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CONTROLLED PUBLIC WORKS AS A STABILIZING FACTOR: SOME BASIC PROBLEMS OF THEORY

Flexible Public Works as a Stabilizing Device

Detailed examination of the wider implications of the theoretical questions raised by the suggested utilization of public works as an agency of economic stabilization in an unstable economic system does not fall within the scope of this study.[1] The proposal is, on the one hand, closely interrelated with basic problems of business cycle theory, and on the other, is merely part of the large complex of problems involved in the construction of public improvements by governmental agencies. These theoretical aspects have been discussed by economists for some years both in this country and abroad.[2] In this

[1] The problem is treated at length in the companion report on The Economics of Planned Public Works recently made by Professor J. M. Clark to the National Planning Board.

[2] For the discussion of the problem in English, see the following American and British studies: O. T. Mallery, The Long-Range Planning of Public Works, in *Business Cycles and Unemployment* (New York, 1923); F. G. Dickinson, Public Construction and Cyclical Unemployment, *Annals of the American Academy of Political and Social Science*, Supplement, September 1928; Public Works and Unemployment, *American Economic Review*, Supplement, March 1930; Leo Wolman, *Planning and Control of Public Works* (National Bureau of Economic Research, 1930); G. Bielschowsky, Business Fluctuations and Public Works, *Quarterly Journal of Economics*, February 1930; E. C. Harwood, A Criticism of Stimulated Construction, *The Annalist*, May 30, 1930; V. A. Mund, Prosperity Reserves of Public Works, *Annals of the American Academy of Political and Social Science*, Supplement, May 1930; Hearings before U. S. Senate sub-committees on Sen. Res. 219 (1928 and 1929), S. 2475 (1928), S. 3059, S. 3060, S. 3061 (1930) and S. 2419 (1932); Stabilizing Employment Through Public Works Programs, *American Labor Legislation Review*, June 1932; W. N. Loucks, *The Stabilization of Employment in Philadelphia*, (Philadelphia, 1933); C. Gill, The Effectiveness of Public Works in Stabiliz-

chapter an attempt will be made merely to raise these basic issues and to express such tentative opinions concerning them as seem justified in the light of the factual and analytic survey presented in the body of this study.

SOME CRUCIAL FACTORS IN INDUSTRIAL FLUCTUATIONS

As a background for the better evaluation of the proposal for utilization of controlled public works as a stabilizing influence, brief mention may perhaps be made to advantage of some of the crucial factors, well recognized though they are, in the process of cyclical business fluctuation.[3]

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ing the Construction Industry and R. F. Kahn, Public Works and Inflation, *American Statistical Association Journal,* Supplement, March 1933; A. D. Gayer, Public Works, in *Encylopaedia of the Social Sciences* (1934), and Monetary Policy and Public Works, Special Report No. V in *Economic Reconstruction* (Columbia University Press, 1934).

D. H. MacGregor, British Aspects of Unemployment in *Some Aspects of Recent British Economics* (Chicago, 1923); A. L. Bowley and F. D. Stuart, Regularization of the Demand for Labour, and A. C. Pigou, Correctives of the Trade Cycle, in *Is Unemployment Inevitable?* (London, 1924); R. G. Hawtrey, Public Expenditures and the Demand for Labour, *Economica,* March 1925; *Britain's Industrial Future* (Liberal Industrial Inquiry, London, 1928); J. M. Keynes, Letters to *The Times* (London), August 7, 1929; H. Clay, *The Post-War Unemployment Problem* (London, 1929); A. C. Pigou, The Monetary Theory of the Trade Cycle, in *The Economic Journal,* Vol. XXXIX, London, 1929; P. W. Martin, *The Problem of Maintaining Purchasing Power* (London, 1931); R. F. Kahn, The Relation of Home Investment to Unemployment, in *The Economic Journal,* Vol. XLI, London, June 1931; J. M. Keynes, *The Means to Prosperity* (London, 1933) and R. C. Davison, *The Unemployed* (London, 1929).

For Continental European sources see the following: Statistisches Amt, *Die Staatsausgaben von Grossbritannien, Frankreich, Belgien und Italien,* Einzelschriften zur Statistik des Deutschen Reiches, No. 2 (Berlin, 1927); Nicola Muratore, *La Finanza delle Opere Pubbliche* (Milan, 1928); *Unemployment and Public Works,* International Labour Office (Geneva, 1931); B. Ohlin, Now or Never: Action to Combat the World Depression in *Index,* Stockholm, Vol. VII, No. 77, May 1932; T. G. Spates, *International Planning of Public Works,* Geneva Special Studies, Vol. 3, No. 3 (March 1932); Erik Lindahl, Öffentligaarbeten i Depressionstider in *Nationalekonomiska Foreningen,* Forhändlingar, 1932 (Stockholm, 1933), with discussion by G. Bagge, E. Hecksher, B. Ohlin, J. Akerman and others; Gunnar Myrdal, *Finanspolitikens Ekonomiska Verkningar* (Stockholm, 1934).

[3] In this section I have drawn on recent discussions with Dr. M. A. Heilperin

A breakdown of economic activity occurs when private industry ceases to make new capital investments, or makes them at a greatly decelerated rate. Since more has been produced than the market can absorb at a given price schedule, the recession is characterized by a falling off of production in capital and other durable goods industries, by attendant unemployment, by a decrease in total consumers' incomes, by consequent contracted demand for consumption goods, by more unemployment, by less production, and so on.

The process does not, however, continue indefinitely. Though the forces that tend to come into operation and arrest it sooner or later are still shrouded in considerable obscurity, the following factors clearly play an important part: obsolescence of existing plant due to wear and tear, and to lack of use; obsolescence caused by new inventions; readjustment of the cost-debt-price structure through bankruptcies, forced sales of plant, voluntary reorganizations, etc. Fixed costs of production are reduced by considerable writing-off of old plant, particularly in respect of interest-bearing capital investment in buildings and real estate. These readjustments make possible a larger net profit per unit from a given amount of gross earnings. Thus in time, after the readjustment has been effected, new investment again becomes profitable, and recovery begins.

Other forces, however, also come into operation during a period of decline which may entirely or in part offset these factors which make for a decrease in production costs. When sales and output fall the burden of overhead costs per unit of output increases. A large volume of unemployment itself retards recovery while also, from the social viewpoint, entailing a loss of real national income. During depressions a relatively greater decline occurs in the demand for, and hence the price of producers' than of consumers' goods: the contraction of the market for the latter, however, makes it unprofitable for the producers of these goods to extend

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of the University of Geneva and the Rockefeller Foundation, New York. For an extended discussion of Strategic Factors in Business Cycles see the recent volume of that title by Professor J. M. Clark (National Bureau of Economic Research, 1934).

their plant. The main factor in the eventual revival of demand for capital goods seems to be obsolescence rather than a fall in their price. The element of price enters mainly in determining whether replacements should be made. The process of technical innovation and improvement is also an important factor in reducing costs of production.

