ADOPTING A VALUE-ADDED TAX IN A DEVELOPING COUNTRY

By

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February 1987

Development Research Department
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Abstract

This paper surveys the decisions that have to be made in coming up with a unique value-added tax, taking into account the conditions typical in developing countries. It discusses the following issues: the type of VAT, the principle of locus of taxation, the calculation method, vertical and horizontal coverage, the issues of single versus multiple rates of tax. Further, it summarizes the factors related to the minimum design of VAT relevant to developing countries and the administrative transition related to the adoption of a VAT. Although the paper is addressed to the question of introduction of a new VAT, the same issues discussed are very relevant to any improvements of any existing VAT. The paper is an offshoot of the Conference on Value-Added Taxation for Developing Countries sponsored by the World Bank in Washington D.C. on April 21-23, 1986.
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The value added is a tax on the element of value that is created by an economic unit during the productive process of transformation of inputs into an output of a commodity or a service. If only the value added of an economic unit is taxed, rather than the value of the product or service, the government can raise a tax revenue which is not likely to be disruptive on productive choices more than once. Except for the retail sales tax, the problem with alternative forms of product taxation is that the product or economic service that is taxed already includes other tax elements so that there is tax on an already taxed product. The merits of alternative forms of product taxation are assessed in many treatises in public finance. This paper surveys the decisions that have to be made in coming up with the unique VAT finally put in place.* It assumes that the problem of choice among the value added tax and other forms of taxation has already been dealt with and that the country has decided that a value added tax is the preferred tax reform to replace a different set of commodity and sales taxes already in place.

Once a country had decided that it wants to build a new form of taxation based on a value-added tax, or VAT, a series of decisions is needed in order to define the VAT which is suitable for the occasion. The choices to be

* This paper is an offshoot of the Conference on Value Added Taxation for Developing Countries sponsored by the World Bank in Washington, D. C., April 1986, and is a companion piece to M. Gillis, C. S. Shoup, and G. P. Sicat (*) which summarizes the overall findings of that conference. This paper deals with the more specific problems faced by country tax decision makers in designing a value added tax. I am grateful for the comments of Malcolm Gillis, Carl Shoup, and Wayne Thirsk.
made will depend on individual country circumstances. The sooner this is made clear, the more realistic will the VAT design be made.

To a greater extent, the country circumstances relate to previous experience with tax administration. A fairly experienced tax administration that collects substantially all that the tax laws are meant to collect from its citizens will be able to institute a VAT that is broad-based and which can take on greater degrees of complexity. A tax administration which has a history of poor tax collection will do better to investigate a limited form of VAT that it can grow with experience to develop and expand. Other things being equal, therefore, it is best to recognize that the tax administration capacity constrains the country to adopt a VAT that it can handle successfully.

A clue to the choice of the structure of the VAT can be derived from previous experience with sales taxes that have been in use in the country, for it is likely that sales taxation of manufactured products, of wholesale enterprises, and even of retail establishments would at least have been tried. In fact a motivation behind the move towards the VAT is often the desire to improve the taxation of commodities and services, mainly directed at the consumption level. Assessing that relevant experience is therefore useful to the design of tax improvements, like the VAT.

The introduction of a VAT does not put in place a tax that is necessarily simpler in administrative terms. The structure would appear deceptively simpler, because under a VAT, the tax rates may be fewer and the
treatment of special sectors may come in under a section either detailing their exemptions or zero-rating of them. However, the resulting tax may be more complex than it seems from an administrative viewpoint. In short, the adoption of a VAT may be seen as a movement towards increasing complexity of the tax system insofar as the taxation of production is concerned. Sectors covered by the VAT would require record-keeping and invoicing to an extent that may not have been done before. Perhaps, the extent of this record-keeping is not any more complicated than what is required in the case of a retail or other sales tax system. If the VAT is to be successful as a tax, the economic units covered should be able to produce a sufficient degree of recording of their internal transactions.

There are several decisions, or choices, that the tax authorities are immediately faced with in undertaking a VAT. Table 1 gives an idea of the sets of decisions required to understand the nature of the problem. It is assumed that the country has not had any type of value-added tax in place before.

Which Type of VAT

The most basic choice of structure refers to the type of VAT to be adopted. There are essentially three choices as to the types of VAT: the gross-product type; the income type; and the consumption type.

