *American Economic Review*, June 1952, pp. 375–380. These sources contain references to other literature on the subject. This topic is also touched on in some of the papers in *Regularization of Business Investment*, as cited.

[10] For further discussion of what might be done to maintain private investment in (by implication) our intermediate type of contraction, see the papers in *Regularization of Business Investment*, as cited. A good many of the authors were pessimistic as to the possibilities unless aggregate demand could first be supported through general monetary-fiscal measures. The chief grounds for pessimism were

In general, it is this "hybrid" type of depression which offers the fullest scope for the conventional instruments of stabilization policy because, by vigorous and prompt action, we can hope to bring about a revival in private spending without undue delay. The more successfully aggregate demand is maintained, the more willing will businessmen be to exploit existing investment opportunities. A combined monetary and fiscal policy can slow down the decline in private spending; fiscal policy working through increased government expenditures and reduced tax receipts can partially offset the decline in private investment; and the specific measures previously mentioned, as well as others, can be used to stimulate private investment.

Perhaps it is superfluous to add that the hybrid case, even more than a minor recession, may require measures aimed at specific types of maladjustment. Prompt action may be necessary to control liquidation in the commodity and security markets. Agriculture may need special help. It may be possible to stimulate the demand for consumers' durables or to increase the availability of mortgage credit. And so on.

The hybrid case shades into the more serious situation of a major depression, in which there is a significant impairment of underlying investment opportunities. Reference to reduced investment opportunities does not necessarily mean secular stagnation in a really long-run sense. The impairment of investment opportunities may be and in the past has been temporary. But, while this situation lasts, measures aimed at maintaining or reviving disposable income and consumption will not be enough to restore private investment to the level needed for full employment. In short, this is the case in which pump priming will have only limited success and the "leverage effects" of expansionary measures will be disappointingly small.

The types of policy already discussed should also be appropriate in a major depression; but, if these restorative efforts seem to have only limited effect and if private investment continues to decline, further steps can be taken. The public works program can be expanded, with particular attention being paid to those types of construction and those geographical areas which have been hardest

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(1) that the present value of investment made in slack times is less than in booms because the higher earnings of prosperity must be discounted for a longer period, (2) that the risks of anticipating future needs are considered too great both because of possible obsolescence and because of depression liquidity attitudes, and (3) the reduced availability of funds in depression, particularly from retained earnings (see, for example, the paper presented by Joel Dean).

hit.[11] Efforts can be intensified to stimulate investment by monetary policy and by tax and other investment incentives. In addition, lower interest rates and reduced prices for capital goods will extend the margin of profitable investment opportunities in some directions.

It should, however, be possible to go farther than this in accelerating the expansion of investment opportunities. Political and administrative problems might well arise, and it would probably be quite difficult in some cases to secure the detailed information necessary for effective action. In addition, the stabilization authorities might run into a special problem of timing and diagnosis. Vigorous application of the measures already mentioned might well stop even a major downswing and bring about a substantial revival in activity. After all, a considerable stock of investment opportunities always exists. It may well be that a new upswing will begin which will peter out too early, because the stock of investment opportunities is not yet sufficient to maintain for long, if at all, a satisfactorily high level of employment. Hence, mistaken or incomplete diagnosis of investment prospects might lead to deferment of some kinds of action until a second downswing had occurred.

What are some of the ways in which the stock of private investment opportunities might be expanded? I have not tried systematically to explore the major possibilities, but the following cursory suggestions may provide a basis for discussion. Also, I shall not consider whether any of these suggestions might entail a greater degree of detailed government intervention than a large section of public opinion would be prepared to accept.

Lower interest rates and prices of capital goods have already been mentioned. Special aid might be given to relatively young industries which perhaps had become temporarily overbuilt but which had considerable growth ahead of them—for example, financial assistance to firms in difficulties and technical help in accelerating the reduction in cost and improvement in product. Tax incentives and other government help could be offered generally to stimulate industrial research and modernization. Public expenditures might be made with a view to expanding particular industries. Thus road and street improvements might stimulate the automobile and house-building industries; construction and improve-

[11] The more important literature on the countercyclical use of public works expenditures is familiar enough not to require extensive citations here. For one recent useful contribution see M. L. Colean and Robinson Newcomb, *Stabilizing Construction: The Record and Potential,* McGraw-Hill, 1952, esp. Appendix Z.

