

T H E

M O D E R N

VAT

Liam Ebrill,

Michael Keen,

Jean-Paul Bodin, and

Victoria Summers

INTERNATIONAL MONETARY FUND

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The following symbols have been used throughout this volume:

- ... to indicate that data are not available;
- to indicate that the figure is zero or less than half the final digit shown, or that the item does not exist;
- between years or months (e.g., 1998–99 or January–June) to indicate the years or months covered, including the beginning and ending years or months;
- / between years (e.g., 1998/99) to indicate a fiscal (financial) year.

“Billion” means a thousand million.

Minor discrepancies between constituent figures and totals are due to rounding.

The term “country,” as used in this paper, does not in all cases refer to a territorial entity that is a state as understood by international law and practice; the term also covers some territorial entities that are not states, but for which statistical data are maintained and provided internationally on a separate and independent basis.

*To tax and to please, no more than to love
and to be wise, is not given to men.*

Edmund Burke

*Anglo-Irish political theorist
and Whig politician*

[Speech on American Taxation, 1774]

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Preface

The rapid and seemingly irresistible rise of the value-added tax (VAT) is probably the most important tax development of the latter twentieth century, and certainly the most breathtaking. Forty years ago, the tax was little known outside dull treatises. Today it is a key source of government revenue in over 120 countries. About 4 billion people, 70 percent of the world's population, now live in countries with a VAT, and it raises about \$18 trillion in tax revenue—roughly one-quarter of all government revenue. Much of the spread of the VAT, moreover, has taken place over the last ten years. From having been largely the preserve of more developed economies in Europe and Latin America, it has become a pivotal component of the tax systems of both developing and transition economies.

This book seeks to draw out the lessons from this experience, especially that in recent years. The VAT has been seen as a key instrument for securing macro-economic stability and growth by placing domestic revenue mobilization on a sounder basis, so that the International Monetary Fund (IMF) has attached considerable importance to its proper design and implementation. Within the context of these wider concerns, the Fiscal Affairs Department (FAD) of the IMF has provided a considerable amount of technical assistance in relation to the VAT (sometimes in conjunction with the IMF's Legal Department).¹ Indeed well over half of all countries that have introduced a VAT during the last twenty years made use of FAD advice in doing so, and the proportion has been rising. This book has its origins in a self-assessment of the advice that FAD has provided in the area. While some traces of that exercise doubtless remain, and the book draws heavily on FAD's experience, the focus of this book is outward-looking.

Its purpose is to explore, and draw the lessons of experience for, some of the central questions that those concerned with the VAT—whether as policy-makers, practitioners, or academics—must wonder about. Has the VAT lived

¹The Fiscal Affairs Department has as one of its main functions the provision of technical advice in taxation and government expenditure matters to IMF member countries.

up to its promise as an efficient and fair source of revenue? What does a VAT do well, and what, conversely, does it do badly? What are the key issues that arise in designing a VAT? What should be exempt, and what should be taxed? How should small traders be treated? What about the agricultural and financial sectors? Does a VAT require restructuring the organization of the tax administration? What are the main administrative problems that a VAT is likely to encounter, and how can they be resolved? Is it an inherently costly and regressive tax, or, to the contrary, can it be designed to be simpler and fairer than the taxes it often replaces? Are there countries for which a VAT is simply a bad idea?

These and other issues addressed here have both policy and administrative aspects; that is, they involve both the design and the implementation of the tax. Indeed a key theme of the book is precisely the importance when thinking of VAT of the interaction between the two. At the most basic level, they are entirely congruent. Just as economic analysis points to the proper role of the VAT as being a broad-based tax on consumption, so the administrative concern with simplicity (for taxpayer and tax collectors alike) points to a clean tax that is applied with minimal exceptions. Beyond that, however, there can be a tension between the two sets of considerations. There is a trade-off, for instance, between the desire to minimize distortions of competitive behavior by including as many traders as possible in the VAT system and the administrative advantages of excluding small traders from whom little revenue can be expected. The proper response to such tensions, of course, is to incorporate administrative concerns carefully into policy formation. This is a delicate exercise, but we believe an essential and fruitful one. In part it requires that public finance economists address themselves much more forcefully than they have in the past to issues that administrators have long battled with; the analysis here of the proper threshold for the VAT is one example, but there remains much more to do.

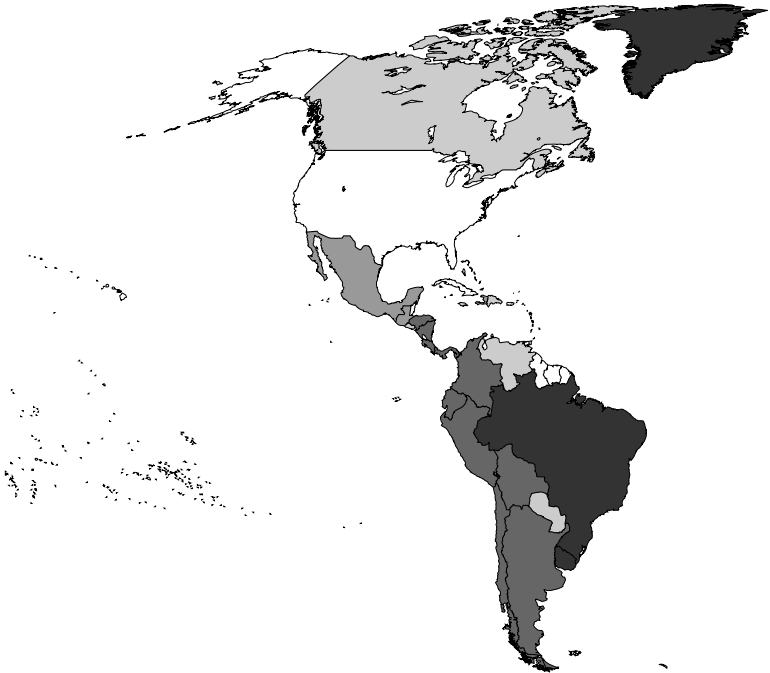
The coverage of this book is not exhaustive. We have tried not to duplicate material that can be found elsewhere, most notably in Tait (1988, 1991), which this book complements; the present book does not address other than in passing, for instance, timetables and transitional issues associated with the introduction of a VAT, or the impact of the VAT on inflation. Oldman and Schenk (1995) provides an interesting legal perspective on many of the issues addressed here.

What is most striking, however, is how much the previous literature leaves out. Indeed there has been surprisingly—shockingly—little serious research effort devoted to the VAT. Why this should be is itself something of a puzzle, given the manifest importance and dramatic spread of the VAT. We hope that this book will go some way to stimulate further and deeper work in this area.

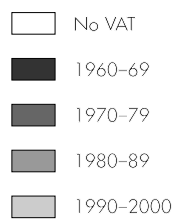
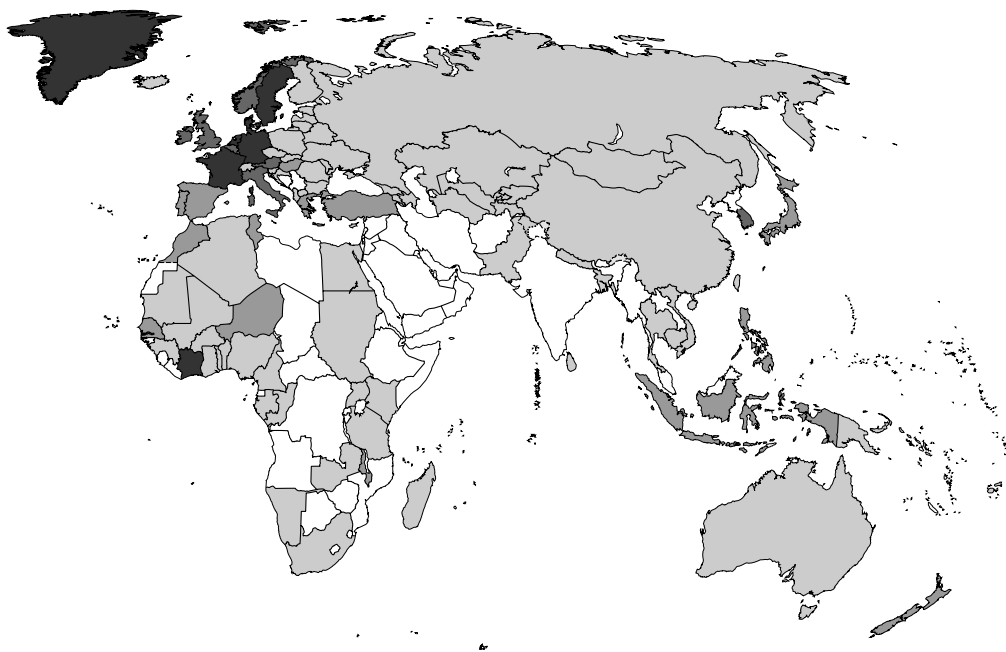
This book reflects the efforts and invaluable expertise of many of our colleagues in the Fiscal Affairs Department, who found time in their overloaded schedules to provide us with information and advice. Katherine Baer and John Brondolo were especially generous and helpful. Particular thanks to Assi WoldeMariam, who undertook the substantial exercise of data collection and analysis reported here. We are grateful too to Richard Bird, Alan Tait, and many colleagues in FAD for their helpful comments on various drafts. Jeremy Clift of the External Relations Department edited the manuscript and coordinated production. Views and, unfortunately, errors are entirely the responsibility of the authors, and should not be attributed to the International Monetary Fund.

Figure 1.1. The Spread of the VAT

Value-Added Tax, first introduced less than 50 years ago, remained confined to a handful of countries until the late 1960s. Today, it is a key source of government revenue in more than 120 nations. About 70 percent of the world's population now live in countries with a VAT.



This map was produced by the Map Design Unit of The World Bank. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of The World Bank Group, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.



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The Nature, Importance, and Spread of the VAT

Value-Added Tax or VAT, first introduced less than 50 years ago, remained confined to a handful of countries until the late 1960s. Today, however, most countries have a VAT, which raises, on average, about 25 percent of their tax revenue.² This chapter defines what is meant by a VAT; documents both the remarkable spread and the current reach of the tax; considers the differences between countries with and without the tax; and develops some stylized facts on the typical experience of countries that have adopted a VAT.

What Is a VAT?

Despite its name, the VAT is not generally intended to be a tax on value added as such: rather it is usually intended as a tax on consumption. Its essence is that it is charged at all stages of production, but with the provision of some mechanism enabling firms to offset the tax they have paid on their own purchases of goods and services against the tax they charge on their sales of goods and services.

Although this characteristic feature is very clear-cut, the VATs observed in practice show considerable diversity as regards, among other things, the range of inputs for which tax offsetting is available and the range of economic activity to which the tax applies (that is, the base of the tax). Some major countries (such as China) currently do not grant credits for taxes on capital goods purchases; moreover, of those that allow credits in respect of such purchases, some do not refund excess credits (any excess of tax paid on inputs over tax chargeable on outputs). Most countries exclude exports from the VAT, in the sense that tax is not charged on sales for export but tax paid on inputs is recoverable,

²Here and below, “tax revenue” includes compulsory social contributions.

although some (in the BRO³ region, at least until recently) have systematically levied VAT on some exports. Some countries extend the VAT only to the manufacturing stage; others do not levy it on services.⁴ Practice also varies in how tax offsetting is implemented: by far the most common method is through the use of invoices, but the same effect can be achieved on the basis of books of account, as elaborated later.

As a result of the diversity of practice, there can be disagreement as to whether a given tax is properly called a VAT or not.⁵ For definiteness, though at the risk of creating the impression of an overly sharp dichotomy, we take a VAT to be:

A broad-based tax levied on commodity sales up to and including, at least, the manufacturing stage, with systematic offsetting of tax charged on commodities purchased as inputs—except perhaps on capital goods—against that due on outputs.

This leaves scope for dispute, but does highlight what is taken here to be the key feature of the VAT: the tax is charged and collected throughout the production process, with provision for tax payable to be reduced by the tax paid in respect of purchases.

This definition is broad enough, for example, to encompass not only the dominant “invoice-credit” form of VAT (under which tax paid on inputs is offset by a means of a credit against tax due on output, tax paid being recorded in invoices issued by seller to buyer) but also the subtraction method (under which the offsetting is achieved implicitly, by charging tax on the difference between the values of output and inputs). These methods of implementing the VAT, and other technicalities touched on in this overview, are discussed further in the next chapter.

The definition excludes, on the other hand, any scheme that allows crediting only in particular sectors of the economy, as well as sales taxes that grant credits only for inputs deemed to be physically incorporated into the output. “Ring” systems—under which tax that would otherwise be charged by one firm on sales to another is suspended for sales to a subset of firms within the “ring”—are also excluded, on the ground that it is an intrinsic feature of a VAT that tax is actually

³The Baltic countries, Russia, and other countries of the former Soviet Union.

⁴Bangladesh affords an example of the former, Pakistan an example of the latter.

⁵Malawi is a striking example. It was deemed by the Fiscal Affairs Department (FAD) of the IMF to have a VAT by 1994, though the tax did not extend to the retail stage. The adoption of a VAT—meaning extension to the retail stage—was then part of IMF program conditionality in 1996. In addition, many countries choose to call by some other name—a general sales tax, or a goods and services tax—what is clearly a VAT. The label chosen is of no importance for this report.

Box 1.1. A Primer on the VAT

The key features of the Value-Added Tax are that it is a broad-based tax levied at multiple stages of production, with—crucially—taxes on inputs credited against taxes on output. That is, while sellers are required to charge the tax on all their sales, they can also claim a credit for taxes that they have been charged on their inputs. The advantage of such a system is that revenue is secured by being collected throughout the process of production—unlike a retail sales tax—but without distorting production decisions, as, in particular, a turnover tax does.

Suppose, for example, that firm A sells its output (assumed, for simplicity, to be produced using no material inputs) for a price of \$100 (excluding tax) to firm B, which in turn sells its output for \$400 (again excluding tax) to final consumers. Assume now that there is a VAT with a 10 percent rate. Firm A will then charge firm B \$110, remitting \$10 to the government in tax. Firm B will charge final consumers \$440, remitting tax of \$30: output tax of \$40 less a credit for the \$10 of tax charged on its inputs. The government thus collects a total of \$40 in revenue. In its economic effects, the tax is thus equivalent to a 10 percent tax on final sales (there is no tax incentive, in particular, for B to change its production methods or for the two firms to merge), but the method of its collection secures the revenue more effectively.

“Zero-rating”¹ refers to a situation in which the rate of tax applied to sales is zero, though credit is still given for taxes paid on inputs. In this case, the firm will be due a full refund of taxes paid on inputs. In a VAT designed to tax domestic consumption only, exports are zero-rated, meaning that exports leave the country free of any VAT. This is consistent with the “destination principle,” which is the international norm: it requires that the total tax paid on a good be determined by the rate levied in the jurisdiction of its final sale with revenue accruing to that jurisdiction. In contrast, the “origin principle” requires that tax be paid at the rate of, and to, the country or countries in which the item is produced rather than consumed.

“Exemption” is quite different to zero-rating in that, while tax is again not charged on outputs, tax paid on inputs cannot be reclaimed. Thus, no refunds are payable. In this case, because tax on intermediate transactions remains unrecovered, production decisions may be affected by the VAT.

¹The Australian Goods and Services Tax (GST) introduced a helpful terminology: “zero-rating” was instead called “GST-free,” and “exemption” instead called “input-taxed.”

collected at intermediate stages of production. There is of course an issue of judgment as to when the exclusions from tax become so widespread that the tax ceases to be a VAT: the exclusion of services in some countries, for instance, is not taken to prevent a tax being labeled a VAT; the former Indian MODVAT, on the other hand, which offered crediting only of central excise taxes (rather than a broad-based output tax) is not regarded here as being a VAT. More generally, it is immediately clear that VATs come in many quite different shapes and forms.

The Origin and Spread of VAT

The VAT is a modern tax. Before its introduction, domestic indirect taxes were typically limited to narrowly defined products (excises on alcohol and tobacco, for example) and, notably, sales and turnover taxes. The distortions created by the last kind of tax (such as the encouragement of vertical integration of an industry solely to reduce tax liabilities⁶), combined with rising revenue requirements, provided an incentive to seek alternative less distortionary taxes. Intellectually, the basic idea of the value-added tax appears to have originated with a German businessman, von Siemens, writing in the 1920s. There were other developments in the 1920s, including the suggestion of the invoice-credit method by Adams (1921). Particularly influential contributions were made by “le père de la TVA,” Maurice Lauré (1953, 1957).

Adoption of the VAT began slowly. Early proposals to introduce the tax were made in France in the 1920s⁷ and by the Shoup Mission to Japan in 1949. Taking the definition used in this report, the first VAT appeared in France in 1948;⁸ this tax, which initially applied up to the manufacturing stage and gave no credit for tax on capital goods, was converted to a consumption-type VAT by 1954.

Manufacturing level VATs were subsequently adopted by Côte d’Ivoire in 1960 and in Senegal later in the 1960s;⁹ Michigan, meanwhile, introduced the Single Business Tax¹⁰—an accounts-based form of VAT—in 1953.

⁶Since a turnover tax is levied on turnover irrespective of value added, the tax collected on a given good will reflect the number of taxable stages in its chain of production. See the discussion of “cascading” in Chapter 2.

⁷Sullivan (1965, p. 13).

⁸Instances of limited crediting of taxes on inputs date back to at least the 1930s. Sullivan (1965) describes such arrangements in Greece (1933), Argentina (from 1935), and the Philippines (1939); but crediting was in the first case limited by sector, and seems under the latter two to have been limited to items physically incorporated into output.

⁹Sources differ: Shoup (1973, p. 15) places introduction in 1966; Tait (1988) sees it as a process beginning in 1960.

¹⁰Then called the Business Activities tax.

Beginning in the late 1960s, the spread of VAT accelerated (see Figure 1.1 inside cover). Brazil introduced the tax to South America in 1967,¹¹ the same year in which the adoption by Denmark began its widespread introduction in Europe.¹² The pace of VAT implementation remained rapid until the late 1970s, at which point it slackened for a decade before picking up again in the latter part of the 1980s and well into the 1990s. The principal focus of this book is the spread of the VAT in this latest round of implementations.

Underlying the aggregate data is a series of distinct geographic episodes. To develop these—and other regional issues as regards the VAT—the set of countries with which the analysis deals¹³ is categorized into seven regional groupings: sub-Saharan Africa (AF); Asia and the Pacific (AP); the current membership of the European Union, plus Norway and Switzerland (EU+); Central Europe, and the Baltics, Russia, and other countries of the former Soviet Union (CBRO); North Africa and the Middle East (NMED); the Americas (AS); and small island economies, defined as islands with populations of under 1 million, plus San Marino (SI). The membership of these groups is listed in Table A.I.1 of Appendix I.

Table 1.1 shows the number of countries in each of these regions having a VAT at selected dates. As can be seen, the early phase was dominated by adoption of the VAT in:

- Western Europe, following the decision of the European Communities to adopt the VAT as the common form of sales tax; and
- Latin America, following the initiative in Brazil.

The only countries outside these regions to adopt a VAT by the mid-1980s were Côte d'Ivoire, Indonesia, Israel, Senegal, South Korea, and Turkey.

The acceleration of the spread of the VAT from the late 1980s reflects three new episodes—namely, the adoption of the VAT:

- by most of the transition economies;
- by a large number of developing countries, notably in Africa, but also in Asia and the Pacific: over half of all countries in these regions now have a VAT, compared with about 15 percent a decade ago; and
- by the small island economies, almost none of which had a VAT before 1990.

¹¹Shoup (1973) cites this as the first consumption-type VAT; it is not clear why he does not so regard the 1954 French VAT.

¹²Södersten (1999) provides an account of the introduction of the VAT in Europe.

¹³The 183 members of the IMF, Netherlands Antilles, and Taiwan Province of China.

Table 1.1. Regional Spread of the VAT
(Number of countries with VATs as of the year indicated)

	Sub-Saharan Africa	Asia and Pacific	EU (plus Norway and Switzerland)	Central Europe and BRO ¹	North Africa and Middle East	Americas	Small Islands
2001 (April)	27 (43)	18 (24)	17 (17)	25 (26)	6 (21)	22 (26)	8 (27)
1989	4	6	15	1	4	16	1
1979	1	1	12	0	1	12	0
1969	1	0	5	0	0	2	0

Source: IMF staff compilation.

Note: The figures in parentheses are the total number of countries in each region as of September 1998.

¹Baltic States, Russia, and other states of the former Soviet Union.

While there are strong intellectual and practical links between these episodes, the underlying core motivation seems to have differed in each case. In Western Europe, adoption of the VAT was intimately associated with the drive for greater economic integration among the member states of the European Communities: the VAT is particularly well suited to avoiding the trade distortions associated with the cascading indirect taxes that it replaced. In South America, the VAT was seen as a more efficient revenue-raising tax that would be consistent with the increasingly outward orientation of economic policies. The rapid adoption of the VAT in the transition economies reflected the need to replace the traditional sources of revenues (such as levies on state enterprises) that were declining as a result of economic transformation with a tax regime geared to the emerging market economy; in some cases it may also have reflected the status of the VAT as a precondition for joining the European Union. In many developing countries, adoption of the VAT has been given additional impetus by the long-run revenue implications of trade reform—the economic efficiency arguments favoring the VAT have been bolstered as trade tax revenues have come under pressure with deepening trade liberalization commitments.

Table 1.2 indicates how the characteristics of countries adopting a VAT have changed over time. Even within the regional groupings shown for the 1990s, there is a considerable diversity of experience.¹⁴ A few key features emerge, however. The VAT has increasingly been implemented by countries with lower average levels of economic development as measured by per capita GDP (the data are stated in current U.S. dollars and accordingly understate this trend). Most

¹⁴The category “other” is of course especially diverse: the high average per capita GDP reflects the adoption of the VAT during the 1990s by a few developed countries, including Canada and Switzerland, while the large average population reflects its adoption by China.

Table 1.2. Changing Characteristics of Countries with VATs

	1970–79	1980–89 ¹	1990 to April, 2001 ²		
			Sub-Saharan Africa	Central Europe and BRO	Other
Number of countries adopting VAT in period	19	20	23	24	31
GDP per capita (current U.S. dollars) ³	4,600	4,300	780	2,200	7,300
Population (millions) ³	15	35	20	16	65
Openness ^{3,4}	27	21	23	41	31
Literacy	89	71	57	99	78

Source: IMF staff calculations.

¹Including Grenada, which subsequently removed its VAT.

²Including Belize, which removed the VAT in 1999.

³These are figures for 1979, 1989, and 1998.

⁴Measured as (exports + imports)/(2 x GDP).

strikingly, the African countries adopting the VAT are characterized by much lower per capita incomes and literacy rates—a crude proxy for administrative sophistication—than other groups that have adopted the VAT. The transition economies have higher per capita GDP, high levels of literacy, and higher ratios of trade to GDP than other countries recently introducing a VAT.

The most populous countries without a central VAT are India and the United States. While there are several possible explanations for nonadoption in these countries—the debate on national consumption taxes in the United States, for instance, has sometimes highlighted a concern that VAT would prove too easy a revenue generator. It is unlikely to be a coincidence, however, that both are federal countries with a strong presence of the states in the levying of general consumption taxes: there are formidable difficulties running the VAT as a lower-level tax (discussed in Chapter 17).¹⁵ Two other groups stand out among the set of non-VAT countries. First, although the average population of the countries without a VAT is about 27 million, around 30 percent have populations of less than 500,000; and about half have less than 2 million. That is, many non-VAT countries are small countries. Moreover, many of these are islands. For such economies the VAT may offer relatively little gain over a broad-based tariff (an issue developed in Chapter 16). The other set of countries among which penetration of the VAT remains relatively low are those in

¹⁵State-level VATs are, however, scheduled for introduction in India in April, 2002. How these difficulties will be dealt with remains unclear.

North Africa and the Middle East, to some degree reflecting the availability of revenue from natural resources. Even there, however, the desire to diversify revenue sources may cause the VAT to spread still further.

The Current Extent and Importance of VAT

Most countries in the world now have a VAT: as of April, 2001, about 123 had one. Table 1.3 provides information on these VATs. They raise revenues, on average, equal to nearly 27 percent of total tax revenue¹⁶ and over 5 percent of GDP.

The table reveals a wide diversity of practice and experience. The standard rate, for example, varies from 3 percent in Singapore to 25 percent in Denmark and Sweden. Moreover, while some countries have only a single rate of VAT, others have several rates: as a relatively extreme example, Colombia currently has seven distinct rates. There is considerable variation in the yield of the VAT—several countries garner less than 1 percent of GDP in VAT revenue, while five raise over 10 percent of GDP.

Table 1.4¹⁷ analyzes some of the key features of the VAT by region. Clearly, the VAT is a major source of revenue wherever it has been adopted. The standard rate is higher in Western Europe and in the transition economies than elsewhere, being lowest in the Asia/Pacific region. Moreover, Western Europe, and North Africa and the Middle East have the most complex VATs in terms of the number of rates. In contrast, it is the regions in which the spread of VAT has been most recent—Africa, the transition economies and the small islands—that typically have the simplest VAT tax structures.

Table 1.5 presents some comparative data on countries with and without a VAT. Not surprisingly, those countries that have implemented a VAT are relatively more developed (as gauged by per capita GDP). They also rely somewhat less on international trade—this is of interest since, as will be elaborated below, the ability of the VAT to tax neatly international trade transactions is one of the principal merits conventionally claimed for the tax. Literacy is noticeably higher in countries that have adopted a VAT. As noted above, other than the cases of India and the U.S., non-VAT countries are also marked by relatively small populations.

Table 1.5 also reports comparative revenue figures for countries with and without a VAT. Broadly speaking, general government tax revenue is noticeably higher in countries with a VAT than in those without, while there is no striking difference once other revenue and grants are added to the measure or

¹⁶The data in Table 1.3 relate variously to central or general government tax revenue, depending on data available, and include social charges.

¹⁷Based on data available in the summer of 1999.

Table 1.3. Current VATs: Rates, Thresholds, and Revenues¹

	Date VAT Introduced	VAT Rates ² (In percent)		Threshold (In U.S. dollars)		VAT Revenue	
		Standard rate	Other rates ³	Basic ⁴	Services	Percent of tax revenue ⁵	Percent of GDP
Albania	1996	20.0		37,000		35.7	5.9
Algeria ⁶	1992	17.0	7	43,000	750	31.0	3.1
Argentina	1975	21.0	10.5, 27			51.4	6.2
Armenia	1992	20.0		5,500		38.0	6.5
Australia	2000	10.0				...	...
Austria	1973	20.0	10, 12, 32	8,300		19.1	8.5
Azerbaijan	1992	20.0	10	...		27.9	4.1
Bangladesh	1991	15.0		32,600		31.6	2.4
Barbados	1997	15.0	7.5	30,000		30.6	9.5
Belarus	1992	20.0	10			26.6	9.0
Belgium	1971	21.0	1, 6, 12	6,300		15.1	6.9
Benin	1991	18.0		50,000		41.6	5.6
Bolivia ⁷	1973	14.9		8,700		29.0	5.7
Brazil ^{8,9}	1967	20.48	9.89, 12.36			31.2	8.6
Bulgaria	1994	20.0		30,000		27.8	8.6
Burkina Faso	1993	18.0		80,000	25,000	28.7	4.0
Cambodia	1999	10.0		125,000	60,000	35.5	2.9
Cameroon	1999	18.7		80,000		34.5	4.2
Canada	1991	7.0		25,000		6.9	2.6
Chad	2000	18.0		40,000		25.3	1.7
Chile	1975	18.0				45.0	8.5
China	1994	17.0	13	120,800 ¹⁰	217,400 ¹¹	27.9	3.9 ¹²
Colombia	1975	15.0	8, 10, 20, 35, 45			28.1	4.9
Congo Republic	1997	18.0				27.4	5.0
Costa Rica	1975	15.0				38.5	6.5
Côte d'Ivoire	1960	20.0		50,000	25,000	28.7	4.8
Croatia	1998	22.0		6,500		34.8	14.1
Cyprus	1992	10.0				28.4	4.8
Czech Republic	1993	22.0	5		16,000	18.7	7.0
Denmark	1967	25.0		1,600		19.2	9.7
Dominican Republic	1983	8.0				20.9	3.1
Ecuador	1970	12.0				41.6	4.4
Egypt ¹³	1991	15.0	5, 10, 25, 45	38,000	18,000	17.9	2.7
El Salvador	1992	13.0		5,700		51.6	5.3
Estonia	1992	18.0	5	16,500		23.4	8.5

Table 1.3 (continued)

	Date VAT Introduced	VAT Rates ² (In percent)		Threshold (In U.S. dollars)		VAT Revenue	
		Standard rate	Other rates ³	Basic ⁴	Services	Percent of tax revenue ⁵	Percent of GDP
Fiji	1992	10.0		7,000		30.7	6.7
Finland	1994	22.0	6, 12, 17	9,900		18.1	8.4
France	1968	20.6	2.1, 5.5	100,000		17.0	7.8
Gabon	1995	18.0		1,742,000	150,000	19.6	4.1
Georgia	1992	20.0		1,500		31.7	4.5
Germany	1968	16.0	7	60,000		18.3	6.9
Ghana ¹⁴	1998	12.5		80,000		23.5	3.8
Greece	1987	18.0	4, 8	5,700	1,900	22.3	7.5
Guatemala	1983	10.0				42.1	3.7
Guinea	1996	18.0		134,000		21.3	2.5
Haiti	1982	10.0		20,000	20,000	25.6	2.2
Honduras	1976	12.0	15			23.9	3.8
Hungary	1988	25.0	12	8,000		22.0	8.1
Iceland	1990	24.5	14			27.9	9.9
Indonesia	1985	10.0		15,300	30,600 ¹⁴	19.3	2.7
Ireland	1972	21.0	0, 3.6, 10, 12.5	64,300	32,000	22.2	7.2
Israel	1976	17.0	6.5			34.9	10.6
Italy	1973	19.0	4, 10, 16	587,200	211,380	12.5	5.4
Jamaica	1991	15.0	12.5			36.9	9.4
Japan	1989	5.0	4.5	269,000		9.4	2.6
Kazakhstan	1992	20.0				27.6	4.4
Kenya	1990	18.0	16	40,200		25.9	5.5
Korea	1977	10.0	2, 3.5	51,600		19.2	4.6
Kyrgyz Republic	1992	20.0		1,700		33.5	4.1
Latvia	1992	18.0		18,100		32.1	8.6
Lithuania	1994	18.0		12,500		26.8	8.2
Luxembourg	1970	15.0	3, 6, 12	14,800		13.8	5.8
Macedonia, FYR	2000	19.0	5			...	...
Madagascar	1994	20.0	5	45,000		39.3	4.3
Malawi	1989	20.0	10	1,000		36.2	5.7
Mali	1991	18.0	10	53,000		27.0	3.8
Malta ¹⁵	1995	15.0				17.5	4.8
Mauritania	1995	14.0		46,000		23.3	3.5
Mauritius	1998	10.0		120,000		17.4	3.0
Mexico	1980	15.0	10			19.7	3.2
Moldova	1992	20.0		4,000		30.8	6.9
Mongolia	1998	13.0		18,700		29.9	5.3
Morocco	1986	20.0	7, 10, 14	200,000		22.7	5.6
Mozambique	1999	17.0				24.4	2.7
Namibia	2000	15.0	30			...	...

Table 1.3 (continued)

	Date VAT Introduced	VAT Rates ² (In percent)		Threshold (In U.S. dollars)		VAT Revenue	
		Standard rate	Other rates ³	Basic ⁴	Services	Percent of tax revenue ⁵	Percent of GDP
Nepal	1997	10.0				22.5	2.3
Netherlands	1969	17.5	6			16.7	6.9
Netherlands Antilles	1999	3.0	1, 6			...	...
New Zealand	1986	12.5		15,000		25.9	4.2
Nicaragua	1975	15.0	5, 6			42.6	10.0
Niger	1986	17.0		50,000	16,700	27.6	2.2
Nigeria	1994	5.0				19.7	1.6
Norway	1970	23.0				21.3	8.9
Pakistan ¹⁶	1990	15.0		22,200		17.7	2.4
Panama	1977	5.0	10			15.5	2.0
Papua New Guinea	1999	10.0				8.6	1.8
Paraguay	1993	10.0				39.0	4.5
Peru	1973	18.0		0		53.2	6.3
Philippines	1988	10.0		14,100		22.1	3.0
Poland	1993	22.0	7, 12	23,000		20.8	7.9
Portugal	1986	17.0	5, 12	20,600		23.3	8.0
Romania	1993	18.0	9, 11	7,000		16.1	1.9
Russia Federation	1992	20.0	10			36.0	4.8
Rwanda	2001	15.0		28,000		...	...
Samoa	1994	10.0				26.4	5.5
Senegal	1980	20.0	10	180,000		37.1	6.2
Singapore	1994	3.0		709,200		8.4	1.2
Slovak Republic	1993	23.0	6	9,400		21.5	7.2
Slovenia	1999	19.0	8	20,000		25.6	10.1
South Africa	1991	14.0		41,300		24.0	5.9
Spain	1986	16.0	4,7	341,500		17.6	6.2
Sri Lanka	1998	12.5		33,000		22.5	3.4
Sudan	2000	10.0				...	...
Sweden	1969	25.0	6, 12, 21	131,000		13.9	7.2
Switzerland	1995	7.5	2, 3.5	63,300		11.0	3.9
Taiwan Province of China	1986	5.0	15, 25			...	...
Tajikistan	1992	20.0				21.6	2.5
Tanzania	1998	20.0		32,700		32.3	3.2
Thailand	1992	10.0		30,800		20.8	2.8
Togo	1995	18.0		60,000	40,000	34.0	4.5
Trinidad and Tobago	1990	15.0		25,000		17.5	3.8
Tunisia	1988	18.0	6, 10, 29	71,429		25.3	6.5
Turkey	1985	16.0	1, 8, 25, 40			20.3	6.5
Turkmenistan	1992	20.0				29.2	7.5
Uganda	1996	17.0		50,000		33.6	3.4

Table 1.3 (concluded)

	Date VAT Introduced	VAT Rates ² (In percent)		Threshold (In U.S. dollars)		VAT Revenue	
		Standard rate	Other rates ³	Basic ⁴	Services	Percent of tax revenue ⁵	Percent of GDP
Ukraine	1992	20.0		3,700		20.1	6.5
United Kingdom	1973	17.5	0	82,800		18.7	6.8
Uruguay	1968	23.0	14			34.6	8.4
Uzbekistan	1992	20.0	15			24.9	7.6
Vanuatu	1998	12.5				38.6	8.3
Venezuela	1993	15.5		70,000		25.0	3.2
Vietnam	1999	10.0	5, 15			24.5	4.0
Zambia	1995	17.5		33,000		29.8	5.8

Sources: National authorities and IMF staff estimates; IMF, World Economic Outlook. IMF, Fiscal Affairs Department database; International Bureau of Fiscal Documentation (IBFD); International VAT Monitor; and Ernst and Young, VAT and Sales Taxes Worldwide, New York: (John Wiley).

¹As of April 2001. Revenue data are for most recent recent year available.

²Rates are in tax-exclusive form (i.e., specified as a proportion of the net of tax price).

³Most countries zero-rate exports and a few also zero-rate some domestic transactions. Zero-rating of domestic transactions is extensive in Ireland and the United Kingdom.

⁴The threshold shown is the level of turnover at which registration becomes compulsory. For cases in which there is more than one threshold, that indicated is the one judged to be most important in practice in limiting the number of taxpayers.

⁵Tax revenue is variously that of central or general government.

⁶Tax revenue excluding that from hydrocarbons.

⁷There are two thresholds in Bolivia: that shown is an income test. There is also a threshold of \$3,270 in terms of assets.

⁸Tax exclusive rate (legislated tax inclusive rates are 9, 11, and 17 percent, respectively).

⁹On interstate transactions the tax exclusive rates are 9.89 and 12.36 depending on the region. The VAT for intrastate transactions varies from state to state, from a rate of 17–18 percent (standard rate) to 25 percent.

¹⁰Production of goods and taxable services.

¹¹Distribution.

¹²The VAT was first introduced in Ghana in March 1995, with a rate of 17.5 percent, and repealed in June 1995; it was reintroduced in December 1998, with a rate of 10 percent.

¹³The threshold of \$38,000 applies to retailers (from July 2001); that of \$18,000 to manufacturers and listed services.

¹⁴For retailers.

¹⁵Malta repealed the VAT in 1997; it was reintroduced in January 1999.

¹⁶From July 1998 the GST was extended to the nonmanufacturing sector above a threshold of \$100,000.

attention is confined to tax revenue of the central government. Little can be read into these simple averages, however, which fail to control for other country characteristics that may be powerfully correlated with revenues. A more comprehensive attempt to discern revenue effects associated with the presence of VAT is made in Chapter 3.

Table 1.4. VAT Features by Region

	Sub-Saharan Africa	Asia and Pacific	EU (Plus Norway and Switzerland)	Central Europe and BRO	North Africa and Middle East	Americas	Small Islands	Average
Standard rate ¹	16.0	10.4	18.8	20.1	15.7	13.5	16.1	16.0
Number of rates ²	1.3	1.7	2.9	1.5	3.2	1.7	1.4	1.8
VAT revenue: ³								
Percent of GDP	3.9	3.3	7.0	6.4	5.7	4.9	4.7	5.1
Percent of total tax revenue	28.4	21.7	20.7	27.8	28.1	33.0	18.0	26.5

Source: IMF staff calculations.

¹Average, in percent.

²Average number of rates (including standard rate and excluding zero rate on exports).

³Figures are unweighted averages over those countries in Table 1.3 for which data on VAT revenues are available.

Table 1.5. Comparing Countries With and Without a VAT

	Countries with VAT	Countries without VAT ¹
GDP per capita (U.S. dollars)	7,670	3,430
Average population (millions)	38	27
Openness ²	29	32
Literacy (percent) ³	79	70
Revenue (percent of GDP): ⁴		
General government revenue and grants	29.4	28.8
Central government tax revenue	19.1	17.5
General government tax revenue	25.6	18.4

Source: IMF staff calculations.

¹All countries without a VAT in September 1998.

²Measured as (exports + imports)/(2 x GDP).

³Data available only for a subset of countries.

⁴Figures are for the 99 countries with a VAT for which revenue data were available in early 2000.

Experience After Adopting a VAT

Table 1.6 reports summary information on developments in two key structural aspects of the VAT subsequent to its introduction: the level of the standard rate and the number of rates. The conventional wisdom that a country's VAT rate tends to rise over time proves correct, in the sense that the common experience is of an increase in the standard rate. That said, in many countries, the standard rate has remained unchanged, possibly reflecting the fact that the

Table 1.6. Developments in VAT Structure Since Introduction¹

	Standard rate	Number of rates
Increase		
Proportion of cases (percent)	43	30
Average increase	5.6 points	1.5
Decrease		
Proportion of cases (percent)	20	12
Average decrease	6.1 points	1.5

Source: IMF staff calculations.

¹Figures are for the 99 countries included in the empirical exercise of Chapter 3.

sample includes many countries where the VAT has been introduced only relatively recently. In others it has actually fallen. This mostly reflects the attempts of transition countries to lower initially high VAT rates, though there are also some other cases—including Brazil, Paraguay, and Peru—where the standard rate has fallen.

Perhaps more significant is the tendency for proliferation in the number of rates, lending support to the notion that VATs tend to become more complex over time. This happened in about one-third of all cases. These summary statistics are, however, clearly no more than suggestive, making no adjustment, in particular, for the length of time that the VAT has been in place. The issue of rate proliferation is examined more closely in Chapter 7.

Finally—and with obvious implications for the perceived effectiveness of the tax—only five countries¹⁸ have ever removed a VAT:¹⁹ Vietnam (in the 1970s); Grenada (introduced 1986 and gradually dismantled); Ghana (introduced March 1995, removed two months later); Malta (introduced 1995, removed 1997); and Belize (introduced 1996, removed 1999). Three of these, however, have since reintroduced the VAT—Ghana in 1998, Malta and Vietnam in 1999.

¹⁸India's Maharashtra state removed a state-level VAT.

¹⁹Venezuela renamed and reformed its VAT structure in 1994, but on the definition above the tax remained a VAT throughout.

2

Basic Design Issues

The diversity of VATs observed around the world reflects the wide range of choices that must be made in designing and implementing a VAT. Some of these choices are more controversial than others. This chapter reviews some core features of the VAT for which there is widespread agreement on what constitutes “best practice.”

VAT as a Tax on Consumption

Economists generally favor designing the VAT so that it is a tax on consumption, in the sense that its key effect is to drive a wedge between the price that consumers pay for their purchases and the price that suppliers receive from the corresponding sales. That said, and contrary to the view often held by policymakers, the real burden of the tax is not necessarily borne only by consumers. The real loss of income that is the counterpart to—indeed, because of the distortion of activity, generally exceeds—the revenue raised by government, may also be felt by the owners, employees, and/or financiers of the firms whose output is being taxed. The effective incidence of a VAT, like that of any other tax, is determined not by the formal nature of the tax but by market circumstances, including the elasticity of demand for consumption and the nature of competition between suppliers.

Since it is levied, ultimately, on consumption and not on intermediate transactions between firms—while tax is charged on such purchases it is, in effect, fully refunded—a VAT does not distort the prices that producers face in buying and selling from one another. Accordingly, the tax has the desirable feature of not violating production efficiency (the condition that the economy be on its production possibility frontier, unable to produce any more of any good without producing less of some

other).²⁰ Taxes on intermediate transactions, in contrast, if not offset will drive a wedge between the buying and selling prices of producers.

A related but distinct phenomenon is that of “cascading.” This refers to the “tax on tax” that arises when tax is charged both on an input into some process and on the output of that same process.²¹ As a result, the tax embodied in any given item will depend on the number of production stages that are subject to tax. In addition to resulting in arbitrary variations in effective tax burdens across the range of goods sold, this also creates an obvious incentive for firms to vertically integrate their activities in order to eliminate taxable stages, with a consequent distortion in the choice of firms’ organizational forms that may involve real efficiency losses.

Production efficiency is generally accepted as a useful guiding principle in tax design, the intellectual basis for this being discussed in Box 2.1. The multistage nature of the VAT implies that two features are essential to ensure that it is indeed only a tax on consumption, without any induced production inefficiency or cascading:

- at each stage, net tax must be payable only on the difference between sales and purchases (an effect—eliminating tax on inputs—that can be achieved in a number of ways, as discussed below); and
- there must be no breaks in the VAT chain.

A third but more problematic feature, that the destination principle be used in handling international trade—under which goods and services crossing jurisdictional borders are taxed in the jurisdiction where they are consumed—is discussed in Chapter 17.

Eliminating Tax on Inputs

Under the VAT, output is taxed at each stage of production, irrespective of the use to which it is put. To ensure that only final consumption is taxed, the tax on all goods and services subsequently used as inputs to production must in effect be refunded to purchasers of those inputs: a VAT with unrestricted crediting of this kind, including of tax on investment good purchases, is a

²⁰The absence of any tax on intermediates does not, however, guarantee production efficiency. For instance, imperfect competition can result in firms facing different marginal costs in equilibrium, which would imply a production inefficiency.

