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# Allocation Aspects, Domestic and International

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## Part 1: *Domestic Aspects*

### A. INTRODUCTION

As the literature of public finance reveals, the distinction between "direct" and "indirect" has been drawn in a number of ways but has remained without much analytical usefulness. For analytical purposes, it is much better to build on a tax classification which serves as a convenient point of departure for analyzing economic effects, e.g., taxes on receipts versus taxes on expenditures, taxes on gross receipts versus taxes on net receipts, taxes on flows versus taxes on stocks, taxes on households versus taxes on firms, taxes on economic variables versus lump-sum taxes, and so forth. Or, we may group particular taxes according to their suitability in securing various objectives of tax policy, be they equity or economic objectives, such as employment, capital formation, work effort, the efficiency of resources allocation, or concern with exports, imports, and capital flows.

In the following discussion, we consider the comparative bearing of certain "direct" and "indirect" taxes on these economic objectives, with emphasis primarily on the differential effects of the corporate profits and value-added taxes. In Part 1, we take up effects on the domestic economy and in Part 2 we deal with effects on international trade.

### *Effects on Employment*

We begin with aggregate demand effects on employment due to changes in the propensity to consume. Here the most important distinction is between the corporation profits tax and all other taxes. This is so because the former—provided it is not shifted in the short-run sense<sup>1</sup>—in substantial part reduces retained earnings rather than house-

<sup>1</sup> The presence or absence of "short-run" shifting is of considerable importance throughout this paper and must, therefore, be defined briefly. (For a fuller discussion see Marian Krzyzaniak and R. A. Musgrave, *The Shifting of the Corporation Income Tax*, Baltimore, 1963.)

To simplify, let us assume that the profits tax is general (i.e., all business firms are incorporated), and that all lines of production are equally capital intensive. As the tax is imposed, there may be two developments.

The first is reduction of the net rate of return on capital. Depending on the elas-

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hold income. It has little or no impact on consumption. If "short-run shifting" occurs, however, the profits tax is similar in its consumption impact to a sales tax.

For taxes that are not absorbed in retained earnings but affect household positions, the consumption impact is heavier in these four cases: (1) for regressive than for progressive taxes (income effect); (2) for taxes reflected in higher prices rather than reduction in disposable income (money illusion effect); (3) for taxes on consumption as against taxes on income (substitution effect); and, though this is more doubtful, (4) for taxes on return to capital (saving as function of rate-of-return effect). On grounds (1), (2), and (3), the employment-depressing effects tend to be strongest for a sales tax or value-added tax of the consumption type (defined below) and least for a progressive income tax, with a general proportional income tax or value-added tax of the income type falling in between.

While the difference in the consumption impact of various taxes may be significant, it does not follow that this should be permitted to deter-

ticity of total capital supply, this may or may not result in a reduced rate of capital formation. If it does, the initial decline in the net rate of return will be at least partly recouped and the burden of the tax will be spread to other factors. This has been referred to traditionally as "long-run shifting," making use of the Marshallian interpretation of the long run as a period sufficiently long for a change in capital stock to occur.

The second is imposition of the tax leading to changes in price or wage policy, or both, such as to increase profits before tax, thereby holding the net rate of return unchanged. If such adjustments are successful, which involves some form of market imperfections, the detrimental effects on capital formation which may result under the first do not arise. Since these adjustments may come about promptly, they have been referred to traditionally as "short-run shifting."

For purposes of this paper, the traditional terminology will be used, even though it may be criticized for two reasons: (a) capital adjustments in the second case may in some instances come about fairly rapidly while administered price adjustments in the first case may be rather slow; (b) adjustments of the type of the second case may be just as lasting as those of the first-case type, i.e., the results of short-run (quick) shifting may be the lasting long-run result.

The distinction between the two patterns, as stated above, is crucial for purposes of our discussion. It remains relevant if the assumptions of generality of the tax and equal capital intensity are dropped. Then the first may involve a capital flow from the corporate to the unincorporated sector, designed to equalize the net rate of return in both sectors (see the references to A. Harberger, footnote 6, below). What matters, however, is that this net rate is reduced in both sectors, so that the question of possible deterrent effects on total capital flows remains present. If the total capital stock declines and the cost of capital increases, there will also be an adjustment in production from more to less capital-intensive products. In the second case, these flows will be absent or greatly reduced.

In the subsequent pages, frequent distinction will be drawn between situations in which the corporation tax is or is not "shifted." Reference is to short-run shifting, and it is assumed that such shifting takes the form of price increase rather than wage decrease.

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mine the composition of the tax structure. Assuming rational policy making, the desired over-all rate of consumption or saving in the economy may be obtained by appropriate adjustments in the over-all level of tax rates (budget surplus or deficit).<sup>2</sup> Since political restraints do not grant this flexibility, or grant it to a limited degree only, the differential consumption impact remains important. The major distinction, however, is not between direct versus indirect taxes, but between corporation profits versus other taxes.

### *Effects on Investment*

Effects of various taxes on capital formation greatly depend on the nature of the investment function.

If conditions are such that investment equals ex-ante saving, all that matters are the previously noted effects on the propensity to consume or save. But this is too simple a picture; the determinants of investment are more complex than such a model implies. Depending on whether investment is a function of acceleration, profitability, or internal funds, different results hold for various taxes.

To the extent that investment is of the accelerator type, the rating of various taxes is the same as that noted under employment effects. To the extent that the rate of return is the determinant, the relevant distinction is between taxes on profits (at the corporate or personal level) and other taxes. Provided the corporation tax is not shifted in the short-run sense it will be more investment restraining than other taxes, although—and this can only be noted here—there remains the question whether such effects result if adequate loss offsets are provided. If investment depends on the internal flow of funds, the crucial distinction is between taxes on business profits and other taxes, and the treatment of dividends and retained earnings assumes major importance.

So far as growth policy is concerned (assuming the required capital formation to be largely private) considerations of tax effects on investment pose a more serious problem for tax-structure policy than effects on saving do. Whereas the latter may be corrected by adjustments in the over-all rate of taxation or level of deficit or surplus, the former cannot be thus offset. By and large, there is the presumption that direct taxes on income, especially if progressive, are less favorable to investment than indirect taxes are.

<sup>2</sup> See Musgrave, "Growth with Equity," *Proceedings of the American Economic Association for 1961*, p. 326.

*Effects on Work Effort*

The comparative effects of various taxes on work effort depend on two considerations:

1. To the extent that work effort is related to the real wage rate, it makes no difference whether a person pays a *given* tax directly and visibly through income tax, or indirectly and hidden, either through a sales tax or a shifted corporation tax. Only if individuals operate under a money illusion will the income tax have a more restraining effect on work effort than will taxes reflected in higher prices. The same holds for what might be called a "spite effect" of visible (direct) taxes. However, it seems doubtful whether these are major considerations.

2. While it cannot be said a priori whether a person will work more or less because he is subject to any given tax schedule, we can say that he will work the less, the more progressive the schedule under which a given tax is paid. This does not prove, as is sometimes assumed, that taxpayers *as a group* will work less under a progressive schedule. It will be so only if the rise in the marginal relative to the average tax rate at higher levels of income does more to deter effort than the inverse movement at lower incomes does to raise it.

Inasmuch as income taxes have been the traditional vehicle of progression, they have caused more concern in this respect than consumption taxes. The basic issue, however, is one of high marginal rates, not of direct versus indirect. (A consumption tax reduces the marginal real wage as does an income tax. The fact that the latter also discriminates against future versus present consumption need not mean that work effort is reduced more.) As noted before, marginal rates at the upper end of the scale have very little revenue significance, even when they actually apply.<sup>3</sup> Adjustments in these rates (if such remedy is needed) may be undertaken with little or no change in the over-all revenue balance between direct and indirect taxes.

*Allocation Effects*

We now turn to allocation effects other than the broad effects on the division of resources between capital formation and consumption, or on the over-all choice between leisure and goods. The generally accepted principle of tax policy in this regard is that allocation effects should be

<sup>3</sup> At the executive level they are bypassed to a considerable degree by various payment arrangements. Also, it may well be that high rates are shifted in considerable degree, i.e., compensated for by higher executive salaries. Surprisingly, this is a possibility which has been given little research attention.

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neutral, unless special considerations to the contrary apply<sup>4</sup>—an important proviso. It permits acceptance of the general principle of neutrality to be combined with support of nonneutral allocation effects where desirable. Balance-of-payment effects, considered in Part 2, may be a case in point.

The essential distinction here is not between direct or indirect, income or consumption, personal or firm characteristics of the tax base. Rather, it is between general and partial taxes. Allocation effects are relevant because interference with efficient allocation imposes an economic burden, making the true cost of public services more than it would have been had the resource transfer been accomplished without such interference. The degree of interference will depend, among other factors, on the generality (properly defined!) of the tax.

No "excess burden" arises where taxes are imposed on a base not related to economic activity, e.g., a head tax or a truly once-and-for-all capital levy; or, where the tax is imposed on economic activity, but no adjustments are possible. For excess burden to arise, two conditions must be met: (1) the tax must enter as a wedge between price paid and price received, so that rates of substitution differ on the two sides of the product market (costs of production versus gross prices paid by consumers) or factor market (costs of factor purchase versus proceeds from factor sale); and (2) the resulting change in prices must lead to substitution in the purchase (sale) of products or of factors. Since—and this is the crux of the matter—the elasticity of substitution tends to be relatively high if the taxed transaction is narrowly confined to a particular market, partial taxes (which apply to particular markets only) are more likely to create an excess burden than general taxes are.

Thus taxes on the sale or purchase of particular products change relative prices and lead to the substitution of tax-free for taxed products; no such substitution occurs as a result of a tax on the sale of all products. An income tax on work income in a particular employment changes relative net wages and results in a movement of labor which does not occur if the tax applies to work income in all employment. A tax on investment income in one industry (e.g., chain stores) or from one group of firms (e.g., corporations) is more likely to affect the composition of capital formation than a tax which applies to investment in all industries, and so forth.

<sup>4</sup> Here as in other connections, the requirement of neutrality in the absence-of-excess-burden sense must not be confused with the quite different and possibly conflicting requirement of equality in the horizontal-equity sense.

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Thus, there is a *prima facie* preference, on excess-burden grounds, for a general as against a restricted tax. One must be careful, however, to define "generality" in the relevant sense. A tax is made more general if its coverage is extended over a wider range of economic choices of the same type, choices that may be substituted more or less readily, such as alternative consumer purchases, alternative work opportunities, or alternative investment outlets. No gain in generality (in the relevant sense) occurs if a partial tax on one type of choice (e.g., whether to invest or not) is supplemented by a tax on another more or less unrelated type of choice (e.g., whether to earn wages or to retain leisure). It is for this reason that there is no *a priori* preference on efficiency grounds for a tax on all as against a tax on only some factor shares—a matter we return to in comparing a value-added and a profits tax.<sup>5</sup> At the same time, there is a preference for a tax on factor incomes (on both profits and wages or on profits only) which is general in applying to earnings from all industries, as against one which is partial and applies to earnings from some industries only.

This is not to deny that even "general" taxes will give rise to changes in relative prices. An income tax on work effort changes the cost of leisure; an income tax on investment income changes the cost of present in terms of future consumption, as well as the gain to be derived from surrendering liquidity, and so forth. But whatever the level of excess burden inherent in such general taxes, the possibility of substitution and excess burden tends to be much larger where partial taxes apply.

The partial nature of a tax may arise because there is a clear-cut limitation of the tax base (e.g., excise versus general sales tax, corporation profits tax versus general profits tax, etc.) or because the tax liability is a function of particular business practices (e.g., equity versus debt financing, timing of income flow, distribution of profits, sale of assets, etc.) and thus comes to influence the way in which the business is conducted. Nonneutralities of the latter sort become the more serious, the higher the rate of tax. In the case of the corporation tax in particular, such nonneutralities may be more important than the fact that the tax does not extend to the entire business sector.

Some attempts have been made to estimate the magnitude of excess burden inherent in particular taxes. Harberger, on the assumption of competitive markets, arrives at an estimate of \$600 million for the corporation income tax, showing that the magnitude of excess burden

<sup>5</sup> See Sect. B, under Profits Tax Versus Value-Added Tax with Income Base.

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can be substantial.<sup>6</sup> At the same time, the existence of an excess burden is not sufficient reason for rejecting a tax. It may be (although in this case, hardly is) a worthwhile price to pay for equity. While a tax system with zero excess burden could be devised (e.g., substitution of a head tax of \$600 or so for the federal tax structure), such a system would be wholly unacceptable on equity grounds. The concepts of neutrality (no excess burden) and equality (meeting the requirements of horizontal or vertical equity) need not coincide. At the same time, lack of neutrality (or existence of excess burden) is to be avoided where it is not justified in terms of other considerations.

### *Effects of Tax Substitutions*

Keeping these various effects in mind, let us take a brief look at the major implications of possible directions of change in the tax structure.

CONSUMPTION TAX FOR INDIVIDUAL INCOME TAX. Substitution of a retail sales tax for the present individual income tax would require a rate of about 20 per cent, assuming all consumer expenditures other than services to be covered. Assuming that on equity grounds income is preferred to consumption as the appropriate index of equality, such a substitution is desirable only if needed to achieve cardinal objectives which cannot be fulfilled in the context of the individual income tax. It appears that this is not the case.

If reduction of high marginal rates is desired—because of concern with investment or work incentives, or to avoid other distorting allocation effects—substitution of a sales tax for the individual income tax would not be required. We have noted that high marginal rates in the upper income brackets have little bearing on the revenue strength of the income tax. Reduction of the top bracket rate to 60, 50, and 40 per cent would reduce yield by about \$0.3, \$0.7, and \$1.4 billion, respectively, amounting to a mere 0.7, 1.5, and 3 per cent of total income tax revenue. Even the 3 per cent loss could be compensated for by a less than one percentage point increase in the remaining bracket rates. Moreover, we have noted that high marginal rates do not generally apply, especially on capital income, on which in many instances the much lower capital gains rate can be paid.<sup>7</sup> Indeed, reduction in top

<sup>6</sup> See Arnold Harberger, "The Corporation Income Tax: An Empirical Appraisal," *Tax Revision Compendium*, U.S. Congress, House of Representatives, Committee on Ways and Means, 1959, Vol. I, pp. 231–250; and "The Incidence of the Corporation Tax," *Journal of Political Economy*, June 1962, pp. 125–140.

<sup>7</sup> See Musgrave, "How Progressive Is the Income Tax?" *Tax Revision Compendium*, Vol. 4, p. 223.



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rates may well be called for as perhaps the only feasible way of reducing horizontal inequities and curtailing the distorting effects of evasive action, rather than as a means of raising general incentives. If so, it could also be done within the context of the income tax, thereby retaining a preferable distribution of the tax burden over the lower-middle income range.<sup>8</sup>

**SALES TAX FOR SELECTED EXCISES.** The present federal excise structure of \$14 billion could be replaced by a sales tax (presumably retail) of about 7 per cent, with services excluded. The standard argument for the change is that the sales tax would interfere less with consumer choice and thus reduce excess burden. This argument has some merit, but also needs qualification. In the first place, the bulk of excise revenue comes from mass consumption items such as tobacco and liquor—items not highly price elastic. Second, the resulting reduction in consumption can hardly be charged as a burden, if that result is considered a policy objective. This qualification has merit in relation to liquor and tobacco taxes. Also, special excises may be in order where they play the role of benefit taxes, an argument of considerable strength if applied to gasoline and other automotive taxes.

