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THE CORPORATE INCOME TAX IN A DEPRESSION

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This paper is addressed primarily to the effects of the present corporate income tax on the size and composition of aggregate demand in a depression and to the consequences of reducing or modifying the tax as an antidepression measure. No attempt is made to investigate the influence of the tax on the pattern of business organization or the possibilities of using corporate taxes to bring about desirable structural changes in the economy. Although considerations of tax equity and administration enter into the selection of possible modifications of the tax and their appraisal, the emphasis on these aspects of tax policy is secondary in the present discussion.

The paper is written on the assumption that raising revenue is a legitimate objective of taxation. The pure principles of functional finance do not recognize this objective. But, for both good and bad reasons, the size of the budget deficit is likely to be a matter of concern in the next depression although anxiety on this score will doubtless be less acute than it was in the 1930's. If this is so, an important subject of inquiry is the comparative efficiency of various tax reductions attributable either to cutting tax rates or to modification of the tax base. Efficiency in this sense would be measured by the multiplier effects of a tax reduction—that is, by the relation between the amount of the tax reduction and the resulting increase in aggregate demand. Even if one is unconcerned about the deficit, it is convenient to have some notion of the probable extent of reaction to tax changes in order to know where to begin and how large an application to prescribe.

The main questions to be discussed are: To what extent can the flexibility of the corporate tax be regarded as an automatic stabilizer? How do technical features influence built-in flexibility? What would be the consequences of reducing corporate tax rates in a depression period? Of reducing liabilities by modifying the tax base? Can corporate taxes be revised to make them more acceptable under depression conditions? ¹

¹ No account is taken in this paper of the general revision of federal tax law embodied in the Internal Revenue Code of 1954 (H.R. 8300, 83d Cong., 2d sess.), which was adopted after the paper was written. Among the most important fea-

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Built-in Flexibility

Corporate tax liabilities are directly related to the usual measure of business success. Hence a firm automatically obtains a reduction of corporation income tax whenever its operating experience is unfavorable. Despite considerable diversity among firms, movements in aggregate profits coincide closely with the general business cycle.² For the Treasury this means that the yield of the corporate tax will automatically decline during a recession and rise during a recovery period. Nearly all taxes exhibit this built-in flexibility to some extent, but it is more pronounced for the corporate tax than for most other major taxes. Corporate profits, defined either as the algebraic sum of all profits and losses or as the total of profits reported by corporations realizing net income in any year, fluctuate more widely than national income as a whole or the other major distributive shares.

Built-in flexibility of tax yield is usually considered an automatic stabilizer of business conditions. In considering the extent to which this characterization holds for the corporation income tax, it is interesting to try to separate the influence of the fact that the tax is measured by net income from the timing of liabilities. This point may be clarified by two comparisons. First, a profits tax may be compared with taxes on sales, gross receipts, units of production, payrolls, or some other base that is more stable than profits. Second, profits taxes with different degrees of instability of yield may be compared. For example, a tax based on annual profits might be compared with one imposed on a moving average of profits covering a whole business cycle. An inquiry of this kind may help to determine whether it is feasible to approximate the effects of the automatic variability of yield of the corporate tax by adjustments of rates of other types of taxes and whether it is worthwhile to modify the corporation income tax to increase its built-in flexibility.

The larger automatic reduction in liabilities under the corporation income tax is certainly one reason for believing that, during a depression, this tax is less deflationary than sales, production, or cost-factor taxes that would yield the same amount of revenue over a com-

tures of this act are: (1) extension of the carryback of net operating loss from one year to two years, (2) liberalization of depreciation deductions by allowing taxpayers the option of using a modified declining-balance method or other methods which will concentrate a larger fraction of total allowances in the early years of life of depreciable property, and (3) exclusion from taxable income of individual stockholders of the first \$50 of dividends received and allowance of a tax credit equal to 4 per cent of additional dividends.

² Thor Hultgren, *Cyclical Diversities in the Fortunes of Industrial Corporations*, National Bureau of Economic Research, Occasional Paper 32, 1950.

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plete business cycle. The income tax will leave firms more funds for working capital, fixed investment, and dividend distributions. But other differences between the two types of tax seem more important. The corporate income tax will not significantly alter the point at which short-run marginal costs and marginal revenues are equal and hence will be less likely to keep production below the capacity of existing plant and equipment. The income tax will interfere less with price reductions. Although this point is more debatable, it seems likely that the income tax will be less discouraging to new investment and to introduction of new products, because management will know that a tax liability will not be incurred unless and until profits are realized.

The conclusion that the corporate income tax is less harmful during a depression than other types of tax that happen to have less built-in flexibility does not necessarily imply that increased built-in flexibility of a profits tax is an important advantage. The only gain from a mere rescheduling of income tax liabilities over the cycle will be the increased availability of funds during the depression. The significance of this point will be further considered in a later section dealing with the effects of reducing corporate tax rates as an anti-depression measure. A change in timing of liabilities but not in the total amount accruing over a cycle would not significantly affect the rate of return on investment in assets with useful lives as long as the duration of the cycle. Some technical features of the corporate tax that determine the degree of its built-in flexibility of yield affect only the timing of liabilities. Other features also influence the total amount of tax that a firm will pay over the cycle.

The foregoing paragraphs make no distinction between tax liabilities and tax yields. In practice, payments of corporate taxes are not synchronous with accrual, and changes in liabilities precede changes in collections. Liabilities were formerly paid in equal quarterly installments in the twelve months following the close of the tax year. In recent years, however, the date of payment has been advanced. Ninety per cent of 1953 taxes will be payable in two equal quarterly installments in the first half of 1954, leaving only 5 per cent to be paid in each of the last two installments. Liabilities of 1954 and later years will be payable in two equal installments in the first half of the following year.

Although the delay in payment may sometimes be important for the corporation's cash position, taxes begin to influence business decisions even before the final accrual of liability. In view of the comparatively short lag under present arrangements, in most in-

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stances it is not necessary to consider the difference in timing of liabilities and of payments in assessing the effects of built-in flexibility on business behavior.³

The reasoning that equates built-in flexibility of tax yield with automatic stabilization does not seem to be fully applicable to the corporate income tax. The identification is justifiable for the individual income tax on the plausible assumption that consumer expenditures ordinarily respond promptly to changes in disposable income. An analogous assumption regarding business investment is not admissible. The timing of liabilities may be of secondary importance in accounting for whatever advantages the corporate tax has under depression conditions. Nevertheless, it seems worthwhile to examine some of the technical features that influence the built-in flexibility of the tax. These features may also be important in other respects.