²¹To see the difference between production inefficiency and cascading, assume that there are no substitution possibilities between inputs. Then an input tax gives rise to no production inefficiency; but there will be cascading if output is also taxed. Conversely, an input tax may give rise to a production inefficiency even if there is no taxation of output and, consequently, no cascading.

Box 2.1. Production Efficiency and the Diamond-Mirrlees Theorem

The fundamental—at least, the best articulated—economic rationale for the pursuit of production efficiency as an object of policy is provided by a theorem of Diamond and Mirrlees (1971): under competitive conditions, if any pure profits are fully taxed and the government is unconstrained in its ability to deploy distorting taxes, then any Pareto inefficient allocation is characterized by production efficiency. Intuitively, eliminating production efficiency means, by definition, that one has more of some outputs and no less of any other—which one would generally expect to be a desirable outcome.

The conditions of the theorem are restrictive, however. If they fail to hold, it may be good policy for the tax system to distort production decisions. For example, if the government is for some reason unable to tax directly a commodity that would otherwise be a suitable object for taxation, then it may be desirable to tax it indirectly, by taxing inputs into its production (Newbery, 1986). Input taxes may also be useful in raising revenue from groups that would otherwise be difficult to tax.

“consumption-type” VAT. There are a number of ways in which restrictions are imposed in practice, some deliberate (which we focus on now) and some a consequence of imperfect administration (discussed in a later chapter).

One set of restrictions intended to ensure that the tax bears on final consumption is the denial to businesses of a tax credit in relation to purchases whose use for consumption rather than production purposes is hard to monitor. Prominent in this category are cars and entertainment, for which many countries deny credit. There are more exotic examples too. In New Zealand, prostitutes can claim input tax credit in relation to “frilly” or “lacey” underwear, but not for flesh colored.²²

Restrictions have also often been imposed in relation to *investment goods*.²³ Under a “product-type” VAT, taxes on investment goods are not refunded while under an “income-type” VAT tax is effectively refunded only on the depreciated part of capital. The first of these systems implies that part of the tax levied on inputs is unrecovered; the latter, that it is recovered but with a lag. Both distort producer decisions, encouraging less capital-intensive methods, and raise the relative prices of more capital intensive goods. While most countries accept the principle of full refunding of taxes on investment goods, there

²²The Times, January 16, 2000.

²³See Shoup (1973, 1990) for a more complete treatment.

are and have been important exceptions. China and (at the state level) Brazil, for example, currently operate a product-type VAT. So, initially, did the states of the BRO—practice in these states has since diverged, but generally now includes the crediting of capital inputs.

New or expanding firms may pay more tax on their purchases of investment goods than they charge on their own sales, with the result that they are due a refund from the authorities. Many more countries impose what are in effect *administrative restrictions* on the refunding of taxes on investment goods. This may reflect simple revenue concerns or fear of fraud. The most common limitation is a requirement that excess credits be carried forward rather than immediately refunded; this is common practice, for example, in Latin America. By reducing the present value of credits attached to investment expenditures, such practices render the VAT closer to an income type.

A rare restriction on input credits is to grant credits only on material inputs used directly in the production process: VAT on adhesives used in producing furniture would thus be refunded, for instance, but that on advertising space bought, or legal services used, would not. This was the case, for example, of the initial VATs of the BRO countries. Such restrictions not only reintroduce an element of cascading, they also distort production and marketing decisions and relative consumer prices.

Breaks in the VAT Chain

The VAT will cease to be a tax on consumption if it is not levied, and appropriately recovered, throughout the production chain. The precise consequences of breaks in this chain depend on how the VAT is implemented, as discussed further below. In particular, if the “invoice credit” method is used—under which each trader passes to the purchaser an invoice showing the amount of tax charged—a break in the chain will mean that part of the tax paid on intermediate inputs is not recovered, so that part of the value added in final consumption is taxed more than once.

Equivalencies

It has already been observed that the effective incidence of the VAT can differ from its formal or legal incidence. In the same vein, a VAT can be economically equivalent to some other combination of taxes, and understanding those equivalencies can clarify the distinctive features of a VAT. The focus here is on equivalencies for a consumption-type VAT.

The first equivalency is obvious: a consumption-type VAT is economically equivalent to a *pure retail sales tax*. This emphasizes, in particular, that it is not

only the VAT that is conducive to production efficiency: that is simply a feature of its being a tax on consumption.

For a VAT *levied at a uniform rate* on all commodities, more subtle equivalencies arise. In a closed economy, an instructive example of an equivalency for such a VAT is:

- *A cash flow business tax and a tax on wage earnings, both levied at the same rate.* To see this, recall that value added (VA) is simply sales (S) less non-factor current inputs (N) and investment (I). Adding and subtracting the wage bill W then shows:

$$VA = (S - N - W - I) + W \quad (2.1)$$

where the first term is exactly the base of a cash flow tax: sales minus all nonfinancial expenditures. Adding to such a system a personal tax-free allowance, this is essentially the “flat tax” of Hall and Rabushka (1995).

If, further, the VAT rate is constant over time, then equivalency also holds between a VAT and:

- *A tax on pure profits, a capital levy, and a tax on wage earnings, all levied at the same rate.* This equivalence follows directly from the first since, over time, the revenue from a cash flow tax comes from two sources: pure profits from past and future investments, and the normal return on capital already in place (with the latter equal, in present value, to the value of the capital itself). This way of thinking about the VAT emphasizes that—like any tax on consumption—it is in part a retrospective tax on past savings, a feature, which is of some importance in considering the distributional effects of a VAT (discussed in Chapter 10 below).

The presence of international trade renders the equivalencies somewhat less transparent, because of the exclusion of exports from a consumption-type VAT. This means, for instance, that a destination-based VAT at a uniform rate is equivalent to the sum of a *cash flow business tax*—with all sales of domestic firms taxable—a *wage tax* (as before) and *uniform export subsidy/import tax*.

Methods for Determining VAT Liability

As noted, it is a key feature of the VAT that tax is charged—in effect, if not in form—only on the difference between purchases and sales. There are three main ways in which this can be done:²⁴

²⁴The discussion here draws especially on Cnossen (1993), McLure (1987), Mintz (1995), Oldman and Schenk (1995), and Summers and Sunley (1995).

- Under the “invoice credit” method, each trader charges output tax at the specified rate on each sale and passes to the purchaser an invoice showing the amount of tax thus charged. The purchaser, if subject to VAT on his own sales, is in turn able to credit such payment of input tax on his own purchases against the output tax charged on his sales, remitting the balance to the authorities and receiving a refund when there are excess credits.
- Under the “subtraction” method, tax is levied directly on an accounts-based measure of value added calculated for each firm by subtracting allowable purchases from revenues.
- Under the “addition” method, tax is levied on an estimate of value added calculated by summing (and adjusting as needed) factor incomes.

Practice and consensus heavily favors the invoice credit method. The only national VAT currently implemented using the subtraction method is that of Japan.²⁵ The Italian IRAP, introduced in 1998, is also in effect—though not in name—a VAT (of the income type) levied by the subtraction method. In addition, a notable variant of the subtraction method is the “gross margin” method used by some in the BRO region at retail and wholesale stages, and by Belarus (until January 2000) for all transactions. This method taxes firms on the difference between their revenues and costs, but with both these items calculated in ways that reflect the conventions and methods of past planned economies rather than market-oriented notions of value added: sales might be valued at notional accounting prices, for example, rather than those actually realized.²⁶

Michigan and New Hampshire have had addition-based VATs since 1976 and 1993, respectively.²⁷ Maharashtra for some while had a VAT that combined elements of addition and subtraction. No broad-based national VAT has been implemented by the addition method, but it has been applied to financial services (in Israel and Argentina, for example), a sector that has proved problematic (as discussed in Chapter 8).

The rest of this section compares the subtraction and invoice methods, the alternatives that have received widest attention. The invoice and subtraction

²⁵The Philippines used the subtraction method before switching to invoice crediting (McLure, 1987). Vietnam uses the subtraction method for individual entrepreneurs.

²⁶Summers and Sunley (1995), Bird (1995). FAD has strongly recommended against the subtraction/gross margin method; among other things, being difficult to administer, it facilitates evasion.

²⁷As described in Kenyon (1996), the Michigan variant is a consumption-type VAT (capital expenditures being deductible in arriving at the definition of profits used in the addition), whereas that in New Hampshire is of the income type.

methods have important features in common. Both are robust to the omission from taxation of any intermediate transaction: if a vendor fails to tax or report a sale, the loss of tax revenue will be exactly corrected if the purchaser also omits to claim the credit (under an invoice method) or deduction (under the subtraction method). Indeed, in a closed economy, and with a single rate of tax, there is little to choose between the two methods. Outside such an idealized world, however, several differences emerge.

Most of these differences reflect the central feature that the invoice-credit method is transaction-based and the subtraction method entity-based. This in turn means that while the invoice-credit method has a tentative aspect to it—tax at each stage is preliminary, being an input into another calculation further downstream—the subtraction method gives rise to a final tax at each stage. Prominent among the specific differences to which this gives rise are:

- By explicitly linking the tax credit on the purchaser's inputs to the tax paid by the purchaser, the invoice method may do more to discourage fraudulent undervaluation of intermediate sales. Thus, in principle, invoices could be cross-checked to pick up any overstatement of credit entitlement. Under the subtraction method, in contrast, the seller might simply fail to report sales that the purchaser nevertheless claims as costs. Under the invoice credit method, the same effect could be achieved only by failing to forward tax shown as withheld on the invoice issued to the purchaser.
- The invoice method is better suited for dealing with differential rate structures.²⁸ For example, assume that sales of some good are zero-rated—meaning that no tax is charged on output but input tax is credited (if necessary, refunded) in the usual way—while all other goods face the standard rate. Under the invoice method, this is accommodated by allowing sales of the good to be tax-free. Under the subtraction method, achieving the same effect requires omitting sales of such goods from taxable revenues, which requires traders to distinguish between different kinds of sales on their books, after the fact. In the same way, one could in principle accommodate multiple rates under a subtraction method. This would transform the subtraction method, however, into something like the invoice method, since traders would presumably be required to keep documentation verifying their claims as to the nature of their sales; the only difference from an invoice system is that invoices need not be matchable between buyer and seller.

²⁸Oldman and Schenk (p. 74, 1995) see this as an advantage for the subtraction method, presumably on the grounds that this unsuitability helps amass opposition to rate proliferation.

- A particular instance of the previous difficulty arises in connection with international trade. If the VAT is levied on the destination principle, as generally recommended, exports should be zero-rated, which, as just noted, is somewhat more naturally done under the invoice method. In contrast, the subtraction method accommodates the origin principle (that is, taxes are levied in the jurisdiction in which a taxable good is produced) with greater facility since it is by construction precisely a tax on value added at source. The difference, however, should not be overstated. The origin principle can be implemented under the invoice method: all that is needed is to tax exports and give credit in respect of imports for the notional tax that would be payable at the domestic rate in the importing country (rather than for the tax actually paid in the exporting country); Box 17.1 in Chapter 17 provides a numerical example.
- Further differences arise in the treatment of exempt goods. Achieving exemption is easy in both cases: under the invoice credit system, tax is neither payable on output nor recoverable on inputs; under the subtraction method, a rate of zero is applied to the difference between revenue and costs. The issue concerns the purchases of exempt goods by registered traders. Under the invoice credit system, the purchaser enjoys no credit in respect of purchases of such goods. On the other hand, under what McLure (1987) calls a “naïve” subtraction system (one that gives a deduction in respect of all purchases, taxed or not), such purchases would be deductible and the tax paid to the exempt trader consequently recovered by the purchaser. Which treatment is superior? This depends on the reason for the exemption. One important form of exemption is that of small traders, on grounds of administrative convenience. Here, the treatment under the subtraction method would seem appropriate, in that it places purchases from exempt small traders on the same footing as purchases from registered traders.²⁹ It may also be an attraction of the subtraction method that it relieves exports of the tax implicit in the price of exempt inputs, and eliminates the incentive to self-supply by registered traders (discussed in Chapter 7).
- Where there exists an effective income tax (which is not the case in most developing countries), there may be some advantage to the subtraction method in terms of compliance costs, since the information and records that it requires are essentially already required for income tax.

²⁹Under the subtraction-based VAT in Japan, credit is indeed available in respect of purchases from exempt traders.

The Comparison Between VAT and Retail Sales Taxation

The VAT is of course not the only possible form of consumption tax. It is natural to compare it, in particular, with the retail sales tax (RST).³⁰ As a single stage tax levied in principle at the point of sale of the final product, the RST may appear to be a simpler way of achieving the same key effects—preserving production efficiency and avoiding cascading—as a VAT. The comparison between RST and VAT need not be pursued here in any detail: see, for instance, Cnossen (1987), Gale and Holtzblatt (2000), and Zodrow (1999). Among the key points, however, are the following:

- In practice, it is hard to ensure that RST does not fall on business inputs. Ring (1989) estimates (for 1989) that in the U.S. states that have a RST about 40 percent of the revenue collected was from business purchases.
- On the other hand, the alleged “self-enforcing” feature of the invoice-credit VAT—the notion that the purchasers will help enforce the VAT as a consequence of their interest in obtaining a proper invoice from their suppliers—is not as important in practice as has sometimes been argued: purchasers do not care, for instance, whether tax has actually been paid by their suppliers, only about the acceptability to the authorities of the invoices they hold. There is evidently a potential problem in the claiming of credits on the basis of fraudulent invoices.³¹
- What does appear important in securing revenues, however, is the collection of revenue at many points under the VAT rather than simply at the final stage under the RST. This renders the RST much more vulnerable to evasion.

These features are reflected in something of a conventional wisdom among tax practitioners: while the RST may work well at relatively low rates, below say 5–10 percent, at higher rates it proves too vulnerable. This has certainly been widely argued by FAD: Tanzi (1995, pp. 50–51), for instance, believes that “10 percent may well be the maximum rate feasible under an RST.” There are of course those who argue for the superiority of the RST over the invoice-

³⁰Another natural comparison is with a turnover tax: but here the key merit of the VAT, at least in its pure form, in avoiding cascading and production inefficiency is clear enough. A formal comparison between RST, VAT, turnover tax, and manufacturer level taxes is provided by Das-Gupta and Gang (1996).

³¹Lent, Casanegra, and Guerard (1973) provide an early recognition of the limits to self-enforcement.

credit VAT, including those who currently advocate it for the United States. On balance, however, the judgment appears to be that expressed by Zodrow (1999): “. . . although. . . some of the advantages of the VAT have been exaggerated by its proponents, it seems difficult to argue that the VAT is not on balance superior to the standard RST.” In any event, it is indeed notable that very few RSTs are set at rates above 10 percent³² while few VATs are set at rates below.

³²There have been a few exceptions (Bosnia-Herzegovina, for example has a retail sales tax of 20 percent) but generally in contexts of unusually tight control by the tax authorities.

3

Is the VAT a Particularly Effective and Efficient Tax?

Despite the evident importance of the spread of the VAT, there have been almost no systematic attempts to progress beyond anecdote in evaluating its performance. Is there any evidence that adoption of the VAT has actually produced the benefits claimed by its advocates? These are difficult questions, which the following attempts to begin answering.

Has the VAT Raised More Revenue than the Sales Taxes It Replaced?

The performance of a tax must be gauged by more than the revenue it raises. It must also be assessed in terms of the efficiency and fairness with which it raises that revenue, and the costs incurred by government and taxpayer in doing so. Nonetheless, revenue needs are often a key concern in the introduction of a VAT. Before turning to efficiency and fairness issues, this section therefore focuses on the narrow question of the revenue effects of introducing a VAT (equity issues being considered in Chapter 10 and collection costs in Chapter 5). Specifically, at the time of its introduction, the VAT is generally perceived as an explicit replacement for some preexisting sales tax. Has it in practice tended to raise more revenue than the predecessor tax?

Table 3.1 reports, for eight African countries that adopted the VAT during the 1990s (and whose particular experience is discussed further in Chapter 5), the difference (in percent of GDP) between the average revenue raised by the VAT in its first two or three years of operation (depending on data availability) and the average revenue raised by the predecessor sales tax in the matching period prior to the VAT.

Comparisons of this sort need to be interpreted with care. The introduction of the VAT is often intended to be revenue neutral, in the short term at

Table 3.1. Revenue Difference Between VAT and Predecessor Sales Tax in Selected African Countries
(Percent of GDP)

Benin	Burkina		Gabon	Guinea	Kenya	Togo	Uganda	Zambia
	Faso							
2.0	0.9		3.0	1.0	0.8	0.2	1.0	0.9

Source: IMF staff calculations.

least (though it would be naïve not to acknowledge that commitments to revenue-neutrality often cloak the pursuit of future revenue gains). It may also be that VATs have been adopted at times when fiscal difficulties are so pressing that a significant increase in tax levels becomes politically feasible, and could have been achieved even under the predecessor tax system. Some upward trend in tax revenues can, moreover, be expected as development proceeds. And, not least, in those cases in which a VAT is introduced both to replace a sales tax and tariff revenues lost as a consequence of trade liberalization, any increase in revenues might in part reflect the fact that the VAT is substituting for a both a sales tax and tariffs.³³

Despite these caveats, the extent of the revenue gains shown in Table 3.1 is impressive. The average revenue increase in the West African countries, in particular, is more than 1 percent of GDP.

Table 3.2 repeats this exercise—again comparing the two or three years either side of introduction, and subject, of course, to the same caveats—for a wider range of countries: all those that have adopted VATs since 1985 and for which sufficient data are available to compare revenue over the two or three years after the introduction of the VAT with that from the predecessor indirect tax.

This confirms the impression of a gain, on average, in sub-Saharan Africa. The apparent gain is even larger in the Americas and, especially, the Small Islands. The reduced tax share in CBRO is striking; however, in these cases the VAT was introduced against the background of a trend decline in the ratio of tax revenue to GDP associated with the economic transition itself. Excluding the CBRO countries, the share of VAT revenues in GDP exceeds that of the predecessor tax, on average, by about 1.1 percent of GDP.

³³For a longer-term perspective, one should compare the revenue performance of the VAT with the broad set of possible alternative taxes to the VAT rather than with just sales taxes. Recall from the discussion of equivalencies in Chapter 2, for example, that a VAT is equivalent to a wage tax combined with a profit tax at the same rate. Once the VAT is in place, the similarity between increasing the rate of VAT and increasing the tax on labor income, in particular, will be evident to taxpayers.

Table 3.2. Revenue Difference Between VAT and Predecessor Sales Tax by Region
(Percent of GDP)

Sub-Saharan Africa	Asia and Pacific	Americas	Central Europe and BRO	EU (Plus Norway and Switzerland)	North Africa and Middle East	Small Islands
1.10	0.70	1.42	-1.88	1.05	0.10	1.96

Source: IMF staff calculations.

Identifying Efficiency Gains from the VAT

As noted, the performance of the VAT is more than just a matter of the revenue it yields. In particular, the case for the value-added tax rests upon the view that a well designed and implemented VAT is a particularly efficient tax. It is this claim that is of central interest in evaluating whether the spread of the VAT has indeed been a desirable development.

It is difficult to quantify the impact on economic efficiency of adopting a VAT. The positive impact on production efficiency arising from the exclusion of intermediate activities from the tax base should in principle be reflected in a higher level of GDP, in so far as the VAT replaces a cascading tax. (Of course, the same benefit attaches to any tax, such as a RST, that excludes intermediate goods and services). The magnitude of this effect is hard to gauge, however, as it depends on the degree of substitutability in input choice. That said, results reported by Bovenberg (1987) from a computable general equilibrium model calibrated to the economy of Thailand of the 1970s suggest that raising an additional 1 percent of GDP by means of a uniform rate consumption-type VAT rather than an intensification of preexisting cascade taxes would raise real incomes by about 0.004 percent of GDP. If a VAT entails the elimination of unrelieved taxes on investment goods, positive growth effects might also be expected as a consequence of a reduced cost of capital. No estimates appear to have been made of the possible extent of this gain, which could exceed the static efficiency gains.³⁴

An alternative to the direct empirical identification of efficiency gains is to look for testable implications of the supposed relatively low efficiency cost of raising revenue by a VAT. One possibility is that a government with a VAT raises more total revenue than would otherwise be the case. This could be investigated by looking at the variation in the ratio of tax revenues—for all taxes, not just VAT—to GDP between those countries with and without a VAT. This

³⁴The extensive empirical literature comparing taxes on income and on consumption (for example, Auerbach and Kotlikoff, 1987) does not address the issue here since the consumption tax considered there need not be a VAT.

approach enables the effects of the VAT to be investigated empirically without specifying any particular alternative: the question asked is not whether VAT is preferable to alternative kinds of sales taxes, or trade taxes, or an expanded income tax, but rather whether the addition of a VAT to the armory of instruments at the disposal of the authorities' appears to improve the overall efficiency of the tax system.

It is not inevitable that access to a more efficient tax instrument will lead to an increase in the tax-GDP ratio. While a lower marginal efficiency cost of raising revenue can be expected to lead to more revenue being collected, there are at least two additional effects associated with the higher real income presumably due to using a more efficient tax:

- If public expenditure is a normal good, the desired level of its provision will rise, pointing to a higher tax ratio.
- With an expanded tax base, any given level of expenditure can be financed with a lower tax rate, pointing to a lower ratio of tax revenues to GDP.

However, for the latter effect to dominate, implying that access to a more efficient tax instrument would lead to a *lower* tax ratio, the income elasticity of demand for public expenditure would have to be sufficiently low. The conventional wisdom, on the contrary, is that, at least over a wide range of incomes, the income elasticity of demand for public expenditure is greater than one. This suggests that a weak income effect is unlikely to more than offset the implications of a reduction in marginal efficiency cost. There are thus grounds for supposing that any efficiency gains associated with the adoption of a VAT may be reflected in a higher ratio of tax to GDP.

Before considering whether countries with a VAT in fact raise more total revenues than those without, note that a positive answer to this question does not necessarily make the VAT a desirable tax. Those who distrust government might regard the ability to raise large amounts of revenue at low marginal cost as an argument against the VAT, not for it: in this view, efficient taxes simply fuel inappropriate spending. Irrespective of the view one takes on this wider issue, however, determining the revenue/efficiency implications of the tax is clearly of considerable importance.

Finally, it would be misleading to test for an efficiency gain ascribable to the VAT by asking whether the ratio of VAT revenues to GDP in countries with a VAT exceeds the ratio of sales tax to GDP in those without. It might be, for instance, that the greater VAT revenues largely offset lower revenue from trade taxes (that are nondistorting in the case of goods that could not be produced domestically), with no necessary implications for efficiency. Nor would considering the sum of VAT/sales taxes plus trade taxes would not resolve the

issue: higher ratios in countries with a VAT might simply arise because the VAT is used in part as a substitute for wage taxes, again with no necessary implications for efficiency. Accordingly, the empirical analysis considers a comparison across countries with and without a VAT focusing on *total* revenue.

Do Countries with a VAT Raise More Revenue?

The question has been little studied. Among the few existing studies, Nellor (1987) compares experiences across 11 European countries between 1955 and 1984, and finds some evidence that the adoption of a VAT did significantly increase tax-GDP ratios.³⁵ However, although suggestive, that study is based on a relatively small sample comprising only developed economies. The rest of this subsection develops new evidence for a wider sample of countries.

The starting point of this exercise was the extensive literature that models international differences in the tax ratio in terms of such variables as per capita GDP (to gauge the possibility that wealthier countries spend a greater proportion of income on publicly provided items) and the share of agriculture in GDP (picking up the degree of development and, perhaps, the breadth of the tax base). The basic strategy in what follows was to modify estimating equations of this kind to allow effects from the presence of a VAT.

There is evidently an issue of causation. While the greater efficiency of the VAT is presumed to underlie any increase in the tax ratio, it could be that implementation of a VAT involves fixed costs that are warranted only if the revenue to be raised is sufficiently high. More generally, of course, the level of taxation and the instruments deployed to collect it are likely to be determined simultaneously. Accordingly, it is only the statistical association that is addressed here.

Moreover, the VAT can take many different forms: a zero-one dichotomy will exaggerate the difference between a crude VAT and a turnover tax that embodies a significant degree of crediting. Nevertheless, given the sample size, the broad distinction makes it worthwhile to ask whether the VAT leaves a trace in the revenue data.

The basic sample for this exercise comprised a cross-section³⁶ of 183 countries, 99 with a VAT, and 84 without. Several countries that now have a VAT

³⁵Stockfish (1985) in a related piece compared the growth of revenues between OECD members who did and did not adopt a VAT between 1964 and 1981. He performs no formal tests, but sees no significant difference in revenue growth performance. However, the hypothesis here concerns the *level*, rather than the *growth* of revenues.

³⁶Panel data would be preferable to enable some control for country-specific effects. A time series of VAT revenues, however, is not available for a wide set of countries. Informal accounts of experience over time in some African countries are given in Chapter 5.

were treated as non-VAT countries for this exercise, since the revenue data available at the time of the work related to a period prior to the introduction of the VAT.³⁷ In some contexts, data availability limited the sample size still further. The data are described in Appendix I.

As implied by the summary statistics in Table 1.5, the impact of a VAT may depend on which measure of aggregate revenue is considered. For instance, since the VAT is generally presumed to be most appropriately levied as a central tax (see also Chapter 17), it may have different effects on central government revenue as opposed to general government revenues (revenue, that is, consolidated over all levels of government). The analysis therefore considers the relationship between the VAT and three different measures of aggregate revenue.

General Government Revenue and Grants

The first measure of revenue is the broadest, and the one that allows the largest sample sizes: general government revenue and grants. This includes receipts at all levels of government, and not only receipts from taxes but also nontax revenue (including grants from abroad) as well. Results are reported in Table 3.3, the dependent variable in each case being (the logistic transform of)³⁸ the ratio of general government revenue and grants to GDP.

Column A reports an estimating equation of the kind commonplace in the literature on “tax effort” (exemplified, for instance, by Tanzi (1987)), with no allowance for the possibility of an effect from VAT. The result replicates the key stylized facts from the literature (notably Tanzi, 1992): GDP per capita (Y) and the importance of international trade to the economy ($OPEN$)³⁹—measured as the average of the ratios of imports and exports to GDP—each have a significant positive relation with the tax share.

The positive impact of income on the GDP share of taxes is well known. More interesting is the positive impact of the importance of international trade. Leuthold (1991) and Tanzi (1992) attribute this effect to the administrative ease of collecting revenues on imports and exports as they cross na-

³⁷These revenue data relate variously to years between 1994 and 1997; other variables in the regressions reported here and elsewhere in the book are contemporaneous with those revenue data.

³⁸That is, the dependent variable is $\ln(\theta/1-\theta)$, where θ is the ratio of general government revenue and grants to GDP: the logistic transformation is employed to ensure a dependent variable with range $(-\infty, +\infty)$. This approach is adopted throughout, but the qualitative results prove insensitive to this choice.

³⁹Broadly similar results are obtained if, as in many studies, the ratio of imports to GDP is used instead of $OPEN$.

Table 3.3. VAT and Total Revenue: General Government Revenue and Grants

	A	B	C	D	E
Constant	-4.29 (-12.95)*	-4.28* (-12.74)	-2.99* (-4.92)	-3.27* (-10.38)	-1.59* (-3.39)
Ln(Y)	0.21* (7.09)	0.21* (7.12)	0.04 (0.58)		
Ln(AGR)					-0.14† (-1.89)
Ln(OPEN)	0.53* (5.81)	0.53* (5.63)	0.67* (5.33)	0.77* (7.80)	0.45* (4.65)
V		-0.08 (-0.94)	-0.79 (-1.08)		1.63* (2.68)
V x Ln(Y)			0.25* (3.22)	0.25* (9.03)	
V x AGR					-0.21* (-2.23)
V x Ln(OPEN)			-0.44* (-2.81)	-0.64* (-8.27)	-0.42* (-2.79)
AF			-0.74* (-3.02)	-0.55* (-3.28)	-0.69* (-4.34)
AP			-0.58* (-2.36)	-0.34* (-3.12)	-0.57* (-3.22)
AS			-0.55 (-1.25)		-0.40* (-2.16)
CBRO			-0.05 (-0.34)		-0.54* (-3.40)
NMED			-0.57* (-2.47)	-0.31† (-1.68)	-0.7 (-0.32)
SI			-0.17 (-0.71)		-0.7 (-0.32)
V x AF			0.69* (2.30)	0.58* (3.13)	0.37† (1.77)
V x AP			0.04 (0.17)		-0.06 (-0.26)
V x AS			0.10 (0.22)		-0.09 (-0.37)
V x NMED			0.52* (2.23)	0.42† (1.81)	0.45* (2.03)
V x SI			-0.28 (-1.25)		-0.21 (-0.84)
\bar{R}^2	0.45	0.45	0.56	0.52	0.50
N	170	170	170	170	160

Source: IMF staff calculations.

Note: Dependent variable is $\ln(\theta/1-\theta)$, where θ is the share of general government tax receipts in GDP; t -statistics (constructed from White standard errors) are in parentheses; * indicates significance at 5 percent and † at 10 percent.

tional borders. More recently, Rodrik (1998) has drawn attention to a robust positive association between the size of government and the importance of trade, arguing that this reflects the role of government in cushioning against external shocks, rather than the ease of taxing imports, because the effect remains after controlling for the extent of trade taxes and VAT. Alesina and Wacziarg (1998) postulate that the effect arises from the positive association between the role of international trade and size, with smaller countries having larger governments because of scale effects in the provision of public goods.

Interest here, however, centers on the role of the VAT variable in the context of aggregate revenue performance. Column B begins to explore this by adding a simple dummy variable V reflecting the presence of a VAT: V takes the value unity if a VAT was present throughout the financial year for which tax data are available, and zero otherwise.⁴⁰ It proves insignificant.

The effect of a VAT may be more complex, however, than a simple shift of intercept. There may, moreover, be idiosyncratic regional effects on patterns of revenue, and indeed the impact of the VAT on wider revenues may also differ by region. Column C therefore reports a more general specification incorporating regional dummies and interaction terms that allow, in particular, for the impact of a VAT to vary with the level of development (as measured by GDP per capita), with the importance of trade, and by region. The regions here are the seven identified in Chapter 1 with EU+ (the EU plus Norway and Switzerland) taken as the reference.

Several striking features emerge from this specification. While the simple VAT dummy remains insignificant, strong effects are apparent in the interactions with income and trade importance. In particular, there is a revenue gain associated with the presence of a VAT that is larger the higher is the level of per capita income. On this score, while all countries gain revenue from the presence for VAT, it is the more developed countries that gain more. The interaction with the importance of trade, however, enters negatively: that is, there is on this account a revenue loss associated with the presence of a VAT that is greater the more important international trade is for an economy. One interpretation of this latter effect is that VAT in itself is less conducive to revenue raising than other devices that it may replace (most obviously trade taxes), so that, considering this effect in isolation, its adoption may weaken revenue collection. This important issue is elaborated upon in the next chapter.

Turning to regional effects, all areas except the Americas, CBRO, and small islands raise significantly less overall revenue—conditional on their real in-

⁴⁰Taking account of the length of time a VAT has been in place did not add insight.

comes, the importance of international trade, and the presence of a VAT—than do the EU+. Again, however, interesting interaction effects emerge: in both sub-Saharan Africa, and North Africa and the Middle East, countries that have adopted a VAT raise significantly more revenue. Indeed the apparent region-specific gain from adopting a VAT in sub-Saharan Africa roughly offsets the negative effect found for the region as a whole.

Column D reports the results of excluding variables not significant at 10 percent or less from the specification in Column C. The effects just described remain.

The pattern of VAT effects that emerges is thus complex. The revenue gain associated with the presence of a VAT is greater in richer countries, and seems also to have been greatest in sub-Saharan Africa and the Middle East. Against this, however, is a loss associated with the VAT that increases with the importance of trade to the economy, perhaps reflecting the availability there of other effective revenue-raising devices. With revenue effects pointing in opposite directions, it is not a priori clear whether the presence of a VAT is associated with higher revenue or lower. Using the point estimates in Column D to compare, country by country, predicted revenues with and without a VAT, one finds that predicted revenue is indeed higher with a VAT in 55 of the 99 countries having a VAT, and that for these countries the average revenue gain associated with the presence of a VAT was around 0.4 percent of GDP. In all but two of the countries without a VAT, however, predicted revenue would be reduced by the presence of a VAT.

These calculations themselves thus provide only mixed evidence that the adoption of the VAT has been associated with higher revenues, and hence of an underlying efficiency gain associated from its use. But these results must be interpreted with great care. They assume, unreasonably, that the unexplained difference between predicted and actual revenues would be the same both with and without a VAT. They are of course open to all the wider criticisms of this approach—such as the neglect of self-selection issues—that are touched on later. Moreover, the results are sensitive to plausible differences in the magnitudes of the point estimates used. If, for instance, the point estimates in Column C are used—which involve a smaller negative interaction effect with international trade—one finds that predicted revenue is higher under the VAT in 93 of the 99 countries with a VAT (by an average of 4 percent of GDP), and in 64 of the 84 without (their average gain being over 4 percent). Finally, the results naturally reflect the fact that they are based on VATs that have been implemented in practice, rather than some ideal VAT. Actual VATs incorporate a range of non-recommended exemptions and other factors (see below) that will serve to undermine the efficiency of the tax.

The last column, E, reports a specification of the same general form as in Column C but replacing GDP per capita by the share of agriculture in GDP (*AGR*). As would be expected, more agricultural countries raise less revenue, all else equal. More interesting for present purposes, the simple dummy *V* is now significantly positive, pointing to a gain associated with the presence of a VAT. The interaction term with the share of agriculture itself is significantly negative. How to interpret this is not clear: the agricultural share may be a proxy for development and the ability to comply with and administer the tax; or the effect may simply indicate the difficulty of raising significant sums from this sector (see Chapter 9). Other interactions are as before: greater reliance on international trade is associated with a smaller gain from the VAT; there is a distinct revenue gain associated with the VAT in sub-Saharan Africa that again tends to offset—though now only partially—a general tendency for revenue to be lower in the region; and there again appears to be a distinct gain from the VAT in North Africa and the Middle East.

With effects again pointing in opposite directions, the question remains whether, on balance, the VAT is associated with higher or lower revenues. For the specification in Column E, however, the answer is clear-cut: for all countries, both those with and those without a VAT, predicted revenue is higher in the presence of a VAT. The positive coefficient on the VAT dummy is an order of magnitude larger than the negative interaction effects.

General Government Tax Revenue

Table 3.4 repeats the exercise for a narrower measure of receipts (now excluding nontax revenues and grants): general government tax revenue. This measure is only available, it should be noted, for a far smaller number of countries, so that the sample size is now only around 70. The specifications reported are analogous to those in Table 3.3.

Columns A and B differ little from those for general government revenue and grants. In particular, the simple presence of a VAT again proves insignificant. The more general specification in Column C again shows a positive interaction between the presence of a VAT and the level of per capita income. The negative interaction with the international trade variable now vanishes. The VAT dummy itself, however, now becomes negative and (almost) significant at 10 percent. The only other feature to emerge from Column C is that the distinct gain from the presence of a VAT for sub-Saharan African countries is no longer present, though there does now appear to be a gain in Asia and the Pacific.

Column D reports the consequence of eliminating all variables insignificant at 10 percent (other than the constant) from the regression in Column B.

Table 3.4. VAT and Total Revenue: General Government Tax Revenue

	A	B	C	D	E
Constant	-4.24* (-6.55)	-4.23* (-6.67)	0.29 (0.14)	-2.22* (-4.82)	-1.87* (-3.74)
Ln(Y)	0.21* (4.37)	0.18* (3.07)	-0.26 (-1.26)		
Ln(<i>OPEN</i>)	0.38* (2.79)	0.37* (2.80)	0.29† (1.81)	0.29* (2.51)	0.18 (1.37)
<i>V</i>		0.34 (1.23)	-4.25 (-1.67)	-2.25* (-4.93)	0.92* (3.12)
<i>V</i> x Ln(<i>Y</i>)			0.53* (2.32)	0.29* (5.67)	
<i>V</i> x Ln(<i>AGR</i>)					-0.34* (-3.51)
<i>V</i> x Ln(<i>OPEN</i>)			-0.06 (-0.21)		
<i>AF</i>			-1.75* (-2.07)	-0.58* (-2.33)	-0.61* (-2.53)
<i>AP</i>			-1.74* (-2.65)	-1.02* (-3.63)	-1.14* (-3.15)
<i>AS</i>			-0.79 (-1.61)		
<i>CBRO</i>			-0.05 (-0.14)		
<i>NMED</i>			-1.21† (-1.91)	-0.73† (-1.84)	-0.72 (-1.67)
<i>SI</i>			-0.52 (-0.94)		
<i>V</i> x <i>AF</i>			0.98 (1.00)		
<i>V</i> x <i>AP</i>			1.24† (1.78)	0.62 (1.67)	0.56 (1.21)
<i>V</i> x <i>AS</i>			0.39 (0.86)		
<i>V</i> x <i>NMED</i>			0.78 (1.25)		
<i>V</i> x <i>SI</i>			0.21 (0.39)		
\bar{R}^2	0.21	0.23	0.38	0.40	0.36
N	71	71	71	71	68

Source: IMF staff calculations.

Note: Dependent variable is $\ln(\theta/1-\theta)$, where θ is the share of general government tax receipts in GDP; *t*-statistics (constructed from White standard errors) are in parentheses; * indicates significance at 5 percent, and † at 10 percent.

The qualitative results remain the same. Column E then replaces per capita GDP in the specification of Column D⁴¹ by the share of agriculture. The significant negative interaction term again suggests that the gain from the presence of a VAT is lower in more agrarian countries.

The point estimates in column D imply that the positive effect from the interaction between the VAT dummy and the level of GDP per capita will offset the negative fixed effect associated with the presence of the VAT at income levels over \$2,343 per annum (\$1,260 in Asia and Pacific). This is a disconcertingly high cut-off, but for the reasons noted in connection with Table 3.3—now compounded by the small sample size for this set of estimates—should not be interpreted too literally. In addition to the small sample size and sensitivity of results to the specification, such calculations are highly sensitive to plausible variations in parameter values. If the coefficient on the interaction with real income were one standard deviation higher, the critical income level would fall to \$620 (\$333 in Asia and Pacific).

Central Government Tax Revenue

The final set of regressions relate to a still narrower notion of revenues: tax receipts of the central government. The results, which are set out in Table 3.5, for the same series of specifications as for the other revenue measures, are easily summarized: apart from a couple of the interaction terms with regional dummies (pointing to a loss from the VAT in the Americas and a gain in North Africa and the Middle East, and, perhaps, in the small islands) there is no sign of any very marked effect on central tax revenues. In particular, there is no discernible systematic structural effect associated with the presence of a VAT.

The marked difference of results depending on revenue measure employed is striking. Moreover, the differences run counter to the simple intuition that suggests that since the VAT is best suited to be an instrument of central government, any revenue effect arising from its presence is most likely to be found in central government revenues.⁴² On the contrary, the results here suggest

⁴¹Multicollinearity problems arise if the replacement is made in Column C.

⁴²Note that the picture that emerges from the regressions is quite different from that implied by the simple averages in Table 1.5. No significant association between the VAT and general tax revenue emerges from the analysis here. The fact that the earlier tabulations point to general tax revenue being higher in countries with a VAT, thus, presumably reflects the tendency for countries with a VAT to be richer, and for richer countries to have higher tax ratios. The reconciliation between the significant effect found in the regressions for general government revenue and grants and the similarity of conditional means between the two sets of countries might be explained in terms of those countries with a VAT tending to rely less on international trade (as also shown in Table 1.5), a disadvantage in terms of raising revenue that counteracts the effect of their greater real income, and which the VAT goes some way to offset.

that the center shares any revenue gain associated with the presence of a VAT with lower levels of government by vacating other tax bases. A resolution of these issues is likely to require, among other things, a greater understanding of the decision to adopt a VAT.

Conclusions

It is hard to gauge directly the extent to which the spread of the VAT has increased the efficiency with which productive resources are allocated. This chapter has focused instead on the search for indirect signs of an efficiency gain, in the form of an increase in the ratio of tax revenues to GDP associated with the presence of a VAT. The empirical results that have been presented here must be interpreted with great caution. They rely only on cross-section variation, so that the presence of a VAT may be proxying for country effects—such as administrative sophistication—that are correlated with revenue performance. Panel data are not available, however, to control for this. There is, moreover, an endogeneity problem: those countries that have adopted a VAT may be marked by characteristics known to them, but unobserved in the data, making them particularly well suited to the VAT. Alternatively, they may be countries that turned to a VAT in the face of a deteriorating revenue situation. Progress will require modeling the decision to adopt a VAT, an important topic for future work.

Caveats aside, however, a number of suggestive results do emerge from the analysis:

- There is some evidence that the presence of a VAT is associated with a higher ratio of general government revenue and grants to GDP; weaker evidence that, except perhaps for the poorer countries, it is associated with a higher ratio of general tax revenue; and no evidence at all that (apart from region-specific effects) it is associated with a higher (or lower) ratio of central tax revenues.

There is thus an important, albeit limited, sense in which the supposed ability of the VAT to bolster revenues in an efficient manner is borne out by the data. The extent of the effect, however, cannot be estimated with any precision.

The absence of an impact on central tax revenues is striking, particularly since—for reasons related to the difficulties associated with interjurisdictional trade (see Chapter 11)—it is widely regarded as a tax that is properly levied only by central government. The implication of the lack of significance found for the VAT in relation to central tax revenues is that any direct addition to

Table 3.5. VAT and Total Revenue: Central Government Tax Revenue

	A	B	C	D	E
Constant	-4.07* (-6.29)	-4.14* (-6.61)	-3.86* (-3.48)	-4.15 (-7.02)	-2.09* (-2.32)
Ln(Y)	0.18* (2.90)	0.17* (2.72)	0.21* (2.31)	0.21* (4.06)	
Ln(AGR)					-0.19 (-1.35)
Ln(OPEN)	0.33* (2.88)	0.35* (2.97)	0.31* (1.99)	0.31* (2.69)	0.50* (3.13)
V		0.19 (1.40)	0.27 (0.23)		0.33 (0.36)
V x ln(Y)			-0.06 (-0.53)		
V x AGR					0.74 (0.44)
V x ln(OPEN)			0.02 (0.08)		-0.25 (-1.04)
AF			-0.36 (-0.70)		-0.90 (-1.39)
AP			-0.33 (-0.68)		-0.67 (-1.06)
AS			0.26 (0.51)		0.03 (0.05)
CBRO			0.16 (0.34)		-0.98 (-0.16)
NMED			-1.55* (-2.28)	-1.35* (-2.86)	-2.33* (-2.73)
SI			-0.16 (-0.32)		-0.58 (-0.90)
V x AF			0.26 (0.78)		0.43 (1.33)
V x AP			0.15 (0.55)		0.26 (0.83)
V x AS			-0.65* (2.13)	-0.33* (2.26)	-0.64* (-2.06)
V x NMED			1.67* (2.91)	1.51* (2.97)	2.18* (3.10)
V x SI			0.38 (1.29)		0.71* (2.08)
\bar{R}^2	0.19	0.19	0.31	0.35	0.29
N	101	101	101	101	95

Source: IMF staff calculations.