The above suggests that the bulk of federal excises (liquor, tobacco, and automotive excises account for about 75 per cent of the total) are by no means entirely arbitrary. Yet, there remain excises yielding some \$3.5 billion (luggage, perfume, appliances, jewelry, etc.) which might be consolidated into a general tax of, say, 1 per cent. However, removal of this portion of the excise system alone and replacement by a general sales tax of such a low rate would hardly justify the required administrative effort and collection cost.

If a substitution were to be made at all, the newly created sales tax would have to replace more or less the entire excise structure. The net gain on excess burden grounds from removal of "miscellaneous" excises might or might not outweigh the loss from removal of benefit taxes. Also, it is hardly for the economist to say (except where measurement of negative externalities proves possible) whether sumptuary taxes should be used or not, i.e., whether smoking and drinking are "demerit wants." Moreover, the political aspect of the matter cannot be overlooked. If the

<sup>8</sup> This assumes, and realistically so, that the alternative to the income tax would be a retail sales tax (or some equivalent thereof) and not a progressive Kaldor-type spendings tax. Recent, and perhaps excessive emphasis on the shortcomings of the income tax leads one to warn against the danger of comparing the imperfect income tax with a hypothetical and perfect spendings tax. There is good reason to believe that the latter would be even more difficult to handle.

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present burden of excises were replaced by a general sales tax, partial and more or less far-reaching substitution of the new tax for the personal income tax would undoubtedly follow. Indeed, this would be the most important consequence of the substitution. In all, the nuisance-excise problem might be solved more simply by substituting a one- or two-point increase in income tax (or a smaller reduction) than by the transformation of the excises into a sales tax.

VALUE-ADDED TAX FOR CORPORATION TAX. A third tax substitution which has received increasing attention in recent discussions is that of a value-added tax for the corporation income tax. The question has been debated for some time at the state level, and in some instances a value-added tax has been introduced in lieu of a corporation tax. The value-added tax, however, is also being suggested increasingly at the federal level, frequently as a partial substitute for the corporation tax.

The value-added tax is also advocated as the eventual solution of tax structure integration in the European Common Market as a means of applying uniform sales taxation on an origin basis. It would be supplemented by a uniform profits tax and a retail sales tax at rates free to differ among countries. This tax will now be considered in some detail in the domestic context, leaving the international aspects to Part 2.

### B. SUBSTITUTION OF VALUE-ADDED TAX FOR CORPORATION PROFITS TAX

Here, we examine briefly the general nature of a value-added tax and then compare it with the corporation profits tax.

#### *Nature of Value-Added Tax*

To simplify matters, the corporate form is disregarded for the time being, and it is assumed that the value-added tax applies to all firms. Following Carl Shoup,<sup>9</sup> we distinguish between a tax imposed on sales receipts  $S$  minus materials  $M$  and depreciation  $D$ , with purchases of depreciable assets  $I$  kept in the base; and a tax imposed on  $S - M - I$ , with  $D$  kept in the base. The first, according to Shoup, is referred to as a value-added tax of the income type (here written as  $VT_i$ ) and the second as a value-added tax of the consumption type (here written as  $VT_c$ ). Under  $VT_i$ , the total tax base for any one year equals net national income (to simplify, other indirect taxes are disregarded), while under  $VT_c$ , it equals consumption. Thus, the base of  $VT_i$  exceeds that of  $VT_c$ .

<sup>9</sup> See Carl S. Shoup, "Theory and Background of the Value-Added Tax," *Proceedings of the National Tax Association for 1955*, pp. 6-19

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by net capital formation. From this, some conclusions may be drawn regarding the relationship between value-added, income, and consumption taxes.

1. Since the aggregate tax base for  $VT_i$  equals net national income, it is the same as that for a truly general net income tax,  $YT$ . Imposed at the same rate, the two taxes would give the same revenue yield, and substitution of the one for the other would leave the distribution of the tax burden unchanged. Indeed,  $VT_i$  imposed at the firm level might be looked upon as source withholding of  $YT$  imposed at the recipient of factor-income level. Suppose that an existing  $YT$  is replaced by an equal rate  $VT_i$ . The wedge between factor payment and take-home pay is removed and replaced by a new wedge between sales proceeds and factor payment. If product prices remain unchanged, factor payments fall and take-home pay remains unchanged in money terms; if product prices rise, factor payments remain unchanged and take-home pay rises in money terms but again remains constant in real terms. Here, as in other instances of the closed-economy incidence problem, price-level changes do not matter. What matters are changes in relative prices, and these remain unchanged in this case.

The proposition of equivalence between  $VT_i$  and  $YT$  holds true if we think of both being imposed in a situation where the economy starts with a zero capital stock. But since capital stock exists to begin with, an important qualification arises. As  $VT_i$  is substituted for  $YT$ , capital goods produced henceforth will be subject to  $VT_i$ , and this will be equivalent to a tax on capital income. But earnings derived from capital assets already in existence are freed from tax as  $YT$  is dropped and thus become the beneficiaries of a capital gain. In order to have a full equivalence for  $YT$ ,  $VT_i$  must be combined with an income tax on earnings from old capital, or  $VT_i$  must be adjusted to disallow deduction of depreciation on "old" capital goods.<sup>10</sup> This, to be sure, is a short-run complication only since in the longer run, all capital assets will be new. But it may be quite significant at the outset.

Also, we should note that this proposition of equivalence relates to a truly general and proportional income tax only. It does not hold for an income tax with progressive rates, nor does it hold for an income tax

<sup>10</sup>  $VT_i$  may be likened also to a consumption tax plus a sales tax on new capital goods. Since the latter does not apply to "old" capital goods (purchased before the tax substitution), an additional tax on capital goods is needed. As suggested in the text, the equalizing tax might take the form of an income tax on income from old capital, or, for that matter, a tax on the capital gain incurred by the holders of old capital goods.

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with a flat rate but with personal exemptions. Moreover, we have overlooked the existence of corporations. If  $YT$ , applied at the personal level, fails to reach retained earnings, substitution of  $VT_i$  now includes such profits in the tax base.

2. Since the aggregate tax base for  $VT_c$  equals consumption, it is the same as that for a general retail tax on consumer goods. Substitution of the one for the other at equal rates leaves both yield and distribution of the tax burden unchanged. Suppose that a consumption tax in the form of a retail sales tax  $ST$  is replaced by  $VT_c$ . The latter may be looked upon as a means of spreading  $ST$  over successive stages of production, such that the successive partial tax bases at the various stages aggregate to the  $ST$  base at the final stage. Assuming competitive (as distinct from mark-up) pricing no pyramiding results, and  $VT_c$  and  $ST$  are equivalent.

3. It follows that the difference between  $VT_i$  and  $VT_c$  is the same as that between  $YT$  and  $ST$ . Just as substitution of  $CT$  for  $YT$  benefits the saver relative to the consumer and is therefore regressive, so is the substitution of  $VT_c$  for  $VT_i$ .

### *Profits Tax Versus Value-Added Tax with Income Base*

We now turn to a comparison of  $VT_i$ , the income-base type of value-added tax, with a corporation profits tax  $PT$ . Limiting both to the corporation sector, the respective tax bases are about \$50 billion for  $PT$  and an estimated \$260 billion for  $VT_i$ . With  $VT_i$  applied to all firms (excluding services and agriculture) the base is estimated at \$330 billion. Thus, a  $VT_i$  rate of 7 to 9 per cent would be needed to obtain the yield now obtained from the corporation tax of 52 per cent. Substitution of  $VT_i$  for  $PT$  would thus involve approximately an 80 per cent reduction in the rate of tax applicable to profit income, while a new 8 per cent tax would be imposed on other factor incomes, including capital income in the form of interest. What would be the results?

To simplify matters, let us first disregard the fact that  $PT$  is limited to the corporation sector while  $VT_i$  might be more general, and assume that both apply over the same range. We then consider the tax substitution under two short-run shifting assumptions.<sup>11</sup>

**PT NOT SHIFTED.** A profits tax which is not shifted in the short-run sense falls initially on the profit share. Substitution of  $VT_i$  then reduces the rate of tax on profit income, while increasing that on other incomes. The result will be: (1) a regressive redistribution of disposable income,

<sup>11</sup> For definition of short-run shifting, see footnote 1, above.

the distribution of profit income being much less equal than that of income as a whole; (2) a reduction in the community's propensity to consume; and (3) such favorable (rate-of-return) effects on investment as may result from reduced profits taxation.

Adjustment of relative prices to the tax substitution may again involve various patterns of absolute price change. If product prices remain unchanged, total disposable factor income remains unchanged as well, but the distribution of net factor shares is changed in favor of profit recipients. With downward rigidity of money wages, this is not a likely adjustment. More likely, product prices will rise by the rate of  $VT_i$ . Wage income then remains constant while disposable profit income rises, both counted in money terms. As product prices have risen, the real value of wage incomes is reduced, leaving the redistribution in real terms the same as before.

In a competitive system, where  $PT$  is not shifted in the short-run sense, substitution of  $VT_i$  for  $PT$  implies substitution of a general income tax for a selective tax on profit income only. Imposed at the firm level, this may be looked upon as substitution of a tax on all factor payments for one on payments to capital only (profits). Does this mean that  $VT_i$ , as the more general income tax, has an efficiency advantage over  $PT$ ?

We have seen that a tax on profits from capital in one industry only is more likely to affect investment decisions and to cause an excess burden than a tax on profits from investment in all industries. Capital supply to only one industry is likely to be more elastic than the total supply to all industry. The same holds for the supply of labor to one industry as against the supply of labor as a whole. Therefore, excess burden is likely to be less, if a given yield is derived from a general tax on profit income, than from a profits tax in some industries only. The same holds for a tax on labor income.

It does not follow, however, that excess burden is reduced if a tax on both investment and labor income is substituted for a tax on investment income only, assuming each to apply in all industries. The essential point is that a tax on wage income does not act as a neutralizing factor in the choice between current and future consumption (or investment) which is interfered with by  $PT$  and which gives rise to its excess burden. To be sure, the inclusion of wages in the tax base permits the tax rate on profits to be reduced, and this will lower the excess burden of  $PT$ . However, a new excess burden is added as the tax rate on wage income is increased and the worker's choice between income and leisure comes

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to be interfered with. This being so, we cannot say a priori whether the net effect of the substitution is to reduce or increase total excess burden. It all depends on what the elasticities of substitution for various factor suppliers are.<sup>12</sup> A general income tax is more general than a profits tax, in the equity sense of the term, but not in the sense which permits simple deductions regarding the excess-burden issue.

Granted that there is no way of telling what happens to excess burden on the factor supply side of the market, is there not an additional problem of excess burden on the production-consumption side of the picture? Suppose we look at *PT*, not as an income tax on profits, but as a purchase tax on capital, payable by the business firm. Will not a purchase tax applicable to capital only result in an increase in the cost of capital relative to that of labor, causing changes in production techniques and a rise in the prices of capital "intensive" products as against labor "intensive" products? The answer is that such changes will come about provided capital supply is elastic, but they do not signal an additional excess burden over and above that already recorded on the factor-supply side of the market. This change in relative prices merely reflects the changed pattern of factor supplies or endowment.

The story is the other way around if a tax is imposed on the sale of one particular product only. In this case, consumer choice is distorted and the excess burden arises at the consumption end of the scale. This may give rise to changes in factor returns and hence factor supplies, but again these are not to be counted as an additional excess burden but merely reflect adaptation to the change in consumer choice.

Notwithstanding recent argumentation to the contrary,<sup>13</sup> it follows that there is no necessary efficiency case in favor of a tax applicable to all factor shares, as against a tax limited to the capital share only. By the same token, there is no general efficiency case favoring *VT*, over *PT*, assuming both to apply over the same industry range.

<sup>12</sup> The argument needs modification to the extent that there exists substitutability between present consumption and leisure. The profits tax discriminates in favor of present over future consumption. The wages tax discriminates in favor of leisure over goods. To the extent that the profits tax leads to substitution of income (less leisure) for future consumption, addition of the wages tax will reduce excess burden. Such a situation may be imagined—more work requires more food—but is not likely to be of major importance.

<sup>13</sup> One of the coauthors pleads guilty to having contributed to this error (see Musgrave, "Another Look at Depletion," *National Tax Journal*, June 1962, p. 205). The argument there presented involves three steps: (1) that a profits tax with the McDonald-type base adjustment does in fact transform the profits tax into a general factor tax; (2) that this gives rise to changes in relative product prices; and (3) that "undoing" the change in relative product prices caused by the profits tax without adjustment must reduce excess burden. Points 1 and 2 stand, but 3 is wrong.

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*PT* SHIFTED. The situation differs drastically if *PT* is shifted in the short-run sense. In this case, profits were not depressed to begin with, so that removal of *PT* (assuming the initial shifting to be reversed) does not offer an inducement to investment. *PT* now resembles a sales tax; and since it applies in both the capital and consumer good industries, it resembles a sales tax on both capital and consumer goods.<sup>14</sup> Since such a sales tax is equivalent to  $VT_i$ , the substitution does not affect the state of distribution between wage and profit income, nor should it be expected to have a bearing on the level of investment.

It bears repeating that a *PT* which is shifted in the short-run sense is similar to a proportional income tax, rather than a consumption tax, as it might seem to be at first sight. But note that the resemblance is to a *proportional* income tax. There remains a substantial distributional difference between the shifted *PT* and an income tax with exemptions and progressive rates. At the lower end of the scale in particular, the distinction between a proportional income tax without exemptions and a progressive income tax with exemptions is more marked than that between a proportional income tax and a consumption tax.

Though leaving the broad distributional pattern and investment effects unchanged, substitution of  $VT_i$  nevertheless has the advantage of reducing excess burden. The reason is that introduction of *PT*, through the mechanism of short-run shifting, changes relative product prices. Those changes occur because the increase in price needed to maintain net profits differs with the characteristics (turnover, margin, financial structure, etc.) of firms and industries.<sup>15</sup> The changes in relative prices introduce inefficiencies into the product mix and gives rise to an excess burden at the production-consumption end of the scale.<sup>16</sup> Introduction of  $VT_i$  does not cause such a burden since no change in relative prices will result. Therefore, substitution of  $VT_i$  for *PT* reduces excess burden on the product side.

In all, it is evident that any policy evaluation of the  $VT_i$  for *PT* substitution depends crucially on one's assumptions regarding the short-

<sup>14</sup> The analogy is not complete since the price changes needed to shift the profits tax are not at a uniform ad valorem rate but depend on the firm's profit margin. However, this is not decisive for the present argument. See the following note.

<sup>15</sup> See Carl Shoup, "Incidence of the Corporation Income Tax: Capital Structure and Turnover Rates," *National Tax Journal*, Mar. 1948, reprinted in *Readings in the Economics of Taxation*, Shoup and Musgrave, Eds. American Economic Association, 1959.

<sup>16</sup> This excess burden is not to be confused with the burden, in the case of short-run shifting, noted to arise on the factor supply side through interference with the investment decision.

run shifting of *PT*. Without short-run shifting, the substitution is regressive, raises investment incentives, and may or may not reduce or raise excess burden. With short-run shifting, the equity and investment effects of the substitution are insignificant, but the presumption is that excess burden will be reduced.

