

VALUE ADDED TAXATION: THE POLICY ISSUES

by

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INTRODUCTION

The growth of value-added taxation from its first adoption in France in 1954 to its present implementation by more than 60 countries is unprecedented by any other concept in taxation. While 80 nations use some form of a VAT, over 40 nations have implemented a comprehensive VAT.¹ Its acceptance by nations in varied economic circumstances and stages of development is most impressive and indicative of the flexibility inherent in its form and design.

Since 1984 the world has witnessed a virtual revolution in the field of applied public finance. During the past nine years there have been at least twenty-five major tax reforms that have taken a "systems" approach to the design of taxation systems--i.e., focusing more strongly on the broader tax system rather than individual tax structures. This is a radically different approach from the norm of the previous three decades.² While individual variations do exist, they have all sought to simplify the structure of the tax systems and to remove incentives for tax avoidance or evasion. Most of the tax reform proposals put forth by these countries came to similar conclusions; namely, that the best design for indirect taxes is a broad base with a small number of rates. It cannot be coincidental that over 30 countries have implemented value-added taxes in the past five years (see Table 1). Most recent entrants to this group, introduced a general consumption tax with only one positive rate of tax.

All countries in Latin America except Venezuela now use the VAT. Brazil was the first in Latin American to adopt a VAT. Bolivia introduced the tax in its most comprehensive and simplest form (i.e. one rate) in 1986.

The value-added taxes that have been adopted in recent years have largely utilized the credit method of accounting administered through invoices, the consumption base and the destination principle. With the number of choices available this certainly reflects some measure of what is considered good in a normative sense. There are very few exceptions to the above configuration.

There are a number of economic benefits in moving to a VAT. The VAT was the choice of the member countries of the EC as the best way to promote tax neutrality, especially with respect to exports and uniformity of the tax burden.³ The recommendation of the EC Fiscal and Financial Committee that all member countries shift to the VAT was formulated as early as 1962.⁴

As with other modifications to a tax system, political and administrative realities can give rise to concessions and variations in the treatment of different classes of taxpayers. Politically sensitive groups are typically small businesses and farmers. Farmers in particular receive favorable treatment using provisions ranging from zero-rating to exemptions. Even without considering the political influence of taxpayers or the revenue loss implicit in making concessions, the availability of administrative resources can substantially constrain the design of the VAT.

WHY DO COUNTRIES CHOOSE A VALUE ADDED TAX

Among the chief reasons countries have chosen a VAT was to avoid the problems inherent to manufacturers' sales or cascading turnover taxes.⁵ As a rough rule of thumb, it is estimated that the effective rate of a cascading tax by the time it reaches the retail stage is approximately two and half times the nominal rate; thus, a turnover tax of 4 percent is equivalent to a retail tax of 10 percent.⁶ In the case of Bolivia, the 2% turnover tax has been estimated to be equivalent to a 4% rate of value-added tax on the same set of goods and services.⁷

Other schemes of mitigating the cascading effect have been attempted--e.g., the single stage manufacturing or wholesale tax.⁸ The so-called ring system of exemption has also been tried unsuccessfully in a number of countries.⁹ The ring system is similar to a retail level tax as manufacturers are "ring-fenced" with all transactions within the ring being tax-free and those outside the ring subject to tax.

Sweden and Norway used the VAT to replace a retail sales tax. If comprehensive, a retail sales tax avoids the problem of cascading. These countries opted for the change as the VAT was best suited to ensure complete exemption (zero-rating) of exports.¹⁰ In other words, the VAT is the ideal tax instrument to eliminate totally the tax component on exports. As export-competitiveness can be adversely influenced by the tax-factor, the capacity to zero-rate easily and accurately is an important consideration.

Sometimes the motivation could be just a long-term structural change intended to broaden the sales tax base and perhaps lower the tax rates. A variant of this is to put in place a new tax which in the long run can be more easily used to raise revenues. For instance, analysis has shown that the incremental social costs of raising an additional dollar of revenues through the tax system can be as high as 80 cents per dollar of additional revenue raised.¹¹ This is because of further induced misallocations of resources in the economy as tax revenues rise. In contrast the potential gains to the economy from rearranging the structure of taxes, so long as the level of tax rates remain the same, are smaller.¹² Thus, the move to a value-added tax could have more far reaching effects on economic performance than on the level of taxes raised in the economy.

In rough conformity with the objective to eliminate cascading is the desire for economic neutrality. To provide the appropriate long-term incentives, the tax system should not distort preferences, e.g. imported inputs over domestic substitutes; capital over labor; vertical integration over smaller production entities; ownership over renting or leasing - or vice versa. Indirect taxes are notorious for creating implicit distortions within an economy. By moving towards a form of value-added taxation, these distortions can be minimized. Economic neutrality can become a secondary consideration in cases where the state purposefully uses the VAT system for meeting certain political objectives. Motivations include purported health, education, and other social policy goals. These interventionist

goals often require a degree of fine-tuning of tax structures inconsistent with present realities of tax administration and tax compliance.¹³

Table 1: Countries Adopting VAT and Percentage Rates Throughout the World¹

COUNTRY	Year Introduced	Standard VAT Rates at Introduction	Standard VAT rates in April
Argentina	1975	16	18(C) ²
Armenia	1992	28	28
Austria	1973	8,16	10,20,32(C)
Azerbaijan	1992	28	11.1
Belarus	1992	28	14,28
Belgium	1971	6,14,18	1,6,12,19.5(C)
Bolivia	1973	5,10,15	13(C)
Brazil ³	1967	15	7,12,13,18(C)
Brazil ⁴	1967	15	18,25(C)
Bulgaria	1993		
Canada	1991	7	7(C)
Chile	1975	8,20	18(C)
Colombia	1975	4,6,10	14,20,35,45(C)
Costa Rica	1975	10	12(C)
Cote d'Ivoire	1960	8	5,10,20,26(IBFD)
Cyprus	1992	5	5(C)
Czech Republic	1993	5,23	5,25(C)
Denmark	1967	10	25(C)
Dominican Rep.	1983	6	8(C)
Ecuador	1970	4,10	10(PW)
El Salvador	1992	10	10(IBFD)
Estonia	1992	10	18
Fiji	1992	10	10(C)
Finland	1990	17	22(C)
France	1968	6.4,13.6,20,25	5.5,18.6(C)
Georgia	1992	28	14
Germany	1968	5,10	7,15(C)
Grenada	1987	30	5,8,15(C)
Greece	1987	6,18,36	4,8,18(PW)
Guatemala	1983	7	7(C)
Haiti	1982	7	10
Honduras	1976	3	7,10(IBFD)
Hungary	1988	15,25	15,25(C)
Iceland ¹	1990	14,24.5	24.5(C)
Indonesia	1985	10	10(C)
Ireland	1972	5.26,16.37,30.26	10,12.5,16,21(C)

Table 1: (Cont'd) Countries Adopting VAT and Percentage Rates Throughout the World¹

COUNTRY	Year Introduced at	Std VAT Rates Introduction	Standard VAT rates in April
Israel	1976	8	18(C)
Italy	1973	6,12,18	4,9,12,19(C)
Jamaica	1991	10	10(C)
Japan	1989	3,6	3,6 ⁷ (C)
Kazakhstan	1992	28	10,20
Kenya	1990	17,20,40,50,270	5,18(IBFD/Std Rate),30,50,75
Korea	1977	10	100
Kyrgyzstan	1992	28	20
Latvia ³	1992	10,12,14	6,12
Lithuania	1991	20	18 ⁶
Luxembourg	1970	2,4,8	3,12,15(C)
Madagascar	1969	6,12	15(IBFD)
Malawi	1989	10,35,55,85	0,5,20(IBFD/Std Rate) 45,70,90(C/Luxury Rates)
Mali	1991	10,17	10,17(IBFD)
Mexico	1980	10	10(C)
Moldova	1992	28	20
Morocco	1986	7,12,14,19,30	7,14,19(PW)
Netherlands	1969	4,12	6,18,5(C)
New Zealand	1986	10	12.5(PW/C)
Nicaragua	1975	6	5,6,10
Niger	1986	8,12,18	10,17,24(IBFD)
Norway	1970	20	20 ⁶ (C)
Pakistan	1990	12.5	12.5(C)
Panama	1977	5	5,10(C)
Peru	1976	3,20,40	16(C)
Philippines	1988	10	10(C)
Portugal	1986	8,16,30	5,17,30 ⁸ (C)
Russia	1992	28	10,20(C)
Senegal	1961-80 ⁹	...	7,20,30,34(C)
Slovakia	1993	5,23	5,23
South Africa	1991	10	10(C)
Spain	1986	6,12,33	6,15,28(C)
Sweden ¹	1969	2.04,6.38,11.1	18,22(C)
Taiwan	1986	5	5(C/PW)
Tajikistan	1992	28	28
Thailand	1992	7	1.5,7(C)

Table 1: (Cont'd) Countries Adopting VAT and Percentage Rates Throughout the World¹

COUNTRY	Year Introduced	Std VAT Rates at Introduction	Standard VAT rates in April
Trinidad & Tobago	1990	15	15
Tunisia	1988	6,17,29	6,17,29(IBFD)
Turkey	1985	10	12(C)
Turkmenistan	1992	28	28
Ukraine	1992	22,28	28
United Kingdom	1973	10	17.5(C)
Uruguay	1968	5,14	12,22(C)
Uzbekistan	1992	30	25
C	=	Coopers and Lybrand, International Tax Summaries 1993.	
PW	=	Price Waterhouse (Guides to "Doing Business in" various countries).	
IBFD	=	International Bureau of Fiscal Documentation Bulletin.	
No indication		No information about recently emerged economies.	

¹ Rates shown in bold type are so-called effective standard rates (tax exclusive) applied to goods and services not covered by other especially high or low rates. Most countries use a zero-rate for a few goods, and Ireland, and the United Kingdom use it extensively to ensure that substantial amounts of goods and services are free of VAT.

² Supplementary VAT rates of 8 and 9 percent on noncapital goods imports: through "catch-up," these can revert to 18 percent retail.

³ On interstate transactions depending on region.

⁴ On intrastate transactions.

⁵ Originally 10% on manufacturing and wholesale, 12% at retail, and 14% at health resorts.

⁶ Also special rates of 10% on imports and 20% on exports except exports to the CIS republics at 10%.

⁷ Applies only to cars. To be reduced to 4.5 percent April 1, 1993.