Note: Dependent variable is $\ln(\theta/1-\theta)$, where θ is the share of central government tax receipts in GDP; t -statistics (constructed from White standard errors) are in parentheses; * indicates significance at 5 percent, and † at 10 percent.

central tax revenue is offset by a reallocation of other tax instruments to the lower levels of governments.

Two other lessons stand out.

- The revenue gain associated with the VAT increases with the level of GDP per capita and decreases with the share of agriculture in GDP.

While these correlations are strong, the results are not totally clear since the effects remain once literacy has been controlled for, implying that the variables are not capturing administrative sophistication as such. In the case of agriculture, the result may simply reflect the typical exemption of agricultural output.

- The revenue gain also appears lower, all else equal, the more important international trade is for an economy, though this finding is more tentative.

This may reflect the availability in such economies of other devices—most obviously tariffs—that are no less effective at raising revenue than the VAT.

4

Understanding the Revenue Performance of VATs

The focus in the previous chapter was on the contribution that the VAT has made within the wider tax system, not the nature or determinants of the performance of the VAT itself. It is to those issues that the analysis now turns.

Summary Measures of VAT Performance

As can be seen from Table 1.3, countries with similar VATs as measured by the standard rate can have significantly different revenue performance as measured by the ratio of VAT revenue to GDP. In both the Philippines and Fiji, for instance, the standard rate of VAT is 10 percent: yet in Fiji the VAT collects over 6 percent of GDP in revenue whereas in the Philippines the tax yields less than 3 percent of GDP. Clearly there must be significant differences of design, behavior, and/or enforcement between the two VATs. More generally, the “efficiency ratio,”⁴³ defined as the ratio of VAT revenues to GDP divided by the standard rate (expressed as a percentage), has been widely used as a summary indicator of the performance of the VAT and as a useful gauge of the extent to which the VAT bears uniformly upon a broad base. A low ratio, in particular, is typically taken as *prima facie* evidence of erosion either by exemption and reduced rates within the tax law or by imperfect enforcement.

The first row of Table 4.1 reports the pattern of efficiency ratios across all countries with a VAT of sufficiently long existence for its yield to have been observed.⁴⁴ The average ratio is 34 percent, implying that a 1 point increase in the

⁴³Sometimes also referred to as the “productivity ratio.”

⁴⁴Data on VAT revenues as such are not available. As described in the Appendices, the GFS category “general sales, turnover or VAT” is used; while some of the sample countries may receive some belated revenue from a sales or turnover tax that it replaced, this seems unlikely to be a significant source of bias. More important, the measure may not in all cases include VAT collected on imports, though additional information has been used to correct for this wherever possible.

Table 4.1. Efficiency Ratios by Region
(Percent)

	Sub-Saharan Africa	Asia and Pacific	Americas	EU (Plus Norway and Switzerland)	Central Europe and BRO	North Africa and Middle East	Small Islands
Efficiency ratio	27	35	37	38	36	37	48
C-efficiency ratio	38	58	57	64	62	57	83

Source: IMF staff calculations.

standard rate is associated with an increase in the share of VAT revenues in GDP of about 0.34 percentage point. However, the variation around this average is substantial. The highest efficiency ratio, 77 percent, is found in Brazil; next is New Zealand at 65 percent. There is also a marked regional variation in efficiency ratios. At one extreme are the small islands, where the efficiency ratio is on average distinctly higher than elsewhere; at the other is sub-Saharan Africa, where it is distinctly lower.

Although the efficiency ratio is widely used as a diagnostic tool in evaluating VATs, its limitations are significant. Errors in the measurement of GDP will clearly contaminate the measure, and—in so far as the extent of the error (from, say, the omission of informal activities) varies across regions—may bias comparisons of the kind invited by Table 4.1. More fundamental, however, is a conceptual weakness of the measure: a “perfect” efficiency ratio of 100 percent could be achieved by a product-type VAT levied at a uniform rate. This is misleading, however, since the appropriate benchmark against which to gauge a given VAT would typically be a consumption-type VAT levied at a uniform rate: so, for instance, starting with such a uniform consumption-type VAT, a change that brought investment into the tax base would increase the efficiency ratio—and so appear to be desirable—even though it would be a retrograde step from a tax policy perspective. This difficulty is in principle addressed by working instead in terms of the “C-efficiency” ratio, defined as the ratio of the share of VAT revenues in consumption (rather than GDP) to the standard rate. The appeal of this is that it is normalized by the benchmark of a uniform tax on all consumption: such a tax has a C-efficiency ratio of 100 percent.⁴⁵ Any other value—higher or lower—indicates deviation from a single rate tax on all private consumption. Zero-rating of some item of consumption, for example, would tend to a

⁴⁵We leave aside the question of whether public consumption should be subject to VAT (discussed in Chapter 8). In practice, only data on private consumption are available for a reasonably broad sample; this is used here in calculating the C-efficiency ratios.

C-efficiency ratio of below 100 percent; on the other hand, the inclusion of investment in the VAT base, or a break in the VAT chain resulting in the taxation both of final consumption and some of the constituent intermediate goods, will tend to result in C-efficiency of over 100 percent.

Of course a highly “imperfect” VAT could happen to score 100 percent: extensive zero-rating of final consumption might be offset in revenue terms by a failure to pay refunds promptly. Thus a C-efficiency ratio of 100 percent is a necessary but not sufficient condition for a VAT levied at a single rate on all consumption. The key difference between the efficiency and C-efficiency ratios is that the former is normalized by reference to an income-type VAT and the latter to a consumption type.

The distribution of the C-efficiency ratio is shown in the final row of Table 4.1. As one would expect, since consumption is less than GDP, C-efficiency is on average greater than the regular efficiency ratio: 58 percent rather than 35 percent. Indeed, in several cases, C-efficiency exceeds 100 percent. The C-efficiency ratio also varies more widely and in that sense may prove more informative.

More important, the two efficiency ratios can convey quite different impressions. Consider, for instance, the measured efficiency of the VAT in New Zealand, which is often held up as a model VAT, and that in Brazil, where there was incomplete crediting of tax on investment goods, so expanding the base relative to a consumption base. The New Zealand VAT has a regular efficiency ratio of about 65 percent, and so scores well below the 77 of the Brazilian VAT. But New Zealand has a C-efficiency ratio of 103 percent, close to the benchmark of 100 percent. Brazil, on the other hand, has a C-efficiency ratio of around 122 percent. Thus a comparison of C-efficiency ratios signals the relative merits of the two more accurately than does a comparison of the usual efficiency ratio.

In terms of regional comparisons, the picture that emerges from C-efficiency ratios (the final row in Table 4.1) is broadly the same in qualitative terms as that from the usual efficiency ratio (discussed above), though more marked in extent. The contrast between Western Europe and the small islands at one extreme and sub-Saharan Africa at the other is now more striking. A lesser but nevertheless notable difference is that whereas Asia and Pacific has a slightly lower efficiency ratio than the Americas, C-efficiency there is on average higher (reflecting, presumably, the higher savings ratio of the former).

When Is the VAT Most Effective in Raising Revenue?

What explains the variation in efficiency ratios described in the previous subsection? Or, put differently, what are the factors—both in terms of tax design

and the wider economic environment—that are conducive to revenue productivity of the VAT?

The revenue produced by a VAT depends on three broad sets of factors: the rules describing rates, bases, threshold, and other structural features of the tax; the scale of taxable activities (the amount of final expenditure, for instance, on items taxable at the standard rate); and the degree to which the rules are complied with. The interactions between these factors are important. Tax rates, for instance, are typically set in light of tax bases and revenue requirements. The ease of enforcement will depend on the formal structure of the tax: multiple rates, for example, may lead to the misclassification of items, and a high standard rate may encourage evasion. To understand fully the revenue yield of a VAT these interactions would need to be explored in detail. Information limitations make this difficult. In particular, sufficient information is rarely available to estimate the VAT revenue that would be raised if the rules were implemented perfectly: the extent of evasion is generally unobserved.⁴⁶

Given the difficulties of disentangling the interactions between rules, base, and enforcement as determinants of VAT yield, the analysis here focuses on the estimation of reduced forms, relating VAT yields to characteristics of both the VAT itself and the economy at large. This serves to highlight some key determinants of yield.

More precisely, in the most general terms, one can conceive of the revenue raised by a VAT as some function $R(\tau, \alpha)$ of variables τ describing the rules of the tax system—rates, base, threshold, presence of a large taxpayer unit, etc.—and variables α that describe the wider economic environment (and so affect both the real decisions that determine the base of the tax and the extent to which the rules are enforced). Assume that policymakers choose the tax rules τ to maximize some function $\Omega[R(\tau, \alpha), \alpha]$ —which might (but need not) be the reduced form of a social welfare function—so that the tax rules are themselves some function $\tau(\alpha)$ of the environment. Not all tax rules, however, are available in our data set: very basic structural variables, such as rates and (for many countries) thresholds, are, but such potentially important factors as the extent of exemptions or the resources allocated to auditing are not. Distinguishing between those VAT rules that are observed, τ_0 , and those that are unobserved, τ_u , one can thus consider revenue to be a function $r(\tau_0, \alpha) = R(\tau_0, \tau_u(\alpha), \alpha)$ of the observed tax rules and wider features of the economy. It is regressions of this

⁴⁶Zee (1995) describes how potential VAT revenue can be estimated from national accounts data, given an assumption on “leakage.” Pellechio and Hill (1996) show that estimation from consumption and production sides of the accounts, while equivalent in principle, can give quite different results in practice.

form that are considered here. The standard rate is always included among the observed tax rules, τ_0 . Note also that, with this specification, any role found for wider characteristics in α comprises two effects: the direct revenue effect of the characteristic itself (a better educated civil service and business community may facilitate compliance and so lead to higher revenue at any given configuration of tax rules, for example) and indirect effects through induced changes on the unobserved tax rules (better compliance perhaps enabling the government to set fewer exemptions than it otherwise would)⁴⁷ The data available do not permit a disentangling of these two effects.

The core sample for the exercise is a cross-section of 99 countries meeting the requirements for VAT revenue and other data.⁴⁸

Representative results are reported in Table 4.2. The dependent variable is in each case the ratio of VAT revenues⁴⁹ to private consumption. Since the standard rate is always included as a regressor, the exercise is thus, in effect, that of modeling observed patterns of C-efficiency, though the results are—except in one important respect—essentially the same, taking the denominator instead to be GDP.⁵⁰

The results in column A highlight some of the key themes to emerge from the exercise.

- As would be expected, revenue increases with the standard rate. If the VAT took the form of a uniform tax on all private consumption, increasing the standard rate would lead to an equiproportionate increase in the ratio of VAT revenues relative to consumption. The coefficient below unity indicates, however, that revenues increase less than proportionately with the standard rate: a 10 percent increase in the standard rate increases revenues, on average, by only 7 percent. (If VAT revenues are initially 10 percent of consumption and the tax rate 15 percent, for instance, then increasing the standard rate to 16.5 percent will increase revenues to 10.7 percent). This cannot be interpreted as reflecting reduced consumption as a behavioral response to the tax, since the dependent variable relates to revenues *relative* to private consumption. Instead the implication is that higher standard rates tend to be associated with narrower VAT bases.

⁴⁷More formally, denoting derivatives by subscripts, the distinction is between the direct effect R_α and the indirect effect $R_\tau\tau_\alpha$.

⁴⁸These 99 are the “with-VAT” countries of the empirical exercise in the previous chapter.

⁴⁹Recall that the variable used is somewhat wider than VAT revenue alone.

⁵⁰Specifically, the trade variable (“OPEN”) appears rather less significant.

Table 4.2. Modeling VAT Revenue

	A	B	C	D
<i>ln(SR)</i>	0.70* (12.09)	0.68* (17.58)	0.72* (8.83)	0.67* (11.9)
<i>OPEN</i>	0.005† (1.88)	0.006* (2.39)	0.007* (2.30)	0.006† (1.81)
<i>AGE</i>	0.009 (1.64)	0.008† (1.84)	0.001 (0.135)	-0.001 (-0.14)
<i>ILLITERACY</i>	-0.009* (-2.49)		-0.008† (-1.84)	
<i>AF</i>	0.13 (0.49)	-0.33* (-2.17)		-0.27 (-1.03)
<i>AP</i>	0.10 (0.41)			
<i>AS</i>	0.02 (0.16)			
<i>CBRO</i>	-0.05 (-0.26)			
<i>NMED</i>	0.30 (1.18)			
<i>SI</i>	0.44* (2.26)	0.34* (3.22)	0.46* (3.39)	0.32* (3.37)
<i>RANGE</i>			0.02† (1.86)	0.01† (1.94)
<i>THRESH</i>			0.001 (0.78)	0.00 (-0.88)
<i>RETAIL</i>			-0.31† (-2.04)	-0.24 (-1.41)
<i>GS</i>			0.17 (0.98)	0.33† (1.96)
\bar{R}^2	0.31	0.39	0.29	0.40
<i>N</i>	69	89	40	55

Source: IMF staff calculations.

Notes: Dependent variable is the natural log of VAT revenue as a percentage of private consumption; *t*-statistics (constructed from White standard errors) are in parentheses; * indicates significance at 5 percent, and † at 10 percent.

- C-efficiency is somewhat higher, all else equal, the greater the importance of trade in the economy (the variable *OPEN* being the average of the import and export shares in GDP, as in the preceding chapter). The natural interpretation is that this facilitates the collection of VAT revenues through the collection of taxes on imports. Even though VAT collected on imports is credited further down the production chain, the border is a

convenient place to begin the withholding mechanism. The scope for fraud in relation to the zero-rating of exports (see Chapter 15 below) could make trade disadvantageous in collecting revenues: empirically, however, any such effect seems to be dominated by the gain in relation to imports.⁵¹

There is no inconsistency between this finding that VAT revenues are higher, all else equal, in economies with higher trade and the conclusion in Chapter 3 that the increase in total revenue associated with the presence of a VAT is *lower* the greater the share of trade in the economy. The two can be reconciled by supposing that there is also some other tax instrument—trade taxes, for example—whose effectiveness in raising revenue is also greater in economies with more trade. Trade is conducive to good absolute performance of the VAT in such a country but the VAT is not necessary to exploit it.⁵²

- Though barely significant, there are indications of a role for the age of the VAT, measured in the number of years since its introduction (*AGE*). Old VATs raise significantly more, all else being equal, than do new.⁵³ One interpretation is that administration of the VAT, and compliance with it, improves with experience.⁵⁴ (For a sample of OECD countries, Agha and Haughton (1996) find that the ratio of actual VAT revenues to the yield they estimate would be obtained under perfect enforcement increases with the age of the VAT, suggestive of an experience effect in administration.) Another possible explanation is that unobserved features of the tax move in the direction of increased revenue after introduction of the VAT. It might be, for example, that exemptions are removed subsequent to introduction.

⁵¹It is also possible that such imperfections in the refunding of input taxes to exporters could bolster revenues in economies with more extensive trade.

⁵²To make the point more formally, assume revenue from the VAT is $v(m, \beta)$ while revenue from other taxes is $r(m, \beta)$, where m denotes the significance of trade in the economy and β a vector of policy instruments. Denoting the choice of instruments with and without the VAT by β^+ and β^- , the finding that revenues increase with the significance of trade corresponds to $v(m) \equiv v(m, \beta^+(m))$ being increasing in m . This is consistent with the fact that the gain from adopting a VAT, $\Delta \equiv v(m, \beta^+(m)) + r(m, \beta^+(m)) - r(m, \beta^-(m))$, decreases with respect to trade so long as the fall in other sources of revenue induced by the policy changes made when adopting the VAT—such as a reduction in trade taxes—increases with respect to trade sufficiently rapidly.

⁵³The effect, moreover, seems to be robustly linear: additional nonlinear terms in age prove insignificant.

⁵⁴An interesting first-hand account of the accumulation of experience in introducing and operating a VAT is provided by the Chairman of H.M. Customs & Excise in Strachan (1998).

- A powerful effect emerges for literacy, included in the exercise as a crude proxy for record-keeping and other administrative abilities of both taxpayers and tax authorities: all else equal, the VAT yields less revenue in less literate economies. This effect emerges even when conditioned on the age of the VAT. That is, the benefit of experience gained from operating a VAT and the benefit from preexisting administrative sophistication represent distinct effects.
- The only regional dummy to emerge with significance is that for the small islands group, pointing to especially high VAT revenues there: a favorable effect over and above, it should be noted, that which these economies tend to enjoy as a consequence of generally having a high ratio of trade to GDP (as discussed in Chapter 3).

A disadvantage of the specification in Column A is that use of the literacy variable significantly reduces the sample size. Column B therefore reports the results of deleting literacy (and such regional dummies that are then insignificant). This increases the sample size by 20. The effects of openness, age, and the small island effect emerge even more strongly. The dummy for sub-Saharan Africa becomes significant: the apparent under-performance of the region being attributed, therefore, given the results in Column A, to relatively high levels of illiteracy.

The last two columns of Table 4.2 introduce additional variables relating to the structure of the VAT. The empirical possibilities are somewhat limited, given that many key features of the VAT and its administration—such as the scope of exemptions, the coverage of reduced rates, and/or the presence/absence of a large taxpayer unit—are not available for a sufficiently large sample of countries.⁵⁵ Having experimented with a variety of measures, results are reported for four: the threshold (for those selling goods, and measured relative to per capita GDP), (*THRESH*); the range between the highest and lowest (nonzero) VAT rate, (*RANGE*); a dummy taking the value unity if the VAT extends to the retail stage and zero otherwise (*RETAIL*); and a dummy taking the value unity if VAT is levied on a broad base of goods and services and zero otherwise (*GS*).⁵⁶

⁵⁵The detailed survey data described in Chapter 6 are unfortunately no help for this purpose, since sufficient information was only obtained for a very small numbers of countries. In only 15 cases, for example, did the survey indicate whether or not a large taxpayer unit was in place. Attempts were made to correlate residuals from regressions of the kind reported here with more detailed tax information for subsets of countries from the survey, but no useful results were obtained.

⁵⁶Additional variables used were measures of the variation in rates, the number of rates, and the number of IMF missions related to VAT. None were significant.

The sample size is significantly reduced by the limited availability of information on the threshold, and the results in relation to these structural variables are also not robust. A sense of the results is provided by the last two columns of Table 4.2: Column C adds these variables to the specification of column A, column D adds them to that of Column B.

The threshold never proves significant. *GS* and *RETAIL* are respectively each significant in one case but not the other, and in that sense neither case should be given much emphasis.⁵⁷

Only one structural variable is significant in both cases: the **range** between highest and lowest rates. The effect is *positive*: that is, the wider the range the higher is VAT revenue.

This runs counter to the finding of Bogetić and Hassan (1993, 1995)—one of the few empirical attempts to explain VAT yields—that a greater range is associated with a lower efficiency ratio. They rationalize such a finding on grounds of administrative complexity and the scope for tax minimization created by rate differentials, though there are other interpretations. It could simply reflect demand responses. Assume there are two goods, with identical linear demand curves (dependent only upon their own price). Then increasing the tax on one while reducing that on the other by the same amount would have no effect on revenue if demand for each were unchanged; but since demand will shift from the highly taxed good to the more lightly taxed one, revenue will fall.

But the present finding of a positive relation between range and yield—which is based on a larger data set and conditions on important nontax variables—is also easily explained. Suppose, taking an extreme case that suffices to make the point clearly, that the marginal value of public expenditure is very high, so that the proper object of tax policy is essentially to maximize revenue. Suppose too that there are just two goods, differing in their elasticity of demand. Then optimal policy will require setting different tax rates on the two goods, implying that revenue is always lower when the range is zero than under the revenue-maximizing structure, for which the range is positive. Or it may be that the significance of the range variable reflects a positive revenue effect from taxing favored items of final consumption at a positive rate rather than simply exempting them. That said, although striking, little weight should be placed on this result, since it is empirically somewhat fragile.

One other feature of the results is of interest: introducing the structural variables renders the variable *AGE* insignificant. This suggests that the maturing of

⁵⁷In addition, the negative coefficient of *RETAIL* is counter-intuitive, as extension to the retail stage implies a wider base and so should imply greater revenues.

a VAT contributes to its yield not through increased experience but through tangible developments in the structure of the tax correlated with those included in the regressions. Indeed the results on the range of VAT rates suggest that even the tendency for the number of rates to increase as the VAT matures, noted in Chapter 1, can be associated with improved revenue performance.

The Importance of Imports in Collecting VAT

The significant role for the degree of trade in an economy in explaining VAT yields is consistent with a key empirical feature of the VAT: revenue collected on imports commonly accounts for a large proportion of total VAT revenues.

Table 4.3 reports the fraction of net VAT revenues accounted for by collections on imports for a sample of 22 developing and transition economies.⁵⁸ In about two-thirds of them, more than half of all VAT revenue is collected on imports: the average is 55 percent. (The much lower shares in Kyrgyz and Russia reflect their application of the origin principle—under which imports are not taxed—to trade with other members of the Commonwealth of Independent States.)

The implication is not that the economic effects of the VAT are similar to those of a tariff. For insofar as the VAT collected on imports is levied on intermediate goods purchased by registered traders, it will be credited in the usual way against output tax on subsequent sales. And the figures in Table 4.3 still leave much VAT to be collected on domestic production. For simple, small economies, the differences between a VAT and a tariff may, indeed, be relatively slight, a point elaborated upon in Chapter 16. But the primary significance of the stylized fact illustrated in Table 4.3 is for administration: securing VAT collections on imports is generally a crucial part of ensuring effective collection of the tax throughout the chain of production. By the same token, getting collection right at that stage can go a long way to securing the success of the VAT overall.

Conclusions

This chapter has attempted to model the factors that contribute to the performance of the VAT. The “C-efficiency” ratio is to be preferred as a measure of VAT performance because—though by no means perfect—it is better calibrated as a summary measure than is the more traditionally cited efficiency ratio.

⁵⁸The data reported are for all countries included in the survey exercise described in Chapter 6 for which responses to the relevant question were obtained.

Table 4.3. VAT on Imports Relative to VAT Revenues
(Percent)

Albania	60
Bangladesh	64
Benin	70
Bolivia	58
Bulgaria	70
Burkina Faso	51
Cameroon	43
Gabon	51
Ghana	50
Guinea	62
Haiti	70
Jamaica	47
Kyrgyz Republic	30
Mauritania	66
Mauritius	60
Pakistan	64
Peru	40
Philippines	44
Russia	17
Togo	68
Uganda	58
Zambia	67

Source: IMF staff calculations.

There is considerable cross-country variation in the revenue performance of the VAT. Among the factors conducive to strong revenue performance are:

- a relatively high ratio of trade to GDP, presumably because of the relative ease of collecting VAT at the point of import;
- relatively high literacy, presumably a surrogate for administrative capacity of taxpayers and tax collectors; and
- the passage of time, in the sense that the performance of the VAT seems to improve over time.

Firm evidence of effects from specific aspects of VAT structure are hard to find. But there is some tentative suggestion that rate differentiation, as measured by the difference between highest and lowest statutory rates, serves to enhance revenues.

5

Collection Costs and the Complexity of VAT

One charge commonly leveled at the VAT is that it is an intrinsically complex tax, cumbersome to both authorities and the taxpayer and, consequently, ill-suited to developing countries in which familiarity with even basic record-keeping requirements may be low. This chapter considers that argument.

Assessing the Suitability of VAT for Developing Countries

The econometric analyses reported in Chapters 3 and 4 suggest that the VAT performs less well in less developed economies. Care must be exercised, however, before drawing any policy conclusion from this.

The results in Chapter 3 suggested that gains in total revenue associated with the presence of a VAT are greater, all else equal, in more developed economies. More specifically, the analysis in Chapter 4 found, quite robustly, that VAT revenues are higher, all else equal, in countries with higher literacy rates. Insofar as literacy proxies the administrative capacity of taxpayers and tax collectors in such matters as record-keeping, the implication is that the VAT does fare significantly less well where that capacity is weakest. This may reflect both less effective collection of any given VAT system and the impact of administrative capacity on the design of VAT features not controlled for, such as the prevalence of exemptions.

The key question, however, is not whether developing countries gain less from the VAT than do more developed. Nor is it whether the VAT itself performs better where administrative sophistication is greater: that will presumably be true of almost any tax. Rather, the question is whether, at lower levels of development, the VAT fares worse than *other* taxes theoretically capable of raising similar amounts of revenue.

Administration and Compliance Costs

There are two broad types of resource cost associated with the operation of any tax: *administration costs* incurred by the tax authorities, and *compliance costs* incurred by taxpayers. Taken together, they are referred to here as *collection costs*. Administration costs are akin to a reduction in tax revenues and appropriately viewed as such. Compliance costs, however, should be weighted rather less heavily than administration costs when evaluating the costs and benefits of a tax: the purpose of taxation being to transfer resources from the private to the public sector; \$1 left in the private sector is worth less than \$1 accruing to the public sector.⁵⁹

High collection costs are not necessarily a sign of a bad tax, but may simply reflect inefficient or corrupt administration. Nor are low administrative costs (even relative to revenue raised) necessarily a sign of a good one, since one could, for instance, raise substantial revenue under a VAT with low administration costs by assigning few resources to the payment of refunds. Indeed such is the potential role of the VAT as a catalyst for organizational and cultural change both within the tax collection agencies (spearheading, for instance, the modern use of information technology and the development of audit methods) and among taxpayers (developing a culture of record-keeping) that there is an important sense in which a successful VAT is in some circumstances bound to involve substantial collection costs, especially in its early years (see Chapter 12).

Collection cost figures must thus be interpreted with care. The even more fundamental difficulty, however, is obtaining such figures. In terms of administration costs, the organizational structure and reporting practices of tax authorities may make it difficult to isolate costs attributable to the VAT. The exercise may be especially difficult in function-based organizations, where VAT is administered along with other taxes, by the same people in the same offices. Even when a separate VAT department is in place, there may be genuine common costs arising, for instance, from joint auditing for VAT and income tax purposes. In terms of compliance costs, a tailored survey of taxpayers is needed to extract accurate information. These difficulties mean that even for developed countries hard numbers on these matters are relatively difficult to come by.⁶⁰ For develop-

⁵⁹This simply says, in the jargon of public finance, that the marginal cost of public funds generally exceeds unity.

⁶⁰The calculation of administration costs depends in addition on such matters as whether the full amount of capital purchases is included or whether there is an allowance for annual amortization; how the costs of tax office accommodations in state-owned buildings should be calculated; how pension funds are handled. And taxpayers' compliance costs for individual taxes are not easy to separate in the face of common accounting and invoicing obligations.

ing countries, it is almost entirely unavailable. It has not been possible, within the resources of this study, to rectify this important gap.

Absent such information, some guidance is nevertheless provided by various studies of VAT collection costs that have been conducted for OECD countries (usefully reviewed by Cnossen (1994).

- Administration costs for a broadly “best-practice” VAT are put by Cnossen at around \$100 per registrant per annum. These costs vary widely, with the general perception that they are significantly lower where the VAT is simpler: they are estimated at around \$50 per registrant in New Zealand (with a single nonzero VAT rate) and \$200 in the United Kingdom (where there are two rates, and substantial zero-rating).
- Compliance costs for a best-practice VAT are estimated by Cnossen at around \$500 per registrant per annum. For Singapore, Jenkins, and Khadka (1997) estimated continuing compliance costs to be about \$700. Since these are largely fixed costs, independent of the amount of tax payable, they fall especially heavily on smaller traders: Cnossen (1994) puts them in the order of 2 percent of turnover for those with turnover below \$50,000, falling to about 0.3 percent for those with turnover above \$500,000.

These dollar figures will overestimate the corresponding costs in developing countries, since they largely reflect labor costs—including those of the taxpayer. Nevertheless, it is clear that compliance costs in particular can be significant for smaller traders. Suppose the threshold is set at \$50,000, for instance, and that traders at this level do indeed incur compliance costs of 2 percent tax on turnover. With a profit margin of 20 percent on sales, this is equivalent to a 10 percent tax on income. This implicit tax may be to some degree passed on to consumers in the form of higher prices, though insofar as small traders naturally tend to have relatively little market power much of the burden will remain with them. There is thus the possibility of some regressive impact. Not surprisingly, small traders are among the most vociferous opponents of the VAT,⁶¹ a point reflected in the discussion of the VAT threshold in Chapter 11.

One clear implication of the evidence for developed economies is that the collection costs associated with a VAT are likely to be significantly affected by

⁶¹It will, though, generally be a matter of opinion whether this reflects an inequitable compliance burden or, to the contrary, the very effectiveness of the VAT in exposing such traders to tax. And again, if small traders are to be subjected to any taxation, they will presumably experience some compliance costs.

the design of the tax. A simple structure with a single rate, few exemptions, reliance on self-assessment, and with a high threshold appears conducive to relatively low collection costs.

It should be borne in mind that it is not the collection costs of the VAT in itself that matter, but those costs relative to those of alternative taxes. The weight of evidence for developed countries suggests, for instance, that the VAT is less costly than an income tax. One natural question, however, is whether the VAT is more or less costly than alternative forms of sales tax. The question, in part, underlies the next section.

Is the VAT More Complicated than the Taxes It Has Replaced?

How do the VATs adopted in developing countries compare, in terms of complexity, with the taxes they replaced? Were those preexisting taxes simpler and easier to administer and comply with? To address this, Tables 5.1 and 5.2 describe the key features of the predecessor taxes to the VAT, and the VAT itself, for six Francophone and six Anglophone African countries.

They indicate that, while there are important cross-country differences, the predecessors to the VAT were far from simple and far from being broad-based taxes on consumption. In West Africa, the VAT generally replaced turnover taxes of the kind prevalent in France before the gradual adoption there of the VAT. In East Africa, it generally replaced a manufacturers' level sales tax on the old Commonwealth model.⁶² Beyond that basic structural difference, however, there were many similarities across the predecessor taxes: numerous and sometimes narrowly differentiated rates (these frequently served the purpose of luxury excises); many specific exemptions (or, alternatively, positive lists of taxable items); exemption for retail trade; and, in some cases, differential treatment of domestic sales and imports (using the general consumption taxes for domestic protection). A further complicating feature in some of the East African systems was the fact that the tax was imposed at the manufacturers'

⁶²Broadly speaking, the six Anglophone countries examined fall into three groups in terms of the origins of their consumption tax systems: the systems of Kenya and Uganda evolved from the old East African Common Market system, the domestic indirect tax structure of which in turn had been based upon the British system of excise taxes. Malawi, though not one of the three members of the Common Market, had a similar British-based system. Zambia, until the mid-1970s, had relied primarily on abundant revenues from the mineral sector, and had a much less developed domestic tax system. That country adopted a quite limited sales tax after mineral revenues declined sharply. The revenue systems of Swaziland and Lesotho are based around the Southern African Customs Union (SACU) and are intimately tied to South Africa.

level, but upon a constructed price using an “uplift” factor over the manufacturers’ price, rather than the actual sale price. In some cases, the “uplift” price and a hypothetical retail controlled price were alternative bases, depending upon which one was higher.

Especially notable, however, is that all of these predecessors to the VAT included complicated methods for avoiding the cascading of tax inherent in turnover taxes. In the VAT, this role is played by the mechanism for crediting tax on all inputs, and it is frequently this feature that gives rise to the accusations of inappropriate complexity. It is striking, however, that the anticascade features of the preexisting turnover taxes were themselves neither simple, in most cases, nor easily administered. In West African systems, cascading was generally mitigated through a complex subtraction method for inputs: that is, tax was levied on output net of allowable inputs. In the Eastern and Southern African systems, this role was played by a combination of a “ring” system for exemption of the sales of certain items between registered traders only, and exemption of some categories of products viewed as generally being intermediate goods. In many countries, both Francophone and Anglophone, “fixed investments,” or “capital equipment” and “raw materials,” were exempt. Naturally such systems, involving in some cases the categorization of borderline items, and in others, identification of end-users, are difficult to administer correctly.

The complexity of some predecessors to the VAT is quite stunning. In Mauritania it involved three distinct turnover taxes, each levied at multiple rates. Relief against cascading was provided by subtraction. In Uganda, the predecessor tax was a multiple-rate sales tax at the manufacturers’ level on a positive listing of items, which charged domestic products and imports at different rates and provided relief for cascading both by widespread exemption and the operation of a ring system.

The VATs that have replaced these taxes in the 1990s also differ in important respects from one another. But they have important common features: they generally use the credit/invoice method and credit all inputs; have broader bases than the predecessor taxes (even where there are still a questionably large number of exemptions); exempt agricultural production; have a single, or few, positive rates; zero-rate exports; include all levels of production but exclude much retail trade and other small businesses by means of a threshold; and treat domestic production and imported goods the same.

It is thus hard to argue that, for these countries at least, the VATs currently in place are inherently more complex or, hence, more costly to collect, than the consumption taxes they have replaced. This bears on the related arguments of whether a VAT increases the risks of underreporting and fraud, and whether

Table 5.1. VAT and Predecessor Taxes in Six Francophone African Countries

	Benin		Burkina Faso		Gabon	
	Pre-VAT	VAT (1991)	Pre-VAT	VAT (1993)	Pre-VAT	VAT (1995)
Type	Turnover taxes: general; (ICAI); on imports; on tourism. Other indirect taxes on imports	Invoice-credit VAT	Turnover tax	Invoice-credit VAT	Turnover taxes: imports and domestic purchases; domestic consumption tax; tax on services; tax on imports	Invoice-credit VAT
Rates (in percent)	ICAI: 25 on production, 29 on services; several rates on others	18	Three rates	18	Several rates	18
Base	Many exemptions (including retail and capital goods)	All activities	Many exemptions (including retail and capital goods)	All activities	Many exemptions (including retail trade)	All activities
Measures to relieve cascading	Complex crediting for ICAI on manufacturing	Invoice-credit VAT	Complex crediting on manufacturing	Invoice-credit VAT	Complex crediting	Invoice-credit VAT

	Guinea		Mauritania		Togo	
	Pre-VAT	VAT (1996)	Pre-VAT	VAT (1995)	Pre-VAT	VAT (1995)
Type	Distinct turnover taxes on production, services and imports	Invoice-credit VAT	Distinct turnover taxes on traders, services, and imports	Invoice-credit VAT	Turnover tax	Invoice-credit VAT
Rates (in percent)	Several	18	Three rates for traders (0, 4, 10); two for services (6, 16); five for imports (0, 2, 5, 10, 20)	18	5, 14, 30	18
Base	Many exemptions (including retail trade)	All activities	Retail trade exempt; customs duties excluding from base	All activities	n.a.	n.a.
Measures to relieve cascading	Complex crediting for ICAI on manufacturing	Invoice-credit VAT	Complex crediting on manufacturing	Invoice-credit VAT	Invoice method but: for traders, credit limited on purchases of goods to be sold; no credit for service providers	Invoice-credit VAT

Note: Information on the predecessor to the VAT is generally as at the time of the introduction of the VAT; information on the VAT is the most recent available; n.a. indicates not available.

Table 5.2. VAT and Predecessor Taxes in Six Anglophone African Countries

	Kenya		Lesotho		Malawi ²	
	Pre-VAT	VAT (1990)	Pre-VAT	VAT ¹	Pre-VAT	VAT (1989)
Type	Manufacturers' sales tax and tax on manufactured imports (including capital goods)	Invoice-credit VAT	Imports taxed unless taxed by South Africa; services taxed selectively	—	Manufacturers' level sales tax, applied also to imports (with 20 percent uplift for latter)	Invoice-credit VAT
Rates (in percent)	4 rates	12, 16	12 (following South Africa)	—	25 domestic, 30 on imports	20, 10
Base	Many exemptions	All activities	Exemptions for basic foodstuffs, agricultural inputs	—	Many exemptions, including raw materials and intermediate goods (but not "investment goods")	To manufacturing and import stages
Measures to relieve cascading	Specified exemptions for intermediate goods and raw materials; ring system before 1975, then credit method	Invoice-credit	Ring system for selected sales between registered traders; imports are in the ring	—	Intermediate exemptions, plus ring system by exemption or credit	Invoice-credit VAT

	Swaziland		Uganda		Zambia	
	Pre-VAT	VAT ¹	Pre-VAT	VAT (1996)	Pre-VAT	VAT (1995)
Type	General sales tax on domestic and imported goods	—	Manufacturers' sales tax, with uplift of 10 percent	Invoice-credit VAT	Manufacturers' sales tax on specified domestic goods and all imports subject to tariff	Invoice-credit VAT
Rates (in percent)	5, 10, 20 (alcohol and imported cigarettes)	—	Five different ad valorem rates ranging from 0 to 30; different rates for imports and domestic goods	18	Six rates for domestic manufactured items (10, 15, 20, 25, 30, 50); imports taxed at 25 with 25 uplift on tariff-inclusive price	17.5
Base	Exemptions included manufacturing and agricultural inputs, plant and machinery	—	Many inputs exempt, including building materials and other equipment	All activities	Domestic manufactured items not on positive list exempt	All activities
Measures to relieve cascading	Exemptions above	—	Exemptions above and ring system	Invoice-credit VAT	Ring system	Invoice-credit VAT

Source: IMF staff compilation.

¹VAT not yet introduced.

²As noted in Chapter 1, there is a semantic issue about when Malawi adopted a VAT. We here take 1989 to be the date of its introduction.

tax administrations in most developing countries have the capacity to cope with these risks.

Basic sources of fraud in a sales tax include nonregistration of businesses (especially small or medium-sized), underreporting of gross receipts, abuse of multiple rates, and nonremittance to the tax administration of the tax that has been paid to the taxpayer by its customers. These are also the primary risks for revenue that a tax administration must address when a VAT is implemented. In this connection, experience in many developing countries shows that a VAT has the advantage of making it easy to determine when a trader selling only in the domestic market is underreporting taxable gross receipts: the monthly VAT returns will show when the trader is continuously reporting more input VAT than output VAT. This is, in fact, the most common fraud and is obviously facilitated by the extensive use of cash payments for most transactions.

There are, however, some types of fraud under a VAT that are different from, and more sophisticated than, fraud under other indirect taxes. Examples include the use of false invoices (to abuse the credit system), the representation of domestic sales as exports (to benefit from zero-rating), and the claim of VAT credits for non-creditable purchases (such as purchases for private consumption). These types of fraud can take some time to develop after a VAT is introduced—though there have been fast learners—and even when they eventually appear, they are no more difficult to deal with than basic corporate income tax types of fraud such as transfer pricing, fictitious payments to phantom companies, or reporting as business expenses the purchase of goods or services for private use. However, false export schemes and other excess credit claims, which give rise to entitlement to actual refunds, have proven to be quite troublesome in countries with weak tax administration capacity, particularly in the audit area. This is explored at greater length in Chapter 15.

Conclusions

There is evidence that the gain from adopting a VAT is less marked, all else equal, in less developed countries. The important question, however, is whether the gain is positive even in such countries. While there are signs of a revenue gain (recall Chapter 3), there is little hard evidence on the costs of administering and complying with the VAT in developing countries. This is an important area of ignorance about the VAT.

What does seem clear, however, is that the taxes the VAT has replaced were not simple. Terkper (1995) puts the point more generally and succinctly in arguing that “. . . the worst form of VAT may still be a better option for raising revenue than most traditional forms of taxation.” Further, predecessor taxes

were often marked by complicated arrangements to avoid cascading, and in that sense were made complex out of a desire to achieve indirectly precisely the effect that VAT achieves directly. In particular, it should be emphasized that the use of crediting mechanisms to alleviate cascading has been widespread in the predecessor systems of many countries. The logic and modalities of the invoice-credit VAT will thus in many cases have been broadly familiar to taxpayers and the authorities. The key novelty in adopting a VAT is often less in the nature of the tax itself than in the methods of its administration and its modernizing influence more generally.

These observations, combined with the key lesson that simple VATs are cheaper to collect than more complex ones, imply that in many developing countries a simple VAT with a high threshold will in many respects be a simpler tax than those that it has replaced.

6

A Survey of Advice and Experience

Many important issues arise in designing and implementing a value added tax. While the headline rate of the tax naturally attracts most attention in public discussions, issues concerning the base and administration can be no less important in determining the impact of the tax. Detail on such matters, however, is relatively hard to come by; not all will even be contained in the law, and there may in any event be a gap between rules and practice. To develop a picture of the pattern of VATs implemented in developing and transition countries, staff in the IMF's Fiscal Affairs Department (FAD) were asked to complete detailed questionnaires on a number of countries in which the department has provided technical assistance in relation to the VAT over the past decade or so. Questions covered not only actual practice, but also the advice that FAD had provided on these items: the intention here is to identify any areas in which "best practice" is systematically not adopted, since this would raise the possibility that the thinking behind these standard recommendations ignores considerations that loom large in practice. Of interest too are cases in which advice varies, suggesting either a sensitivity of design issues to country circumstances or an underlying intellectual issue that remains unresolved.

The Survey

The questionnaire sought detailed information on the broad context of the VAT (such as its yield and the kind of tax it replaced), FAD recommendations, and current practice as regards a range of policy and administrative matters. Broadly usable responses were obtained for the 37 countries listed in Table 6.1, although item nonresponse was quite high for several questions, especially on details of tax administration. Most questionnaires were completed in spring/summer 1998.

Table 6.1. The Countries Surveyed

Start of VAT	Sub-Saharan Africa	Asia and Pacific	Central Europe and BRO	North Africa and Middle East	Americas
Before 1980					Bolivia (1973) Peru (1973)
1981–90		Philippines (1988) Pakistan (1990)			Haiti (1982)
1991–95	Benin (1991) Burkina Faso (1993) Gabon (1995) Mauritania (1995) Togo (1995) Zambia (1995)	Bangladesh (1991) China (1994)	Azerbaijan (1992) Georgia (1992) Krygyz (1992) Moldova (1992) Russia (1992) Poland (1993) Bulgaria (1994)		Jamaica (1991) El Salvador (1992) Venezuela (1993)
1996–99	Guinea (1996) Uganda (1996) Mauritius (1998) Tanzania (1998) Cameroon (1999) Ghana (1999)	Sri Lanka (1997) Mongolia (1998) Cambodia (1999) Vietnam (1999)	Albania (1996) Croatia (1998)		
Planned			FYR Macedonia (2000)	Yemen	

Note: Date in parentheses refers to the year of introduction.

The sample was not, and was not intended to be, random. Rather it principally reflected the geographical scope of FAD’s activities in relation to the VAT over the previous ten years, and capitalized on the detailed knowledge of available staff. The result was a particular emphasis on African countries (about one-third of the sample) and transition countries (also around one-third). Reflecting the importance of pre-implementation involvement, the sample included six countries which, at the time of the survey, did not yet have a VAT in place. Since the sample reflected advice given at various points over the previous ten years (though the “practice” described in the survey responses is intended to be current practice), recorded variations in advice given, or implementation strategy adopted, could reflect changes over time in perceived “best practice” rather than systematic differences in opinion or the tailoring of advice by circumstances.