*Profits Tax Versus Value-Added Tax with Consumption Base*

A similar analysis may be applied to substitution of *VT<sub>c</sub>* for *PT*. Assuming no short-run shifting of *PT*, the redistribution is now from consumers to profits recipients, with possible stimulating rate-of-return effects on investment being even more marked than in the case of *VT<sub>i</sub>*. Assuming *PT* to be shifted in the short-run sense, substitution of *VT<sub>c</sub>* now favors savers relative to consumers. This is the case because the sales-tax-on-capital-goods component of the shifted corporation tax is removed, while the sales-tax-on-consumer-goods component is retained.

*Significance of Difference in Sector Coverage*

Additional considerations enter, if we allow for the fact that *PT* applies to corporations only, whereas *VT* might well apply to all firms. Assuming that *PT* is not shifted in the short-run sense, limitation of *PT* to the corporate sector, as emphasized by Harberger, may give rise to capital flows from the corporate into the unincorporated sector, with resulting loss of efficiency in allocation.<sup>17</sup>

In terms of our preceding discussion, the tax on profits in the corporate sector may be looked upon as a factor tax which is restricted in the relevant sense of applying to employment in a particular set of industries (those which are incorporated) only, while leaving other industries tax free. Thus, there results an inefficient allocation of factors between industries, giving rise to an excess burden on the consumption side, similar to that which results from an excise or value-added tax on the product of the corporate sector only. This burden may be removed by extending *PT* to the unincorporated sector, or by substituting a general *VT<sub>i</sub>* applicable to all sectors. Elimination of this particular efficiency loss will then be added to the above-noted effects of the substitution.

If *PT* is shifted in the short-run sense as here defined, the Harberger effect does not result. But, as noted before, an excess burden arises because shifting distorts relative prices, whether *PT* is limited to the corporate sector or is general.

<sup>17</sup> See footnote 6, above.



*Relation to Individual Income Tax*

Brief reference should be made to the relationship of *PT* and *VT* to an equitable system of individual income taxation. Assuming that *PT* is not shifted in the short run, and taking the "conduit" view of the corporation, *PT* interferes with horizontal equity in that dividend income is "double taxed," but it strengthens horizontal equity in that it provides a means of reaching retained earnings. Replacement of *PT* by *VT*; removes both the disadvantage and the advantage. Whether that would be a net gain or loss to horizontal equity is a matter of conjecture. But, given the preferential treatment of capital gains, there would probably be a net loss.

*Interindustry and Interfirm Differences*

So far, we have considered the effects of these substitutions in rather aggregative terms, without allowance for interindustry or interfirm differences. It remains to allow for the important fact that the distribution of the tax base will be quite different under the various taxes. For this purpose let us again disregard the corporate versus unincorporated sector distinction and assume that all taxes apply over the same range.

For any one firm we have the following identities:<sup>18</sup>

$$S = W + D + P + Q_c - \Delta J$$

where *S* = sales; *W* = payroll; *D* = depreciation; *P* = profits; *Q<sub>c</sub>* = purchases from other firms on current account and  $\Delta J$  = change in inventory; or,

$$S = W + P + Q_c + Q_K - \Delta K - \Delta J$$

where *Q<sub>K</sub>* = purchases on capital account and  $\Delta K$  = the net increase in depreciable assets.

For any one firm or industry, the tax base under the various taxes is given by:

<i>Tax</i>	<i>Base</i>
<i>PT</i>	<i>P</i>
<i>ST</i>	<i>S</i>
<i>VT<sub>i</sub></i>	$S - Q_c - D + \Delta J = W + P$
<i>VT<sub>c</sub></i>	$S - Q_c - D - \Delta K = W + P - \Delta J - \Delta K$

Since, under any one tax, a uniform rate applies to all firms or industries,

<sup>18</sup> This presentation may be readily expanded to distinguish between profit and interest income, thus bringing out the differential bearing of financial structure on various taxes. For simplicity it is not carried out here.

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any one firm or industry will be benefitted—in the sense of reducing its initial share in the tax liability—by a tax substitution such that its ratio of old base to new base exceeds that for industry as a whole. The relevant ratios, which must be above average to make the substitution advantageous, are as follows:

<i>Tax Replaced</i>	<i>Tax Introduced</i>			
	<i>PT</i>	<i>ST</i>	<i>VT<sub>i</sub></i>	<i>VT<sub>c</sub></i>
<i>PT</i>	$X$	$\frac{P}{S}$	$\frac{P}{W+P}$	$\frac{P}{W+P-\Delta K-\Delta J}$
<i>ST</i>	$\frac{S}{P}$	$X$	$\frac{S}{W+P}$	$\frac{S}{W+P-\Delta K-\Delta J}$
<i>VT<sub>i</sub></i>	$\frac{W+P}{P}$	$\frac{W+P}{S}$	$X$	$\frac{W+P}{W+P-\Delta K-\Delta J}$
<i>VT<sub>c</sub></i>	$\frac{W+P-\Delta K-\Delta J}{P}$	$\frac{W+P-\Delta K-\Delta J}{S}$	$\frac{W+P-\Delta K-\Delta J}{W+P}$	$X$

A number of these ratios are easily understood. Thus, replacement of *PT* by *ST* helps a firm with a large profit margin. As between firms with equal turnover, since the rate of return  $Y = P/K = P/S \cdot S/K$ , it also helps the more profitable firm. Replacement of *PT* by *VT<sub>i</sub>* helps a firm with a high profits to wage ratio. As between firms with equal capital intensity, the gain is with the more profitable firm; while as between firms with equal profitability, the gain is with the more capital-intensive firm. Substitution of *VT<sub>c</sub>* for *PT* is advantageous if the profits are high relative to wages and if net investment is high. Replacement of *ST* by *VT<sub>i</sub>* is advantageous to a firm whose wage and profit payments are a small fraction of sales. Substitution of *VT<sub>c</sub>* for *ST* involves the same considerations, but again the expanding firm is at an advantage. Substitution of *VT<sub>c</sub>* for *VT<sub>i</sub>*, finally, is advantageous to the expanding firm.

It is evident that the impact of various taxes differs greatly by types of firm or industry. Without attempting to characterize various industries in terms of the coefficients involved (something that should be done in a follow-up analysis) some of the general results may be noted. Most important, perhaps, is the role of the growth variable under *VT<sub>c</sub>*. Substitution of *VT<sub>i</sub>* for *PT* in turn rewards the more profitable firm. Obviously, the growth effect of *VT<sub>c</sub>* is superior to that of *VT<sub>i</sub>*. However, the relative advantage which results from expansion may be matched under *VT<sub>i</sub>*; and, for that matter, under *PT* by granting more rapid depreciation. Moreover, the results may be changed by combining various features of these taxes. Thus, *PT* combined with an investment

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credit takes on some of the characteristics of  $VT_i$ ; and as the required tax rate would be larger, the incentive effect in the direction of a high expansion rate could be higher as well.

### *Implications for State Finance*

The preceding discussion has been in a closed-economy context. One correction of this assumption allows for state finance in the federal setting. The other relates to an international setting, considered in Part 2.

In comparing the implications of  $PT$  and  $VT_i$  at the level of state finance, some additional considerations arise. If it is held that state business taxes should be of the benefit type, there is good reason behind the proposition that value added is a better index of benefits received than profits are. Also, if the state business tax is to rest on a benefit basis, the tax should be imposed in such a way that the burden is passed on to the beneficiaries of the public services in question. This is accomplished by imposing a tax which will increase the cost of operation, just as the public service has reduced it. This will be accomplished by  $VT_i$ ; but, unless there is complete short-run shifting, not by  $PT$ . Provided that "benefit" and "tax" shifting will be similar, neutralization is then achieved, whatever the direction of the shift. Assuming that public services tend to reduce all costs equally, this result is accomplished by  $VT_i$ ; and to the extent that particular (e.g., transport) costs are reduced, particular cost taxes (e.g., on gasoline) are in order. To the extent that the beneficiaries of public services are out of state (be it owners of capital or consumers of the product) it is only proper that the tax burden be "exported," corresponding to the export of benefits received.

Export of tax burden which does not match export of benefits is a different matter. Thus a retail sales tax  $ST$  has the disadvantage (looked at from the "nationalistic" point of view of any one state) that it is paid wholly domestically.  $PT$  has the advantage that it can be exported to the out-of-state shareholder, while  $VT_i$  has the advantage that it can be exported to the out-of-state consumer, provided the position of the exporting state in the national market is sufficiently strong. Thus,  $VT$  has its orderly use in fiscal federalism if used to match benefit export by cost export; but it may be used also to burden out-of-state consumers, where such a burden is not justified. In other words, export exemption is appropriate for nonbenefit but not for benefit taxes.

Finally, there is the question of how the imposition of  $PT$ ,  $VT_i$  and  $ST$  by any particular state affects the allocation of capital on a nation-

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wide basis. Differentials in  $ST$  (assuming consumer immobility) do not affect the location of production, while differentials in  $PT$  and  $VT_i$  do. If we assume that the interstate mobility of capital is higher than that of labor, the distortion will be greater under  $PT$  than under  $VT_i$ . But, given a high degree of labor mobility, this may not be the case.

### Conclusions

What conclusions may be drawn from all this regarding the desirability of replacing the corporation income tax by a value-added tax?

If we assume that  $PT$  is not shifted in the short-run sense, the equity case for retaining it must rest on the proposition that an "absolute" corporation tax is justified; or it must be based on the political consideration that substitute taxes would be less progressive. Otherwise, removal of  $PT$  is in order, provided (1) a way is found to integrate retained earnings into the individual income tax,<sup>19</sup> and (2) transition problems are met.<sup>20</sup> Whether or not the revenue loss should be made up by  $VT_i$  is a different matter. While  $VT_i$  would be preferable on equity grounds to a retail sales tax or  $VT_e$ , the better answer might be increased reliance on the individual income tax. But ruling this out,  $VT_i$  might not be a bad solution.

Such a substitution might also have desirable economic effects. While it cannot be argued as a general proposition that substitution of  $VT_i$  for a general  $PT$  must reduce excess burden, substitution of a general  $VT_i$ , which includes the unincorporated sector for a  $PT$  on corporations only, may well have this (Harberger) effect—if no short-run shifting applies. Moreover, the resulting redistribution in favor of profit income may encourage investment via the rate-of-return effect. An even stronger investment incentive could be given by the substitution of  $VT_e$ , but this would hardly be tenable on equity grounds. If the revenue loss from  $PT$  were made up by individual income tax, investment effects would depend on the nature of the rate adjustments.

If we assume that the corporation tax is largely shifted in the short-run

<sup>19</sup> If this were done through the partnership method, it would still be necessary to determine taxable profits. Substitution of  $VT_i$  for the remainder of the profits tax, therefore, would complicate rather than simplify the tax law. Substitution of  $VT_i$  for  $PT$  would simplify matters only if the taxation of retained earnings under the individual income tax were dispensed with, or if it were accomplished through full taxation of capital gains under the income tax.

<sup>20</sup> Reference is to the argument that removal of the tax, by creating capital gains, would benefit present owners. To some extent, at least, this could be met by taxing the capital gain. But even if some windfalls remain, this is essentially a short-run problem which should not stand in the way of longer-run tax reform.

sense,<sup>21</sup> possible substitution of  $VT_i$  for  $PT$  becomes much less controversial. Excess burden is reduced, but distributional and investment effects are minor. Substitution of  $VT_c$ , on the other hand, might still offer a significant inducement to investment, as well as distributional change, since, as noted before, the short-run shifted corporation tax is equivalent to a general and proportional income tax, and not a consumption tax.

## Part 2. *International Aspects*

### A. INTRODUCTION

In recent years, much attention has been given to the implication of alternative taxes in the open-economy setting. From the international point of view, the primary problem is one of minimizing distorting effects of national tax structures on international trade and capital flows. From the narrower point of view of national concern, there is the problem of how the structure relates to the balance-of-payments position.

The choice between income and product taxes is at the heart of these issues. It is dealt with here primarily by comparing the effects of a corporation profits tax  $PT$  with those of a value-added tax of the income type  $VT_i$ . As noted previously,  $VT_i$  applies to both capital and consumer-goods industries, with depreciation omitted from the tax base. It is broadly equivalent, in the absence of exemptions and differential rates, to a general tax on factor incomes. Following current practice, a rebate  $ER$  of the value-added tax is given on exported goods, and a compensating sales tax  $IT$  is imposed on imports.

While our major concern is with the  $VT_i$ - $PT$  substitution, certain alternatives are considered as well, including attachment of an  $ER$ - $IT$  arrangement to  $PT$ , substitution of  $VT_i$  for the personal income tax, use of  $VT_c$  (value-added tax, consumption base), and so forth.

### *Assumptions*

We begin with a comparison on efficiency grounds and then examine balance-of-payments aspects. We assume  $PT$  to be abolished and replaced by an equal yield  $VT_i$ . If  $VT_i$  applies for all firms while  $PT$  applies to the corporate sector only, the corporate sector will benefit. Since this sector is more export intensive, favorable balance-of-payments effects result. This factor is disregarded for the time being, it being assumed that all firms are incorporated.

<sup>21</sup> For such evidence see Krzyzaniak and Musgrave, *The Shifting of the Corporation Tax*, p. 5.

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In examining the international consequences of various taxes, the relevant factor is not the absolute level of rates but rate differentials. To simplify matters, we shall assume that *PT* and *VT* are applied in one country only, thus equating the absolute rate with the differential rate.

The effects of the tax substitution from both an efficiency and balance-of-payments point of view depend on the incidence of the profits tax. Since this is a controversial matter which cannot be resolved here, the analysis is again developed under two assumptions: (1) that the profits tax is not shifted in the short-run sense; and (2) that it is thus shifted, i.e., that the rate of return is maintained to begin with by shifting the tax forward onto the product.<sup>22</sup> In the latter case, shifting is assumed to occur only with regard to domestic sales of products, the prices of which are not dominated by import competition. Shifting of a tax *differential* is assumed to be impossible with regard to export sales.<sup>23</sup> Also, short-run shifting that resulted from imposition of a profits tax is assumed to be reversed when the tax is removed.

The discussion is not developed in terms of full-scale international equilibrium. In other words, the world offer curve for traded commodities is taken as given, and repercussions of foreign economic adjustments to United States tax changes on the terms of trade are generally not allowed for. Also, it is assumed that exchange rates are fixed and, in most instances, that factor mobility is limited to capital. Finally, world demand for internationally traded products is assumed to have an elasticity in excess of one.

### B. EFFICIENCY ASPECTS

It is currently assumed in most discussions that a value-added tax with an *ER-IT* arrangement is efficient from an international allocation point of view. Similarly, it seems to be held that the efficiency of a profits

<sup>22</sup> For definition of short-run shifting, see footnote 1, above.