⁸ In the Azores and Madeira the rates are 4, 12, 21, respectively.

⁹ Senegal's VAT evolved from a limited manufacturers' turnover tax with credits, and no precise date of introduction is given.

When faced with chronic budget deficits and growing expenditures, governments have been turning to tax reforms as a way to raise revenues. Governments seek revenue sources that are income elastic and not sensitive to changes in prices of particular goods or income sources. The wider the extent of coverage at the time of design and inception, the closer one gets to this objective. Some skeptics of the governments' inability to curtail their burgeoning expenses have called the VAT a "money machine" and use it to impede VAT introduction. The difficulty with the argument is that even if it is true, it in no way justifies the retention of narrow-based, distorting, and inelastic taxes.

Finally, perhaps of the greatest practical significance when contemplating reform is the need for a simple and administratively feasible tax. Administrative ease and compliance are almost completely dependent on basic design choices. Complexity can be assumed to increase in quantum progression with the number of rates, and exemptions. The system of multiple rates is endemic in Europe, giving less developed nations a notion that the VAT is an "advanced" form of taxation suitable for wealthy nations, requiring a high degree of administrative sophistication.¹⁴ In fact there is marked tendency for value-added taxes to get simpler with time, as there is a constant pressure from both the tax administration and specific business groups to roll back the number of exemptions and limit the number of rates. As part of customs integration by 1993, the EC has stressed the need to restrict member countries to a maximum of two-rates. Experience with VAT introduction in developing nations with the most rudimentary administrative institutions indicates that a classic VAT with a single rate (plus a zero rate for exports) and few exemptions is easily managed. Countries using complex schedules of exemptions and multiple rates have without exception faced difficulties.

FRAMEWORK FOR AN IDEALIZED VALUE ADDED TAX

Value added taxes can take many forms. Much work has been done in distilling the elements of a so-called "idealized" value added tax. Structural features that match the needs of one country or region may not be directly relevant to another, owing to differences in economic structure. Despite the differences, a country contemplating a VAT introduction (or VAT reform) has a number of choices to make.¹⁵ The structural choices or decisions to be made are:

1. The type of VAT, i.e. consumption, income, or gross product.
2. The regime for international trade: the origin principle (exports taxable, imports exempt) versus the destination principle (exports exempt, imports taxable).
3. The method by which a taxpaying firm may compute its liability: subtraction, tax credit or invoice method, and addition.
4. The products, firms, or sectors to be exempted from the VAT.

5. The technique of freeing a firm from VAT: exemption (the firm need not file a VAT return but does not get a refund of tax paid on inputs) or zero-rating (the firm must file a return, but pays a zero gross tax and gets a refund for VAT payments made at a prior stage).
6. The sectors and firms, although taxable, thought to require special rules or regimes.
7. A single-rate VAT versus a VAT with two or more rates (in addition to the zero rate, if any).
8. A tax-inclusive VAT rate versus a tax-exclusive VAT rate. Or whether the price of goods will be shown tax inclusive or tax exclusive. In the former case the VAT is levied on the total amount of the sale, including the tax itself. In the latter situation, the VAT is levied on the price before tax.

CRITERIA FOR EVALUATING THE VAT

How wide a choice does a country really have in deciding what kind of VAT would be best ?

To begin answering the question, a delineation of the criteria for evaluating the tax is important. First, in the interests of economic efficiency, the tax should create no incentives to alter methods of organizing production and distribution systems. Inherent in this criterion is that the value-added tax must avoid cascading, i.e. multiple application of the tax to the same final consumption items, which causes economic distortions and the loss of neutrality between different ways of organizing the production and distribution of goods. Secondly, the final burden of the tax should be the same on imported and domestic production; protection of domestic industry should be left to tariffs. Thirdly, for both equity and economic efficiency reasons, it is assumed that the burden of the tax in the sense of the pattern of reduction in real income should rest in relation to consumer spending, either uniformly or in conformity with a desired pattern of non-uniformity. Fourthly, the tax must fit into the overall mix of taxes, so that the tax system and other taxes in aggregate meet the standards of equity conventionally acceptable in the country. In most cases this means the avoidance of a significant tax burden on the lowest income groups. Finally, and perhaps most important, the tax must be structured to permit adequate compliance and administration at reasonable cost, a requirement that may conflict with others, necessitating a compromise.¹⁶

As indicated, most countries prefer a consumption type VAT imposed on the destination principle utilizing the tax-credit method of collection. Does this in any broad sense denote an idealized value-added tax? The answer is probably an unequivocal yes.

The Type of VAT - Consumption, Income, or Gross Product

The consumption base has been a much favored tax base from both the perspective of economic neutrality and ease of administration. The consumption VAT restricts the burden of the tax to final consumption goods and thus exempts capital goods. In effect the tax is only on the pure value added within the production stage in question. Consumption VATs are also the easiest to compute - simply subtract from taxes due on sales all taxes previously paid on purchases from other firms. No distinction need be drawn between capital goods and other goods, and no depreciation need be computed.

Consumption, it is argued, is a broad measure of the ability to pay taxes, much like income. Furthermore, it excludes savings from the base, hence does not discourage investment. If we use a flat rate tax there is also an element of fairness, as it treats persons equally regardless of what they choose to consume.

The Income form of value-added tax reflects value added in the conventional sense of total economic activity in the country, i.e. a tax on National Income. The aggregate base is the same as that for a comprehensive income tax.¹⁷ The income VAT has been used by Argentina and Columbia. The state of Michigan in the U.S. uses an income VAT, and an approximate form is used in Turkey.¹⁸

The gross product VAT is computed by subtracting from a firm's sales only purchases of those goods that are used up currently, not purchases of machinery or other capital goods. Depreciations cannot be subtracted. The economic base of the tax is similar to Gross National Product (GNP). Capital investment will be taxed twice under this type of VAT - once at the time of purchase and also when products they produce are sold to consumers.

From an economic growth perspective, both the income and gross product VAT have an anti-investment bias. This is all the more significant in countries that impose substantial income taxes. An income tax taxes saved income and hence investment twice - once as the income is being earned and again as the rewards for saving appear as interest and profit, which are again taxed.¹⁹ Although some might justify double taxation for an income tax on grounds of relative ability to pay, it makes little sense in the case of an indirect tax such as the VAT.

There can be other short-term economic stabilization uses of a VAT by including capital goods purchases in the tax base. Germany subjected capital goods to its VAT in 1973 as a fiscal tool to reduce demand for such goods and thereby control an economy that was heating up.²⁰

Example 1: Operation of Basic VAT Credit-Invoice VATs: Consumption VAT, Gross Product VAT, and Income VAT

Assumptions:

- * Three-year time horizon
- * Annual final product sales of \$1,500 by firm C
- * Annual purchase of intermediate good of \$500 by firm C from firm B
- * Year 1 purchase of capital good for \$400 by firm C from firm A
- * 25 percent straight-line depreciation rate for capital good
- * 10 percent VAT rate

Purchases	Capital	Intermediate Good	Total Purchases	VAT on Purchase	Eligible VAT Credit	VAT on Final Sales	Tax Payment by Firm C	Net VAT on Product
1) Consumption VAT								
Year 1	400	500	900	90	90(1)	150	60	150
Year 2	0	500	500	50	50	150	100	150
Year 3	0	500	500	50	50	150	100	150
2) Gross Prod VAT								
Year 1	400	500	900	90	50(2)	150	100	190
Year 2	0	500	500	50	50	150	100	150
Year 3	0	500	500	50	50	150	100	150
3) Income VAT								
Year 1	400	500	900	90	60(3)	150	90	180
Year 2	0	500	500	50	60	150	90	140
Year 3	0	500	500	50	60	150	90	140
(1) Total Purchases times .1. (2) Intermediate goods purchases times .1. (3) $((.25 \times 400) + 500) \times .1$.								

Exemption versus Zero-rating

Suppliers of goods and services are either taxable or tax-exempt. By definition, exemption relieves the exempt trader's value added from the tax, but all his purchases including capital goods are taxed. Exemption will therefore increase the amount of tax finally paid on intermediate goods – the opposite effect that the exemption was supposed to provide. In the case of final goods, exemption eliminates the tax on value-added in the final stage only. In other words, if a commodity is exempt only at the retail level, then only the retail level is

freed of value-added tax. Although the retailer would not charge value-added tax on its sale, the retailer would not be entitled to a credit for tax paid on the purchase of an exempt item.

If a commodity or service is zero-rated, the zero rated trader's value-added is not taxed and the trader receives a credit for the tax paid on the purchase of materials and other inputs used. Zero-rating, in theory, is the only way to ensure that a product is truly free of VAT. With zero rating, unlike exemption, only the final sale of the commodity needs to be zero-rated, since any tax paid would be credited on the last sale.

The considerations influencing the choice between zero-rating and exemption are: (1) The desirability of freeing users of specific goods or services completely from value-added tax (as with zero-rating), or only partially (as with exemption); (2) The merits of excluding certain firms from the registration and filing of returns. Even from the perspective of firms themselves, there are conflicting considerations. If a firm's goods are completely exempt, it is not required to register and file a return, but the prices of the goods sold by the exempt firm will include the tax incurred by the exempt firm on its purchases. This may be particularly objectionable to the exempt firm's business customers who cannot receive credit for this tax. In this case, exemption would place the exempt firm at a competitive disadvantage.

Example 2: How Exemption Works

Assumptions

- * Purchases of primary products by firm B from firm A = \$ 500
- * Purchases of intermediate good by firm C for firm B = \$1,000
- * Sales of final products by firm C to final consumers = \$1,500
- * 10 percent VAT rate

Primary Product Purchase by B from A	VAT on Purchase	B's Eligible VAT Credit	VAT on Intermediate Product, B's Sales	B's Tax Payment	C's Eligible VAT Credit	VAT on C's Sales to Consumer	C's Tax Payment	Net VAT Paid on All Stages
1) Exempt Primary Product								
500	0	0	100	100	100	150	50	150
2) Exempt Intermed Product								
500	50	0	0	0	0	150	150	200
3) Exempt Retailer								
500	50	50	100	50	0	0	0	100

If the objective is to have a broader tax base, exempting certain goods is preferred to zero-rating them. In addition, the administrative burden of the zero-rating procedure can be onerous. Zero-rating necessitates the payout of refunds, which in itself entails huge administrative costs, requiring verification and disbursement of refund cheques. Furthermore, there is the issue of controlling evasion or fraud. Zero-rating creates an incentive for sellers to exaggerate the values of their final sales and to correspondingly inflate the value of taxable inputs purchased, in order to avail themselves of the refund of a larger input tax element. The administrative resources needed to cross-check such claims can impose additional and perhaps unsustainable demands on administrative systems that are already weak.

