Using the fact that for ordinary investments yielding income streams of present value R_1, C_1 tends to be equal to R_1, we may write:

$$C_3(1 - .8t - .2t') = C_1(1 - t'),$$

or

$$\frac{C_3}{C_1} = \frac{(1 - t')}{(1 - .8t - .2t')}.$$

It can be seen from a comparison of Table 12.3 with Table 12.2 that the incentive given to petroleum exploration by the capital gains provisions of our tax laws is almost as great, for any given tax rate, as that given by the percentage depletion provisions. Moreover, the differential incentive given by the capital gains provisions is like that given by percentage depletion in that it increases with the tax rate, from small values when the tax rate is in the neighborhood of 10 or 20 percent to high values when it is 50 percent and more. The conclusion appears inescapable that strong incentives for excessive investment in petroleum exploration really came into being in the last few decades, as income tax rates were raised toward their present high levels. To bring the relative incentives for petroleum exploration back to the level at which they were when percentage depletion was first enacted would entail, at present corporation tax rates, a very substantial reduction in the current 27 1/2 percent depletion rate, and a very substantial increase in the tax rate applicable to capital gains on oil properties.

X

Chapter 13, which appeared in *The Taxpayer's Stake in Tax Reform* published in 1968 by the Chamber of Commerce of the United States is essentially a straightforward exposition of the principles underlying the taxation of value added, together with a modest plea for its consideration as a permanent component of the United States tax system. This is a *modest* plea because the arguments for a value-added tax are much stronger when it is viewed (as was the case in the European countries, which have by now largely shifted to the value-added tax) as a substitute for a preexisting turnover tax than when it is viewed as a wholly new component of the system.

As Chapter 15 indicates, I place only small weight on the possible beneficial effect of a value-added tax on the balance-of-payments position of the United States. Its principal benefit, I believe, would be as a potential source of increases in revenues when these are needed in a hurry (as was the case, for example, in the Korean War) and as a highly responsive instrument of flexible fiscal policy in the short run.

I have encountered no arguments against the value-added tax in the above terms. Rather, its opponents seem to have concentrated their fire on the likely regressive incidence of the tax. On this matter no issues of economic analysis are involved, but only questions of values on the one hand and political judgment on the other. On the value side, I share with opponents of the value-added tax the belief that the tax system should be progressive. But I would argue that judgments concerning progressivity are more relevant when applied to the whole tax system (or even better, to the whole tax-expenditure system) than when applied to each component separately. A tax system can have some substantial regressive components, and still be quite, or even very, progressive over-all. This does not argue in any sense that there should be regressive components in a tax system, but only that where a particular tax (like the value-added tax) has very substantial advantages of its own (neutrality with respect to resource allocation, ease of administration, flexibility with respect to changing revenue needs), the fact that taken alone it is somewhat regressive in its incidence should not be taken as a decisive argument against it.

Here is where the issue of political judgment enters. If one views the ultimate incidence of the tax system as the product of a series of historical accidents — first one tax is imposed, then another, then a rate structure is changed, etc. — the addition of one new regressive component (in this case the value-added tax) will automatically make the system as a whole more regressive. This is the position taken by a number of opponents of the value-added tax.

On the other hand, it is possible to take the view that the political and social climate prevailing in any given period largely determines the degree of progressivity of the tax and expenditure systems, more or less independently of the particular components making up, say, the tax system. Thus the imposition of value-added tax could be accompanied, or reasonably shortly followed, by either an increase of the exemption level on the personal income tax, or by a closing of some tax loopholes that benefit mainly the higher brackets, or by a variety of other devices which would tend to preserve the progressivity of the overall structure, or to make it reflect changing political pressures and forces much as it would have done anyway, even in the absence of a value-added tax.

I do not have very firm feelings about which of these alternative sets of political judgments is more nearly correct or relevant, but my leaning is toward the view that the overall degree of progression is determined in a fashion that is largely independent of the presence or absence of any particular tax. Certainly I can say that it is when I more or less explicitly or consciously accept the approximate validity of this view of the political process that I feel most easy and comfortable in advocating a value-added tax for the United States.

Chapter 13

A Federal Tax on Value Added

The idea of a value-added tax is still strange to most Americans, and it is only natural that this should lead to its being greeted with trepidation and suspicion. Our first task, therefore, is to set out the basic concept of the value-added tax, and to relate it to more familiar types of taxation. Then, as the second step in our analysis, we shall outline the principal arguments for and against the value-added tax, and attempt to assess their overall merits and weaknesses as well as any particular advantages or disadvantages that such a tax might have for the United States. Finally, we shall turn to issues related to the design and administration of a value-added tax.

THE NATURE OF VALUE-ADDED TAXATION

In its National Policy Statement, *A Better Balance in Federal Taxes on Business* (April, 1966), the Committee for Economic Development stated (p. 20):

> We urge that serious consideration be given to the introduction of a flat rate tax on all the value added in business activity in the United States. To assure that the tax rate can be set at a low enough rate to minimize distortions, this tax should be as broadly based as is administratively feasible. By a tax on value added we mean an unduplicated tax on the increase in the value of products as they pass through successive firms in the production and distribution process.