<sup>23</sup> That is to say, export shifting is limited to the lowest rate, which rate may be looked upon as a general tax. Suppose that before imposition of the profits taxes, the rates of return both domestic *D* and foreign *F* equal  $y$ . Now, profits taxes are imposed, such that the domestic tax rate  $t_d$  exceeds the foreign rate  $t_f$ . Since the foreign tax rate is the smaller one, it can be shifted in its entirety. As a result, the foreign gross rate of return rises to  $y/1 - t_f$  and the foreign net rate of return  $y_f^n$  stays at  $y$ . The domestic gross rate of return also rises to  $y/1 - t_f$  and the domestic net rate of return  $y_d^n$  falls to  $(1 - t_d/1 - t_f)y$ . The resulting percentage change in the net domestic rate of return or non-shifted component of  $t_d$  equals  $t_f - t_d/1 - t_f < 0$  and is the smaller for any given  $t_d$  the larger is  $t_f$ . The relative position of domestic investors, measured by the ratio  $y_d^a/y_f^a$ , drops from 1 to  $1 - t_d/1 - t_f$  and the same observation holds. Now suppose that  $t_d$  is removed. Shifting of the foreign tax now becomes impossible, and  $y_f^n$  falls to  $(1 - t_f)y$ . At the same time,  $y_d^a$  returns to  $y$ . The percentage gain in  $y_d^a$  due to removal of  $t_d$  equals  $t_d - t_f/1 - t_f$ , and  $y_d^n/y_f^n$  rises to  $1/1 - t_f > 1$ .

tax would not be improved by such attachments. Current practice among GATT countries is in line with this rule by applying *ER-IT* to the value-added and product taxes, but not to the profits tax. In this section, we consider the underlying principles and re-examine the efficiency case for one or the other tax with or without export-rebate-import tax arrangement. We assume for the moment that such an arrangement is feasible for the profits tax.

### *Efficiency Requirements*

In determining which tax arrangements are or are not efficient from a world-allocation point of view, two basic requirements are considered. One is that tax arrangements should not affect the choice of country in which factors are put to work. Since it is usually assumed that capital is internationally mobile whereas labor is not, primary concern here is with differential taxation of capital returns rather than with labor income. The other requirement is that tax arrangements should not affect international commodity flows and thus not interfere with the efficient international trade use of given national factor endowments.<sup>24</sup> Put differently, taxes should not distort relative factor and commodity prices in the international markets. As before, the comparison between *VT*, and *PT* differs, depending on whether or not there is short-run shifting of *PT*.

### *Factor Mobility Without Commodity Flows*

To put the matter clearly, suppose first that factors are mobile but there are no commodity flows.

**PT NOT SHIFTED.** To begin with, suppose that only capital has international mobility. If *PT* is not shifted in the short-run sense, it reduces the rate of return on capital. Since international capital flows tend to equalize the net rate of return, imposition of *PT* in country A will reduce its share in the world capital stock. Substitution of *VT*, for *PT*, by broadening the tax base to other factor incomes, will reduce the rate of tax on the mobile factor and extend taxation to immobile factors. This reduces the distorting effect of *PT* which resulted in underallocation of capital in the country with an excess *PT* rate. Contrary to the domestic finding, where there was no a priori excess burden argument for *VT* as against *PT*, such an argument now applies. The reason is

<sup>24</sup> The additional efficiency aspect of tax interference between purely domestic goods is considered in Part 1 and therefore omitted here.

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simply that capital is assumed to be internationally mobile while labor is not, whereas domestically both supplies are considered more or less elastic.<sup>25</sup>

Since the profits tax differential may be highly nonneutral with respect to international capital allocation, can this nonneutrality be eliminated alternatively by an *ER-IT* arrangement? The answer is clearly, no. The appropriate way of dealing with the matter (while retaining a profits tax) is avoidance of differentials through uniform rates, or taxation of capital at residence of ownership rates.<sup>26</sup> The *ER-IT* arrangement, to be sure, would tend to reduce the distortion which comes about because there is underinvestment in the excess-rate country, but it would add other distortions as between domestic and export industries. Clearly it is not the appropriate remedy.

A similar argument may be applied to a situation with international labor mobility while excluding capital mobility. The conclusion is reversed. Since the profits tax *PT* is entirely on the immobile factor, whereas *VT*<sub>i</sub> extends to the mobile factor, it is now the latter which interferes with world factor movements and is inferior. The *ER-IT* arrangement is again an inappropriate remedy. What is needed is an income tax arrangement by which wage income is taxed at a rate independent of place of work, e.g., country of birth. Looking at *VT*<sub>i</sub> as a general income tax, application of this principle becomes extremely difficult. In this context *VT*<sub>i</sub> is clearly an inferior tax. While it is granted that the assumption of capital mobility is more reasonable than that of labor mobility, the latter has assumed increasing reality in the Common Market.

**PT SHIFTED.** If *PT* is shifted on domestic sales, its distorting effects on international capital flows are greatly reduced, as is the efficiency gain to be derived from substituting *VT*<sub>i</sub>. *PT* now leaves unaffected the net rate of return on capital engaged in production for domestic sales. However, capital engaged in the export industries must pay the tax, leading to a structural capital flow away from exports. This would be eliminated by substitution of *VT*<sub>i</sub>; or an export rebate for *PT* would now be suitable to eliminate this effect.

<sup>25</sup> Analogous to the preceding note, the efficiency aspects of excess burden suffered by domestic factor suppliers (internationally mobile or not) are again omitted here as they are treated in Part 1.

<sup>26</sup> This precisely is aimed at by the foreign tax credit which must be distinguished from the export rebate arrangement as used with *VT* and referred to in the text as *ER*.



*Commodity Flows Without Factor Mobility*

Next suppose that there are no resource movements between countries so that effects on commodity trade only are to be considered.

**EFFECTS OF  $VT_i$ .** Let country A introduce  $VT_i$  without such a tax in country B. Suppose also that monetary policy in country A is such as to leave its factor costs unchanged while raising domestic prices. If no *ER-IT* arrangement applies, exports fall and imports rise, and the tax is highly unneutral. If an export credit is given and a compensating import tax is imposed, export prices are unchanged and there is no change in relative prices of domestic and imported goods. No price effects on commodity flows result and the tax is rendered neutral. This is the basic argument for attaching the *ER-IT* arrangement to  $VT_i$ ,<sup>27</sup> thereby applying cost taxes on a destination basis. Since we are dealing here with a flexible system, aggregate income effects may be assumed neutral as well.

The situation is changed if we assume that monetary policy in country A is such as to maintain product prices and permit the tax wedge of  $VT$  to reduce factor prices. In this case, introduction of  $VT_i$  without *ER* leaves export prices unchanged; moreover the price of imported relative to domestic goods does not change in the absence of *IT*. The *ER-IT* arrangement would now be nonneutral and should not be permitted.

As distinct from the closed-economy case, where the direction of price-level change due to  $VT$  did not matter,<sup>28</sup> the movement of absolute prices and costs becomes crucial in the open-economy context. The accepted conclusion that  $VT$  calls for the *ER-IT* arrangement is thus based on a specific assumption regarding price-level behavior. Given the worldwide tendency of wages to be rigid in a downward direction, we see no objection to this assumption but, in putting the theoretical argument, it is important to notice its strategic role.

**EFFECTS OF  $PT$ .** Consider now the consequences of introducing  $PT$  in country A. Assuming no short-run shifting, this may lower capital formation for both domestic and export production and in time shrink the volume of exports. However, there are no direct commodity flow effects, as resulted (assuming a price rise) from  $VT_i$  without an *ER-IT* arrangement. Hence, no such arrangement is called for.

<sup>27</sup> The text argument has been in terms of applying  $VT$  in country A without such tax in B. If B has an equal rate tax no problem arises. If the taxes are unequal, the text argument applies to A's excess rate only. As noted before, a rule by which each country rebates its full tax and applies an import tax at the full rate of its tax also serves the purpose of eliminating the differential rate.

<sup>28</sup> See Part 1, Sect. B, under Nature of Value-Added Tax.

The picture changes if we introduce the assumption that *PT* is shifted on domestic sales in the short-run sense, giving rise to increased domestic prices.<sup>29</sup> At the same time, there is no shifting on export sales (remember that reference is to the differential rate). We then have a situation analogous to that of *VT*, with rising prices. An export rebate associated with *PT* is now called for to keep total export costs (factor costs plus tax) from rising. Similarly, an import tax is required to keep the prices of imported goods from falling below those of domestic goods. Moreover, the export rebate is needed to prevent a structural capital effect, i.e., capital flow from export to home production. A *PT* which is shifted domestically but not on export sales in fact acts as a differential profits tax on the export industry. An *ER-IT* arrangement is needed to eliminate it. The validity of the GATT practice which does not apply *ER-IT* to the profits tax thus rests on the assumption that there is no domestic short-run shifting.<sup>30</sup>

*Commodity and Factor Flows Combined*<sup>31</sup>

Consider now the realistic case where both factor and commodity flows occur. We assume that the profits tax is not shifted domestically and that factor supplies originating in any one country are fixed. At the same time, their allocation between home and foreign use responds to differentials in the rate of return.

Taxes on factor incomes, on profits or wages, will distort factor flows if imposed at rates of the country of activity (source of income) but will be neutral with regard to factor flows if imposed at rates of the country of residence of owner. What can be said about distorting effects

<sup>29</sup> Contrary to the competitive case, where the absolute price level change in response to *VT*; cannot be derived from the price behavior of firms, the administered pricing adjustment for a shifted *PT* does suggest an absolute increase in product prices. As far as the effect on domestic prices (and the justification of *IT*) and on total export cost (and the justification of *ER*) are concerned, the shifted *PT* case thus resembles the *VT*; case with constant factor costs, while the *PT* case with no shifting resembles the *VT*; case with reduced factor costs.

<sup>30</sup> Article IV:2 says that imports may be subjected to such internal taxes as are imposed on like domestic products. This provision is not tied to particular kinds of taxes, nor is it said explicitly what criterion (price increase?) should be used to decide which taxes are or are not eligible. Article VI:1, which rules out dumping, nevertheless permits allowance to be made for differences in taxation (without specifying particular taxes) and for "other differences affecting price comparability." Thus it appears that for the export credit the basic distinction is between taxes that do and taxes that do not affect prices, and presumably the same logic should carry over to the import compensating tax. It follows that the GATT rules call for a profits tax *ER-IT* if there is short-run shifting.

<sup>31</sup> This section was added in response to Lawrence B. Krause's suggestion that the two extreme cases be combined.

of such taxes on commodity flows? A profits tax by origin of capital, though not affecting factor flows, nevertheless may give rise to changes in demand patterns, which in turn may have repercussions on commodity flows. But such repercussions are merely responses to changes in effective preferences, and are not to be considered distortions. If the profits tax is by country of activity, the distorting effects on factor flows will again react on commodity flows, such reactions now emanating from both the supply and the demand side. The former are part and parcel of the distorting effects on factor flows, the adjustment to which involves responses in commodity flows; and the latter again reflect changes in demand patterns. In all, it appears that income taxes whether by country of residence or of activity have no direct distorting effects on commodity flows, even though they may in many ways affect the volume and direction of commodity trade.

A value-added tax of the income type  $VT_i$  with  $ER-IT$  does not distort commodity flows. However, it may distort factor flows. Since  $VT_i$  is equivalent to a tax on factor incomes, it includes a  $PT$ . Since the implicit  $PT$  is at country of activity rates it distorts factor flows. While the implicit  $PT$  rate is apt to be much below that of an outright  $PT$  (because of the larger base) and hence the distorting effects on capital flow to be correspondingly less, the similarity nevertheless exists in principle. Since the factor taxes implicit in  $VT_i$  cannot be converted into factor taxes by residence,  $VT_i$  is inferior to the factor-tax approach on a residence base. That is true at least if labor is immobile relative to capital.

Leaving the normative level, it should be noted that factor taxes are frequently imposed not by residence but by place of activity, whereas product taxes are usually subject to  $ER-IT$ . Reliance on the  $VT$  type of tax, therefore, may be preferable on international allocation grounds, especially where  $PT$  (as against wage tax) differentials are concerned.

#### *Further Problems*

The discussion above sets forth the main principles involved in the efficiency comparison of direct and indirect taxes. Certain additional considerations will be noted briefly.

DISTRIBUTION OF REVENUE. The international point of view has been taken here as related to international factor and commodity flows. In addition, the international distribution of available tax bases should be briefly noted.

So far as income taxation is concerned, the crucial matter with re-

spect to efficiency is that mobile factors should be taxed at rates of country of residence of factors. It does not matter from the efficiency point of view whether the revenue accrues to country of activity—as it does with the foreign tax credit arrangement—or to country of residence. However, present tax practice gives prior tax claim to the country of activity. With regard to commodity taxation, efficiency requires taxation by country of destination, which leads to a distribution of base different from that by taxation of origin. The essential point is that taxation by destination tends to benefit the net commodity importing country. Income taxation also now gives prior tax claim to the country of activity which tends to be the factor importing country. Since the net borrower tends to be a net importer of commodities as well as of factors, both arrangements tend to be to its advantage. This may be a desirable result but it should be noted that here as elsewhere efficiency has its distributional implication.

VALUE-ADDED TAX, CONSUMPTION BASE. We have argued that a value-added tax income base  $VT_i$  with  $ER-IT$  is neutral with regard to commodity flow, but has some distorting effects on factor flows. This is owing primarily to the effects of the profit tax component of  $VT_i$  on the mobile capital factor. Consider now a value-added tax, consumption base  $VT_c$ . Assuming again an appropriate  $ER-IT$  arrangement to apply, such a tax will also be neutral with regard to commodity flows. Since  $VT_c$  is equivalent (in the longer run at least) to an income tax with capital income exempted, the distorting effect on capital flow will be reduced or absent. It appears, therefore, that  $VT_c$  may be superior to  $VT_i$  on world neutrality grounds.

EXPENDITURE BENEFITS. Benefits from public expenditures have been disregarded. However, it should be added that what really matters are the differentials in *net* benefit or burden rates that result from fiscal operations.

To the extent that  $VT_i$  is matched by cost-reducing public services, the  $ER-IT$  arrangement becomes inappropriate. The rebate would now reduce export costs, while the import tax would raise the relative prices of imports. To the extent that such services match a  $PT$  which is not shifted, considerations of international neutrality might in fact require a special tax on exports and a rebate on imports. The case for the shifted  $PT$ , finally, again parallels that of  $VT_i$ .

The GATT rules evidently disregard the public-services factor, which may or may not be justified in the international context. In the context of the United States discussion of fiscal federalism, however, such an

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oversight is not permissible. As noted above, the advantage of  $VT_i$  as a state business tax is precisely that it can serve as a means of exporting benefit taxes to the foreign consumer, if imposed on the origin basis.

**NATURE OF ER-IT ADJUSTMENT.** We have seen that a proper *ER-IT* arrangement is crucial in certain cases to neutralize the effects of value-added or profits taxes. It remains to take a closer look at what constitutes a neutralizing adjustment.

We begin with  $VT_i$  and assume for the time being that its introduction involves an absolute rise in prices. An *ER-IT* arrangement is then in order. Determination of the export rebate is straightforward in principle. The rebate should be an amount equal to the tax cost to be imputed to the export product throughout its course of production.<sup>32</sup> But a question of principle arises with regard to the import duty. Here three possibilities present themselves:

1. The compensating import duty may be designed to hold constant the ratio of market prices of imported and domestic products. This requires application of the  $VT_i$  rate to the duty-paid base of imports.