The question that presents itself is whether, pending the obsolescence of existing plant, the production of capital goods must necessarily fall off so sharply with the accompaniment of a corresponding decrease in general production, in consumption, in employment, and in real national income.

The heart of the problem of business fluctuation has long been recognized to lie in this rise and fall of investment in new capital goods, both producers' goods and durable consumers' goods. While it is probably true that some check can be effectively placed upon excessive activity in capital goods industries on the upswing by the exercise of 'monetary' weapons alone, yet in themselves they would appear from recent experience to be powerless to restore the community's purchasing power once the reaction from excessive capital investment has occurred. Plentifully available funds may help in preparing the way for new investment, but they will not induce it so long as the prospective rate of profit on it is likely to be a minus quantity: in other words, until the process of readjustment through depreciation, obsolescence, the introduction of new inventions and the development of new products has been effected.

A program of flexible controlled public works may in its broader aspects be properly viewed as one special application of a fiscal policy which attempts to smooth fluctuations of activity by alternately accumulating balances in periods of prosperity and disbursing them during years of depression. The possible forms these 'balances' might take—a highly important aspect of the problem—are discussed more fully below. In many important respects, though not in all, the basic

problems raised would be similar in schemes for building up and subsequently expending unemployment insurance funds, industrial reserves, consumer reserve funds, and the like. The effect in all cases should be a tendency to check net profits in periods of prosperity and therefore to moderate the upward swing. During depressions, on the other hand, their expenditure should tend to help maintain the general level of consumption. In the case of public works reserves the effect upon the maintenance of activity in capital goods industries should be even more important: this is not equally true of unemployment and other consumer reserve funds.

In the light of this very bare outline of a theoretical frame of reference for the appraisal of a flexible public works policy it would appear that the aim of the latter during depressions should be, first, to promote the maintenance of durable goods production at a level higher than it would otherwise be pending new 'normal' demand for them; and second, to stimulate new demand for durable goods. This it would aim to do by increasing production in certain groups of durable goods industries and by furthering the demand for other durable goods by these groups. Expanded public works should also help maintain consumption. During periods of prosperity the opposite policy would naturally be the appropriate course of action to pursue.

It follows that accelerated emergency public construction should as far as possible take the form of capital investment which, while increasing the national stock of durable goods, does not compete with private industry or aggravate its difficulties. Nor would the aggregate volume of public works undertaken over the period of years, good and bad together, which embrace a complete cycle, be any larger than otherwise. The objective would merely be a better time-distribution. The effect of public works in *directly* financing consumption should not be overstressed. Since, during depressions, it is in

the capital goods industries that the fall in production and employment is greatest, increased activity on their part will indirectly but inevitably increase consumption. The direct financing of additional consumption, however, is likely to have only distant, indirect and delayed effects on the production of capital goods. The main function of expanded public works is thus to induce a secondary current of private orders and stimulate private enterprise. Public construction expenditures under long-range planning should therefore during depressions describe a curve which passes through a maximum and thereafter declines when private expenditures begin to increase.

SCOPE AND EFFECTIVENESS OF PUBLIC WORKS CONTROL

In light of the examination of specific practical difficulties made above, it need not be emphasized that at best the policy can operate only within certain limits. A large proportion of public works is non-shiftable in time, and the problem is envisaged artificially if public bodies are thought normally to have unrestricted freedom of choice between different projects, none of them especially urgent. Hitherto the latitude of choice open to governmental agencies in the United States has been rather strictly limited because they have almost always been behindhand, often through no fault of their own, in the supply of much-needed public facilities. Yet this condition of affairs has in itself been largely the outcome of the failure to plan public improvements in advance. Effective long-range programs of public works, framed with reference to future as well as present needs, should admit of anticipation equally with postponement of projects. That public works may to some extent during emergencies be carried out earlier than would otherwise have been possible, with the benefits of both lowered costs and increased employment,

seems to be evidenced by the experience of several countries during the few years following the close of the War, and again more recently.[4]

Any adequate system of controlled public works must thus obviously be based upon careful, comprehensive long-range planning of public improvement projects, and would involve both their deliberate retardation during prosperity and their acceleration in periods of unemployment. Though the volume of work which can be conducted on an elastic schedule is clearly not sufficient to eliminate all cyclical fluctuation in the absence of the regularization of private construction and industry in general, it might well constitute an important element in a general program for the stabilization of employment.

The exact proportion of improvement expenditures in the country as a whole that is susceptible to reallocation by advancement or postponement clearly cannot be determined, but some light is thrown on the problem by Professor Loucks' analysis of the situation in Philadelphia over the period 1919–28.[5] It was found that about 50 per cent of the total improvement expenditures from loan funds by the city proper could have been considered shiftable from one year to another during that period, and that had the city's expenditures of loan funds on municipal improvements been distributed over that period with a view to the reduction of unemployment, 10 to 15 per cent of the jobless could have been absorbed in any one year as a result. This percentage seems small, but there is reason to believe that it could be much increased were the long-range planning of public works adopted more systematically and prevailed over a wider area. The effects of local expenditures in stimulating or restraining industrial activity elsewhere, as also conversely of expenditures else-

[4] *Unemployment and Public Works* (International Labour Office, 1931), pp. 105–68.

[5] W. N. Loucks, *The Stabilization of Employment in Philadelphia,* pp. 181 sqq.

where upon local conditions, had necessarily to be excluded from this study by reason of its limited scope.

THE ARGUMENT THAT CONSTRUCTION EXPENDITURES MERELY EFFECT A DIVERSION OF RESOURCES

The objection has been advanced to a flexible public works policy that capital raised by public authorities for construction work in times of depression represents merely a diversion of resources from private industry to public enterprise, especially by raising the costs of borrowing and of labor and materials, and therefore cannot create any addition to the sum total of employment. While it is not possible at this point to enter into a full discussion of all aspects of this vexed question, the argument seems to rest upon certain questionable assumptions.

The contention has been stated as follows: "It is not permissible to regard the additional employment offered by the enlargement of public building activities as so much net increase in the total volume of employment available. The assumption disregards the fact that an extension of public works has to be financed with funds, part of which at least would otherwise have been used by private enterprise." [6] Since, however, there is usually during depression periods a surplus of idle funds seeking secure investment at attractive returns, which private industry is unable or unwilling to utilize, its use by public bodies need not necessarily involve transference of spending power from private enterprise, inasmuch as this capital might otherwise not have been employed at all.[7] If the expansion of government expenditures

[6] G. Bielschowsky, Business Fluctuations and Public Works, *Quarterly Journal of Economics*, February 1930, p. 297.