Technical Features Affecting Built-in Flexibility

The degree of built-in flexibility of the corporate tax depends on the exact definition of net income, particularly procedures for valuation of inventories and determination of depreciation allowances; the extent to which losses of one year can be offset against profits of other years; and the rate structure. All these features affect, to some extent, the total yield of the tax over the business cycle, but in this section they will be considered with particular reference to their influence on the timing of liabilities. In order to isolate the significance of built-in flexibility, it will be convenient to assume that tax rates are adjusted so that the yields of different versions of the corporate tax are approximately equal over a complete business cycle.

INVENTORY VALUATION

Historically, inventory profits and losses have been an important element in fluctuations of the reported total of profits. Changes in inventory profits or losses have accounted for the following percentages of the total change in reported corporate profits before taxes: from 1929 to 1932, 4 per cent of the decline; from 1932 to 1937, 12 per cent of the rise; from 1937 to 1938, 34 per cent of the decline; from 1948 to 1949, 68 per cent of the decline; from 1949 to 1950, 57 per cent of the rise.⁴

³ As noted below, however, the timing of refunds attributable to loss carry-backs may be important.

⁴ Inventory profits and losses are here taken to be equal to the inventory valuation adjustment (for corporations) included in the national income estimates prepared by the Department of Commerce (see *National Income Supplement, 1951, Survey of Current Business*, Dept. of Commerce, p. 150).

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These fluctuations were partly attributable to the traditional accounting convention that when particular units cannot be identified goods should be assumed to be sold in the order of their acquisition. Under the first-in-first-out valuation method, the lag between assumed cost of goods sold and replacement cost becomes important in periods of rapidly changing prices. Reported profits are further reduced during business recessions by the accounting adjustments necessary to conform to the common practice of carrying inventories at the lower of cost or market value.

The last-in-first-out method of inventory valuation is intended to reduce variations in reported profits by shortening the lag in changes of cost of goods sold behind movements in replacement cost. This procedure is based on the assumption that the goods sold in any period are those most recently acquired. Under present law a taxpayer using Lifo forgoes the privilege of writing down the book value of inventories if market values fall below original cost. A further condition of use of Lifo for tax purposes is that the taxpayer's own books of accounts and reports be on the same basis.

Lifo did not become generally available for tax purposes until 1939, when it was made optional for all taxpayers. Experience with the method has, therefore, been dominated by war and postwar developments, rather than by ordinary cyclical movements. In fact, the procedure does not seem to have been widely adopted. In 1951 the Department of Commerce estimated that Lifo inventories of corporations represented about one-tenth of the total book value of nonfarm inventories or about one-eighth of all corporate inventories.⁵ Later estimates place the book value of Lifo inventories for manufacturing at the end of 1951 at 15 per cent of the total for manufacturing industries.⁶ Lifo accounting is concentrated among large manufacturing corporations in the fields of iron and steel, petroleum and coal products, nonferrous metals, paper and pulp, textiles, food processing, and leather and products, and among department stores.⁷

To the extent that it has been adopted, Lifo clearly reduces the built-in flexibility of corporate tax liabilities. During a recession, reported profits and tax liabilities of firms on Lifo will fall less rapidly than they would under Fifo. Inability to write down inventories when the market price of raw materials declines below cost may be especially significant for some of the manufacturing industries in

⁵ *Ibid.*, pp. 123-124.

⁶ James P. Daly, "Lifo Inventories and National Income Accounting," *Survey of Current Business*, May 1953, pp. 16-18.

⁷ *Ibid.*, and J. Keith Butters, *Effects of Taxation: Inventory Accounting and Policies*, Harvard Graduate School of Business Administration, 1949, Chap. III.

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which Lifo is most widely used. Downward revaluations of inventories were large for such firms in 1921, 1930-1932, 1934, and 1937.⁸

The effect of Lifo accounting on business activity is qualitatively uncertain, although it may be presumed that it will be quantitatively unimportant for the economy as a whole so long as Lifo is confined to the limited area that it now occupies. On the one hand, the cash position of firms on Lifo will be adversely affected during a recession. On the other hand, it is possible that the smaller decline in reported profits will help prevent the development of pessimism and thereby contribute to stabilization of business outlays.⁹ I am inclined to believe that the adverse effect on cash resources will be more important than any beneficial influence on business sentiment, partly because I find it hard to believe that executives of firms with large stocks of raw materials will fail to make a mental adjustment for price changes. But I do not see how the question can be resolved.

Recent proposals to allow taxpayers using Lifo the option of valuing their inventories at the lower of cost or market prices would largely eliminate the disadvantage of the method during a recession. Such an amendment, however, seems objectionable on other grounds. It would allow taxpayers to minimize taxes on inventory profits when prices were rising and to take immediate advantage of inventory losses when prices fell below Lifo valuations. The result would be discrimination against taxpayers who have refrained from adopting Lifo partly because of fear that prices would fall, and against firms for which Lifo is not feasible.¹⁰

CURRENT-COST DEPRECIATION

Unlike Lifo, which was designed to reduce cyclical fluctuations in taxable profits, proposals for current-cost depreciation allowances for tax purposes have usually been intended to deal with a condition of secular inflation or a one-for-all increase in the price level. The more elaborate of these proposals would allow taxpayers to adjust depreciation deductions each year by reference to indexes of the cost of capital goods. Discussion of this subject has already abated in this country and probably will disappear in the quarters in which it

⁸ Albert R. Koch, *The Financing of Large Corporations, 1920-39*, National Bureau of Economic Research, 1943, pp. 49-50.

⁹ Professor Butters stresses the advantage of eliminating the "distorting effects of inventory profits and losses." *Op. cit.*, p. 11.

¹⁰ For a good discussion see Douglas H. Eldridge, "Issues Raised by Proposal to Grant Cost or Market Option with Lifo," *National Tax Journal*, March 1953, pp. 52-68.

has been popular in the past few years if a significant decline in the price of capital assets occurs.