The key element of value-added taxation is clearly stated by the CED: The base of such a tax is the *increase in value* of products as they pass through successive stages in the production and distribution process. The farmer pays tax on the difference between the value of the wheat he produces and the cost of the seeds, fertilizers, etc. used in producing the wheat. The miller pays tax on the difference between the value of the flour he produces and the cost of the wheat and other material inputs that went into its production. The baker pays tax on the difference between the value of the bread he produces and the cost of the flour and other materials consumed in making it. Finally, the retailer pays tax on the difference between the retail value of bread he sells and the cost to him (at wholesale) of acquiring the bread. Thus if the tax were levied at the rate of

5 percent of value added at each stage of the process, it would end up having collected, in separate stages, 5 percent of the retail value of bread. It is an *unduplicated* tax in the sense that once tax has been paid on a "part" of the economic activities involved in producing bread, that "part" is never taxed again in subsequent stages of production.

The principles reflected in the above example of bread apply equally well to other products. Of the final tax of 5 percent of the value of an automobile, a part would have been paid by coal mining companies, other parts by steel firms, by tire makers, by glass makers, by copper companies, etc., and finally the parts corresponding to them would be paid by the auto manufacturer and the dealer. Of the final tax of 5 percent on meat, a part would have been paid by the rancher, a part by the cattle-fattener, a part by the meat packer, a part by the wholesaler, and a part by the retailer. If the tax were fully general, and struck all productive activities in the economy, it would end up having taxed away 5 percent of value of the final goods and services produced by the private sector of the economy; in other words, it would have taken 5 percent of the private sector's contribution to the Gross National Product.[1] Each business firm would have paid tax on its contribution to the GNP, which is simply the difference in value between its output and the costs of those materials and intermediate products which were purchased from other firms for use in making that output.

Now let us examine the relationship between value-added taxes and other, more familiar taxes. The value-added tax just described, which is called the product type, is most closely related to a retail sales tax of a very general kind — so general as to cover all goods and services acquired by consumers, plus all acquisitions of investment assets by business firms. The value-added tax strikes all final goods and services produced by the private sector of the economy, while the fully general retail sales tax strikes all final goods and services acquired by the private sector. The differences between the production and the acquisitions of the private sector are of two types: (a) sales to the public sector, and (b) transactions with foreign countries.

With respect to (a), these sales would be taxed under the value-added tax and presumably exempt under the sales tax. The difference, however, is of little practical moment. If the public sector were to pay tax under the sales tax alternative, it would also receive the revenues in question; there is thus no basic difference between the situation in which the public sector pays and receives a 5 percent tax on the final goods and services it acquires, and that in which it pays and receives no tax on these acquisitions. The only point at which the difference has relevance concerns the different levels of government. Under a federal value-added tax, state and local governments would in effect pay tax to the federal government on their purchases; under a federal final sales tax, these purchases would presumably (though not necessarily) be exempt. Thus, while the situation of the public sector as a whole is the same under final sales and

[1] The above statement is precisely true only for the so-called product type of value-added tax, but the general principle that a fully general value-added tax is equivalent to a tax on some corresponding macroeconomic total applies also to value-added taxes of the income and consumption types. These are discussed in detail below.

value-added taxation, the distribution of fiscal burdens and revenues within it may be somewhat different.

With respect to (b), under a general final sales tax, export sales would presumably be exempt, while under a value-added tax striking all production done within the country, tax would automatically have been paid on the great bulk of the value of exports long before the items in question reached the export stage or were even known to be headed for export. The border-tax adjustments permitted under the General Agreement on Tariffs and Trade are, however, all that is needed to bring about the same end result under either value-added tax or the final sales tax. These adjustments permit the rebating, at the point of export, of any indirect taxes that have been paid in the process of the production of any exported goods or services. They also permit the collection, at the point of import, of a corresponding tax (in our example, 5 percent) on any imported goods and services. In this way a tax which (like the value-added tax) is nominally levied upon production activity can be transformed in effect into a tax on acquisitions of final products by domestic consumers and business firms.

In sum, a general value-added tax of the product type, and incorporating the GATT border-tax adjustments, is for all practical purposes equivalent to a general sales tax on all final goods and services acquired by the private sector.

Up to now we have considered the value-added tax as a levy on the difference between the value of production and the cost of acquiring materials and intermediate products. We can now visualize an income statement for the firm, and ask ourselves of what items does the above difference consist. Basically, this reduces to an issue of deciding what we mean by value of production and what we mean by the costs of acquiring materials and intermediate products. However we decide this issue, we must do so consistently; if an item is counted as part of product when sold to another firm, it must be counted as part of cost when bought from another firm. No serious issues arise here insofar as material goods or direct services (such as legal, accounting, and consulting services) are concerned. If they are bought from an individual or entity not covered by the value-added system, as in the case of the services of a lawyer directly employed by the firm, they are not deductible in the computation of value added.

If they are bought from a firm which is itself covered by the system, they are deductible to the purchasing firm but are treated as part of the value of product of the selling firm. Thus the services of a law firm contracted by a company would be deductible so far as that company was concerned, but the salary paid to the lawyers in question would not be deductible in the law firm's computation of its own tax liability.