From the perspective of taxpayer compliance costs, zero-rating can help avoid complications that would arise if a firm were to handle both taxable and exempt commodities. With zero-rating, such a firm receives credit for tax paid on all its purchases whether for production or distribution for zero rated or taxable goods. But if some goods are exempted, the firm selling the exempt items is entitled to a credit only for the tax on those purchases of materials and other inputs that are used to produce taxable or zero-rated goods. In this case compliance and accounting costs rise dramatically. In a study in the United Kingdom, traders using the zero rate and standard rate had mean compliance costs over three times as great as those using the zero rate alone.²¹

Single versus Multiple Rates

The debate surrounding the choice of a single or multiple VAT rates covers every policy variable considered in fiscal reform. Politicians may think that the public will acquiesce to a VAT more easily if products consumed by low-income households are taxed at lower rates than products consumed by those that are better off. Administrators who actually implement the tax will soon know, if they do not already, that every additional rate will significantly increase cost and complexity. Economists, unfortunately have no common voice - some support the economic elegance of a single rate, and others espouse the optimality of multiple rates.

Early European and Latin American VAT systems frequently attempted to make the rate structure a progressive one, taxing basic necessities at lower rates and luxuries at higher rates, compounded with numerous exemptions. The experience has been painful every step along the learning curve. Just the volume of information that needs to be processed can dampen administrative enthusiasm - if there ever was any. A simple practical VAT (one positive rate, a zero rate, and some exemptions) requires at least 9 pieces of information from each taxpayer (the value of supplies at the two rates and the value of exempt supplies, the value of purchases at the two rates, two liabilities to VAT on output, and two liabilities to VAT on inputs). A VAT with three positive rates, a

Example 3: How Zero-Rating Works

Assumptions:

- * Purchases of primary products by firm B from firm A
- * Purchase of intermediate product of \$1,000 by firm C from firm B
- * Export of final product by firm C = \$1,000
- * 10 percent VAT rate

Primary Product Purchase by B from A	VAT on Purchases	B's Eligible VAT Credit	VAT on Intermediate Product of B's Sale	B's Tax Payment	C's Eligible VAT Credit	VAT on C's Sales to Consumers	C's Tax Payment	Net VAT Paid on All Stages
1) Zero-Rate Primary Product								
500	0	0	100	100	100	150	50	150
2) Zero-Rate Intermed Product								
500	50	50	0	-50	0	150	150	150
3) Zero-Rate Retailer								
500	50	50	100	50	100	0	-100	0
4) Zero-Rate Export Sales								
500	50	50	100	50	100	50(1)	-50	50
(1) \$500 in non-export sales times .1.								

Example 4a: Multiple Inputs, Outputs and Rates

Assumptions:

- * Three intermediate good inputs: i(5%, \$500), j(10%, \$500), k(15%, \$500)
- * Two final good outputs: x(5%, \$1,500), y(15%, \$1,000)

Case 1: Full Compliance -- Purchase and Sales are Correctly Allocated										
Actual Purchases			VAT Credit			Actual Sales		VAT Collected		Net VAT Paid
i	j	k	i	j	k	x	y	x	y	75
500	500	500	25	50	75	1500	1000	75	150	
Case 2: Non-Compliance -- Purchases and Sales are Incorrectly Allocated										
Reported Purchases			VAT Credit Claimed			Reported Sales		VAT Collection Reported		Net VAT
i	j	k	i	j	k	x	y	x	y	-65
0	700	800	0	70	120	2500	0	125	0	

Example 4c: Multiple Inputs and Outputs; Single Rate

Assumptions:

- * Three intermediate good inputs: i(\$500), j(\$500), k(\$500)
- * Three final goods: x(\$2,000), y(\$2,000), z(\$2,000)
- * A single VAT rate of 10%

Case 1: Full Compliance -- Purchase and Sales are Correctly Allocated												
Purchases			Eligible VAT Credit (1)			Sales			VAT Collected			Net VAT Paid
i	j	k	i	j	k	x	y	z	x	y	z	450
500	500	500	50	50	50	2000	2000	2000	200	200	200	
Case 2: Non-Compliance -- Purchases and Sales are Incorrectly Allocated												
Reported Purchases			VAT Credit Claimed			Reported Sales			VAT Collection Reported			Net VAT Paid
i	j	k	i	j	k	x	y	z	x	y	z	450
0	700	800	0	70	80	1000	5000	0	100	500	0	

zero rate, and exemptions needs at least 17 pieces of information.²² Definitions of the various classes of goods can be ambiguous, sometimes arbitrary, and therefore subject to manipulation. This often produces protracted legal disputes. For example - different rates for cars and light trucks, confectionery and food, restaurant meals and ready-to-eat snacks can encourage purposeful reclassification designed to evade taxes "legally." The cost of auditing the classification of exempt and taxable items and the applicable rates thereon at every stage of production, distribution and sale is high, if not impossible.

Economic arguments are equally persuasive against multiple rates. Multiple rates very simply distort consumer and producer choices. Consumer preferences are dynamic even in the uniform rate economies-i.e., what was a "necessity" with a low elasticity of demand could tomorrow become one of relatively indifferent choice (or high income elasticity). Designing a tax structure for stable revenues by differentiating on the basis of "necessities" and "luxuries" will require constant reclassification - which in itself is undesirable. The question posed is - should the government want to change its tax laws because demand became more elastic for one good, supply less elastic for another, or because a new product was introduced or an old one improved?²³ The basic thesis is that once a system of uniform taxation is in place, it can be typically be left as such for many years. That is, the dynamic movements of tastes and technology are not likely to call for important or frequent changes.

The least important of the arguments for a single rate is one of economic optimality. Using a general equilibrium model, it has been shown that rate differentiation leads to reductions in the welfare gains of adopting a value added tax.²⁴ The basic rule as stated by Tait is a good one: "use as few rates as will satisfy the preferences of politicians." In some ways the issue was elegantly dealt with in countries such as Indonesia, Jamaica and the Dominican Republic by using a low rate for all goods and most services. Products, however, can be implicitly differentiated by using a system of excise taxes - which leads one to look at the tax system as a whole in meeting the particular "standards of equity" in each country.

Example 5: Operation of VAT with Excise Taxes

Assumptions:

- * Final product sales of \$2,000 by firm B
- * Purchase of intermediate product of \$1,000 by firm B from firm A
- * 10 percent VAT rate
- * Excise tax of 40% levied at intermediate stage

Pre-Tax Sale to B	Excise Tax on Good	Base for VAT	VAT on Sale to B	B's Vat Credit	Vat on Final Sale	From B's VAT Payment	Total VAT plus Excise Paid
1000	400	1400	140	140	200	60	600

Often the use of multiple rates is justified on the grounds of enhancing progressivity. For example the zero-rating of food is thought to make the tax less regressive. In developed economies with a high degree of monetization this result is usually not achieved. While the VAT on food is eliminated, it applies to all consumers regardless of income. In light of its basic objective of lessening the relative burden of the tax on lower income groups, it does not have much of an effect and it is very expensive in terms of revenue foregone,²⁵ as well as in administrative and compliance costs. From the point of view of compliance costs, administrative costs, or tax policy stability, it is clear that a VAT with a single positive tax rate is much better than the next best alternative.

International Trade Under VAT

When goods cross international frontiers, avoidance of double taxation or non-taxation may be broadly effected in two ways - the transaction may be subject to the taxes of the exporting country (the country of origin principle) or to the taxes of the importing country (the country of destination principle).²⁶ These adjustments, generically called Border Tax Adjustments (BTA), are in conformance with GATT rules and apply only to indirect taxes. Its extension to direct taxes can cause other problems, like the conscious subsidization of exports. GATT rules do permit the levy of import surcharges on imports of types similar to domestically produced goods in the course of whose production indirect taxes are levied. These countervailing surcharges represent, in principle, the equivalent of the indirect taxes paid by the corresponding internally produced commodities.²⁷

Administrative convenience has made the destination principle the preferred choice of most nations. A destination based value-added tax is essentially a levy on domestic consumption, with a zero tax rate on exports. If uniformly applied, the destination principle does ensure that goods consumed within the taxing jurisdiction are equally burdened.

A VAT based on the destination principle is easier to control, principally because goods must pass through a limited number of border crossings with check points. For exports, some customs-type control is usually needed to determine the actual amount of exports and verify accuracy of VAT refunds claimed. Imports, however, require explicit valuation at the border if the value added in the exporting country is to be comprehensively taxed by the importing country.

Example 6: Treatment of Imports and Exports Under Destination Principle

Assumptions:

- * Raw material imports, with customs value of \$1,000 by firm A
- * Custom tariff of 20 percent on raw material import
- * Final product exported for \$2,000
- * 10 percent VAT rate

Custom Value plus Duty	VAT Payable by A on Import	A's Eligible VAT Credit	A's Export Price	VAT due on Export	A's Tax Payment	Net VAT Liability
1200	120	120	2000	0	-120	0

One must note that any attempt at taxing imports accurately is entirely dependent on the exchange rate used to value the item. VAT and other tariffs on imports are typically paid in domestic currency. When using an overvalued exchange rate, the real tax base may shrink dramatically. To offset the incentive for imports caused by over-valuation, countries often employ other forms of import controls to restrict the total volume. Thus instead of correcting the original distortion, another distortion is introduced which, in turn, needs to be rectified. Exchange rate adjustments can also increase the VAT burden on imported goods. Thus, the border tax adjustment can in practice also be used to pursue a protectionist trade policy.

Apart from administrative ease, the decision to opt for a destination based VAT is often derived from a desire to develop/expand export markets. Countries like Sweden, Korea, Canada and Indonesia, for example, used this reasoning.²⁸ For nations with a consumption VAT the destination principle is also the most obvious means of taxing domestic consumption.

HOW THE VAT WORKS WITH INTERNATIONAL TRADE DESTINATION PRINCIPLE

There are, however, some administrative problems that must not be overlooked. Nations aggressively pursuing export markets import substantial amounts of materials, machinery, etc. for export production. Under the basic destination rule, tax would be collected at importation, and the firms would receive credit for this tax and a refund when the products are exported. As a consequence of this manufacturing lead-time, there is often strong pressure to exempt the inputs in order to reduce working capital requirements for export-oriented firms. These pressures are further exacerbated if there is a delay in paying refunds. These pressures will intensify where there is no system to refund input credits. When this occurs, the government may permit credits to be applied against income or other tax. If compliance is good, there is no net revenue loss to the government from exemption

except for the interest on the input tax it would receive before paying out the same as tax credits.