2. The compensating import duty may be designed to hold constant the ratios of market prices as they would be in the absence of customs duties. This requires application of the  $VT_i$  rate to the before-duty basis and raises the market price of domestic relative to imported goods.

3. The compensating import duty may be designed to preserve the absolute differential in the market price of foreign and domestic goods, requiring a corresponding adjustment in the duty rate, defined with regard to either base.<sup>33</sup>

<sup>32</sup> In practice, giving a correct rebate on exports is not simple, and European experience has shown that there is scope here for overrebating and effectively subsidizing exports. The earlier the stage in the productive process that such taxes are imposed the more difficult it becomes to achieve an exact tax rebate and, incidentally, to impose a compensating sales tax on imports which corresponds to the effective tax paid on comparable domestically produced goods. Thus the operation of a value-added or turnover tax on the destination principle in practice can be equivalent to a tariff. U.S. exporters to the European market frequently adduce this as an argument for the institution of a U.S. value-added tax affording the same possibilities for discrimination. The discussion in this paper, however, assumes that accurate export rebates are made.

<sup>33</sup> Let  $MP_d$  and  $MP_i$  = market prices of domestic and imported goods in absence of tax,

$MP'_d$  and  $MP'_i$  = prices after tax,  
 $CP_d$  and  $CP_i$  = cost prices (in absence of tax and duties),

$r$  = tariff rate,

$t$  =  $VT_i$  rate.

In the pre-tax position, we have

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From an efficiency point of view, nothing is to be said in favor of (3), but the choice between (1) and (2) is more difficult. If we assume that existing customs duties are an accepted fact, tax neutrality might be defined in terms of procedure 1. But this is not very satisfactory on efficiency grounds, where one should be free to reconsider the customs arrangement. In this case procedure 2 is preferred, since it permits at least a partial reduction in tariff distortions.<sup>34</sup> Extension of this logic would set the compensating import duty (positive or negative) equal to the differential between domestic tax and tariff duty, but this is a possibility which may be safely neglected. For the balance-of-payment discussion procedure 1, which is in fact followed, is assumed to hold.

Additional complications arise if the *ER-IT* arrangement is applied to other taxes. The consumption type of value-added tax again poses no difficulty in principle in assessing the proper level of *ER*, except in cases where the firm produces for both export and domestic sales, and capital outlays must be allocated between the two. Then problems arise with regard to *IT*. If imposed on the assumption of zero domestic investment, foreign producers with net investment will be discriminated against. If imposed at the average rate applicable to domestic producers—and the rate will be the lower, the more rapid is expansion—distortions may arise as between industries, and so forth.

If an *ER-IT* arrangement were to be added to the profits tax, determination of the appropriate export rebate rate for a mixed firm involves allocation of profits between domestic and export sales. If the adjustment were to be made on a unilateral and hence differential basis, there would be the further difficulty of establishing comparative rates for various countries, since many factors (e.g., depreciation rules) other

$$\frac{MP_d}{MP_i} = \frac{CP_d}{(1+r)CP_i}$$

After tax, using method 1 we have

$$\frac{MP'_d}{MP'_i} = \frac{(1+t)CP_d}{(1+t)(1+r)CP_i} = \frac{MP_d}{MP_i}$$

After tax, using method 2 we have

$$\frac{MP'_d}{MP'_i} = \frac{(1+t)CP_d}{(1+r+t)CP_i} > \frac{MP_d}{MP_i}$$

After tax, using method 3 we have

$$\frac{MP'_d}{MP'_i} = \frac{(1+t)CP_d}{(1+r)CP_i + tCP_d} < \frac{MP_d}{MP_i}$$

<sup>34</sup> To the extent that old import duties have already been offset by exchange rate adjustments, they do not involve a distortion, and procedure 1 is appropriate on efficiency grounds.

than statutory rates are involved. Also, in determining the differential rate, different rates would have to be applied, depending on the destination of the export. Similar difficulties arise in defining the appropriate import tax. Thus a corresponding treatment for *PT* might be very difficult, even where theoretically justified.

Even in the simple case of *VT*, implementing the proper levels of *ER-IT* is no mean task. Moreover, it requires retention of a customs apparatus which, hopefully, might be liquidated with tariff abolition. This is the reason the Neumark Committee recommended that EEC countries eventually move to a system of equal-rate value-added taxation by origin, leaving rate differentials to apply only for sales taxation at the retail level.<sup>35</sup>

**FLEXIBLE EXCHANGE RATES.** All the preceding discussion has been predicated on the assumption of fixed exchange rates. In what way may the conclusions be modified if flexible exchange rates are allowed for? No attempt is made here to follow through this difficult problem, but some lines of thinking are suggested.

One of our main conclusions was that commodity taxes are neutral, (given fixed factor supplies in each country), if imposed on the destination principle (*VT* with *ER-IT* arrangement) but nonneutral if on the origin principle (*VT* with no *ER-IT*). Within the context of flexible exchange rates, however, even a differential *VT* without *ER-IT* (source principle) may not interfere with domestic factor allocation. Introduction of such a tax to country A would penalize exports and stimulate imports, leading to a larger supply of A's currency on the international exchange market and a smaller supply of foreign currencies. A's exchange rate would thereby decline until the price of A's product (including the *VT*) expressed in terms of the foreign currencies would be the same as in the pre-tax situation. Devaluation of A's currency would offset the commodity tax.<sup>36</sup> Introduction of an *ER-IT* arrangement would then restore the exchange rate possibly to its pre-tax level, and the situation would remain neutral. While, by the same token, the exchange-rate adjustment may be said to neutralize a uniform ad valorem tariff, this, of course, does not mean to say it would neutralize a differential tariff.

<sup>35</sup> Report of the Fiscal and Financial Committee of the EEC on Tax Harmonization (Neumark Committee), 1962.

<sup>36</sup> An argument developed by J. Tinbergen (see *Communauté Européenne du Charbon et de l'Acier: Haute Autorité Commission-Taxes*, report submitted to the High Authority, Apr. 8, 1953). See also Carl S. Shoup's comments, "Taxation Aspects of International Economic Integration," *Travaux de l'Institut International de Finances Publiques*, Frankfurt, 1953.

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The point to be kept in mind is that the value-added tax analogy is to a uniform ad valorem tariff case only.

The second main conclusion was that an unshifted profits tax is neutral, with respect to international capital flows, if imposed on the residence principle. The nonneutrality arising from a profits tax on source-of-income (country of activity) basis might also be mitigated by a flexible exchange-rate system. Introduction of such a tax in country A will encourage capital outflow, reduce capital inflow, and have an adverse impact on A's balance of payments as in the commodity tax case. A's exchange rate will again decline until the after-tax profit rate in A, expressed in terms of foreign currencies, approximates the pre-tax situation. The exchange rate adjustment again neutralizes the tax on factor income.

### C. BALANCE-OF-PAYMENTS ASPECTS

In the preceding section, various taxes were evaluated from the point of view of world efficiency in resource and commodity flows. We now turn to a more national point of view, looking at the effects of various tax changes on a country's balance of payments. A distinction will be drawn between: (1) short-run trade effects, including price and income effects; (2) structural capital flow effects, involving changes in the allocation of capital resources between production for export and for domestic use; and (3) effects on international capital flows. In dealing with the latter effects, longer-term capital movements only are considered. The problem of short-term capital movements is a matter of monetary rather than of tax policy and is passed over here.

As before, our primary concern is with the substitution of a value-added tax of the income type  $VT_i$  for a profits tax  $PT$ , but certain other changes will be considered as well.

#### *Short-Run Trade Effects of $VT_i$ - $PT$ Substitution: 1. Price Effects*

Consider first a period not long enough to affect capital formation in the export industries. However, there may be trade effects due to changes in import or in export prices. Such effects may result from changes in relative prices or from changes in income; and they will differ, depending on what one assumes regarding the short-run shifting<sup>37</sup> of the corporation tax.

<sup>37</sup> Here, as throughout, the term not shifted as it appears in the subheading means not shifted in the short-run sense as defined in footnote 1, above, and is to be distinguished from long-run shifting which may come about through capital adjustments.



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*PT* NOT SHIFTED. We assume first that all prices (product and factor) are determined in such a way that the short-run effect of the corporation tax is to reduce profits. As *VT*<sub>i</sub> is substituted for *PT*, there will be a change in the relative prices of products sold at home and abroad, as a rebate is granted on the latter under *VT*. However, what matters for balance-of-payments purposes is the change in the absolute level of export and domestic prices resulting from the tax substitution. Whereas the absolute (as distinct from relative) price change did not matter in the closed-economy context, we note again that it now assumes strategic importance.

Suppose, first, that substitution of *VT*<sub>i</sub> for *PT* raises domestic prices by the rate of *VT*<sub>i</sub>. Considering the nature of wage and price policy in our economy, this is a reasonable assumption. Money wages are not likely to fall, nor is *VT*<sub>i</sub> likely to be absorbed (under these conditions) in reduced profit margins. Factor costs and hence export prices net of rebate remain unchanged. Thus, exports will be unaffected. Assuming that domestic demand is maintained in real terms through appropriate fiscal or monetary measures, demand for imports will be unchanged as well. Since import prices are subject to a compensatory tax, they are raised along with domestic prices, leaving relative prices unchanged. Hence imports are unchanged as well. There are no price effects.

Next, let us suppose (if somewhat unrealistically) that substitution of *VT*<sub>i</sub> for *PT* leaves the market price of domestic products unchanged. In this case, the tax wedge driven by the value-added tax results in reduced factor costs. As shown in the preceding discussion of the closed-economy case, factor incomes (in money as well as real terms) available for expenditure are unchanged by the substitution, as the gain in profits (from repeal of the profits tax) offsets the loss of factor income (due to value-added tax). The cost of export goods (which are exempted from *VT*<sub>i</sub>) has fallen, along with factor prices. If international product prices are given by world-market conditions, it will lead to increased export profits and substitution of export production for domestic sales production. Such switching will be possible without capital changes and hence must be distinguished from longer-run structural effects noted below.

On the import side, no compensating tax is called for in this case (on grounds of efficient world commodity flows), since the relationship of domestic to import prices has not been changed by the substitution. No immediate favorable effects from the import side will ensue. A compensating import duty would not be justified on international neutrality grounds and indeed would give an undue advantage to the

imposing country. By the same token, that country would find it advantageous on balance-of-payments grounds.

What constituted a more or less trivial matter in the closed-economy case, i.e., the change in absolute prices by which the change in real income shares resulting from the tax substitution is brought about, assumes considerable importance in the open-economy setting. Tax substitution with rising domestic prices would carry the adverse balance-of-payments effects of appreciation on imports, were it not for the compensating tax. Substitution with falling export prices, in turn, carries the favorable export effects of depreciation, provided of course that no compensating adjustment is made by the importing country abroad.

*PT* SHIFTED. If *PT* were shifted in the short-run sense (we again assume shifting for domestic products subject to only limited import competition, but no shifting on exports), various adjustment patterns might occur. One question is whether *PT* shifting took the form of increase in absolute or in relative prices. Let us assume the former and postulate also that, under conditions which permit *PT* shifting, introduction of *VT*<sub>i</sub> will also be reflected in absolute price rise. Another question is whether the assumption of *PT* shifting as *PT* is introduced need imply a similar assumption of unshifting with *PT* removal. This need not be, but let us suppose that it is.

Under these conditions, which seem reasonable, substitution of *VT*<sub>i</sub> for *PT* leaves domestic prices unchanged, as the price increase due to introduction of *VT*<sub>i</sub> on the average tends to offset the decline due to removal of *PT*.<sup>38</sup> Net profits will then remain unchanged on domestic sales, but (owing to the export rebate) increase in export industries. In the longer run this will lead to structural capital flows into exports, but in the short run higher export profits are enjoyed. This will lead to substitution of export for domestic market production within the confines of existing capital and thus have favorable balance-of-payments effects. Such would be the case, particularly if world demand were infinitely elastic, and less so if price reduction is needed to increase exports. Since the substitution of *VT*<sub>i</sub> is accompanied also by a compensating import tax, a favorable import effect will result as well. The basic change, inherent in the substitution, lies in the addition of the *ER-IT* arrangement which, of course, has favorable price effects.

<sup>38</sup> If removal of *PT* does not lead to unshifting, the favorable price effects here noted do not occur. The structural capital flow effect is still antiexports, and the international capital flow effect is highly favorable to the balance of payments.

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### *Short-Run Trade Effects of $VT_i$ - $PT$ Substitution: 2. Income Effects*

PT NOT SHIFTED. Substitution of a general tax on factor incomes for a partial tax on corporate profits, and the resulting change in income distribution may affect the aggregate level of expenditures as well as its distribution between domestic and imported goods.

Aggregate demand may be affected in two ways as  $PT$  is replaced by  $VT_i$ . Removal of  $PT$  may raise investment, due to favorable rate-of-return effect. At the same time, consumption demand is likely to decline. The fraction of the tax absorbed in reduced corporate saving is curtailed; disposable personal income is redistributed regressively, i.e., toward taxpayers with lower marginal propensities to consume; and if  $VT_i$  is reflected in higher prices, money illusion on the part of consumers may lead to reflection of the entire tax in reduced consumption. If the net effect on investment and consumption demand is restrictive, favorable balance-of-payments effects may result, either because of declining prices or declining real income. If the net effect is expansionary, short-run balance-of-payments effects may be unfavorable on the same grounds.

It may be assumed, of course, that income effects would not be permitted to occur, because government action would be taken to maintain full employment income and to prevent price changes—at least changes beyond the price increase needed to reflect the value-added tax. In this case, balance-of-payments effects, especially if short-run capital flows are taken into consideration, will depend on the particular type of stabilization action taken.

PT SHIFTED. If  $PT$  were shifted and then unshifted when removed, income effects would be much reduced in importance. Except for minor effects, which may result from tax exemption of the export sector, the investment and consumption responses of which may differ from those of industry at large, aggregate demand will be unchanged.

### *Domestic Capital Effects of $VT_i$ - $PT$ Substitution: 1. Structural*

As noted before, we consider two types of domestic capital effects. The first includes "structural" effects involving redirection of domestic investment as between production for exports and production for home markets.

PT NOT SHIFTED. Repeal of  $PT$  does not affect relative profitability of domestic and export industries. Introduction of  $VT_i$  with  $ER-IT$  arrangement similarly leaves relative profitability unchanged. The tax substitution on balance increases profitability in both sectors, at least

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if introduction of the value-added tax raises domestic prices. If domestic prices remain constant and factor prices fall, the profitability of exports is increased and domestic capital will flow from home to export production.<sup>39</sup> This implies a long-run favorable export effect on the balance of payments which, in time, comes to supersede the previously noted short-run gain from substituting export for domestic sales on the basis of the given capital stock. However, upward adjustment in domestic prices in response to the value-added tax is the more likely effect of the  $VT_i$  substitution; the internal capital flow, therefore, is likely to be minor.

**PT SHIFTED.** Assuming that  $PT$  were shifted onto domestic sales only and is unshifted with removal, its repeal increases export profitability. Imposition of  $VT_i$  with  $ER-IT$  arrangement affects profitability in neither sector so that the substitution increases relative export profitability, giving rise to capital flow from domestic production industries to export industries. The balance of payments is improved on the export side.