ment of airports would help the aircraft and related industries; government assistance in the exploration for new oil reserves might result in a substantial increment of private investment in the important oil industry; and so on. Undoubtedly there are many other ways of helping private industry to develop new opportunities for expansion of which it is not yet aware.[12]

Particularly difficult problems are created when a major depression is brought on or intensified by the downswing of a building cycle, particularly in residential construction. This may well be a problem that the American economy will have to cope with sometime during the 1950's. In recent years nonfarm residential building has amounted to half or more of new private construction activity, and the latter has been nearly half of gross private domestic investment excluding additions to inventories. In the last few years we have been adding new dwelling units at a rate of better than a million a year, which is considerably higher than the rate of new-family formation that we can probably expect during the middle and late 1950's.

A serious decline in residential building is likely to mean that there has been a decline in the stock of investment opportunities in one or both of two ways. There may have been overbuilding, so that the current stock of housing is too large, given the size and other characteristics of the population and given also current incomes and prices. Second, and less serious, there may not have been any overbuilding, but the past rate of building (which brought the stock of dwellings up to the appropriate level) may have been larger than that called for by current and expected future increments of demand. If the stock of housing does become excessive, particularly if a general decline in income and a deterioration of liquidity attitudes also occur, the supply of mortgage funds may dry up, thereby reducing the level of building activity still further.

These considerations suggest the general lines along which attempts to revive residential building activity might proceed. I should prefer to leave the details to the experts, and I note that Mr. Grebler is contributing a paper on financial aids to housing. Perhaps the following suggestions, however, can at least be noted. Slum clearance and other forms of subsidized demolition can contribute to reducing an excess stock of housing. Special tax and financial inducements can be offered to private builders of housing for low

[12] Special mention should probably be made of the whole field of foreign investment, where undoubtedly much could be done to stimulate the flow of private capital to other parts of the world.

and middle income groups. Special efforts can be made to bring down building costs and to stimulate the maintenance and improvement of existing dwellings. Public works can be undertaken in part with a view to stimulating residential and commercial building—for example, improvement of streets and roads and public transportation systems, and the opening up of potentially attractive new suburban areas.[13] Government efforts that stimulate internal migration—for example, through decentralization of industry and government—may also tend to stimulate construction activity. It goes without saying that, from the point of view of a coordinated stabilization program, the time for accelerating the construction of public housing projects is during depression rather than boom periods—and particularly during periods of depressed building activity.

On the financial side, mortgage credit regulations can be relaxed, particularly if they had been tightened during the preceding boom. Unfortunately, American policy since World War II has been to stimulate the flow of mortgage credit in boom periods also, except for a short period after the outbreak of the Korean crisis.[14] Increased government support of the secondary mortgage market might be helpful during a period of depressed activity, as would steps to relax unduly tight credit standards applied by institutional lenders.

The measures discussed in the preceding pages can do some good, but undoubtedly they cannot *prevent* a major depression. Delays in diagnosis and the inevitable political and economic problems involved in putting any large-scale discretionary program into effect mean that, if a serious impairment of investment opportunities were to occur, steps could not be taken in time to prevent a business contraction of considerable magnitude. But perhaps I am more pessimistic than I should be.

Concluding Remarks

I have had little to say about wage-price policy and how it should be applied in the different kinds of contractions, largely because I am not at all sure I know the answer. A few sketchy observations

[13] It has been suggested that for every dollar spent in improving the Long Island Railroad, several dollars of additional demand for suburban housing on Long Island would be created.

[14] Cf. Leo Grebler, "Stabilizing Residential Construction—A Review of the Postwar Test," *American Economic Review*, September 1949, pp. 898–910, and Colean and Newcomb, *op. cit.*, pp. 145–147.

will have to suffice. I see little reason for tampering with the wage-price structure in minor recessions. Wages would certainly decline little if at all; a moderate decline in flexible prices would probably do more good than harm; and by definition the moderate decline in prices relative to wages that would be associated with a minor recession would not seriously impair long-term profit expectations.

In the hybrid case, exaggerated liquidation in commodity and security markets should obviously be prevented, if possible. Perhaps I am too confident that a vigorous easy money policy would help in this respect. Beyond this, we can assume that a farm price-support program would hold within moderate limits the decline in domestic agricultural prices. In the international sphere I should be happy to see an established, adequately financed buffer stock scheme. Something might be done to bring about some reduction in the prices of capital goods, through consultation with industry leaders. But since I suspect that the hybrid case is not the time for government pressure on wage rates, I have some doubts about pushing reductions in industrial prices to the point where we risk serious wage-price distortions and a further deterioration in business confidence.