Consistent Advice Consistently Followed

The survey showed that FAD’s advice in the past decade had been quite consistent across countries for many of the tax policy and administration issues

explored in the survey. Further, in many of these areas of consistency, actual practice broadly conformed to FAD advice. These seemingly uncontentious prescriptions include that: (i) the VAT should utilize the invoice-credit method; (ii) the VAT should extend through the retail stage; (iii) services should be included in the base of the tax except for well-specified exemptions for education, health, and financial services; (iv) the introduction of a VAT is facilitated by the establishment of large taxpayer units (LTUs);⁶³ (v) the VAT should be administered as a national tax; (vi) in addition to incorporated businesses, individual entrepreneurs and unincorporated businesses should all be covered by the VAT, subject to a threshold to exclude the smallest businesses; and (vii) a preparation and implementation timetable and project team devoted solely to VAT implementation should be established before a new VAT is introduced.

Consistent Advice Not Consistently Followed

Areas in which FAD advice was consistent but was not consistently adopted include:

- *Zero-rating*: for all survey countries for which there is information (32),⁶⁴ FAD recommended that exports be zero-rated, with trade being taxed on a destination basis (that is, where the good is consumed). In practice, exports were zero-rated in 28 countries; the exceptions occurred in the CIS, which adopted a mixed origin/destination basis depending on whether trade was among themselves or with the rest of the world. However, 12 out of 22 surveyed countries responding on this point also zero-rate items other than exports.
- *Input credits for capital goods*: in 28 of 30 cases, it was recommended that VAT charged on capital goods be credited in full immediately. In eight surveyed countries, however, full and immediate credit was not given for capital inputs.
- *Number of rates*: in all but two cases, the advice was for a single positive VAT rate. In practice, almost one-third of surveyed countries (7/22) set more than one rate.

⁶³As the name suggests, LTUs are mechanisms that allow the tax administration to focus efforts on the largest entities in the country, where the revenue yield is naturally the greatest.

⁶⁴Since not all questions were completed for all survey countries, the sample size can vary by question.

- *Cash versus accrual basis:* for all 28 surveyed countries, the advice was that the VAT be calculated on an accrual basis (meaning that tax is payable, broadly speaking, when effective delivery or transfer of ownership occurs). In practice, an accrual basis is used in 27 of 32 surveyed countries with 5 on a cash basis.
- *Staffing and training:* VAT staffing was seen as appropriate in only 73 percent of the surveyed countries (11/15). More stark, however, is that training was reported as appropriate in only 25 percent of surveyed countries (6/24).

Variations in Advice

On several issues, advice varied noticeably across countries:

- *Threshold:* the FAD-recommended threshold below which businesses need not file for the VAT varies quite widely. More striking and troubling is that the survey reveals a strong tendency for countries to adopt thresholds significantly lower than those recommended, with an associated higher number of registrants.
- *Exemptions and their control:* in line with international practice, FAD recommends that certain services, principally health, education, and non-fee financial services, be exempt from the VAT for policy and practical reasons. In 20 countries, FAD reports have recommended permitting some additional exemptions of various types. And in virtually all cases, nonstandard exemptions exist in practice, particularly, though not exclusively, including imports and supplies related to diplomats, NGOs, donor-funded projects, and incentives provided under investment codes. FAD generally advises against the broader exemptions that have emerged in practice.
- *Rate of tax:* the standard rate of VAT recommended by FAD has varied widely, clustering between 11 and 19 percent. This variation is not surprising given the differences in needed revenue and levels of economic activity.
- *Agriculture:* FAD recommended exempting agricultural production in 13 cases, and taxing it in 10 cases. Practice is, however, consistent—of the 28 countries for which there is survey information, 25 exempt agricultural production, while only 3 transition countries subject it to tax; 13 of the 25 countries also exempted inputs to agriculture.
- *Organization of the VAT administration:* FAD typically recommends that the domestic component of the VAT be administered by the inter-

nal tax department (that is, administered with the income tax in a function-based organization⁶⁵). This is currently the case in 80 percent of the surveyed countries (29 out of 36 countries). However, in a few countries that administer indirect taxes in the customs department (mainly former British colonies), FAD advice was that the VAT be administered by the existing customs department or that a new VAT department be established.

Impediments to Administrative Implementation

The survey results indicated that there were a number of key implementation areas where FAD's advice or administration of VAT had been adopted, notably, in setting the VAT implementation strategy, ensuring taxpayer education, and collection enforcement (including through large taxpayer units). However, in some areas, countries had set out to follow FAD advice on administrative aspects of the VAT but failed to implement them satisfactorily. Reported problem areas included:

- weak procedures to register taxpayers in some countries;
- absence of self-assessment (whereby taxpayers calculate and pay their tax liability directly) in some countries. Moreover, even in countries that do have self-assessment, filing and payment procedures are often excessively cumbersome;
- poorly functioning refund systems—delays in processing exporters' refunds claims are particularly worrisome; and
- insufficient audit coverage and inadequate audit methods.

Conclusions

There are clearly several essentially noncontentious issues in VAT design. More striking is that there are several areas in which FAD advice has been consistent but not widely accepted. These include the wider-than-recommended use of zero-rating; the lack of the recommended timely input credits for capital goods; and the frequency with which multiple-rate VATs are adopted. Perhaps the most notable, however, is the tendency for countries to adopt thresholds lower than recommended. There are also areas in which there has been vari-

⁶⁵That is, an organization where tax officers are specialized by function (for example, registration, collection, and audit) instead of being specialized by tax.

Table 6.2. Implementation of IMF Tax Administration Advice: Summary

	Number of Responses	Advice Fully Implemented (appropriate)	Advice Partly Implemented (medium)	Advice Partly Implemented (insufficient)	Advice Not Implemented
<i>VAT preparations</i>					
VAT implementation team	30	29			1
Implementation timetable	26	19		6	1
Involvement of customs	29	9	12	8	
Staffing	15	11		4	
Training	24	6	11	7	
Registration	27	5	18	4	
Education	24	10	9	5	
<i>VAT administration</i>					
Use of self-assessment procedures	31	26			5
Forms (and procedures) easy to complete (and to comply with)	27	13	10	4	
Accuracy of taxpayers' accounts	24	11	11	2	
Detection of nonfilers	26	8	11	7	
Penalties	31	10	17	4	
Collection of penalties	24	6	9	9	
Functioning of VAT refund system	19	4	7	8	
Audit coverage	21	2		19	
Audit methods	21	3	8	10	
Large taxpayer units	31	24			7

Source: IMF staff tabulation.

ability in both advice given and accepted—notably, as regards exemptions and the treatment of agriculture. Finally, the survey results identify a number of tax administration impediments (see Table 6.2) to the successful implementation of the VAT. These points are taken up in the chapters that follow.

7 Rate Differentiation

This chapter and the next focus on two key aspects of VAT design: the number of distinct rates charged, and the extent to which particular items or traders are exempted. These in turn relate to one of the questions that has evidently troubled many countries considering its introduction: Is VAT inherently regressive?

Background

Table 7.1 shows the number of nonzero rates adopted in all countries currently having a VAT. Over half of all countries with a VAT levy only one nonzero rate and less than a quarter charge three or more nonzero-rates.

As noted in Table 1.4, there is variation in the number of rates across regions. The number of nonzero rates tends to be greatest in North Africa and the Middle East, for instance, and least in sub-Saharan Africa. Closer examination⁶⁶ also suggests that the number of rates at the time of introduction has a lasting effect on the number of rates applied. It appears too that older VATs are characterized by a larger number of rates, a point to which we return later.

It is also striking that, as Table 7.2 shows, the vast majority of countries (72 percent) that have introduced a VAT over the past ten years have opted for a

⁶⁶A simple regression of the current number of rates, *NT*, against the number of rates at the time of introduction, *NO*, the *AGE* of the VAT and regional dummies gives (with *t*-ratios in parenthesis):

$$\begin{aligned} NT = & 0.45.NO + 0.04.AGE - 0.22.AF - 0.18.AS + 0.37.AP + 0.25.CBRO \\ & (4.07) \quad (4.46) \quad (-1.80) \quad (-0.79) \quad (1.70) \quad (1.94) \\ & + 1.02.NMED + 0.28.SI \\ & (2.64) \quad (1.47) \quad R^2 = 0.31; N = 111 \end{aligned} \tag{7.1}$$

Table 7.1. Distribution of the Number of VAT Rates
(All countries)

One rate	Two rates	Three rates	Four rates	Five rates	Six rates
53 percent	23 percent	13 percent	9 percent	0	1 percent

Source: IMF staff tabulation.

Note: Figure is percentage of all countries currently with a VAT with number of VAT rates shown.

single positive rate when doing so. One notable instance of this is the experience of the WAEMU countries, which is described in Box 7.1. More generally, the number of initial rates at the time of introduction has tended to fall over time. This presumably reflects, in large part, the perceived success of existing single-rate VATs.

How Many Rates of VAT?

As discussed in Chapter 2, the archetypal VAT is a tax on consumption. At one level the question is thus why one might wish to tax different components of consumption at different rates. This question has been much discussed in the public finance literature. The question for VAT design is rather more precise: the widespread use of excises means that VAT is not the only tax on consumption, and the multistage nature of the VAT implies distinct practical consequences of setting multiple rates.

To bring out the various considerations of principle and practice that arise, this section considers in turn the potential benefits from differentiating rates of VAT, the potential costs, and finally the balance between the two.

Benefits of Rate Differentiation

There is a technical literature on the optimal degree of rate differentiation in taxing consumption; a brief guide is provided in Box 7.2. For present purposes, it is helpful to distinguish between two sets of considerations: efficiency (in the loose sense of raising revenue in a way that does not harm

Table 7.2. VATs Introduced with a Single Rate

Date of Introduction	Number of Countries	Single Rate	Multiple Rates
Before 1990	48	12	36
1990–94	46	31	15
1995–April 2001	31	25	5
Total	125	68	56

Source: IMF staff tabulation.

Box 7.1. Single-Rate VATs in the WAEMU

Three members of West African Economic and Monetary Union (WAEMU) were among the first countries to introduce a VAT in sub-Saharan Africa—Côte d’Ivoire in 1960, Senegal in 1980 (beginning with a VAT at the manufacturer’s level in the 1960s), and Niger in 1986. However, these VATs had a complex rate structure (four positive rates in Côte d’Ivoire and Senegal, three in Niger) and many exemptions; their performance was not satisfactory. Taking into account these weaknesses, Benin was the first WAEMU member to adopt a VAT with a single rate and limited exemptions, in 1991. Given the revenue performance achieved in the following years (indirect tax revenue increased from 1.7 percent of GDP in 1990 to 5 percent in 1994), that country was quickly seen as a model by other WAEMU countries. Burkina Faso, Togo, Niger, and Mali adopted a single rate for their VATs in 1993, 1995, 1997, and 1999, respectively.

In December 1998, the WAEMU Council of Ministers adopted a directive to strengthen the harmonization of the indirect tax system. This directive provides that by January 2002, each WAEMU member will have a VAT with a single rate (in the 15–20 percent range) and limited exemptions (detailed in a list to be adopted by the WAEMU Commission).

The direct impact of the single-rate on Benin’s revenue performance has never been assessed. In fact, that measure was part of a significant tax administration reform package that was implemented (including the establishment of a large taxpayer unit and significant improvements in collection enforcement and audit systems). However, there is little doubt that, building on the simplicity of the VAT, the drafting of simple regulations and the design of simple forms have contributed to a reduction in taxpayers’ compliance burden and facilitated improvements in the effectiveness of the tax administration in that country.

aggregate real income) and equity (ensuring a fair distribution of that aggregate income).

Efficiency

Taxes on some commodities may be more distortionary than taxes on others. This notion underlies the widely known policy prescription—the “inverse elasticity rule”—of levying lower tax rates on commodities for which the demand is more elastic and higher rates on commodities for which demand is inelastic so as to minimize the impact of taxation on the pattern of consumption. A more general argument for differential commodity taxation based on efficiency considerations involves taking account of the interaction between consumption of commodities and (untaxed) “leisure,” interpreting the term to refer broadly to

Box 7.2. The Optimal Tax Perspective on Rate Differentiation

The literature on optimal taxation has focused on finding restrictions on the form of consumer preferences, which imply that it is optimal to tax all commodities at the same rate. Central contributions include Besley and Jewitt (1995), who establish a necessary and sufficient condition for uniform taxation to be optimal in the single consumer case; Deaton and Stern (1986), who establish conditions for uniform taxation to be optimal in the presence of an optimal linear income tax; and Atkinson and Stiglitz (1976), who establish that indirect taxation is unnecessary in the presence of an optimal nonlinear income tax if preferences are weakly separable between consumption and leisure (that is, take the form $U[F(X),L]$, where X denotes the vector of consumption and L leisure). (Edwards, Keen, and Tuomala, (1994) and Marchand, Nava, and Schroyen, (1996) provide a straightforward intuition for this last result.)

The general conclusion is that nonuniform taxation has a role to play whenever the pattern of consumption contains information about the consumer's underlying—and unobservable—ability to pay taxes that is not fully exploited by the other policy instruments assumed to be available. The preference restrictions under which uniform taxation is optimal thus naturally become weaker as the range of instruments available widens. Even with fully optimal nonlinear taxation, however, the restrictions required remain implausible: the empirical evidence is that preferences are not of the Atkinson-Stiglitz form.

Moreover, this literature assumes, for the most part, that indirect taxes have no effect on factor incomes, either taking producer prices to be fixed or assuming profits to be fully taxed. In more general circumstances, nonuniform taxation might in principle have some role to play through its effect on factor incomes, although again, of course, the availability of other instruments will be critical.

time spent other than in the formal labor market. Taxing most heavily those goods whose consumption is associated with the enjoyment of leisure in this broad sense will tend to mitigate the distortion of decisions away from paid work.⁶⁷ Examples of such goods, however, are somewhat hard to find: golf clubs, for example, might fit the category in some countries; a more important example may be alcohol. As with alcohol, however, most of the commodities that

⁶⁷This result is related to the inverse elasticity result since, for example, the tax-induced price increase for an elastically demanded commodity will tend to significantly reduce the value of consumer expenditure and so, taking account of the consumer's budget constraint, will tend to have a particularly depressing effect on the incentive to earn income, aggravating the unavoidable distortion of labor-leisure decision.

come to mind in this context can conveniently be subjected to excise taxes. This is not a coincidence. Revenue and efficiency considerations long ago picked out a few goods as proper subjects of heavy taxation. There is, of course, scope for discussion as to what those goods might be (and the list will naturally vary across countries depending on national tastes and characteristics), and how many of them there are. The important point for present purposes, however, is that a few standard excises will be able to deal with most of the obvious cases in which there may be efficiency gains from rate differentiation.

One aspect of efficiency, of course, is the ability to raise revenue. As shown in Chapter 4, there are some signs that a wider range between highest and lowest VAT rates is associated with higher VAT revenues (for any given level of the standard rate). This is suggestive of some efficiency gain from rate differentiation, and to that extent runs counter to the argument just given; the evidence, however, is not strong.

Another and increasingly important aspect of efficiency deserves some emphasis. As noted in Chapter 2 (and discussed further in Chapter 17), the destination principle by which VAT is normally levied is intended to ensure that the tax provides a means of taxing the consumption of domestic residents. There are circumstances, however, in which commodities can be purchased tax-paid by residents of other countries. The simplest example is that of cross-border shopping by final consumers, either legally (within duty paid allowances) or illegally. Another example arises from the taxation of some services in the EU by reference to the location of the supplier. The importance of all such cases is that domestic tax rates may affect the volume of sales to non-residents, and the appropriate rate structure will then reflect the opportunities that these consumers have to buy elsewhere. In particular, countries may find themselves at a disadvantage if they tax more heavily goods that foreigners can find less heavily taxed elsewhere.

The significance of these concerns is likely to vary greatly across countries. Cross-border indirect tax differences are often greater for excises than for VAT, so the issue will in most cases be of less importance for VAT (though there are exceptions). It may also be that services will prove particularly vulnerable: as discussed in Chapter 17, there have already been suggestions in the EU to zero-rate items delivered over the Internet in order to protect domestic producers. One area in which the treatment of purchases by nonresidents is both pressing and quantitatively significant for many developing countries is that of tourism. This is discussed in Box 7.3. In this, as in other instances of this general problem, the possibility that countries will do themselves mutual harm by competing for mobile tax base may ultimately point to a potential gain from coordination of tax rates, perhaps on a regional basis.

Box 7.3. The VAT Treatment of Tourism

It is often advised that services provided to tourists should be fully taxed. It is increasingly argued, however—and in some cases is the practice—that they should be zero-rated or exempted.

The issue is sometimes couched in terms of the question of whether these services are properly regarded as consumption (and so subject to normal tax), because they are consumed domestically, or exports (and so zero-rated), because they are consumed, typically, by foreigners. This, however, is not the issue; nor is the treatment of tourism in the national accounts of any relevance.

The key economic point is that the ability of tourists to substitute between services offered by different countries can quite plausibly imply highly elastic demand for services that are broadly the same in different countries. This high elasticity points to a low tax rate. The argument applies most obviously to facilities—palm-fringed beaches, for instance—that are much the same in different countries. Where facilities are genuinely unique, however, the same considerations will point to a high rate, naturally implemented as an excise or entrance fee. Even manifestly matchless resources may, however, in a wider sense, be substitutes: a visit to the Pyramids may be a substitute for one to the Forbidden City. Even in such cases, the ability to extract rents may therefore be limited.

A strong case can thus be made for setting a low tax on generic tourist services, perhaps even a zero rate. Or, to discriminate between less elastic domestic demand and more elastic foreign demand, tax might be rebated to nonresidents (as with the hotel tax in Canada); this, of course, is potentially troublesome to administer. Genuinely distinctive tourist resources might be made the subject of user fees, which could in any event be better tailored to congestion and other external effects of their usage.

Three arguments can, however, be made against taxing generic tourist services at a low rate. The first is the administrative: that multiple rates complicate administration and compliance, and create opportunities for abuse. The second is that there is a coordination problem: the elasticity of demand for tourist services offered by any particular country may be much greater than that for the services offered collectively. While the service offered by any particular game park is not unique, that offered by game parks in general is much more so. Thus, all countries could gain by collectively agreeing to raise the tax rate applied. This argument points to regional coordination. Third, to the extent that such services are purchased by foreigners, who presumably appear in policy-makers' objective function with a lower weight than do their own nationals, the social loss from raising taxes on these goods will be reduced: taxing foreigners is always attractive.

Finally, while environmental considerations have come to receive considerable attention in the formulation of tax policy, they do not provide a rationale for differential VAT rates. The VAT is intended as a tax on consumption, while corrective taxes should apply to all uses of externality-generating commodities; intermediate use, in particular, should be taxed just as heavily as final use. Externalities call for excises, not consumption taxes.

Equity

These efficiency considerations abstract from the possibility that alternative commodity tax structures will alter the distribution of real income. In terms of equity considerations, it will be desirable, all else equal, to tax most heavily those goods that account for a greater share of the expenditure of the better off. If, on the contrary, all households allocated their budgets across commodities in the same way—that is, if budget shares for all goods were independent of income—then there would be no equity gain in taxing some goods more heavily than others. However, since there is no reason to presume that this condition holds in general, in the absence of other instruments to achieve distributional goals it may be desirable to set more than one rate of indirect taxation.

The presence of other instruments, however, makes it less likely that social gains will be had from setting more than one rate of VAT. Most obviously, the presence of an income tax provides a more effective means of pursuing distributional objectives, and differentiation is consequently less likely to be needed. For example, if the way in which consumers allocate their spending across commodities is the same at all income levels—more precisely, if budget shares do not depend on the pretax wage rates at which individuals can sell their labor—then indirect taxation is entirely unnecessary. (This is the Atkinson-Stiglitz (1976) result, referred to in Box 7.2.) The reason is straightforward: there is no information on individuals' underlying (and unobserved) ability to pay taxes contained in the pattern of their expenditures that is not already contained in their (observable) earnings; thus one can do no better than simply tax the latter. This, however, is a restrictive condition, unlikely to hold in practice. More generally, in the presence of an optimal nonlinear income tax, it will be appropriate to have as many distinct rates of indirect taxation as there are distinct groups of commodities that are perfectly substitutable among themselves.⁶⁸

⁶⁸For example, it can be seen from Atkinson and Stiglitz (1980) that it is sufficient for the optimality conditions to be satisfied with two distinct nonzero rates of indirect taxation that preferences be of the form $U[F(X^0, L)] + A(X_1^\alpha + X_2^\alpha \dots, L) + B(X_1^\beta + X_2^\beta \dots, L)$, where the sets of goods superscripted by 0, α , and β are disjoint. The solution applies identical nonzero rates to goods that are perfect substitutes for one another.

It has also been increasingly argued that expenditure policies, in areas such as education and health, may be more effective tools for pursuing equity objectives than the use of differential VAT rates. This has received less formal attention, however, and does not seem to have been investigated empirically. Insofar as such expenditure measures are akin to negative income tax payments, however, the same arguments as above would suggest a reduced need for rate differentiation.

The availability of other instruments thus weakens the case for rate differentiation. It does not, however, eliminate it. That said, the availability of other instruments is likely to be crucial, and on this there may be an important distinction between developed and developing countries. For a developed country with a well-functioning income tax, the case for rate differentiation is likely to be relatively weak. Davis and Kay (1985), for example, show how the elimination of the considerable zero-rating of VAT in the United Kingdom could be accompanied by an increase in the threshold for the income tax and increases in benefit levels in such a way as to maintain revenue without jeopardizing progressivity. Using a computable general equilibrium (CGE) model calibrated to the United States, Ballard and Shoven (1987) conclude that differentiating the rate of a VAT used to partially replace the income tax would have a large efficiency cost but do relatively little to mitigate the adverse distributional impact of the change. Many developing countries, however, do not have well-functioning income taxes and the case for differentiation may thus be stronger. Using a CGE model for Bangladesh, Hossain (1995) concludes that some zero-rating and selective use of excises would significantly diminish the regressive impact of using the VAT to replace the preexisting indirect tax structure.⁶⁹

How large could be the gains that can be achieved by redistribution through indirect taxation? The scope for redistribution depends on the extent of dissimilarity in spending patterns of rich and poor. For quite plausible degrees of dissimilarity, however, the amount of redistribution that can be achieved through any indirect tax alone is quite limited.⁷⁰ Suppose, for example, that

⁶⁹Results from such models are limited, not least because they presume forms of preferences that may to some degree prejudice the potential gain from departures from uniformity. Moreover, the conclusions drawn may be sensitive to the precise exercise considered. In Ballard and Shoven (1987), for example, the effects of differentiation in mitigating the impact of the VAT on the poorest decile depend very much on whether the VAT is used to reduce marginal rates of income tax by the same proportion for all taxpayers or by the same absolute amount. In the latter case, differentiation reduces the adverse impact on the poorest by 0.4 percent of the present value of their lifetime income (Table 6.8), which is larger than the mitigating effect on the poorest groups found by Hossain (1995).

⁷⁰The argument is developed by Sah (1983).

there is some particular good—food, say—that accounts for a much larger share of the expenditure of the poor than it does of the expenditure of the rich. Then to achieve a more equitable distribution of the tax burden one might think of taxing food more lightly than other commodities, and even subsidizing it if the funds are available. The extent to which money can be channeled to the poor by this means is limited, however, by the fact that while the *proportion* of their income that the rich spend on food may be relatively low, the *amount* of food they consume may be very large. Thus much of the money spent on subsidizing food will actually benefit the rich: in one country, FAD staff estimated that for every \$100 (say) in VAT revenue forgone as a result of zero-rating food, less than \$15 accrued to the poorest 30 percent of the population, while about \$45 benefited the richest 30 percent.

These inherent limitations to the extent of redistribution that can be achieved by indirect taxation are developed in Box 7.4. They mean that even the best-informed government will be severely constrained in the redistribution it can achieve by rate differentiation.⁷¹

The discussion has presumed so far that the main distributional effect of VAT is felt through the prices that people pay for the goods they consume. That may not be the case. The real burden of the VAT tax may not fall entirely on consumers but may in part be passed back to suppliers of factors through lower prices received by producers.⁷² The distributional consequences of a VAT may thus be more complex than at first appears, and in some cases a VAT might be deployed in a deliberate attempt to tax producers rather than consumers. For example, the availability of imported foods may mean that small farmers—that is, those below the VAT threshold—are unable to recapture in higher consumer prices the VAT that they are charged on their fertilizer usage. Despite the production inefficiency it induces, such a tax may thus be desirable as a means of taxing this otherwise hard-to-tax group.⁷³ On somewhat similar grounds, Ab Iorwerth and Whalley (1998) argue that the common-place exemption of food exacerbates the distortion toward excessive home

⁷¹And of course rate differentiation will do nothing for equity concerns if poorly designed: Liberati (1999), shows that, conversely, a recent reform in Italy involving a reduction in the number of VAT rates in Italy actually improved the distribution of real income.

⁷²In the simplest case, incidence—the extent to which the burden of the tax is split between consumers and producers—depends on relative elasticities of demand and supply. Kotlikoff and Summers (1985) and Boadway and Keen (2000) review the literature on tax incidence.

⁷³The importance of indirect tax effects operating through the sources of income, rather than the uses to which it is put, is emphasized, and analyzed in a CGE model of a developing country, by Bovenberg (1987).

Box 7.4. Limits to Redistribution Through Indirect Taxation

Assume that there are only two income groups—“rich” and “poor”—and only two goods. Assume also that the poor spend all of their income on good 2, while the rich buy both goods. The sole object of government, for argument’s sake, is to redistribute income to the poor. Clearly the best way to do this is to tax good 1 (at tax-inclusive rate t) in order to finance a subsidy s on good 2.

How much redistribution can be achieved? Since the poor spend all of their income on the subsidized good, the amount they gain is simply the subsidy received. Expressed as a proportion of their income, this is simply the subsidy rate s . For the government’s budget to balance, it must be that $sw_2 = tw_1$, where w_i denotes the proportion of total income (of rich and poor combined) that is spent on good 1. Thus, $s = t(w_1/w_2)$; and so, since t cannot exceed unity, the gain to each poor person can be no more than w_1/w_2 .

Assume, for example, that 80 percent of all income accrues to the rich, who spend 90 percent of their income on good 1. Since the rich are the only group who buy good 1, it follows that $w_1 = 0.72$. Then the poor can gain no more than 250 percent of their income.

This is a surprisingly small amount, given the propitious circumstances of the example. Even though the rich spend relatively little of their income on the subsidized good, the volume of that spending on that good soaks up much of the subsidy that the taxes that they pay finance.

In less extreme cases, the potential redistributive gain is even less. Change the numbers above, for instance, to have the rich receive 70 percent of all incomes and spend 50 percent of their income on good 2, and the potential gain to the poor falls to only 54 percent of their incomes.

production of meals implied by the non-taxation of time inputs into home cooking.

A striking instance of the use of rate differentiation to pursue distributional objectives through effects on factor incomes is the recent EU decision to allow member states to set (for a period of no more than three years) a reduced rate of VAT on a limited number of items from a specified list of labor-intensive services, such as construction, renovation, child care and hairdressing. The avowed purpose of this initiative is to stimulate employment in these sectors. Such measures might indeed be rationalized as counteracting the possibility that taxation of such items at the full rate would encourage consumers to adopt inefficient methods of self-supply (an argument developed by Piggott and Whalley (1998)): cutting their own hair, for example, rather than purchasing in the market. They may also serve to reduce the extent of tax evasion, potentially a worth-

while objective in itself. Against this, however, the distributional consequence of setting a reduced rate in this way may even be adverse, as small tax exempt firms cease to benefit from the ability to sell at the gross prices charged by their taxable competitors. Moreover, it is not clear why one might wish to encourage employment in these sectors rather than in general; for which better tools—reducing payroll taxes, for instance—would seem to be available.

Costs of Rate Differentiation

Although there may thus be advantages to some rate differentiation, there are evident costs as well. These can be divided into two main categories, both of which also apply to the introduction of exemptions, which is discussed in the next chapter.

Increased administration and compliance costs

The reasons that applying a single rate of VAT to all items except exports generally⁷⁴ simplifies both compliance and administration include:

- The use of a single positive rate simplifies taxpayer books and invoices, and eliminates the need to open separate records for purchases and sales depending on the rate to be applied. It also facilitates simple and easy-to-understand tax forms—a single page for a single-rate VAT in New Zealand, instead of two to three pages in the case of VATs with multiple rates (including reduced positive rates and zero-rates) in EU countries. Simple records, invoices, and tax forms in turn support the effective operation of a self-assessment system based on voluntary compliance. They also support more effective taxpayer education and staff training programs.
- The use of a single rate facilitates VAT audits. In a single-rate VAT, basic desk verifications, including cross-checking between VAT, income tax, and customs data, help assess the accuracy of VAT liabilities reported by the taxpayer. These verifications are complicated in a multiple-rate VAT, where the breakdown of purchases and sales by VAT rate requires checking taxpayers' records. Moreover, in the case of a multiple-rate VAT, significant audit time (30 to 40 percent) is typically needed to verify the breakdown of inventories, purchases, and sales between the respective rates. Conversely in a single-rate VAT, audit work can focus essentially on two main issues: under-reporting of output VAT; and over-reporting of input VAT.

⁷⁴There may be some very specific exceptions. The sale of a business as a going concern, for example, should in principle be subject to VAT (with a credit for the purchaser); but difference in the timing of the purchase and subsequent credit may create cash flow problems for the purchaser that can be avoided by simply zero-rating such transactions.

- The use of a single rate also helps limit the number of refund claims to, essentially, exporters and enterprises purchasing a large amount of capital goods. Conversely, the adoption of a reduced positive rate and the use of a zero rate for domestic sales can result in sustained credit positions for those taxpayers using these rates. This results in additional refund claims, which increase the burden of the tax administration and impact the effectiveness of its operations.
- Differential treatment of different goods creates scope for argument as to the proper treatment of items lying on the borderline between distinct categories. In the United Kingdom, for example, disputes have arisen as to whether deepening a house's foundations should be treated as repairs (taxable) or an extension, and whether a Jaffa Cake is a cake or a biscuit. Cnossen (1987) lists many murky borderlines in the Dutch VAT: smoked eel taxable at the reduced rate, for example, while smoked salmon is subject to the standard rate.
- Differentiation also creates incentives for the deliberate misclassification of items. One important instance of this is in the zero-rating of exports, which creates the potential to gain by diverting to the domestic market goods claimed to have been exported. Border formalities can discourage such fraud by providing a check on the fact of export. In the EU, however, the removal of such frontiers has given rise to increasing concern that the VAT chain is weakened by the zero-rating of exports to registered traders. Moreover, in many developing countries the need to prevent abuse of these provisions whilst providing timely refunds to honest traders is a major and continuing concern.

Consistent with these difficulties, some tentative evidence that multiple rates do indeed jeopardize revenue by weakening enforcement is provided by Agha and Haughton (1996), who find for a sample of OECD countries that the ratio of actual VAT revenues to the estimated yield with perfect enforcement is significantly lower the greater is the number of VAT rates.

Political vulnerability

One common concern in considering measures of rate differentiation or exemption is that, however deserving the measures in their own right, they make it harder to resist pressures for other and perhaps less deserving measures of differentiation. By permitting some differentiation, governments may reveal themselves more willing to live with the complications that differentiation brings and so increase their vulnerability to further erosion of the tax base. Thus it might be, for example, that the theoretical considerations discussed

above point to a system with two distinct rates of VAT. But political dynamics may mean that the real choice is between one rate and many more than two.

The legitimacy of this concern is to some degree empirically testable: does the number of distinct VAT rates tend to proliferate over time, and does the number of rates at the time of introduction have any lasting effect? The regression reported (in equation 7.1) above tends to answer both questions in the affirmative. There is in this sense some empirical support for the “slippery slope” argument against multiple rates at the time of introduction: through this route, starting off with a relatively small number of rates may go some way toward limiting the number of future rates.⁷⁵

Comparing Benefits and Costs

Whether or not some differentiation in VAT rates is appropriate will depend on whether the benefits outweigh the costs. But while the nature of those benefits and costs is fairly clear, their magnitude is not. In one sense the costs are evident enough—or at least will be made evident to the policymaker by the complaints of taxpayers and tax administrators. There appears, however, to be no hard evidence on how large those costs are. The benefits are in a sense less apparent: overstretched tax administrations will complain to the minister, but the excess burden triangles of optimal tax theory knock on no one’s door.

Moreover, the benefits are likely to be quite country-specific, depending as we have seen on the nature of spending patterns (and the availability of other instruments).

One approach to this issue is to extend the approach in Box 7.4 to get some sense of how large the possible gain from rate differentiation might be. This is done in Box 7.5. In the example there, by incurring additional administrative costs equal to 3 percent of total incomes it is possible to increase the net incomes of the poor by about 38 percent. Whether this is worthwhile (bearing in mind that the rich lose out by the amount of the gain to the poor plus the deadweight loss of the extra costs) will depend on the importance one attaches to bringing about a more equal distribution of income.

Such calculations can yield no general conclusions, other than to emphasize that the issue of rate differentiation is in large part ultimately an empirical one, and that some attempt to quantify the factors involved may be fruitful. Some of the considerations raised above—including the political economy considerations—are much harder to quantify. What is widely agreed, however, is that while the benefits of introducing an additional VAT rate are likely to de-

⁷⁵Unfortunately, there are no data allowing a comparable analysis in relation to exemptions, an area in which the effects at issue may be even more important.

Box 7.5. Comparing the Costs and Benefits of Rate Differentiation

Pursuing further the two-good, two-types example in Box 7.4, assume that the government needs to raise a proportion g of aggregate income in order to meet its expenditure needs.

If it sets only a single rate of tax, that rate will then have to be precisely g . The gain to the poor from moving to a two-rate structure is thus $g - s$, where, as before, s , is the subsidy on good 1. Assume that implementing this second tax rate involves administrative costs equal to a proportion γ of total income. The government must now set t and s so that $tw_1 + sw_2 = g + \gamma$. Since t can be no greater than unity, the gain to the poor can now be no more than $(1 - g)(w_1/w_2) - (\gamma/w_2)$.

Take the same illustrative numbers as at the end of Box 7.4: the rich receive 70 percent of all income and spend 50 percent of their income on good 1. Assume in addition that the government must raise 20 percent of all income for general spending, and that the second rate increases administrative cost by 3 percent of income. The largest possible gain to the poor from introducing a second rate is now about 38 percent of their income.

Notice, moreover, that (through the term γ/w_2) the increased administration costs associated with the second rate lead to an even greater proportionate reduction in the gain to the poor: in the example above, the 3 percent administration costs actually reduce the largest gain to the poor by over 4.5 percent. In this sense, those costs are borne disproportionately by the poor (rather than by, say, a 3 percent reduction in the net incomes of rich and poor alike). The reason, intuitively, is that a government that seeks only to raise the incomes of the poor will always extract as much as possible from the rich in order to benefit the poor; if the amount that the government has to pay in administrative expenses increases, this can consequently be found only by reducing the subsidy—which bears more harshly on the poor than on the rich, since it is they whose expenditures are most concentrated on the subsidized good. Thus, there appears to be a multiplier-like effect at work, with the administrative cost of multiple rate structures having a more than proportionate effect in reducing the redistributive potential of indirect taxation.

crease quite quickly with the number of rates so long as even a very rudimentary set of alternative instruments is available, the costs also increase quite rapidly. While there may be some gain from introducing a second VAT rate, there is unlikely to be any great gain from introducing a fourth or fifth. As discussed in Chapter 15, it is also now all too apparent that the zero-rating of exports has given rise to severe administrative problems in many developing countries. There would need to be very clear evidence of substantial offsetting benefit to warrant extending these to domestic transactions by zero-rating items consumed by the less well off.

Conclusions

The principal conclusions suggested by this discussion are:

- Support for setting only a single positive rate is based both on experience with the administrative and compliance difficulties associated with multiple rates and on the realization that the amount of redistribution that can be achieved through indirect taxation is inherently limited. This position is matched by an increasing tendency for VATs to be introduced with only a single rate.
- The extent to which equity gains can be achieved by differential rates of VAT depends on the range of other instruments available. A few excises on goods in inelastic demand may be able to reap the main efficiency gains from differentiation, so that the case for multiple rates of VAT is primarily an equity one.
- The equity case for differential VAT rates will be stronger the more restricted is the set of other tax-spending instruments available to government. It will be weaker, for instance, when an effective income tax is in place. But while the benefits from differential VAT rates may consequently be greater in developing countries, these are also the countries in which the problems of compliance and administration associated with a multiple rate structure will be greatest.
- The standard advice to fully tax tourism appears to be widely ignored. It may have underestimated the optimal tax argument for a lower tax on services of a fairly non-unique kind. Effort might be better focused on securing some degree of coordination between competing countries.

The importance of the rate differentiation issue may in any event have been overstated. Even leaving aside non-VAT instruments, there are design features within the VAT itself other than the statutory rate structure that can be—and are—rightly or wrongly used to mitigate the distributional effects of the tax. The widespread use of exemptions, for instance, discussed in the next chapter, means that even a VAT that has only a single statutory rate will have many effective tax rates, some of which (such as those associated with the exemption of basic foodstuffs, health, and education services) may have significant equity effects. A high threshold can have similar effects.

8

Exemptions

An exemption occurs when output is untaxed but input tax is not recoverable.⁷⁶ It is thus an aberration in terms of the basic logic of VAT. But exemptions are of great practical importance, raising issues that pose considerable and perhaps increasing difficulty for policy formulation.

Background

The survey responses show that there are a few specific exemptions—namely, those in relation to education, health, and financial services, on which there is a broad consensus. Is that consensus well founded?

Exemptions beyond these core items are common: almost all countries exempt more than just items relating to education, health, and financial services. A flavor of these additional exemptions is given by Table 8.1, which lists the key exemptions in the subset of the survey countries for which information is available. While practice varies, there are also some commonalities in the range of items exempted. Broadly, seven categories can be identified (though, of course, few countries have adopted all of them):

- agricultural products, and key agricultural inputs;
- fuels;
- cement;⁷⁷
- passenger transport;

⁷⁶An exemption may be defined either in terms of particular commodities or in terms of particular traders. An example of the latter kind is the exclusion of small traders from the VAT system through use of a threshold below which registration for the VAT is not required. This kind of exemption is discussed separately below.

⁷⁷Some countries impose an excise on cement.

Table 8.1. Some Key Nonstandard Exemptions in a Selection of Countries

Albania	Housing services; post; imports by diplomats; kerosene for heating
Bulgaria	Legal services
Burkina-Faso	Agriculture and fishery products; gas and petroleum
Cameroon	Agriculture; basic goods (e.g., milk, flour, fertilizer); diplomatic imports; nonprofit organizations; newspapers and periodicals
China	Self-produced agricultural products; imported materials used in scientific research, experiments and education; articles for disabled imported directly by organizations for disabled
Croatia	Welfare services; cultural services, religious communities
Ghana	Agriculture (including inputs); fishing equipment; water; books and newspapers; post; imported goods for diplomats; machinery; construction
Mauritania	Professional services, post, newspapers
Mauritius	Rice, onion, potatoes, books
Moldova	Agricultural products
Mongolia	Passenger transport; cultural services; religious organizations; notary services; diplomatic imports; foreign grants
Pakistan	Agricultural products; sugar; gas and petroleum; electricity; fertilizers and pesticides; defense stores; ships, aircraft, and spare parts; goods for diplomats; newspapers, books, and magazines; cement; computer hardware and software; capital goods
Philippines	Agriculture (including inputs); coal, gas, and petroleum; books and newspapers; import of large vessels
Russia	Some distinctions between domestic and imported goods, for example, technological equipment and parts
Sri Lanka	Agriculture (including inputs); cement; water; sugar; post; passenger transport; import of persons having an agreement with the Board of Investment; hotel accommodation for tourists; pearls and precious stones
Togo	Unprocessed food; real estate; petroleum; diplomats and NGOs
Uganda	Passenger transport; petroleum; lotteries
Vietnam	Unprocessed foodstuffs; imported capital goods; excisable items, sports and culture, newspapers and magazines, public transport; certain government purchases

Source: IMF staff compilation.

Note: This table is constructed from responses to the survey described in Chapter 6, and so reflects the situation in early 1998. Some responses indicated only the fact of exemptions—other than for education, health, and finance—not their nature. Thus, the omission of a sample country from this table does not imply an absence of other exemptions nor is the list for each country intended to be comprehensive; rather, the table is illustrative.

- services, where issues of coverage and the use of “positive” and “negative” lists arise;
- cultural and other merit items (such as books and newspapers, and the noncommercial activities of religious organizations);
- aid-financed activities; and
- capital goods (essentially imported capital goods).

The rationale for exempting the first four categories typically seems to be some notion that doing so will ameliorate the distributional consequences of the tax, both through the effect on prices that consumers face and, especially in relation to agriculture, through the effect on incomes. The fifth category reflects the sensitivity of taxing particular items, while the sixth in many cases reflects conditions imposed by donors. In all cases the question arises as to why these objectives are not better pursued by setting a lower rate rather than outright exemption. The same question also arises even more powerfully in relation to the exemption of capital goods, since exemption leads to unrecovered tax that is likely to be reflected in the final price of items produced from those capital inputs. The possible rationalization of such exemptions is a key concern in this chapter.

Consequences of Exemption

Exemption has many effects, some of them quite complex.

Revenues Fall—or Increase

Exemption breaks the VAT chain. Whether this increases or decreases the net revenue raised by the VAT depends where in the chain of supply the break occurs. If the exemption occurs immediately prior to final sale, the consequence is a loss of revenue since value added at the final stage escapes tax.

If the exemption occurs at some intermediate stage, on the other hand, the consequence is actually an increase in net revenues: the cascading of tax on inputs means that, as the price charged by downstream firms using the exempt item rises in order to cover their increased costs, so the tax on output downstream increases.⁷⁸ Thus value added prior to the exempt stage is effectively taxed more than once.

⁷⁸This will be so however many taxable stages occur after the exemption: even if the immediate purchaser from the exempt sector sells to a registered trader, who is therefore able to reclaim the increased tax charged by that supplier, the increase in output prices throughout the chain will at some point be reflected in sales to unregistered persons (including final consumers).

Distorted Input Choices

The exemption of items used as inputs into production removes the key feature of the VAT, discussed in Chapter 2, of preserving undistorted the production choices that firms make. The unrecovered taxation of some intermediate inputs that is implied by exemption will induce producers to substitute away from those inputs.

The distortionary consequences of the initial exemption, it should be emphasized, can spread far beyond the sectors most directly affected. Exempting the production of steel, for example, will not only distort the production decisions of machine tool manufacturers using steel products as an input; the consequent impact on the price for machine tool services will distort the prices of tooled products, disadvantaging items and production methods that make intensive use of such inputs. Exemption may thus render the impact of the VAT system far more opaque, with effective rates of VAT—in the sense of the difference between the price at which goods finally sell and the value of the underlying resources used in their production—potentially differing greatly, and in nontransparent ways, from the statutory rates of VAT applied to final output.

This concept of the “effective rate of VAT”—a term that has been used in the literature in rather different senses—is discussed in detail in Appendix II. Even describing the distortions on input choices that exemptions create is far from straightforward, as is shown there. Conceptually, the effective rate of VAT—referred to here as the type-I effective rate, to highlight the focus on input-choice distortions—can be viewed as the excess of the price producers actually pay for a commodity over the price that would prevail (assuming unchanged factor prices) in the absence of the VAT. If there are no exemptions, the type-I effective VAT rate on any commodity is simply the rate of VAT applied to that product. In the presence of exemptions, however, the type-I effective rate reflects the precise pattern of input-output relationships between sectors. Information on these quantities is especially hard to come by in developing countries, so that the calculation of type-I rates will often be problematic. Assessing the welfare cost of the distortions associated with these effective rates is even harder.