A similar issue arises in connection with the treatment of interest payments and rents. In both cases what is involved is the use within a firm of "hired" capital, and the question arises of whether to treat the payments to hired capital similarly to those to hired labor, i.e., to count interest and rent payments as part of value added, or whether to treat them similarly to the purchase and sale of goods and services, thus counting rental and interest income as part of the product of the firm and deducting rental and interest payments to other firms. The second of these approaches is clearly to be preferred, for the fact that the services in question are "hired" is not the relevant distinction. The relevant distinction is whether the payments in question were made to other firms covered by the system or not. If they were, and if the law is appropriately framed, they would already have entered into the calculation of those firms as part of the value of their product, and the other firms would have been liable to tax upon them. The general rule, then, is that all receipts from the provision of goods and services (including interest and rent receipts) are included in the value of production, and all payments to other entities within the value-added system for materials or intermediate goods and services (including interest and rental payments to such entities) are deductible in the calculation of value added.

When a general value-added tax of the product type is imposed, covering the whole (incorporated and unincorporated) business sector of the economy, then, the principal components of the tax base are (a) profits,[2] (b) wage and salary payments,[3] (c) interest and rental payments to individuals, (d) indirect business taxes (other than the value-added tax itself), and (e) depreciation allowances. Together these add up to the Gross National Product generated by the private sector of the economy, so long as the tax is indeed fully general.

When looked at this way, the tax often gives rise to the question of whether it is fair or appropriate to include indirect business taxes and depreciation allowances in the tax base. Without going at this point into the issues involved, let us note that the standard, garden variety type of excise tax in effect is levied on the base of all of the above items plus the costs of materials and intermediate products (including whatever taxes those costs incorporate); hence there are no grounds to justify our being shocked at having depreciation and indirect taxes included in the value-added tax base. Moreover, their inclusion in the base is not a necessary part of value-added taxation, but rather the distinguishing feature of the product type of value-added tax. They can easily be eliminated from the base by allowing firms to deduct them from value added as defined for a product-type tax, before arriving at the base on which their tax will be computed. Doing so, we convert a value-added tax of the product type into one of the income type.

This is perhaps the clearest way to conceive of what is meant by a value-added tax of the income type — as simply a value-added tax of the product type, adjusted so as to make depreciation and indirect business taxes (other than the value-added tax itself) deductible. It is important to note that the income type of value-added tax does not correspond to a tax on business income, but rather to one on all wages and profits in the business sector, plus interest and rents (i.e., the income from capital other than profits) paid by that sector to individuals. These items, for a fully general tax, would add up essentially to the national income generated within the private sector. The tax with which a value-added tax of the income type can most directly be compared is not the corporation profits tax but rather the personal income tax. In effect, the income type value-added tax is simply a proportional income tax on all income generated in the economy, with an exemption for that part generated in the public sector. And since, as indicated before, there is precious little difference between the cases in

[2] Sales, and therefore profits, should in principle include goods "sold" by the firm to itself or its owners — e.g., inventory accumulation or withdrawal of part of the firm's product for consumption by owners.

[3] Including payments in kind.

which the government does or does not pay tax to itself, the analogy to a proportional income tax on income generated within the economy is quite close indeed.

The consumption type of value-added tax differs from the income type in that instead of allowing the deduction of depreciation on capital assets it simply permits the cost of such assets to be deducted at the time of purchase. The analogy here is with a proportional tax on consumption, or with a retail sales tax from which investment goods acquired by business firms are exempt. This can be easily seen by proceeding from our earlier analysis of a value-added tax of the product type. We saw there that such a tax (with the GATT border-tax adjustments) was equivalent to a general tax at a flat rate on all final goods and services acquired by the private sector of the economy. If, starting with such a tax, we exempt those goods acquired for investment purposes, we are naturally left with a tax striking only consumption goods.

The concept of a value-added tax, then, though it may be unfamiliar as such to many readers, has close analogies, in its several variants, with (a) a fully general sales tax on final goods and services (product type), (b) a proportional tax on all income generated in the economy (income type), (c) a proportional tax on all consumption goods sold to consumers in the economy (consumption type). The equivalence is so close that it is difficult to conceive of any strong argument for a general value-added tax of one type or another, which is not equally weighty in favor of its non-value-added counterpart. Thus one rarely if ever hears arguments for substituting a value-added tax for an existing sales or income tax; its advocates instead tend to regard it as a substitute for other taxes, against which its superiority stands out more clearly, or as an additional tax in the system.

THE MAJOR ISSUES

The value-added tax clearly has its strongest appeal, and its firmest base of application, in continental Europe, where it has been in effect in France since 1954, is scheduled to be introduced in West Germany this year, and has been recommended for adoption by all Common Market countries. The reason is, I believe, not hard to find, for the continental European countries have traditionally relied heavily on taxes of the turnover type, in contrast to most other advanced economies. The overwhelmingly most important argument favoring the introduction of value-added taxation on the Continent is that the value-added tax is a much more neutral, much more rational substitute for the prevailing (or previously prevailing) turnover tax system.

Under the turnover system, the farmer pays tax on the value of the wheat, the miller pays tax on the value of the flour, and the baker pays tax on the value of the bread. Thus, in effect, the wheat embodied in the bread is taxed three times, the value added in converting wheat into flour is taxed twice, and the value added in making flour into bread is taxed once. All the above assumes, however, that the farmer, the miller, and the baker are three separate business firms. If the miller and the baker merge, the new firm still only pays tax once on the value of the bread; the tax previously paid by the miller on the value of the wheat simply disappears. And if the merged firm were to acquire the farmer's enterprise, his tax too would disappear, leaving only the tax on the bread.