Under the gross product VAT, a firm would be allowed to deduct its purchases of materials and services from its sales, but it would not be allowed to deduct the cost of purchases of capital equipment or depreciation
Table 1: ISSUES OF STRUCTURE OR DESIGN FOR THE VALUE ADDED TAX

1. As to Basic Type of VAT
   1.a Gross Product Type
   1.b Income Type
   1.c Consumption Type

2. As to Principle of Which Unit to Tax
   2.a Origin principle -- the producing unit is taxed
   2.b Destination principle -- the final using unit is taxed

3. As to the Method of Calculating the Value Added Tax Due.
   3.a Tax Credit or Invoicing Method
   3.b Subtraction Method
   3.c Addition Method

4. As to Tax Coverage of the Economy
   4.a Vertical coverage -- Up to which stage of economic activity:
       primary industry (such as mining, forestry or agriculture),
       manufacturing industry, wholesale distribution, retail distribution.
   4.b Horizontal coverage -- Treatment at the tax units within the same
       sectors: For instance, treatment of small business establishments
       in contrast to larger business establishments; agricultural enter-
       prises engaged in direct food production as against other commercial
       crops; service industries in transport, communications, entertain-
       ment and food in contrast to financial services or housing.

5. As to Number of Rates of Tax
   5.a Single Rate
   5.b Two Rates
   5.c Three Rates
   etc.
on that equipment. The economic base of this tax is similar to gross domestic product, since it includes gross investment as part of the base.

Under the income type of VAT, both purchases of materials and depreciation on capital goods would be deducted from sales in order to arrive at a firm's value-added. Hence, investment purchases are subject to taxation. The economic base of the tax therefore is similar to net national income.

Under the consumption type of VAT, all business purchases, including those for investment goods, would be deducted from sales in the computation of value added of the firm. The tax base is therefore equivalent to that of total private consumption.

Among these types of tax, the definition of the value-added tax base along the gross product type is the broadest. However, this tax base generates the most problems. It produces a double taxation of capital goods: once, upon their purchase by the firm, and second, when they are sold to consumers. This feature makes it burdensome for capital formation and provides a direct disincentive to saving. On administrative grounds, it also produces difficulties. It becomes problematic to distinguish between expenditures for capital goods from depreciation and for maintenance expenditures. There would be created a net incentive to classify capital purchases as current expenditures because of the deductibility features of the latter from tax liability.
The income type of VAT is based on net income. Since depreciation expenditures are to be deducted from value added, the problem of estimating depreciation poses administrative issues that are complex, which relate to the lifetime of assets. In fact, the use of this type of VAT requires the building up of depreciation estimates, as in the case of accounting for the net income tax.

Of the three types of VAT, most countries have chosen to adopt the consumption type. Those actively considering the VAT as a tax have structured their VAT design along the consumption type model. Only a limited group of developing countries have opted for the income type VAT, and no developed country has adopted the income type. No country has yet adopted a gross product type VAT. It seems likely that this type of VAT would be relegated to oblivion, firstly, because of the messy problems related to the treatment of capital goods and depreciation, and secondly, out of disuse.

The consumption type of VAT has emerged as the preferred design largely because of the search for a superior instrument of taxation of consumption. Historically, the VAT was made to replace a set of consumption taxes, mostly commodity sales taxes. This choice of the consumption type of VAT is probably due to the relative ease of transition from the commodity sales taxation regimes from which the VAT has evolved. It is also not surprising that the European Economic Community nations that have adopted the VAT opted for the consumption type of VAT, most probably out of their experience from administering a variety of commodity taxes destined for final consumption. Another point in favor of the consumption VAT is that it does
not penalize capital investment, unlike the gross product and the income types of VAT. The consumption VAT would be neutral between the decision to save and to consume and the choice of technique since productive inputs will be equally taxed. Not least, of course, the success of this type of VAT has influenced tax advisers to recommend its merits.

Which Principle on the Locus of Taxation?

Since most developing countries are economies dependent on international trade, the basis of border tax adjustment is important. This is also true in the case of large countries in which fiscal issues constitute a significant definition of federal-provincial relations, for it could determine the revenue claims of the provinces or states vis-a-vis the central government.

A tax may be based on the location of production (origin) or on the location of its final consumption (destination). A product that is taxed on the basis of its place of production is said to be based on the "origin" principle of taxation. A common example of the application of the origin principle is the corporate income tax. A product which is taxed on the basis of its place of final use or consumption is taxed on the basis of the "destination" principle. Sales taxes are based on the destination principle. Under the origin principle, exports are taxed while imports are not taxed. Under the destination principle, exports are not taxed, while imports are subject to tax. These two methods of taxation would be equivalent in their effects after sufficient border tax adjustments had been made between importing and exporting tax jurisdictions, given equilibrium prices, including that of foreign exchange. Within a given country (as in the case of a large,
federated state), the exchange rate is not a factor but border tax adjustments still have to be made. Border tax adjustments brings up the necessity of tax rebates between tax jurisdictions to provide proper tax adjustments among countries; in this case, the foreign exchange rate could matter substantially.