Incentive to Self-Supply

By introducing cascading, exemption creates incentives for the avoidance of tax by vertical integration, commonly referred to by VAT practitioners as “self-supply.” To elaborate, exempt traders have an incentive to supply taxable items to themselves rather than purchasing them and incurring irrecoverable VAT. For many exempt items, economies of scale or the specialized nature of the activity may be such that self-supply is hardly feasible; it is services produced by relatively unskilled labor and relatively suited to small scale production that seem most

susceptible to self-supply. Banks producing exempt financial services, for example, may find it worthwhile producing security services in-house rather than purchasing them from outside companies that must charge VAT, which the bank cannot recover. While such self-supply mitigates the production efficiency problem associated with exemption, it evidently does so only at some revenue cost.

Final consumers, of course, are an especially important group of exempt persons. Their incentive is to avoid tax on final sales by supplying themselves with some of the value added embodied in final sales: they may escape tax on the value added by painters touching up their woodwork, for example, by doing the work themselves. (By the same token, of course, painter and consumer together have an incentive simply to conceal the transaction, with the painter charging no output tax and refraining from reclaiming input tax.) The essential effect here is the bias that any indirect tax creates for consumers to enjoy their purchasing power in the form of untaxed leisure—broadly interpreted—rather than as paid work.

The incentive to self-supply may be greater than that implied by the statutory VAT rate on final output in the presence of rate differentiation. Assume, for example, that, as in the United Kingdom, food is zero-rated but restaurant meals are taxed at 10 percent. Assume also that a prepared meal uses \$0.2 of food and sells at \$1 (both amounts net of tax). Since food is zero-rated, the full tax of 10 cents is attributable to the value added in the restaurant; a tax rate on value added in that sector is not 10 percent but $10/80 = 12.5$ percent. Since the net effect is to tax more heavily than might at first seem the value added in sectors whose output is relatively heavily taxed, the incentive for self-supply of such goods is greater than might at first seem. The reverse would also be true.

The measurement of this incentive to self-supply gives rise to a concept of the effective rate of VAT on a commodity⁸⁰ that is quite distinct from the type-I effective rate above (which focuses on input choice distortions). This alternative concept, referred to here as the type-S effective rate, so as to call to mind “self-supply,” is simply the net revenue paid in respect of the production of some item expressed as a proportion of value added. The type-S effective rate will thus be high for lightly taxed outputs produced from heavily taxed inputs. This notion of the effective rate, and its relation to the type-I effective rate introduced above, is also discussed in Appendix II.

The appropriate policy response to self-supply is not clear-cut. The artificial grouping of activities that results implies that organizational forms are in part being dictated by other than purely commercial considerations, and to that extent is undesirable. Self-supply can itself, however, be a response to the

⁸⁰See Hemming and Kay (1981) and Kay and Warren (1980).

distortion associated with unrecovered input tax, and so may serve a socially useful purpose in mitigating the distortion of input-choices that might otherwise arise.

Perhaps in part as a reflection of this ambiguity, policy responses to the self-supply issue vary. Some revenue authorities reserve powers enabling them to charge tax (and deny credit) on self-supply to avoid nonrecoverable input tax. One test, for example, may be whether the services in question are also available for hire outside the firm. More widely, the question arises to how firms are to be grouped for VAT purposes. The United Kingdom, for example, has recently proposed that companies not eligible to reclaim input VAT not be allowed to join VAT groupings; and grouping rules are under consideration more widely in the EU.

Compromising the Destination Principle

Exemption compromises the destination principle for the taxation of items entering international trade. While exported items that would otherwise be exempted are in practice typically zero-rated, it is not possible to remove the consequences of exemption at an earlier stage in the production chain. In the European context, for example, the Sixth Directive enables banks selling financial services directly to countries outside the EU to reclaim VAT levied on their inputs. But the exports of companies that make use of financial services provided by banks in their own jurisdiction, which are exempt rather than zero-rated, bear, indirectly, unrecovered input tax. To some degree, exemption thus undoes what has often been seen as a principal merit of the VAT.

By the same token, firms using inputs that are exempt have an incentive to import those inputs—which will be zero-rated rather than exempted in the country of export—instead of purchasing tax-laden items from exempt domestic producers. Indeed, there is an incentive for exempt producers to artificially export their output (and so have it zero-rated) in order that domestic producers can escape indirect taxation through the input into the exempted sector. These difficulties have led a number of countries (such as Colombia in 1999) to consider introducing countervailing tariffs so as to eliminate the advantage of imports of exempted items over domestically produced substitutes.

Partially Exempt Traders

Complications arise in respect of traders who sell both taxable and exempt outputs. For recovery purposes their input tax payments must be allocated between the two kinds of sales. This is typically in proportion to the values of the two types of sales, which clearly hold the potential to do rough justice in the presumed allocation of inputs to outputs, and to distort traders' decisions as

to the composition of their sales depending on how such treatment differs from the underlying reality.

Exemption Creep

One of the key features of exemptions is the way in which they feed on one another, giving rise to a process of what might be called “exemption creep.” The point here is distinct from the concern that each exemption provides a general precedent for others. Rather, it is that each exemption creates direct pressures for further exemptions, both upstream and downstream:

- Creating one exemption in order to lighten the tax load on a particular item or group creates pressure for exemption (or zero-rating) of commodities used to produce that exempted item. If the government wishes to remove the burden on that item, lobbyists for upstream suppliers might reasonably argue, surely it should remove the tax on its inputs that would otherwise be unrelieved?
- Creating an exemption at an intermediate step in the chain increases the potential return to downstream users of that input from lobbying to secure their own exemption. To see this, suppose that firm B buys some input from firm A. If A is taxable, then the gain to B⁸⁰ from becoming exempt is that B’s own value added escapes tax. If A is exempt, however, then since output tax levied on B captures value added by both firms, the gain to B from becoming exempt would be that *both* firms’ value added escape tax.⁸¹

The first kind of creep has been especially apparent in practice, a prime instance being in the agricultural sector: the exemption of basic foodstuffs has in a number of countries bolstered pressure for the exemption of agricultural inputs (the wider issues here being discussed in detail in the next chapter).

Avoidance

The distortions that, as just described, can be induced by exemptions are, in a sense, forms of avoidance. But one response to exemptions may be avoidance

⁸⁰The usage here and below is loose: gains of this sort would typically be shared between supplier and purchaser.

⁸¹The gain will be somewhat greater than this, since the exemption of A leads, as a consequence of unrecovered input tax, to an increase in the price B pays for its inputs, the effects of which are multiplied by any tax levied on B’s sales. This consideration also implies that firm B will have some countervailing incentive to lobby against the granting of exemption to its supplier (so long as it expects to remain taxable itself).

of a more transparent kind. De Wit (1995) gives the example of characterizing a lease of property (exempt, suppose) as an agreement for storage of goods (taxable, suppose, and hence preferable for a taxpaying lessee).

Why Exempt?

Exemption is partway between, on the one hand, levying a positive VAT rate in the usual way (differing from exemption in charging tax on output) and, on the other, zero-rating (differing in allowing input taxes to be credited). There are consequently two potential broad classes of reason for exempting.

Output Is Hard to Tax

In some cases it may seem impractical to apply the VAT to output; either practicalities or revenue needs make exemption preferable to the alternative of zero-rating.

A prime instance concerns the treatment of small traders, where administrative and compliance costs can effectively preclude their inclusion in the VAT system. In this case zero-rating is for the same reason not a realistic option. Standard practice is thus to exempt traders below a certain size. Quite where that line should be drawn is an important issue, and addressed at some length in Chapter 12. For the present, the important point is that exemption—in effect, excluding from tax the value added by such traders—may be an acceptable compromise between the desire to save implementation costs and the desires not to unduly jeopardize revenue and/or favor small traders in competing with large.

A second key instance is that in which output is sold at prices below true market value. The most prominent examples arise in connection with outputs sold by the public sector in competition with private enterprises. State-financed educational institutions, for instance, may provide output at low prices, and in competition with private enterprises subject to VAT. Complete parity between the two could be achieved by zero-rating these services, but may present opportunities for abuse. Though still placing the public sector at an advantage, exemption may be preferable.

There are also sector-specific cases in which difficulties in identifying the appropriate output to tax have been used to justify exemption as a means of ensuring that taxation is not avoided altogether. The leading instance of this is in the taxation of intermediation services, most prominently in respect of financial services. The difficulty here is that the taxable output is in principle the intermediation service. While the aggregate value of this can be inferred from the difference between buying and selling prices, the allocation between buyer

and seller—which will matter for the appropriate crediting of the tax—is not immediately revealed by the market.

Exemption as a Less Costly and Administratively Convenient Substitute for a Reduced Rate

When both outputs and inputs can be observed, the alternative to exemption is to subject the commodity to the VAT at a reduced or even zero-rate. If that is possible, and given that exemptions are associated with production inefficiencies, can it ever be the case that granting an exemption would be the preferred course of action? On balance, this is not obvious, even though exemptions do avoid some problems. On the positive side, exemption avoids the administrative difficulties associated with the payment of refunds as a result of zero or reduced rating (discussed further in Chapter 16). On the negative side, exemption does not avoid either of two problems already noted with rate differentiation—namely, that such differentiation can encourage definitional disputes and set the stage for further base erosion. There is, of course, an important sense in which exemption is simpler than rate differentiation, in that it is not necessary to monitor either output tax or the recovery of input tax. This, however, bears on the risk that exemption is used precisely as an opaque device to favor certain commodities or interest groups—multiple nominal rates are in an important sense more transparent than multiple effective rates induced by exemptions.

Commonplace Exemptions

As already noted, there is a consensus to exempt some particular items—all these standard exemptions, for instance, are in the Sixth Directive (the template of the VATs of the EU). The basis for that consensus, however, merits consideration. Key questions to ask in evaluating an exemption are: Why not zero-rate? Why not instead tax at some positive rate, perhaps lower than that applied to other goods?

Public Sector

Standard advice and practice is for commodities provided by publicly owned bodies in competition with private enterprise to be fully taxable, except for items, principally those listed below, which are generally exempted. More contentious is the proper treatment of services provided by the public sector either free of charge to the final user—defense and other classic public goods fall into this category—or more generally on a not-for-profit basis. These services are the focus here. (Essentially the same issues also arise in the treatment of nonprofit bodies and fraternal organizations more generally.)

Policy toward the public sector adopted in the EU appears to be broadly representative of practice in most developed countries. The Sixth Directive effectively exempts noncommercial services provided by public bodies. This indeed is a prominent example of the first rationale for exemption noted above, namely, it is hard to tax output that is given away other than by taxing inputs into its production. In effect, the public sector is regarded as the final consumer of the inputs used to produce services it provides on a noncommercial basis.

Little systematic information is available, however, on the treatment of the noncommercial activities of the public sector in developing countries (no question on this was included in the survey conducted for the IMF study). Practice appears to vary: in some cases, for example, sales to public bodies seem to have been exempted.

Does it make any difference whether the public sector is exempt or fully taxable? Absent an explicit charge on output, with respect to goods and services provided for a fee to members of the public, output tax revenue will be zero even if in principle taxable; and any revenue that the government collects by denying the recovery of input tax on purchase by public bodies is exactly offset by an increased cost to the government of financing those bodies' activities. Closer inspection reveals, however, that exempting the public sector can have the same adverse effects that are associated with exemption of private activities. Specifically:

- Insofar as the agency does not anticipate that it will be reimbursed for the input tax that it incurs, the effect of exemption on the input prices that it faces will distort production decisions just as it does for profit-maximizing private firms. Public agencies are presumably required, among other things, to minimize the costs associated with their activities: and it is this cost-minimization, rather than profit maximization, that generates a production inefficiency when input prices are distorted.
- For public bodies engaged in both commercial and noncommercial activities, the difficulties of partial exemption arise.
- Self-supply biases also arise: for activities that can be contracted out to the private sector, exemption of the public sector will mitigate in favor of retaining production in the public sector.
- Classification disputes may arise from, for instance, the requirement that public bodies be taxable on activities that do, or might, compete with the private sector.

The difficulties have given rise to various ad hoc responses. One strategy, adopted by Canada and a number of European Union countries, is to rebate

VAT payments to public bodies in respect of their exempt activities. In effect, this converts the exemption into a zero-rating. This eliminates both the potential distortion of input choices and the bias against outside contracting. It also eases the problem of distinguishing commercial and other activities: in either case, input tax is recovered, albeit by different administrative means (within the regular VAT system for commercial activities, outside it through the rebating).

A more systematic response is simply to treat public sector bodies as fully taxable in respect of all their activities. This option has attracted increasing attention in recent years. Notably, it has been adopted by New Zealand, and has been proposed in the context of the European Union by Aujean, Jenkins, and Poddar (1999). While raising no new issues of principle in relation to the crediting of input taxes, there is the matter of identifying the taxable sale. This is straightforward in respect of fees charged to users of a commodity. More generally, the logic of this approach is to regard all sums received by the producer that are tied to production, whether as user charges or as subsidy payments, as, in effect, taxable sales. The net revenue raised by levying output tax in this way on subsidy payments received from other branches of government is of course zero: the revenue collected by the supplier exactly matches the increased cost to the deemed purchasing agency. The advantage is that the VAT chain is preserved through the public sector and its interface with the private sector.

The additional question is what tax rate should be applied. This takes us back to the discussion on rate differentiation. Interestingly, Aujean, Jenkins, and Poddar argue that the sensitivity of the goods in question warrant a reduced rate: they mention a rate in the order of 3–5 percent for the EU.

Turning back to practice, the notion that basic services traditionally provided by the public sector on a not-for-profit basis should be exempt from VAT appears to underlie two of the exemptions widely found in both IMF advice and practice: those for education and health.

Education

Standard advice and practice is to exempt basic education services, and tax at some “normal” rate more specialist training provided on a commercial basis.

The appropriate taxation of education is a complex matter. External benefits associated with education mean that it may even be optimal to subsidize some kinds of training. Leaving these arguments aside, however, the focus is on why it might be appropriate to exempt basic education provision. Two features of the education sector are important to this question: it is a significant component of national income; and basic educational services are commonly

delivered at zero or subsidized prices, in competition, to some degree, with private producers.

The last feature implies that to subject education to a VAT in the normal way would exacerbate the competitive distortion between private and publicly provided forms. One way of leveling the playing field between public and private providers, at least to some degree, would be by zero-rating. This however raises the difficulties associated with refunds (discussed in Chapter 15). While manageable in many developed countries, making zero-rating an option there—and Australia, for example, does zero-rate education—refunds continue to be problematic in developing countries. Moreover, the first feature (the considerable size of the education sector) makes the revenue cost of zero-rating basic education expenditure considerable.

Where, however, publicly provided education is provided at cost, as, for example, may increasingly come to be the case in the tertiary sector, the case for subjecting education to VAT in the usual way, perhaps at a reduced rate to reflect the growth externalities that increasingly seem to be associated with education expenditure, becomes more powerful.

Health

As with education, it is only the basic services that, typically, are exempted: professional services of registered doctors and dentists, supply of prescribed medicines, and the like. The arguments in this case are very similar to those for education. There may again be externalities from some kind of health care that warrant some degree of subsidization. Again, there would be some logic to zero-rating basic health services: Australia does this, for example, while Uganda apparently zero-rates some medical supplies and the United Kingdom zero-rates aids for the disabled. Revenue cost and administrative difficulties, however, weigh against wide-ranging zero-rating the core supplies of the sector.

As private provision grows relative to public, and the latter moves closer to market pricing, so the extent of properly taxable nonbasic health care services can be expected to grow, though this is likely to be some way off in many developing countries.

Financial Services

The rationale for the commonplace exemption of financial services is different, resting on technical difficulties arising from the nature of value added in financial intermediation. For financial services provided on a fee-paying basis, such as safe-keeping services and financial advice, VAT can be charged in the usual way. The difficulty arises for services charged for in the margin between the re-

turn paid to lenders and that charged to borrowers.⁸² Even though the aggregate value added created by intermediation can be identified, to the extent that the financial services are used by registered firms, one needs further to allocate the aggregate value added between the two sides of the transaction. This is difficult.

Suppose, for example, that a bank pays its depositors 5 percent and charges its borrowers 15 percent. Clearly the value added by the bank is $15 - 5 = 10$ percent of deposits (less any material inputs, and assuming too there is no risk of default). This should be taxed. If all loans were to final consumers, this would be the end of the matter. Assume instead that the borrower is a registered firm. How much of the 15 should be creditable? The standard conceptual approach on this issue has been to imagine a hypothetical “pure” interest rate at which the lender could have lent (but without enjoying the ancillary services (clearing, etc.) offered by the bank) and at which the borrower could have borrowed (had they been able to find suitable lenders without the help of the intermediary). If this pure rate is 12 percent, for instance, then the value added provided to the borrower is $15 - 12 = 3$ percent of the loan, and the remaining $12 - 5 = 7$ percent is value added provided to the lender. On a loan of \$1,000 and at a VAT rate of 10 percent, the appropriate outcome is thus for the borrower to be charged VAT of \$3 and the lender VAT of \$7, the total payable thus being 10 percent of the aggregate value added on 10 percent of \$1,000. These VAT payments would be creditable, in the usual way, if lender or borrower is registered. It is, however, the difficulty of bringing about this outcome, which would appear to require, in particular, identifying a “pure” interest rate, that has led most countries to exempt financial intermediation.

Some countries (Israel, for example) have instead taxed value added in financial services by the addition method (described in Chapter 2): that is, by levying tax directly on the sum of wages and profits.⁸³ A potential alternative is afforded by the subtraction method (as was at one point proposed in Canada). Either method is capable of taxing aggregate value added in this sector, and indeed either would in principle be perfectly adequate within a wider VAT system based comprehensively on the addition or subtraction method. Neither method, however, sits well with the application of the invoice-credit method in the rest of the VAT system. Neither enables the identification of embodied VAT on a transaction-by-transaction basis, and hence neither allows the systematic crediting of financial services provided to registered traders.

⁸²The discussion here focuses mainly on simple loan transactions. Similar issues apply to insurance contracts with a savings component and to other more complex forms of financial intermediation. See also Schenk and Zee (2001).

⁸³Profits for this purpose should in principle be defined on a cash flow basis, with investment immediately expensed.

In principle, these difficulties can be circumvented by applying VAT on a “cash flow” basis.⁸⁴ Under this system, all inflows of funds, including the receipt of a loan, and of interest payments, would be treated akin to sales, and be taxable if the recipient is registered; and all outflows, including the repayment of loans, or payment of interest, would attract credit if the payer is registered. For example, consider a loan of \$1,000 to a registered trader (at 15 percent) financed by a deposit (paid 5 percent) from a consumer. Assume as before that the tax rate is 10 percent. Under the cash flow VAT:

- The bank is liable to pay \$100 on the deposit but this is exactly offset by a credit of \$100 on the loan itself. When the loan is repaid, the bank has a net inflow of 10 percent of \$1,000 (its spread on the loan) and so owes tax of \$10.
- When the loan is made, the business pays tax of \$100. When it is repaid, it receives a credit of 10 percent of \$1,150 (principal plus interest).

If the government is able to earn the pure rate of interest of 12 percent on its receipt from the business of \$100, it is left with net revenue of $\$112 + 10 - 115 = \7 , which is exactly 10 percent of the services of \$70 provided to the consumer.⁸⁵

So long as the interest rate available to the government is identified with the pure interest rate, the cash flow approach achieves the theoretically correct allocation of value added, and allows a proper crediting of input tax. Intuitively, by crediting inflows and outflows at the same rate the system ensures that the present value of the revenue raised from registered traders is zero; revenue is ultimately raised only to the extent of that part of the margin which falls on unregistered traders.

The treatment of pure insurance—insurance with no savings element—is straightforward under the cash flow VAT, an example being given in Box 8.1.

⁸⁴See Poddar and English (1997) and European Commission (undated).

⁸⁵Some algebra may be helpful. Denote the amount of the loan by L , the borrowing and lending rates by r_B and r_L respectively, and the tax rate by τ . Also define λ_B and λ_L to take the values 1 and 0 as the borrower (lender, respectively) is registered or not; thus the example in the text has $\lambda_B = 1$ and $\lambda_L = 0$. In the first period of the loan (assumed for simplicity to last only two periods), the net liability of the bank is zero; that of a registered borrower is τL ; and a registered lender receives a credit of τL . In period 2, the net liability of the bank is $\tau(r_B - r_L)L$; a registered borrower is due a credit of $\tau(1 + r_B)L$, and a registered lender is liable for tax of $\tau(1 + r_L)L$. Assuming that the government obtains a rate of return p on its net receipts in the first period of $\lambda_B \tau L - \lambda_L \tau L$, net revenue in period 2 is:

$$(1+p)(\lambda_B - \lambda_L)\tau L + \tau(r_B - r_L)L - \lambda_B \tau(1 + r_B)L + \lambda_L \tau(1 + r_L)L = \tau L[(1 - \lambda_B)(r_B - p) + (1 - \lambda_L)(p - r_L)]$$

Thus, tax is ultimately collected only on that part of the margin that reflects the value added enjoyed by nonregistered traders.

Box 8.1. Treatment of Pure Insurance Under a Cash Flow VAT

An insurance company receives premiums of \$100 and pays \$80 (exclusive of VAT) in claims. The tax rate is 20 percent (this being the tax-exclusive rate; that is, the rate charged on values not including tax).

The insurance company is liable to VAT of \$20 on its premiums, but allowed a credit of \$16 in respect of the claims it pays. Thus the insurer pays net tax of \$4, which is 20 percent of the value added (in this context, the excess of premiums over claims financed by the insurer) of \$20 (= 100–80). The credit enables the insurer to send the insured a check for \$96 should the insured event occur.

If the insured is a consumer, \$96 is just enough to purchase goods to the tax-exclusive value of \$80: the credit included in the claim pays the VAT on the replacement goods bought. Total tax collected is thus exactly 20 percent of value-added.

If registered for VAT, the insured takes a credit of \$20 on the premium. When the claim of \$96 is received, output tax of \$16 is charged, which is exactly offset by an input tax credit of \$16 on the replacement property. Total tax collected by the government is zero.

Consistent with the logic of the invoice-credit VAT, the tax thus “sticks” only on final sales to final consumers.

Outside the case of pure insurance, however, the cash flow scheme is cumbersome administratively. Some measures can be taken to alleviate this (for example, by suspending the payment of tax, and refunds, associated with the initial receipt of loans and deposits). But even within the EU, where the scheme has been closely considered, there are doubts as to its practicability.⁸⁶ For developing countries, it seems likely to remain overly complex for some time yet.

It should be emphasized too that it is by no means certain that bringing financial services fully into tax will generate an increase in VAT revenues. If financial services were fully taxable, revenue would be collected only on sales to final consumers. When they are exempt, in contrast, tax is collected on all inputs into the sector.⁸⁷ Which will lead to greater revenue is an empirical ques-

⁸⁶New Zealand, however, has signaled its intention to review the exemption of financial services: see New Zealand Inland Revenue Department (1999).

⁸⁷This is a simplification: revenue will be less than this to the extent that financial services are exported (hence zero-rated) and greater to the extent that a higher price of financial services leads to higher prices of taxed commodities produced with their help.

tion. Subjecting financial services to VAT is unlikely to be the fiscal panacea for cash-strapped governments that it may appear to be.

Real Estate and Construction

Real estate is the durable good *par excellence*. It yields services over more than one period, and it is commonly resold. Thus the issues that arise in its VAT treatment are simply those that apply to all such goods, but writ large.⁸⁸

The ideal treatment of durable goods would be to tax the flow of services in each period, with a corresponding credit if the services are used as a business input. This is easy to do when the services are traded in the marketplace and hence readily valued. Thus the leasing of real estate for commercial purposes is often subject to VAT, with a credit to the lessee (if not in an exempt activity). Where it is exempt, so that a risk of cascading arises insofar as the lessee is a taxpayer, provision is generally made to allow the lessor to opt for registration and payment of the tax (and recovery of input tax).

In many cases, however, real estate services are self-supplied, and so have no observable market value. For services used as business inputs this poses no particular difficulty, as the tax that the enterprise should charge itself on those services would in any event carry an exactly offsetting credit. Owner-occupied housing is problematic, however, because this involves final consumption on which one would like the tax to “stick.” While attempts have been made in the past to impute value to services enjoyed from owner-occupation for the purposes of income tax, the experience has not been a success and is now rarely made. Thus services enjoyed from owner occupation are—with no exception that we know of—exempt from VAT. To avoid distorting the choice between house ownership and renting, the commercial leasing of residential property is commonly also exempt.

There is, however, another way in which services from owner occupation can be taxed. This is by the “prepayment” method, which simply means levying VAT on owner-occupied properties at the time of purchase. Since the value of the property capitalizes the value of future services, the effect of this is to levy tax in advance of the enjoyment of those services. This, implicitly, is the general method applied to durable goods under the VAT. It is now also the generally recommended method for taxing residential properties.

⁸⁸Cnossen (1995) provides a very useful account of both the issues in this area and current practice in the EU and some OECD countries.

The question that then arises is how to tax resale of property under the prepayment method. In principle, resales should be fully taxed to the purchaser (to capture the future services to be enjoyed by the purchaser) and fully refunded to the seller (to give, in effect, a credit in relation to services taxed at purchase but not enjoyed during their ownership).⁸⁹ Net revenue would be zero. This treatment is generally feasible, and should be adopted, for commercial properties.⁹⁰ Given a possible ownership period of some decades, however, this is unlikely to be practicable for owner occupation; it is simpler—and apparently universal practice—to exempt resale of owner-occupied housing.

Construction services and inputs should generally be fully taxed, and creditable only for those undertaking construction as a business activity. Taxing such inputs acquired by owner-occupiers is a rough and ready way of taxing the enhanced consumption services to which they presumably lead.

Taxing the sale of new residential properties does raise transitional issues at the time the provision is introduced. Unless also applied to first sales of preexisting properties—which, though feasible, apparently has never been done—it confers some windfall gain on owners of that initial stock, who will now be able to sell their properties at prices reflecting the increased VAT-inclusive price of new properties (though their benefit is mitigated by the increased house prices they will face if they choose to purchase another residence). This measure will also be seen as disadvantaging first-time house-buyers, a politically sensitive group in many countries. Thus Australia, for instance, provided some relief for such buyers at the time of introducing its GST. More generally, exemption from VAT for housing services is frequently cited as necessary to reduce regressivity. It is not clear, however, why housing should be favored over other forms of “necessary” consumption. Further, and especially in developing countries, the wealthy are frequently heavy consumers of housing relative to their incomes, as compared to the poor. In any event, if the impact of the VAT is to increase costs of housing for the poor, it would be far more efficient to give them direct subsidies.

⁸⁹This is the essence of the “S-tax” (“s” for “stock”) proposed by Conrad (1990).

⁹⁰To the extent that the property is used to provide traded services, which can be subject directly to VAT, prepayment is not strictly necessary. But the operation of the credit ensures that there is no net tax due on resale, and treatment in this way serves as a safeguard.

Conclusions

Exemptions are abhorrent to both the logic and the functioning of the VAT. Policy toward exemptions is thus a critical component of both advice and practice with respect to the VAT. Several conclusions emerge from the present discussion.

- Exemptions have the potential to undermine a VAT. Preventing their spread is a major concern in many countries, and this is likely to be the case for many years.
- The rationale for many standard exemptions is increasingly being questioned. A main item on the VAT reform agenda in many developed countries over the coming years is likely to be a movement from exemption to full taxation in a number of these areas, such as the treatment of the public sector and financial services.
- Developing countries reviewing such moves to full taxation may face a trade-off. To some degree, though not perhaps in relation to proposed cash flow VAT on financial services, these moves to full taxation hold the prospect for administrative simplification. They may also, however, create pressure for the introduction of reduced rates of taxation that could create their own and more than offsetting difficulties.

9

Treatment of Agriculture

The agricultural sector often receives special treatment under the VAT, not only in developing countries. Why? This chapter considers the proper treatment of this important sector.

Background

As the results of FAD's VAT survey showed, practice in the treatment of agriculture varies relatively little, with the large majority of countries surveyed exempting agriculture and a minority, all transition economies, taxing it (though generally with an exemption for small traders). Many countries also exempt agricultural inputs—meaning, typically, fertilizers, pesticides, seeds, farm machinery—and two zero-rate them.⁹¹ In contrast to practice, the advice offered through FAD technical assistance has varied, with both exemption and taxation being recommended.

The survey picture appears broadly typical of the more general one in developing countries, with various forms of special treatment extended to the agricultural sector. In developed countries also, the sector has often received special treatment under the VAT (as described, for instance, in Tait (1988)). We have seen too that the revenue increase associated with the presence of a VAT is lower, all else equal, in countries where agriculture accounts for a larger share of national output. The interpretation of this result is not entirely clear. A high agricultural share may proxy for a relatively low level of administrative development. But the result is also consistent with explicit exclusion of agriculture from the VAT system. Whatever the reason, it seems a common feature of practice that value added in agriculture is taxed relatively lightly.

⁹¹The survey was not well designed to elicit information on the extent of zero rating of agricultural inputs.

Distinctive Features of the Sector

The specific difficulties that the agricultural sector raises for VAT design come from its combining two features:

- In many developing countries, most agricultural producers are outside the formal sector. Even among farmers who do work within the formal system, it may be only the largest who keep records sufficient for an accurate measurement of annual turnover. Physical remoteness may further increase the difficulties of monitoring tax compliance by farmers. Agriculture is also marked by issues of seasonality and mismatched timing between inputs and outputs that complicate both measurement and payment procedures.⁹² In short, compliance and administration costs for agricultural producers are likely to be high.
- The agricultural sector is often a particular concern in the pursuit of wider distributional objectives. A tax on food is either borne by consumers in the form of a higher price or by producers in the form of reduced real income. The former would be widely perceived as regressive, at least in relation to basic foods (such as unprocessed vegetables, meat, and fruit); so too would the latter, insofar as producers are thought to have low incomes.

The first of these points is commonly agreed. But similar collection problems are associated with small traders, raising the question of whether there should be any special measures for agriculture beyond the setting of a high threshold applicable to all enterprises.

Views differ on the importance of the second consideration. The distributional argument on the consumption side clearly only applies to basic foods. Moreover, expenditure policies may be better targeted to poverty relief than departures from uniform taxation: as seen in Chapter 10, the amount of redistribution that can be achieved through indirect taxation is limited. The distributional argument on the production side may also be disputed. In the absence of a properly functioning income tax—even (in some cases, especially) in relation to large and prosperous farmers—implicit taxation of agricultural producers through the indirect tax system may be the only prospect for ensuring that they bear a reasonable share of the tax burden.

Irrespective of one's view on this latter issue, including whether one wants to tax agricultural products at regular rates or at low ones (possibly zero), the implication is that agricultural products should be fully within the VAT sys-

⁹²These problems are likely to be less marked for VAT, or other sales taxes, than for income tax.

tem: either in order to charge them at regular rates or, on the contrary, to exclude them from tax altogether (by ensuring that tax on inputs is refunded). In this sense the long-term objective in the treatment of agriculture is clear: tax agriculture as any other good, subject to the normal threshold.

In the interim, however, high collection costs may validate other methods. Specifically, the exemption of agricultural products is a potential compromise measure. Exemption excludes farmers from the administration of the tax altogether while ensuring that agricultural products are taxed at a reduced but positive rate because of the absence of relief for any tax paid on inputs, notably, seeds, fertilizers, pesticides, and animal fodder. In efficiency terms, this will distort production decisions away from these inputs and toward socially excessive use of untaxed inputs. However, there may be environmental grounds for imposing tax on the use of some agricultural inputs, such as fertilizer and pesticides to achieve exactly this result. A more obvious implication of unrelieved tax on inputs is simply the implied tax burden on final agricultural products. This could result in some foodstuffs being more heavily taxed than they otherwise would be, as in the case of agricultural products subsequently used as inputs into taxable activities (perhaps, the production of processed foodstuffs). Exports too will suffer from some tax burden.

Move Toward Full Taxation

There are two broad responses to these difficulties. One is to remove the exemption on basic agricultural outputs. The other is to seek to alleviate the tax burden arising from input taxes. In practice, the latter seems to be the preference of policymakers. There are several ways in which the burden of input tax might be mitigated.

- Intellectually, the cleanest is to zero-rate agricultural inputs (as recommended by both Tait (1988) and Due (1990)). It is important to strictly limit the zero-rating to items truly specific to agriculture. Zero-rating machinery, equipment, or spare parts that have multiple uses, or conditioning the zero-rating on final use rather than the nature of the item in question, creates opportunities for avoidance and evasion. For example, zero-rating machinery invites attempts to redesignate as such other machinery likely to be used by exempt traders. When tax administration is weak, the danger can be significant. In order to target the relief at inputs to small farmers, and to restrict revenue losses, it is best to restrict any zero-rating of inputs to fertilizers, seeds, and perhaps pesticides. Farm-specific machinery is likely to be little used in a culture of subsistence agriculture, and so best taxed.

- Special schemes might be adopted that enable some credit to be claimed by farmers or by their taxable clients. Under the former heading, for example, refunds could be granted for large purchases. Schemes of the latter kind include the flat rate scheme used by a number of EU countries, under which purchasers from exempt farmers are able to show payment of tax on the tax invoice they receive from that farmer, and then credit the tax shown against their own liabilities, even though none was withheld by the farmer. The latter scheme provides the small farmer relief from input taxes without requiring registration. However, the scheme is open to abuse by overstating values traded on invoices; and it only relieves input tax in relation to sales to registered traders.
- Agricultural inputs might be exempted. As with zero-rating, it is important to delimit the exemptions carefully. This approach is quite widespread in developing countries, and is a prime instance of the danger of “exemption creep” discussed in Chapter 8: the presence of one exemption (agricultural products) creates pressure for the exemption of its inputs.

Technically, the last of these is likely to be the best approach when tax administration is weak: zero-rating inputs and the special schemes both create greater opportunities for fraud. The danger is that exemption contains no impetus for movement toward full taxation; indeed the danger of exemption creep points in the opposite direction.

Conclusions

There is nothing inherent in agriculture that implies that the sector should not be subject to VAT. Collection difficulties, distributional concerns, and political considerations, however, mean that exemption has proved an irresistible option for many countries. Against such a background, it is important to develop a well-articulated strategy for this sector. Elements of the strategy should include levying VAT on the inputs to agriculture and applying a high threshold to bring large farmers within the VAT net. Small farmers otherwise placed at a disadvantage should be allowed to register voluntarily.

The apparent absence of any tendency for countries to progress toward full taxation is disconcerting. If anything, the tendency is for some degree of exemption creep. Moreover, the experience in developed countries is not entirely encouraging: many EU countries, in particular, continue to operate special schemes for agriculture. Developments in New Zealand and Denmark to fully tax agriculture in the normal manner show, however, that the special treatment of agriculture is not inevitable.

10 Poverty, Fairness, and the VAT

It is a common fear when a VAT is introduced or extended that there will be an adverse impact on poverty, or on the distribution of real income more generally. Many of the central issues raised by such a concern have been discussed at some length in Chapters 7 and 8 above, which considered the specific design issues of an appropriate rate structure and exemptions for the VAT. But the conceptual and practical considerations at stake are somewhat wider, and have in any event proved sufficiently widespread and powerful to merit explicit consideration. That is the task in this chapter.

The VAT in the Wider Tax System

It is potentially misleading to focus on the distributional impact of the VAT in isolation. What affects poverty and fairness is not the impact of any particular tax, but the impact of the tax system as a whole. This echoes one of the key points to emerge from the discussion of optimal VAT rate structures in Chapter 7: the importance for the appropriate design of the VAT of the range of instruments available to the government. More generally, it is not the tax side alone that matters for the alleviation of poverty and pursuit of fairness but public spending policies too: a regressive tax might conceivably be the best way to finance pro-poor expenditures, with the net effect being to relieve poverty.⁹³

⁹³More fundamentally, it may quite plausibly be the case that the overall distribution of tax payments under the optimal tax system is not progressive, in the sense that the average rate of tax may fall over some range of income. Edwards, Keen, and Tuomala (1994) show that the marginal rate of direct and indirect taxes combined is optimally zero for the taxpayer with the highest income; over some range of income the overall tax system must therefore be regressive, in the (usual) sense that the ratio of all taxes paid to income falls as income rises.

These broad points have played an important role in FAD advice. A common response to concern about the equity impact of the tax is that the proper role of the VAT is to raise revenue in an efficient manner, with distributional concerns best addressed by other tax or spending instruments. While the theory reviewed in Chapter 7 provides some support for this, it also emphasizes that it is only in quite extreme circumstances that distributional concerns become completely irrelevant to the design of the VAT. It has been seen, in particular, that the range of other instruments that the government is able to deploy is critical. The danger is that by simply referring in broad terms to the potential superiority of other instruments one may too easily overlook the restrictions that are faced in the use of such instruments, and so avoid confronting the real distributional issues. Indeed the departures from the broad-based, single-rate structure documented above suggest that the presumption of there being better-targeted instruments is not always found entirely compelling by the authorities.

Moreover, the VAT has become such a significant tax that it will to a large degree shape the impact of the tax-spending system as a whole. While care must thus be exercised not to forget the crucial role played by the rest of the tax-spending system, understanding the distributional impact of the VAT, viewed in isolation, must be part of informing and designing an overall strategy toward the relief of poverty.

Taxing Consumption

Is Taxing Consumption Regressive?

A single positive rate of VAT applied to the broadest possible base—as advocated by FAD—is essentially a proportional tax on consumption. The burden of such a tax need not be distributed in that way, of course; but it is supposed in this section, as is usually done (if only implicitly), that it is.

Such a tax—and the arguments here apply to any flat tax on consumption, not just the VAT—will appear to be regressive when effective tax payments are related to current income: since the proportion of income that is spent tends to decrease with the level of income, so the proportion of income that is taken in paying a flat-rate VAT will decrease with income. In that sense, a broad-based, single-rate VAT—indeed any flat tax on consumption—is inherently regressive.

But this may not be the best way to think of progressivity. Welfare, presumably, ultimately depends on consumption, not on income. Thus higher income households are not necessarily better-off households. Rather, it is the manner in which tax liability varies with consumption that matters for as-

sessing the distributional implications of a tax, not how it varies with income. The point is most easily seen by considering an idealized world in which all individuals can borrow or lend as much as they wish against their future income. The level of consumption that each individual chooses to sustain over time will then reflect their own assessment of their lifetime income, and so will be a better indicator of their lifetime welfare than is their current income. Some people who are poor in terms of their lifetime income, for example, may be observed in some particular period to have relatively high current income (perhaps because they are then youthful and productive in unskilled tasks). It would clearly be wrong to regard such a household as rich, and to interpret the low ratio of consumption tax payments to income for this household as indicative of regressivity. While the point that the distribution of the tax burden may be better viewed relative to consumption rather than income is thus especially clear in a context of perfect capital markets, the same point is valid more generally: the key observation is that it is consumption over the lifetime, not income over any relatively short interval of the lifetime, that matters most for welfare comparisons.⁹⁴

This point is now quite widely appreciated for developed countries,⁹⁵ but less so for developing. While it implies that a broad-based tax on consumption is not regressive, it does not imply that it is progressive. Rather it leaves the view of such a tax as essentially proportional and so neutral in its distributional effects.

Pursued further, an intergenerational perspective would suggest that the most important equity consequences of moving toward a VAT might not be those relating to distribution *within* generations but rather those concerning distribution *across* the generations.⁹⁶ To the extent that current consumption is financed by past savings, a consumption tax is akin to a levy on the stock of savings, and so may bear most heavily on those who are relatively old at the time of the shift: those who are young will of course pay tax on their own future consumption, but the savings they have yet to make to finance that consumption will be untaxed.

⁹⁴This issue is complicated, moreover, by the possibility of bequests, which imply that not all wealth is consumed over a lifetime. Inheritance taxes have a potentially important role in this context.

⁹⁵See, for example, Poterba (1989).

⁹⁶This argument focuses upon the shift toward a VAT from a system that previously relied more heavily on income taxation. To the extent that a VAT explicitly replaces some other tax(es) bearing on consumption, these distributional effects would be mitigated.

Mitigating the Distributional Impact

The discussion so far has assumed a single-rate VAT levied on essentially all domestic consumption. In fact, measures can be taken to mitigate the distributional impact of the VAT by taxing different commodities at different rates and/or by introducing exemptions. These measures were discussed at length in Chapters 7 and 8. The essential conclusion, recall, is that the redistribution which can be achieved by these means is limited and can come at significant administrative and other cost (especially for exemptions). While the VAT can be significantly compromised by turning it to pursue distributional objectives, however, there may be circumstances—likely to be ones in which government has few other tools available to it—in which these considerations should not be ignored.

The use of other tax instruments to offset VAT effects can be quite explicit. Canada, for instance, introduced an explicit tax credit at the time of introducing the GST; and both Canada and Australia have introduced tax credits for first-time house buyers to help offset the increase in house prices expected upon the introduction of VAT on sales of new houses. It may also be appropriate to take measures to address the intergenerational consequences of the VAT, perhaps an increase in pensions—brought about automatically if these are indexed to consumer prices—or (less well targeted) a credit for elderly taxpayers.

Another common concern at the time of introducing a VAT is that traders will use the opportunity to bring about an unwarranted price increase. How well founded a fear is this is not clear: if traders can exploit monopoly power when the VAT is introduced, why not exploit it even without the VAT? Perhaps the introduction of a VAT provides a focal point for tacit collusion. In any event, this is commonly a real concern among the public. A number of countries, including South Africa and the United Kingdom, have sought to reassure consumers on this score by establishing temporary watchdog bodies at the time of introducing their VATs, giving them a mandate to receive, investigate, and perhaps publicize complaints of unfair pricing.

Empirical Evidence

The distribution of VAT payments is likely to be quite sensitive to patterns of consumer preferences and to the rate structure and exemptions built into the VAT itself. While the empirical evidence does show significant diversity of experience, it also points to some general observations.⁹⁷

⁹⁷There are of course many methodological and data issues associated with such studies, including not least the allocation of unrecovered VAT on intermediate purchases. These issues are left aside here.

As one would expect, VATs that are characterized by a broad base and simple rate structure appear regressive when viewed relative to some measure of current income and broadly proportional when viewed relative to total consumption. OECD (1988), for instance, finds this to be true of three of the four countries for which it presents comparable figures: Denmark, the Netherlands, and Sweden.

It is also clear, however, that rate differentiation and exemptions can make the VAT a progressive tax, at least, when viewed relative to consumption. For the United Kingdom, for instance—whose VAT is marked by extensive zero-rating of food and other items important in the budgets of the less well off—OECD (1988) finds that the proportion of consumption taken in VAT rises from 6.3 percent of total consumption for the decile of the population with the lowest consumption to 9.5 percent for the decile with the highest consumption.⁹⁸ Kay and Davis (1985) reach a similar conclusion, finding the distribution of VAT payments in the United Kingdom to be progressive in the sense that as income increases so a larger proportion of spending is on items that are fully taxed. Similarly, Ballard and Shoven (1987) find, for a computable general equilibrium model calibrated to the United States, that rate differentiation can substantially reduce the harm that low income groups suffer from moving away from an income tax and toward a VAT: in one of their simulations, for instance, moving from a single rate to a differentiated VAT benefits the poorest decile by nearly ½ percent of their lifetime income (and indeed turns a loss for them into a gain).