If consistently applied, current-cost depreciation resembles Lifo in that it would reduce cyclical variations in profits and tax liabilities, but the magnitude of the adjustment is harder to estimate. Although the book value of depreciable assets is much larger than that of inventories, the average useful life of depreciable property is much longer than the turnover period for inventories and annual depreciation charges are small in comparison with sales from inventories. The changes in costs of depreciable assets over the business cycle are probably greater than the fluctuations in prices of nonfarm inventory goods as a whole, but the fact that book values of depreciable property represent a wide range of price history means that, in intermediate phases of the cycle, adjustments necessary to convert original cost to replacement cost would involve both plus and minus items. To the extent that acquisition of depreciable property is concentrated in times of high prices, the present type of depreciation allowance is correspondingly large, and a shift to a current-cost basis would cut allowable deductions and increase taxable profits in depression periods more than it would if acquisitions were evenly distributed over the cycle. As compared with Lifo, current-cost depreciation would involve a greater departure from ordinary accounting methods, graver administrative difficulties, and a sharper clash with usual standards of equity. Lifo (without the proposed cost-or-market option) represents merely a change in the convention regarding the order in which goods are sold; it reduces, but does not eliminate, inventory profits or losses. Some versions of current-cost depreciation would completely destroy the link between historical costs and allowable deductions.¹¹

Like Lifo, a consistent scheme for current-cost depreciation allowances would decrease liquidity during a depression but might have a beneficial influence on business psychology. Current-cost depreciation might be an additional deterrent to investment when prices are expected to decline, because future deductions would be smaller than under historical-cost depreciation. Inasmuch as the expectation of falling prices is always discouraging to investment, it would be undesirable to reinforce this influence with a tax consideration. It is true that the other side of this argument is that current-cost depreciation might offer an inducement to investment when prices

¹¹ E. Cary Brown, *Depreciation Adjustment for Price Changes*, Harvard Graduate School of Business Administration, 1952, and Richard Goode, *The Corporation Income Tax*, Wiley, 1951, pp. 172-178.

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are expected to rise, but under these circumstances there is less need to encourage investment. Furthermore, it seems likely that businessmen are enough subject to the so-called money illusion that, within fairly broad limits, they are more concerned about recovery of original cash outlays than about the purchasing power of allowable deductions for depreciation. Proposals for an upward adjustment of depreciation allowances to reflect a price rise, but without provision for a downward adjustment when prices decrease, would, of course, avoid perverse effects during a depression. These schemes are not considered here, because they appear to constitute special pleading rather than suggestions for a fundamental reform in the definition of taxable income.

LOSS CARRYBACKS AND CARRYFORWARDS

Variability of corporate tax liabilities over the business cycle is greatly increased if corporations experiencing net operating losses are allowed to carry back these losses against profits of prior years and receive refunds of taxes already paid. The carryback produces negative tax liabilities for many firms in depression years. A carryforward of net losses, on the other hand, decreases variability of tax liabilities. Losses suffered in bad years reduce liabilities in a later period of recovery or prosperity. The difference in variability of the government's tax revenues, however, may be smaller than the difference in variability of liabilities. The tax reduction attributable to a carryback is in the form of a refund which will be paid only after a delay occasioned by auditing and other administrative steps, and by the time the refund is paid the recipient may already be earning taxable profits again. A carryforward, on the other hand, is taken into account by the corporation itself when it files its tax return and the tax payment is adjusted accordingly. Carryback refunds may be greatly speeded by administrative arrangements for prompt payment on a tentative basis before a return is examined in detail. This was done immediately after World War II. It may be especially helpful to small businesses which often lack ready access to credit.

Like any other arrangement that increases built-in flexibility, the carryback has a desirable effect on liquidity during a recession or depression. But other aspects of the difference between carrybacks and carryforwards are probably more important.

The tax consequences of a carryback are more certain than those of a carryforward. The refund attributable to a carryback can be estimated as the year progresses and can be closely determined immediately after the end of the year. The value of the carryforward de-

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depends on future income and future tax rates. A further hazard is the possibility that the law will be revised before the carryforward can be used. In 1932, for example, Congress shortened the carryforward from two years to one year, and in 1933 it completely eliminated the carryforward.

With a carryback in effect, a firm with a record of prior earnings can be sure that if it suffers a loss the Treasury will absorb part of the cost of its current operating expenses, depreciation allowances, and interest payments. This consideration seems more likely to encourage a business to maintain operations and even to acquire new plant and equipment in a depressed year than the possibility that, at some time in the future, a carryforward will reduce tax liabilities.

At the present time, federal law allows only a one-year carryback of net operating losses but permits a five-year carryforward. This arrangement was adopted in 1950 to replace a two-year carryback and a two-year carryforward which had been in effect since 1942. It had been generally agreed that a liberalization of loss offsets was desirable. Two main reasons for preferring a carryforward were advanced: First, the carryforward is administratively simpler since it does not involve holding open or reopening old tax returns. Second, the carryforward is more advantageous to new and growing businesses, whereas the carryback favors established businesses that are either stable in size or declining. Both these arguments are valid, but the decision to concentrate on a carryforward seems to have been unquestionably disadvantageous from the countercyclical point of view.¹²

Extension of the carryback would help us prepare for combating a depression. Further investigation is needed to determine the ideal length of the period. Only a few statistical studies of loss offsets have been published, and most of these center attention on the carryforward.¹³ If it is necessary to act before further factual information is available, a reasonable compromise might be to restore the

¹² *Business Loss Offsets*, a report prepared jointly by the technical staffs of the Treasury Department and the Joint Committee on Internal Revenue Taxation in 1947, strongly favored the carryforward. The report conceded that carrybacks might stimulate business expenditures during depression more than carryforwards but concluded that the difference was probably not very great and that neither was likely to have an important countercyclical effect (p. 7).

¹³ For an exception see Morris Beck, "Carryover of Business Losses," *National Tax Journal*, March 1953, pp. 69-85. For a sample of sixty identical corporations, 1923-1939, Beck found that the following proportions of losses would have been offset by the indicated arrangements: two-year carryback, 58 per cent; two-year carryforward, 19 per cent; five-year carryback, 90 per cent; five-year carryforward, 76 per cent.