Other dangers from exemptions do exist. This practice will retard the development of domestic production of those inputs currently being imported that are used to produce exports. Unless the domestic production of such inputs is also zero rated, they will bear tax for the period until the refund is issued on the export of the final good. In effect, exemption removes the tax from imported inputs but not from domestic inputs; to do so requires zero rating. This can result in some of the goods imported tax free leaking to final consumers in the domestic market, rather than through taxable sales by registered firms. Governments may set up procedures and regulations to curtail such leakage - this is usually never totally effective. It is more effective to remove such incentives while designing the tax structure itself and make all imported inputs taxable.

Method Determination of the Tax Base and Liability

The specific modalities on how the tax base is established and the liability computed will influence the administration of the VAT. Three methods of computing the actual value-added tax liability are used - the credit method (also called the invoice-credit method), the subtraction method, and the addition method.

The **credit method** is almost universally preferred, at least for the comprehensive VAT. In fact it is clearly a necessity if multiple rates are used. A firm pays tax based upon its sales value and claims a deduction for the VAT paid upon its purchases of goods and services. In this case, the tax paid on inputs serves as an important record, not the specific value of purchases. This tax is then credited against taxes due on the sales made by the enterprise.

The credit method is now widely used in Europe, but there are difficulties. The payment of taxes to the government at each stage in the production process with an implicit refund through credits is expensive from a tax collection point of view. This is apparent when we compare it to a system where transactions flow in only one direction.

For cross-border movements of goods, the EC will be adopting a scheme which will eliminate all fiscal controls at borders. From January 1, 1993, the tax on imports will be entered as a liability on the importer's VAT return, where it will normally qualify for a refund; so no net payment will arise, and the importer's cash flow will benefit from the elimination of the time lag between paying VAT on imports and being given a credit for it. At present there is no VAT on exports, but after 1992 this will only apply in the EC if the purchaser is registered for VAT in their home country.²⁹ While the system does entail some complication in the case of exports, it is planned to be a transitional situation.

Care must also be taken in the operation of the credit system. While there is the possibility of cross-checking invoices filed by the buyer and seller, monitoring is cumbersome. Most administrations do selective audits to discourage evasion. However, the fact that the system is difficult to monitor makes the issuance of invoices equivalent to the printing of money. Frauds involving the use of counterfeit invoices to claim extra credits are common.

The **subtraction method** of computing a firm's VAT calls simply for subtraction of total purchase from the sales of the firm in question. The balance, the value added by this firm, is then multiplied by the VAT rate to determine liability. This is the simplest method and at first sight looks just like the tax credit method. The revenue collected is the same as the credit method if a uniform single rate with no exemption is employed. Advocates of the subtraction method argue that the compliance costs are lower.

The subtraction method was one of the approaches listed by the Canadian Ministry of Finance in the 1987 tax reform proposals for the goods and services tax (GST).³⁰ Canada finally opted for the credit-method when introducing the GST in 1991.

The **addition method** is normally employed by countries using the income type VAT. It sums the factor payments made by the enterprise during the taxable period. Value added in this case is comprised of payments to employees, lessors, interest to creditors, and profits or dividends to owners. Although rarely used, this method is occasionally suggested as a possible means of dealing with certain difficult-to-tax industries. This argument, however, is not compelling for a country contemplating a national VAT to augment an existing income tax system. McLure writes, "A natural place to start would be with the calculation of income for income tax purposes; using different measures of income for the income tax and the VAT would entail annoying and inexcusable complexity. Given existing problems under the income tax, this is hardly appealing."³¹

The principle debate concerning choice of methods in computing VAT liability is normally restricted to the credit and subtraction methods. This often focuses upon the relative burdens of the accounting requirements of the two types of VAT, and whether the issuance of invoices is a sufficiently common business practice to allow the implementation of the credit (or invoice) method. More fundamental structural differences are often overlooked. The following sub-sections draw attention to these differences:

Exemption of an Intermediate Firm

Exemption in an intermediate production stage results in a break in the production chain. Exempt firms will furnish invoices which do not have a tax component, but a tax on inputs is already paid. Consequently, the subsequent firm which uses the exempt intermediate good as an input will pay the VAT on its total sale price, but be unable to claim a credit for the intermediate good.

Use of the credit method will result in an increase in the cumulative VAT paid when compared to the true value added in the entire production chain. While extra revenues are collected, the intermediate producer is penalized. In summary, the government will face no drop in revenues by exempting intermediate producers. However, excusing an intermediate firm from filing a VAT return causes a tax penalty.³²

When using the subtraction method, precisely the opposite defect appears. The cumulative VAT is now less than the VAT rate on the value shown at the retail sale. This arises because at the final stage the intermediate inputs are subtracted from the retail sales value to determine the tax base for the VAT.

The credit or the invoice method can correct the problem of excessive taxation caused by exempting an intermediate good by requiring all exempt firms to file returns and have them

zero-rated. Neither the subtraction of the addition method has any easy means of recouping the lost revenue that results from exempting an intermediate good.

To illustrate, let us consider a three-firm production chain (firms A, B and C). Let the value added at each stage be \$100, with a VAT rate of 10%. Firm B is the intermediate firm exempt from VAT. In the credit method \$10 will be collected from A on a price of \$100; B pays no VAT and does not get any input credit either, selling the product for \$210; firm C adds \$100 in value to reach a tax exclusive price of \$310; as it gets no input credit for VAT in previous stages, it will pay \$31 as tax. The total revenue collection by the system is \$41.

If the subtraction method were employed, firm A will continue to pay \$10 as tax, firm B will pay no tax and not claim any input credit either. The principle difference is in the computation of firm C's VAT liability i.e. $(310 - 210) \times 10\% = \10 .

The total revenue collected by the system is thus only \$20, compared to \$42 in the credit method. This example also illustrates an important benefit of the credit method. Even if VAT is missed at a particular stage, it can be picked up in a subsequent stage. The increase in overall VAT burdens by firms in the subsequent stage can also result in political pressures for some form of tax relief or benefit. If granted, this will further complicate the system.

The following three points describing structural differences in the practical application of the subtraction method and the credit method involve the use of multiple rates. Rather than risk being interpreted as implicit support for multiple rates, the following should be considered as arguments against both multiple rates and the subtraction method.

Multi-product firm with different tax rates

In the case of a multi-product firm with different products taxed at different rates, administrative difficulties are faced with the subtraction method. Under the subtraction method an apportionment of the purchases to the different products is required in order to establish the tax base for each differentially taxed product. Besides increasing the cost of compliance, enterprises can use creative accounting to gain an unfair tax advantage.

Under the credit method, as long as all the sales are subject to tax, all the tax on input is creditable irrespective of the product for whose manufacture they were purchased. To illustrate, let us assume a firm producing two products, X and Y, having tax-exclusive prices of \$200 and \$300 respectively, and subject to tax rates of 10% and 20%, respectively. For simplicity, let us consider only a single input purchased at \$200 (tax exclusive price, \$220 with 10% tax). Under the subtraction method the computation of the final tax burden will require that the input be apportioned; if product X uses \$80 of input and product Y uses \$120 of input we compute a tax liability of \$48: $(200 - 80) \times 10\% + (300 - 120) \times 20\% = \48 . If the credit method were used, the tax would be computed on the ex-factory price with a credit for input tax paid. i.e., $200 \times 10\% + 300 \times 20\% - \$20 = \$60$.

The amount of taxes collected in both the cases varies widely, and the tax paid in the subtraction method can be minimized by appropriately adjusting the apportionment of input between the two outputs.

Degree of vertical integration and total tax liability

The subtraction method in conjunction with differential tax rates provides an incentive to integrate production vertically i.e., the enterprise can end up paying a lower effective rate of tax on the final product by vertically integrating. The tax rate under the credit method is unaffected by the degree of vertical integration. To illustrate the problem under the subtraction method: if the tax rate on an intermediate good is lower than that on a final good, then the overall tax collected on the production of the final good will be less if the intermediate good is produced by a separate company than if the intermediate good production is integrated with the final good production in the same company.

Zero-rating of Exports

A major shortcoming of the subtraction method is the difficulty in zero rating sales. This can be an expensive and pervasive problem where exports need to be zero-rated. If indeed one could assume that all prior stages of the exported good had paid VAT at just one rate - that one rate could be applied to the total of the purchase invoices of intermediate goods of the exporter and a refund easily computed. But these assumptions are rarely correct. Hence, there will be either a net subsidy given when inputs have not borne the full tax, or a penalty will be imposed if the rate of input tax is greater than the assumed nominal rate of tax.

Products, Firms, or Sectors to be VAT Exempt

Choosing goods and services that are to be kept free of the value-added tax is both a political as well as an administrative issue. Once the items to be preferentially treated in this manner are decided, the choice between exempting versus zero-rating them is another major design consideration. This distinct issue of selecting exemption or zero-rating as the means for excusing VAT liability is dealt with subsequently. This subsection addresses the motivations, practices, and associated problems in according this treatment to specific goods and services.

In practice, there are three ways to justify exemptions and zero-rating.³³ First, there are exemptions that may be designed to change, rightly or wrongly, the progressivity of the VAT. Second, there are those goods and services that are "meritorious," deserving to be tax free.³⁴ Third, some goods and services are administratively too difficult to tax, so that it makes sense to keep them free of the tax. Some goods can be justified on all three grounds; for instance, farmers are difficult to tax, the food they produce can be meritorious, and exemption of food may improve the progressivity of the tax.

These concerns are generic and do not stem from any specific issue of design. The practical solution to some of these generic problems has narrowed the tax base and diminished the neutrality of the tax system. A few of the different kinds of sectors and firms that need special attention are examined below.

Small Businesses

In most countries there are a large number of small businesses which contribute very little to the total VAT revenue but greatly complicate its administration. In developing countries this situation is further aggravated by the rudimentary level of business and accounting practices. Since the revenue loss is relatively small, especially compared to the cost and effort of

administration, many countries have exempted them from tax. For example, seven EEC countries exempt small firms completely from registering, collecting taxes, and filing returns.³⁵

Compliance costs to small traders can also be disproportionately large. Estimates for the UK indicate that they can account for between 31% and 78% of revenue obtained from them.³⁶ There is also the issue of economies of scale. The same study estimated mean compliance costs for establishments of different sizes. For traders with taxable turnover of less than 50,000 pounds per year, mean compliance costs were 1.17% of taxable turnover, whereas for those with turnovers in excess of 100,000 pounds, it was only 0.21% of taxable turnover.