The choice between these two principles of taxation is determined by circumstances unique to the country in question. In general, the destination principle of taxation has been adopted almost universally among countries that have adopted the VAT; hence, imports are taxed while exports are not. The use of the destination principle is preferable where there is a strong desire to tax goods sold to final users, as in the case of consumption taxes. A built-in advantage is also the non-taxation of exports, and taxation of imports which favors a desire to promote export trade in many countries.

In a country in which some regions are large internal exporters of major commodities that have taxable value for domestic production, an immediate interest for the exporting regions is to impose a VAT based on the origin principle or to secure concessions from the central authority on tax transfers. This is likely the case of federated states in which some states are large exporters of domestically consumed products. An example would be a region rich in mineral or agricultural resources which sells its produce to a highly industrialized, commercialized, and populated geographic centers. Such a region would want to generate sufficient revenues for its export products, and it could derive these most directly, or in the first instance, through the use of an origin-based VAT.
However, this is not a typical problem for many developing countries, especially in the case of countries with centralized fiscal authorities wherein local governments have fairly limited taxing powers. In such cases, the choice of the destination principle for the VAT would be logical. It is also not a coincidence that the consumption type of VAT works most consistently with the destination principle.

Which Method of Calculation of the Tax?

Three equivalent methods of calculation of the VAT are available: subtraction, credit, and addition. Some of these methods tend to be more consistent with some other principles of VAT selection. Therefore, they are not independently substitutable, once a choice of the other bases of the VAT had been made. Some designs predetermine the suitable VAT. 2/

Theoretically, these different methods of computing the tax are equivalent. The final value added tax collected by government would be the same whatever the method chosen under perfect conditions. In practice, they have specific requirements and would be different in their effects on behavior of the tax unit. For instance, the record-keeping required is different. That has a consequence on who makes the tax payment. In the subtraction method, the values of purchases of materials are deducted from total sales of the firm, to derive the value added on which the tax rate is applied to arrive at the tax revenue. In the credit method, a gross tax is levied on sales in the period, and from this is subtracted the sum of VATs on purchase invoices for the same period, so that the firm only pays the tax for the value added it creates. In the addition method, the basis of the tax is the factor payment,
including profits. The specific factor payments of the firm are added up (wages, rents, interest, and profits) to derive the total value added of the firm. Against the value added, the tax rate is applied. Since the value added for a product grows until the final retail stage prior to consumption, all the taxes computed by whichever method will be added up across the stages of production. Eventually, the total value added tax revenue will be collected. Assuming only one rate of tax and no mismatches and other lapses in the tax system, each of these methods of computing the VAT will yield the same revenue. 3/

In a situation in which different tax rates (depending on the sector or goods or services) are used, the guarantee of yielding the same revenue cannot be made by all methods. In fact, the credit method of computation would be superior to the other two methods. The credit method is more conducive towards making later stage firms keep track of the record of tax payments made by sellers; there is some element of cross-checking that is done. Under the credit method, the final tax liability is dependent on the tax rate at the final stage, so that the intermediate stages would have less incentive to seek special tax treatment. This is not the case in the subtraction or addition methods, because the tax base is the value added at the specific stage of production. A tax unit or group of tax units (such as a sector or industry) would be encouraged to lobby for a lower tax treatment because it benefits them directly. The implication of this setup is that it will cost the tax administration more resources in order to collect the same revenue 4/
The tax credit method is superior to the other methods of calculation, not only in shielding the tax from the pressures of groups seeking to erode the basis of the tax, but also in connection with the implementation of the VAT based on the destination principle. The rebate of tax on exports is accomplished simply by applying a zero rate at the export stage and allowing full tax credit on inputs used in the manufacture of the export. This procedure frees the export tax from the VAT much more simply than in the other methods. Another feature of the tax credit method is that it has some cross-checking features. Cross-checking of invoices can be undertaken by the tax administrators in undertaking tax audits. There is also a self-checking feature which is built in the method: it is in the interest of the buyer to keep track of the taxes paid by the seller so that he can deduct these from the taxes that he pays.

Vertical Coverage: Which Stage of Economic Activity?