While studies of VAT incidence for developing countries are scant, the growing evidence is that there too, the VAT can be strongly progressive when viewed relative to consumption. Younger and others (1999), for instance, find that in Madagascar the distribution of VAT payments is more equally distributed than is the total consumption: that is, the share of all VAT that is paid by the poor is smaller than their share of total consumption.⁹⁹ Younger and Sahn (1998) reach the same qualitative conclusion for Côte d'Ivoire, Guinea, and Tanzania. Indeed, not only does the VAT emerge from these studies as progressive, it emerges as *more* progressive than several other taxes. Importantly, it proves more progressive, in particular, than the trade taxes that in many contexts it has replaced. This certainly cannot be taken for granted: for Bangladesh, for instance, Hossain (1995) finds that while zero-rating food

⁹⁸Or nearly: the proportion of consumption taken in VAT actually falls slightly between the poorest (in terms of consumption) and the next poorest decile.

⁹⁹This is implied by, but does not imply, the VAT being progressive in the sense that the proportion of consumption taken in VAT rises with the level of consumption.

would greatly mitigate the adverse impact of replacing the preexisting indirect tax regime by a VAT, it would not eliminate it. Nevertheless, recent work is challenging any notion that the VAT is an inherently regressive tax.

There is thus little doubt that by introducing rate differentiation and exemption the VAT can in many cases be made less regressive than a proportional tax on consumption, and that indeed it has in some cases been turned into arguably quite a significantly progressive tax. Whether it is appropriate to complicate the VAT in this way is of course another question (that has been discussed in earlier chapters); Ballard and Shoven (1987), for instance, also find that the distributional benefit of rate differentiation comes at a substantial efficiency cost. Moreover, the empirical evidence does tend to confirm the basic point that, despite its potential for progressivity, the VAT is generally less progressive than wage or salary taxes.

The Treatment of Small Traders

The issues addressed so far relate to the impact on the real incomes of those who purchase taxed commodities. A second and distinct set of concerns relates to the impact on those who sell them.

In particular, it is generally agreed that the costs of complying with the VAT are likely to include a significant fixed component, and so may bear most heavily on smaller traders. There is again an incidence question: part of this burden may be passed on to consumers in the form of higher prices.

Clearly, a critical role is played here by the choice of threshold above which registration for the VAT is compulsory. This is discussed in the next chapter, but some points bearing on equity require emphasis here. Most obviously, the level at which the threshold is set can be raised, if felt necessary, to exclude from the requirement to charge the tax those traders for which compliance would be especially burdensome. Focussing on those traders who sell directly to consumers, the operation of the threshold conveys a double benefit on the smallest traders who remain below it: not only are they spared the compliance burden of their competitors above the threshold, but they are also spared the requirement to charge tax. The distributional impact of the VAT on traders as a group may thus be rather complex: while small traders just above the threshold may suffer through a disproportionately high compliance burden, those who are even smaller benefit by acquiring a distinct competitive edge over taxed traders (paying tax on their inputs, like their competitors, but escaping tax on their own value added). Thus it is far from obvious that all small traders are harmed by the VAT (compared to, say, a retail sales tax levied on all traders, or indeed to no indirect tax at all).

This picture is more complicated, however, in respect of traders who sell primarily to other traders rather than direct to final consumers. While such traders avoid the requirement to charge tax by remaining below the threshold, they must also pass on, or bear themselves, the tax that they have been charged on their own inputs. This latter disadvantage could be avoided by registering voluntarily for the VAT—but then the compliance costs are again incurred. Small traders wishing to sell mainly to other registered traders can indeed be placed in a difficult position under a VAT.

Note that even those below the threshold who sell to final consumers are still liable to pay tax on their inputs, which is then not recovered. This ability of the VAT to reach enterprises below the threshold by the taxation of their inputs enables the burden of the VAT to be spread more widely and, hence, potentially, more fairly than that of other taxes.¹⁰⁰ Those who should register for the VAT but seek to evade tax by failing to do so, in particular, will be taxed under the VAT to the extent of their taxed inputs. This quiet taxation of hard-to-tax sectors through VAT on their inputs can indeed be deployed deliberately to impact on such sectors. As already noted, the agricultural sector, for instance, often proves hard to tax through the income tax, land, or wealth taxes: taxing the sector through its inputs may be acceptable as a third-best method of ensuring some equity in the distribution of the tax burden between this sector and others. This improved intersectoral equity might at first sight seem to imply some reduction in intrasectoral equity, as larger farmers will be able to recover their input taxes against output tax. But in doing so those larger farmers will ultimately pay tax not only in relation to their inputs but also on their own value added, so that smaller farmers will be favored; only in the case—a potentially important one—in which agricultural outputs are taxed at a sufficiently low rate that registered producers are due refunds (perhaps because they are exported) will the taxation of agricultural inputs disfavor small farmers.

Conclusions

It seems that the VAT is quite widely perceived—especially by those with relatively little experience of it—as an especially regressive and unfair tax. Quite where this belief comes from, however, is far from clear.

The “ideal” VAT is a tax on consumption; and a strong case can be made that since an individual’s consumption is one of the best observable indicators

¹⁰⁰It is a further merit of the VAT—but one shared with other forms of indirect tax—that it ensures that those who manage to stay outside the income tax system at least pay some tax on their final consumption.

of their living standard, so consumption is potentially one of the most equitable of tax bases. True, a uniform tax on all forms of consumption takes the same proportionate amount from those with low consumption as it does from those with high, so that it is not in that sense a progressive tax. But some progressivity can be (and commonly is) introduced by exempting key products, and perhaps by some rate differentiation—though we have argued that the equity gains to be achieved in this way may be quite limited relative to the revenue foregone. These are in any event objections that apply not only to the VAT, but to other broad-based sales taxes, such as a retail sales tax. Indeed the treatment of small traders under the VAT is generally more favorable under a VAT than under alternative forms of consumption tax, since those selling to final consumers—small retailers in particular—are placed at a competitive advantage relative to larger.

To some extent those who perceive the VAT as regressive may be implicitly comparing it with a progressive personal income tax. But this not only overlooks inequities associated with income taxation that are not as widely understood as they should be (the inequity some see, for instance, in taxing more heavily those whose income is highly variable relative to those with more stable receipts). It also ignores the considerable difficulty that developing countries experience in levying an effective personal income tax, one of the most challenging taxes to administer. Indeed the adoption of a VAT is often intended as the first stage in a reform process that will ultimately lead to effective income taxation.

The more general point, however, is that few taxes are very well suited to the pursuit of equity objectives. Expenditure policies can often be far better targeted to these aims, and in that context the first duty of taxation is to raise revenue with as little distortion of economic activity as possible. It is important not to overstate this point: many developing countries also face severe limitations on the effectiveness of their spending policies, and these may properly temper tax policy advice. The key point, however, is that it is in this wider and more difficult setting that the potential of the VAT to alleviate poverty and enhance fairness must be assessed.

11 The Threshold

Experience has taught, sometimes harshly, that a critical decision in designing a VAT is the threshold level of firm size above which registration for the tax is compulsory. This chapter reviews the issues at stake.

Background

This is an area in which FAD advice has clearly been at odds with practice: the results from the survey reported in Chapter 6 indicate that thresholds actually adopted have in many cases been substantially lower than those recommended, and have rarely been higher. Table 11.1 compares thresholds recommended by the IMF with those applied (at the time of the survey¹⁰¹) in those survey countries for which the information was obtained. On average, those adopted are less than 80 percent of those recommended. This, however, understates the issue: while some follow FAD advice on this matter fairly closely, others set vastly lower thresholds. This dissonance suggests that this is an issue that needs closer thought than it has previously received, and a central task of this chapter is to begin that task.

There can be no doubt as to the practical importance of the threshold issue. Several survey responses—those for Albania, Croatia, Georgia, Ghana, and Uganda—explicitly mention the low level of the threshold as having been one of the principal weaknesses of the VAT adopted. In Ghana, the low level of the threshold is cited as one reason for the failure of the 1995 VAT.¹⁰² One of the

¹⁰¹For this reason, and because of exchange rate changes, figures shown as “actual” in Table 11.1 may differ from the current figures in Table 1.3.

¹⁰²See Terkper (1996) for a considered account of this episode.

Table 11.1. VAT Thresholds: Actual and Recommended
(U.S. dollars)

	Actual Threshold	Fund Recommendation
Albania	32,000 ¹	50,000
Bangladesh	32,609	34,900
Benin	80,000	80,000
Bulgaria	42,000	50,000
Burkina Faso	80,000	80,000
Cameroon	80,000	60,000
China ²	<i>Upper</i> \$121,000 (production) \$217,000 (distribution)	
	<i>Lower</i> \$300–\$1,200 (varies locally)	\$10,500
Croatia	8,000 ³	40,000
El Salvador	6,000	12,000
Georgia	2,400	12,000
Mauritania	46,000	55,000
Mongolia	18,750	18,750
Pakistan	22,700	70,000
Philippines	14,000 ³	14,000
Sri Lanka	33,000	30,000
Uganda	50,000 ⁴	20,000
Vietnam	(a) Zero for state and foreign enterprises and others under invoice method; (b) 1.5 times minimum civil servant salary for individuals and households	52,000

Source: IMF staff compilation.

¹\$20,000 at introduction; \$37,000 in January 2000.

²Firms above the upper threshold are fully subject to VAT. Those between lower and upper thresholds charge a turnover tax at 6 percent (compared to 15 percent standard rate for VAT), which is then creditable against output tax for firms above the upper threshold. In this intermediate range the system can thus be thought of as a simplified VAT. The IMF recommendation relates to this lower threshold.

³Adjusted for inflation since time of recommendation (1986).

⁴\$20,000 at introduction.

key differences between the VAT reintroduced in Ghana in January 1999 and its predecessor is a much higher threshold: about \$75,000 in the new version, compared to \$20,000 in 1995. In Uganda, the near failure of the VAT in 1996 is in large part attributed to a low threshold, which in the event was quickly raised from a level of \$20,000 at the time of introduction to \$50,000 only five months later. Within the EU, the considerable structural harmonization ac-

completed under the Sixth Directive does not extend to the level of the threshold;¹⁰³ variation across member states continues to cause some friction.

To elaborate on current practice, two features are striking. First, there is considerable variation in the level at which VAT thresholds are actually set. The average for the survey countries in Table 11.1¹⁰⁴ is about \$34,500 with variation from zero in Vietnam and \$6,000 in El Salvador to around \$80,000 in the WAEMU countries and over \$200,000 (for distribution) in China.

The variation is far wider, and the mean higher, across the full set of countries with a VAT: for those countries for which we have been able to obtain information, the mean VAT threshold¹⁰⁵ is \$90,000; the lowest is zero, and the highest (found in Singapore) about \$700,000. The variation is also considerable when thresholds are expressed relative to GDP per capita—greater, indeed, than the variation in GDP per capita. Even within the EU, there is significant variation in the level of the threshold: from zero in several member states (albeit with simplified schemes) to about \$75,000 in the United Kingdom and \$100,000 in France (the last of these reflecting a substantial increase, from about \$17,000, at the start of 1999).

Second, there is also significant variation in the form that thresholds take and in the extent and nature of related measures. In most cases there is a single threshold, specified as a monetary amount of turnover. However:¹⁰⁶

- A number of countries specify different thresholds for different kinds of activity. The most common form of variation involves a lower threshold for services than for other activities; this is the case, for example, in Burkina Faso, Indonesia, Ireland, and Togo.¹⁰⁷ Moreover, those instances in which the VAT only extends to some stage of production also imply, in effect, threshold differentiation: the threshold is infinite for excluded activities.
- A few countries have also adopted measures to smooth the discontinuity that otherwise arises when all activities are brought into tax once the

¹⁰³HM Customs & Excise, for example, launched a review of the VAT threshold in July 1998.

¹⁰⁴Excluding China, which has a particularly complex threshold structure. Figures are for thresholds and exchange rates at the time of the survey.

¹⁰⁵For countries with multiple thresholds, it is that for goods which enters this calculation.

¹⁰⁶In addition to those noted in the main text, there are other respects in which threshold provisions vary. In Bolivia, the threshold is specified not in terms of turnover but in terms of income or assets. Countries also differ in the existence and nature of provisions to avoid rapid movements in and out of registration: some, such as the United Kingdom, set different thresholds for registration and deregistration, others set minimum periods for registration (until liquidation, in Belgium and Spain). Some countries (for example, Germany) set different thresholds for retrospective and prospective turnover.

¹⁰⁷But some countries—including Côte d'Ivoire and Niger—set a higher threshold for services.

threshold is reached: in Japan, for example, entities with turnover above ¥30m (below which no VAT is payable) but below ¥50m (above which VAT is fully payable) have their liability reduced proportionately. The Netherlands also provides a tax reduction to those whose tax liability is between NLGs 2,173 and 4,150, ensuring a gradual rather than discrete entry into a taxpaying position.

- More generally, many countries, including those with a threshold of zero (such as Italy and Spain), apply simplified schemes, notably a presumptive tax based on firm characteristics or with reduced reporting requirements.¹⁰⁸ Some countries (including Bangladesh, the Philippines, China, and Tanzania) levy a simple turnover or gross receipts tax on such firms,¹⁰⁹ typically at a low rate (in the order of 2 to 4 percent). Somewhat more common in developing countries is for those firms below the threshold to be subject to some form of presumptive tax. Diversity in practice was also evident in the survey response: of those cases with usable replies, in about 13 of the countries surveyed no sales tax was levied on those below the threshold; about five imposed some turnover tax and eight were subject to some form of presumptive taxation.

Most countries, but not all,¹¹⁰ allow those below the VAT threshold to register voluntarily. Compliance costs aside, this will be in the commercial interests of those selling to registered traders (since registration will enable them to recover tax on their inputs, and the tax that must then be charged on output will in any event be recovered by the purchaser) and of those selling to final consumers at a sufficiently low tax rate (so long as the tax recovered on inputs exceeds that which has to be charged to those consumers). The zero-rating of exports, in particular, means that all exporters will find registration beneficial. Voluntary registration is typically seen as a means of limiting competitive distortions and avoiding inequities. Restrictions are needed, however, to prevent companies registering to take input tax credits and then disappearing before paying any positive net tax.

¹⁰⁸Less frequent filing, for example, or the use of cash accounting. Some countries (including the Netherlands and Sweden) set a zero threshold in the sense that all firms must register but exempt the smallest traders from VAT. In Sweden, specifically, the very small (turnover less than Skr 30,000) are entirely exempt while the less small (turnover between Skr 30,000 and Skr 1 million) report their VAT declarations on their income tax return.

¹⁰⁹In China, there is another threshold determining liability to the turnover tax.

¹¹⁰OECD (1994) indicates that in 1992 Norway, Spain, Sweden, and Turkey did not allow voluntary registration.

Considerations in Setting the VAT Threshold

A Crucial Empirical Regularity

The rationale usually given for a high threshold rests on the empirical observation that the size distribution of enterprises is typically such that a relatively small proportion of firms account for a large proportion of potential VAT revenue. Deploying scarce administrative resources so as to raise revenue most effectively thus calls, it is argued, for a concentration of those resources on the largest taxpayers; the revenue to be raised from the smaller firms is seen as insufficient to warrant the resources required for its collection.

It does indeed appear to be an empirical regularity that value added is very strongly concentrated among a relatively few firms. Table 11.1 shows the distribution of turnover by size of firm for selected countries. Despite significant variation, a useful rule of thumb is that the largest 10 percent of all firms commonly account for 90 percent or more of all turnover.¹¹¹

This seemingly universal feature has important implications for the relationship between the threshold and the tax base: starting from a low level, a \$1 increase in the threshold is initially very cheap in terms of revenue foregone, but becomes much more expensive at higher levels of turnover. That is clearly the case for the distributions shown in Table 11.2. Nevertheless, experience shows that many countries have not found entirely compelling the case for a high threshold that this would seem to imply. Quite why is not always clear. In part, there seems to have been a belief that a lower threshold than that advised would prove more productive of revenue. There may also have been concern over the potential inefficiencies and inequities arising from the differential treatment of those above and below the threshold. To assess the force of both the standard argument and possible objections to it, it is helpful to consider more systematically the underlying issues of principle that arise in considering the appropriate VAT threshold.

The Trade-Off Between Revenue and Collection Costs

If it were not for the costs of administering a VAT (incurred by the authorities) and of complying with it (incurred by taxpayers), the best threshold would be zero: this would maximize revenue (at any given tax rate) while also minimizing distortions of competition between firms of different size. Thus the need

¹¹¹If turnover follows a Pareto distribution with parameter $\theta > 1$, the share of turnover accounted for the largest n percent of firms is $(n/100)^{\theta/(\theta-1)}$. Table 11.1 suggests, however, that distributions are too variable to construct any very general rules from this.

Table 11.2. Distribution of Turnover in Selected Countries¹

Largest ² (percent)	Egypt	Georgia	Pakistan	Sri Lanka	Uganda
0.5	45	—	71	50	—
1	47	65	80	60	—
5	64	83	94 ²	84	—
10	—	93	98	89	88
20	89	98	—	—	94
50	95.4	—	—	98	97

Source: IMF compilation

¹Entry is percentage of turnover (or, in the case of Egypt, GST revenue) accounted for by largest firms.

²Sources typically do not break down turnover shares by precise percentiles of population; figures are for percentiles close to that shown.

for some threshold arises from the willingness to forsake some revenue in order to save on collection costs.

To see what this trade-off might imply for the appropriate level of the threshold, suppose that the government values an additional \$1 of revenue at δ . Clearly one expects $\delta > 1$, since the only rationale for raising revenue is the belief that resources are more valuable to society in the hands of the government than in those of taxpayers. Put differently, since taxation involves costs to the private sector additional to those of the resource transfer itself—because it distorts economic activity—an additional \$1 of revenue should only be raised if the uses to which it is put are valued by society at more than \$1. Indeed $\delta - 1$ can be thought of as corresponding precisely to the deadweight loss associated with the distortion of economic behavior.

Suppose then that such a government considers raising the threshold level of turnover, denoted z , by \$1 (taking as given the rate τ at which VAT is levied). For each firm consequently taken out of the tax net, the government loses revenue of $\tau v z$ (where v denotes value added per unit output, so that tax paid at the threshold level of turnover is $\tau v z$) but saves administration costs of, say, A ; each firm taken out of tax, on the other hand, gains after-tax income of $\tau v z$ and saves compliance costs of C . Weighting the net loss to the government by δ and equating it to the gain to the private sector gives an optimal threshold of:

$$z^* = \frac{\delta A + C}{(\delta - 1)\tau v} \quad (11.1)$$

As would be expected, the optimal threshold is higher the more costly is administration or compliance and the less urgent is the need for funds (the lower, that is, is δ). Clearly too it is higher the lower is the ratio of value added

to sales. All else equal, there is thus indeed a case for setting a lower threshold for more profitable and/or labor intensive activities.

More important than these qualitative insights, however, are the illustrative calculations that the simple rule in (11.1) allows. For OECD countries, as noted in Chapter 5, Cnossen (1994) estimates that a well-functioning VAT involves administration costs in the order of \$100 per registrant and compliance costs of around \$500.¹¹² Studies for the United States suggest a value for the marginal value of dollar of tax revenue on the order of \$1.20 to \$1.50; for illustration, take $\delta = 1.2$. Suppose too that the tax rate is 15 percent and the ratio of value added to sales is 40 percent, the simple rule thus suggests a threshold of about \$52,000.

One of the striking features of the rule in (11.1) is that it defines the optimal threshold without reference to the underlying size distribution of firms. This is in apparent contrast to the standard argument above. This difference reflects the importance the standard argument has attached to the existing capacity of the tax administration. That is, the threshold is calculated not by reference to an explicit calculation along the lines above but rather as whatever is needed to restrict the number of taxpayers to fit some given (usually very limited) administrative capacity. This, however, is simply the same rule in another guise; the key feature is simply that when capacity is limited the administrative cost A is implicitly very large.

More generally of course, it is important to recognize that administrative costs are not exogenous: the costs of coping with each taxpayer depend on such design choices as the frequency of audit, the nature of audit, the complexity of the tax structure, and so on. Thus one interpretation of the regularity with which FAD has advised thresholds higher than those subsequently adopted is that FAD has thought the proper costs of audit to be greater than the authorities have. There are clear links here with audit policy, which is discussed at length in Chapter 14.

Distortionary Effects of Differential Treatment Above and Below the Threshold

Another and potentially important set of issues that arise in considering the VAT threshold are the potential distortions of competition, and inequities, as-

¹¹²For the United Kingdom, the National Audit Office (1994) puts the compliance costs for small traders at about \$480, a figure broadly comparable to Cnossen's, but administration costs rather higher, at about \$190. (Cnossen's figures, it should be noted, are averages over all taxpayers; what is relevant to the rule in (11.1) is rather the collection costs in relation to the marginal taxpayer, which are likely to be higher.)

sociated with the differential treatment of those above and below the threshold. This raises several issues.

First, as noted, there are important circumstances in which it is commercially advantageous to be fully liable for VAT. This includes firms selling zero-rated items and, potentially even more important, those selling to other firms that would wish to register for VAT in order to effectively reclaim tax paid on their own inputs. For these reasons, it is normal practice to allow firms to register for VAT voluntarily. This right is subject, typically, to provisions guarding against temporary or fraudulent registration simply to obtain refunds: deregistration is commonly restricted, for instance (as noted above). Indeed there is a sense in which a reduction in the threshold is self-enforcing: the more firms that are subject to VAT the greater the likelihood that a trader will find themselves selling to registered traders and so will find it advantageous to register too.

Even when it is commercially advantageous to be below the threshold, however, the extent of that advantage should not be overstated. Small traders will be unable to recover VAT on their inputs: it is only their own value added, not the full value of their sales, which escapes taxation. Nevertheless, there clearly is potentially some cause for concern. In particular, firms characterized by a high ratio of value added to sales and selling to unregistered purchasers—small traders providing services directly to final consumers being the key group here—are likely to find it worthwhile to be exempt from VAT. Distortions of this kind have both equity and efficiency aspects.

In equity terms this is, in a sense, an odd worry, since although the size of an enterprise is not necessarily a reliable indicator of equity concerns, the presumption would be that smaller traders are generally poorer—and so presumably more deserving of support—than large. Thus equity considerations would tend to point toward higher thresholds than would otherwise be the case.

The implications of the existence of a threshold for economic efficiency, and their consequences for the appropriate level of that threshold, are complex. One distortion arising from the exemption of small traders is the potential for cascading that exemption always introduces. The provisions for voluntary registration noted above, however, provides a safeguard against such cascading on sales by small traders to registered ones. It is only in connection with transactions between small traders that unrecovered input taxes are likely to cascade into final prices. Of greater concern is the potential distortion of competition, in favor of smaller enterprises, implied by the additional costs—in terms of both the tax liability itself and compliance costs—imposed on those above the threshold. Since smaller firms are likely to be characterized by higher costs than larger enterprises, this effect tends to reduce the efficiency of the market outcome. Indeed, the presumption in contexts of imperfect competition is that it is the small

firms, if any, who should be disfavored by tax policy.¹¹³ Moreover, the threshold may itself distort output decisions as those firms that would otherwise find it attractive to produce some amount in excess of the threshold choose instead to remain below the threshold, the saving in tax and compliance costs more than offsetting the reduction in sales volume.

Quite what these effects imply for the appropriate threshold remains largely unstudied (a recent exception being Keen and Mintz (2000), on which the analytical parts of this chapter draw). It seems likely, however, that they on balance point to a lower threshold than would otherwise be the case: although one could conceive of leveling the playing field between most companies by setting a high threshold (so that most compete on a tax-exempt basis), this strategy would call, if revenue is to be maintained, for a higher tax rate on those above the threshold, in turn intensifying distortions between the two groups.

Moreover, quite apart from the potential distortion of real economic activity is the potential scope that the threshold creates for the avoidance of VAT by organizing production in a series of sufficiently small enterprises. Legislation typically provides for related firms to be aggregated for the purposes of applying the threshold, though the detection and identification of common control needed for this purpose can be problematic. Artificial splitting of enterprises has certainly been a concern in some countries.¹¹⁴ Again, while the most effective response to this issue is likely to be in terms of anti-avoidance rules, it may also on this account be appropriate to set a somewhat lower threshold than would otherwise be the case, as a means of raising the cost of avoidance by this route.

Relevance of Special Taxes on Those Below the Threshold

The extent and nature of the distortion between those above and below the threshold will depend, of course, on how those below the threshold are taxed. As noted, a number of countries (such as China and Tanzania) apply a gross receipts tax, at a low rate (typically 2 to 4 percent) to such firms; sometimes, indeed (as in China) this tax has its own threshold. Rather more common, however, is some form of presumptive tax.

In the presence of a simple turnover tax on those below the threshold, the calculation underlying (11.1) must be recast in terms of the differential rev-

¹¹³See Lahiri and Ono (1988). In a dynamic context, however, smaller firms may be especially important for longer-term growth.

¹¹⁴Avoidance can, though, also go the other way, toward the artificial aggregation of companies (through tax-induced vertical integration) in response to the incentives for exempt firms to self-supply (as discussed in Chapter 8).

venues and collection costs associated with the two taxes around the threshold.¹¹⁵ Assume, for instance, that one retains the same parameter values as in the illustrative calculation above, but now supposes a turnover tax at 3 percent to be charged below the threshold. Assuming too that the collection costs associated with the sales tax are one-quarter those of the VAT, the optimal threshold rises from \$51,000 to \$77,500. More generally, the cheaper the alternative tax is to collect, and the higher the rate at which it is levied, the higher is the optimal threshold for the VAT. As discussed, this simple rule neglects the social costs of the production inefficiency associated with the differential treatment of those above and below the VAT threshold. These costs will be mitigated by the existence of some alternative tax, such as a turnover tax, on those below the threshold. Thus, one would expect the existence of such a tax to imply, all else equal, an optimally higher threshold for the VAT.

Because of the empirical regularity emphasized above, such taxes commonly raise little revenue. Moreover, the administrative resources required to implement even a gross receipts tax may be better allocated to the deployment of the VAT, especially if no such tax originally exists. A turnover tax on small traders is also liable to intensify the cascading effect of their unrecovered VAT. It may be, however, that by assuaging the inequity felt by traders caught in the VAT, a simple tax on those below the threshold will in some contexts increase the political acceptability of a VAT levied with an appropriately high threshold.

What Form of Threshold?

The standard FAD recommendation is for a single threshold, uniform across activities, specified in terms of turnover. One implication of the simple rule (11.1), however, is that, all else equal, the optimal threshold is lower the greater is the ratio of value added to sales and hence the larger is the potential VAT revenue at any given level of sales. This provides some rationale for the practice, which as noted above is observed in a number of countries, of applying a lower threshold to services, since these are typically relatively labor-intensive activities. Against this, however, are to be weighed the practical difficulties of distinguishing between service activities and in dealing with traders conducting multiple activities. These difficulties, which traders have an incentive to ex-

¹¹⁵More precisely, (11.1) becomes

$$z^* = \frac{\delta(A - A') + C - C'}{(\delta - 1)(\tau v - t)}$$

where t is the rate of turnover tax and a prime refers to the sales tax regime.

plait, can be expected to intensify over time as economic activity becomes more complex.

A more fundamental question is whether there are better ways of specifying the threshold than in terms of turnover. As noted above, there are two quite different issues. The first is the discontinuity associated with current practice. The second is the case for differentiating thresholds by activity. It might seem that both could be accommodated by specifying a threshold in terms of value added and applying tax, as under the income tax, only to the excess of actual value added over that threshold. This is easily achieved under the subtraction form of VAT. One can simply tax value added above some threshold, exactly the same structure as is normal under the income tax, and in principle apply any rate structure one likes.¹¹⁶ The dominant invoice method, however, does not lend itself to such an outcome. This is partly because calculation of value added requires knowledge of input and output costs net of tax.¹¹⁷

Conclusions

The choice of threshold has proved a crucial element of VAT design.

- Experience indicates that setting too low a threshold can significantly compromise the political and administrative feasibility of a VAT. This, together with the remarkable degree to which the VAT base is concentrated among a relatively small number of taxpayers, and the limited administrative capacity in many countries, lends support to setting a relatively high threshold (especially at the time of introduction). However, authorities often appear not to have been persuaded of the wisdom of this approach. The reasons for this are not entirely clear: a belief that high thresholds may forego significant revenues, and perceptions of unfair competition, appear to be among the most prominent reasons. It may be that the experiences of Ghana and elsewhere will make the case for a sufficiently high threshold more persuasive in the future.
- Countries appear more inclined to differential thresholds by sector than FAD has advised; there is, though, some theoretical support for a more differentiated threshold.

¹¹⁶The Japanese structure is similar but slightly more complex than this because the marginal rate on entry is structured so as to ensure that all firms beyond some size pay VAT at the same rate on all their value added.

¹¹⁷A point emphasized by Godwin (1998).

- The tax treatment of those below the VAT threshold has received scant attention, and practice varies, though countries quite frequently adopt simplified methods for small traders. This is evidently a second-order issue in terms of direct revenue impact, and innovation in this area at the time of introduction of a VAT may divert resources. Given, however, the potential importance of treatment below the threshold for the extent of registration under the VAT, for the development of compliance capacity, and—not least—the importance that governments appear to attach to the competitive positions of those above and below the threshold, a simple tax below the VAT threshold may have a beneficial effect disproportionate to the revenue it yields.

12 Organization of the VAT Administration

The next few chapters more systemically address several major issues in administration of the VAT. They focus on areas where the need for strengthened performance has been identified. There are, of course, other areas, such as taxpayer registration and education, and enforcement of arrears, in which there has been important success and hence there is confidence in the basic reform strategy.

The methodology of the analysis of tax administration differs from that of the tax policy issues. Absent a significant academic literature against which to assess the issues that arise, the tax administration analysis draws especially heavily on the discussions that have taken place between national authorities and IMF staff on tax administration issues. These discussions have attempted to strike a balance between the general principles governing sound tax administration and recognizing the importance of country specific circumstances. Individual chapters assess a number of issues that have emerged in recent years as a result of these discussions, and in doing so drew heavily on the survey results summarized in Chapter 6.

The first such general issue is the organization of the tax administration.

Background

In many countries, the introduction of VAT has been seen to afford an opportunity to improve substantially the general tax administration through the introduction of more effective procedures, which can be extended to the entire tax system. On occasion, however, the introduction of the VAT has actually disrupted the existing administration because of inadequate preparations, including difficulties in establishing a proper VAT organization. For example, in Ghana, where the VAT was repealed in June 1995 three months after its introduction, a *third* Board of Revenue was established for the VAT, in addition to

those for the internal revenue service and the customs service; in Kenya and Uganda, where VAT departments were established, the lack of coordination of the revenue services has prevented an extension of modern procedures, developed initially for the VAT, to other taxes.

Clearly, decisions regarding the organization of the tax administration are central to the effective operations of the VAT and to the modernization of the entire tax system.

Domestic Tax Organization: Customs or Separate Agency?

The principle that is followed in virtually all countries is that actual collection of taxes on imports, including VAT, is the responsibility of the customs department.¹¹⁸ It would make little sense to require the taxpayer, in this case the importer, to prepare different forms (that is, imports declaration and tax returns) for the same goods and to visit different offices to present essentially the same information to two different organizations. The issue is, therefore, who should run the domestic VAT, including accounting for crediting tax paid on imports. The three possibilities are administration by:

- the customs department;
- a separate VAT department; or
- the department responsible for domestic tax operations, particularly personal and corporate income taxes.

The VAT is administered by the domestic tax administration in the majority of the surveyed countries (29 out of 36), reflecting the uncontroversial decision of the authorities to administer the VAT in the same domestic tax department as the previous sales or turnover taxes. In these cases, discussions focused on the respective merits of establishing separate VAT offices or administering the VAT, with the income tax, in function-based offices (that is, tax offices primarily organized around functions (registration, taxpayer education, collection, audit, etc.) instead of being specialized by tax). Although many opted for function-based offices, some introduced the VAT in separate offices (for example, Albania, Bulgaria, and Sri Lanka). This latter approach can be supported as a means for facilitating the administration of the VAT during the first years of its implementation. In most cases, however, a major drawback has been the difficulty of merging VAT and income tax offices in the following years.

¹¹⁸In a few cases, FAD successfully advised against assigning these collections to the internal revenue department during the preparations for the VAT.

In the other countries (mainly those with a tradition of administering indirect taxes in the customs department), FAD recommended that the VAT be administered either in the customs department or in a new VAT department. Specific recommendations sought to accommodate local circumstances:

- *Customs department:* in 1990, it was recommended that Pakistan administer the VAT in its customs department; however, in 1993, given subsequent weaknesses in customs' administration of the tax, FAD recommended that a separate department be established (which was done in 1996). The other cases where FAD advised using Customs are Belize and Malawi (neither included in the survey). In both countries, reflecting the absence of hard and fast rules, this recommendation was debated within FAD. For Belize, the reasons cited by the 1994 mission were the ready availability of office space and the expected VAT collection on imports (which, as noted below, is not a convincing argument). For Malawi, a FAD team in 1996 recognized that the VAT should be administered with the income tax in the long term. However, its recommendation to begin administering the VAT in the customs department was based on: (i) the presence of a strong United Kingdom assistance program at customs, (ii) the weakness of the income tax department, and (iii) the existence of a proposal to establish an autonomous tax and customs revenue agency in the medium term.
- *VAT department:* in other countries (Ghana, Mauritius, Tanzania, Uganda, Zambia, and Pakistan after 1993), FAD has recommended that a new VAT department should be set up to manage the VAT. It is now obvious, however, that the establishment of an additional revenue department has in most cases increased the coordination problems of the revenue agencies.

Looking beyond the survey results, the operation of the VAT by the domestic tax administration is the rule in a vast majority of countries (see Table 12.1). This outcome reflects the parallel trend in recent decades favoring function-based tax administrations over the traditional tax-based organizations. Out of 108 countries for which information was available, 90 countries have decided that the domestic tax department would administer the VAT; 4 decided that the VAT would be administered by the customs department¹¹⁹ and 14 have established a special VAT department.¹²⁰

¹¹⁹The United Kingdom, Israel, Malawi, and Belize (until that country repealed the VAT in April 1999).

¹²⁰Cyprus, Dominican Republic, Jamaica, Ghana, Kenya, Luxembourg, Tanzania, Uganda, Zambia, Mauritius, China, Egypt, Pakistan (since 1996) and Belgium (prior to the creation in 1999 of a single administration for VAT, income, and other taxes).

Table 12.1. Examples of Organization for the VAT Administration

	VAT Administered by Domestic Tax Department	VAT Administered by Customs Department	VAT Administered by VAT Department
European Union	10	1	2
Other European countries	14		1
BRO ¹	15		
Latin America	18	1	3
Africa	18	1	5
Asia-Pacific	13		
Middle East	1	1	2
North America	1		
Total (108 countries)	90	4	14

Source: IMF staff compilation.

¹Baltic states, Russia, and other states of the former Soviet Union.

There are variants within each of these models, depending on the degree of integration of the revenue departments:

- In most countries where the VAT is administered by the domestic tax administration, both VAT and income tax are usually handled in the same tax office at the local level. Indeed, many countries where the VAT was initially established in a separate office network have now merged their VAT and income tax operations in the same function-based offices.¹²¹ However, in some countries (for example, Portugal) integration of direct and indirect tax administrations is limited to the headquarters level.
- Most countries where the VAT and income tax are administered in a function-based organization have maintained specific VAT programs in separate units. For example, all EU countries established special VAT registration and audit programs following the reform of the VAT on intra-European transactions in 1993. Special units are also usually required for processing VAT refunds and implementing VAT education programs.
- Conversely, in some of the countries where the VAT is administered by customs and those where a separate VAT department has been imple-

¹²¹In Europe, France merged the income tax and VAT offices in the early 1970s and Italy has also done so.

mented, some integration of income tax, VAT, and customs operations has typically emerged over time. For example, Canada's implementation of the VAT almost coincided with a move toward integration of the customs, excise, and income tax administrations in the early 1990s.¹²² In Africa, countries such as Kenya, Malawi, Tanzania, Uganda, and Zambia have implemented revenue authorities controlled by a single board of directors.¹²³ So far, however, integration in these African cases has been limited to personnel policies and budget control, with only modest progress toward integration of their operations.¹²⁴

Administration of the VAT by the Customs Department

The most often cited example of VAT administration by a customs department is that of the United Kingdom H.M. Customs and Excise. Historical accident is the main reason for this.¹²⁵ Beyond historical accident, two main factors could justify the allocation of VAT administration to Customs. The first is the significance of VAT collected on imports for total VAT revenue (which, as discussed in Chapter 4, frequently amounts to between 40 to 60 percent of total VAT collections in developing countries and transition economies). The second is the experience of customs officials with physical control of goods and issues such as the classification and valuation of goods.

However, these factors are of less relevance in a modern tax system. As an economy grows, the share of VAT associated with the domestic formal economy will typically increase. More important, the new challenges faced by a VAT administration have little to do with the collection of VAT on imports (which does not require skills different from those of collecting customs duties). These challenges include establishing new registration and education systems, controlling the credit mechanism, processing refunds, and developing

¹²²The Canadian Taxation Department and the Customs and Excise Department were merged in a single department reporting to a deputy minister in 1994. However, while VAT and income tax headquarters and field offices have been successfully merged, there are still separate headquarters and field offices for the customs administration.

¹²³Others, such as Mauritius and Rwanda, have also taken steps to establish revenue authorities.

¹²⁴The most noticeable steps taken in this direction are in Uganda, which recently established a large taxpayer unit, in which VAT, excises, and income tax operations are fully integrated, and in Ghana, where a single taxpayer identification number was introduced.

¹²⁵As explained by Tait (1988), "the United Kingdom case is unusual. The customs administration was assigned responsibility for the operations of the purchase tax that was introduced during World War II, when the tax administration was overburdened and when the Customs was less busy than usual. Because of this accident of timing, the Customs gained in experience in dealing with the purchase tax, and when the time came to introduce the VAT, this experience was a deciding factor in allocating responsibility for VAT administration."

new audit programs, all areas in which domestic tax administrations usually have an advantage.¹²⁶

In addition, although experience in physical controls may be useful, effective VAT administration requires a broader range of skills to administer a self-assessed, accounts-based tax. These skills are usually found in the internal tax administration whose staff are trained in auditing financial transactions and accounting records. Indeed, in countries where the VAT was initially administered by the customs and excise department, experience has shown that customs and excise staff, whose skills focus on physical control, classification, and valuation of goods, are not best suited to the requirements of a VAT administration. The problem is that there is a tendency to administer the tax like an excise tax using complex forms (requiring unnecessary information on the quantities and types of goods produced, raw materials processed, raw materials and goods in inventory).

Administration of the VAT by a Separate Department

Most of the countries that had a tradition of administering excises and sales taxes in the customs department recognized that the VAT requires organization, procedures, and systems different from those in customs administrations. As a result, specific VAT departments were typically established in these countries. This provides the opportunity for a clean break with the potentially flawed procedures of existing revenue agencies. In theory, the recruitment of staff exclusively trained in the VAT should also provide the specialized expertise needed for an effective VAT administration. However, there are also shortcomings. These include:

- Establishing a separate administration in countries with scarce skills and training facilities can be difficult. For example, when Pakistan established its new VAT department, the recruitment of new staff from outside the administration proved difficult. Furthermore, many of the VAT officials, who were recruited from the customs administration and trained for the VAT, returned to their former administration in the months following their assignment to the new VAT department.
- Establishing a new administration is often resisted by the staff of existing revenue agencies. For example, in Ghana, where a new VAT administra-

¹²⁶One advantage of an integrated VAT and customs administration is that it should facilitate exchanges of information on imports and exports, a requirement for effective processing of refunds. However, this is essentially an information technology issue—not an organizational one—that should be resolved by the implementation of appropriate computer systems using a single taxpayer identifier for both tax and customs administration purposes.

tion was created in 1995, a number of customs officers openly opposed the establishment of a new revenue service.

- The creation of a separate VAT department can also lead to fragmentation of the tax administration if there is no comprehensive strategy to promote coordination of the operations of the various revenue agencies. For example, in Ghana (in 1995, at the first introduction of the VAT there) and Uganda, where the VAT registration process was carried out by new VAT agencies, different taxpayer identification numbers were used for income tax, excise, and customs administration purposes, with an additional number being introduced with the implementation of the VAT. Moreover, there has been no cross-checking of information between the revenue departments since the introduction of the VAT in many of these countries. (The lack of coordination can reflect political realities. In one of the surveyed countries, an important reason for the resistance of traders to the VAT was the fear that reconciliation of purchase and turnover data by the VAT and the income tax departments would provide the income tax administration with additional information to assess their tax liabilities. Opposition to the VAT is sometimes really opposition to an effective income tax.) Indeed, despite the recommendations of FAD to promote close cooperation between the income tax, VAT, and customs administrations, there is little apparent appreciation among the staff of these administrations that cooperation is critical to successful enforcement programs.
- Separate VAT departments also increase tax administration costs due to duplication of resources (for example, duplication of taxpayer identification systems, office facilities, equipment, and computerization resources). For taxpayers, the need to carry out their tax obligations in separate offices, the possibility of being audited by different departments (which do not coordinate their enforcement programs), and risks of inconsistent treatment under the VAT or the income tax also contribute to complexity.

Administration of the VAT by the Domestic Tax Administration

As noted, this form of organization has been adopted by a vast majority of the countries where a VAT has been introduced over the past 20 years. It was the organization used by the French tax authorities when their VAT was introduced in the 1950s. Indeed, major steps in the transformation of the organization of the French tax administration coincided with the gradual introduction of the VAT in that country from 1948 to 1968 (Box 12.1).

Box. 12.1. Introduction of the VAT and Reform of the French Tax Administration

The different phases of the introduction of the VAT have coincided with three major steps in the reform of the French tax administration Direction Général des Impôts (DGI):

In 1948, the authorities introduced a sales tax with an invoice-based credit mechanism that applied at the manufacturing-import stages (the *taxe unique à paiements fractionnés*).

In 1954, the authorities extended the coverage of that tax to the wholesale stage and replaced several indirect taxes. The new tax was called the VAT.

In 1968, the authorities extended the VAT to the retail stage.

The DGI was established during the same year by merging the departments in charge of direct and indirect taxes.

At the same time (1950–55), the DGI was gradually implementing new audit techniques, based on joint audits of the taxpayers' liabilities by specially trained auditors (*les vérificateurs polyvalents*). Also, in 1955, the DGI began experimenting with function-based tax offices (to replace the former tax-based offices).

At the same time, the DGI began the implementation of a comprehensive plan of modernization of the tax offices. The objective was the reorganization of the tax offices based on both function-based and taxpayer-based principles (for example, the establishment of separate units to audit small, medium, and large taxpayers).