Some EC nations exempt the small firms from the payment of the tax but not from registration. Under this system, all firms are registered, but firms with sales volume below a certain figure merely invoice forward to their customers the tax paid on their purchases.³⁷ It is advantageous for certain small businesses to register and collect tax, particularly those who supply goods and services to registered firms. Since purchasers cannot claim input credits with respect to purchases from unregistered small suppliers, they may be more inclined to deal with registered suppliers.

A practical alternative to complete exemption would be to estimate the tax base from the value of purchases. Since small businesses purchase goods from relatively few suppliers, the value of sales may be approximated as a given percentage markup above the cost of purchases including VAT paid on inputs. For the small trader this is a simple operation and requires very minimal bookkeeping. It is relatively easy for the tax administration to audit selected cases to maintain the integrity of the system. Sometimes such a presumptive fixed markup can be higher than the trader's markup, increasing his tax burden. On the other hand, a fixed markup that is too low encourages traders to continue this method rather than adopt normal procedures. If large organizations follow this method, as has been the case in the UK, the loss in revenue can be significant.

A high markup will minimize revenue loss and encourage traders to keep proper records and participate in the full VAT system. High markups will thus provide the right incentives in the long run. In any case, the success of such a method depends upon the co-operation of the trader, through his estimation (or records) of his cost of purchases.

Korea until recently (1986) treated small businesses whose VAT inclusive annual turnover did not exceed Won 24 million (about US\$27,000 in 1986) as "special taxpayers." These businesses had a special VAT rate of 2% levied on their turnover rather than on value added. Those who did business by proxies, agents, etc, with a turnover of Won 6 million or less (about US\$7,000 in 1986) paid 3.5% VAT on their turnover.³⁸ These special rates co-existed with the standard 10% VAT rate. (In 1987, the rate was raised to 13%). In 1987, "special taxpayers" filed 68% of total VAT returns but accounted for only 4% of the VAT revenue. The tax base--i.e. turnover--was determined by the tax authorities as amount of purchases, as shown in the purchase invoices of the firm, plus a fixed rate of markup imputed by the tax authorities for the type of business. This system discouraged small traders from obtaining tax invoices on purchased goods. The system was modified to allow special taxpayers to deduct from their VAT liabilities up to 5% of the taxes they paid on purchases, provided they submitted the tax invoices to the authorities. As a result the practice of issuing invoices can be sustained as there is no direct reason for the small

business to refuse tax invoices.³⁹ However, this system was not entirely satisfactory as many large enterprises classified themselves as "special taxpayers" in order to be subject to a lower tax rate.

Chile provides special treatment for retailers, artisans, and various service activities. These entities are eligible if their average sales per month during the preceding twelve months are less than twenty tax value units. A published tax table indicates the fixed monthly tax payment for each bracket of sales, from which is subtracted the tax paid on purchases. There are only five brackets for these special quotas. The tax value units are modified monthly by the tax administration on the basis of price level changes.⁴⁰

In Argentina, purchasers from unregistered small businesses are required to withhold from the price a final tax calculated on 40% of the net price at the ordinary rate. The withholding agent can take a credit computed by applying the ordinary rate to the net price on which the withholding tax is calculated. This substitutes for the VAT these unregistered small firms would normally pay if registered.⁴¹ This tax is estimated to be fairly high, causing small businesses to register themselves. It is reported, however, that these firms, though registered, file no returns.

A common feature of most of these systems is that these simplified schemes incur a heavier level of taxation than the regular system of imposing the VAT. Among the other modes of taxing the small business sector is the forfeit system. Estimates of sales under the forfeit system are usually done on the basis of trading results for the previous year. Deductions are based on presumed purchases and adjustments for general factors affecting all businesses and factors that might have relevance only to the particular trader.⁴² Many of the Francophone countries use this system - Niger, Madagascar, Ivory Coast, and Senegal. While it is recognized to be a very inexact system, it is regarded as a necessary evil.

Some nations do not set specific sales limits or other codified conditions which if satisfied exclude an enterprise from VAT liabilities. It has been found that the executive power could be given the authority to design procedures to tax this small business sector. This flexibility allows the tax administration to set up special and easier compliance requirements for small taxpayers. The Bolivian VAT, for example, has no legislated minimum size of enterprise that is not subject to the tax, but clearly there are administrative limitations on the size of the establishment from which it is worthwhile to collect the tax.

The thrust of the discussion so far has focused on the available means of taxing small firms and the problems in practice. Another practical problem is one of definition, more specifically, what is a "small" firm. Generally this determination has been made on the basis of sales volume. If this were the only criterion it might not present a fair picture of the enterprises. Some firms may have a high level of value-added but a lower turnover than others, with high purchases of intermediate goods but low value added. Furthermore, firms with highly fluctuating turnover or growing levels of turnover are difficult to regulate on an equitable basis. A threshold of sales that differentiates a "small" firm from one which is taxable has been referred to as the "poverty trap" for small firms in the United Kingdom. Basically, as soon as a small business crosses the line and becomes liable to VAT, tax liability will reduce profits; to earn the same profits net of VAT as he did before, the trader has to have a large increase in turnover, which, of course, is unlikely. Under these circumstances, small traders are likely to suppress sales figures to avoid moving above the

limit, and larger traders are likely to perceive the system as unfair and feel penalized because they have to pay while others escape from the tax. Thus, to develop a fair and comprehensive set of criteria by which to base the definition for a small firm, one might have to include sales, number of associated firms, and a measure of value added itself. Indonesia has a specified annual turnover limit (about US\$19,000) and a capital limit (US\$8,000) - based on 1986 exchange rates. Firms must meet both requirements to be exempt. Austria uses all the three criteria noted above: a turnover limit (US\$205,886); an asset limit (US\$52,940); and a profit limit (US\$114,700). Columbia outdid the rest, moving to a total of four criteria: a legal identity, net income, gross assets, and a limit on the total number of establishments. In Morocco, where the only criterion is the turnover, the limit differs according to the firm's function.

Limits of this type are nearly always controversial. Producers will always try to manipulate borderline cases to escape taxation. Although each country differs in its policy, the most popular criterion is the turnover of the firm. It is evident that there is no single elegant solution to the issue of exempting small firms or entities. However, the need for a system to exempt small enterprises is imperative.

Financial Institutions

The financial sector is often perceived as being highly remunerative and thus worth including in the revenue base. Arguments for exemption do not meet most of the criteria outlined at the beginning of this section. Financial services cannot be considered "meritorious" goods, nor are they consumed largely by low-income groups warranting exemption on grounds of progressivity. The fact remains that despite any arguments for taxing this sector, this is administratively extremely difficult, given existing levels of information processing and accounting in the most sophisticated of banks.

Primary in the debate is the question of what constitutes value added in the financial sector i.e., how does one determine the tax base. Charges for services often do not reveal their full price, except for specific services such as the provision of safe deposit vaults and traveller's checks. The charges for many services are reflected in the interest rates charged on loans and paid to depositors. Thus the difficulty lies essentially in distinguishing a tax upon the financial services from a tax upon the return of the capital.⁴³ Taxation of the full amount of interest charged would amount to taxing the depositors for the use of their capital in addition to the value of services rendered by the financial institution.

There are, however, a number of reasons for wanting to tax the "explicit" service component of the overall package provided by financial institutions. By the very nature of business, financial institutions consume and pay tax on a range of inputs - office equipment, computers, stationery, telephone charges, rents, and electricity. As a result of being exempt, these institutions are forced to bear the burden of this tax, without being able to claim it as a credit against an output tax. Of course, the tax burden will be largely borne by consumers who pay higher interest rates. If the financial institution were made taxable on services and allowed to claim credit for input VAT, they would be inclined to unbundle or separate the cost of services from the margin they build into interest spreads. By paying output tax on services provided, the FI's can reduce the spread in their borrowing / lending interest rate. The advantage to the government is that coverage is broadened by including financial institutions in the tax net. Consumers in turn will now be able to claim a credit for VAT paid on bank services. There will thus be additional pressures on financial institutions to

unbundle their services, and as a matter of fact, pressures to increase the size of the explicit service component, so that their business customers can subsequently claim credits. On a broader economic neutrality dimension, this would have uniform applicability to financial institutions and non-financial firms providing financial services.

Very few countries have attempted to tax the financial sector using the VAT. Israel tried from 1976 to 1979, and now uses a tax that is distinct from the VAT. It is essentially an addition type of VAT base, with the tax being imposed on wages and profits. To effect complete integration of the financial sector in the VAT system, credits should be generated by the payment of tax. Additionally, the invoice chain should remain unbroken to facilitate common administration.

The most persuasive argument against a VAT on the financial sector is the cost of tax compliance. There are two facets of this problem: first, the cost imposed on the financial institution in determining its tax liability can be a substantial portion of the tax revenue generated; second, the cost to the tax administration in monitoring and auditing the accuracy of the return can also diminish the net benefit. Based on similar reasoning, the sixth directive of the European Commission provides that insurance services are to be exempt.⁴⁴ New Zealand and Israel are the only two countries that tax general insurance (life insurance is exempt). New Zealand, however, has abandoned the theoretical nicety of determining the true value added by the insurer's intermediation activities.⁴⁵ The full GST rate is multiplied by the premium and the tax is then remitted to Inland Revenue. If the payer is subject to GST, he claims an input credit. When the insurer pays a claim, the amount is grossed up and the insurer claims an input credit for one eleventh of the amount is claimed even though no invoice showing GST has been received.⁴⁶

The globalization of financial markets continues to pose several other challenges to the tax authorities. They relate to the allocation of profits when funds are borrowed in one jurisdiction and loaned in another, when securities are bought in one jurisdiction and sold in another, or when financial institutions resident in one jurisdiction transact with a branch or subsidiary in another. Such problems, while in concept applicable to transactions in any goods or services, become particularly acute in the case of financial services which do not involve any material use of "real" resources or factor inputs and cannot be measured as a basis of income allocation.⁴⁷

For a country to develop economically, an efficient financial sector is an important element. To date, all systems for applying the VAT to the financial sector have caused too great an interference in the process of financial intermediation. Although exempting the financial sector may result in an increase in the costs of intermediation, this has been much less costly than the additional compliance that would have to be incurred if a theoretically correct system of VAT taxation were imposed on the sector.