Value added taxation was first installed in countries having in mind the comprehensive coverage of various stages of production, down to the retail sector. The European and Latin American examples of adoption of the VAT are in this tradition. When many observers talk of the VAT in developing countries, it is often this model that is alluded to in the context of the VAT.

By vertical coverage, we mean the question of which stages of production would be encompassed by the VAT. Ideally, the coverage should cover all stages of production: primary, manufacturing, wholesale, and retail. In any economy, whether highly developed or not, coverage down to the retail
level would mean the taxation of economic units producing at every stage and in all stages, until the product reaches the final stage prior to consumption by the final user. This is the retail level, comprehensive VAT. Thus, the broadest base for vertical coverage is down to the retail level. Any pre-retail VAT is necessarily of much narrower scope. In practice, however, developing countries have varying capacities and experience in implementing various types of sales taxation, which is the precursor of a VAT. It is often difficult to raise the revenues implied by the presumed base and the tax rate: the administrative machinery may fail to cope with the tax because it may be designed beyond its capacity to implement. This means that realistic factors are at work to fit the tax to the capacity of the tax bureaucracy of successfully implement and develop it.

A VAT at the primary stage is both trivial and impractical. In many developing countries, the myriad existence of subsistence and poorly educated farmers will make the tax impractical to apply. It is feasible to apply the tax to larger enterprises engaged in farming, forestry, and mining, especially since in most cases, such large enterprises would keep appropriate business records. Alternative means of taxing these enterprises, especially if they are engaged in international trade, however, present themselves, and they may be even more attractive and convenient than the VAT from the viewpoint of the government.

A VAT at the manufacturing stage is probably the minimum type of VAT that would be worthwhile. It can be designed initially so as to cover only larger enterprises with a reasonably good level of business record-keeping.
The more developed the industrial sector is, the larger is the potential coverage of the VAT as a revenue measure. Such a VAT would inevitably include the well-organized enterprises within the primary stage of production, especially since it is almost certain, unless they are excluded from the purview of the tax through exemption, that they will sell inputs to industrial enterprises. In a country in which the organized manufacturing sector includes public enterprises engaged in manufacturing, for instance, large petroleum refineries or state-owned mineral and manufacturing enterprises, it makes sense to capture the value added tax at the manufacturing stage if further progress towards distribution leads to serious implementation problems.

Initiating a manufacturing stage VAT can provide a country with the initial experience by which to develop a multi-stage VAT with ever more comprehensive coverage. As one saying goes, the long journey begins with the first step. A manufacturing stage VAT is indeed a sizeable step from cruder forms of sales taxes, including those with VAT-like features. This puts in place the initial administrative infrastructure required for a long-term source of government revenues. If a country decides to set up a VAT, in a later time, to take care of various forms of commodity taxation, an early investment in the administrative infrastructure and in the direct learning process is more likely to be a productive experience than one involving a switch from one set of commodity taxation in favor of a VAT later.

The logical progression of the VAT from the manufacturing stage is at the wholesale level. Wholesale distribution takes in a larger network of
enterprises under the VAT. If a country is faced with the prospect of setting up either a manufacturing stage VAT or a wholesale level VAT, but cannot quite yet face up to the prospects of adopting a comprehensive, down to the retail level VAT, then the wholesale level VAT would be even a bigger step than the manufacturing level VAT. This will cover more enterprises trading with each other, including those already in the manufacturing and the primary sectors.

Sometimes, the coverage under VAT of wholesale distribution could be infeasible because of the required administrative steps and the problems of compliance of wholesale enterprises. But this may not extend to the enterprises engaged in imports. These enterprises are likely to meet the requirements of recordkeeping, and there are mechanisms already well in place to cover taxation of imports. This is one reason why a VAT at the manufacturing stage would also include import distribution.

Of course, the comprehensive, retail level VAT is to be preferred as a starting point if in the judgment of experts it is felt that sufficient experience exists to make a transition to the comprehensive VAT. Most usually, in making the transition, the country involved would have to replace a set of sales taxes at different levels of activity, possibly even a form of retail sales taxation, and unify them under a VAT. This increases the overall coverage of the tax and makes it more broad-based compared to the limited different bases of the single-stage taxes that it presumably will be designed to replace [except for the retail sales tax.]
Horizontal Coverage: Which Sectors, Establishments or Goods to be Covered?

Horizontal coverage refers to the tax treatment of particular units within the same sectors. All forms of taxation encounter the question of determining the extent to which some firms in a sector are to be preferably treated compared to other firms in the sector. Preferred tax treatment refers to exclusion from the tax burden. The desirability of exclusion may be due to practical reasons of implementation.

