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Value Added Taxation
The Experience of the United Kingdom

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Introduction

Value added taxation (VAT)—that is, the system whereby enterprises are taxed on the value they add to the materials they buy—has been discussed a great deal in recent years. The purpose of this study is to contribute to the debate on a federal government value added tax in the United States by assessing the British experience against the background of VAT's theoretical attributes. To make an overall assessment of the tax it would be necessary to examine the experiences of other countries in employing VAT. Although references are made to other countries, there is no pretense that they are more than casual. The author's view is that an in-depth study of one country makes a real contribution to the debate whereas too broad an approach may result in superficiality.

Chapter 1 describes the essentials of VAT; compares it with other taxes, particularly payroll taxes, for efficiency, equity, and macroeconomic and balance-of-payments effects; and appraises VAT administrative problems.

Chapter 2 covers the background that led to the introduction in 1973 of VAT in the United Kingdom, tracing the evolution of thought on the tax in the previous decade, the alternative choices facing the government, and the influences on the form and content of the tax act.

Chapter 3 discusses the problems that have arisen since enactment of the tax, what changes have been made in the original structure of the tax, and what others may be made in the future.

Chapter 4 assesses how far the United Kingdom experience does or does not confirm those attributes of VAT that are suggested by economic theory.

Appendixes A to D give detailed structural information on VAT as it has operated in the United Kingdom.

The literature on VAT is so voluminous that instead of a comprehensive reading list a selective bibliography is provided for the convenience of those readers who wish to pursue particular aspects of VAT further.

One further word: Some of the United Kingdom VAT decisions only can be explained by the United Kingdom's need to conform within broad limits with European Economic Community directives. Any country outside that particular grouping has a wider range of choice and might choose a VAT structure with rather different characteristics than those of the United Kingdom tax act.

1

Characteristics of Value Added Taxation

To demonstrate the basic characteristics of value added taxation and to compare it with other major ways of raising revenue, the assumption is made initially that the economy is closed, with no foreign trade, no inward or outward investment, and no flow of investment income from or to abroad. This assumption will be removed once the structure of VAT has been examined.

There are a number of ways to figure value added in an economy. To facilitate understanding, the following simplified and imaginary national income and expenditure accounts show how various ways differ.

Income		*Expenditure*	
Wages and gross profits	200	Consumption	120
Gross domestic product	200	Gross capital formation	80
Capital consumption	50	Gross domestic product	200
Net domestic product	150		

It is possible to devise three separate measures of value added from this simple macroeconomic tabulation:[1]

1. The first measure would be 200. The total of factor rewards, wages and gross profits generated, is identical to gross domestic product (GDP). The tax base in that case would be the same as for gross income, no deduction being allowed on capital account.

2. The second total is 150, derived by deducting capital con-

[1] One of the first expositions of the different concepts of value added tax is to be found in C. S. Shoup, "Theory and Background of the Value-Added Tax," *Proceedings, Forty-eighth National Tax Conference*, 1955 (Sacramento, Calif.: National Tax Association, 1956). For an expanded treatment, see the same author's *Public Finance* (Chicago: Aldine, 1969), ch. 9.

sumption from GDP, giving a figure corresponding to net domestic product. This total broadly corresponds with the kind of base used for income taxation in many countries.

3. The third variant is 120, derived by subtracting gross capital formation from GDP. This total is the same as that of aggregate consumption. The logic of this approach is simply an extension of the normal method of computing profits: deduct wages and material purchases from turnover but make a further deduction for the cost of all new capital goods (whether for replacement or expansion purposes) rather than just for capital consumption. If value added is computed in this way for each firm[2] in the economy the total will then be equal to that of aggregate consumption expenditure, just as in the tabulation.

There is a crucial difference between the first two variants of VAT and the third. The first two differ from one another but are both a form of income taxation, while the third is a tax on consumption rather than on income.

It is the third variant that has been adopted in several countries in Europe and elsewhere in recent years. While there have been cases where deductions for capital expenditure were incomplete, these are now only of historical interest. Therefore, we shall concentrate on the third variant. Precision would require that it be called the consumption variant of VAT but for brevity it will be called VAT in this study.

Refinements now must be introduced to this simple idea. The first is that the tabulation referred to consumption, without distinguishing between personal and public consumption. Obviously, public consumption expenditure at one level of government or another is a standard feature of an economy, whether financed by income taxes or by loans from the private sector. If the logic of computing value added on the basis of full deduction for capital expenditure is adhered to, the tax base then will be total consumption—public plus personal. If the government wished to exclude any or all elements of public consumption from the base, specific measures would be required to reduce the base to a lower figure as the natural base is total consumption.