Real Property Construction & Rental

While having the characteristics of a tangible physical good, housing presents unique features of both economic and administrative complexity. First, if all housing were rented, the taxation would be straightforward, all rental services should be taxed. But a segment of housing is owner-occupied and changes hands infrequently. The absence of regular market transactions between taxable parties can make this tax difficult to administer. Second, the same real estate can be used for the production of goods and services by taxable firms or for

financial consumption. Third, real estate is used for both consumption and investment. An ideal value-added tax would distinguish between the two. Finally, the construction industry by its very nature presents special difficulties primarily because it produces goods (building) for both capital (business) purposes and consumption (housing) purposes.

For the maintenance of a broad base, neutrality, and simplicity, it is desirable to treat this sector the same way as any other business. This industry, however, is particularly complex, consisting of contractors, subcontractors of varying sizes, contractual obligations, and organizational characteristics. The problem is further complicated when governments seek to hold down the tax element in housing for social reasons. To the extent that taxable services and housing are substitutes, by keeping housing tax free, there is an incentive to substitute housing services for other forms of consumption.

A theoretically elegant solution has been proposed by Conrad, in the form of the Stock-VAT, or the S-VAT.⁴⁸ The S-VAT has one major advantage in that it does not change the incentive for the allocation of real estate between owner-occupiers and renters or between residential and nonresidential use. Under the S-VAT, the first purchaser of either old or new real estate after the VAT is introduced pays VAT on the entire capital value of the sale. In effect, this one-time payment is a prepayment of all future taxes regardless of whether future use is for investment or consumption. Taxable firms receive credit on a purchase but not on a sale. Nontaxable purchasers pay the tax, and nontaxable sellers receive as a refund the taxes paid by the purchaser. When the property is resold at some future date, the seller will be able to demand and receive from purchasers the sales price of the property as part of the remaining balance of the prepaid taxes. The allocation of residential property between owners and renters would be not affected. Renters would still pay the value-added tax over the period of the lease, technically repaying the owner for prepayment.

The main drawback with this proposal in the absence of a credit system would be transactions between registered payers of value-added tax or between registered taxpayers and consumers. A credit system can easily be instituted to solve this problem.

The administration and collection of this tax would involve two steps. First, when the real estate is sold, the title search (or deed) should contain information on whether a value-added tax has ever been paid. No subsequent record is necessary. If the tax has never been paid, the tax is paid on this transaction independent of the tax status of the buyer or seller. If the tax has been paid, the tax status of the seller must be identified. If the seller is a payer of value-added tax, the government collects the funds and gives them to the seller in the form of a refund for prior taxes.

Self construction will continue to remain a problem with the S-VAT, as with any other form of value-added taxation. However, it is worth noting that the value of labor is captured in the price of housing, and will be taxed when the proceeds are realized.

One method of taxing the sector partially is through the purchases of contractors, rather than the entire contract price, but this is not suitable for business purposes. Some countries attempt to circumvent the problem by offering special concessions depending on the type of work i.e., construction, repairs, maintenance, fixtures etc. Experience shows that the ambiguity of these definitions can result in litigation and revenue losses.⁴⁹ The UK has found that taxpayers often attempt to gain the advantages of zero-rated repairs and

maintenance on work that should be liable for a normal rate. Administrative rulings and listings of such transactions cannot be comprehensive. Nor are large-scale physical inspections feasible. In such cases the tax auditors often find the matter not worth pursuing and accept the return as filed.

Related to this issue is the situation of the same builder accepting various types of work. The builder will himself find it difficult to maintain separate accounts when common labor, inputs, and equipment are used for all activities. Additionally, the builder's objective is to maximize his profits, not to assist the tax administration. A practical way to handle the problem is to compute the full value added as if due and to allow a deduction in proportion to cost of tax-favored construction, to total value of construction during the period. This method will roughly compute the value added by both sectors of the business individually.

The Belgian solution has been to make the purchaser of a house liable for VAT in the event the builder fails to pay the tax. This ensures that the purchaser will not act in collusion with builder to avoid VAT. However, the builder must add the VAT to his selling price and collect the money. What if the builder disappears? Must the purchaser pay again? If purchasers are required by law to withhold the VAT when the purchase price is paid and remit it directly to tax departments, this problem will not arise. A clearance certificate for VAT payment should be a precondition for the issuance of a permit for occupancy.

Sometimes private citizens build their own homes, acting as their own general contractors, purchasing inputs (materials and labor). In developing countries individuals will at times build the houses themselves or use community help without paying remuneration. Administratively, this can be a nightmare, in terms of both registration and tax collection. There are also timing problems related to the input tax credit. Housing might take years to complete. If credits are delayed till completion, cash flow problems can occur.

The practices adopted by countries are as diverse as the issues discussed. Feasible solutions depend largely on the economic level of the nation and administrative resources. Most developing countries prefer to tax building inputs alone.

Treatment of Government Entities

Government organizations and institutions account for a substantial amount of consumption expenditure in most nations. There is an inclination to exempt government entities from output taxation, on the grounds that it would merely constitute a transfer within the same entity. While this is true in a very aggregate sense of the term, the inefficiencies that can result from exempting government entities do not justify this gross simplification.

Unless government operations face the same prices, including taxes, as the private sector, comparisons of the size of activities are distorted. In particular, if the public sector can relieve itself of taxes, its true size and influence on the rest of the economy are understated.⁵⁰ Additionally, competition between the public and private sectors gets seriously distorted or biased against the private sector in the provision of goods and services. Most European VAT regimes, in an attempt to reduce distortions in competition between the public and private sectors, essentially "ring fence" the trading activities between public sector organizations. A supplementary issue is one of self-provision of certain services. Entities that are tax free are drawn towards the self-provision of services like laundry, cleaning, and

transport. This can result in the inefficient use of resources and disadvantage independent producers of such services.

From an administrative perspective, exempting public bodies necessitates the determination on a case-by-case basis of which functions constitute "activities of a commercial nature" and the extent of these functions. The wide range of interpretations that can be ascribed to the term "activities of a commercial nature" and the difficulties in allocating costs (and even revenues) between commercial and non-commercial activities impose significant costs both on the inland revenue department in administering the tax and the public body in complying. Furthermore, exempting or zero rating sales to the public sector greatly increases the compliance costs of those firms that make sales to both the government and private sectors.

One of the primary determinants of an elastic source of revenue is that it be comprehensive in its coverage. If the VAT is to be a comprehensive tax applied to the widest range of goods and services, the exemption of the sector detracts from this goal. By taxing government consumption and production for consideration, the broad-based approach is reinforced. If the government exempts services it consumes, a strong case can be made for applying concessions to other forms of supplies and therefore weaken the commitment to the broad-based approach.

The New Zealand Approach to the Taxation of Government Entities

The New Zealand GST represents a preferred model for a VAT with comprehensive coverage and also for its treatment of the government consumption and public sector entities. It treats all government departments, local authorities, and other public bodies as suppliers of goods and services to both the private sector and the government. Distortions caused by second best approaches like the arbitrary ring fencing of trading activities are avoided. It also ensures that no unrelieved tax enters into the final price of goods sold in New Zealand or exported from New Zealand. Finally, in areas where public bodies compete side by side with private firms, such as in refuse removal and gas supply, neither party obtains a competitive advantage (or competitive disadvantage) from the application of GST.

Administratively, public bodies are subject to the same requirements as other taxable traders regarding returns and records. The value of services to the private sector is measured by the revenues received by way of fees and charges. The value of services to the Crown i.e., government is represented by the government's contribution toward the operating expenditure (i.e., the cost of providing goods and services to the government).

The administrative benefit of this virtual 100 percent coverage with no exemptions is that a government entity will not have to distinguish between taxable and exempt supplies made or received. Thus no complex issues of apportionment arise.

Taxation of Government Entities - Paving the way for Privatization

In a number of developing countries there is a growing trend toward the privatization of state owned entities and services. One of the problems faced in privatizing some of these enterprises is that they have operated in environments characterized by being zero rated or in some way have been able to sell free of value-added taxation. In this context, when a firm faces the prospect of privatization it may also have its goods subject to VAT, implying a

substantial increase in its sales prices. If when instituting a VAT (or VAT reform), the coverage is expanded to cover all public sector entities, subsequent privatization of some of the commercial ones will be somewhat easier, as the act of privatization will not involve a change in tax status.

IS THE VALUE-ADDED TAX A REGRESSIVE TAX ?

The most frequent objection to a value-added tax is that it would be unfair to lower income individuals and families. In other words, those opposed to a VAT attempt to garner support by describing the tax as a regressive.⁵¹ A valid starting point for the discussion is to define the term "regressive." A regressive tax, broadly defined, is one in which the poor pay a larger proportion of their incomes in tax than the rich. Income is essentially composed of consumption and savings.

Income is usually considered the most appropriate measure of tax-paying ability, but the VAT is usually applied to a subset of the items consumed. Furthermore, consumption forms a larger proportion of the incomes of lower-income groups i.e., the rich save more and consume less of their overall income, relative to the poor, who consume almost their entire income.