[7] "It is well established by the study of business cycles that total income and total expenditure are not a fixed fund but do fluctuate and that the short-run effect of enlarged expenditure, in one direction, and correspondingly enlarged

is accompanied by an expansion of credit, additional means of payment may be created and a net increase in employment effected, and this in turn by bringing about increased consumer and producer demand and stimulating industry could relieve the credit contraction which characterizes a downward trend of activity. "Industry has expanded after trade depression in the past without any prior increase in capital resources, because the expansion itself provides the resources out of which expansion is possible. The problem is to find the causes that stimulate expansion, and the placing of a large number of government contracts might be one of them." [8]

Because business men are reluctant in periods of industrial depression to make capital expenditures in the face of uncertainty, declining costs and prevailing excess productive capacity, funds are likely to lie idle as unemployed bank, personal and corporate balances, and it is from these reservoirs of credit that the means to finance expanded public works programs could be largely drawn. This need cause no diversion of resources. The enlargement in the volume of public construction financed in this manner could of course be only temporary, but it might be effective in increasing purchasing power when most needed and in assisting general business revival.[9] "The experience of governments has been generally speaking . . . that it has been possible to raise money in the capital market for public works without

productive activity, is not necessarily to diminish expenditure and activity elsewhere, but more likely to increase it, the stimulus being diffused in cumulative fashion. There is elasticity in the credit mechanism and back of this there is slack in corporate and personal budgets" (J. M. Clark, Long-Range Planning, *American Economic Review,* Supplement, March 1930, p. 18).

[8] Henry Clay, *The Post-War Unemployment Problem* (London, 1929), p. 129.

[9] The point has been concisely stated by Professor J. M. Clark: "Funds may be raised by drawing on general balances, by short-term borrowing, or by the sale of long-term securities somewhat earlier than they would otherwise have been sold. And the probabilities are all in favor of this being done without giving rise to reactions which would neutralize the effect and would defeat the end in view" (*American Economic Review,* Supplement, March 1930, p. 18).

increasing the difficulties of other enterprises in raising capital for their purposes." [10]

It should be emphasized, however, that a public works program undertaken in conjunction with an appropriate central bank policy can prove successful only if government credit is secure, the capital market strong, and the demand for bonds elastic. Otherwise there is danger that any reflation effected through credit creation and expanded public expenditures may be offset by a decline in private activity resulting from general lack of confidence, financial uneasiness and consequent increased cost of raising capital. This is a proviso of absolutely fundamental importance: it is developed at greater length below.

During periods of depression the piling up of idle bank balances causes a decrease in the quantity of the total effective means of payment in circulation, and this condition would be remedied, subject to the conditions just noted, by expanded public works financed directly or indirectly by means of loans from the banks.[11] As Professor Pigou has pointed out, the funds needed to finance increased building activity during depressions might be provided partly as a result of the reduction of expenditures which would be required for direct unemployment relief and partly by creating bank credits or by preventing their continued contraction in volume.[12] Indeed, Hawtrey, in commenting upon this argument, goes so far as to claim that the chief virtue of the policy lies in the

[10] *Unemployment and Public Works* (International Labour Office, 1931), p. 30.

[11] In periods of depression "the rapidity of circulation is low, because people cannot find outlets for their surplus funds and they accumulate idle balances. If the Government comes forward with an attractive gilt-edged loan, it may raise money not merely by taking the place of other possible capital issues, but by securing money that would otherwise have remained idle in balances" (R. G. Hawtrey, cited in Clay, *op. cit.*, p. 131).

[12] Correctives of the Trade Cycle, in *Is Unemployment Inevitable?*

credit expansion it would occasion, and in substance asserts that that objective directly pursued and unaccompanied by added expenditures on public works would be equally effective: that is, that the employment of this device is an unnecessarily roundabout method of aiming at a desirable end.[13]

STIMULATED CONSTRUCTION AS A MEANS OF CREDIT EXPANSION

But can this objective be successfully attained by direct means? The policy of flooding the banks with cheap money by means of a low rediscount rate supported by large security purchases may not have the desired effect of creating bank deposits and increased consumer buying and producer borrowing, or the process may be long delayed. There is no guarantee that sound borrowers will come forward automatically. Experience has repeatedly shown that making borrowing easier will not necessarily in a severe depression of itself encourage business activity. That depends upon whether business men consider they can increase production profitably, and that in turn depends largely upon the probable future volume of demand and the trend of prices. Ultimately it is a question of profits, actual or prospective.

In these circumstances, it has been argued, the way to achieve credit expansion is through a sufficiently enlarged public works program to ensure that the additional credit made available will be effectively utilized. The expenditure of large sums for construction purposes, by giving jobs to the idle both directly, and to a greater extent indirectly, should stimulate production and bring about a recovery of commodity and security prices, the first essentials to arrest the process of liquidation. Once a severe depression has developed, what ever may have been the factors originally responsible in caus-

[13] Public Expenditures and the Demand for Labour, *Economica*, March 1925 (reprinted in *Trade and Credit*, 1928).

ing recession, business is likely to continue long to take an unsteadily downward course by reason of the sheer cumulative momentum of the forces at work. If it is true that these can be checked and reversed by increased spending, governmental authorities may have to take the initiative themselves, since little can be expected from appeals to a nervous and impoverished public. One should not assume that because depressions are precipitated by previous overexpansion, they will therefore necessarily be remedied by a mere reduction in total spending: for though the process of contraction does represent a reaction from maladjustments, it may well intensify these maladjustments and create others. A necessary measure of corrective liquidation involving some reduction of spending and lowering of prices is not the same thing as purely destructive deflation produced by a panic-generated passion for liquidity. Since contraction will not of itself ensure reduction of prices where it is most needed, public works expenditures may help during depression in effecting readjustments by keeping up the total volume of spending to some extent and preventing a runaway deflation which may go far beyond the lengths required to effect these readjustments. Furthermore, the aim of a long-range policy of controlled public works would be precisely the prevention of the overexpansion which leads to reaction. But the foregoing argument again is subject to the twofold proviso mentioned above, namely, that the expansionist policy during depressions does not increase the difficulties of private industry, first, by raising the cost of new capital through injury done to the bond market and the banks in consequence of weakened confidence, and, second, by raising the cost of construction materials and building labor.

POSSIBLE DEFLATIONARY CONSEQUENCES OF EXPANDED PUBLIC WORKS

This proviso is crucial and requires further examination. Sustained recovery must of necessity under the existing economic order be dependent almost wholly upon the revival of *business* spending. Public expenditures normally constitute far too small a proportion of all expenditures for any feasible expansion of the former to take the place of business spending. The most that can be hoped for from increased public spending is that it will 'prime the pump' of private spending. This it will do only if its effect is to strengthen business confidence, for the latter is a necessary condition for the resumption of business spending.