In a prolonged major depression, downward pressure on prices and wages will, of course, be stronger than in the milder types of contraction. And the creation of some needed new investment opportunities may well require substantial changes in prices and costs in particular sectors. I have no great confidence that a stepped-up antitrust program will help reduce inflexible prices; government-industry cooperation may do a bit more; government and private measures aimed at stimulating greater efficiency in order to reduce costs may do a little more. Widespread wage cuts should not be pressed until fairly late in the downswing, and then the government might make a contribution by helping to bring about the reductions considered necessary in a few key industries. I share the view expressed by others that wage reductions should not be dragged out over a long period. A once-for-all cut relatively late in a contraction is probably better.

I do not think that either an effective or a practicable stabilization program can rely on a combination of the "castor oil treatment" (sharp downward revision of the cost-price structure and widespread bankruptcy of weak firms) and the "Pigou effect" (the stimulus given by the increased real value of cash balances to an increase in spending in relation to income). At the same time, efforts to bolster every weak spot that develops to the point of preventing needed price and cost adjustments can seriously delay recovery.

Probably the most important problem I have ignored is the one of diagnosis. Granted there is something in the sort of distinction I have tried to draw, how do we recognize the kind of contraction being presaged by a downturn in the more important business indicators? Perhaps empirical research will eventually tell us that certain constellations of behavior among various time series at cyclical peaks are associated with particular types of depression.[15] One difficulty is that the early stages of a contraction may look entirely like a minor recession and, indeed, be preceded by a minor boom. Only as the downswing develops do businessmen come to reevaluate long-term investment opportunities.

So far as I know, the only way out is careful analysis of the unfolding business situation, done in considerable detail and on the basis of a continuously improving body of information. In particular, we need more and better information on the factors influencing the production and investment plans of business firms and the spending plans of consumers. Needless to say, the time to start preventing a depression is during the preceding expansion. And when the beginnings of a downturn are recognized, the answers to three questions should be ready so far as it is possible to obtain them. What minor maladjustments need to be corrected, and how serious do they seem to be? To what extent do the speculative characteristics of the preceding boom suggest the imminence of a substantial secondary deflation? And, in many respects most important, what seem to be the long-term prospects for each important category of private investment? It is the answer to the third question which is likely to determine how intractable a depression will be.

Government commitments to spend belong in our concept of investment opportunities. Today government expenditures are considerably greater than gross private investment, and it does not seem likely that their total will fall below the level of private investment in the near-term future. As a result, a given percentage decline in private investment would mean less than half as great a relative decline in total nonconsumption expenditures, even without any contracyclical increase in government spending. This can be bad enough, but it suggests that for this reason alone "major depressions" are a somewhat less fearsome possibility than they have

[15] In this connection, note the interesting experiments reported by Geoffrey H. Moore in "The Diffusion of Business Cycles," in *Economics and the Public Interest,* Robert A. Solo, editor, Rutgers University Press, 1955, pp. 35–64.

been in the past. And, so far as the troublesome hybrid type of depression is concerned, we can safely assume that, in the absence of a philosophy of "balanced budgets at any cost," this type of "investment" (i.e. government spending) would be in any event well maintained. Unfortunately, this still leaves us with plenty of potential instability to worry about.

COMMENT

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The difficulty of distinguishing the various types of contraction, which Gordon describes, might be partially remedied by a different kind of classification of depressions. He holds that "the only way out is careful analysis of the unfolding business situation, done in considerable detail and on the basis of a continuously improving body of information." If the attempt were to differentiate the business cycle from the long cycle, this prescription might be considerably modified.

A shrinkage in investment opportunities is a notable characteristic of the peak levels of the long cycle. The seriousness of a subsequent depression is directly dependent upon the extent of the shrinkage which has taken place, and the latter can often be determined by a study of approaching saturation in growth industries, made industry by industry.[1] I believe that a stage is reached at which most of these industries experience, or are about to experience, a marked shrinkage in new-owner demand.

This is only one of the ways of predicting the continuation of the fundamental factors on which the high level of the long cycle rests. A study, industry by industry, of the development of new companies also offers promise in this respect. Department of Commerce studies under the direction of Lawrence Bridge indicate that new companies account for a large percentage of total investment. It may be possible to show that a point is reached, while the long cycle is still at a high level, at which the promise of new-company formation significantly declines in a predominant group of industries.