Most analysis of tax incidence focuses on annual consumption or income, wherein lies a major limitation. From this perspective it is not particularly important whether we look at consumption or income in the analysis - attention is being drawn to the distinction between annual and lifetime tax burdens. As mentioned, the view usually held is that taxes like the VAT are regressive because those poor with low income tend to consume a larger proportion of their income. However evidence for this view can depend largely on the time horizon used in incidence analysis. According to Joseph Pechman "... whether regressivity of (indirect) taxes with respect to income would remain for accounting periods longer than one year is not known. It seems clear, however, that the regressivity shown at the lowest income level would be moderated, if not completely eliminated, over the longer period."⁵²

Basically, the thesis is that household income when measured over long horizons is less variable than annual household income.⁵³ This implies that low-income households in one year have some chance of being higher-income households in other years. Thus, even if the share of income consumed by the lowest-income group is higher than that for higher-income groups, taxes on consumption may be less regressive than calculations based on annual income suggest. While lifetime incidence studies are scarce to begin with, almost none are available for developing countries. In Canada it was found that the average burden of the sales and excise taxes for the lowest-income decile falls from 27 percent when annual income is used to 15 percent with lifetime incidence.⁵⁴ The advantages of lifetime incidence analysis over annual calculation are (1) Lifetime incidence incorporates predictable lifecycle patterns in earnings, asset accumulation, and consumption, yielding more sensible inferences with respect to tax burdens; (2) Lifetime incidence averages income and taxes over many years, reducing the importance of variations in calculations based on annual earnings due to unemployment or changes in family status. In effect, calculations based on annual income may provide particularly unreliable guidance on a central tax policy issue such as regressivity,

A value-add tax can be regressive with reference to income only under a limited number of circumstances – a single rate tax with no zero rates (except for exports) and no exemptions, either through law or administration. Of course these circumstance are unlikely to be encountered in practice as any VAT will have a large non-taxed base—e.g., informal sector production of goods and supply of services, small-holder agriculture, etc. In practice, value added taxes rarely are applied to more than 50 percent of total consumption. A VAT can, however, impose too small a burden on the better-off if the items consumed by higher income groups go untaxed. This often results when agriculture and manufacturing are taxed, but items like electricity, telephones, financial services, entertainment, etc. are not. While certain services might be excluded from the tax net for administrative convenience, most of the goods and services consumed by the higher income groups should be taxed. Apart from promoting progressivity, this will make the base more comprehensive with associated revenue and elasticity gain. At the same time, much of the consumption carried out by low income groups administratively is virtually impossible to tax.

In analyzing the degree of progressivity, or designing a progressive tax, certain micro-level distinctions are important. The existence of formal and informal sectors as well as the element of market and non-market time must be recognized.

Distinction Between the Formal and Informal Sectors

It is useful to disaggregate total consumption into those items that are taxed and those that remain outside the tax net. Individual consumption items should be examined on the basis of whether they are produced/provided by the informal or formal sector. In general, sales by the informal sector are not subject to the VAT, whereas the formal sector is by definition taxed.

The importance of this distinction is that effective VAT rates depend crucially upon observed differences in consumption patterns. Though a commodity may be classified as taxable, the actual tax content will differ substantially between highly monetized urban areas and essentially rural subsistence sectors of a developing economy. Rural and poor families usually purchase most of their goods from local small-scale (informal) producers whose output escapes taxation, while urban families are likely to buy more processed goods sold through outlets that tend to be taxed more effectively. Obviously, patterns of VAT burden will differ accordingly.

Distinction Between Market and Non-Market Time in the Consumption Basket⁵⁵

This distinction is fundamental to the more commonly used examples delineating processed and unprocessed food. Similar to the case of formal and informal sectors, non-market time is untaxed, and market time is by definition taxed.

Poorer consumers substitute substantial amounts of non-market time in lieu of taxed inputs. For instance, lower-income households expend more time in cooking their purchases of basic unprocessed food than do higher-income households, who prefer to buy timesaving ingredients which have undergone some processing e.g., dressed chicken in lieu of live chicken. In some countries taxes on clothing is considered regressive. However, poorer

households tailor most of their clothes by themselves or purchase untaxed tailoring services within the community. Laundry services once again are used by higher-income households, while the poor use their own non-market time as a substitute for these taxed services. House construction, painting, repairs, etc. are usually undertaken on a self-supply basis by the poor, wealthier households hire contractors to do the work.

The economic explanation for such seemingly natural behavior is that the low-income are relatively more productive in market activities with respect to their wages than are the high-income earners. A lawyer making \$100 per hour is relatively less productive cleaning his home than his maid who earns \$10 per hour. This helps explain why poor households do most of their cooking from basic unprocessed inputs, whereas wealthier households prefer purchasing processed inputs to reduce the amount of non-market time - or in other words, increase their relative productivity.

Progressivity through Tax System Design

A few of the commonly employed measures to increase progressivity are discussed below.

Exemption of food and other necessities

Food purchase as a percentage of income tends to decrease as income levels rise. It follows that households at the bottom of the income ladder spend a larger share of their disposable income on food. Consequently, most countries completely exempt food for distributional as well as administrative reasons. Farmers are difficult to treat as taxpayers. Exempting food alone and taxing agricultural inputs such as fertilizer, insecticides, seeds, etc. does not totally eliminate the burden of the tax. Many countries thus exempt both food and agricultural inputs.

Distinguishing between processed and unprocessed⁵⁶ foods also helps us to limit the exemption to items consumed by low/middle income groups. It is in theory possible to introduce an element of progressivity by exempting only unprocessed foods. In practice this is difficult to administer effectively, as the distinctions are at times difficult to make and enforce. From a practical standpoint the easiest distinction one can make is to tax any food that comes out of a registered taxpaying production facility e.g., canneries, processing plants, soft-drink bottlers, large bakeries, ice-cream plants, candy factories, etc. A more general solution would be to have a manufacturing stage tax. Though some small-scale processing of similar food products will be occurring, they will be mostly below the taxable threshold and hence escape the tax net anyway. Thus, rather than get into complex schedules and pages of legislation defining processed and unprocessed foods, one can exempt food in general, and tax the output of large-scale plants, which would be inclined to register as they probably use a large share of non-food inputs (i.e., electricity, machinery, packaging materials, etc.), and therefore be eligible to claim credits for input tax.

Basic nutritional studies show that upper-income households substitute more processed food for other inputs like labor and unprocessed food. If the above guidelines are adopted, the degree of progressivity can be increased without creating administrative or legal complications.

Provision of a Refundable Credit

Another alternative, used by several developed states, is to provide a credit against the income tax for an amount which represents the VAT paid on the consumption of goods and services necessary to maintain a minimum standard of living. The objective is to eliminate the VAT from an essential level of consumption. If the available credit exceeded one's income tax liability, it would be refunded in cash.⁵⁷

The Turkish authorities use a variant of this system. Consumers must present receipts showing purchases of "eligible" items (food, clothing, consumer durables, residential fuel, education, transport) on a monthly basis. They then get VAT rebates on the sales purchase price based on a sliding percentage scale.⁵⁸ This complex system seems to encourage compliance and should help lower-income households, but the cost is huge. The total VAT revenue represents some 24 percent of Turkish tax revenue; the consumer rebates repay about 12 percent.⁵⁹

Multiple rate structures have been used in an attempt to impart a degree of progressivity to the VAT. Usually food, clothing, and select services considered important in the low-income consumption basket are taxed at a lower rate. Experience has shown the multiple rate system requires high compliance and administrative cost to function. Despite the existence of these measures to dampen any regressivity in the VAT structure, there are more fundamental questions that need to be answered.

First, is the VAT more regressive than the alternative? The alternative is often the sales tax, tariffs, other forms of turnover tax, or inflation. These taxes are often much more defective on distributional grounds as well as in terms of economic neutrality. In this context it is revealing to examine the impact of not having a VAT.

Second, is the VAT necessarily the appropriate instrument to provide progressivity in the system? The VAT is intended to be a neutral, efficient, buoyant revenue raising tax. It is not designed to correct for income or wealth inequalities; other parts of the system are supposed to do that like the personal income tax,⁶⁰ or of more importance, the coverage of government expenditures.

Policymakers considering the adoption of the VAT are at times interested in studies providing numerical results on who bears the burden of the tax. Incidence studies use economic theory and provide best guesses about the incidence of various taxes among such broad groups as consumers, workers, owners of capital, etc. At times the level of disaggregation can be carried further, delineating consumers of particular products, workers in a given industry, or corporate stockholders. It is easy to see the potential usefulness of such information. Unfortunately to be indicative of reality, the quality of the data and assumptions underlying their use are important. Most developing nations are unable to provide the requisite data to make any such analysis meaningful. More work needs to be done in this very important area. In fact, further work on the distributional impacts of taxation will depend entirely on such studies. In their absence, normative judgments will continue to be made with questionable influence on tax policy.

CONCLUSIONS

The rapid acceptance and outstanding performance of the VAT in countries at very different stages of development and character, is indicative of its future in tax systems around the world. Unlike income tax policy, the tax policies associated with the VAT have slowly evolved toward a greater degree of simplicity and uniformity. Countries introducing the VAT since the mid 1980s have generally opted for systems with fewer rates (often only one positive rate), more restricted exemptions, and a smaller number of items subject to zero rating than those who started using a VAT earlier.

The widespread application of the consumption type VAT, utilizing the credit method with invoices for administration, and on a destination basis, indicates a great deal of consensus on the basic tax policies to follow when introducing a VAT. Recently there has been a growing consensus that it is feasible and preferred to have only one positive rate of tax, with a zero rate on export sales. When there is a desire to tax some items at higher rates, the preferred option is to use a small set of selective excise taxes. There is a general consensus, that at this time the financial sector should be exempt from the VAT.

All systems exempt small business, but the way it is done varies greatly across countries. There is, however, a growing movement to exempting small business on a criteria that does not refer to the trade level of the business i.e., primary, manufacturing, wholesale, or retail. The treatment of farmers varies greatly, from being fully taxable to being zero rated. The most common form in developing countries is to exempt agriculture sales and some of the major inputs to agriculture e.g. fertilizer. The treatment of food is also highly variable. In a number of countries sales of unprocessed food (defined in some way) are exempt, while processed food is fully taxed.

Construction and real estate is another area where there is little consensus. Countries at every level of development have experimented with different tax policies. Some countries, e.g. the United Kingdom, have tried several methods sequentially. Taxing the inputs into construction, while exempting the sales of real estate and rents, is an option used by many countries. In general the taxation of services varies greatly from country to country. The broad (but not comprehensive) taxation of services in New Zealand, Canada and Chile might serve as a guide to the techniques that can be used and the problems one faces when a large proportion of the service sector is brought into the VAT net.

Although the VAT when applied in an industrialized country is not a simple tax, its compliance and administration costs tend to fall over time. Efficient procedures might take some time to be developed, but once they are in place the system usually remains very stable.

The regressive nature of the VAT and its inflationary impact have been greatly exaggerated. In poor countries the VAT is likely to be quite progressive, if its base is defined broadly. This arises simply because many of the purchases made by the poor will be administratively exempt from tax, while most of the purchases of the higher income groups can be taxed. Likewise, with the inflationary impact of the VAT. Over a period of a year or two the effect of a VAT should be to lower the rate of inflation rather than increase it. As the VAT has generally had a very successful record at raising revenue, it will tend to reduce the government's deficit and, hence, indirectly reduce the rate of inflation.

In a world where countries are looking toward international trade as a means of generating competitive economies and economic growth, it is important that a VAT which zero rates exports will eliminate indirect taxes from the cost of exports. No other form of indirect tax is as effective in this regard. In summary, on most, if not all, of the criteria which defines a "good tax" the modern value added tax ranks very high.