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former balance between carryback and carryforward by allowing a three-year period for each. Provision for prompt refunds on a tentative basis would be a desirable feature. Perhaps it would be feasible to allow a longer carryforward for new firms as a partial answer to the criticism that a carryback discriminates against them.

RATE STRUCTURE

The existing degree of built-in flexibility of yield of the corporation income tax, as distinguished from the excess profits tax, is due almost entirely to fluctuations in the size of the base rather than to automatic changes in effective rates. Corporation income tax rates are graduated to only a limited extent, and the average effective rate paid by corporations realizing profits in any year does not vary appreciably with the size of profits. The average effective rate of excess profits tax does respond to changes in business conditions.

Further graduation of the corporation income tax according to the absolute size of net income or the rate of return on invested capital would increase built-in flexibility. Both possibilities, however, seem objectionable on other grounds. Graduation of a corporate tax on the basis of size of profits is inequitable because it takes no account of differences in optimum size of firms in various industries or the number of stockholders. Graduation according to rate of return overlooks differences in risk. Furthermore, experience with the excess profits tax has brought to light many practical difficulties in application of this principle. At the present time there seems to be little support for permanent adoption of rate-of-return graduation. This feature of the system will disappear with the expiration of the excess profits tax, now scheduled for December 31, 1953.

APPRAISAL

Lifo inventory valuation, current-cost depreciation, carryforwards of net operating losses, and a flat rate reduce the built-in flexibility of corporation income tax liabilities. The following favor built-in flexibility: Fifo, historical-cost depreciation, carrybacks, and graduated rates. The countercyclical advantages of appropriate timing of tax liabilities appear to be genuine, but their quantitative importance is uncertain. In the present state of knowledge, therefore, the other advantages and disadvantages of these procedures may appropriately be given primary consideration.

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Reduction of Tax Rates

Perhaps we may assume that the "new economics" has gained enough acceptance to make it improbable that corporation income tax rates will be increased in time of depression in an attempt to maintain declining revenues. If this is so, the question arises whether the advantage of reducing corporate tax rates would be great enough to justify recommending this action as a means of lessening the severity or length of a depression.

The question of what action to take regarding tax rates in time of depression, like most other issues of tax policy, must be stated and answered in terms of a comparison of alternatives. This is awkward because it greatly complicates discussion, but there is no other fully satisfactory approach. Within the limits of the present paper it will not be possible to attempt a systematic comparison of alternatives, and the treatment must be recognized as incomplete. I shall, however, make explicit some judgments about other taxes without trying to support these opinions in detail.

It is advisable first to adopt some working hypotheses regarding the short-run incidence of the major taxes. For familiar reasons, it seems justifiable to assume that, for an interval of at least a few years, the direct effects of a reduction of the rate of the corporation income tax would be reflected almost exclusively in higher profits, rather than in lower prices or higher wage rates. The secondary repercussions, of course, might influence prices and wages, but these repercussions would be the consequence of the primary rise in profits after taxes. This hypothesis is much less subject to challenge than any judgment regarding the longer-run effects or ultimate incidence of the corporate tax. Fortunately, the latter judgment is not needed for present purposes.

There would probably be general agreement that the immediate consequences of a reduction of individual income tax rates would be mainly an increase in disposable income of taxpayers. Contrary to the impression that might be gained from most public finance textbooks, the primary beneficiaries of a reduction in excise tax rates are somewhat harder to identify. Nevertheless, the usual assumption that relative prices of taxed commodities would fall seems plausible, especially under depression conditions. There is, however, at least a reasonable possibility that part of the tax reduction would augment profits or diminish business losses. The same reasoning applies in the short run to the employer's share of payroll taxes. The employees' share is probably reflected in take-home pay. Whether a fall in the

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prices of taxed commodities would involve a decline in the average level of market prices or would be offset by increases in other prices would depend largely on what happened to total consumer expenditures and on the elasticity of supply of goods and services for which demand might increase.

It will hardly be possible to stimulate aggregate demand and business activity by cutting taxes unless the government maintains its own expenditures and finances them by expansionary borrowing. Under these conditions the effectiveness of the tax reduction will depend on its influence on private consumption and investment.

Only a minor fraction of a reduction in corporation income tax can be expected to be added to consumer expenditures. First, corporations will retain part of the additional funds. Corporate savings may well absorb the greater part of the total. Dobrovolsky found that in the period 1922-1943 all manufacturing corporations as a group distributed on the average only about 20 per cent of an increase in net income after taxes. (The change in profits was measured in relation to net worth rather than as absolute amount.) There was, however, a tendency to attempt to maintain dividends when profits fell in the early 1930's. Dividends were reduced only moderately in 1930 and sizable amounts were paid in 1931 and 1932, when manufacturing corporations as a group incurred net deficits.¹⁴ If the desire to stabilize dividends holds in a future recession, some corporations may distribute in dividends a high proportion of the addition to available profits attributable to a reduction in corporate taxes at that time. But other corporations, which would otherwise maintain dividends by drawing on reserves, may in effect save the entire proceeds of the tax reduction. The net result of these two types of reaction is hard to predict.

Of additional dividend distributions, only a part, perhaps less than half, can be expected to be spent for consumption. Some of the dividends will go to nonresidents and nonprofit organizations. The amount received by resident stockholders will be subject to individual income tax at a fairly high marginal rate, and a considerable fraction of the net increment in disposable income of stockholders will be saved.¹⁵ Up-to-date estimates of these magnitudes would be

¹⁴ Sergei P. Dobrovolsky, *Corporate Income Retention, 1915-43*, National Bureau of Economic Research, 1951.

¹⁵ On the basis of the 1941 distribution of dividends and individual income, 1948 individual income tax rates, and information on consumer budgets of 1941, I have estimated that a change in dividend distributions would be allocated approximately as follows: dividend income of nonresident foreigners and nonprofit organizations and retained income of taxable fiduciaries, 11 per

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helpful in appraising the effects of a reduction of the corporation income tax.