Not only does turnover taxation give obvious incentives to vertical integration, but since not every firm is in a position to become vertically integrated, the system turns out to be one in which the bread produced by ten different bakers will in all likelihood have borne, per dollar of final value, ten different amounts of aggregate turnover tax. To the incentive to integrate vertically we must therefore add the inequity of differential taxation of the same product. Moreover, a bakery which is unintegrated may for want of a better partner integrate with a high-cost mill, paying somewhat more to produce flour in the mill than it could buy the flour for on the open market. This is uneconomic from the point of view of the economy as a whole, but may be a worthwhile move from the bakery's point of view if the extra cost it bears producing its own flour is less that the tax it saves as a consequence of being integrated with the mill. Thus tax-induced inefficiency of production may be added to the charges already levied against the turnover system.

Under the value-added tax, by contrast, it makes no difference what the economic structure of production is; a dollar's worth of bread will in the end pay the same tax. The tax incentive to vertical integration disappears, and with it the inequities for those who cannot merge and the inefficiencies introduced into the operations of some of those who can. Given the fact that turnover taxes in Europe have tended to be quite general in their coverage, making their disadvantages well known and their discriminations widely suffered, it is small wonder that value-added taxation has developed its strongest support and gained its strongest impetus there.

In the United States, Canada, and the United Kingdom, the turnover tax system is and has been essentially nonexistent, and the value-added tax has been viewed either as a substitute for selective excise taxes or as a partial substitute for the corporation income tax. Selective excise taxes on final products, which are the type that have prevailed in these countries, introduce a discrimination at the consumer level against the taxed commodities and in favor of those not subject to excise taxation, and within the group of taxed goods against those subject to the higher rates of tax. Economic inefficiency results, in the sense that a consumer willing to pay \$1.20 for an item whose price net of tax would be \$1 is denied access to that item if because of the tax its prices is \$1.25, even though he pays only \$1 for a corresponding untaxed item. The welfare of consumers could be improved by shifting resources out of the no-tax industries and into those subject to selective excises, but the existence of the tax essentially prevents this reallocation of resources from taking place. The way to bring such a reallocation about, at no loss of tax revenue, is to reduce the highest rates of excise tax, introduce low-rate taxes in goods not yet subject to tax, and perhaps raise the low-rate excises as well. In the process of doing this, the economy would be moving toward a general flat-rate tax on all final consumption goods, which as we have seen is equivalent to a general value-added tax of the consumption type. Such a tax is not discriminatory as among the different items consumed. Under a 5 percent tax of this type, all consumer prices contain a tax of precisely 5 percent over cost — regardless of what the consumer buys, he

pays \$1.05 for each dollar of cost. Once consumers have fully adjusted their consumption to this regime, the efficiency with which they use their income can no longer be improved by commodity-tax adjustments.[4]

Typically, selective excise tax systems do not have nearly the breadth of coverage of the European turnover tax systems, and it is likely that their economic costs are lower as well. On the first ground, self-interested opposition to the taxes is more likely to be confined to a small group of the electorate, and on the second it is harder to arouse strong opposition based simply on concern for public welfare. As a consequence, in spite of there having been considerable academic support and some business support for the substitution of a broad-based, low-rate tax for the selective excises that prevailed in the U.S. for more than a decade, this substitution never took place. When the selective excises were finally nearly eliminated in the tax law of 1964, the move came as part of a package of general tax reductions; no serious consideration was given to their replacement by tax of value-added or similar type.

The strongest organized voice favoring a value-added tax at the present time for the United States is the Committee for Economic Development. Their argument is three-pronged, as indicated in the following quotations:

> The immediate consequences of rising military expenditures in Vietnam require taxes to be raised to prevent inflation. We recommend that a value-added tax on business activity be considered as the measure for raising the necessary revenue. As will become clear, this short-run solution to the immediate revenue requirements is a well-directed first step toward our longer-run plans for the structure of our tax system.
>
> It is because of its relevance as part of our longer-run tax structure that we have suggested the value-added tax as the tax to meet our immediate revenue needs. . . . We [therefore] recommend that when the international situation makes it possible for federal revenues to be reduced, the value-added tax be kept as a permanent part of our tax structure and that the reduction in revenue should be brought about by corporate income tax reduction.
>
> The corporate profits tax and the value-added tax also would differ in their effects on the balance of payments. Under present rules of the General Agreement on Tariffs and Trade (GATT), direct taxes such as the corporate income tax may neither be rebated on exports nor added to imports (it being assumed that such taxes are not passed on). Indirect taxes, such as the value-added tax, may be rebated on exports and added to imports (it being assumed that indirect taxes are passed on). A partial shift from the corporate

[4] This assertion must be qualified when distortions other than commodity taxes are present in the system, for then a differential tax or subsidy on specified commodities can work to offset existing distortions. I do not consider this qualification to be of major practical consequence in most cases, but it is conceivable that it might be in some. For further elaboration of this point see Arnold C. Harberger, "Taxation, Resource Allocation, and Welfare" in National Bureau of Economic Research, and The Brookings Institution, *The Role of Direct and Indirect Taxes in the Federal Revenue System* (Princeton: Princeton University Press, 1964), pp. 25–75, and "The Measurement of Waste," *American Economic Review*, May, 1964, pp. 58–76. [This volume, Chapters 2 and 3.]

income tax to a value-added tax offers the potential of stimulating exports and discouraging imports, and thus improving our balance-of-payments position.