The second refinement is to remove the earlier assumption of a closed economy. Reverting to the tabulation, suppose the consumption of domestically produced goods is revised from 120 to 100 and consumption imports of ten are added, giving a total of 110 for

[2] This proposition holds whether all production is thought of as being private or whether we introduce a public sector which generates factor incomes, provided that its value added is computed on the basis set out above.

consumption. Let exports of consumption goods be twenty and suppose, for simplicity, that there are no other types of imports or exports. The left side of the tabulation is unchanged; the right side still comes to the same total, the lower consumption total being exactly compensated by the excess of exports over imports. Following through the logic of value-added-tax basic computation, the natural result would appear to be that the tax base remains at 120, the sum of factor incomes less gross capital domestic formation. In effect, this procedure would amount to taxing exports and exempting imports and is known as the *origin* principle. It can be seen that there is no longer an identity between the VAT base and consumption expenditure. To retain such an identity one has to adopt the converse principle of *destination* whereby imports are taxed but exports are not. The mechanics of such a procedure are that value added taxation of exports is refunded whereas imports are a taxable category, the net result being a taxable total of 110, the same as the consumption total.

For a variety of reasons, to which we shall return later, countries imposing VAT have opted for the destination basis.[3] But two points are worth making about the origin variant. The first is that there can be a lack of correspondence between the origin principle and the consumption base whether foreign trade is in capital goods or consumption goods. If, for example, output consisted of 100 of capital goods and all output were exported, the origin base would be 100 but consumption zero. The second is that if one wants a value added tax with regional discrimination, the origin principle comes into its own. Suppose a government wants to favor the northwest part of a country over the southeast and so imposes a higher rate of tax in the southeast. If a destination basis holds, all goods sold in a region, whether originating locally or brought from another region, pay the same rate of tax. Thus, the competitive power of the northwest in no way improves relative to the southeast, whichever set of markets one considers. With the origin principle, on the other hand, producers from the northwest would find it easier to compete in southeast markets and producers from the latter region would find it harder to compete in the northwest. So there are clear advantages to the origin principle if a country puts regional discrimination high on its list of priorities.

[3] One major report did advocate a VAT on an origin base for the United Kingdom as a replacement for part of the income tax system. However, this proposal envisaged that such a tax would be imposed concurrently with the existing type of VAT levied in the European Economic Community on a destination basis and so it did not amount to exclusive adoption of the origin principle. See J. E. Meade et al., *The Structure and Reform of Direct Taxation* (London: Allen & Unwin, 1978), ch. 8.

Collection Procedures

A distinctive feature of VAT administration is that the normal method of collecting the tax is what might appear to be a roundabout one. Instead of computing value added on the basis of a firm's financial accounts and levying tax on that total (after deduction of capital goods inputs), the usual procedure is to operate on the basis of sales invoices. On selling to firm C, firm B will levy an *output tax* at the relevant rate on the value of the sale and the invoice to firm C will incorporate this additional amount. Firm B will have been similarly billed by firm A for supplies so to that extent firm B can be said to have paid *input tax.* The actual amount of VAT handed over to the tax authorities by firm B will be the net difference between output tax and input tax. If the difference is negative, firm B claims a refund. Obviously, the allocation of the burden of the tax depends on the time intervals elapsing between due dates and actual dates of tax payment and repayment. In principle the procedure is symmetrical and both tax payments and repayments can be precisely determined by this means.

The reason for this apparently roundabout procedure is that firm B will, to minimize its tax liability, ensure that it collects an invoice recording tax paid by firm A on its supplies to firm B; similarly, firm C will do the same for firm B's supplies to it. By this means there is a self-policing mechanism built into the system that would not exist if tax were collected from each firm separately on an accounts basis. The self-policing system is not perfect, however. For example, firm A may issue a tax-paid invoice to firm B without actually paying the tax, although this runs the risk of being found out by any cross-checking process. Nor does self-policing apply at the final stage in that purchasers on consumption accounts will have no incentive to insist on tax-paid invoices.