Reduction of the corporation income tax will have a favorable influence on the two main determinants of the volume of corporate investment—the availability of funds and the anticipated return on a successful investment. The extent of the reaction is hard to guess. The tax cut will not transform an unprofitable investment into a profitable one. Hence it may be only a weak stimulus in time of severe depression, when pessimism is widespread and profound. Under these conditions measures to revive demand for final output are required to call forth a general increase in private investment. Under less extreme conditions the tax cut will move some projects over the line between acceptance and rejection.

If the tax reduction is announced to be temporary or is generally expected to be so, it may be much less effective than a permanent reduction. The returns on new investment of intermediate or long-term durability will be expected to be subject to the regular tax once business recovery is at hand and hence the outlook for these investments will be improved to only a minor extent if at all.

Some firms that would have been unable or unwilling to obtain outside financing will undoubtedly make greater investment outlays because the tax reduction makes more funds available to them from internal sources. Outside credit and equity capital may also become easier to get. But, on the average, lack of funds does not seem to be the main limitation on investment in a depression period. In years of severe business recession during the period 1919–1939, corporations partially liquidated their inventories, receivables, and fixed assets. They used a large fraction of the funds so obtained to reduce indebtedness and to distribute dividends in excess of current net income. Large corporations increased the ratio of cash to total assets and to total payments in the early 1930's.¹⁶ A shortage of funds is most likely to interfere with investment when business enters a downswing with a large volume of short-term debt. Corporate short-term debt grew rapidly after the war, except for a minor decline in 1949, and at the end of 1952 was at a historically high level both in net amount and in relation to long-term debt.¹⁷ However, it repre-

senting; individual income tax liabilities of stockholders, 32 per cent; individual savings, 19 per cent; consumption and gifts and contributions, 39 per cent. Goode, *op. cit.*, p. 108. Needless to say, these estimates are based on many assumptions, some of them rather shaky.

¹⁶ Friedrich A. Lutz, *Corporate Cash Balances, 1914–43*, National Bureau of Economic Research, 1945.

¹⁷ *Survey of Current Business*, October 1950, p. 10, and September 1953, p. 17.

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sents a smaller fraction of income originating in corporate business than in 1929 or 1937.¹⁸

A drawback to cutting corporate taxes as a means of stimulating demand during a recession or depression is the possibility that a large fraction of the tax remission will be used to reduce short-term indebtedness or to increase idle reserves. When the business outlook is highly uncertain or when prices are expected to fall these uses may be the most prudent applications of funds for many firms. Although an increase in business liquidity and a reduction in fixed charges may be helpful, it seems unlikely that they will offer as much support to economic activity as an equal increase in spending power of individual consumers.

As compared with a reduction of corporate tax rates, a cut in the rates of the individual income tax, payroll taxes, or excises can be expected to offer a much greater stimulus to consumption. This judgment is based mainly on the hypothesis that the corporate tax has less direct effect on disposable income of consumers or its purchasing power. It does not depend on an assumption that the marginal propensity to consume of stockholders is lower than that of other groups. If, however, the marginal propensity to consume is inversely related to the size of family income, this factor will tend to widen the difference between the corporation income tax and the other taxes inasmuch as dividend receipts are highly concentrated in upper income groups.

Reduction of the individual income tax, excises, or payroll taxes will probably stimulate some additional private investment. But the direct effects on this component of demand are likely to be smaller than those attributable to a change in the corporate income tax.

In summary, it appears that a reduction of the corporate tax rate is always a relatively ineffective means of stimulating consumption. Its influence on investment is less certain but is likely to be weaker during a depression than in a period of recovery or prosperity. If the tax reduction is expected to be temporary, its force will be diminished because it will not significantly improve the anticipated return on long-lived investments. These considerations suggest that a reduction of corporate tax rates is a less promising antidepression measure than a cut in other major taxes.

Rapid Amortization

An alternative to a change in tax rates as a means of reducing the corporation income tax is to allow rapid amortization or accelerated

¹⁸ *National Income Supplement, 1951, Survey of Current Business*, p. 156.

depreciation. Several countries have experimented with this method of removing obstacles to private investment. The United States adopted rapid amortization of emergency facilities during World War II and again during the Korean war in order to prevent high tax rates from interfering too much with selected types of investment. Could this technique be successfully employed for a similar purpose under depression conditions?

Rapid amortization of new depreciable property will result in an immediate reduction in reported profits and tax liabilities, by an amount depending on provisions of the particular scheme and the volume of eligible investment. If aggregate deductions are limited to original cost, the larger deductions allowed in the early years of useful life of an asset will be offset by smaller reductions in later years. With constant tax rates there will be a redistribution of tax liabilities over time rather than an outright reduction with respect to the income attributable to any one asset. So long as the plan remains in operation the Treasury will not recover its original loss of revenue, unless the rate of new investment in eligible assets declines. An individual firm can enjoy continued tax exemption by acquiring new assets as soon as the old ones are written off. If, however, rapid amortization is terminated once recovery has been attained, tax postponement will come to an end and the Treasury will begin to recoup the earlier loss of revenue.

The objective in granting a tax reduction in the form of accelerated depreciation rather than by a cut in tax rates would be to encourage investment in depreciable assets as distinguished from accumulation of idle reserves, debt retirement, additions to inventories, or other uses of funds. The first step in appraising this device is to consider its value as an investment incentive.

If tax rates are constant and all firms have enough operating income to absorb the extra deductions, the tax postponement due to rapid amortization would be equivalent to an interest-free advance of funds from the government. This would mean a small increase in the rate of return on the investment. It would also ease the financial position and working capital problems of a firm expanding its depreciable assets. But a more important aspect of accelerated depreciation would be the fact that it would reduce the risk that the income tax would interfere with recovery of the capital invested in a new asset.

Businessmen are accustomed to subject future earnings to a heavy discount because of their uncertainty. This attitude is reflected in repeated reports that most firms will undertake a new investment only if it promises to pay for itself within a rather short time. Com-

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monly this "payoff period" is said to be about three to five years for machinery of a type that is usually considered to have a normal useful life of ten to twenty years. The insistence on the short payoff period implies that uncertainty is so great that the possibility of receiving earnings after the end of the period is not worth taking into account.

The corporate income tax makes it harder to recover the cost of an asset during its payoff period because depreciation allowances are based on the longer normal useful life. The greater the discrepancy between the payoff period and the depreciation period, the more repressive is the tax at any given rate. Since creditors are likely to adopt somewhat the same attitude toward the future as investors, the tax will also make it harder to borrow to finance acquisition of depreciable property when the depreciation period is longer than the payoff period (and the maturity of the loan).