Let us consider these arguments in turn. First, as an emergency measure to accommodate an unforeseen increase in government expenditures, the value-added tax has the great advantage of neutrality. The selective excises that were imposed as an emergency measure during the Korean War were highly discriminatory, producing a highly unequal distribution of the extra tax burden they entailed. Moreover, although successive pieces of legislation provided for the automatic expiration of the selective excises, subsequent events led to the continual postponement of their expiration, so that until the ultimate repeal of most of them in 1964, they seemed well on their way to becoming a permanent part of our tax structure. I believe that history demonstrates that there is more than a fair probability of emergency taxes becoming permanent; consequently, the more attention that can be paid to making them worthy elements of the overall structure, the better. The value-added tax wins hands down against the Korean War excises on this criterion.

The disadvantage of the value-added tax as a temporary measure is that it would be an entirely new element in the tax system. The administrative problems of putting it into effect, and of reaching the great numbers of taxpayers that would be involved, seem quite a formidable price to pay if the system is in any case not going to last. As strongly as I advocate the adoption of the value-added system in the United States, I doubt that I could favor its adoption if I knew for *certain* that it would last no more than two or three years. If it had, as I believe it would have, a substantial probability of lasting longer, I would readily argue for its adoption to meet an apparently temporary emergency. But — and this is the most important point — if the tax were once introduced into the permanent structure, it would be a natural vehicle for meeting the revenue requirements of temporary emergencies through changes in rates. In this case the administrative problems of setting the system in motion would be faced only once — thereafter the merits of its neutrality and its broad base (which implies that substantial amounts of additional revenue could be met by small increases in the rate of tax) would dominate.

The second prong in the CED case for a value-added tax is the long-run argument that a substitution of a value-added tax for part of the corporation income tax would enhance the efficiency of the economy. The corporation income tax is an exceedingly discriminatory one: It strikes the income from *equity* capital earned in the *corporate* sector of the economy, and thus discriminates against the corporate sector generally, while giving firms within that sector an incentive to bias their financial structure against equity and in favor of debt, and discriminating against the more venturesome and risk-taking firms because the market provides them only limited access to debt financing. Apart from these discriminations among types of capital, the corporation income tax creates incentives for the corporate sector to use less capital relative to labor than purely economic considerations would dictate. As the CED report states (p. 27) "A value-added tax, on the other hand, would be neutral, as far as any tax can be neutral, among forms and methods of doing business. By taxing the income

produced by each of the factors of production alike, it creates no tax-induced incentives to alter production methods."

There can be doubt that the shift of part of the weight of the corporation income tax to a tax of the value-added type would be conducive to greater economic efficiency, as the CED asserts, and the economist in his role as a national efficiency expert can do nothing but applaud such a move. Yet it is well to point out that a powerful coalition of forces is likely to oppose such a switch. The opponents are fairly obvious — labor, unincorporated businesses, and corporate businesses in which the return to equity capital is a relatively small fraction of value added would take over, directly or indirectly, the burden of which corporations in general were relieved. Among the types of corporations that would oppose the move are those (like public utilities) whose capital structures are heavily weighted toward debt, those (like many apparel firms) that are relatively highly labor intensive, and those (regardless of industry) that are in a relatively precarious financial situation, either sustaining actual losses or making only very low returns on their capital. Indeed, the switch of some part of the corporation income tax to a value-added tax would almost certainly shift some firms from a profit to a loss position, for while it is true that under the corporation income tax firms with losses are not liable for tax, under the value-added tax all firms are assessed a given fraction of their value added, regardless of their profit situation.[5]

As far as labor is concerned, it might at first appear that workers should be neutral as regards whether a given amount of tax is to be raised from businesses by the corporation income tax or by the value-added tax, as "business will pay in any event." But this is obviously short-sighted. Labor should, and labor today surely would, look to the longer-run incidence of the two tax alternatives. With respect to the value-added tax, the long-run incidence of the various types should be clear from the discussion of the previous section. The consumer-type value-added tax will in the long run be borne by consumers; and the income-type tax will be borne proportionately by all factors of production. The product-type tax would tend, paradoxically, to fall more on consumers than the income type, and less on consumers than the consumer type, because in the long run that part of the tax which nominally or initially strikes depreciation will have to be reflected in the prices of products. Labor, then, would be indifferent between value-added and corporation income taxation only if the corporation income tax itself were largely borne by labor, either in its role as a very large part of the consuming public or in its role as a factor of production as such. This is not the place to enter into a detailed analysis of the incidence of the corporation income tax; suffice it to say that both theoretical analysis and empirical evidence strongly suggest that capital bears close to the full burden of the corporation income tax in the United States.[6]

[5] In the CED's words "The present method of taxing corporate income tends to shelter the inefficient and tax the efficient" (p. 27). The value-added tax would not entail this discrimination, but this does not mean that inefficient firms will not lobby forcefully against it.