End Notes

1. A comprehensive VAT is one that includes producers, wholesalers, and retailers. Malcolm Gillis, Carl Shoup, and Gerardo Sicat, "Lessons from Value-Added Taxation for Developing Countries," (World Bank, February 9, 1987).
2. International Tax Program, *The Value-Added Tax and Tax Reform: Policy and Administrative Issues*, Volume I (Harvard University, March 1989), p. 5.
3. Alan Tait, *Value-Added Tax: Administrative and Policy Issues*, IMF Occasional Paper #88 (October 1991).
4. All the original EC members changed over to a VAT by 1973 (Italy was the last). Members joining the EC later, i.e. Ireland (1972), the UK (1973), Portugal (1986), Spain (1986), and Greece (1987), had to introduce a VAT.
5. The word *cascading* denotes that tax-on-tax occurs as a product moves through the various stages of production to final sales. The defects and economic problems with these taxes are well known and documented. See Sijbren Cnossen, "VAT and RST: A Comparison", *Canadian Tax Journal*, Vol. 37 (May-June 1987), pp. 419-464.
6. Tait, p. 9.
7. The revenue estimates for both the turnover tax (Impuesto a Las Transacciones) and VAT excluded the petroleum sector. Glenn Jenkins and Leon Larrain, "A Review of Tax Policies and Administration in Bolivia," unpublished mimeo, (July 1991).
8. The difficulties of operating a manufacturing sales tax have been seen in Canada. Canada instituted a value-added tax called the Goods and Services Tax (GST) in January 1991.
9. Bolivia, Canada, Costa Rica, Honduras, Indonesia, and Nicaragua among others, used a ring system before introducing the VAT. This system allows manufacturers registered as taxpayers to purchase inputs tax-free; i.e., sales between registered taxpayers within the ring are free of tax. Sales to unregistered taxpayers outside the ring are taxed.
10. Carl S. Shoup, "The Value-Added Tax and Developing Countries," *The World Bank Research Observer*, Volume 3, Number 2 (July 1988), p. 141.

11. A number of empirical studies have been done to estimate the marginal economic cost of taxation, i.e. the marginal cost of raising \$1 of additional tax revenues: \$1.69 for Sweden (Hansson & Stuart, 1985), \$1.50 for the US (Ballard, Shoven & Whalley, 1985), \$1.80 for Canada (Usher, 1986), and \$1.47, also for the US (Browning, 1987).
12. John Whalley and Deborah Frethz, "The Economics of the Goods and Services Tax," *Canadian Tax Foundation*, Paper No. 88 (September 1990) p. 9.
13. Malcolm Gillis, *Tax Reform in Developing Countries* (Duke University Press, 1989), p. 19.
14. R. McKinnon, "The Value-Added Tax and the Liberalization of Foreign Trade in Developing Countries," *Journal of Economic Literature*, Volume 11 (1973), p. 520.
15. Carl S. Shoup, "Choosing Among Types of VAT," *Value-Added Taxation in Developing Countries*, ed. Gillis, Shoup and Sicat (World Bank, 1990).
16. John F. Due, "Some Unresolved Issues in Design and Implementation of Value-Added Taxes," *National Tax Journal*, Volume XL VIII, No. 4 (December 1990), p. 383.
17. $\text{VAT Income} = \text{Consumption} + \text{Income} - \text{Depreciation} = \text{Wages} + \text{Profits}$. For numerical examples illustrating the difference between the consumption VAT and income VAT, see Musgrave and Musgrave, *Public Finance in Theory and Practice*.
18. The Turkish VAT departs from the pure consumption concept by requiring that the credit for the VAT on the purchase invoice of a capital good be credited equally over a five-year period against the gross VAT, rather than all at once in the year of purchase. It thus approaches the income VAT, which allows deduction of depreciation only.
19. Shoup, "Choosing Among Types of VAT," p. 6.
20. Dieter Pohmer, "Value-Added Tax After Ten Years: The European Experience," *Comparative Tax Studies: Essays in Honour of Richard Goode*, ed. Sijbren Cnossen (1983), p. 247.
21. *VAT Experiences of Some European Countries*, ed. Henry Aaron (Kluwer Law and Taxation Publishers, 1982), pp. 102-103.
22. Tait, p. 42.
23. Arnold Harberger, "The Uniform-Tax Controversy," *Public Finance, Trade and Development*, Proceedings of the 44th Congress of the International Institute of Public Finance (Istanbul 1988), p. 6.
24. Charles Ballard, John Shoven and John Whalley, "The Welfare Cost of Distortion in the United States Tax System: A General Equilibrium Approach," *NBER Working Paper No. 1043* (1982).

25. U.S. Department of Treasury, "Tax Reform for Fairness, Simplicity and Economic Growth," *Value-Added Tax*, Report to the President, Vol. 3 (November 1984), p. 45.
26. Keni Messere, "A Defense of Present Border Tax Adjustment Practices," *National Tax Journal* (December 1979), p. 481.
27. Arnold Harberger, *Taxation and Welfare* (University of Chicago Press, 1965), p. 258.
28. Sijbren Cnossen, "What Kind of Sales Tax," *Canadian Tax Journal*, Volume 23, No. 3.
29. John Wilkins, "Taxing Time Ahead for EC Exporters," *Financial Times* (London, September 27, 1991).
30. "Tax Reform 1987: Sales Tax Reform," Department of Finance, Ottawa, Canada (June 1987), p. 55.
31. Charles McLure Jr., *The Value-Added Tax - Key to Deficit Reduction*, American Enterprise Institute For Public Policy Research (Maryland, London: 1987), p. 96.
32. "Tax Reform for Fairness, Simplicity and Economic Growth," U.S. Department of Treasury, *Value-Added Tax*, Volume 3 (1984), pp. 39-42.
33. Alan Tait, p. 56.
34. The term "meritorious goods" is sometimes attributed to Richard Musgrave. See Musgrave and Musgrave, *Public Finance in Theory and Practice*.
35. Germany, Denmark, United Kingdom, Ireland, Luxembourg, Sweden, Norway.
36. The 78% figure may be too high an estimate as the sample includes a group of chemists who claimed refunds; the 31% figure is thus more representative. C.T. Sanford, et. al., *Costs and Benefits of VAT* (Heinemann Educational Books, 1981), pp. 36-66. Also see M. Goodwin, "VAT Compliance Costs to the Independent Retailer," *Accountancy* (September 1976), pp. 48-60.
37. John F. Due, "VAT Treatment of Farmers and Small Firms," *Value-Added Taxation in Developing Countries*, ed. Gillis, Shoup and Sicat (World Bank, 1990), p.59.
38. Seung Soo Han, "The VAT in Korea," *Value-Added Taxation in Developing Countries*, ed. Gillis, Shoup and Sicat (World Bank, 1990), p. 135.
39. National Tax Administration, *The VAT System in the Republic of Korea* (January 1989).
40. Eduardo Aninat, "The Chilean Value-Added Tax: History, Structure, and Economic Aspects," *Conference on Value-Added Taxation* (Washington D.C.: World Bank, 1986).

41. International Bureau of Fiscal Documentation, *Taxation in Latin America, Supplement on Argentina*, No. 81 (September 1990), p. 61.
42. Alan Tait, p. 120.
43. This distinction is important in order to underscore that it is the typical net income, or "spread", that banks earn on loans which should be taxed.
44. European Economic Community, *Sixth Council Directive*, May 17, 1977.
45. Thomas G. Thornbury, "A Better Way to Include General Insurance in VAT Systems," *VAT Monitor* (May 1991), pp. 2-11.
46. F.C.T. Owen, "New Zealand Goods and Services Tax," *1987 International Conference on Insurance Taxation*, pp. 11:31 and 11:34.
47. Satya Poddar and John Greene, "Taxation of Financial Services, Public Finance, Trade and Development," *Proceedings of the 44th Congress of the International Institute of Public Finance* (Istanbul, 1988), p. 94.
48. Robert Conrad, "The VAT and Real Estate," *Value-Added Taxation in Developing Countries*, ed. Gillis, Shoup and Sicat (World Bank, 1990), pp. 95-103.
49. International Tax Program, *The Value-Added Tax and Tax Reform: Policy and Administrative Issues*, Volume I (Harvard University, March 1989), p. 40.
50. Peter Barrand, "The Taxation of Non-Profit Bodies and Government Entities Under the New Zealand Goods and Services Tax," *Conference on Administrative Aspects of Value-Added Tax* (Washington D.C.: October 1990).
51. Robert S. McIntyre, "An American VAT and the Unsolvable Problem of Regressivity," *Tax Notes International* (September 1991), pp. 1039-1045.
52. Joseph A. Pechman, *Who Paid the Taxes, 1966-1985* (Brookings Institution: 1985), p.51.
53. James Poterba, "Lifetime Incidence and the Distributional Burden of Excise Taxes," *American Economic Review*, Vol. 79, No. 2 (May 1989), p. 325.
54. James Davies, France St. Hillaire and John Whalley, "Some Calculations of Lifetime Tax Incidence," *American Economic Review* (September 1984), pp.633-649.
55. For a discussion of the concepts of market and non-market time, see Gary Stanley Becker, *The Economic Analysis of Human Behaviour* (University of Chicago Press: 1976).
56. Unprocessed food in normal usage denotes basic food grains, cereals, legumes, vegetables, fruit, meat and milk. As almost all food requires some degree of processing, i.e. rice is de-

husked and polished, milk is pasteurized, meat is refrigerated, etc., unprocessed food includes those which have been processed to keep it in a natural state. Processed foods are therefore those which go through subsequent value addition stages, such as canning, cooking, pickling, baking, etc.

57. U.S. Department of Treasury, "Tax Reform for Fairness, Simplicity and Economic Growth," Report to the President, *Value-Added Tax*, Vol. 3 (November 1984).
58. On purchases under Turkish Lira (LT) 30 a month, 20 percent of the purchase price is rebated. Following the sliding scale, on purchases above LT 100 and below LT 1000, only 5 percent is rebated. For some consumers the rebate may exceed the VAT payment.
59. Alan Tait, "VAT Policy Issues," Paper for *IMF/UNDP Seminar on Value-Added Tax in Asia and Resource Mobilization* (Jakarta, Indonesia, March 13-16, 1990), p. 14.
60. Alan Tait, "VAT Policy Issues," p. 12.

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