Administering the VAT in the department responsible for administering domestic taxes has several advantages:

- Integration of the revenue departments can underpin a more effective tax administration, in which a function-based organization can be implemented from the top (headquarters) to the bottom (field offices). Such an organization enhances efficiency and reduces compliance burdens. For example, a single registration system and a single accounting unit to process all returns and payments for all taxes will simplify taxpayers' obligations and reduce tax administration costs. Similarly, an

integrated collection enforcement unit for all outstanding taxes helps improve effectiveness, as the same accounts are likely to be in arrears for several taxes.

- The self-assessment embodied in a VAT (discussed in the next chapter) requires close coordination between the VAT, income tax, and customs administrations, including automatic cross-checking of data (for example, on turnover, purchases, imports, and exports) and implementation of effective enforcement programs based on both physical and accounts-based controls.
- Integration can also facilitate a major improvement in income tax procedures and systems. For example, modern collection and enforcement procedures designed for the VAT should also be used for personal income tax and the corporate tax. In the same way, the registration thresholds under the VAT can assist the income tax administration by providing a basic approach to classify taxpayers (for example, simplified income tax systems can be used for taxpayers below the VAT threshold, while compliance work can be directed primarily toward those above the threshold to maximize income tax performance). Integrating the VAT and income tax administrations can also energize taxpayer education and income tax enforcement (both in dealing with noncompliance with filing and payment, and in pursuing underreporting of sales, use of fake invoices, as well as under or overpricing). Clearly, implementation of effective VAT enforcement and audit programs helps improve income tax compliance.

This list of advantages prompts one to ask why VATs administered under this model have sometimes been associated with weak performance. There are several reasons:

- The design of several of the VATs implemented in the 1970s and 1980s was too complex. Some of these, for example, were in Africa¹²⁷ and their VAT legislation included multiple rates (for example, four rates in Côte d'Ivoire and Senegal, five in Morocco). In most cases, there were no registration thresholds, and small taxpayers (with a turnover below a certain amount) paid VAT based on the *forfait* system, a complex presumptive tax ill-suited for countries with a limited administrative capacity. Moreover, VAT forms were unnecessarily complicated (four pages in certain countries). Thus, in

¹²⁷For example, Côte d'Ivoire in 1960, Morocco and Niger in 1986, and Tunisia in 1988.

Table 12.2. Advantages and Drawbacks of the Different Models for VAT Administration

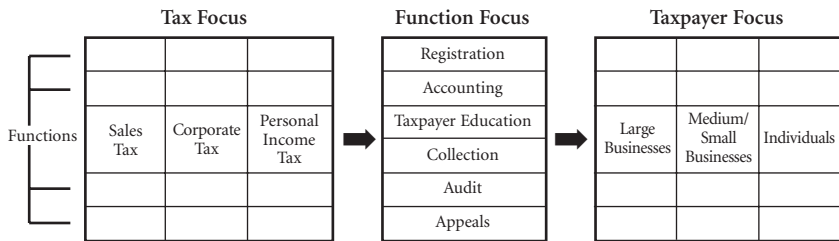
	Advantages	Drawbacks
VAT administered by the customs and excise department	Facilitates exchange of information on imports and exports	Customs and excise procedures and systems are not suitable for VAT administration Customs staff may not have appropriate skills Impedes coordination of VAT and income tax administration
VAT administered by a specific department	Allows a clean break with existing procedures when the VAT is implemented Helps focus on VAT administration	Establishing a new revenue department in a developing country with weak administrative capacity and scarce skills requires a strong political commitment Staff of the existing revenue departments often resist the establishment of a new department Increases the fragmentation of the tax administration and impedes coordination of the VAT, income tax, and customs operations Increases tax administration costs
VAT administered by the domestic tax administration	Provides for a more modern, effective (function-based), and efficient tax administration Facilitates coordination between VAT and income tax administration, and therefore supports better VAT and income tax compliance	Risks insufficient focus on the specifics of the VAT administration

Source: IMF staff compilation.

several countries, the advantages of a sound organization (VAT administered with the income tax in a function-based tax department) were offset by excessively complex legislation and weak procedures.¹²⁸

¹²⁸There has been a subsequent improvement in many of these countries—for example, Côte d'Ivoire and Senegal now have only two VAT rates, and all other WAEMU countries have a single VAT rate; moreover, businesses below the registration threshold are now exempted. In recent years, most of these countries have also embarked on reforms to improve their tax administration (including the establishment of large taxpayer units, simplified collection procedures, and more effective collection enforcement programs).

Figure 12.1 How the Structure of Tax Administrations Has Evolved



- Some countries, including France and Canada, have tended to neglect the need to maintain specific VAT systems in their move toward a fully integrated, function-based administration. For example, audit methods based only on joint audits of all tax liabilities do not provide for sufficient broad coverage of taxpayers for the VAT. These methods, which are sometimes excessively focused on income tax audits, are often too sophisticated for small and medium-sized taxpayers. Thus, tax administrations that have moved toward more integrated, function-based organization, do nevertheless need to maintain some tax-based components (mainly for VAT and, sometimes, excise administration purposes).

Table 12.2 summarizes the principal advantages and drawbacks of the alternative forms of organization.

Another major trend over the past ten years in the organization of the tax administration has been the development of compliance strategies based on a taxpayer-segment approach (for example, the establishment of special units to control large taxpayers, the implementation of audit units to deal respectively with small, medium-sized, and large taxpayers and the establishment of units to deal with specific industries such as financial services). In some countries (for example, Australia and the Netherlands) the taxpayer segment approach is now the primary criterion for the organization of the tax administration (see Figure 12.1).

Conclusions

Are some types of organization more effective than others in supporting the performance of the VAT and facilitating the modernization of the tax system? The discussion above shows that there is no definitive answer. Clearly, advice regarding the department where the VAT should be administered has varied over the past ten years, and there has been some uncertainty as to what is the

most effective and efficient organization for administering the VAT in a few countries. However, discussions have clearly been sensitive to the existing institutional strengths and weaknesses in specific countries. Nonetheless, strong common trends have emerged in the FAD recommendations. In particular, FAD advice now recognizes that, whatever the organization model, the implementation of a VAT should be part of a comprehensive strategy to modernize the entire administration.

To elaborate on the details of the overall strategy as currently practiced:

- Whatever the type of organization adopted, there should be close coordination of VAT preparations with the income tax and customs departments.
- When the decision is to administer the VAT in the domestic tax administration, it is crucial that the basic systems be in place to support VAT operations—including modern registration systems, comprehensive taxpayer education programs, and appropriate collection enforcement procedures (to ensure that VAT defaulters are identified and treated promptly)—and, as needed, to develop specific VAT systems—including effective refund systems and audit programs.
- Where a special VAT department is established, the emphasis should be on strengthening the coordination of the income tax, VAT, and customs agencies:
 - (i) In the near term, this involves, among others, a better coordination of the VAT, income tax, and customs operations at management levels, and the development of basic measures to coordinate VAT operations and those for other taxes (including a unique taxpayer identification number, exchanges of information to support enforcement, and programs of joint audits).
 - (ii) In the near to medium term, large taxpayer units (LTUs) should be implemented for all taxes. In countries where a special VAT department has been established (such as Uganda), a major objective of the LTU is to support the merging of the income tax and VAT administrations in pilot offices as a first step toward the integration of the VAT and income tax administrations.
 - (iii) In the longer term, after a function-based organization has been tested in the LTU, the objective should be to move toward an integrated tax administration organization beginning with the integration of income tax and VAT operations at the headquarters level, and, later at local office level (beginning with the most important centers).

However, it must be recognized that the coordination of different agencies' operations is frequently a source of frustration. In most of the surveyed countries, there are still different taxpayer identification numbers in use in each department, and the coordination of the different agencies is always extremely difficult. More generally, the experience of several of the surveyed countries shows that insufficient attention paid to tax administration organization and management issues may have undermined VAT performance. In addition to the examples mentioned above, this was the case in many CIS countries.

Building on this experience, FAD for its part has increased its emphasis in recent years on addressing specific tax administration issues with a clear preference being expressed for the VAT to be in the domestic tax administration. In all cases, the reform should be prepared by a team of full-time officials, including representatives from the income tax and customs departments. Depending on the tax administration's previous organization and history in administering a sales tax, the organization should then be as follows:

- In countries where there is a function-based, domestic tax department and a strong experience in administering the sales tax in this department, the VAT should be administered in function-based tax offices, in this department. In this case, however, appropriate attention must be paid to the development of special VAT systems for specific functions (especially refund and audit).
- In countries with no function-based organization or/and no experience in administering the sales tax in the domestic tax department, the VAT should be administered in separate offices, in this department. Attention should be paid to: (i) the need to closely coordinate income tax and VAT operations at both headquarters and tax office levels, and (ii) developing a medium- to long-term strategy to merge the VAT and income tax offices (for instance, beginning with the merging of VAT and income tax operations for large taxpayers in a pilot office).

13 Self-Assessment by Taxpayers

The VAT can play a pivotal role in developing modern methods of tax administration, based on effectively monitored voluntary compliance. This chapter deals with its role in respect of a key aspect of this approach to tax administration: self-assessment.

Background

Under a system of voluntary compliance (meaning that taxpayers comply with their basic tax obligations without the intervention of a tax official) taxpayers self-assess: that is, they calculate and pay their own tax liabilities. They must complete their returns and submit them with their payments to the tax administration. If they do not, the tax administration detects this failure and takes appropriate enforcement actions, including applying the penalties specified in the law. Returns are then subject to the possibility of audit.

In many countries, the development of self-assessment is closely linked to the rise of the VAT. Thus, in countries such as France and the United Kingdom, while VAT systems and procedures have been built around self-assessment from the outset, the move toward self-assessment for other tax liabilities such as the personal and corporate income tax has been more recent. Until the early 1990s, all countries willing to introduce a VAT broadly followed the same approach—administrative preparations for implementation of the new tax were always based on the assumption that the VAT would be a self-assessed tax.¹²⁹ It was mainly at that time that several coun-

¹²⁹When describing VAT payments and refunds, Tait (1988) indicated that “the VAT is basically a self-assessed tax.” He did not consider this to be an issue for discussion.

tries in transition—first CIS countries, then China and Vietnam—decided to introduce VATs using procedures not based on self-assessment.

Existing Conditions

In terms of their acceptance of the basic principles of self-assessment, the countries surveyed in Chapter 6 fall into three categories.

Countries in which sound procedures have been implemented. Only 42 percent of the surveyed countries (13 out of 31) have implemented modern collection procedures (using simple filing and payment forms and a self-assessment system). In these countries, reflecting best tax administration practices to simplify the taxpayers' compliance burden, VAT filing and payments are made in a single step at the bank, using a simple, combined return and payment form. These forms were often designed with FAD assistance. In developing countries, implementation of such practices often requires significant efforts.

Countries using self-assessment procedures with complex requirements. Almost half of the surveyed countries (15 out of 31), while using self-assessment procedures, place excessive data requirements on taxpayers. In these countries, the forms may include several pages, with taxpayers sometimes requested to attach additional documents (such as copies of invoices and import declarations), significantly increasing compliance costs. In several countries, filing and payment can also be in separate locations, compounding administration difficulties by impeding the reconciliation of payment and return data. This has been the case, until recently, mainly in transition economies, where taxpayers file the return at the tax office and pay their liabilities at a bank. This practice can be a serious impediment to the timely detection of delinquent taxpayers (in particular, those who file a return, but do not pay their tax liabilities).

Countries that introduced the VAT without self-assessment. As noted above, the issue of self-assessment reemerged in the early 1990s, as transition economies moved toward VAT implementation with little experience of tax administration and little appreciation of what would be required to administer an accounts-based tax. Among the surveyed countries, only 3 out of 31 do not use nominal self-assessment procedures. However, looking beyond the survey, the VAT is administered without self-assessment procedures in 16 (mostly transition economies) of the 120 or so countries in which a VAT has been introduced. In these countries, taxpayers must go—in principle, each month—through a complicated process to file and pay their VAT liabilities. In this process: (i) the taxpayer files a return at the tax office; (ii) the tax office re-

views the return and prepares the payment notice; (iii) the tax office sends the payment notice to the taxpayer; (iv) the taxpayer sends his payment to the bank; and (v) the tax office reconciles assessment notices and payments. In some of these countries (Russia, for example) the payment notice is provided on the spot to the taxpayer who must wait in the office until the VAT return is checked. The taxpayer must then to go to the bank to pay the tax due.¹³⁰

Why Self-Assessment? Factors and Problems

What Are the Conditions for Implementing Self-Assessment?

Research at the IMF on the VAT in the early 1990s viewed the concept of self-assessment as core to the recommended strategy for implementing a VAT. Thus, Casanegra de Jantscher and Silvani (cited in Tait, 1991, p. 30), consider that “all aspects of VAT administration should be designed with the aim of increasing *voluntary* compliance. Swift detection of stopfilers, broad audit coverage, and appropriate penalties are particularly helpful in this regard. Of course these activities must be supplemented by appropriate programs to help taxpayers comply with VAT.” Based on that research, the conditions for the successful implementation of self-assessment are summarized in Box 13.1.

As background, the VAT literature initially emphasized the self-checking mechanism of the VAT (through the chain of invoices that are required at each stage though the retailer). This could be seen as consistent with implementing self-assessment procedures—if the VAT is a “self-enforced” tax, it should also be “self-assessed.” However, experience indicates that the positive impact of self-checking on VAT compliance can be overestimated. The main connection between invoicing and record-keeping obligations on the one hand, and self-assessment procedures on the other hand, is simply that traders able to comply with the requirements of an accounts-based tax are also those able to fulfill their obligations under a self-assessment system. If returns are kept simple, they can be easily completed using information readily available from taxpayers’ records. Provided the threshold is sufficiently high to eliminate small businesses from the VAT net, all registered taxpayers should therefore be able to keep both proper records and self-assess their tax liabilities.

Why Is Self-Assessment So Important for VAT Administration?

One way to appreciate why self-assessment is important to an effective VAT administration is to consider the impact of not having self-assessment.

¹³⁰These complicated procedures were also applied in Uganda until 1998. Uganda, however, began implementing simple VAT filing and payment procedures through the banks in early 1999.

Box 13.1. Conditions for an Effective Self-Assessment System

The conditions that support a self-assessed tax system include:

- *Simple tax laws.* Complex laws can significantly increase compliance costs, reducing tax compliance. A “simple VAT law” would provide for limited exemptions, a single positive rate, a zero rate limited to exports, and a high threshold.
- *Services to taxpayers.* The tax administration should assist taxpayers in meeting their obligations. Taxpayers should receive clear information describing their obligations, the taxes applicable, the dates when taxes are payable, etc. They also need to be informed of changes to the laws and should have easy access to information and tax forms.
- *Simple registration, filing, payment, and refund procedures.* Tax forms should be readily available to taxpayers and procedures easy to comply with.
- *Collection enforcement.* Prompt detection of taxpayers who fail to submit tax returns, and/or pay tax due, is critical to improving tax compliance, especially regarding large taxpayers.
- *Audit.* Taxpayers need to know that if they fail to comply with the tax laws, they face a reasonable risk of being detected. The tax administration should have sufficient resources to audit a reasonable percentage of taxpayers to increase the risk of detection of noncompliance.
- *Penalties.* Noncompliers need to know that if they are detected, penalties will be strictly applied. Moreover, tax fraud should be prosecuted through the criminal justice system.
- *Access to independent review of decisions.* Taxpayers should have access to an appeal process to protect their rights. When they disagree with the results of an assessment, they should have access to judicial processes for the resolution of disputes with the tax administration.

Taxpayers’ costs. Filing and payment procedures without self-assessment typically require taxpayers to carry out several steps in the tax office and at the bank. While such time-consuming procedures may sometimes be accepted by enterprises for annual tax liabilities, it is a serious drawback when tax returns and payments are due monthly, as is usually the case for the VAT. Moreover, these alternative filing procedures often call for more complicated tax return forms and supporting documents (such as customs bills of entry, copies of purchases and sales invoices, or lists of invoices).

Tax administration’s effectiveness. Burdensome procedures would also have a negative impact on the tax administration’s effectiveness. Absent self-

assessment, tax officers need to deal each month with substantial paper work—processing returns, issuing payment notices, and reconciling liabilities and payments for all registered taxpayers. Failure to complete these tasks in time may jeopardize monthly revenue collections.¹³¹ In an attempt to cope with this paperwork, countries have typically embarked on ambitious computerization programs to speed up the processing of returns and issuance of tax notices—this is not an effective use of computer resources.¹³²

Enforcement. With self-assessment, tax officials can concentrate on dealing with the minority of taxpayers who do not comply with their tax obligations, while, absent self-assessment, most tax administration resources need to be allocated to paper work. Moreover, when liabilities are assessed each month by the tax administration, tax officials are often reluctant to apply penalties (levying of which would imply that the assessment process had not been conducted smoothly and effectively). In some cases, it would not seem appropriate to discuss an assessment during a field audit when liabilities have already been agreed to by both the tax administration and the taxpayer during the monthly assessment.

Corruption. Experience in countries without self assessment shows that there is usually no difference between the liabilities reported by large taxpayers on their returns and the liabilities calculated and mentioned in the payment notices prepared by the tax administration. These amounts may differ somewhat in the case of small taxpayers, but this appears mainly to reflect the incentive to negotiate the amount of tax due in the absence of self-assessment procedures. One explanation of both the reluctance to apply penalties and the support of procedures involving regular discussions between taxpayers and tax officials is the opportunities that result for collusion, particularly in countries where the salaries of civil servants are low. In some surveyed countries, concern over corruption was a major reason for the implementation of a self-assessment system, with modern filing and payment procedures through banks.

What Are the Main Reasons for Resistance to Self-Assessment?

Three main explanations are given to account for the resistance to self-assessment in the surveyed countries:

¹³¹The schedule for fulfilling these tasks is tight. In one of the countries surveyed, for example, taxpayers must file the VAT return before the 10th of the following month and pay the tax due before the 25th of the same month based on a tax notice issued by the tax offices. To cope with this schedule, tax offices must process and issue the tax notice within 10–12 days.

¹³²In the country mentioned in the preceding footnote, studies prepared to support the tax administration computerization program showed that the cost (staff and computer equipment) was 2.5 times higher than would be expected if self-assessment procedures had been implemented. The additional cost resulted from the requirement to issue assessment notices for all returns.

“Small traders may be illiterate.” Self-assessment has been opposed in a number of developing countries on the grounds that many traders would not be able to keep proper records and file their returns accurately. However, the issue is likely to be more one of the level of threshold; provided this is set sufficiently high, all enterprises then required to register for the VAT should be able to keep proper records and self-assess their tax liabilities. Moreover, in several surveyed countries, while resistance to the VAT regime may be blamed on presumed weaknesses in maintaining records, the true source may be reluctance of the business community to have tax officials accessing records and being able to cross-check VAT and income tax liabilities.

“Most businesses underreport their tax liabilities.” This has also been mentioned in countries in transition. In these countries, a number of officials seem to be firmly convinced that taxpayers cannot be trusted, especially those in the emerging private sector. However, such reactions should gradually decrease as senior tax officials improve their experience with the basic tax administration principles of market-based economies and taxpayers become more familiar with the new tax laws.

“The conditions for implementing self-assessment are not met.” This is the most compelling argument, and is most relevant in transition economies where the VAT was introduced without adequate preparations in the early 1990s. Since that time, significant work has been undertaken (with technical assistance) to improve the VAT operations and explain the requirements of a modern tax administration to these countries’ tax authorities. However, to this point, progress in implementing FAD’s recommendations and meeting the conditions for an effective self-assessment system has been slower than expected.

Conclusions

Over the past ten years, it has been difficult to convince some countries to implement self-assessment procedures for their VAT.

Against that background, the following summarizes the approach that has been adopted within FAD for its technical assistance program in this area. In essence, that approach involves less than satisfactory balancing of the need to support self-assessment against the often observed resistance of national authorities to the concept.

Attention paid to VAT preparations in countries with no experience of self-assessment. When a country has made the decision to implement a VAT, significant attention should be paid to the administrative preparations. Based on the consensus that the VAT is a self-assessed, accounts-based tax, the imple-

mentation timetable typically recommended varies from 18–24 months; this includes approximately 15–20 months for the preparation of the VAT organization; the design of forms and computer systems supporting self-assessment procedures; and taxpayer education and staff training programs. In the surveyed countries with little or no previous experience with self-assessment, a longer timetable is likely appropriate to take the necessary steps toward the VAT, such as the establishment of pilot LTUs, the development of a function-based administration, taxpayer education programs, and modern collection forms and procedures. For example, two to three years prior to VAT introduction, FAD had assigned long-term experts to help implement LTUs and new tax administration systems in Albania, Benin, Togo, Vietnam, and Sri Lanka. While this approach was reasonably successful in most cases, including for countries with little experience of self-assessment, it was less successful in some countries.

Approach proposed in countries not willing to introduce self-assessment procedures. Such cases pose real difficulties, illustrated by the following two cases in which the IMF was involved.

- First case: In 1997, two years before the introduction of the VAT, the government stated that it wanted to introduce a VAT using the non-self-assessment procedures described above. As an alternative, FAD advisors suggested the following compromise as a simplification: (i) all VAT taxpayers would have to submit a return that would be checked by the tax administration (as provided for in the VAT law); (ii) a tax payment notice would be sent to taxpayers *only* when anomalies are detected in the return (instead of to all taxpayers); and (iii) other taxpayers would simply have to pay the amount mentioned in their return.
- Second case: This is one in which, with the benefit of hindsight, more attention could have been devoted at the outset to the difficulty of implementing a VAT without self-assessment. Later in the preparation process, IMF advice did target the lack of modern procedures and effective enforcement programs as key weaknesses of the tax administration and recommended a comprehensive strategy to improve tax compliance. This strategy was based on the gradual introduction of self-assessment procedures in pilot units established for large taxpayers. Such units have recently been established. In these units, as a first step toward self-assessment of VAT liabilities, the payment notice is provided on the spot to the taxpayer after the VAT return is checked. The taxpayer must then pay his VAT liabilities to a bank office located in the pilot unit.

In both cases, the advice was, appropriately, for intermediate steps to facilitate a gradual implementation of self-assessment procedures, rather than for alternative solutions.¹³³ However, again with the benefit of hindsight, the difficulties in implementing even these strategies may have been underestimated.

Recommended strategy in countries where the VAT was introduced without self-assessment procedures. In recent years, countries that have introduced VATs without appropriate preparations have experienced difficulties. For example, in Russia and the other BRO countries, lack of familiarity with traditional taxpaying mechanisms, weak tax administration procedures (including the lack of self-assessment) combined with the lack of proper accounting standards and major shortcomings in policy design (such as the margin methods for certain categories of taxpayers and the use of the origin principle) have impeded the performance of the VAT since its introduction at the end of 1991. Faced with this reality the basic strategy recommended by FAD included measures such as the improvement of the VAT law, establishment of LTUs, gradual introduction of self-assessment procedures, appropriate penalties, and enforcement programs.¹³⁴ Little progress has been achieved until recently. Decisive steps, beyond the scope of technical assistance, are needed to provide a more stable political environment and a stronger political commitment to implement the necessary reforms.

In summary, self-assessment is clearly central for the effective operation of a VAT. Indeed, for most tax administration experts the question is not how to administer a VAT in a country without the capacity to administer a self-assessment system, but how to implement the basic principles of self-assessment in a country willing to introduce a VAT. The transitional arrangements recommended, in some cases, may not be an adequate response to this problem. In short, current thinking based on evidence of the past decade is that, if true self-assessment cannot be implemented, the country is not ready for the VAT and should defer its plans.

¹³³Alternative solutions would focus on measures to reduce the tax administration workload due to the lack of self-assessment. For example, VAT returns and payments could be made once or twice a year to limit the number of returns and payments to be processed. Alternatively, the VAT could be applied only above a threshold (higher than that which would otherwise be recommended). The first solution, however, would have serious drawbacks for revenue collection. The second makes little sense since taxpayers above a very high threshold are precisely those most capable of self-assessing their liabilities.

¹³⁴See Silvani and Fulford (1995).

14 Audit

Audit is often the weakest component of VAT administration. As noted in Chapter 6, among the surveyed countries, audit performance is reported to be a particularly weak aspect of tax administration, irrespective of whether other aspects of the VAT are working well. This chapter discusses the importance of the audit function and the difficulties faced in implementing audit programs.

Background

Basic guidelines provided for the development of an audit program typically address the following key issues:

- Coverage—what percentage of taxpayers should be audited?
- Selection—how should the audit cases be identified?
- Methods—what type of audit should be performed, what should be the duration of an audit, and what approach should be taken by the auditors?
- Staffing and training—what are the staff resources needed to implement the audit program and what type of training should be provided?
- Monitoring—what are the management systems needed to monitor the audit program (including assigning targets, developing time-standards, performing quality review, and ensuring prompt collection of additional assessments)?

Detection of offenses, such as underreporting of turnover, over-reporting of VAT credits, and use of fake invoices, requires field audits by well-trained officers, rather than desk verifications. The experience of countries with successful audit programs also shows that a VAT audit plan should be primarily based on short, issue-oriented audits covering a limited tax period (no more

than one or two return periods). This plan should provide for a broad coverage of taxpayers (taking into account their classification by size and industries). Most tax administration experts agree that, by international standards, an effective VAT audit program should provide for a 25–30 percent coverage of taxpayers each year.

In addition, VAT audits need to be closely coordinated with audits of other tax liabilities (especially income tax). When significant underreporting is detected during a VAT audit, the case should be transmitted to a joint-audit division specialized in comprehensive audits. In most countries where VAT and income tax administrations are integrated (or have been able to develop close cooperation), the development of an effective VAT audit program significantly helps improve income tax compliance. Such methods have also proved to be more effective and more compatible with business requirements (for instance, in limiting the number of visits to taxpayers' premises and restricting in-depth audits to cases where significant underreporting is detected). Box 14.1 presents a typical example of an audit program recommended by FAD.

Information on audit performance was provided in only 21 of the 37 surveyed countries. Only 2 of those were seen as having sufficient audit coverage, while only 11 had implemented the recommended audit methods. As the lack of an effective audit program undermines the functioning of the entire VAT operations, beginning with the refund system (see Chapter 15), it is worrisome to find that most of the surveyed countries still need to make significant effort to develop appropriate audit programs.

More generally, in recent years, the need to strengthen VAT audit programs has been an ongoing concern of a number of countries, including industrial countries. For example, in 1993, the implementation of a new VAT taxation system for transactions between EU countries¹³⁵ necessitated the development of several programs to reduce the risks of fraud. Since then, however, despite these programs, the EU Commission and most EU countries are increasingly concerned by the development of sophisticated types of VAT fraud. Most recognize that considerable efforts have still to be made to limit these risks and continue to improve their VAT compliance—including their audit programs.

¹³⁵Under the new system, customs clearance is no longer needed on trade between EU countries. The purchase of goods and services from EU businesses is no longer treated as an import but as a domestic transaction and VAT on intra-European transactions must be declared and paid monthly (or quarterly), along with the domestic transactions, using the same VAT return form.

Why and How Is Audit Critical?

Why Is An Effective Audit Program Critical for VAT Operations?

Like other taxes, VAT can be evaded. The development of effective audit programs is crucial to increase the risk of being detected and punish those businesses not in compliance with their VAT obligations. Typically, the most common sources of VAT evasion are similar to those of traditional sales taxes—as discussed in Chapter 5—including non-registration of businesses, underreporting of gross receipts, abuse of multiple rates, and nonremittance to the tax authorities of the tax that has been paid to the taxpayer by its customers. However, fraud under a VAT may sometimes be more sophisticated than fraud under other indirect taxes. VAT-specific fraud includes the use of fake invoices to abuse the credit system, the misreporting of domestic sales as exports to benefit from zero-rating, and the claim of VAT credits for noncreditable purchases. Unless these types of fraud are dealt with appropriately the entire VAT system can be corrupted, particularly when the credit mechanism and the refund system are abused.

The most obvious consequences of ineffective audits are the deterioration of VAT compliance and a loss of credibility of the tax administration. Even if sufficient penalties are provided for in the law, taxpayers will not be deterred from minimizing their tax liabilities if they believe that there is little chance of being audited. At some stage, honest businesses will realize that they cannot compete with those who consistently evade the VAT and may decide, in turn, to underreport their own tax liabilities.

The survey indicates that most of the countries lacking an effective audit program are also those where VAT procedures and systems are more complex. In a number of cases, tax authorities appear convinced that the lack of effective audits can be offset through increased filing requirements.

Some countries have been attracted by the theoretical possibility of cross-checking all purchases and sales invoices to promote compliance. Cases include South Korea, China, Côte d'Ivoire, Indonesia, and Bulgaria, where taxpayers are requested to attach a copy (or a list) of their purchase invoices to their monthly returns. This approach has often reflected a concern that the refund system is being abused. In several countries, requirements to audit 100 percent of the claims prior to refunding VAT excess credits complicate matters; not only does this policy delay the processing of refunds, it also implies that most audit resources are assigned to the verification of refund cases. Since not all refunds can be audited in a timely fashion, a database of all purchase and sales invoices is seen as facilitating the verification of refund claims. The South Korean experience (described in Box 14.2) indicates that

Box 14.1. Elements of an Effective Audit Program

In a function-based tax service, the audit program typically includes the following types of audits:

- *Desk verifications.* Made annually, these verifications are primarily based on (i) a review of income tax and VAT returns (including a review of basic ratios such as profit margin, cash flow, cost of personnel, and a comparison with ratios for previous periods and ratios for other taxpayers in similar industries), and (ii) the cross-checking of information included in the taxpayer files (particularly income tax, VAT, and customs information).
- *Registration checks.* These take the form of unannounced visits to a taxpayer's premises (mainly for new small and medium-sized taxpayers) during which the tax officer ensures that: (i) the taxpayer has a basic understanding of his/her obligations; (ii) appropriate records are being kept; and (iii) proper invoices are being issued.
- *VAT refund audits.* A pre-refund audit should be undertaken for a first refund claim (particularly by new enterprises); audits of further claims should be carried out selectively. Refund audits should focus only on the period covered by the claim.
- *Issue-oriented audits.* These should be directed at verifying items for which errors have been detected in the returns. Regarding the VAT, an issue-oriented audit should focus on no more than one to two returns.
- *Comprehensive audits.* All cases where serious underreporting has been detected during a desk verification, a registration check, a VAT refund audit, or an issue-oriented audit should be forwarded to a unit responsible for undertaking comprehensive audits of all tax liabilities (including VAT and income tax). These comprehensive audits may be extended to cover several years, up to the limit provided for in the law.
- *Tax fraud investigations.* In the most serious fraud cases, criminal investigations may be necessary. Such investigations may require searches (of business premises and, sometimes, domiciles), seizure of evidence, testimony from key witnesses, etc. They should be undertaken in accordance with criminal procedure laws.

massive cross-checking of invoices is costly to administer, burdensome for taxpayers, and ultimately not effective in controlling evasion. While information technology has improved spectacularly since then, the sheer volume of transactions continues to make massive cross-checking a daunting task. Moreover, it runs the risk of alienating taxpayers.

**Box 14.2. Massive Cross-Checking of Invoices—
Experience of South Korea**

In 1977, South Korea implemented an ambitious cross-checking program in conjunction with the introduction of a VAT. Each taxpayer was required to complete four tax invoices for every sale of goods and services: one copy for the supplier; a second copy to be sent by the supplier to the district tax office; the third copy for the purchaser; and the fourth copy to be sent by the purchaser to the district tax office. The two tax offices, in turn, sent their copies to a centralized computer center for cross-checking.

This program was subsequently modified in an effort to reduce administrative costs. Sales invoices were no longer required. Instead, taxpayers were only required to submit a summary of purchase invoices above a certain amount. These summaries were processed at the computer center and aggregated by seller. This aggregate was then compared to the volume of sales reported on the VAT return. Any discrepancies identified by the computer center were forwarded to district offices for follow-up.

These programs produced mixed results. There is some evidence that taxpayer compliance initially improved following the introduction of the cross-checking programs. During the period 1977 to 1982, the number of cases where there was a sales invoice but not a purchase invoice (or vice versa) dropped slightly. However, South Korea's tax administration found the programs to be costly and difficult to administer. These costs were in the form of the increased staff and computer resources required to input and process the invoices, resources that were unavailable for other, potentially more productive, enforcement activities. The programs also imposed significant compliance costs on taxpayers. Finally, the programs were beset by inefficiencies as many of the discrepancies between the sales and purchase invoices that were detected by the computer system were found, upon closer inspection, to result from transcription errors and other innocuous mistakes.

The following examples illustrate the difficulty in implementing an effective VAT in the absence of effective audit programs. In one of the countries in the survey, the difficulty of processing exporters' refund claims within the legal time frame resulted in serious cash-flow problems for a number of exporters. In 1998, to address these problems, the government introduced VAT exemptions for exporters' imports and modified the normal VAT mechanism for their domestic purchases, by extending zero-rating of the VAT to the transactions of exporters' suppliers ("indirect exporters") up to the production stage. As discussed in the next chapter, this approach compromises the fundamental nature of the VAT and increases risks of fraud and abuse of the zero-rate system.

What Are the Main Reasons for the Lack of an Effective Audit Program?

There are several reasons for ineffective audit programs that are evident in varying degrees in several countries. First, audit typically requires higher-level skills than those needed for most other tax administration tasks, and such skills are sometimes in short supply. Second, the possibility of collusion between taxpayers and tax officials is significant during an audit.¹³⁶ Moreover, auditor errors may damage business activity. As a result, governments may, sometimes, be reluctant to support comprehensive audit programs.

However, while these general reasons cannot be ignored, the survey data point to more specific factors that also contribute to the lack of effective audit programs, including:

Inadequate preparations for VAT implementation. The consequences of a weak audit program may not be immediately perceptible. While the lack of effective collection enforcement systems, especially those needed to deal promptly with nonfilers and nonpayers, has an immediate impact on revenue, the lack of effective audits to detect underreporting of gross receipts and/or overreporting of credits may affect tax compliance only in the medium term. There have been cases in which insufficient attention has been paid to the development of an audit function when the VAT was implemented. For example, in two of the countries surveyed, although resident advisors were made available to support VAT preparations, which included the development of an audit program and the training of auditors, the audit units were not staffed until several months after the introduction of the VAT.

Weak political commitment. The absence of clear political support is another common reason for the lack of an effective audit program. In one of the surveyed countries, for instance, the most common form of evasion has been the underreporting of domestic sales, with traders, especially the largest, claiming more imports and purchases than taxable sales. This problem was not appropriately addressed at the outset; in fact, the authorities dismissed the head of the tax administration who wanted to address noncompliance issues immediately. As the implementation of an audit program was deferred for more than two years after the introduction of the VAT, there is still significant underreporting of VAT liabilities in that country. Similar problems were encountered in other countries; for example, in one case, traders were assured that there

¹³⁶This is especially true when the disparity between salaries for the private and public sectors is substantial. A common approach to deal with the risk of collusion is to organize auditors into teams (at least two auditors for each audit); however, there is little evidence that this approach helps address the problem of corruption.

would be no exchanges of information between the VAT and income tax administrations after the VAT is introduced.

Inappropriate legal and judicial environment. In several cases, the lack of an appropriate legal and judicial environment has also militated against an effective audit function. A clear legal framework ensures that taxpayers' rights are protected and that the tax administration has sufficient and clearly defined legal powers to visit taxpayers' premises and examine their records.¹³⁷ It also ensures that appropriate action will be taken by the administration, and, as needed, by the judiciary, to collect outstanding taxes and penalties. Moreover, practice may significantly diverge from the legal and judiciary framework provided for in the law. For example, in several developing countries there are few, if any, possibilities for taxpayers to go to court to appeal the decision of the tax authorities. Conversely, in other countries the appeal process is so complex that taxpayers often take advantage of the system to delay the payment of their outstanding tax liabilities for a number of years.

Other technical issues. There are several additional technical issues that contribute to the lack of an effective audit strategy in the surveyed countries, including the following:

- *Misallocation of resources.* Ill-designed procedures and complex forms result in the allocation of the majority of staff resources to paperwork.
- *Lack of audit selection and monitoring systems.* Several tax administrations have yet to develop basic audit systems. Weaknesses include: (i) the lack of a system for the selection of audit cases;¹³⁸ (ii) absence of audit targets

¹³⁷There are often concerns in the business communities of developing countries and transition economies that the tax system is not always applied in a transparent manner and that objections and appeals are costly and complicated. In these countries, taxpayers are sometimes presented with large tax bills, which are intended to provide a basis for negotiation of a settlement of increased liabilities resulting from audits. In a number of cases, little explanation is provided to justify the reasons for these additional liabilities and auditors are not always interested to discuss technical issues.

¹³⁸Most modern tax administrations have developed case selection systems (usually computer based) to select VAT returns for audits. The more effective systems utilize taxpayer profiles and criteria to identify the highest risks for the revenue. These systems are frequently based on the cross-checking of internal information—for example: comparing return information with basic ratios (markup ratio), comparing information from different taxes (VAT and income tax), and using information from previous audits. Most systems also use information from other sources, for example: comparing customs information on tax paid on imports with input tax credit claims in the VAT returns; comparing customs information on exports and amount of zero-rated sales in the VAT return; and cross-checking of information on sales and purchases (information collected from large enterprises and government suppliers).

and lax time completion standards for audits; (iii) rudimentary techniques (such as, in certain countries, checking 100 percent of invoices); and (iv) flawed management reporting systems. In some countries, there is no appropriate audit organization, with tax auditing responsibilities being split between different administrations (including tax police forces in several transition countries).

- *The absence of an effective training program.* This is an area in which the assistance provided by bilateral donors could be improved.

Conclusions

Although various technical and political reasons may contribute to poor audit performance in most of the surveyed countries, the difficulty faced in convincing countries' tax authorities to adopt effective audit suggests several areas where reorientation of advice would be appropriate. For example:

Impact of the legal and judicial environment. It is important that the tax administration apply tax laws and regulations consistently—including through the publication of information regarding interpretation of the laws and regulations—and that objections and appeals are resolved through administrative channels as much as possible. To ensure that taxpayers are treated fairly, recent FAD advice has also recommended establishing the position of an ombudsman responsible for handling taxpayers' complaints regarding the quality of services provided by the tax administration.

However, the overall weakness of the legal and judicial environment, which impedes the development of effective appeals procedures in many developing countries and transition economies, is an issue that requires significant effort, including technical assistance.

Elimination of massive cross-checking programs. Those cases where countries attempt to cross-check on a large scale are often particularly challenging when it comes to giving advice concerning effective refund processing and audit programs. In several cases mentioned above, FAD has not been successful in convincing tax authorities that 100 percent pre-refund audits or/and massive invoice cross-checking is unworkable. Additional efforts are needed to promote more modern audit strategies developed in successful tax administrations,¹³⁹ which would need require extending technical assistance in tax administration beyond short-term implementation issues.

¹³⁹For example, replacing the checking of 100 percent of invoices by selective programs (ranging from the cross-checking of sample quantities of purchase and sales invoices in the course of VAT audits to intensive cross-checking of invoices within specific industries or among major taxpayers).

Attention paid to the need for effective audit programs. Since revenue issues are often a major source of concern at the outset, priority is often given to measures aimed at bolstering VAT revenue immediately, such as establishing a large taxpayer unit, developing new filing and payment procedures, and implementing collection enforcement systems.

As governments and tax administrations often begin to be interested in audit and refund issues only several months or, sometimes, several years after the introduction of the VAT, it is mainly at that time that assistance to implement refund and audit programs will be most effective. This may explain why a number of countries with established VATs have subsequently requested further assistance from the IMF in these specific areas. Experience with these countries shows that, as soon as refund and audit issues are recognized as major problems, advice may be more successful (even if they cannot have a revenue impact immediately).

An important lesson from these experiences is that a period of more than the 18–24 months of the standard VAT implementation schedule is eventually required to implement a VAT successfully. Indeed, the effective implementation of a VAT may take several years.

15 Refunds

The logic of the VAT requires that some taxpayers, particularly exporters, receive refunds. The practical problems this creates—often among the most troublesome that arise in implementing the VAT—are the topic of this chapter.

Background

It is a key feature of the invoice-credit form of VAT that some businesses will pay more tax on their inputs than is due on their output, and so ought in principle to receive refunds. This will be true, in particular, of exporters (since their output is zero-rated, so long as the destination principle applies), and those whose investment purchases are large relative to their current sales (a group that may well include new enterprises). These are especially important groups in terms of wider economic development. Without effective treatment of excess credits, the VAT runs the risk of introducing significant and costly distortions for these groups.¹⁴⁰ At the same time, however, the payment of refunds evidently can create lucrative opportunities for fraud and corruption. Moreover, financially strapped governments may be tempted to delay refunds for sheer need of cash. As discussed in the previous chapter, an effective refund system is also closely connected to the successful implementation of a comprehensive VAT audit program.

In principle, refunds should be paid promptly following the first VAT return after the excess credit arises, and should be paid irrespective of the nature of the

¹⁴⁰Excess credits can also arise even with positive value added if the rate of tax on inputs is sufficiently in excess of that on outputs. More precisely, excess credits arise whenever the proportionate excess of the average rate of tax on inputs exceeds that on output by more than the ratio of value added to input costs.

Table 15.1. The Treatment of Excess Credits

	FAD Recommendation (number of respondents)	Practice (number of respondents)
Refunds to exporters only (with or without lag)	7	8
Refunds to exporters immediately; all others with lag	6	6
Carry forward (for all) for some period	3	2 ¹
Refunds to exporters and those making large capital investments only	0	1
Year-end (or quarterly) adjustment only	1	1
Refund in excess of a floor credit size only	1	4
Not given in practice, although provided for in the law	0	1
Completely ad hoc	0	1

Source: IMF staff compilation.

¹Of which one refunded only after audit.

enterprise or the circumstances giving rise to the credit. That is indeed typically the case in most developed countries: refunds are usually paid within about three to four weeks of the end of the taxable period. Many developing and transition economies, however, limit the entitlement to refunds. Hard information on this is sparse. Table 15.1 reports on practice in 27 survey countries and FAD advice on somewhat fewer. It should be noted, however, that the practice reported in this table is typically that laid down in law or regulation, which experience suggests can differ quite markedly from that actually implemented.

Clearly many countries focus their refund efforts on exporters. The means by which this is done vary. Nearly one-quarter of respondents give refunds to no other group. FAD has also advised in some cases (for example, Gabon) that imported foreign capital equipment be exempted for certain investors.

There is some evidence that FAD advice on refunds has become less “purist” in recent years: increasing awareness of the risks of fraud, particularly in transition countries, has led to a wider acceptance of departures from the theoretically ideal practice of immediate refunding. The results of the survey show that, in most developing countries, FAD now typically recommends limiting refunds of excess credit to exporters; other taxpayers are thus requested to carry forward their excess VAT credits during at least six months. While this approach is appropriate to deal with most taxpayers whose sales are made predominantly on the domestic market, there is no doubt that in a few cases this recommendation underestimates the difficulties faced by some enterprises with significant excess

credits. This may be the case for major investments (with sometimes the business activity beginning several months after the investment is made) or in case of structural credit position due to a dual rate structure (outputs being taxed at the reduced rate while most inputs are taxed at the standard rate).