### *Domestic Capital Effects of $VT_i$ - $PT$ Substitution: 2. Aggregate*

The second domestic capital effect that has been noted is the effect on the total levels of domestic capital formation.

**PT NOT SHIFTED.** As just noted, substitution of  $VT_i$  for  $PT$  raises profitability in both sectors. This may give rise to an increased over-all rate of capital formation. If so, the balance of payments will be affected favorably through increased exports (depending again on cost and demand conditions) and unfavorably through increased import demand due to increased income. The net effect on the balance of payments through faster growth may be in either direction.

**PT SHIFTED.** Aggregate as well as structural capital effects are much reduced in importance if  $PT$  is shifted and is unshifted with removal.

### *International Capital Flow Effects of $VT_i$ - $PT$ Substitution*

We now turn to the effect of substitution of  $VT_i$  for  $PT$  on international capital flows, probably the most important type of capital effect. As noted before, we consider long-run flows in response to changes in investment yields, rather than short-run monetary effects.

**PT NOT SHIFTED.** Removal of  $PT$  will raise private returns to investment in the United States relative to those in other countries, and there will be a strong incentive given to investment in the U.S. American

<sup>39</sup> The magnitude of flow will depend on long-run cost conditions in the export industries as well as on the elasticity of world demand for exports.

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investors may now prefer to invest in their own country rather than abroad, while foreign capital may be similarly attracted to the United States. The higher the foreign profits tax rate is, the stronger this incentive will be. Similarly, there will be a tendency to remit to and reinvest in the United States a higher proportion of the earnings of U.S. securities owned abroad.

The conclusion that a *PT* reduction in the United States has a favorable balance-of-payments effect on capital account holds, whatever the relative levels of *PT* are in the U.S. and abroad. At the same time, from the point of view of world allocation of capital, reduction in the U.S. rate is efficiency-increasing if the differential is reduced but is distorting if it goes beyond that. To the extent that there are profits taxes abroad, repeal of the U.S. tax would be damaging to world efficiency.

Table 1 shows the taxes payable on 100 units of investment income arising from investment made in the United States, in country A with corporate profits tax of 30 per cent, and country B with a tax rate of 60 per cent, both with the 1963 U.S. corporate income tax of 52 per cent (with the foreign tax credit) and the United States with a zero tax on corporate profits. Table 2 shows the ratios of after-tax income from investments made in the United States to that from investments made in each of the other countries, for each type of investment situation. The tax loads in each situation are shown for investments made in both branches and subsidiaries of U.S. corporations and for both distributed and retained earnings. The after-tax income ratios indicate the strength of the tax incentives to invest in the United States or abroad. If the ratio is greater than unity, there is a tax inducement to invest at home; if less than one, to invest abroad. If the ratio is equal to one, the investor is indifferent in the choice between U.S. and foreign investment so far as tax considerations are concerned. Comparison of the ratios in the two situations before and after the tax change in the United States indicates the changes in the incentives to home investment. Since we assume that all value-added taxes in the United States and abroad operate on the destination principle, the tax load on the product is independent of the location of the U.S. investment in producing operations. Of course, that is not true of tariffs, and there remain tariff inducements to home or foreign investment.

It is evident that abolition of the U.S. corporate income tax, while capital-importing countries maintain the same rates as before, would greatly increase (so far as U.S. investors are concerned) the profitability of United States relative to foreign investment. At the same time, this

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TABLE 1  
 TAXES ON 100 UNITS OF INCOME FROM INVESTMENT IN UNITED STATES AND COUNTRIES A AND B,  
 RETAINED, DISTRIBUTED, AND EARNED BY BRANCH AND SUBSIDIARY OF U.S. CORPORATION

	Branch Earnings		Subsidiary Earnings <sup>a</sup>		
	Retained, Retained	Remitted, Distributed	Retained in Subsidiary	Distributed to and Retained by Parent	Distributed to and Redistributed by Parent
Situation 1: U.S. tax rate = 0.52					
Investment in U.S.	52	76	52	56	78
In A ( $t_a = 0.30$ )	52	76	30	52	76
In B ( $t_b = 0.60$ )	60	80	60	60	80
Situation 2: U.S. tax rate = 0					
Investment in U.S.	0	50	0	0	50
In A	30	65	30	30	65
In B	60	80	60	60	80

<sup>a</sup> Subsidiary earnings retained in subsidiary; under U.S. tax deferral, earnings subject only to foreign tax until remitted; distributed to and retained by parent: domestic earnings subject to 85 per cent dividends received deduction; foreign earnings fully taxed but with credit for foreign taxes up to U.S. rate; distributed to and redistributed by parent; assuming a 50 per cent marginal tax rate on dividends.

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TABLE 2  
AFTER-TAX INCOME RATIOS<sup>a</sup>

	Branch Earnings		Subsidiary Earnings	
	Retained, 1.00 1.20	Remitted, Distributed 1.00 1.20	Retained in Subsidiary .69 1.20	Distributed to and Retained by Parent and Redistributed by Parent .90 1.10
Situation 1				
U.S.: A	1.00	1.00	.69	.90
U.S.: B	1.20	1.20	1.20	1.10
Situation 2				
U.S.: A	1.43	1.43	1.43	1.43
U.S.: B	2.50	2.50	2.50	2.50

<sup>a</sup>Each ratio is computed as after-tax income from investment in the United States to after-tax income from investment in countries A or B.

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measure would severely impair the degree of neutrality of the present situation, under which all U.S. investment income wherever it arises is subject to the present U.S. corporate income tax rate unless earnings are retained in the subsidiary abroad or the foreign tax is higher than the U.S. rate. Abolition of the U.S. profits tax would increase the ratio of after-tax earnings (U.S. to foreign) by from 40 to some 130 per cent. The tax-burden differential as between investments located in different countries would widen, since the effect of the U.S. rate of 52 per cent together with the foreign tax credit had served to narrow the gap. U.S. investment in the new situation would be discouraged relatively more in the high-tax jurisdictions.

It should also be noted that the greatest diversionary effect would take place with respect to the retention of earnings abroad. The present tax incentive to the retention of earnings abroad, particularly in low-tax jurisdictions, would disappear and it is probable that in these circumstances a larger proportion of foreign earnings would be remitted to the United States. The combination of a reduced rate of direct investment outflows, and a reduction in the proportion of foreign earnings reinvested abroad would act to improve greatly the U.S. balance of payments in the short run. At the same time, such a development would considerably slow down the rate of growth of U.S. capital in foreign countries and thus the return flow of income therefrom in future years. To the extent that much of this foreign investment diverted to the United States would have been made in lines of production that compete with and displace U.S. exports, and to the extent that increased home investment leads to lower costs of production in the export- and import-competing industries, the balance of payments in the long run would not be adversely affected.

Other indirect effects on the balance of payments resulting from the tax-induced diversions of capital flows may be favorable or unfavorable depending on the structural effects on the trade balance. A slowing down of American investment in foreign sources of raw materials and intermediate products could, in the long run, worsen the terms of trade and raise the costs of domestic production. The nonneutrality of the pattern of taxes, domestic and foreign, on U.S. investment would mean that American capitalists would be encouraged to invest at home up to the point where the gross rate of return is well below that of foreign countries. In other words, investment at home will be preferred to foreign investment even though real costs may be much higher here. Although this represents a world welfare loss, it might not be a loss



to the United States as a nation for, had the investment moved abroad, part of the earnings would be taken in taxes by the recipient country. However, such a structural effect might have serious consequences for the U.S. competitive position in world trade in the long run, unless the increased domestic capital formation leads to technological improvements of a cost-decreasing and demand-increasing nature.

One undesirable feature of the tax change would be the retardation of private direct investment in the underdeveloped countries. With a zero profits tax rate in the United States there could be no way of maintaining capital flows to the low-income areas short of large subsidies. The underdeveloped countries heavily dependent on private U.S. investment for their capital formation would be encouraged to reduce their own corporate income tax rates to their own fiscal embarrassment. With the natural reluctance to invest in those countries, however, even though net returns may be higher than in the U.S., there would remain a bias in favor of investment in the United States. Abolition of the U.S. corporate profits tax would be analogous to a "beggar-my-neighbor" tariff or devaluation policy.

*PT SHIFTED.* If the profits tax is shifted onto domestic sales and becomes unshifted with removal, the effect of the tax substitution on capital and investment flows will be much less pronounced. Removal of the profits tax will not greatly affect the profitability of home investment by U.S. investors. This makes the substitution less advantageous from a U.S. balance-of-payments point of view, and, by the same token, less harmful from a world allocation of capital point of view.

#### *Substitution of $VT_c$ for $PT$*

We now leave the  $VT_i$ - $PT$  substitution and briefly consider certain other tax changes. To begin with, how will the results differ if a value-added tax of the consumption type  $VT_c$  is used to replace  $PT$ , rather than the previously considered  $VT_i$ ?

*PT NOT SHIFTED.* For the  $VT_i$ - $PT$  substitution, we noted absence of price effects if  $VT_i$  is reflected in higher absolute prices (the more likely case) but favorable effects if prices do not rise. We also noted favorable capital-flow effects. For  $VT_c$  the same conclusions hold regarding price effects. The international capital-flow effect would be even more favorable, because  $VT_c$  (as distinct from  $VT_i$ ) excludes capital income from the tax. By the same token structural effects on internal capital flow to export industries would be even weaker.

*PT SHIFTED.* For the  $VT_i$ - $PT$  substitution, we recorded favorable price

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effects. Much the same holds for a  $VT_c$ - $PT$  substitution. International capital-flow effects would not be significant for either substitution. Structural capital flow effects toward the export industry are again positive but somewhat weaker than in the  $VT_c$  substitution, since profit income would escape the tax.

In all, it appears that the balance-of-payment effects of the  $VT_c$ - $PT$  substitution do not differ greatly from those of the  $VT_c$ - $PT$  substitution.

### *Export Rebate and Import Compensation Tax for PT*

So far, we have explored the balance-of-payments implications of substituting a  $VT$  with  $ER$ - $IT$  for  $PT$ , the general conclusion being that the balance-of-payments effects of such a substitution would be favorable. We now examine briefly to what extent unfavorable balance-of-payments effects of  $PT$  may be avoided by attaching an export rebate-import tax arrangement to it.

**PT NOT SHIFTED.** So far as international capital-flow effects of  $PT$  are concerned, the obvious remedy as noted above is to tax capital at residence rates.<sup>40</sup> Giving an export credit would help (1) by reducing the average differential and (2) by directing investment into industries which are foreign-exchange earning. However, the credit needed just to cancel adverse balance-of-payment effects of  $PT$  may exceed or fall short of the differential rate, depending on the response of capital flows and indirect trade effects.

Next, consider the rebate as an offset to total domestic investment effects of  $PT$  on the export industry and hence on exports. A full credit (i.e., for the entire rate differential) on profits from export sales would help, but again it might well go much beyond the needed correction. The resulting redirection of internal capital from domestic to export production could put the exporter in a stronger competitive position than if there had been no differential. Theoretically, a lesser rebate rate could be devised which would induce a structural flow just sufficient to offset the "total investment" effect in the export sector, but it would hardly be worthwhile since the effect is likely to be relatively small.

**PT SHIFTED.** If  $PT$  is shifted onto domestic goods, the initial price effects will leave exports unchanged while raising imports. Introduction of the export rebate would have no initial price effect on exports, but the import tax would raise import prices thus reversing the initial rise in imports.

Adverse capital-flow effects of  $PT$  were less than they were in the

<sup>40</sup> See Sect. B under Factor Mobility Without Commodity Flows.

no-shifting case, but the export industry suffered through structural capital flows. A *PT* credit on export sales and a compensating tax on imports would cancel those effects. The capital effects (as distinct from price effects) of adding *ER-IT* are the same for either shifting assumption.

The preceding conclusions apply to the effects of introducing the *ER-IT* arrangement to an existing *PT*. The reader might want to combine these considerations with our preceding conclusions regarding substitution of *PT*, excluding *ER-IT*, for *VT* and see what happens if *PT* with *ER-IT* is substituted for *VT*.

#### *Substitution of $VT_i$ for Individual Income Tax*

Suppose now that  $VT_i$  is introduced not as a substitute for *PT* but for the personal income tax *YT*. Assuming *YT* to be proportional and recalling our earlier statement of equivalence between  $VT_i$  and a proportional general income tax, it would seem that the substitution leaves matters unchanged. However, substitution of  $VT_i$  brings with it *ER-IT*, and the outcome depends on the response of absolute prices.

Suppose, first, that absolute prices rise by the amount of value-added tax. The effect thereof on exports and imports is neutralized by *ER-IT*. Consider, however, a situation where the substitution leaves the domestic price level unchanged, the  $VT_i$  wedge simply replacing the *YT* wedge between market price (gross receipts of the firm) and disposable factor income remaining after deducting personal income tax. Introduction of *IT* now raises the relative price of imports, and *ER* reduces the cost of exports. Favorable trade effects result, the situation being exactly the same (except for favorable capital-flow effects which are now absent) as in the previously considered substitution for the profits tax.<sup>41</sup>

The result, as in preceding instances, thus depends entirely on the price-change assumption. As noted before, the downward rigidity of money wages cannot be overlooked, nor does it seem reasonable to expect that the tax would be reflected readily in reduced profits. It seems reasonable, therefore, to expect that favorable price effects will be absent or of slight importance.

#### *Addition of $VT_i$*

The preceding reasoning may be applied readily to consider what happens if  $VT_i$  is added to rather than substituted for existing taxes. Let us suppose this is done in a full-employment context and that the

<sup>41</sup> What matters is merely introduction of  $VT_i$ , it being immaterial whether *PT* or *YT* is replaced.

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increase in revenue is accompanied by a corresponding rise in public expenditures. Also, suppose the increase in government expenditures is as import intensive as is the replaced private demand.

If introduction of  $VT_i$  leaves domestic prices unchanged while lowering factor cost,  $ER-IT$  will have favorable price effects on commodity trade and on the balance of payments. If, as is more likely, the tax raises domestic prices, there will be no such effects. The result is very similar to that of substituting  $VT_i$  for the  $YT$ .<sup>42</sup>

### *Summary of Conclusions*

Our major conclusions on the balance-of-payments effects of a  $VT_i$ - $PT$  substitution are summarized in Table 3.

1. Consider first a substitution of  $VT_i$  for  $PT$ , and assume that the corporation income tax  $PT$  was not shifted in the short-run sense. Substitution of  $VT_i$  for  $PT$  may then be expected to have powerful and favorable effects on the balance of payments through its effects on international capital movement. Short-run trade effects on the balance of payments will be neutral or favorable, depending on whether or not domestic prices rise, the former being the more likely situation. If domestic prices do not rise, a flow of domestic capital into export industries will add a favorable longer-run structural effect to the short-run price effect on exports.

Short-run income effects are likely to be of minor importance, but on balance may reduce imports and improve the balance of payments. In all, the effects on the balance of payments are clearly favorable, with the effect on capital flow probably the most important item. The latter will be the more favorable the higher the rates of profits taxes are in the other major capital supplying and importing countries.

If we assume that the corporation tax on domestic products (but not exports) is shifted in the short-run sense, and that removal will result in corresponding unshifting, the short-run trade effects of substituting  $VT$  on the balance of payments are much less pronounced and longer-run domestic capital allocation and international capital movements will be little affected.<sup>43</sup>

<sup>42</sup> This is the case in the context of a full-employment assumption. If this assumption is dropped, employment and income effects may differ, leading to different balance-of-payments repercussions.