For instance, it is impractical to include all small establishments under the VAT. To do so is an impossible task, given that myriad small businessmen, often without a place of fixed business, would not be in a position to keep records of transactions. In fact, the compliance cost under the VAT for small establishments is fairly high even in developed countries, as shown by studies made by Sandford (*) for England. Given this, there is no incentive for small establishments to be included under a VAT. From the viewpoint of the tax authorities, dealing with small establishments would mean a high cost of administering the tax. In some cases, the volume of transactions would be so small as to make the tax yield negative returns, if the cost of administration is factored in. Among developing countries, many owners of small establishments may not even be aware of their tax obligations and the question of compliance therefore is even remote. It is not worthwhile to include these establishments because their sales are also negligible.

For this reason, the issue of dealing with small businesses is a very real problem for value added taxation. The question then becomes what would be the appropriate treatment of small businesses under the VAT. A study of
this issue with particular reference to the VAT and other forms of sales taxation was undertaken by Due (*)}. Also, Tait (1986) recently summarized various issues connected with the specific treatment under the VAT of small retailers and traders. The particular recommendation, or common practice among countries, is to exempt a small businesses from the VAT. But this problem poses the question: what are the criteria for small businesses? The cutoff points for defining smallness vary from country to country. In the manufacturing stage VAT covering only large manufacturing enterprises, the small businesses engaged in distribution are already automatically excluded; so the issue either does not arise or is not very significant. Some countries also adopt "simplified schemes", reduced rate, and in the typical advanced country cases, tax exemption with required registration under the VAT or a system of reduced rates.

Another example is treatment of particular types of transactions because of the difficulty of defining their actual value added. Here again, the problem derives from practical considerations of whether it is possible to bring the activity within the ambit of the VAT or not. Sometimes a special economic reason may occur, which makes it imperative to define the activity or service outside the tax. The taxation of services brings this out more clearly compared to any other sector. While it has been shown that most services can be brought under the coverage of the VAT, as shown by Kay and Davis (*), there are some sectors that are more difficult to treat, especially in the context of developing countries. This is probably true of housing and financial services. In the case of housing, it is an asset with a long life which provides a stream of consumption services. In some countries, special
incentives are available to home ownership, for social reasons. In the case of financial services, not only are they varied and sometimes difficult to define, they are also intimately linked to issues of financial development, which are critical to the country's economic development policies. As such, they require care to handle, as Gillis (*) has demonstrated.

Another reason for exclusion of a sector is regional location. For reasons of industrial and other economic development incentives, exemption of sectors located in special regions may occur. The experience documented for Argentina (see Schenone (*) on this account shows that the VAT is not a good vehicle for achieving regional and industrial development incentives. Many distortions occur, including the incentive to create "ghost" establishments located in special regions to take advantage of exemptions.

So far, the discussion is largely related to exemption as a technique for excluding from the tax. The philosophy behind the use of exemption is largely one of force majeure: tax authorities would normally not want to exclude a sector but they are forced to exempt them for practical reasons related to tax administration. An alternative method is available, which is to "zero-rate" the establishment or activity in question. Zero-rating allows the removal of the effects of the VAT from a particular good or service, usually for desirable reasons, like social and economic reasons.

Zero-rating as a technique has a cost. Zero-rating would lift the entire VAT from a commodity or service, and therefore, it would require that the tax collected at earlier stages be refunded. However, refunding is not
always necessary. If the firm sells enough taxable goods too the zero-rating of some other good merely reduces the total VAT on the firm, and no refund is needed unless the zero-rated items are so large and the taxable items so small that the tax credits on purchases by the firm exceed the gross tax on the firms taxable sales.

Refunding constitutes an additional administrative cost. This feature has led tax experts to recommend that for developing countries exemption rather than to zero-rate is an easier technique to use. While there are costs to the zero-rating, Shoup (*), for instance, suggests that the making of refunds provides the government with the opportunity to demonstrate a reputation for fairness. So long as refunding is feasible, it would seem that zero-rating would provide a longer-term solution towards establishing a credible tax.

As one may conclude from this discussion, exclusion under horizontal coverage does not necessarily mean the listing of the tax at a single stage. In some cases, this involves a whole set of industries, covering several stages of economic activity. In that sense, it also affects the vertical coverage of the tax.