[6] See Arnold C. Harberger, "The Incidence of the Corporation Income Tax," *Journal of Political Economy*, LXX (June, 1962), and John G. Cragg, Arnold C. Harberger, and Peter Mieszkowski, "Empirical Evidence on the Incidence of the Corporation Income Tax," *Journal of Political Economy*, LXXV (December 1967). [This volume, Chapters 7 and 9.]

Thus, though on the grounds of economic efficiency an explicit shift from corporation income to value-added taxation would be highly desirable, such a move is likely to face formidable political opposition.

The third string in the CED's bow was the balance-of-payments argument, which is of even greater current interest today than it was in 1966 when the CED report was written. Indeed, there is a considerable undercurrent of opinion in government and business circles and in the press to the effect that the U.S. is at a competitive disadvantage vis-à-vis Europe because Europe relies more heavily on indirect than on direct taxation as we do, and is therefore able to rebate, under the GATT rules concerning border-tax adjustments, a considerably larger fraction of the internal value of export products. As much of this discussion is in general terms — not explicitly in terms of a tradeoff between a reduction in corporation taxes and the imposition of a value-added tax — I shall first deal with the balance-of-payments implications of the introduction of a new value-added tax, or its substitution for a part of the personal income tax, and then turn to the case of a shift between corporation income and value-added taxation.

The reaction of the balance of payments to the introduction of a new value-added tax depends exclusively on the nature of the overall strategy of monetary policy which is pursued in the wake of the change, and on the economy's reaction to that policy. The ultimate incidence of the tax, as has been indicated, will be broadly proportional across the economy. The question is whether this incidence will be reflected in a structure of costs which is roughly the same as it would be in the absence of the tax, with the tax being reflected in a rise in prices, or at the other extreme whether the structure of prices will be roughly the same as it would have been without the tax, with the tax being reflected in a reduction in the level of costs. In order for the former result to work out, the monetary authorities would have to expand the money supply by more than the normal amount so as to "finance" the consequent rise in prices. If the Federal Reserve were to simply provide for the normal secular expansion of the money supply, this would in the presence of the new tax exert a deflationary pressure on money wages, and other costs. Now it is a well-known fact that the economy does not respond promptly and flexibly to deflationary pressures: instead of prices and costs falling quickly as a consequence of a policy of stringency on the part of the Federal Reserve, the economy tends to slow down, unemployment increases, and real output falls short of its potential. This is precisely what would tend to happen if the Federal Reserve failed to expand in order to "finance" a corresponding price rise following the imposition of a new value-added tax.

I doubt very much that the Federal Reserve authorities would opt for such a course. Maintaining the price level in the face of a 4 percent value-added tax would entail pushing wages and other costs down to a level 4 percent below where they would otherwise be. As far as balance-of-payments effects are concerned, the same result could be achieved by a four-percent deflation even without a value-added tax to rebate at the border. Since the Federal Reserve has not taken the deflationary route in the past, we have no ground to predict that it would do so under the circumstances here being considered. Our best prediction is that the Federal Reserve would as much eschew generating internal cost

deflation under those circumstances as it has in general in the past. This leads to the conclusion that the likely result of the imposition of a new value-added tax would be that the general price level would rise by the percentage of the tax, but that our export prices would remain essentially constant owing to the rebate of the tax at the border. Likewise, there would be no incentive to shift demand away from domestic goods and toward imports because imports would be subject to a countervailing surcharge of 4 percent at the border, and their prices would rise in step with those of U.S. products in our own national market. If this is the course followed by our monetary authorities, then, the imposition of the new tax is unlikely to have any perceptible effect on our balance of payments.

Where the value-added tax is introduced as a substitute for a part of the personal income tax, more problematical issues arise. In principle, workers should be willing to accept a 4 percent reduction in their money wages (or, what amounts to essentially the same thing, a wage reduction of 1 percent in place of a normal 3 percent increase) in return for a reduction in income taxes of corresponding value to them. If this were the case, domestic prices could remain the same as a consequence of the simultaneous introduction of a value-added tax, and export prices could drop by 4 percent, with a corresponding improvement of our balance-of-payments position. But I doubt that this would happen. In the first place, organized labor is not likely to placidly accept such a tradeoff. Perhaps the wage increases would be less than normal if income taxes were simultaneously reduced, but I find it highly implausible that there would be full reflection of income tax reductions in a reduced wage scale. In the second place, a fairly large segment of the labor force pays little or no income taxes. A policy of general wage reductions to reflect the reduction in income tax collections would leave this group clearly worse off, and give rise to a strong center of political opposition to the tax substitution scheme. I conclude, then, that the value-added versus personal income tax substitution might lead to some improvement in our balance-of-payments position, but that our exports are likely to have a significantly smaller price advantage than the percentage rate of the value-added tax.

Finally, I come to the balance-of-payments effects of a shift to the value-added tax at the expense of a part of the corporation income tax. This tax switch would favor the corporate sector vis-à-vis the noncorporate sector. Noncorporate sector products would tend to rise in price, reflecting the newly-imposed value-added tax, while corporate sector products would tend to fall, because that sector would gain corporate tax relief equal to the full yield of the value-added tax, while it would be called upon to pay only its share of that yield under the value-added tax as such. It is not clear that corporate-sector prices would fall immediately, but the greater profits generated by the tax switch would give an incentive for corporations to expand output, and as output in fact expanded, the price fall would come about.