At the same time it should be noted that some commercial transactions do not fit readily into the "tax-from-tax" system, as it is usually called. A used-car dealer purchasing a car from a private individual would be liable for VAT on total sale value (less any taxable inputs such as replacement parts) rather than on his margin on the sale. So in cases such as this[4] special schemes have to be introduced to levy tax on an accounts rather than an invoice basis. If this were not done all sales of cars between private individuals, to continue our example, would tend to take place through newspaper advertisements rather than used-car dealers.

[4] See C. S. Shoup, *The Value-Added Tax,* Center of Planning and Economic Research, Lecture Series 27 (Athens, 1973), p. 35.

Another important distinction in VAT is that between *exemption* and *zero-rating*. Exemption implies that a particular operation is outside the scope of the tax; zero-rating means that it is in the tax net but is explicitly taxed at a zero rate. Exemption will frequently be less advantageous than zero-rating because input tax can be reclaimed in the latter case but not the former. In other words, a negative tax situation is possible with zero-rating but not with exemption. So if the aim is complete freedom from value added tax, as with exports under the destination principle, one has to zero-rate and not merely exempt. The exact effects of exemption on tax liability will depend on which production stage is exempted. Suppose there are stages A, B, and C where A sells to B and B sells inputs to C. If stage A is exempted, it is of little consequence in that B's tax liabilities are correspondingly greater. If stage C is exempted, the tax base is smaller than it would be otherwise. If stage B is exempted, the aggregate base is larger because there is no tax connection between stages A and C. Tax, then, is levied on the sum of turnover at both stages and not just on that at stage C, which, in turn, would equal total value added at all three stages—as would be the case were there no exemptions.

The concept of zero-rating leads naturally to that of multiple rates. Legislators often try to differentiate between necessities and luxuries with this kind of tax as with others. Leaving out whether such differentiation is justifiable or not, certain implications should be noted. One is the difficulty of drawing meaningful borderlines: the greater the multiplicity of rates the harder such problems become. Another implication is the additional administrative costs, public and private, when a trader selling goods taxed at different rates has to apply the relevant rate to the subtotal supplied, all of which must be done under official surveillance. On the other hand, there is no need to divide input tax among the goods selling at different rates of output tax; all that matters for tax purposes is to deduct the total of input tax from the total of output tax, however many rates are levied.[5]

One general point is the effect of VAT on the liquidity position of traders. When there is a delay between the payment of tax and its recovery, liquidity will worsen; conversely, if tax charged by a trader is received some time before it is paid to the authorities, liquidity will improve. The net position frequently will be that the

[5] This argument does not hold when some of a trader's sales are exempt and some are taxable. In that case, one clearly must have an apportionment of inputs between the two categories. These problems are very clearly explained in Shoup, *The Value-Added Tax*.

trading sector as a whole is in a better liquidity position than in the absence of the tax; that is not to say, however, that this margin of superiority holds over alternative taxes.

Comparison with Other Taxes

To evaluate value added taxation one must have a reference standard and there are many candidates—not only alternative ways of raising tax revenue but also the alternative of cutting expenditure. As it would be a herculean task to examine all the alternatives, we shall make some general remarks about them and later on explore the VAT-payroll tax comparison in detail as that alternative seems to be the most relevant in the United States.

Before proceeding, the distinction between tax rates quoted on a tax-inclusive and a tax-exclusive base must be clarified. A tax-inclusive base simply means that, as with income tax, the tax itself is included in the base to which the tax rate applies, whereas a tax-exclusive base excludes the tax element. If we write t_n for the tax-inclusive base and t_e for the tax-exclusive base, we have:

$$t_n = \frac{t_e}{1 + t_e} \text{ and } t_e = \frac{t_n}{1 - t_n}$$

Thus, it follows that a VAT of 25 percent on a tax-exclusive base would be equivalent to one of 20 percent on a tax-inclusive basis. The former is the more commonly used basis but one has to be aware that rates can be quoted in either form.

VAT and a Closed Economy. For expositional purposes we shall revert to the closed-economy case initially and subsequently consider balance of payments and international trade aspects.

One major domestic issue is the efficiency of VAT, which depends on the exact nature of the VAT and of the relevant alternatives. In comparing a uniform and universal VAT with a uniform and universal income tax, one major difference is in terms of efficiency. Whereas an income tax can be said to favor current consumption over future consumption or saving,[6] VAT is neutral between the two alternatives. VAT is by no means the only tax with such a property. Other devices such as an expenditure tax (a tax on income less saving) or a pure income tax combined with immediate writing off of capital expenditure will have the same results.[7] Nevertheless, the

[6] For a formal proof of the proposition see R. A. Musgrave, *The Theory of Public Finance* (New York: McGraw-Hill, 1959), ch. 12.
[7] Meade, *Structure of Direct Taxation*, p. 153.

contrast with the general income tax is an important one and no doubt lies behind the often-repeated argument that VAT has advantages for saving and capital formation.