Now there is danger, for various reasons, that large public works expenditures may, by causing private enterprise to reduce *its* expenditures, deepen rather than relieve depression. This danger is likely to be especially great when the accelerated outlays are made not as part of a long-range program of alternate contraction and expansion, but are undertaken in an emergency, without having been previously retarded—the object being to 'support the market'. In this study we have been chiefly concerned with the former type of policy and have considered improvised emergency expenditures only incidentally. The possible effects of the latter course of action in provoking a contraction in business spending call, however, for brief discussion, since even long-range programs may have the same effects, though the probability of their doing so would be much smaller.[14]

Greatly enlarged public works expenditures, especially if

[14] The argument of the remainder of this section owes much to Professor Sumner H. Slichter's paper, The Economics of Public Works, *American Economic Review*, Supplement, March 1934, pp. 174–85, and his recent book, *Towards Stability* (Henry Holt, 1934), pp. 36–7, 143–9.

there is doubt as to how long the policy will be continued, may be looked upon by the business community as creating a highly artificial situation. Instead of expanding operations, business men might well, in these circumstances, postpone commitments. On the other hand, if the results expected by the government from increased expenditures are slow in appearing, and if, because depression continues unabated, the government borrows and spends progressively larger sums, probably in the face of declining revenues, the rapid consequent growth of the public debt may engender fear of ultimate inflation. The more severe the depression, the greater naturally is this danger likely to be. But a fear of ultimate inflation (unlike a conviction of imminent inflation) may have, not inflationary, but *deflationary* effects, by finding expression not in the buying of commodities but in the sale of bonds, the hoarding of cash, and the flight of capital—with consequent weakening of the banks and a competitive struggle on their part for liquidity. Thus the cost of new borrowing might be raised to a prohibitive point.

Hardly less important are the possible effects upon other construction costs, and, through them, upon the relation between prices within the total price structure. Large expenditures on public works, if made before building costs have had time to fall, may prevent their doing so, and thus retard the very readjustments which are most needed for business recovery. Expanded public works might thus, by supporting building costs, prevent correction of maladjustments and prolong depression. This was one charge brought against the government's huge public works program during the recent depression—that it tended to 'peg' construction costs.

"The government is purchasing materials at the lowest possible price, but it is buying labor, which represents, of course, a large part of the total construction cost, at more or less arbitrary prices. In view of the fact that there is often no price for labor in the

construction industry which may properly be regarded as a market price, the government is confronted with a difficult problem in fixing wages on construction jobs. The government has set a scale for skilled labor of $1.00 an hour in the South, $1.10 in the Middle states, and $1.20 in the North for skilled labor. In the South, union men have been striking to get $.75 an hour. In many places in the North, wages of the building crafts, even during the height of the building boom of 1928–29, did not reach $1.20. Now in the midst of perhaps the worst depression in our history, the government is paying wages which exceed the boom rates in many communities." [15]

Thus the acid test of a policy of controlled public works is the extent to which it is likely to assist, during depressions, in correcting those basic maladjustments which are the cause of depressions, and during prosperity, in preventing their development. The problem cannot easily be solved *a priori,* since so much must depend upon both the manner in which the policy is put into effect and the varying complex of the circumstances of the occasion. The danger that the policy will prove a hindrance rather than a help is likely, however, to be reduced in proportion as it forms part of a program of long-range planning. Apart from the aid it might well afford

[15] S. H. Slichter, The Economics of Public Works, *loc. cit.* Professor Slichter, however, goes on to add: "As a matter of fact, I am not particularly alarmed at the probable effect of wages under the present public works program upon the revival of business. Fortunately the program has been initiated only after nearly four years of depression, after the prices of construction materials have had time to fall, after business men have had ample opportunities to discover many new ways of changing and enlarging their operations, and after a substantial shortage of some types of housing and equipment has developed. Consequently, although high wage rates on public works may discourage some private construction and even interfere seriously with the provision of cheap housing, they are not likely to have a disastrous effect upon recovery. I do, however, wish to stress emphatically the danger of pegging building materials and labor by an ambitious program of public works initiated early in a depression before these prices have had an opportunity to fall. . . . For example, a large public works program in 1930, tending to peg building costs at 1928–29 levels, would have been disastrous."

in preventing the development of maladjustments during the prosperity phase of the cycle, the policy, when thus employed, is obviously far less likely during depressions to create difficulties for private business of the sorts enumerated above. The suggestion has indeed been made that public works might be deliberately utilized to effect a reduction in the price of capital goods and thus to aid in removing maladjustments.

"The government might predicate its willingness to expand construction by a given amount upon the willingness of building labor and producers of building materials to accept a given reduction in their prices. In that event, the public works program would be doubly useful—it would directly tend to increase the volume of spending and it would accelerate price changes that are needed in order for change and growth on a large scale to become profitable." [16]

To sum up: The effects of increased public works expenditures during depressions will largely depend upon the extent to which they remove or reinforce the maladjustments that precipitated the depression and, by so doing, stimulate or retard business spending. The prospects of their successful utilization in effecting readjustments will in turn depend largely upon the degree of long-range planning they represent. "If the government expenditures have been carefully planned, they should assist in removing the causes of depression because most maladjustments are more easily corrected on a rising market than on a falling one. . . . Even when a policy of strict *laissez-faire* is pursued, recovery does not wait for all maladjustments to be removed . . . it is, in large measure, *through revival itself* that some maladjustments are eventually eliminated." [17]

[16] S. H. Slichter, *Towards Stability*, pp. 145–6.
[17] S. H. Slichter, *op. cit.*, p. 40.

FURTHER OBJECTIONS EXAMINED

Some more popular objections frequently advanced against public works expansion in depression can be dealt with more briefly. The objection that the additional debt contracted involves a future increased burden of taxation rests, when thus expressed, on a confusion of thought. Business recovery, provided it occurs—and this assumes that government spending is successful in hastening recovery—is likely to bring increased tax receipts without the imposition of additional taxation. It is precisely the contraction of incomes consequent upon a decline in business activity that is responsible for the increase during depressions of the real burden of fixed indebtedness. In other words, if the policy succeeds, its cost will be more than paid for by the restoration of business activity. But if it fails, the increase in public debt may, immediately or subsequently, have serious consequences. Thus the argument that public works expenditures financed by borrowing do injury in depressions by 'unbalancing' the budget is not wholly unfounded. For though the answer is valid that the budget can only be brought into an enduring balance if the national income is increased, and that this can come about only through a restoration of business activity, still the danger exists in the short run that if a badly unbalanced budget lessens business confidence, it may reduce private activity by a greater amount than public activity is increased by expanded expenditures. It remains true, however, that we cannot all grow prosperous if everyone, including public bodies, spends progressively less and less. That way lies universal impoverishment.

With respect to the charge of inevitable waste, no excessive waste need occur if projects have been planned in advance, and such as did occur should be insignificant in comparison

with the economic waste of idle and deteriorating man power and capital equipment. Besides, since the unemployed must be supported in any event out of public or private funds, the real net direct cost of public works, apart from their possible indirect stimulating effects, is much less than it seems, while in addition the community receives something in return for its expenditures. Thus the apparent magnitude of the cost is deceptive. For first, there must be deducted from the gross cost both the saving in unemployment relief and the increased tax receipts which should in time flow into the treasury as a result of the increased incomes (including profits) of the recipients. Second, public outlays on capital developments bring the community a twofold socially beneficial return, which relief expenditures do not: they augment its physical assets and they preserve the industrial skill and the morale of those given employment. Third, as shown below, there are in addition their equally important indirect effects in creating 'secondary' employment and in starting the ball rolling again.