The substitution of the value-added tax for a part of the corporation income tax accordingly has favorable balance-of-payments consequences, if monetary policy is assumed to be unaffected. As import prices would rise by the full percentage of the value-added tax, consumers would shift some of their demand from imported goods to substitute commodities produced by the corporate sector. On the export side, the prices of corporate-sector products — even including the value-added tax — would tend to be lower than before, and the rebating of the value-added tax upon exportation would either make their foreign prices fall still more or else give companies a strong profit incentive to expand the quantity exported at the same price through sales promotion efforts in foreign markets.

It is clear, therefore, that of the three alternatives we have explored which do not entail reductions of wages and other costs, the present one is likely to have the most favorable balance-of-payments consequences. But one must be careful not to exaggerate these effects: even in this most favorable set of circumstances, the balance-of-payments benefits to the United States would be significantly smaller than those of a devaluation of the same percentage as the value-added tax. That is to say, a value-added tax of 4 percent cannot yield as great balance-of-payments effects as a 4 percent devaluation. I am afraid that many of the proponents of a shift toward indirect taxation as a measure to improve our balance of payments have greatly exaggerated the likely benefits that would ensue. It is quite possible, as was indicated earlier, that internal prices would rise to reflect a new value-added tax; in this case there would be no perceptible balance-of-payments effects at all. And even in the favorable case just examined the effects would be small unless the value-added tax carried a rate significantly higher than 3 or 4 percent. It should also be noted that the higher the rate of value-added tax, the stronger would be the political opposition, mentioned earlier, to having its revenue consequences offset by a reduction in the corporation income tax rate.

I come now to what I believe is the most important advantage of a value-added tax: its potential as an instrument of flexible fiscal policy. Economists have long been aware of the power of fiscal policy as a means of influencing the general level of activity in the economy and of averting untoward movements in the price level. Volumes have been written, and an untold number of speeches made on this subject, yet precious little has been done. The source of the difficulty is, I believe, plainly and painfully evident. It is now nearly a year since the President called for a tax surcharge, and in spite of the pleadings of Administration officials, the bulk of the economics profession, many enlightened businessmen, and the Federal Reserve itself, nothing has been done. The last great fiscal policy move made by the United States — the tax revision of 1964 — came at the end of nearly two years of Congressional discussion and debate. With this kind of Congressional delay, even the idea of a flexible fiscal policy seems utopian.

Obviously, there are many reasons why Congress has been reluctant to accede rapidly to Presidential requests in the fiscal field. The Constitution places fiscal powers in Congress's hands, and our legislators have jealously guarded them. The assessments of Congressmen and Senators of the need for tax changes may differ within each body, giving rise to extended debate, and the majority view of Congress may differ from that of the Administration, as may be the case at the present time. These problems are obviously not going to be resolved by a new tax gimmick, and it would be foolhardy to claim so. But I believe that having a value-added tax in the system would greatly facilitate the flexible use of fiscal policy, for two reasons.

In the first place, there are many ways of changing the income tax law; thus, when a proposal is made for a specific set of changes, there usually emerge, in Congress, groups that feel that a change ought to be made, but of a different type — changing exemption levels rather than rates, making the changes more progressive or less progressive, etc. Moreover, when an adjustment of the personal income tax is contemplated, political considerations usually dictate that a change in the corporation tax rate also be made, giving rise to debate as to how the benefits of the tax cut should be distributed between corporations and individuals. Small wonder, then, that when it examines possible income tax changes, Congress takes a lot of time! In contrast to this situation, a change in the value-added tax would in principle only entail varying the rate of tax. The Pandora's box of alternative possibilities that emerges when the income tax is at issue is totally avoided, and it is only reasonable to suppose that Congress would be able to act with much greater dispatch. As a general tax at a low rate, shared broadly by the whole community, the value-added tax is therefore a prime candidate as the preferred fiscal instrument for countercyclical manipulation. Moreover, the insulation from politics provided by its generality and neutrality makes it again the obvious vehicle for Congress' granting to the President limited discretionary power to change the rate of tax for countercyclical purposes.

The second ground for preferring the value-added tax as an instrument of flexible fiscal policy is the administrative simplicity with which its rate could be changed. Taxpayers could simply be instructed to change the rate of tax which they applied to the value added calculated on their tax returns. Especially if the tax were of the consumption type, thus requiring no depreciation accounting, it would not be a serious burden on businesses to file, say, quarterly tax returns, and in this event a decision made within any quarter to change the rate of tax could already have its effect by the end of that quarter.