There is yet a subset of coverage which may be undertaken using only the value-added technique. This can be true of so-called VAT-like taxes in which care is taken to tax only particular commodities, with allowance for the deduction of previous taxes paid. This can be over a group of some industries. Some countries practice these methods of taxation, without necessarily calling their methods value-added taxation. A single stage manufacturing tax
in the Philippines for many years had this feature, and Lue (*) has called it a pioneering effort in value-added techniques. Many sales taxes are found in developing countries with the same features today. Recently in India, a modified value-added tax is made to cover a limited number of industries. China has also instituted a value-added tax for fourteen industries. There are very restricted applications of value-added techniques and although they qualify under the topic of limited coverage value-added taxes, these are not even close to the VAT at the manufacturing level as discussed in the early section.

How Many Rates of Tax? Single Versus Multiple Rates

With the exception of the zero-rate which can be used to remove the VAT from a sector or industry, the issue about the tax rate is how many rates of VAT can be applied. A second but nevertheless important case is the average level of the tax rate. The average rate of the VAT is important in view of the administrative costs of running an effective VAT and it is therefore useful to ascertain whether that rate is well below the minimum rate it takes to make the VAT worthwhile as a revenue measure. 5/

The argument in favor of the single rate VAT is its administrative simplicity. With a single rate of tax, there are gains derived from administering a simple tax. One implication of a uniform rate is that it will probably facilitate ease of compliance by the taxed sectors. Another is that, even though uniformity may not guarantee optimality on productive choices affecting business establishments, it is nevertheless true that departures from simple structures oftentimes lead to complications that are not
anticipated. Thus, the "keep it simple" argument for taxation, as in some arenas of life, has its appeal.

The argument in favor of multiple rates is that it enables tax policy makers to discriminate much more fully between more favored and less favored sectors of the economy. A policy of differentiation of the tax rate may be adopted for social or economic reasons. Like any ad valorem sales tax, the VAT is essentially a regressive tax in terms of its effects on various income groups. By reducing the tax rate for some and raising it for other sectors, the regressive effect of the VAT may be reduced.

If the objective is to help the poor with smaller or zero tax payments on some items of consumption, rate differentiation may not be the best way. For instance, zero-rating food items will benefit poor consumers as well as rich ones. It reduces potential revenues, and in cases of refunds, will require also additional administrative costs to rebate the tax collected.

One argument that can be raised against complicating the rate structure with many rates is that there may be other tools of policy available which can attain the social equity objectives: through direct expenditures, including transfers and subsidies for the poor, through other supplementary taxes on luxuries, and through a more progressive income taxation. The tax authorities may find it attractive to have the VAT mainly as a revenue generating measure, utilizing other fiscal instruments to attain the income redistribution measures so essential to the government for the accomplishment of social ends. Those who argue in favor of using more rates may insist on
linkage of the VAT to some progressivity schedule because of a distrust of the effectiveness of alternative fiscal measures designed to redress income distribution problems.

As in other points about controversial aspects of income distribution policy, most experts are divided on the issue of how many rates are necessary for the VAT. The essential answer to this query is that it depends on the country concerned. If there is a strong preference to keep the VAT structure able to produce more revenues, there will be a gravitation towards a single rate, or at least two rates. On the other hand, if there is a strong preference to give weight towards resolving some income distribution issues with the use of the VAT, there will be a tendency to have multiple rates.

As a compromise to these two divergent tendencies, something tried in Indonesia was to introduce a single rate VAT of 10 percent, accomplished by excise taxation for some luxury goods, which is outside the purview of the VAT. Another possibility is the use of zero-rating for basic necessities, a standard rate, and perhaps one or two additional rates: one rate is lower than the standard rate, for "necessities", and another rate is higher than the standard rate, for "luxuries". The determination of what constitutes necessities and luxuries is a highly subjective matter and many persons disagree on their relative merits.

What is the Minimum Standard Rate Needed to Make the VAT Worthwhile? The 7 percent Solution

One consequence of having multiple rates is the introduction of additional costs of the administration of the VAT. Most experts agree that the VAT requires the development of an administrative infrastructure which is
relatively demanding. This implies that maintaining the additional revenue requires an additional cost in administration. If a single rate simplifies administrative procedures, it probably also reduces the cost of administration per dollar of revenue. It is not the case that a one rate VAT will not cost much to administer. The addition of a new tax rate will raise that cost, but we do not know by how much. Any rate which is lower than the standard rate will reduce the average revenue implied by the standard rate of tax. Any rate above it would raise that average. As in all cases of progressivity, a reduction in the tax burden of the lower income class will have to be offset from the additional revenues from the higher income class if the standard rate is to be unaffected.