Finally it is often asserted that a sufficient volume of genuinely needed public works cannot be found in depression periods to give substantial employment. This objection would of course fall to the ground if construction programs were to be planned in advance and retarded in periods of prosperity. But even though this has not been the case during the recent depression, still the statement is wholly unjustified, at least with respect to the United States. For in all parts of the country billions of dollars worth of authorized and sometimes already initiated projects were suspended through the wholesale elimination of all possible construction items from numerous local budgets because of the shortage of funds, though this was not true of the Federal government. Road- and bridgebuilding, in particular, is an example of construction work suitable for this purpose both because it can be put in

hand rapidly and entails expenditures that are bound to be made sooner or later. Schemes for slum clearance and the erection of decent workers' dwellings suffer from the defect that in most cities comprehensive and detailed plans have hitherto not existed, but they offer almost boundless opportunities in the future for construction work of the highest social utility, if certain basic problems of financing can be satisfactorily solved.

'SELF-LIQUIDATING' CONSTRUCTION PROJECTS

What criteria should be applied in the choice of public works to be undertaken during depressions apart from social desirability and the possibility of their speedy initiation? Obviously they should be such as will not compete with private business and adversely affect existing capital structures. Should they, however, further take the form as far as possible of 'self-liquidating' projects, as was stipulated in the Emergency Relief and Construction Act of 1932? (See Ch. I). It has been argued that self-liquidating public works weaken the consumer market by withdrawing purchasing power that would ordinarily have been spent on goods and services through the payment of tolls and fees, and should therefore be avoided, even though their social value may be great. This criticism does not seem to be valid. It is true that the consumer market will be weakened consequent to the collection of tolls for the liquidation of these projects, but this is more likely to occur after revival has already set in than during the period of depression, when the projects are still under construction, unless the depression is protracted. If the aim of a public works program is to speed up construction during depressions and reduce capital development during periods of prosperity, self-liquidating projects are economically sound in theory. They stabilize buying by pouring money into the market

when there is a decline in purchasing power and withdrawing it when spending is too liberal. If public works are designed to correct a condition of alternate overexpansion and overcontraction of capital goods industries, self-liquidating projects need not be avoided. The chief difficulty, however, is to find such projects in sufficient volume. For this reason no great weight can ordinarily be attached to the self-liquidating character of projects to be undertaken during depressions. If the object of such expenditures is to increase the total volume of purchasing power, the choice of projects must be determined primarily by their social utility rather than by the prospect of a specific yield accruing from the services to which the projects are devoted.

'SECONDARY' EFFECTS OF FLEXIBLE PUBLIC WORKS EXPENDITURES

Increased public expenditures on capital development give employment not only to the men directly engaged on the projects on which the money is spent, but also to those producing and transporting the construction materials required. This employment, direct and indirect, may be designated the 'primary' employment created by the gross amount of the initial new expenditure. But the increased purchasing power resulting from the additional aggregate incomes received by those thus engaged will in turn be expressed in increased demand for other goods which will further increase employment; and so on, in a series of waves—though always subject to the qualifications made above concerning the possible effects on business spending. The employment created by these repercussions may be termed the 'secondary' employment created by the initial additional expenditure on public works.

If the process continued indefinitely it would be sufficient

to put one man to work on roadbuilding to keep the entire population employed providing for his 'secondary' needs.[18] But although the process is cumulative, its effects do not multiply indefinitely. At each stage, because of various leakages, whose magnitude will depend upon the phase of the business cycle, a certain proportion of the increased income will not eventuate in increased employment.[19] Some of the added income will be saved, some will merely be a substitute for previous expenditure by private charity, some will be used to pay off old debts. These are deflationary tendencies likely to occur if increased expenditure is concentrated in a period of depression. Some of the increased income might also be spent on imports, or raise prices and thus diminish consumption, unless producers spent their increased profits. During a depression there probably would be less leakage on the score of higher prices, because there would be a great deal of unused productive capacity, so that industry could take its increased gains by a larger turnover at the same price.

The net effect of a given volume of expenditure can therefore be calculated if we assume the proportion of these leakages, letting our assumptions vary with the circumstances. Thus there may be no secondary employment if there is little or no margin of unemployed resources, for the additional purchasing power is then likely to be reflected in higher prices and increased imports. If the increased income took the place

[18] R. F. Kahn, The Relation of Home Investment to Unemployment, *The Economic Journal*, June 1931. The analysis of 'leakages' which follows was first developed by Mr. Kahn in this article. See also his paper on Public Works and Inflation, *American Statistical Association Journal*, Supplement, March 1933, and J. M. Keynes, *The Means to Prosperity* (London, 1933). *Cf.* Mark Mitnitzky, Economic Effects of Changes in Consumers' Demand, *Social Research*, May 1934.

[19] The assumption must of course be made that the original expenditure represents a net addition to the aggregate volume of purchasing power and does not merely replace previous expenditure, for otherwise no cumulative effect could ordinarily be expected.

of a 'dole' paid for by borrowing, there would be scarcely any repercussions at all. On the other hand, if the dole were paid for by taxes, the reduction in the 'dole' would presumably lead to an increase in the taxpayer's purchasing power.

The problem, then, is to discover the total employment, primary and secondary together, created by a given amount of additional 'loan-expenditure'; to ascertain what J. M. Keynes calls the multiplier relating the total employment to the primary employment. He calculates it to be, in depression, about 2.

He uses as an example the primary expenditure of $100, which he divides into two parts: [20] (1) money which does not become additional income, consisting of cost of imported materials, cost of goods not newly produced but merely transferred, cost of productive resources of men and plant not additionally employed but merely taken from other jobs, and cost of wages substituted for income derived from a dole paid for by borrowing; (2) money which does become additional income. This may be either spent or saved.

To obtain the multiplier two magnitudes must be estimated: the proportion of a typical expenditure becoming someone's income and the proportion of this income which is spent. These two proportions multiplied together give us the ratio of the first repercussion to the primary effect, since they give us the ratio of the second flow of expenditure to the initial flow of expenditure. To sum up the whole series of repercussions, we may assume that the second repercussion will bear the same ratio to the first repercussion as the first bore to the primary effect.

Under conditions of serious depression, such as existed when he was writing, Keynes suggests as a reasonable figure the deduction of 30 per cent of expenditure which for one reason or another does not increase incomes, leaving 70 per cent accruing to one person or another in current income. Of this 70 per cent additional income, he further assumes that perhaps 70 per cent

[20] *The Means to Prosperity*, pp. 8–12.

will be spent and 30 per cent saved. On these assumptions the first repercussion will be 49 per cent (7 x 7) of the primary effect, or approximately one-half; the second repercussion will be one-half of the first repercussion, that is, one quarter of the primary effect, and so on. Thus the multiplier is 2: (the sum of the series $1 + \frac{1}{2} + \frac{1}{4} +$ etc.). Since seven-eighths of the total effects would come from the primary expenditure and the first two repercussions, the time-lags involved would not be very serious.