By narrowing or eliminating the difference between the payoff period and the depreciation period for tax purposes, accelerated depreciation will lessen the tax obstacle to investment. It will not wholly eliminate tax deterrents, inasmuch as the net return above cost will still be subject to taxation.

It seems clear that, in a period of stable prosperity when tax rates are high and are not expected to change, introduction of rapid amortization will offer a significant stimulus to investment in depreciable property. Under depression conditions and with the possibility that profits will be larger and tax rates higher at some future time, the measure will probably be much less effective. First and most important, rapid amortization, like a cut in tax rates, does nothing to increase the gross yield of an investment. Rapid amortization will not induce investments which would be unattractive even in the absence of income taxes. Second, if tax rates are expected to be higher in the future, it may be disadvantageous to accelerate depreciation deductions. This suggests that a policy of countercyclical changes in tax rates will partially cancel the benefits of accelerated depreciation as an antidepression measure. Third, anticipated earnings may be too small to absorb deductions in excess of normal depreciation allowances over the shortened amortization period.

The significance of the third point depends on the availability of loss carrybacks or carryforwards and the form of the accelerated depreciation arrangement. Even when current profits are low or non-existent, additional depreciation deductions may produce a tax benefit if they result in accounting losses that can be offset against profits of past or future years. For firms with a record of profits in the recent

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past, a carryback will assure a tax refund, whereas a carryforward offers only a contingent benefit. In the absence of provisions for averaging profits and losses, a compulsory plan for systematic accelerated depreciation might actually discourage investment in a period of low profits. This effect could be minimized by making rapid amortization optional with the taxpayer or by giving taxpayers freedom to write off depreciable property at any rate that is convenient.

Three forms of systematic accelerated depreciation may be distinguished: (1) an "initial allowance" equal to some fraction of the cost of new assets with the remaining cost written off according to normal depreciation practices; (2) amortization of new depreciable property over a fixed period without regard to normal useful life; (3) amortization allowances for the new assets equal to some multiple of normal depreciation. These plans could be combined in various ways. The initial allowance has been used, in combination with a normal declining-balance depreciation computation, in the United Kingdom, Canada, India, and some other countries. Amortization over a period of sixty months, with the possibility of a still shorter period under stated circumstances, has been the provision applied to emergency facilities in the United States. So far as I know, the third method has not been generally adopted by any large country.

A uniform initial allowance and a uniform amortization period for all assets, as well as complete flexibility for the taxpayer, favor investment in long-lived assets as compared with short-lived assets. The increase in deductions will be proportionately larger for the long-lived assets. This feature might cause some distortion in investment patterns, but in part it would only compensate for the greater risk associated with long-term investment. It is also true that the heavy capital goods industries and construction are likely to be most adversely affected by a depression. Hence, investment in these types of assets would stand in greatest need of a tax fillip. Application of a uniform multiplier to normal depreciation allowances will shorten the amortization period by the same fraction for all types of assets and in that sense can be considered neutral as regards long-lived assets.

Administrative and compliance problems associated with adoption and termination of rapid amortization probably would not be much greater than in connection with countercyclical changes of tax rates. In order to prevent tax avoidance, it would be advisable to tax gains from sales or exchanges of depreciable property (at least to the extent of the difference between book values under accelerated de-

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preciation and under normal depreciation) at regular income tax rates rather than at capital gains rates. In the absence of such a rule, taxpayers could effect a tax saving merely by exchanging assets.

There is a strong presumption that, in proportion to the amount of revenue sacrificed, rapid amortization would stimulate more new investment than a reduction of corporate tax rates. The concession would be tied directly to the acquisition of depreciable assets, and the amount of tax revenue lost would depend on the volume of new investment. Nevertheless, part of the tax reduction would be "wasted" because some of the investment eligible for accelerated depreciation would have been made without that privilege. Some of the tax saving would go into idle reserves, but it seems likely that this fraction would be smaller than under a general reduction in the corporate tax rate. Rapid amortization would benefit most those industries in which depreciation constitutes a large part of total costs. In general, these are the industries that have suffered most in past depressions.

The stabilizing potentialities of adjustment of depreciation allowances as an alternative to countercyclical changes in tax rates deserve further study. Attention might well be given to the possibility of reducing or postponing normal allowances when inflation threatens as well as to accelerated depreciation in time of depression.

Taxation of Undistributed Profits or Uninvested Funds

An alternative to reduction of corporation income tax rates or liberalization of depreciation allowances would be basic revision of the method of taxing corporations. One approach would be to restrict the corporate tax to retained profits by transforming it into an undistributed profits tax or a withholding tax. Despite important differences in form, these two substitutes are fundamentally similar, and for present purposes attention can be confined to the undistributed profits tax. This measure has usually been advocated as a reform appropriate for all phases of the business cycle rather than as a means of alleviating depression. It raises a number of controversial issues that will not be examined here.¹⁹ Brief attention will be given, however, to some of the economic implications of the undistributed profits tax during a depression. A tax on uninvested funds of corporations, either as an addition to the present corporate tax or as a partial substitute for it, will also be considered as an antidepression measure.

The United States experimented with an undistributed profits tax

¹⁹ See *The Postwar Corporation Tax Structure*, Dept. of the Treasury, 1946, and Goode, *op. cit.*, Chap. 10.

in 1936-1937. The tax appears to have been an important stimulus to distribution of dividends in those years.²⁰ It is uncertain to what extent this reaction was peculiar to conditions of the times or to particular features of the statute, but it is clear that the tax would always exert pressure to distribute net profits.

Additional distributions of cash dividends would increase disposable income of stockholders and raise consumption expenditures. This effect would be desirable during a depression but undesirable under inflationary conditions. On the other hand, the liquidity of corporations would be reduced, and their ability to finance investment from internal sources would be impaired. This would partially or wholly offset the influence on consumption.