A study of the changing need for replacement is another promising area. Studies are needed of the changed age distribution of the

[1] A list of rapidly growing industries is given in two Department of Commerce publications: *Markets after Defense*, pp. 66–71, and the *Survey of Current Business*, January 1953, pp. 5–10.

stock of commodities in various durable industries. It appears likely that usually the average age comes to be abnormally low in the majority of durable industries when the long cycle is near its highest level.

There are no doubt other methods of throwing light on the fundamental conditions of the long cycle. Shifting debt obligations might be indicative. Grebler's suggestion that we need data on the combined housing and consumer durable debt obligations of individual consumers in relation to their income is interesting in this connection. Also, some method is needed to represent the changing pressure of business debt obligations. The combined movement of several aggregative variables—population changes, family formation, changes in business population, and others—must be considered, although work done so far indicates that chief reliance cannot be placed on aggregates.

Special conditions existing at any given time must be carefully weighed. The large demand for educational, commercial, and public utility construction is a current illustration. The reasons for the level of demand in each of these three major cases differ substantially, and, with the exception of public utility construction, they appear to center on forces that the techniques suggested above would not be likely to uncover. For example, wartime material shortages created a backlog of demand for commercial and educational construction. I believe that serious depressions occur only at low levels of the long cycle. If this is true what we need to forecast is the imminence of such low levels.

A study of the unfolding of the business situation offers little promise in classifying recessions because the unfolding is quite similar in early recessions. From the point of view of indication of needed early action, a classification into concomitant long cycles and business cycles offers substantially more promise than Gordon's classification.

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The principal papers presented at this conference were concerned with national fluctuations and with national policies to combat them. They did not explore intranational fluctuations, the transmission of intranational fluctuations from region to region, and the possibility that a first line of national policies to combat national depression might well take the form of policies designed to isolate and prevent the transmission of subnational fluctuations.

Intranational fluctuations might well be a suitable area of inquiry for subsequent meetings of this group. Among others, the following questions might be explored:

1. *Intranational Fluctuations.* What evidence do we have either confirming or negating the concept of subnational fluctuations? Many studies, some published, some in thesis or manuscript form and not otherwise widely known, have dealt with regional fluctuations. As a first step a bibliography of known studies of this sort might be prepared and circulated to members of this conference, with a request for the addition of any other known titles. On this basis, a paper might be presented to a future session of the conference dealing with a "survey of contemporary knowledge of intranational fluctuations."

2. *The Transmission of Intranational Fluctuations.* To the best of my knowledge, this subject has been little explored by existing studies. Most regional cycle studies have suggested some fairly obvious relationships between the timing of regional vs. the timing of national turns, and that has been the end of the matter. A much more penetrating study dealing with the mechanisms by which fluctuations in one region are transmitted to others is required. We may borrow heavily from the techniques of international economic analysis. We need information upon regional trade balances, upon interregional capital and money flows. There is a clear use for input-output analysis.

3. *National and Intranational Fluctuations.* Are there any identifiable intranational fluctuations that have shown a consistent lead relation to national fluctuations? Presumably no such consistent relationships will be disclosed. But national fluctuations will be preceded by fluctuations in some subnational regions and the identification of such patterns may provide a helpful guide to the early perception of developing national trends.

4. *Intranational Fluctuations and Policies to Combat Depression.* Any cycle turning point for the national economy will be preceded by turns in some subnational units and followed by turns in others. Most of our antidepression policy is directed to the national level. It is possible that we can construct policies designed to offset regional declines before their effects are transmitted elsewhere within the national economy.

5. *Variations in Vulnerability of Subnational Units.* We know in a general way that different regions show differing degrees of vulnerability to different kinds of national depressing forces. A general decline in farm prices will have much greater impact upon the

total economy of the Great Plains–Intermountain region than upon the New England economy. The application of selective countering measures in the more vulnerable regions may discourage the development of secondary repercussions that will transmit the regional depression to a broader market.

6. *Policies for Combating Intranational Depression.* While national depressions quickly develop to a stage requiring national action, there are still wide intranational differences in the magnitude of such depressions. And, as suggested above, appropriate subnational measures may contribute to the preventing or mitigation of national depressions. Among the many measures that might be considered are: (1) Development of public works programs with known variations in regional impact. This will require a considerable advance preparation of input-output data. (2) Policies for greater variation in regional credit and loan policies.