If the increased demand led to increased prices, the rise in prices would gradually diminish the proportion that becomes new income, surplus resources becoming depleted and a large proportion of the new expenditure merely being diverted from other jobs. Higher prices would also mean higher profits, and since more of the increased income would become profits rather than wages more of it would probably be saved. The multiplier would diminish as a result, but that would be indicative of the success of the remedy.

It is chiefly in estimating the proportion of expenditure that becomes additional income that we must be cautious. Keynes thinks that under present or recent circumstances not less than 60 per cent of additional expenditure would become additional income, and that not less than 75 per cent of this would be spent. He further believes that the American multiplier would be greater than two rather than less. "The more nearly an economic system is self-sufficient, and the smaller the relative importance of its international trade, the larger will be the multiplier by which we obtain the total effect of additional expenditure on employment. For the smaller are the deductions to be made in respect of imports. The multiplier is also likely to be large in the United States because of the absence of any system of unemployment relief paid for out of loans, so that incomes of American workers from increased employment are likely to be in the main additional incomes." [21]

[21] The above analysis of the effects of increased expenditure on employment can equally well be expressed in terms of its effects upon the community's aggregate money income. New funds put into active circulation through enlarged government expenditures are likely to increase the total income of

Provision and Administration of Public Works Reserves

For the adequate financing of public works in periods of depression arrangements must previously be made for the rapid provision of funds when needed. The actual form the reserve should take is a matter of some dispute and the particular methods suitable are not necessarily the same in all cases. One proposal is that reserve funds should be accumulated and invested in 'gilt-edge' securities or deposited in a bank; another is that they should be held in the form of bank notes so that the circulation would be alternately contracted and expanded. But whether or not actual funds are accumulated in advance, it is imperative that adequate credit reserves

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the community by more than their own amount, if we assume that the effects are not offset by a contraction of private activity. A hundred dollars injected into the market not only become net income to that amount to all those engaged in the various processes of production between the original producer and the ultimate consumer, but, if spent by the recipients, also set in train a new circuit of production and become income for a second chain of producers. If we call the number of times money passes through the production sequence before again becoming income in any given period its *income velocity* (in contradistinction to its *transactions velocity*), then new expenditures will raise the national income by the amount initially injected multiplied by its income velocity. In boom years the latter appeared to have been about three per annum in the United States and Great Britain. Obviously during depressions it is likely to be markedly less, because, as shown above, new spendable funds are not wholly employed in making new purchases, or are utilized more slowly, part being held idle at each stage in cash or deposits. But even if the income velocity of money in depression is not more than one and a half or two, the injection of a given quantity of money would still increase the community's money income by perhaps twice its own amount.

The suggestion is not intended that the results reached by the income-velocity method and the 'multiplier' method are necessarily the same. As Mr. D. H. Robertson of Cambridge University has pointed out to me, the one relates to the increase in income per annum, the other to the aggregate increase from the time of the original injection until Judgment Day. "The multiplier method assumes that all injected money ultimately, and most of it quite soon, will become non-existent or completely inert. This may of course happen—but has always seemed to me an odd case to take as a standard of reference" (Letter to the author).

be created and, in the case of municipalities in the United States, that a much larger unencumbered margin of constitutional borrowing power be preserved than hitherto. For public construction must be undertaken during periods of depression either mainly from loans or from previously accumulated reserves, the debts in the former case being amortized at an accelerated rate during years of prosperity from budget surpluses. Again, money that would normally go in reduction of public debt could in depressions be used for public works. It should be noted at the outset, however, that *theoretically* it makes no difference whether the financing of controlled public works is effected by means of funds accumulated in periods of prosperity and expended during depressions, or by means of bonds issued during depressions and subsequently redeemed during prosperity. For in both cases, unless counteracting measures are taken, the effect is likely to be to reduce the rate of interest in times of prosperity and thus stimulate private capital investment and to raise it during the depression period and make the resumption of private activity more difficult.

One of the greatest problems of a flexible public works policy has been shown above to be the danger that additional funds disbursed during depressions may reduce the flow of funds disbursed by private business. If the prosperity reserve previously accumulated has been invested in government securities, their liquidation during a depression for the purpose of securing the funds required for the expanded construction program might weaken the bond market and retard private capital investment. It is important therefore to make sure that the additional funds injected into the market by public agencies are not offset by a contraction induced in private activity.

The relative efficacy of various possible methods of administration of public works reserves is therefore a question of

prime importance.[22] Such reserves may be viewed as either a substitute for or supplement to Federal Reserve control of credit, and hence raise problems of possible conflict into which we cannot enter here. The various possible methods of operating the funds may be classified as follows. They could be placed in deposits with commercial banks, Federal Reserve banks, or with savings banks. They could be invested in commercial paper or short-term obligations of the Federal government purchased in the open market. They could be invested in United States government bonds purchased and sold in the open market, or purchased from and sold to the Federal Reserve banks, or purchased from and sold to the United States Treasury. Finally, they might be kept either in whole or in part in money hoards.

The analysis which follows relates specifically to the administration of Federal reserves, and would need to be modified accordingly if applied to those of local governments. The latter might, for example, be invested in the securities of the political unit involved.

Whether the reserves were placed in demand deposits or in savings deposits, the volume of effective money during the period of prosperity would be likely to be curtailed, but the demand deposits method would have the further advantage of compelling bankers to carry a higher reserve ratio. Nor would the danger be great that withdrawal of deposits in the period of depression would force liquidation of bank assets, because these funds would for the most part find their way into the consumer market and appear elsewhere as new deposits. The investment of public works reserves in short-term securities would also tend to check the

[22] In what follows in this section I have drawn heavily, to the point of summarizing his argument, upon Professor Alvin Hansen's paper, The Flow of Purchasing Power, Special Report No. VIII, in *Economic Reconstruction* (Columbia University Press, 1934). Though Professor Hansen's analysis relates to Consumer Reserves, it applies at many points equally well, in slightly modified form, to public works reserves.

expansion of the effective money supply during the boom period, by encroaching upon the available secondary reserve and thus necessitating the carrying of a larger primary reserve. Placement in demand deposits, however, would probably be the more effective method in restraining bank credit expansion. Both methods offer advantages in the maintenance of purchasing power during the depression. The effects in all the cases considered above and below will naturally depend largely upon the order of magnitude of the reserve funds.

The savings deposits method imposes some restraint upon the expansion of the effective money supply during the boom period but investment of the reserve funds in Federal bonds through open market purchases imposes none upon the volume of bank credit in this phase of the cycle. During the depression phase both methods involve the liquidation of bonds, but the savings deposit method would involve a less disastrous liquidation. The banks are likely to lose less by unloading their assets and paying off the public works reserve deposits progressively as the depression deepens before the full effect of the liquidation has affected bond prices than under the second method where the liquidation of bonds is made by the public works reserve. In that case, the banks, not having to pay off deposits to the reserve funds, would presumably find themselves at the end of the depression period with a larger volume of both deposit obligations and bonds than would be the case under the first method: but they would be likely to suffer at the close of the depression the full measure of the bond depreciation.