If the statute allowed a credit for stock dividends as well as cash dividends, as the 1936 act did, some corporations would be able to escape liability without jeopardizing their cash position. Other corporations, especially closely held ones, might arrange with their stockholders for reinvestment of part of the funds paid out in cash dividends. It is also possible that more generous dividend policies would improve the market for new equity securities. But this is doubtful, inasmuch as stock prices may be more closely related to earnings available for dividends than to dividends paid. In any event, if corporations succeeded in avoiding a reduction in the resources available for financing new investment and for building up reserves, the undistributed profits tax would fail as a stimulant to consumption.

The effect of the undistributed profits tax on the combined total of investment by corporations and consumption expenditures by stockholders seems too uncertain to justify recommending the measure as one especially suitable for depression conditions. Furthermore, if the tax is held to be desirable for depression use because it promotes consumption without greatly restricting investment, there is a presumption that it would be undesirable when the fiscal problem is to control inflation. In view of the complex and controversial nature of the undistributed profits tax there are strong objections to alternate imposition and suspension of the tax in different phases of the business cycle. This negative report on the value of the undistributed profits tax as an antidepression measure is not intended to suggest that it would be inappropriate to adopt the plan during a depression if it were considered a desirable permanent revision of the revenue system. Whether the tax qualifies as such is not considered in this paper.

²⁰ George E. Lent, *The Impact of the Undistributed Profits Tax, 1936-1937*, Columbia University Press, 1948, Chap. II, and Dobrovolsky, *op. cit.*, pp. 57-62.

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In the late 1930's and in the discussion of postwar tax plans some attention was given to the possibility that a tax on "idle" funds of corporations would be more effective than the undistributed profits tax as a check on excessive savings and would not be subject to the same disadvantages as the latter. This tax was proposed as a levy on net profits plus current accruals to depreciation and depletion reserves but with deductions for dividend distributions and for new investment. The objective would be to apply a tax pressure against accumulation of inactive funds, whether from net profits or depreciation and depletion reserves, and in favor of dividend distribution and investment. If this pressure proved ineffective, the government would realize revenue from a tax that would not directly encroach on private investment or consumption.

A technical problem would be presented by the choice of a definition of "investment" and its application. A narrow definition would take in only depreciable or depletable property but would include outlays for replacement as well as expansion. A broader concept would include land, inventories, and accounts receivable. Securities would presumably not be an acceptable type of investment. Financial businesses would probably have to be exempted from the tax.

The most serious difficulty in devising a satisfactory tax on uninvested funds would be to make appropriate allowance for the difference in timing of fund accrual and investment outlays. Some businesses are accustomed to replace their assets at a fairly steady rate because the durability, age distribution, and size of individual property items allow this. These firms could also follow a policy of gradually expanding their physical assets. Other firms, however, necessarily have an irregular pattern of replacement or expansion, because their properties are long-lived and consist of a relatively small number of large units (hotels and real estate corporations are examples of this type of business). The first type of firm could adjust its investment outlays to the volume of retained profits and depreciation accruals and thereby avoid tax liability. The firm with an irregular investment pattern might become liable for the tax because it needed to accumulate funds over a period of years to finance a large outlay for replacement or expansion.

One way of dealing with the timing problem would be to allow a long period of averaging by means of carrybacks or carryforwards of investment outlays in excess of current accruals of funds. But this would introduce an important element of discrimination against firms that had made large investments just before the tax went into effect

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as compared with firms investing immediately thereafter. The former might be faced with a tax liability, while the latter would enjoy a carryforward sufficient to wipe out liability for many years. In fact, with a sufficient carryforward, the provision for inclusion of depreciation and depletion accruals in the tax base would become virtually meaningless because the original investment would result in a carryforward equal to all future accruals to depreciation and depletion reserves. While a carryforward or carryback would seem essential for equity reasons, it would greatly diminish the effectiveness of the tax in time of depression because accruals of funds in such a period could be offset by investment outlays made during prosperity.

It might be possible to solve the technical problems associated with a tax on uninvested funds if enough serious study were given to the subject. Even so, the tax would be appropriate only for a condition of secular stagnation and not as a means of helping counteract a brief depression. It would be much too cumbersome a machine to start and stop at frequent intervals.

Summary of Conclusions

The principal conclusions of this paper may be summarized as follows:

1. The marked built-in flexibility of corporation income tax liabilities does not mean that the tax is a powerful automatic stabilizer of business activity. The advantages of the corporate tax during a depression are probably due more to the fact that it is based on net income than to timing of liabilities as such. Nevertheless, built-in flexibility is a desirable feature.

2. Built-in flexibility could be increased by elimination of Lifo inventory valuation, by lengthening the carryback of net operating losses and shortening the carryforward, and by graduation of rates. In view of the uncertain importance of timing of corporate tax liabilities, however, it may be justifiable to evaluate these measures primarily in the light of their other advantages and disadvantages.

3. A temporary reduction of corporation income tax rates will probably increase private spending less during a depression than a temporary cut in the individual income tax, excises, or payroll taxes. It will be much less effective in stimulating consumption. A temporary reduction of corporate taxes will be less favorable to investment than a permanent reduction because it will not greatly improve the anticipated return on long-lived assets. In a severe depression,

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lowering of corporate tax rates may have little influence because there are comparatively few investment opportunities that seem to promise any net profit.

4. In proportion to the amount of revenue sacrificed, rapid amortization of depreciable property can probably do more to improve investment incentives than a general reduction of corporate tax rates. Carrybacks or carryforwards of accounting losses or other elements of flexibility will be essential to allow realization of the full benefits of rapid amortization and to prevent it from actually discouraging some investment in time of depression.

5. Neither an undistributed profits tax nor a tax on uninvested funds of corporations appears to be a promising means of combating a short depression. The former would probably bring about some increase in consumption expenditures but would make internal financing of investment more difficult. The latter presents some unsolved technical difficulties. Both measures would be undesirable when fiscal restraints on private spending were appropriate, and they are too cumbersome to apply and remove in different phases of the business cycle.

C O M M E N T

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In commenting on this very interesting and constructive paper, I shall concentrate on a couple of points which leave me worried and which may stand further discussion. Most puzzling, perhaps, is the proposition that little can be expected, in terms of increased investment, from a reduction in the rate of the corporation tax. This, to be sure, is the prevailing opinion, and I am inclined to share it; but I don't quite know why, and feel uneasy about the matter.