Having these considerations in mind, what then, is the minimum average rate of VAT that is required to make it worthwhile? We have conjectured this rate to be at about 7 percent. If the tax is a consumption type of VAT, this will not yield a revenue which is 7 percent of the value of private consumption in the economy, because of incomplete coverage. Other factors will also be present, such as the extent of compliance for those that are legally covered by the tax. The smaller the establishment, the higher is the cost of compliance, and firms on the margin may decide to evade the tax if the compliance cost is too high (not worthwhile) for them.

What is the Minimum VAT?

What is the minimum design of VAT that a country, given its special conditions, can successfully implement? This is a recurrent common question. Although the exposition already made above has already answered
this question, it is useful to elaborate further on this point because the question will come back.

The answer to this question is that it depends on a number of factors. But they boil down to the administrative capacity of the country to successfully implement the tax. It must become obvious by now that the VAT is useful only in the context of a literate, record-keeping business society. In any less developed country, there is at least a fraction of that community which can be made to conform to the standard of a record-keeping environment. The hopeful element behind the VAT is that as development progresses in a given country, this fraction increases. The size of the establishments covered under the VAT registry is critical. If the retail level of business is dominated by myriads of very small retailers and there exists only a few, large retail establishments, the VAT at the retail level will not work. So, the options available to the country would be limited to the pre-retail stage of VAT. Retail establishments are automatically excluded from the VAT under this arrangement.

As stated earlier, the wholesale stage or the manufacturing stage of VAT are the competing vehicles. In any country, the establishments engaged in these activities are certainly fewer than the number of those engaged in the retail trade. However, even enterprises in manufacturing are made up of very small scale manufacturing in many developing countries, such as handicrafts and home industries in food processing undertaken at the family level, so that it is next to impossible to have full coverage of the manufacturing industry. It is next to hopeless to have a coverage of the informal sector under a
VAT. This sector is relatively larger in low-income countries. In fact, a parallel existence of an informal sector is also present in developed countries. In the developed world, the major reason for the existence of the informal sector -- or the underground economy as it is often called -- is the rigidity in the labor market which encourages the unemployed, the underemployed and the retired to undertake work at the informal sector level.

Pragmatic considerations of tax administration imply the need to exempt small scale enterprises engaged in manufacturing or, in the case of the wholesale level VAT, those in wholesale distribution. However, these problems are not unique to the VAT. They exist under any regime of sales taxation. In short, this problem is not prejudicial to the consideration of the VAT as against other forms of taxation. Special treatment of small scale enterprises is a problem that exists, whether a VAT or another form of sales tax is under consideration. Small enterprises and farmers pose the same problems of implementation in other taxes that attempt to include within their tax base this class of enterprises. The solutions attempted have varied from the use of presumptive taxes, such as what is known as forfait, which is a system in which the tax administrator has the latitude to set the tax rate of an enterprise, presumably after agreement of the taxpayer.

The consequence of these administrative compromises leads to a VAT with a fairly narrow base, initially. It leads to a coverage of the larger manufacturing establishments which are operating only on the factory system. It can include quite easily the import distribution system. Where it is feasible, the VAT may be conceived at the wholesale distribution level, covering only the larger establishments.
The experimentations with VATs of much more limited focus, such as those applicable only to a few industries, is akin to that of confining the tax coverage to the larger manufacturing enterprises, but further narrowed down to a smaller sub-set of industries. As a first step, this represents one adaptation to the VAT. It appears to be a very confined tax experimentation that some developing countries can skip because they may have a capacity for going beyond that level. On the basis of experience of other countries, it can be concluded that many developing countries can meet the requisites of a VAT confined to large manufacturing or wholesale establishments.

The Administrative Transition

The choice of the suitable VAT for the country cannot be isolated from the administrative capacity, as emphasized in the discussion at every turn. This is probably the most challenging component of the experience once a decision has been made on the various options available to the government. In fact, some choices that have been decided upon earlier may have to be revised in the context of administrative feasibility. This refers to issues such as method of collection, horizontal and vertical coverage, and treatment of special sectors, including the problem of number of rates of tax.

Given the improvements of computational technology in recent years, many developing countries have been adopting some level of computerization of their tax filing system. Where this has been done, it is feasible to introduce the VAT probably much more easily, but this is not a guarantee. There are enough examples of underused computers in many bureaucracies, and the tax
bureaucracies of developing countries that have acquired computers are probably more prone to this problem because of the limited absorptive capacity of the tax administration. Setting up a "master file system for taxpayers" is enormously helpful in the processing of tax data, and in the context of reducing the turnaround time for overall tax data retrieval. Naturally the payoff for these developments includes the improvement of the administrative handling of the VAT. It is too hopeful to expect that computerization can solve many administrative problems, including those related to the VAT.