Should the public works reserve funds be placed as demand deposits with the Federal Reserve banks, the sums would be transferred from member bank balances in the Federal Reserve banks to the new accounts and the reserves of the member banks would thereby be reduced. Conversely, when the reserve fund withdrew deposits, the ultimate effect would be to build up member banks' reserves. The latter would therefore be alternately contracted and expanded. The purchase and sale of bonds by the public works reserve fund from and to the Federal Reserve banks would

also serve to stabilize the effective money supply, but the deposit method would help keep the liabilities and assets of the Federal Reserve banks intact, the only effect of this procedure being to transfer a part of the deposits of member banks with the Federal Reserve to the public works reserve funds. The bond purchase and sale method, however, tends to force a somewhat violent fluctuation in the deposit liabilities and assets of the Federal Reserve banks. Neither method, moreover, ensures an appropriate adjustment of member bank reserves to the stabilization program, and the Federal Reserve system would be forced to take steps to modify the arbitrary influence of the accumulation of public works reserves. The purchase and sale of bonds from and to the United States Treasury instead of the Federal Reserve banks would relieve the latter of the necessity of loading up their portfolios with great quantities of government bonds. The Treasury Department would instead purchase those bonds and issue against them legal tender notes, but the method would have the obvious objection of periodically pumping large quantities of such notes into circulation.

The hoarding method could place such a powerful restraint upon bank credit expansion during the boom period that, if used to the limit, it would endanger the power of the Federal Reserve system to control the situation. If, however, the hoarding is placed under the control of the Federal Reserve banks, the method becomes a mere formality. The alternative method of purchase and sale of bonds from and to the Federal Reserve system merely reinforces, and makes more effective, the open market operations. If the hoards assumed entirely the form of gold and lawful money they would denude the Federal Reserve banks of their cash resources. Whereas the demand deposit method affects the reserves of the member banks, the hoarding method affects the reserves of the Federal Reserve banks themselves. The restraining effect is therefore enormously greater.

Of these various possible methods of administration of the reserve funds, that of cash hoards would produce violent fluctuations in the reserves of the Federal Reserve banks, and for that reason

would threaten their very basis. Three other methods would produce fluctuations in the surplus reserves of member banks—deposit with the Federal Reserve banks, purchase of bonds from and sale to the Reserve banks, and exchange against United States notes. Three would tend to affect the reserve requirements of the member banks by forcing them to carry a larger reserve because of the character of the liability or encroachment upon secondary reserves: deposit with commericial banks, placement in savings deposits, and investment in short-term maturities. One method, investment in bonds purchased and sold in the open market, would appear as likely to have little influence upon either the volume of reserves or reserve requirements.

Choice between these methods and other possible variations of them must in practice be determined by a complex of factors too numerous to discuss here. The consideration of prime importance, in attempting to maintain a steady total flow of purchasing power, is the need for expanding public outlays as private outlays begin to contract. The substitution by the banks of investments (in the assets owned by the public works reserve funds) for loans, as private activity slowed down, would prevent a decline in the total volume of bank credit. Combined with the reverse process in periods of expanding private activity a more even flow of funds as between good and bad times should be effected. During the latter the banks would offset the decline in loans to business by increased investment; when activity revived they would be relieved of some of their investments and would be in a position again to place more funds in loans. A flexible public works policy thus operated might do much to maintain total purchasing power during periods of declining private business activity by providing the channels through which credit might be pumped into the system. Subject to the important qualifications noted above, it is a fallacy to assume that a deflationary process involving a *general* contraction of the

purchasing power flowing into the system from both public and private sources is needed to effect a new balance. On the contrary, maintenance of purchasing power as a whole should facilitate the readjustment of factors which is the essential need in such circumstances. But since the central banking system apparently cannot successfully bear the entire burden of preventing violent fluctuations of purchasing power, the assistance which a policy of controlled public expenditures might lend deserves serious consideration.

Limits to the Operation of a Flexible Public Works Policy

If unemployment continues for a prolonged period of years as a result not of cyclical fluctuations but of deep-seated forces involving secular readjustments to basically changed conditions, as happened, for example, in Great Britain [23] and Germany [24] during the post-War decade, public works can-

[23] The policy of expediting public works in periods of unemployment was officially advocated as early as 1909 in the great British Poor Law report of that year, and has since been the subject of inquiry by many individuals and bodies in Great Britain. See, for discussion prior to the depression, D. H. MacGregor, British Aspects of Unemployment, in *Some Aspects of Recent British Economics* (Chicago, 1923); and A. L. Bowley and F. D. Stuart, Regularization of the Demand for Labour, in *Is Unemployment Inevitable?* (London, 1924). The proposal was endorsed by both the Liberal and Labour Parties: *Britain's Industrial Future* (Liberal Industrial Inquiry, London, 1928); *We Can Conquer Unemployment* (Liberal Party pamphlet); *Labour and the Nation* (Labour Party program); *How to Conquer Unemployment* (Labour Party pamphlet). See also letter of J. M. Keynes published in *The Times* of August 7, 1929, and *Can Lloyd George Do It?* by J. M. Keynes and H. D. Henderson. The proposal was criticized, however, by the Conservative government in *Memoranda on Certain Proposals relating to Unemployment* (Cmd 3331, 1929). For discussion of the problem during the depression see works mentioned in note 2.

[24] For accounts in English of German experience with emergency programs of public works prior to the depression, See M. R. Carroll, *Unemployment Insurance in Germany* (Washington, D. C., 1929), and R. C. Davison, Unemployment Relief in Germany, *The Economic Journal*, March 1930. The experience of other countries is examined in Unemployment and Public Works (International Labour Office, 1931) especially Part I, Ch. 2 and Part II.

not, of course, be expected to provide increased employment permanently except at the cost of at least an approximately equivalent contraction of private expenditures. The only claim that can be advanced is that when private industry is unwilling to expand, additional employment and purchasing power can be provided temporarily in order to give the stimulus needed in order to bring about a revival of activity.

Such stimulation of business during depressions through the expansion of public works is in the last analysis a counter-deflationary measure, and their contraction the converse in periods of upswing. Under an 'automatic' international gold standard, which demands of all countries adhering to it, not indeed a common price level, but an internationally interrelated price and money income structure, the strict limits to the pursuit of such a policy by any one country are clear enough, short of concerted international action. For such a course adopted by a country in isolation must ordinarily constitute a threat to its continued adherence to the gold base. This was largely the difficulty throughout the recent depression, until our abandonment of gold, with all proposals for vigorous expansion of construction programs, though many who recognized this danger did not regard it as a decisive objection. A large-scale policy of controlled public works, unless adopted internationally, therefore incurs the danger of coming into conflict with the underlying principles of a freely automatic international standard based on gold, though it need not do so with some form of modified gold standard operated under central bank cooperation or regulated in some other manner.