<sup>43</sup> If, however, the profits tax had been shifted onto exports as well as domestic products, there will be export-increasing price effects with little effect on capital allocation and flows, on the assumption that no unshifting of foreign profits taxes from export-competing goods results. If foreign competitors are forced to unshift the profits taxes they pay, there will be short-run price effects on trade but a longer-run favorable capital-flow effect may be expected.

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TABLE 3  
SUMMARY OF BALANCE OF PAYMENTS EFFECTS

Effects	Substitution of $VT_i$ with ER-IT for PT Assuming		Addition of ER-IT to PT	
	No Short-Run Shifting of PT	Short-Run Shifting of PT on Domestic Products <sup>a</sup>	No Short-Run Shifting of PT	Short-Run Shifting of PT onto Domestic <sup>a</sup> Products
Short-run price effects	If domestic price level increased by $VT_i$ : export neutral, import neutral	If domestic price level increased by $VT_i$ : export neutral, import reducing <sup>b</sup>	Export neutral	Export neutral
	If domestic price level unchanged by $VT_i$ : export inducing, import reducing	Not applicable <sup>c</sup>	Import reducing	Export neutral
Short-run income effects	Aggregate-demand effects: import reducing; distributional effects: import increasing	Minor	Minor	Minor
Domestic capital effects	Aggregate-investment effect: export increasing; if domestic price level increased by $VT_i$ , no structural capital effects on exports; otherwise, adverse effects	Minor	Aggregate investment, minor; structural capital flow into exports	Same

(continued)

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TABLE 3 (concluded)

Effects	Substitution of $VT_1$ with ER-IT for PT Assuming		Addition of ER-IT to PT	
	No Short-Run Shifting of PT	Short-Run Shifting of PT on Domestic Products <sup>a</sup>	No Short-Run Shifting of PT	Short-Run Shifting of PT onto Domestic Products <sup>a</sup>
International capital-flow effects	Reduction in U.S. capital export and increase in capital import	Over-all gain less but directed toward exports	Effect on total inflow minor, but redirection into exports	Same

<sup>a</sup>For definition of shifting, see footnote 1, above.

<sup>b</sup>It is assumed that export rebate and import tax apply with or without absolute price rise.

<sup>c</sup>See footnote 29, above.

2. Substitution of a value-added tax for personal income tax, or simple addition of a value-added tax will have favorable price effects, only under the unlikely assumption of wage reduction or profits squeeze.

3. Addition of an *ER-IT* arrangement to *PT* will have favorable balance-of-payments effects by inducing structural capital flow from domestic industries to exports and by raising the price of imported goods. However, *ER-IT* will not offset the adverse international capital-flow effects of a *PT* which is not shifted.

### *Tax Effects on Export Competition*

The problems dealt with in the preceding pages may be approached in a somewhat different fashion by asking whether exporters in a high tax rate country are "handicapped" vis-à-vis their brethren in low rate countries.

**PROFITS TAX.** Consider, first, exporters in a country with high *PT* rates. In the absence of short-run shifting, the excess rate was shown to have an adverse total capital effect, as well as to discourage capital imports and induce capital outflow. Thereby, capital formation in the high-rate country tends to be retarded, and export as well as domestic industries will suffer. Assuming perfect capital markets, the net return on capital in the high-rate country for both export and domestic industries will be equated eventually with returns abroad, but this is of little comfort to existing exporters who, like the old investor in the high-rate country, suffer a capital loss. If exporters rely on internal funds to expand foreign markets, the tax imposes a greater disadvantage. However, this may not hold for earnings from foreign subsidiaries where deferral applies. Finally, if *PT* is shifted on domestic sales, the disadvantage of the exporter is even greater, as the export industry must now contend with adverse structural capital flows to domestic industries.

**VALUE-ADDED TAX.** Exporters in a country with high *VT<sub>i</sub>* rates are not handicapped in foreign markets, provided a proper *ER-IT* system applies. Nothing is to be gained or lost, from the point of view of export competition, by either raising or lowering the *VT<sub>i</sub>* rate. The same applies for a high *VT<sub>c</sub>* rate, provided *ER* is figured properly so as to allow for investment deductions at earlier stages of export production.

**COMPOSITION OF TAX STRUCTURE.** It is sometimes suggested that exporters in country A are at a disadvantage relative to those in B if the ratio of *PT* to *VT* yield is higher in A. This is incorrect as a general proposition. What matters, obviously, is the relative level of *PT* rates and, assuming proper adjustments to *PT*, nothing else. The *PT* to *VT*

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yield ratio, therefore, is relevant only for countries with an equal ratio of total yield to GNP, and even then the comparison is made better by direct reference to *PT* rates.

This reasoning, of course, needs to be qualified where the *ER-IT* adjustment deviates from the proper level. If *VT* differentials, before introduction of *ER-IT*, were compensated for by exchange-rate adjustments, subsequent introduction of *ER-IT* may result in a gain, and the absolute level of *VT* rates becomes a significant factor. Similar considerations hold where *ER-IT* adjustments overcompensate for other reasons; but unless such errors in *ER-IT* levels exist, it is only the absolute differential in *PT* rates that matters.

### D. PRESENT SITUATION OF THE UNITED STATES

It has been argued, particularly by businessmen, that the U.S. exporter is at a disadvantage vis-à-vis his foreign competitor owing to the high corporate income tax in this country. The argument is based on the claim that those countries which are the major competitors with the U.S. rely largely on sales taxes, which are rebated on their exports. Replacement of the corporate income tax by a value-added tax, with export rebates, is suggested as a redress for this competitive imbalance. Having considered the theoretical aspects of the argument, what are the facts of the case?

If we consider the six countries of the European Common Market, together with the United Kingdom, Canada, and Japan, we find (see Table 4, column 1) that six of the countries (France, West Germany, the United Kingdom, Canada, Luxemburg, and the Netherlands) have statutory tax rates on undistributed profits not greatly out of line with those in the United States (see Table 4, column 1). If we allow for the rate reduction now pending, the U.S. rate is on the low side, except for the comparison with Belgium, Italy, and Japan. In column 3, two further adjustments are made. Certain other taxes which fall on corporate profits, such as net wealth, capital taxes, local surcharges, and (in the United States) state corporation profit taxes, are included. Also, certain major modifications to the statutory rates, which are necessary to arrive at an approximation of the effective tax rates, are allowed for, such as accelerated depreciation, investment allowances, and other forms of deductions and profits exemptions. The general picture is not changed, the U.S. position being more favorable in some cases and less so in others. On the whole, it appears that the foreign effective rates on retained earnings do not depart radically from the U.S. rates.



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TABLE 4  
COMPARATIVE PROFITS TAXES ON BUSINESS IN SELECTED COUNTRIES AND THE U.S.

Country	Profits Taxes, <sup>a</sup> Statutory Rates, National Level		Estimated Effective Total Tax Rates on Profits, <sup>b</sup> All Levels		Sales, Value-Added, and Turnover Taxes (5)
	Undistributed (1)	Distributed (2)	Undistributed (3)	Distributed (4)	
Belgium	.30	.30	.33	.31	.06 (turnover)
France	.50	.50	.46	.46	.25 (value added)
West Germany	.56	.32	.67	.44	.04 (turnover)
Italy	.36	.15 <sup>c</sup>	.40	.10 <sup>c</sup>	.03 (turnover)
Luxemburg	.45	.45	.34	.34	.02 (turnover)
Netherlands	.45	.35 <sup>d</sup>	.42	.33	.05 (turnover)
United Kingdom	.54	.24 <sup>e</sup>	.45	.20 <sup>d</sup>	
Japan	.38	.28 <sup>f</sup>	...	...	.20 to .40 (manufacturer's sales)
Canada	.50	.50	.45 <sup>g</sup>	.45 <sup>g</sup>	.11
United States 1963 <sup>h</sup>	.52	.52	.48	.48	0
United States 1964 <sup>h</sup>	.47	.47	.43	.43	0

<sup>a</sup>For Germany, the Gewerbesteuer is included. Where more than one tax exists, deductibility of one from the other's base is allowed for.

<sup>b</sup>See Richman, Working Paper II B 2., International Economic Integration Program, under direction of Carl S. Shoup, Columbia University, School of International Affairs.

These effective rates are estimated for a representative manufacturing firm and allow for respective depreciation treatment. The figures include lower level profits taxes and surcharges as well as net wealth and capital taxes. For the U.S., state corporation taxes are included but property taxes are excluded.

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### NOTES TO TABLE 4 (concluded)

<sup>c</sup>Excludes the Ricchezza mobile tax, which is paid by corporations but not again imposed on individual recipients of dividends.

<sup>d</sup>Excludes the income tax (standard rate), which is paid by corporations but not again imposed on individual recipients of dividends.

<sup>e</sup>Selective purchase tax at varying rates.

<sup>f</sup>Rates applicable to profits in excess of 2 million yen.

<sup>g</sup>Varies by provinces, rate applies to Ontario.

<sup>h</sup>Assumed rate reduction proposed in the House tax-cut bill (H.R. 8363, passed Sept. 9, 1963, 88th Cong., 1st sess.; at the time of writing in the Senate Finance Committee).

For distributed earnings, the U.S. position as shown in columns 2 and 4 is less favorable. The United Kingdom, West Germany, and Italy have, to some degree, an integrated corporate and personal income tax system, whereas the United States does not. This would be accentuated by repeal of the dividend credit. However, only in the case of the United Kingdom and Italy does this lead to a significant excess rate in the United States over foreign rates on distributed earnings.

All the countries considered, except the United States and the United Kingdom, impose national sales, value-added, or turnover taxes in addition to the profits taxes discussed above. These taxes are generally rebated on exports with compensating sales taxes imposed on imports. There is considerable rate variation, with higher rates on luxury goods and low or zero taxes on necessities such as foodstuffs. However, the typical rates for manufactured goods, as shown in the table, are very much higher than the value-added tax rate (around 8 per cent), which would be needed in the United States to yield the same tax revenue as the present corporation income tax.

Suggestions for the harmonization of fiscal systems of the Common Market countries<sup>44</sup> include adoption of an equal rate profits tax (about 50 per cent on retained earnings and 15 to 25 per cent on distributed profits) and the abolition of wealth taxes on business. Also recommended is the conversion of turnover sales taxes to the value-added type and their eventual rate equalization to permit their imposition on the origin principle.

Rebates for exports going outside the Common Market countries and compensatory taxes on imports into the Common Market countries would continue. Equal value-added taxes would be combined with low but unequal retail sales taxes to permit adjustments in national tax

<sup>44</sup> See reference in footnote 35, above.

revenues. It would thus appear that the more significant difference in tax burdens on profits of U.S. and foreign corporations exist with respect to the lower foreign taxes on distributed earnings (by split rates or integration of corporate and personal income taxes or under a schedular system), which prevail in some foreign countries. This difference would become even more prevalent if the Common Market countries generally adopt the split-rate type of corporate income taxation. However, differences in the effective rates on retained earnings are more important, so far as the financial ability of the corporation to expand is concerned, and here we have seen the U.S. corporation is not seriously handicapped. Moreover, U.S. exporters are not subject to any value-added tax in the United States and thus compete on equal terms with foreign products, unless, of course, foreign exports are overrebated.

Introduction of the tax credit for domestic investment and more liberal depreciation treatment also combine to reduce the effective U.S. corporation income tax on businesses producing for export. Foreign subsidiaries of U.S. parent companies, which are engaged in the sale of U.S. products abroad are able to take advantage of low foreign tax rates under the U.S. system of tax deferral on foreign income, which is specifically permitted (with certain limitations) under the Revenue Act of 1962.

### *Policy Conclusions*

Policy conclusions on the international aspects of our problem depend on whose view is taken.

From the international point of view, efficiency in international trade and resource use is what matters. In this respect, the position of the United States tax structure relative to that of other tax structures is reasonably satisfactory. While it is true that some of our major competitors in Europe place considerable reliance on value-added taxes while we do not, this is beside the point. Our trade share or capital share is not depressed by such a tax, nor is theirs, since an *ER-IT* arrangement applies. The unilateral existence of *VT<sub>i</sub>* with *ER-IT* in some parts of the world is no cause for nonneutrality; nor are mere differences in the direct versus indirect tax shares in the tax structures of various countries. The relevant question is, by how much the absolute levels of profit tax rates, or cost taxes not subject to *ER-IT*, differ. Existing *PT* differentials with West European countries are minor, especially if the pending legislation is passed, in so far as retained earnings are concerned, but in some cases there is a major disadvantage for distributed earnings. Drastic action, such as substitution of a *VT<sub>i</sub>* for *PT*, would create an

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opposite differential in our favor, much in excess of that which now exists against us. International nonneutrality as between developed countries would be increased, not reduced. What may be more important, any existing and desirable nonneutrality in favor of underdeveloped countries would be eliminated.

To look at the matter from the narrow national point of view of U.S. balance-of-payments interests only, a number of tax adjustments can be suggested that would be helpful. Reduction of *PT*, substitution of *VT<sub>i</sub>* with *ER-IT*, addition of an *ER-IT* arrangement to *PT*, would all be helpful. Eliminating tax deferral would also serve this purpose, at least in the shorter run. While it is easy to point out that these things would be helpful in the narrow sense of U.S. balance-of-payments interest, it does not follow that they should be done. U.S. policy, over the years, has placed great emphasis on the desirability of establishing an international order which will permit a freer flow of world trade. It can hardly afford to scuttle these objectives by an indiscriminate policy of tax dumping, without regard for free trade and the orderly development of tax policies both here and abroad. If a longer view is taken, this applies to the narrow point of view of national interest as well.

The problem, then, is not to determine which tax change would be most helpful on balance-of-payments grounds, but to examine what changes (including nontax as well as tax measures) would be most helpful and least in conflict with these other objectives. This involves a decision (1) on the relative merits of interference or noninterference with capital as against commodity flows, and (2) on which adjustments are best designed to meet either purpose, while raising least objections on other grounds.

It does not seem likely that a drastic move from *PT* to *VT<sub>i</sub>* is the proper solution, unless one were to argue for this on grounds of domestic tax reform, in which case, fuller taxation of retained earnings would be called for as well. Nor do we feel that application of an *ER-IT* arrangement is the proper solution. The technical difficulties of doing that would be considerable, and the relief obtained by applying *ER-IT* to the rate differential would seem to be minor.

## COMMENT

CARL S. SHOUP, Columbia University

This represents a division of labor with Lawrence Krause, who is concentrating on the second part of the paper, "International Aspects."

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These comments add nothing to the main themes of Part 1; they raise only a few subsidiary questions regarding the transition problem, the efficiency discussion of a profits tax limited to corporations, and the question of what tax is appropriate to finance government services that reduce all costs equally.