Other efficiency hallmarks are less easy to establish. Incentives to work may or may not be greater under a consumption tax arrangement than under an income tax one depending on, among other things, whether one sets up a requirement of equal current revenue to the government in both cases. It should be noted that if work incentives are reduced in the consumption tax case, then it is perfectly possible for output to fall to such an extent that the absolute level of saving is less than with the general income tax even though the ratio of saving to income is higher.[8] The relative effects on incentives to take risks also are not clear, depending on how much weight is given, especially in an inflationary age, to the argument that an income tax that allows full loss-offsets is conducive to risk-taking.[9]

Once allowances are made for exemptions and zero-rating and assumptions are relaxed about uniformity or universality of VAT, there is then the usual argument that a selective tax interferes with choice and so imposes excess burdens, though once again we must know whether the resulting distortions are greater or less than with other taxes. Other complications follow in that willingness to work may be associated with particular categories of consumption goods and services and if these categories are subject to especially high (or low) rates of tax, incentives to work may be affected. A standard example is commuter transport costs, which may decrease willingness to work if a higher tax rate is imposed. We do not make any systematic comparison between VAT and a general turnover tax. It can be seen, however, that the latter discriminates in favor of integrated business arrangements while the former is neutral.

The equity of VAT also will be dependent on whether it is taken to be uniform and universal and on the relevant alternative tax. It is a well-known theoretical proposition that in an all-consumption (and no-capital-formation) situation, a proportional and universal tax on factor incomes has exactly the same incidence as a uniform and universal tax on expenditure: it makes no difference whether people

[8] See A. R. Prest, "The Expenditure Tax and Saving," *Economic Journal*, vol. 69 (September 1959), pp. 483–89.

[9] See C. S. Shoup, *Public Finance*, p. 334 for exposition of the argument that VAT is neutral with respect to risk-taking. It follows that the contrast with the general income tax depends on how far the latter promotes or hinders risk-taking. And see M. S. Feldstein, "The Effects of Taxation on Risk-Taking," *Journal of Political Economy*, vol. 77 (September-October 1969), pp. 755–64 for discussion of the loss-offset argument in an inflationary situation.

have less income to spend or whether goods and services are more expensive.

Once saving is admitted into the model, there are complications. The standard argument is that as cross-section data usually show that the ratio of saving to income increases with income, a uniform tax on all consumption will be regressive and so less desirable than a proportional income tax on distributional grounds. However, one must be careful about this argument. First, many income-tax codes contain savings concessions of some sort. Second, it can be argued that a lifetime income concept is more appropriate in this context than a cross-section picture; and if that argument is followed through, it is by no means clear that one can label a consumption tax as regressive. Indeed, from some angles a consumption tax can be judged more equitable than an income tax because it does not differentiate in the same way against those individuals who choose to save in the earlier part of their working lives and dissave later rather than consume all their income in each and every year. Moreover, consumption may be a better indication of well-being than income in that a taxpayer's consumption choice takes into account the estimated future availability of income and total wealth.

The picture is also more complex when we allow for differential value added taxation. The usual assumption is that prices will rise by the full amount of the tax and the distributional impact will therefore differ depending on such factors as whether the more heavily taxed goods are purchased mainly by the rich or the poor. A fuller analysis would have to allow for the possibility of some of the tax impinging on the factors of production of such goods, for their movement out of these industries, and for other price changes as well as those of the heavily taxed goods.[10] In addition the distributional effects of the alternative method of raising revenue should be kept in mind. Furthermore, poor people living on transfers such as welfare payments would be protected against price changes to the extent that such transfers were indexed. This is an important point both in the United States and the United Kingdom and will be discussed further in chapter 3.

In the context of the United Kingdom, there are important linkages between resource allocation and equity effects; the more one takes specific VAT measures to improve equity, the more likely it is that the excess burden problem worsens.

The macroeconomic effects of VAT are crucially dependent on

[10] For further analysis, see A. R. Prest, "The Budget and Interpersonal Distribution," *The Budget and the Distribution of Income* (Saarbrücken: International Institute of Public Finance, 1968).