The greater the degree of international cooperation in the execution of an elastic public works policy, the more successful is it likely to prove. In the past, however, it has been found extremely difficult to secure such agreement on concerted policies between central banks and treasuries, even in periods of

acute stress, as was instanced by the failure of such proposals to receive general assent at the World Economic Conference held in London in the summer of 1933. The extension, likewise, of the concept of the stabilizing influence of controlled public works to the similar utilization of other governmental expenditures should render all the easier the smoothing down of cyclical variation in business activity. In both cases the purposes of the policy would clearly be considerably furthered by greater centralization of control over public works planning in place of the confusion hitherto created by the multiplicity of authorities responsible for construction work.

THE PROBLEM OF TIMING

The correct timing of controlled public works is a somewhat vexed question and one of major importance. The Committee on Recent Economic Changes of the President's Conference on Unemployment made the following statement in a report published in 1931:

"The amount of public construction which it is possible to push forward in order to influence employment and the trend of business in a period of recession is less important than the timing of the acceleration. The psychological effect of advancing public construction at the right time suggests that here is to be found an important factor in the problem of maintaining a reasonable economic balance. If properly timed, as the pendulum of employment starts to swing in an unfavorable direction, the influence of the prompt expedition of public works is effective out of all proportion to its size. Timeliness multiplies the effectiveness of each project accelerated." [25]

The validity of the assumption here made, that public works should be expanded rapidly as early as possible during a depression, is contingent upon certain important qualifi-

[25] *Planning and Control of Public Works,* p. xxiii.

cations. Since some process of readjustment is probably both inevitable and desirable once an unhealthy inflationary situation has been allowed to develop, it would seem to follow that unless public works have previously been sufficiently retarded to prevent capital overexpansion and the development of serious maladjustments, the right time to launch an enlarged program is not in the early stages of depression but only after the strictly unavoidable amount of liquidation has been effected. At such times as the latter, however, as pointed out above, a stimulus may be needed to arrest a continued contraction of business brought about by the cumulative momentum of the downward process. As business revives and private enterprise resumes capital outlays in normal volume, and activity and prices increase, public works programs would naturally have to be correspondingly contracted under such a policy. The danger that public works expenditures during depressions might perhaps actually discourage private construction outlays by creating alarm should be remote if they represent part of a well considered long-term policy.

It is not possible to decide in advance, and *a priori,* when the point at which public works programs could best be speeded is likely to be reached. The decision must in practice necessarily be difficult to make and involves the danger of an incorrect reading of the current situation. The success of any action taken will in large degree be contingent upon the insight with which current data are interpreted and future tendencies forecast. The corresponding difficulty is of course equally great of knowing when, and to what extent, to retard public works on the upswing. Undeniably there are dangers inherent in the deliberate postponement of selected construction projects, and it may be argued that in the present state of our knowledge and in the absence of any unified control of industrial processes, the preferable alternative is to avoid

putting the brakes on production as distinct from price inflation and speculation in such periods.[26]

Indeed one variant of the theory of controlled public works disregards the creation of a prosperity reserve through deliberate retardation of construction and looks to the continuance in the future of the steeply rising trend normally shown by public works expenditures, until the 1929 recession, to afford a sufficiently ample 'unplanned' reserve which could be drawn upon in periods of cyclical depression largely by advancement of projects which would have been undertaken later. Stabilization through public construction would, according to this view, be effected less by the creation of a reserve volume of public works during prosperity than by setting up in advance the machinery which would allow, when needed, the prompt initiation and acceleration of the huge latent reserve of needed improvements usually already in existence. If, however, public works are to be expanded at each period of recurrent unemployment without being correspondingly reduced in times of prosperity, their total volume and the money expended upon them would clearly in the long run be greater than otherwise, either if they had been left to vary along with, or, if controlled, to vary inversely to, the fluctuations of private industry: and this in turn would mean a permanent and progressive diversion of resources from private to public enterprise.

The greater the degree of stabilization effected either by private industry through control over its own operations or by a flexible schedule of public works, the easier of solution is the problem of correct timing. Since the deliberate alternate expansion and retardation of public construction are designed to balance fluctuations in private business in the opposite direction, the degree in which they must vary as a compensating factor will depend upon the violence of the fluctuations of private industry itself.

[26] *Cf.* J. M. Clark, Long-Range Planning, *American Economic Review*, Supplement, March 1930.

The objections to the concentration of public works in depression encounter a basic difficulty when it is asked at what other phase of the business cycle they could better be put in hand. The reasoning of those who oppose large expenditures at the trough of the cycle would appear to prove too much, since it virtually amounts to a case against *all* public works as such. Granting that governments must always be responsible for a certain volume of public construction—and this volume has been growing steadily both absolutely and relatively to private construction with the state's progressively enlarged economic activities—the onus rests upon the critics of public works in depressions of demonstrating not merely that there are certain dangers in their execution at such times, but of showing whether they could be better undertaken at some other period. Reasons have been given above for believing that the best time is unlikely to be during the early stages of the downswing. It would seem absurd to argue that they should be undertaken during the boom phase of the cycle. If public works programs undertaken in depression may raise building costs and the cost of borrowing to the detriment of private enterprise, they are certainly not less likely to have injurious effects during the boom period, for their probable effects then would be further to intensify the inflation. Public construction is ordinarily less likely to have the effect of raising costs at the bottom of a depression, since private outlays then tend to fall to a minimum. In the light of these considerations the conclusion would appear justified that public works should as far as possible be concentrated in periods of depression. The danger of incorrect timing, conceded above, cannot be evaded by a policy of inaction; it is inherent in the nature of government expenditures as such, and not only on public works.

Conclusion: Public Works and Economic Stabilization

One's evaluation of a policy of flexible public works as an agency of economic stabilization depends in the last analysis upon the theory one holds of the fundamental nature of the business cycle and the effectiveness of 'artificial' correctives of it under a system of more or less freely competitive private enterprise. All students of the problem are agreed on the importance of securing a proper relationship between costs and receipts. Those, however, who incline towards advocacy of deliberate control or guidance of industrial and financial processes, even though only at 'strategic' points, will tend to approve a policy of planned flexible public outlays. Those, on the other hand, who regard business depressions as being due to the development of structural maladjustments impossible to remedy through governmental intervention and necessitating for recovery the drastic reduction of costs and the writing down of past liabilities are likely to condemn increased public expenditures out of borrowings during depressions. Though in practice the viewpoints of economists are not susceptible to such sharp and rigid classification, their individual attitudes to an elastic public construction policy must ultimately be determined by the degree of faith they repose in the possibilities of the conscious and nationally planned guidance of economic activity, through some degree of centralized planning and direction, as opposed to the reputedly automatic readjustments of a freely competitive *laissez-faire* order.