To begin with, note an important distinction between possible inducements to investment by reducing the corporation tax and inducement to consumption by reducing the personal income tax. In the case of the personal income tax, the consequences of tax change take the form of income effects¹ and the same holds pretty much for conventional excises, the substitution effect of which is of minor importance insofar as consumption as a whole is concerned. Because we deal with the income effect, we know (1) that the resulting initial gain in consumption or "multiplicand" cannot exceed the reduction

¹ Substitution effects on work effort are a different matter and may be neglected in this connection.

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in yield, and (2) that a decline in yield will have a favorable leverage effect, no matter whether this decline is due to a reduction in the tax rate or to a shrinkage in the tax base.

In the case of the corporation income tax, expenditures may be affected in two ways. As the tax is reduced, the corporation is left with more investable funds. If we assume that investment is a function of retained funds, the argument is quite analogous to the previously considered consumption effects of cuts in personal taxes. The only difference is that a propensity to invest is substituted for a propensity to consume. This propensity to invest or "liquidity" theory of investment behavior seems to underlie much of the recent tax discussion, especially the optimistic view of accelerated depreciation. The trouble with this theory is that it is more likely to work in the boom, when you don't need it, than in the depression, when you want it.

In any case, changes in available funds are only one aspect of the matter. Investment behavior, surely, also involves profit prospects as a determining factor. These prospects, of course, are prospects net of tax. It is necessary, therefore, to consider the substitution effect of tax changes on the profitability of investment. Profits, after all, are doubled if a tax of 50 per cent is repealed; or they are raised by 50 per cent if the tax rate is cut by one-half. What puzzles me is why we feel that investment might not be encouraged substantially by such a rather drastic change in profitability.

Here the principle involved is quite different from that of the income tax. Resulting changes in the level of investment need not bear any particular relation to the loss in yield; they may fall short of this loss or be a multiple thereof. Also, we know that a favorable substitution effect can result only from a reduction in the tax *rate*, not from a shrinkage in the profits base. Built-in flexibility, in other words, works only with regard to the income effect; it does not work (except where rates are progressive) with regard to the substitution effect.

Why is it that so little is expected of the substitution effect? Among a number of possible explanations, these might be offered: (1) To the extent that the corporation tax is shifted anyhow, reducing the tax rate will not affect investment, be it via income or via substitution effect. Pending an empirical study of the matter, I am still far from convinced by the usual view (adopted in Goode's paper) that the entire tax stays put in the short run. As I see it, there are many arguments, wholly compatible with conventional price theory, which permit the possibility of shifting. (2) Perhaps

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the fault lies in the very premise that a tax on profits reduces, and that removal of a tax increases, investment "yield." While this seems to be the case at first glance, the actual problem is much more complex. If perfect loss offset is assumed to exist, imposition of a tax may be shown to reduce the risk of loss as well as the prospect of yield.² Thus, the attractiveness of risk taking remains unaffected. But it does not follow necessarily that more cash will be held. In all, we must admit that we have little to go on when it comes to investment theory. The crude $L = f(M)$ and $I = f(I)$ functions usually employed tell us little. The whole problem is *how* they are affected by the imposition of a tax on investment income; and to answer this, a much more explicit theory is needed. (3) Finally, the explanation may be that the investment schedule is highly inelastic to yield. To the extent that this is true, the increase in investment induced by reduction in tax rate will not be able to offset such reduction in investment as results from a downward shift in the investment schedule during depression. If this is the case, the effectiveness of tax reduction falters at the same obstacle as does monetary expansion—although the latter may have the additional handicap of a highly elastic liquidity preference schedule.

Evidently, this is an area in which much work needs to be done. Until empirical results are obtained little can be said in an authoritative way. Nevertheless, I feel rather skeptical about the heavy emphasis on the liquidity approach to investment (with its stress on accelerated depreciation) and about the de-emphasis of the substitution effect part of the problem. What we are doing, perhaps, is to apply boom psychology to a depression problem.

Second, I have been much interested in Goode's treatment of price level change. On equity grounds, there would be an advantage to having income defined in real terms, provided that this could be done consistently.³ But, as Goode shows, corrections in the tax base, working in this direction, will reduce built-in flexibility of tax yield. This consideration, to be sure, is disturbing only if we take the available funds approach to investment behavior; under a profitability approach, adjustment for price level change may contribute to stabilize investment. Also, there is the bothersome thought

² For an elaboration of the risk approach, see E. D. Domar and R. A. Musgrave, "Proportional Income Taxation and Risk Taking," *Quarterly Journal of Economics*, May 1944.

³ Advocates of replacement cost depreciation usually overlook the facts that similar adjustments may be applied to other items on the balance sheet and that an analogous problem arises for personal taxpayers.

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that built-in flexibility is a fine thing when you are at the top; but it is not so attractive after income has declined and you are trying for a recovery.

This, among other considerations, suggests the possibility of using different definitions of taxable income at different stages in the cycle. On the whole, I share Goode's skepticism toward such an approach. If we want a tax structure which is neutral as between investment in different firms, we need to work out an *income concept* which meets these requirements and then leave it alone, while using adjustments in tax *rates* as our major anticyclical device.

Perhaps Goode is correct in suggesting that anticyclical adjustment in depreciation rates is a proper exception to this rule, but I am not as optimistic regarding its effectiveness. Remember that recent years have been just the setting in which accelerated depreciation could be most effective. For one thing, investors looked forward to a subsequent decline in tax rates, a factor which more than anything else makes accelerated depreciation desirable to the investor. For another, investment was booming, thus emphasizing the gain-in-liquidity aspect of accelerated depreciation. Should a recession set in, neither of these factors would be present, and the effectiveness of accelerated depreciation would be greatly reduced. Certainly it is a policy which will be more helpful in maintaining than in restoring a high level of activity.

Nevertheless, Goode is probably correct when he concludes that per dollar of yield lost, the incentive to investment will be greater from accelerated depreciation than from a reduction in the tax rate. This, perhaps, is primarily due to the fact that accelerated depreciation will apply to new investment only, whereas the reduction in tax rate would apply, presumably, to earnings from old investment as well. Perhaps the main merit of accelerated depreciation is that it furnishes us with an administratively feasible way of giving preferential treatment to new investment.