1. If an income tax is replaced by a value-added tax of the income type, assets already in existence at the time of the change are said to be favored relative to assets produced later. The argument given is: (1) "capital goods produced henceforth will be subject to  $VT_i$ , and this will be equivalent to a tax on capital income," which is of course correct; and (2) "earnings derived from capital assets already in existence are freed from tax as  $YT$  is dropped and thus become the beneficiaries of a capital gain," a statement that seems incorrect, or at least ambiguous. Under the value-added tax (income type), earnings from existing capital assets are not freed from tax; they are subject to tax on net profit after depreciation, just as they had been under the income tax. Earnings from new assets will be treated similarly. For example, let us consider a business firm that engages no labor, but sells a service by wearing out a capital asset. Under the income tax, its tax base will be sales less depreciation, and under the value-added tax (income type) its tax base will be the same. A competing firm that purchases its capital asset after the value-added tax has been introduced will likewise pay value-added tax on its sales less depreciation. As I understand the issue being posed, I am unable to see a need, "in order to have a full equivalence for  $YT$ ," for  $VT_i$ ; to be "combined with an income tax on earnings from old capital," or for depreciation on "old" capital goods to be disallowed.

If the value-added tax is of the consumption type, a transition problem does arise. Owners of old assets will complain that they are getting no deduction at all, under a regime that disallows depreciation but allows subtraction of the cost of an asset in the year of its purchase. These owners will be competing with firms that, buying new assets after the value-added tax is introduced, obtain full deduction. It was this argument that persuaded the Tax Mission to Japan, in its second report, to recommend, as a partial reduction in disparity of treatment, that depreciation be allowed as a deduction with respect to assets in existence at the time the tax was introduced.<sup>1</sup>

<sup>1</sup> *Second Report on Japanese Taxation*, by the Shoup Mission, Sept. 1950, p. 17. Elimination of the disparity would have required an immediate subtraction of the net value of existing capital assets at the time of introduction of the tax (with a suitable carry-over).

2. The efficiency discussion of a profits tax limited to corporations seems to imply that the corporation tax results in straight double taxation—or extra taxation—of all corporate profits, so that an investor in an unincorporated firm, who pays only the personal income tax on his investment income, is compared with a corporate stockholder who is deemed, if there is no shifting, to be paying both personal income tax and corporate income tax on his investment income. In fact, however, since undistributed corporate income is not subject to personal income tax, the corporate tax is in large part a substitute for the personal income tax, sometimes a more than adequate substitute, sometimes less, depending in part on the capital gains and losses provisions. Some misunderstanding may therefore arise when so much of the efficiency analysis is carried on in terms of the corporate tax's "leaving other industries [unincorporated-firm industries] tax free." In the horizontal equity discussion, on the other hand, this issue is specifically mentioned; I am suggesting therefore that it be specifically mentioned also in an analysis of the efficiency problem.

3. When benefits from government expenditure are introduced into the analysis, it is said that neutralization is achieved, when "public services tend to reduce all costs equally," by using a value-added tax of the income type. I am not sure I follow this argument; it seems to me that the income type of value-added tax is appropriate only if the government service is of a kind that reduces the cost of producing by capital equipment while not reducing the cost of producing by direct labor. That kind of a government service, which amounts to a reduction in the interest charge, may then be offset by a tax that impinges on interest, namely, a tax of the income type. If, on the other hand, the government service reduces wage cost only—that is, reduces the amount of labor that needs to be privately hired and privately paid, for any task whatever—it reduces, by an equal percentage, (a) the total cost of producing by direct labor, and (b) the total cost of producing (somewhat more product) by labor plus waiting—assuming that the interest rate remains unchanged. The appropriate charge for such a service is a tax,  $VT_c$ , that likewise does not discriminate between producing a certain amount now and producing somewhat more later.

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I will concentrate on some of the international aspects studied. The authors have investigated two proposed tax changes; the substitution

of an indirect value-added tax of the income variety,<sup>1</sup> having an export rebate-import compensation tax (*ER-IT*) feature for the direct corporate profits tax and, alternatively, the grafting of an *ER-IT* feature onto the existing corporate profits tax. The proposed changes are examined as to their implications for world efficiency and their consequences for the balance of payments.

Recognizing that the incidence of the profits tax plays a crucial role in deducing the consequences of the proposals, the authors proceed with the analysis by first assuming on the one hand that there is no short-run shifting of the profits tax and then assuming on the other hand that the profits tax is shifted forward through an increase in the price of products sold domestically, with no increase in the price of products exported.<sup>2</sup> But two hands prove to be inadequate for the analysis, because the value-added tax, while generally assumed to be shifted forward in its entirety, is occasionally assumed to leave the price level unaffected. This requires two more hands for all the possible combinations, which accounts, I presume, for the joint authorship. The assumptions are passed from hand to hand with the skill and dexterity worthy of a T-formation quarterback and my duties as a discussant might best be served by spotting some of the more important plays and in the process checking to see whether the ball has been dropped in the midst of the hand-off.

#### REVIEW AND SUMMARY FINDINGS

In discussing world efficiency considerations with respect to a shift from direct to indirect taxation, both goods and factor movements are examined. I have some doubts about the methodological approach of resting the analysis upon two unrealistic assumptions—first, movement of factors without movement of goods and then the reverse—without proving that the conclusions deduced thereby are additive. In particular, I am concerned with the discussion in which factor movements alone are postulated and the effects of export rebates and import taxes are deduced. I do not understand how *ER-IT* can be examined where there are no commodity flows, nor can I comprehend the meaning of distortions between domestic and export industries in a situation where there are

<sup>1</sup> For definition see Musgrave and Richman, Part 1, Sect. B, under Profits Tax Versus Value-Added Tax, *PT* Not Shifted.

<sup>2</sup> Since this form of forward shifting is assumed throughout, I presume that the authors' concept of reality is contained in it. This is interesting in itself, since the type of firm pricing behavior depicted would be in violation of the U.S. antidumping laws if practiced by foreign firms when exporting to the United States.

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no exports. The discussion of efficiency when commodity movements are allowed, however, seems much more firmly based. If a value-added tax is fully reflected in selling price and a profits tax is wholly absorbed without price increases, then the allowance of an export rebate-import tax arrangement only for the indirect tax will prevent distortions of commodity flows and is thus in agreement with GATT rules. To the extent, however, that an indirect tax is not passed on in higher prices or a direct tax is forward shifted, then GATT rules inhibit the exports and stimulate the imports of a country employing primarily profits taxes, and some undesirable structural and aggregate capital effects will occur.

Turning to the question of the balance of payments, we see the importance of the shifting assumption. If the profits tax is not shifted, then its removal in favor of a value-added tax with *ER-IT*, which is passed on in higher prices, yields the following results:

1. Prices of both import competing and export goods relative to other countries are unchanged and thus merchandise trade is not affected.

2. The profitability of export industries relative to domestic industries is unchanged, preventing any structural investment shift.

3. However, over-all profitability of investment will increase and thereby encourage investment of domestically owned capital at home rather than abroad, and an inflow of capital from abroad will be encouraged. This will have favorable short-run consequences for the balance of payments, although the longer-run effects are a matter of dispute.

If the profits tax is shifted forward, but only on domestic sales, then its replacement by a value-added tax will affect the balance of payments as follows:

1. Prices of imports will be raised relative to domestic goods and the profit margin on exports will be raised relative to domestic sales, both factors making for a surplus on the merchandise trade account of the balance of payments.

2. The increase in the relative profitability of export industries will lead to a structural shift in their favor and away from other domestic industries with favorable long-run consequences on the balance of payments.

3. International capital flows, however, would not be greatly affected.

Thus the balance of payments is likely to benefit in the short run through the substitution of an indirect for a direct tax, irrespective of the assumption about the incidence of the profits tax. If the profits tax is not shifted forward, then the improvement will occur on the capital



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account, but if the profits tax is shifted, the improvement will appear in the current account. However, there is little indication of the degree of improvement that can be expected under either alternative.

### ER-IT FOR PROFITS TAX

The authors next analyze the consequences of adding an export rebate-import compensation tax feature to a profits tax. Many of the same benefits for the balance of payments can be achieved through this device as with an indirect tax substitution. However, there are many difficulties involved which may make the plan unworkable and possibly undesirable.

### POLICY CONCLUSIONS

There is a marked shift in the tone of the paper when the authors present their policy conclusions. The cautiousness of the taxonomic approach is replaced by a direct expression of belief. Present taxing methods are defended on efficiency grounds and the use of these changes in taxation for helping the balance of payments is deemed inappropriate. While the weight of the arguments would appear to support the authors' judgment, I suspect that some of the caution of the earlier sections should have been maintained. The conclusion is reached that our trade share and capital share are not depressed by current taxes without examining how much shifting of the profits tax takes place in practice. The exclusion of tax shifting from the policy discussion seems strange in view of the central position of this variable in the previous analysis. If there is short-run shifting of the profits tax, then our trade share may well be depressed, particularly if the shifting includes export products. One could have hoped that the authors' expert opinions on the shifting question would have been presented. Furthermore, tax substitution for the purpose of improving the balance of payments cannot be rejected merely on the grounds that it constitutes tax dumping and is inconsistent with our ideal of international policy. In a world of fixed exchange rates, encumbered with an inadequate international monetary mechanism yet subject to persistent imbalances, any policy selected to correct the imbalance will be either inconsistent with liberal policies or will force an intolerable burden on the domestic economies of deficit countries.

The major value of having a tax system containing indirect taxes with export rebates and import compensating taxes may well be the imprecision with which these rebates and compensating taxes are calculated. If a country is prepared to adjust these rates to the needs of the balance

of payments, it obtains the equivalent of a flexible exchange rate confined to the merchandise account. West Germany has in fact used these taxes for that effect.<sup>3</sup> While this type of adjustment mechanism is far from perfect, it is certainly superior to many other alternatives open to deficit countries. I am personally neither convinced of the need, nor favorably disposed toward this approach to solving the U.S. balance-of-payments problem, but I don't think it can be rejected out of hand.

While I have great admiration and respect for this excellent study, much theoretical and empirical work remains to be done before those charged with policy formation can weigh the merits of the tax policies discussed in this paper. Since the substitution of a value-added tax for the corporate profits tax would be a drastic measure, its reversal very quickly would be unlikely if once enacted. This requires that the question of long-run incidence and adjustment to the change be investigated. Furthermore, some guidance must be provided as to the amount of balance-of-payments improvement expected, not merely an expression of the direction of change. This in turn requires a determination of the degree of short-run forward shifting of the profits tax both on domestic and foreign sales. One of the major contributions of this work by Musgrave and Richman might well be the stimulation of further research on these questions.

#### REPLY by Musgrave and Richman

Beginning with the international aspects,<sup>1</sup> we welcome the suggestion that the implications of the shifting assumption be brought out more fully in the concluding section, particularly since one of the authors is committed to the shifting hypothesis.<sup>2</sup> As noted in the paper, the balance-of-payment effects of the  $VT_i$ - $PT$  substitution hinge on the shifting assumption. Without short-run shifting of  $PT$ , the substitution is favorable on capital account, but without short-run price effects on trade. With shifting, it is neutral on capital account, and short-run trade effects are favorable. Substitution, therefore, is favorable in both cases. Moreover, unilateral attachment by the United States of an  $ER$ - $IT$  arrangement to  $PT$  would be favorable, mostly on trade account, with or without shifting assumption.

<sup>3</sup> After the revaluation of the mark in 1961, West Germany decided that the current account had deteriorated excessively and offset the exchange rate adjustment in part through manipulation of taxes.

<sup>1</sup> The suggestion that product and factor mobility be dealt with jointly has been allowed for by amending the text.

<sup>2</sup> See Marian Krzyzaniak and Richard A. Musgrave, *The Shifting of the Corporation Income Tax*, Baltimore, 1963.

This much for the mechanics of the matter. There remains the question whether such steps should be taken. Proceeding on the assumption that *PT* is shifted domestically, the GATT rule of excluding *ER-IT* for *PT* is unjustified. The United States, therefore, would be entitled, without offense against good international tax manners, to demand that such an arrangement be applied. However, we should expect the same to be done everywhere else, provided the same shifting assumption applies abroad. In this case, our net gain would relate to the *PT* differential only, and this differential, as noted in the paper, is rather slight. We concur in the desire for hard empirical evidence in shifting patterns here and abroad and suggest that the resources of the Brookings Institution be applied thereto. In the meantime, the gain from applying *ER-IT* to the corporation tax seems rather too slight to justify the complications arising from such a policy.

It may be noted, moreover, that a logical extension of the shifting assumption would require that the present crediting of foreign profits taxes against the U.S. tax on foreign investment income be replaced by permitting only the deduction of such taxes from taxable income. While these complications might be avoided by outright substitution of *VT* for *PT*, such a substitution would involve rather drastic changes in the domestic tax structure, hardly acceptable without adequate taxation of capital gains; and if it is assumed that other countries follow suit, the gain would again be limited to the modest differential of excess rates.

These discouraging conclusions on the powers of tax policy are based on the assumption that U.S. measures stay within the constraints of liberal trade policy, i.e., that unilateral credits be limited to tax differentials. But, as Krause points out, full preservation of liberal policies may not be possible within a system of fixed exchange rates, and he is entitled to ask why the tax tool should not assume its share of guilt in saving the balance of payments. As always, the student of taxation (trailing his star of the good tax structure) finds this an awkward question.

While the use of taxation for control purposes is surely not to be excluded in principle, the need for tax coordination in an increasingly integrated world seems too great to be burdened, at this formative stage of international tax policies, with the necessity of correcting for maladjustments in the balance of payments. Specific tax measures which improve the U.S. balance of payments, while at the same time promoting or at least not severely damaging international tax neutrality, are all to the good; but beyond this, we prefer the use of the more old-fashioned

correctives, such as tariffs, export subsidies, or more direct impediments to capital exports.

Turning now to the domestic aspects, we accept the objection that substitution of  $VT_i$  for  $YT$  does not free earnings from old capital assets of tax, since income therefrom is still taxed. Noting that this is similar to the tax treatment of earnings from new capital, Shoup concludes that no corrective is needed. If we assume that substitution of the value-added tax leaves product prices unchanged, this seems correct. New assets are acquired at the same cost as old assets. But suppose that (owing to downward rigidity of wage rates) the substitution results in rising prices. New investors now acquire their assets at higher prices than holders of old assets did. Yet, the holders of old assets partake in the increased income stream corresponding to the higher prices. If we stipulate that depreciation (book and tax) is on a replacement cost basis, Shoup's result of equal treatment still holds. But if depreciation is on original cost basis, the net rate of return on old assets rises relative to that on new assets, and capital gains result.

We thoroughly agree that, in fact, the corporation profits tax is not always an "extra" tax but, for higher income shareholders, it acts as a corrective for individual income tax avoidance. This should have been made clear in the efficiency sections of the paper.

Finally, Shoup's brief comments on the appropriateness of  $VT_i$  to compensate for cost-saving government expenditures leave us puzzled. If we define public services which "reduce all costs equally" as services which leave unchanged the relative costs of products whose cost mixes (i.e., ratio of capital income originating to wage income originating) differ, it follows that prepublic service costs are restored and the same relative cost relationships are maintained by a tax which raises both labor (wage) and capital (interest) cost at an equal rate. This, we suggest, is done by  $VT_i$ , which falls on all factor shares alike. This reasoning assumes, as we believe is proper in this context, that the cost of capital is increased to the user. If public services reduce labor cost only, the appropriate remedy, it seems to us, is a payroll tax; and if the reduction is in capital cost only, an interest tax (in value-added terms an investment tax, the reverse of the consumption tax) is in order.