It is too much to expect that computerization will be available efficiently to many developing countries. In the absence of a master file for taxpayers, a special registry for enterprises covered under the VAT would be essential. This is a process that can only be described as tedious but necessary, for the capacity of the tax administration of the VAT will be tested against this registry in its operation. The computational method of the VAT will determine the nature of the invoicing essential for its application. Whatever is the method chosen, the taxpayers under the VAT will have to operate under a system in which documentation of transactions includes not only total sales and the sales taxes payable but also their purchases and the taxes already paid.

Thus, the transitional period in placing a VAT under operation requires careful planning and study. It is too much to expect that it can be implemented successfully quickly within one year. There are transitional costs, which incidentally would be present in the case of any new tax being put in place. Perhaps the pre-retail VAT may create less problems with imple-
mentation than a single stage, retail sales tax in a developing country. Retail establishments are by their nature more plentiful. Under the single-stage retail sales tax as under the comprehensive VAT, the problem of coverage of as many retail establishments defined by their being "large enough" poses the administrative challenge. A large part of the transitional period is not only in the proper design of the forms, the invoicing, and the upgrading of administrative tasks. Much of it is related to an information campaign, which is of far-reaching character. Any country trying to undertake the introduction of the VAT, therefore, would enormously gain from the specific efforts of countries that have successfully put the VAT in place. For instance, a description of the Korean case (see Han (x)) is very informative.

In summary, it is too hopeful to expect that a well-designed VAT can be installed successfully within one year. Two years of preparatory work on the part of the tax administration, including the training of personnel, and especially the public information campaign related to it, would probably be essential for success.

Summary

There are many decisions points to consider once a government has decided to put in place a value added tax. Some of these decisions pre-determine other decisions.

In particular, most countries have chosen this VAT to be most suitable: consumption type of VAT designed along the destination principle, and collected by the credit method. Other features tend to be more variable
depending on the countries concerned. Most countries would want to adopt the comprehensive VAT, down to the retail level, but practical considerations would necessitate the introduction only of the pre-retail VAT. The VAT may have a narrower coverage of sectors because of the limitations related to special conditions of small establishments, especially in developing countries and because of the stage of economic activity covered. When these are taken into account, through the technique of exemption, the VAT would tend to be applicable to the more formal sector of the economy that is composed of larger establishments. The simplest VAT would be conceived with a single rate, but intermediate rates may be introduced to accommodate the need to meet social considerations on the burden of the tax.

Finally, although this paper dealt with the issues about the introduction of a VAT, the same issues would loom large in any improvements designed to broaden the coverage of an existing VAT. It is likely that the most basic choices will have to be committed at the point of introduction. In that respect, there is some irreversibility in the choice of the type of VAT, the principle upon which it is based, and the method of collecting it. Room for improvement will take place essentially in the coverage of the tax. For instance, this can be in terms of the following: movement towards the comprehensive VAT, in the case of a decision in favor of a pre-retail level VAT; increase in the coverage of sectors where before the horizontal coverage is narrow; and changes in the level of the tax rate.
1. One way of presenting such a table is in the form of a decision-tree. In such a case, it can be seen as a sequential decision problem, in which the choice begins with step 1 and moves on to the next decision steps. The sequential decision is less complicated in the determination of basic design. Some decisions lead to a narrower set of subsequent decisions. For instance, as the discussion below will make clear, the following sequence of decisions are very consistent: 1.c to 2.b to 3.a.

2. See, for instance, the table of incompatibilities in Shoup (*) in which the various designs are matched against other possible designs of the VAT chosen by virtue of different criteria.

3. Examples of the application of these different types of calculation are found, for instance, the Tait (*) and Shoup (*). Treasury (I) provides neat examples comparing these three different methods.

4. This is also a consequence of the difficulty of estimating the correct amount of rebates to equalize taxes on goods operating in international trade, whenever such is required within the rules of international trading.

5. It can be expected that for every new tax rate, the marginal cost of maintaining the tax collection machinery rises. The problem is to measure this, so that it can be operationalized.

6. See the previous footnote.

7. See Gillis, Shoup, Sicat (*).

8. Casanegra (*) and Lent, Casanegra, and Guerard (1973) have discussed this issue comprehensively. Hutabarat and Lane (*) have dealt with computer-ization of a VAT in Indonesia, which is a VAT at the manufacturing stage.
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