From this analysis of the issues involved in a federal tax on value added, I find no reason to modify the conclusions I drew in an earlier paper on the subject:

> In sum, the value-added tax has considerable merit as a revenue-raising device. It is admirably suited as an instrument for achieving emergency increases in tax revenue, and it is also an excellent tool in framing a flexible and countercyclical fiscal policy. A low-rate tax on value added, preferably of the consumption type, could therefore be an important addition to our federal tax system. (*Challenge*, Nov./Dec., 1966, p. 46)

THE DESIGN AND ADMINISTRATION OF A VALUE-ADDED TAX

The first major issue concerning design and administration is whether a value-added tax should be of the product, income, or consumption type. I feel that the overwhelming weight of the arguments on this issue favor the consumption type of tax. Under a product type of tax, purchases of materials and intermediate products are deductible, but investment goods acquisitions are not. Therefore, a distinction must be made between investment goods and other inputs; such a distinction is necessarily arbitrary, and can give rise to litigation and other enforcement difficulties. Also, the "natural" treatment of inventories under a product-type tax is to consider as inputs those materials actually used up in the production process during the tax period, and to treat increments to inventory as investments by the firm. This embroils the tax authority in all of the knotty problems of inventory accounting, and places corresponding burdens on the companies in connection with the preparation of their tax declarations.

The income-type tax is even worse. Not only does it require the distinction to be drawn between investment goods and other inputs, but it also requires the depreciation of past investments. The tax authority here becomes involved with all the issues with respect to admissible depreciation rates and patterns that we have become familiar with in connection with the income tax. And as with the product-type tax, the natural treatment of inventories would require inventory accounting to support a firm's tax declarations.

By way of contrast, the consumption-type tax is the model of administrative simplicity. All purchases by a firm from other firms covered by the value-added system are deductible at the time of acquisition, regardless of whether they are investment goods or direct inputs into production. Since both investment goods and other inputs are deductible, there is no need to distinguish the part of the purchases made during a period that went to increase inventories from the part that fed the production line; hence no inventory accounting is necessary as an underpinning to the tax calculation. Strict cash accounting of all purchases from other firms is all that is necessary. It is this simplicity which makes it reasonable to think of quarterly collections under a consumption type of value-added tax; thus enhancing its usefulness as a countercyclical weapon.

The second issue of design and administration is that of coverage. While a fully general tax has great theoretical appeal, the burdens of administration and compliance can be substantially reduced, with only a minor sacrifice of yield, by exempting farmers and retailers. The exemption of farmers would not reduce the yield, because since farmers would not be in the system, purchases by food processors and other firms from farmers would not need to be treated as allowable deductions by those firms in calculating their own tax liability. In effect, the food processors and other firms buying from farmers would get their farm products more cheaply, but then would be required to pay the tax not only on their own value added but on that of the farmer.[7]

A definite loss in revenue would, on the other hand, be involved in the exemption of retailers, but it might be deemed worthwhile in the light of the substantial savings of administrative effort that would be involved. Clearly, if retailers were to be exempt, a firm line would have to be drawn between activities qualifying as retailing and those reflecting earlier stages of the production and distribution process.

My own view is that if the value-added tax were of the consumption type, its administration would be sufficiently easy that it would be worthwhile to keep both farmers and retailers within the value-added system. Only for a product- or income-type tax would I recommend the exemption of these two groups.

My final point in connection with administration concerns the reinforcement which the value-added tax gives to the administration of the personal and corporate income taxes. Each firm making its declaration of value-added tax would have to list its purchases from other firms. If these firms were identified by code numbers, it would be a relatively simple matter, using modern computer technology, to obtain an independent assessment of a firm's sales to other businesses from the declarations of its customers. Enforcement is not, to my knowledge, a serious problem where large corporations are concerned, but small, closely held corporations and unincorporated enterprises generally are believed to practice a significant amount of tax evasion. Thus, not only is the value-added tax meritorious in its own right, but it also would contribute to the effectiveness of the administration of the two most important existing sources of federal revenue.

[7] Actually, under this system, revenues would be somewhat greater than under a fully general tax, because the food processors, paying tax "for" the farmers, would not be able to deduct the value of farmers' purchases from other firms. In practice, a rule-of-thumb deduction for such purchases might be allowed, however. This could be accomplished, under, say, a 4 percent value added, by allowing the food processors to apply a 3 percent rate to their purchases from farmers as against a 4 percent rate on their value added. Exempting farmers would also entail a slight loss of revenue, offsetting part of the gain referred to above, stemming from direct sales from farmers to consumers (or to retailers in the case where the latter group is also exempt).

SELECTED BIBLIOGRAPHY

Bronfenbrenner, M. "The Japanese Value-Added Sales Tax." *National Tax Journal*, III (December 1950).

Bronfenbrenner, M., and K. Kogiku. "The Aftermath of the Shoup Tax Reform, Parts I and II." *National Tax Journal*, X (September and December 1957).

Brown, H. G. "The Incidence of a General Output or a General Sales Tax." *Journal of Political Economy*, XLVII (April 1939).

Due, John. "The Value-Added Tax." *Western Economic Journal*, Vol. III, No. 2 (1965).

Harberger, A. C. "Let's Try a Value-Added Tax." *Challenge*, XV (November/December 1966).

Papke, James A. "Michigan's Value-Added Tax after Seven Years." *National Tax Journal*, XIII (December 1960).

Shoup, Carl. *Second Report on Japanese Taxation*. Japan Tax Association, 1950.

———. "Theory and Background of the Value-Added Tax." In *Proceedings of the Forty-Eighth Annual Conference on Taxation* (National Tax Association, 1955).

Sullivan, Clara K. *The Tax on Value-Added* (1965).