A critical aspect of the treatment of refunds is the overall VAT audit strategy, including the systems adopted to verify refund claims. Hard evidence is limited to relatively few countries. However, as discussed in the previous chapter, the general impression is that the lack of appropriate audit programs in many countries contributes to the ineffectiveness of the refund system, which relies heavily on extensive pre-refund checks prior to granting refunds rather than the selective post-refund strategy typically recommended by FAD.

A poor refund system can do significant harm. Failure fully to refund excess credits undermines the core principle of the VAT: intermediate transactions between firms should bear no final VAT burden. Such failure creates distortions that imply a real waste of resources: producers will substitute away from taxed inputs, and relative prices between sectors will be affected. The competitiveness of the export sector may be harmed, and the competitive edge tilted against new firms.

The Magnitude of the Issue

The refunds required under an invoice-credit VAT can be substantial, although the appropriate level of refunds will vary across countries according to their circumstances (see Box 15.1). In 1994–95, for instance, the United Kingdom collected over £68 billion in VAT payments and returned over £26 billion in refunds—that is, over 60 percent of net collections. While this is unusually high, reflecting the extensive zero-rating in the United Kingdom, refunds are extensive in many other countries too. In France, for example, VAT refunds amount to 40 percent of the net collections, while in Sweden they are nearly 80 percent; in Korea refunds run at around 50 percent of net VAT receipts.

Reasons for Failure and Possible Responses

Difficulties

While the appropriate treatment of excess credits in theory is clear—prompt refund—a number of obstacles to this arise in practice. Even when all parties are honest and capable, some transaction costs unavoidably imply some imperfection in the process. Three more considerations also arise.

Consider first the potential for fraud. The point is nicely put by Bird (1993), noting that a VAT is “. . . uniquely susceptible to fraud to the extent that

Box 15.1. What Is a Reasonable Level of Refunds?

It is important for tax administrations to have a sense of the level of refunds they might reasonably expect to pay, both as a guide to the level of resources that the activity might require and as a warning signal of attempted fraud.

Broadly speaking, refunds as a proportion of (net) VAT revenues under a fully functioning, single-rate, invoice-credit VAT would be

$$\frac{\alpha i + (1 - \lambda)z}{e}$$

where i and z denote respectively the shares of investment and zero-rated items (including exports) in GDP, α is the proportion of investment that generates excess credits (a quantity one would expect to be higher in faster-growing economies), λ the ratio of value added to sales in the zero-rated sector and e the efficiency ratio. Refunds will clearly be higher (a) in faster-growing economies (both because investment will be higher and more of it is likely to be by new firms with no output tax to take credit against), and (b) in more open economies.

The refunds required can quite plausibly be very large. Suppose, for example, that one is considering an economy in which the investment ratio is 10 percent, and exports account for 40 percent of GDP. Assuming that 5 percent of investment generates excess credits and that value added is 40 percent of sales in the export sector, achieving an efficiency ratio of 35 percent—around the average for a BRO country—will imply paying refunds equal to about 70 percent of net collections.

a supplier's invoice (or export certificate) in effect constitutes a check drawn on government [and so] inherently constitutes a tempting target for those who would loot the treasury." By concealing sales to the domestic market, traders not only evade the requirement to charge tax on their output but, moreover, enable themselves to reclaim tax on their input. Overstatement of exports, sometimes with the support of falsified customs documents, can be a particularly attractive way to do this, in that it apparently explains the use that has been made of inputs. Of course, when refunds are restricted to exports, as is the case in a number of countries, it is precisely the assertion that items have been exported that is needed to open the possibility of refund. Temporary shell corporations, false export documentation with respect to actual production sold domestically, falsification of invoices, production and purchase records, and misreporting of prices are all used extensively to support claims of excess credits to be refunded. In the EU, for example, various types of fraud have developed under the VAT regime, with the more complex devices emerging with the recent elimination of the borders between EU members for the

circulation of goods, persons, and funds. Other types of fraud have also developed in transition economies in central Europe. In this connection, the capacity of countries such as Poland and Hungary to develop effective VAT audit programs and control the movement of goods on their Eastern borders will clearly be a major challenge for their accession to the EU.

Second, the power to make refunds provides opportunities for corrupt practices by tax officials. Payment might be extracted in return for prompt provision (or overprovision) of refunds. Anecdotal evidence in some developing countries suggests that there are countries in which there is a widely known price for obtaining refunds of, say, 5 percent of the amount refunded. Customs officials might also connive in issuing false export documentation.

Short of outright corruption, moreover, the need for refunds creates scope for favoritism in the treatment of particular firms or sectors. There have been cases, for instance, in which complaints are voiced that domestic enterprises receive refunds more readily than foreign.

Third, particularly in transition countries with no history of voluntary tax compliance as well as in the many other countries that find themselves short of revenue, governments may find delaying the payment of refunds a tempting source of funds. By delaying payment, the government may be able to extract a forced interest-free loan from taxpayers.¹⁴¹ In some cases, such practices have resulted in a major reaction of the exporter community. In recent years, complicated exemption and zero-rating schemes applied to exporters and their suppliers (so called indirect exporters), have been implemented in a few developing countries (mainly in Asia), in an attempt to deal with cash flow problems resulting from excessively slow refund of excess VAT credits. Similar schemes also apply in some developed countries' VAT systems (such as the Irish and the Netherlands VAT systems; see below). However, while EU countries can afford the administrative burden of such complex mechanisms, developing countries with weak administrative capacity clearly cannot. Indeed, in those developing countries, such schemes send the wrong message to the business community regarding governments' commitment to simplifying and enforcing the tax system, with the immediate result of further degrading the design of the VAT and significantly complicating its operations.

¹⁴¹Tax administrations that are not operating effectively often build up a large stock of refund liabilities. By turning off the "refund tap," weak tax administrations can make current collection look better, so long as no one is tracking unpaid refund claims. In effect, current tax collections are inflated. Although in a number of countries the law usually provides that interest should be paid to the taxpayer in the event of publicly stated commitments being broken, it is not clear that tax authorities of these countries consistently apply these provisions.

Responses

Some of these difficulties evidently extend far beyond the context of VAT. Dealing with corruption, in particular, is a matter for wider civil service and other reforms. Within that wider setting, however, there are a number of approaches that might be taken to achieve an acceptably smooth system of refunds.

Offsetting excess VAT credits against VAT and other tax arrears. Some experts would argue that excess VAT credits (refunds) should never be offset against taxes other than future VAT liabilities, as is sometimes done. Such cross-offsetting would result in loss of control over data on taxpayers in all the affected taxes. This view may be excessively rigid for most developing and transition economies, where tax administrations have to cope with significant noncompliance problems, including, in many cases, substantial tax arrears. In these countries, the most common practice is to ensure that a taxpayer has no outstanding tax arrears (from VAT and other taxes) before processing VAT refunds.

Limiting entitlement to refunds. Scarce administrative capacity might be focused on the most important refund claims by simply denying some kinds of refund that, in principle, ought to be allowed. The simplest such rule is a de minimis requirement specifying an absolute amount, which must be exceeded before a refund is granted. This, however, will inevitably bear proportionately more heavily on small (perhaps new) firms rather than large.

A preferable approach would be to require excess credits to be carried forward for some specified time (three to six months, for example) and pay a refund only if they remain unrecovered. This is rough justice: a credit delayed is to some degree a credit denied. But it may be an acceptable means of excluding less important excess credit positions from the requirements for refund monitoring. In some contexts, tax administration may be so weak that even this exposes the revenue to too much risk. One might then require the indefinite carry forward of all excess VAT credits against future VAT liabilities.

Carry forward, however, is unlikely to prove satisfactory for exporters—who will find themselves permanently carrying forward unrelieved excess credits—or for firms that incur considerable costs prior to beginning operations. Even a requirement to carry forward for some fixed period effectively implies a charge equal to the interest foregone in deferring credit for the period of the carry forward, which can be a substantial sum.

Treatment of exporters. Many countries make special arrangements for exporters. These arrangements seek to ensure that exporters of good repute, at

least, obtain prompt refund. This might involve a “gold card” scheme, for instance, under which exporters with good payment records obtain repayment within some specified period; silver card holders, and those in any lower groups, receive somewhat less prompt treatment. However, these schemes create their own difficulties and distortions. They create administrative complications in requiring some apportionment of credits for enterprises that both export and sell domestically. Moreover, schemes that offer beneficial treatment of those with established reputations inevitably disfavor firms that may be honest but are simply too new to have built up such a record; this, however, seems to be an inevitable consequence of the optimal audit strategy.

The refund processing system for exporters recommended by FAD is based on a few simple principles,¹⁴² namely:

- distinguishing between refund claimants with a history of compliance and those claimants with poor or unknown compliance histories;
- using pre-refund audits for high risk refund claims and postrefund audits for claims of lesser risk;
- the application of criteria to determine the likely extent of revenue risk associated with each refund claim;
- maintenance of historical profiles for each refund claimant; and
- the performance of refund audits that focus only on verifying the facts of the refund claimed.

VAT excess credits related to import of capital goods. While recommendations regarding the prompt treatment of refunds in developing countries are usually targeted to exporters, efforts have also been made recently to better deal with excess credits due to large capital expenditures. VAT exemptions for investors who import large amounts of capital equipment have been limited to very few countries. Indeed, this practice may be easily abused and result in pressures to extend VAT exemptions to other imports. As described in Box 15.2, the development of a simple deferred-payment scheme for large amounts of imports of capital goods has recently been seen to be a more appropriate approach.

Audit strategy. A well-designed and executed audit strategy is critical to the construction of a smooth refund system. Many countries rely heavily on extensive pre-refund auditing, which is clearly a misuse of audit resources. In

¹⁴²Silvani and Brondolo (1996) provide a detailed discussion of some of the methods used to control refunds to exporters.

Box 15.2. Guidelines for a Deferral System for VAT on Imported Capital Goods

A deferral system for the VAT on imports should have the following characteristics:

- The scheme should be limited to importers of large amounts of capital goods who are registered VAT taxpayers.
- Capital goods, both imported and domestic, are subject to the standard rate VAT.
- Imports of capital goods by persons who are not registered VAT taxpayers are subject to VAT at the time of import. VAT is paid, as usual, before the clearance of goods.
- Importers of capital goods who are registered VAT taxpayers are permitted to defer accounting for the VAT until their next VAT return.
- In this return, the value of the capital goods and the VAT applicable to those goods are reported as a VAT liability, and, in the same return, the appropriate VAT input tax credit is taken for the capital goods.
- If the importer is entitled to 100 percent input tax credit (equipment used exclusively in taxable activities) the VAT applicable to the importation, reported as a liability, will be completely offset by the corresponding input credit.
- The customs office is furnished a copy of the VAT return to close their records of the importation.

such cases, the vast majority of VAT audit resources are absorbed in the verification of VAT refunds as a result of the requirement that every claim be audited prior to approval. This preoccupation with the pre-refund audit of all claims leaves very few audit resources available to implement a comprehensive audit program. Even strong tax administrations would typically be unable to provide timely clearance of all refunds in this way.

The strategy recommended by FAD envisages prerefund audits only for first and unusually large refund claims, with emphasis concentrated instead on selective post-refund audits. Claims for refunds in excess of a certain level should be subject to quick, issue-oriented refund audits. New Zealand, for example, assigns each taxpayer a limit below which refunds will be made automatically. However, insofar as they are known to taxpayers, such regularities in audit may facilitate some evasion devices; even dishonest taxpayers, for instance, will ensure that their first refund claim is accurate. “Gold

card” schemes of the kind described above also provide an incentive to acquire a reputation for honest dealing, and then abuse it. This is clearly an area where all risks of fraud cannot be entirely eliminated—the success of any audit and refund programs depends on the capacity of the tax administration to adapt its methods and procedures to taxpayers’ changes of behavior (that is, they depend, ultimately, on the good judgment of experienced, skilled auditors).

To limit the risks of abuse, any refund system that limits pre-refund audits to a few cases—those with the highest risks for tax revenue—needs to be complemented by an effective audit program. This program needs to have a broad coverage and to include taxpayers for whom the refunds are usually processed without prerefund verifications. Information collected during these audits, especially data on refunds that were processed without pre-refund audits, are critical to updating taxpayers’ profiles and the criteria used for the processing of refunds.

Removing input tax on those likely to have excess credits. An alternative strategy is to remove the need for refunds altogether by eliminating tax on the inputs of enterprises most likely to run up excess credits. As mentioned above:

- Certain countries effectively zero-rate supplies to exporters. In Ireland, for instance, those who export more than 75 percent of their output can obtain an authorization that enables their suppliers not to charge VAT. In Korea, those who supply exporters (referred to as “indirect exporters”) are zero-rated in respect of selected transactions if they can produce an authorized letter of credit relating to the final export.
- A number of transition economies and some developing countries exempt from VAT the import of foreign capital equipment, at least by foreign investors. This precludes ensuring that the VAT is collected at the easiest point, import, but, in principle, achieves the same substantive result (assuming output tax is charged appropriately by the investor on later sales) as imposing the tax at the border, and crediting it and refunding excess credits in a timely manner.¹⁴³

These devices, however, do break the VAT chain, and so significantly increase the complexity of the VAT, and, eventually, expose revenue to major risks.

¹⁴³In cases where the investment is in a start-up or rapidly expanding enterprise, exemption for imported capital goods would even give a tax incentive to import rather than purchase domestically.

- If supplies to exporters are zero-rated, it becomes necessary to ensure that final output is not diverted to the domestic market tax-free. Moreover, if indirect exporters consequently find themselves in an excess credit position, the problem is merely shifted back one stage perhaps to even more enterprises, and ones typically harder to control. In Korea, extending the logic of effectively zero-rating indirect exporters has led to similar zero-rating, in some circumstances, for the second or third preexport stage, complicating control problems still further: indeed it has been suggested that these provisions underlie the high ratio of refunds to net receipts in Korea.
- If exemption on capital purchases is to be granted only to foreign investors, it becomes necessary to guard against fraudulent shell corporations set up offshore by domestic persons to take advantage of the exemption. Breaking the chain in this way can also distort economic activity: exemption for capital goods imported by established foreign producers, for instance, distorts the system by lowering costs in those instances, relative to the use of domestically manufactured capital equipment, and relative to domestic owners. Extension of such import exemptions to eliminate the competitive distortion, or exemptions for all capital equipment purchases, simply extends the opportunities for fraud and abuse.

When tax administration is weak, breaking the chain in these ways is likely to be unduly risky. And when it is not weak, breaking the chain is unnecessary.

Conclusions

The refund system is one of the principal pressure points in the administration of the invoice-credit VAT. This is obviously an area in which tax policy advice has been strongly influenced by tax administration constraints over the past years, recognizing that implementation of best practices, including immediate refund of all VAT excess credits, was simply not possible in countries with weak administrative capacities.

In many developing and transition countries, the lack of effective audit programs is certainly a main factor explaining the difficulties faced in implementing sound collection procedures and effective refund systems, based on self-assessment principles. During the early part of the renewed spread of the VAT over the past ten years, it seems that technical assistance recommendations have been rather successful in dealing with the risks of weak collection procedures, especially when effective debt collection systems have been imple-

mented for large taxpayers in an LTU. However, during the same period, it may be that the capacity of tax administrations to develop effective audit programs and, hence, to provide timely refunds without inviting excessive abuses has been overestimated.

In recent years, however, audit issues and refund problems have become a major concern in technical assistance work and this can be expected to continue. FAD's current strategy to improve the operation of refunds is to limit entitlement to refunds, by ensuring prompt refunds to exporters (and, more recently, to enterprises importing large amounts of capital goods), while imposing some delays on others. This, however, does compromise the basic nature of the VAT, which requires that all excess credits be refunded without loss of value in order to avoid competitive distortion.

As discussed in Chapter 14, future improvements in current refund practices are subject to the development of appropriate audit strategies: better audit selection and methods, better coordination of income tax, VAT, and customs operations, increased training of auditors, and stronger tax administration management and supervision. However, this is an area in which achieving decisive progress is difficult, and refunds are likely to be a continuing concern in some developing countries and transition economies for some time. The difficulty of dealing with refunds has proved, to some degree, the Achilles' heel of the VAT.

16 Small Countries and the VAT

The past decade has seen the adoption of the VAT by a number of countries that—in terms of population—would generally be regarded as small. Even more strikingly, it was seen in Chapter 1 that many of the countries still without a VAT are also small. The suitability of the VAT for small countries, and small islands in particular, is an issue that arises with increasing frequency. Does country size matter in assessing the advisability of adopting a VAT?

Background

Table 16.1 lists the 36 small countries that currently have a VAT, with “small” for this purpose being defined as a population of under five million. All but seven of these adopted the VAT since 1989. The list includes, moreover, seven small island economies¹⁴⁴ whose distinctive character may give rise to distinct concerns: no such economy had a VAT prior to 1989.

The average population of those countries without a VAT—excluding India and the United States (both exceptional cases)—is 7.6 million, compared to an average of 38.3 million for those countries with a VAT. Over a quarter of the countries without a VAT, moreover, are small island economies.

Performance of the VAT in Small Countries

The final column of Table 16.1 reports the C-efficiency ratios¹⁴⁵ of the VATs implemented in small countries. They are strikingly high. Indeed, at 65 per-

¹⁴⁴Recall from Chapter 1 that these are defined here as islands with populations under 1 million, plus San Marino.

¹⁴⁵As defined and discussed in Chapter 4.

Table 16.1. Small Countries with a VAT

Country and Date of Introduction of VAT	Population (millions)	C-efficiency ¹
Albania (1996)	3.5	71.3
Armenia (1992)	3.8	29.0
Barbados (1997)	0.3	101.1
Belize (1996) ²	0.2	56.2
Congo Republic (1997)	2.5	11.7
Costa Rica (1975)	3.7	87.4
Croatia (1998)	4.8	111.4
Cyprus (1992)	0.6	100.1
Estonia (1992)	1.5	79.7
Fiji (1992)	0.8	84.1
Gabon (1995)	1.4	74.9
Iceland (1990)	0.3	64.8
Ireland (1972)	3.6	66.2
Jamaica (1991)	2.5	83.5
Kyrgyz (1992)	4.8	...
Latvia (1992)	2.6	69.0
Lithuania (1994)	3.8	58.9
Luxembourg (1970)	0.4	82.9
Malta (1995 and 1999) ³	0.4	67.0
Mauritania (1995)	2.6	46.2
Mauritius (1998)	1.1	...
Moldova (1992)	4.5	71.0
Mongolia (1993)	2.4	...
New Zealand (1986)	3.6	103.2
Nicaragua (1975)	4.8	34.6
Norway (1970)	4.4	78.8
Panama (1977)	2.7	67.3
Papua New Guinea (1999)	4.4	...
Samoa (1994)	0.2	...
Singapore (1994)	3.0	107.9
Slovenia (1999)	2.0	...
Togo (1995)	4.1	31.8
Trinidad and Tobago (1990)	1.4	46.8
Turkmenistan (1992)	4.1	...
Uruguay (1968)	3.2	50.9
Vanuatu (1998)	0.2	...

Source: IMF staff calculations.

¹Ratio of VAT revenues to private consumption divided by the standard rate: see Chapter 4. Figures are those available to IMF staff in February 2000.

²VAT abolished in 1999.

³C-efficiency is for 1995.

Box 16.1. Malta and the VAT

Malta introduced a VAT in January 1995. Initial performance was strong, the VAT raising revenue of about 6.8 percent of GDP and having C-efficiency of around 73 percent.

In December 1996 a new government, committed to repealing the VAT, came to power. As noted in the White Paper *For a Better Tax System* (January 1997), three main criticisms were leveled at the VAT:

- “The reality of VAT in a state like Malta is that much of it is a disguised customs duty” (paragraph 2.7). It was argued that a return to explicit tariffs would be superior, recognizing that “. . . in the particular geographic and economic situation of Malta, customs duties need not be replaced by VAT. . . to ensure a nondiscriminatory system” (paragraph 2.8).
- Compliance costs were perceived to be high, especially for medium-sized enterprises.
- The quite extensive zero rating of domestic consumption, including food other than catering, introduced considerable complexity.

On the first of these, Malta is indeed one of the few countries in which imports exceed consumption, so there is some merit to the argument. In relation to the second criticism, an unusual feature of the initial VAT was a threshold of zero. On the third, widespread zero rating on domestic transactions, of course, is not inherent to small countries.

The VAT was replaced during 1997 by a system relying instead on a broad-based tariff, a single-stage sales tax (the “Excise Tax on Products,” ETP), and selective excises on services. The ETP included crediting and other arrangements to avoid cascading. These replacements were introduced sequentially during 1997, complicating evaluation of the revenue effects of the reform. There seems, however, to have been a noticeable fall in revenue, in the order of 1.5 percent of GDP.

Following a further change of government, the VAT was reintroduced in January 1999 by the party that had initially introduced it. The main structural difference from the initial VAT was an increase in the threshold from zero to, for goods, about \$38,500.

cent, average C-efficiency for these countries is comparable with the highest of any of the regions identified in Table 4.1. The implication is that the VATs in these countries are relatively well designed and well implemented.

Experience with the VAT has inevitably been mixed. Malta, for instance, removed the VAT it introduced in 1995; it was then reintroduced at the start of 1999 (Box 16.1 provides an account of this episode). In other cases, however, such as Barbados, the VAT has been generally seen as a success.

The strong revenue performance of the VAT in these countries is associated with the general observation, developed in Chapter 4, that the performance of the VAT is stronger, all else equal, in economies with a heavier reliance on international trade. As discussed and documented by Alesina and Wacziarg (1998), there is a strong negative correlation between country size and the importance of trade.¹⁴⁶ Thus, small economies tend to rely more on trade and so would be expected to have higher C-efficiency.

The econometrics reported in Table 16.2 explores the relationship between country size and the revenue performance of the VAT more closely. The dependent variable is in each case the (log of the) ratio of VAT revenues to private consumption. The first column reproduces a parsimonious specification from the general discussion of VAT performance in Chapter 4 above (column B of Table 4.2). As discussed there, the importance of trade has a significant positive effect. Interestingly for present purposes, the small island dummy appears with a strong positive effect: even conditional upon their reliance on trade, the VAT performs well in island economies. Column B of Table 16.2 repeats the same specification but with the inverse of population replacing openness. As expected, this enters with a strong positive effect. The small island dummy becomes insignificant, but this may merely reflect that these tend also to have the smallest populations, and so effectively correspond to the higher values of the size variables. In column C, the dependent variable is the ratio of VAT revenues to GDP rather than consumption: efficiency again emerges as higher in smaller economies, with small islands now performing well even controlling for their size.

By the standard criteria, the VAT has thus performed well in small countries, with some sign that it has performed especially well in small islands. The natural interpretation is that the importance of international trade for these economies enables them to collect considerable amounts of VAT on imports, and that the geographical remoteness of small islands insulates the tax base, to some degree, from smuggling. This general strong performance does not imply, however, that the VAT is an especially appropriate tax for these economies. Thus:

- It may be that other taxes would also prove good revenue raisers in these economies. Indeed economies where international trade is important tend to have higher tax yields irrespective of whether they have a VAT or not (as seen in Chapter 4). Given the association between the importance of trade and size, the same will be true of small countries. Moreover, very

¹⁴⁶A simple linear regression for 173 countries gives $\ln(OPEN) = 3.46 - (0.122)\ln(POP)$, with a (White-adjusted) *t*-statistic on the slope coefficient of -4.8 and \bar{R}^2 of 0.14 .

Table 16.2. Size, Importance of Trade, and the Performance of the VAT

	A	B	C
$\ln(SR)$	0.68* (17.58)	0.73* (24.31)	0.55* (21.04)
<i>OPEN</i>	0.006* (2.39)		
<i>IPOP</i>		0.096† (1.81)	0.08* (2.59)
<i>AGE</i>	0.008† (1.84)	0.008† (1.88)	0.009* (2.63)
<i>AF</i>	-0.33* (2.17)	-0.35* (-2.21)	-0.19 (-1.38)
<i>SI</i>	0.34* (3.22)	0.20 (1.35)	0.27* (2.84)
\bar{R}^2	0.31	0.36	0.40
<i>N</i>	89	90	97

Source: IMF staff calculations.

Note: Dependent variable is ratio of VAT revenues to private consumption (in percent) in columns A and B; the ratio of VAT revenues to GDP in column C; *t*-statistics (constructed from White standard errors) shown in parentheses; * indicates significance at 5 percent, † at 10 percent.

small economies may have social structures that facilitate tax enforcement.¹⁴⁷ Finally, the protection against smuggling which may come with remoteness would presumably help secure tariff revenues as much as it does VAT revenues.

- These empirical results relate only to the yield of the VAT. It is also important to look to collection costs, again relative to those of other taxes.

Both considerations point to the need to make comparisons with other taxes. In general, there is no single alternative tax to the VAT. For many small economies, however, leading alternatives include a broad-based tariff and a retail sales tax.

Comparing VAT with a Uniform Tariff

Collection costs aside, it is well-known that for a small economy—here using the term in the technical sense of one unable to affect the world prices at which it trades—an appropriately designed consumption tax (such as, but not only, a VAT) is superior to any system with nonzero tariffs. Even if the object of pol-

¹⁴⁷To the extent, for example, that the tax administration may be able to put pressures on recalcitrant taxpayers by phoning their parents.

icy is simply to maximize revenue, the consumption tax is in this sense intrinsically superior. Intuitively,¹⁴⁸ tariffs mean that private producers face prices that differ from those of world markets, so that their decisions do not lead them to maximize the value of national output at those prices. The country is therefore poorer than it need be. Indeed, it is possible to replace tariffs by consumption taxes in such a way that consumers benefit (as a result of more efficient production) and government revenue simultaneously increases.¹⁴⁹

In practice, however, there are collection costs to be weighed against this gain. To assess the likely balance of effects, it is helpful to consider more closely the consequences of moving from a regime in which only tariffs are deployed to one in which only destination-based consumption taxes are deployed. It is easy to show (see Appendix III) that there are three effects to consider:

- *The change in public revenues.* Since tax and tariff revenues are simply transfers from public to private sector, this revenue effect should be valued at the marginal efficiency cost of raising revenue; that is, the amount by which the social value of \$1 of tax revenue exceeds \$1.
- *The change in the deadweight loss* that arises from distorting the prices that consumers face away from those at which products must be traded on the world market.
- *The gain in production efficiency* from aligning the prices faced by producers with those on world markets. Tariffs on intermediate products, for example, will induce domestic manufacturers to substitute away from those intermediates, implying production techniques which, valued at the world prices that ultimately determine the opportunities open to the economy, are less efficient than they might be.

What do these considerations imply for the suitability of VAT in small countries?

It is always possible to raise at least as much revenue from a consumption tax as from a tariff.¹⁵⁰ With a properly designed reform, the first of these effects

¹⁴⁸For a small economy, maximizing social welfare subject to a revenue constraint requires zero tariffs if destination-based consumption taxes can be deployed. This result is a corollary of the Diamond-Mirrlees (1971) theorem on the desirability of production efficiency (described in Box 2.1).

¹⁴⁹Keen and Ligthart (2001) show that this can be done, in the simplest case, merely by increasing consumption taxes by exactly the same amounts that tariffs are cut.

¹⁵⁰Setting the consumption tax at a rate equal to that of the initial tariff, consumption is unaffected by the switch; but revenue is now collected not only on imports but on all consumption, a base that will be wider to the extent that there is any domestic production.

is thus always positive. How large might it be? This will depend on the rates at which the consumption tax and tariff are set. It will also depend on the size of the respective bases. All else equal, the potential revenue gain in moving from a tariff to a VAT is thus likely to be greater the higher consumption is relative to imports.¹⁵¹ Broadly speaking, one would expect the ratio of consumption to GDP to be independent of country size; the import share, on the other hand, has been seen to be strongly negatively related to size. Thus the ratio of consumption to imports would be expected to increase with size, and this is indeed the case.¹⁵² On this account, the advantage of VAT over a broad-based tariff is indeed likely to be less in smaller economies.

The sign of the second effect is ambiguous: deadweight loss could rise in moving to a consumption tax. Taking as a benchmark the case in which it is desirable to tax all goods at the same rate,¹⁵³ one key consideration will be the breakdown of final consumption between imports and domestically produced items. If much final consumption is imported, then a broad-based tariff will function in large part as a broad-based consumption tax. In so far as small economies would be expected to be relatively undiversified in their production, much of their consumption is likely to be imported. Moreover, much of the consumption that is not imported may be of a kind that either would not in any event likely be subject to VAT, (notably basic agricultural products), or could conveniently be taxed by a well-targeted excise (locally produced alcohol, for instance, or hotel rooms). These observations again suggest that the gains from a VAT will typically be greater in large economies.

The third consideration always tells in favor of the consumption tax, since in a competitive economy eliminating tariffs always increases the value of output at world prices in a competitive economy. The gain is likely to be larger of course, the higher the initial tariffs. This consideration also directs attention to the balance of imports between intermediate and final consumption goods: the greater the share of intermediates in imports, the greater the production inefficiencies induced by the tariff are likely to be. These inefficiencies can be mitigated by duty drawback arrangements (that enable tariffs on intermediates to be reclaimed insofar as they are identifiably used to produce exports)

¹⁵¹While differences in the size of these bases might be addressed by setting different tax rates, higher rates are themselves likely to induce more distortions through the encouragement of evasion and avoidance.

¹⁵²Writing C/M for the ratio of private consumption to imports, one finds for a sample of 156 countries that $\ln(C/M) = 0.44 + (0.18)\ln(\text{POP})$, with (White-adjusted) t -statistic on the slope coefficient of 6.9 and R^2 of 0.25.

¹⁵³As discussed in Chapter 7, this will typically not be fully optimal. Insofar as excises deal with the important deviations from uniformity, the benchmark is nevertheless a natural one.

or by outright exemption of intermediates, albeit at the cost of some revenue both directly and perhaps indirectly through the scope for abuse thereby created. In any event, there seems no particular reason to suppose the composition of imports between final consumption and intermediate items—or, hence, the importance of this third consideration—to vary systematically, one way or the other, with country size. Rather, the variation may be more a matter of the state of a country's development.

On balance, there are grounds for presuming that the gain in moving to a VAT from a broad-based tariff will be less in smaller economies, both because the probable widening of the tax base is likely to be less and because more consumption is likely to be caught, in any event, under the tariff. The basic truth remains, however, that, collection costs aside, the gain is positive: it is better to raise revenue by taxing consumption properly than by distorting trade. Moreover, there may be benefits in putting a VAT in place relatively early in the development process so as provide a solid foundation for future growth.

Thus it can only be collection costs that turn the balance in favor of the tariff strategy. While the collection costs of a VAT were discussed in Chapter 5, the issue for present purposes is how those costs compare, for small economies, with those of collecting tariffs. Unfortunately, there appears to be even less evidence on the costs of collecting tariff revenue than there is on the costs of collecting VAT. It does though seem to be widely supposed that—being collected at a single stage, from a limited number of importers, traditionally heavily reliant on physical verification, and, not least, familiar—tariffs are relatively cheap to administer and comply with.

Fixed collection costs may be a particular concern in small economies. As discussed in Chapter 5, there is strong evidence that there are substantial fixed elements in complying with the VAT, which consequently bears more heavily on smaller firms. Insofar as the average size of firms above the appropriate VAT threshold tends to be smaller in smaller economies—which one might expect to be the case—so collection costs will consequently be more burdensome. Presumably there are fixed components to tariff collection costs too. Their extent, however, is unclear.

In the absence of firm estimates of the likely magnitude of such key quantities as differential collection costs between VAT and tariffs, illustrative calculations can be helpful to give some sense of likely magnitudes. Consider a country thinking of moving from a 10 percent tariff to a 10 percent VAT. Assume that the share of consumption in GDP exceeds that of imports by 20 percentage points, and that under both regimes, half of the base will, for various reasons, be exempt. Assume also that the marginal social value of \$1 of tax rev-

enue is \$1.25. Finally, assume that the efficiency gains from shifting to the VAT will amount to 0.5 percent of GDP. Then shifting to the VAT will be desirable unless its costs of collection exceed those of the tariff by more than 1.75 percent of GDP,¹⁵⁴ which is a large amount. It should be stressed, however, that it may be even more desirable, depending on circumstances to shift the balance not to a VAT but to a simple sales tax combined with excises on a few key commodities.

Conclusions

This discussion points to a number of lessons:

- Size itself does not seem to be a key concern in determining the desirability of a VAT, except insofar as a smaller average size of taxable firms means that collection costs bear more heavily than they would under other taxes. Little is known about the collection costs of, in particular, tariffs, and how these vary with scale.
- The importance of trade in many small countries, and the remoteness of many small island economies, are conducive to the effective functioning of the VAT. But these same advantages are also likely to apply to other taxes, not least to tariffs.
- The advantages of a VAT over a tariff will be greater, all else equal, the lower the share of imports in GDP, the smaller the proportion of consumption that is imported and the larger the share of intermediate goods in imports. The first two of these considerations suggest that the gains from moving to a VAT will indeed be lower in smaller economies.
- Crude calculations suggest, nevertheless, that the collection cost differential would in many cases have to be implausibly large to outweigh the efficiency and base-broadening gains of moving to a VAT.
- When there are few stages in domestic production, the VAT may offer little gain over a retail sales tax or broad-based tariff. As the economy develops, however, the merit of the VAT in preserving the chain of taxation will grow. As a longer-term strategy, the introduction of the VAT may serve a useful role in developing familiarity with the tax.

¹⁵⁴Calculated as the sum of the revenue gain from moving to the VAT (relative to GDP), $(0.1)(0.5)(0.2)$ valued at 1.25 per unit, and the efficiency gain of 0.005.

As regards the best advice for these countries:

- It is appropriate to temper general support for the introduction of a VAT into smaller economies with a note of caution. The gain is likely to be lower in such countries than elsewhere. In some cases, there may be little gain, or even a loss, relative to a broad-based tariff¹⁵⁵ or a retail sales tax.
- It is important clearly to articulate and fully incorporate these considerations into pre-introduction policy analysis.
 - Articulation is especially important, given the general lack of favor with which tariffs are viewed: the point needs to be made that in the absence of domestic production there is no economic difference between a consumption tax and a tariff.
 - There are a few key magnitudes upon which the comparison between tariff and consumption tax turn: the share of imported consumption in total consumption; the share of intermediates in total imports; and the number of stages in domestic consumption. The potential gains from introducing a VAT can be quantified, at least roughly, and it would be useful to do so. Less tangible arguments—such as the wisdom of building a tax system suited for a more sophisticated future—are important, but do not reduce the value of simple calculations.

¹⁵⁵Though, of course, any WTO obligations will need to be met.

17 Interjurisdictional Issues

Some of the deepest design issues for the VAT in the coming years are likely to be those arising from intensifying international economic integration and continued pressures to decentralize tax powers. These issues, which revolve around the interactions between the VATs of different jurisdictions, are the subject of this chapter.

Background

Until recently, there has been widespread agreement on the proper treatment under the VAT of internationally traded goods and services as well as on the proper form of VAT in federal systems.

In order to be a tax on domestic consumption, the VAT must be levied by the destination principle. This means that the total tax paid in relation to a commodity is determined by the rate levied in the jurisdiction of its final sale (as a proxy for the location of consumption); and, moreover, that all the revenue accrues to the government in the jurisdiction where that sale occurs. This is in contrast to the “origin principle,”¹⁵⁶ whose meaning is less clear-cut. As applied to the VAT, we take it to mean that the total tax paid on a commodity reflects the pattern of its origin, in the sense of being the sum of the tax rate in each jurisdiction (in cases where production is spread across several jurisdictions) times the value added there; moreover, the aggregate rev-

¹⁵⁶In the EU, the term origin taxation has come to be used to refer to a system in which tax is collected by the country of origin even if that revenue is later channeled to another jurisdiction. Thus the Commission refers to its clearinghouse system, described later, as an origin system. This is important because of the EU’s long-standing intention (laid down in the preamble to the sixth Directive, issued in 1977) of ultimately “. . . abolishing the imposition of tax on importation and the remission of tax on exportation in trade between member states. . . .”

enues should be distributed in that pattern. The term “origin principle” is sometimes used more loosely, however, simply to indicate that tax is charged on exports and not on imports.

The destination principle is generally implemented by zero-rating exports and bringing imports fully into tax, either at the border, as is typical, or—in an arrangement referred to as “deferred payment” or “postponed accounting”—at the time of the next periodic VAT return of the importer. In this way, commodities move between countries free of VAT and in this sense trade remains undistorted.

In the context of a federal country, the application of the destination principle (as currently implemented) to a lower-level VAT would imply that consumption in different states could be taxed at different rates and interstate trade should be zero-rated. The relative ease of movement between states within a federation, however, may make it difficult to sustain significant interstate tax rate differentials without inviting large scale cross-border shopping. Moreover, the administrative demands of implementing zero-rating at the level of the state are likely large. Consequently, VATs of the kind currently observed may not generally be suitable for deployment by lower-level governments. While the central (“federal”) government may choose to share revenues with the states,¹⁵⁷ conventional wisdom has been that those states should themselves have no control over the rates or base of the tax in their jurisdiction. VAT is a tax for central governments.

The destination principle implemented by zero-rating exports is the international norm. Specifically, the GATT explicitly allows for (but does not require) the refunding of indirect taxes paid in the production of exported goods and the imposition of taxation, at a rate no higher than that applied to domestic goods, on imports. The only exceptions to the generalization that VAT is levied internationally on a destination basis have been found in the treatment of trade within the CIS countries.

The view that VAT is a tax for central government is also apparent in FAD advice. In none of the cases surveyed was it recommended that the VAT be other than a “national tax.” And there have been few examples of lower-level jurisdictions levying independent VATs. Québec in effect operates a VAT of its own (albeit one very similar to the federal GST) as do the states of Brazil.¹⁵⁸ It is noticeable, moreover, that the largest countries still without a VAT—India and the United States—are ones in which the sales tax has been largely the pre-

¹⁵⁷Questions concerning how VAT revenue should be shared lie in the realm of fiscal federalism proper, and are not pursued here.

¹⁵⁸A number of Indian states have also operated systems with similarities to a VAT.

serve of lower-level governments. It seems likely that this reflects both, on the one hand, the political difficulty of preempting states' rights by establishing a federal VAT¹⁵⁹ and, on the other, the technical difficulty of designing state-level VATs that preserve some autonomy to the states.

It seems likely, however, that interjurisdictional issues will loom increasingly large over the coming years. The dual trends toward closer economic integration between countries (not least as a consequence of the Internet) and greater decentralization within countries are likely to both place increasing pressures on current international VAT arrangements and simultaneously increase the reluctance to deny to the lower-level government such an appealing source of revenue as a VAT.

Interjurisdictional issues are already a major VAT concern in the EU. Within the EU, paradoxically, while the VAT is an attractive tax for ensuring undistorted trade between distinct countries—making its adoption a key step toward closer economic integration—it may be a bad tax for application at lower levels of a federation of the kind to which the EU in many respects is converging. Squaring this circle has proved enormously difficult, both intellectually and politically. Thus the EU has yet to agree on a “definitive regime” to replace the current “transitional regime”—at the heart of which is zero-rating between member states—that is argued by the Commission to be inappropriate for a single market of the kind that the Union intends to create. As the EU moves to the next phase of enlargement, with VAT policy in the potential entrants largely dominated by the concern to establish consistency with EU practice, the importance of these issues is set to grow.

The issue is also already prominent in several mature federations. The proper structure of lower-level VATs had long been a concern in Brazil and Canada and is becoming an issue in Argentina. In India too there has long been debate on the prospects for introducing state-level VATs; state-level VATs are planned for 2002, but details are unclear at the time of writing.

In response to the growth in importance of interjurisdictional issues, the last few years have seen important conceptual advances in how these should be addressed under the VAT. These advances call into question some aspects of the conventional wisdom. The rest of this chapter reviews the interjurisdictional issues that arise in connection with the VAT, both between independent countries and across states within a federation. The focus is primarily on the feasibility issues raised by interjurisdictional issues rather than on the desirability of supporting anything other than a national-level VAT.

¹⁵⁹Canada's experience in superimposing a federal VAT on preexisting provincial sales taxes shows, however, that this difficulty is not always insuperable.

Destination Versus Origin-Based Taxation: Issues of Principle

This section considers the nature and wisdom of the presumption that internationally traded goods and services should be handled under the VAT by using a destination rather than an origin-based taxation.

Destination and Origin Principles for VAT

The key difference between the destination and origin principles is in the crediting of input tax in relation to commodities entering trade. Under the destination principle, tax levied at all stages of production must be fully credited as a necessary condition for ensuring that only final consumption is taxed. Under an invoice-credit form of origin taxation, in contrast, exported goods leave a jurisdiction laden with the tax of that country but receive credit in the other country for the hypothetical tax that would have been paid on the value added embodied in the good at the rate of the importing country. In this way the final tax paid on a good is, in principle, the sum of tax paid, at the local rates, on the various components of value added embedded in the final good. Box 17.1 illustrates.

Countries could of course apply different principles to trade with different countries, as in the CIS case discussed later. Moreover, treatment may or may not be reciprocal: trade between countries A and B might be treated on a destination basis in A and on an origin basis in the other. For brevity, however, the focus here is on reciprocal adoption of destination or origin basis on all trades.

Which Principle Is to Be Preferred?

Theory

The key economic difference between destination and origin principles is that the former places all firms competing in a given jurisdiction on an even footing whereas the latter places consumers in different jurisdictions on an even footing. To elaborate:

- In a competitive environment, the destination principle implies that all firms receive the same producer price (that is, the price net of taxes) from selling in any location, irrespective of their country of residence. They will all charge consumers in any jurisdiction the same price if they are to be competitive, and, by the destination principle, they will all pay the same tax. This should lead to “production efficiency” in the sense that producers will all equate their marginal costs to a common producer price, implying that it would be impossible to produce the same total output at lower cost.

Box 17.1. Workings of an Origin-Based VAT: An Example

Suppose that country A exports a good valued at \$100 to country B, where it is used to produce a good that finally sells in B for \$350 (both prices being exclusive of tax). The tax rate in A is 5 percent, in B it is 10 percent. Under the origin principle, country A levies tax of \$5; country B charges output tax of \$35 and gives credit not for the input tax of \$5 actually paid but the \$10 that would have been paid at the rate of country B itself. Total tax paid is thus \$5 in country A (5 percent of the value added there) and \$25 in country B (10 percent of the value added there of \$350–\$100).

- Under the origin principle, in contrast, consumer prices (that is, the price inclusive of tax), adjusted for transport costs, would be equated across jurisdictions: if they were not, all consumers could buy more cheaply from suppliers in one state than another, and the sales of the high price firm would consequently vanish. This leads to “exchange efficiency”: since all consumers face the same prices, all will place the same marginal valuation on all commodities, and it would be impossible to make all better off by re-allocating consumption of the various goods and services between them.

It is possible (though not necessarily optimal) to achieve both production and exchange efficiency under either principle. To achieve this, the tax rate within each country should be the same for all commodities, though that uniform rate may differ across countries. Uniformity means that, within each country, relative producer prices equal relative consumer prices, so that equating one set of relative prices across countries—producer prices under the destination principle, for instance—also equates the other. If, moreover, trade is balanced then this same uniformity condition implies that there is no real difference between the two principles. Both lead to the same real allocation of resources. All that is needed to neutralize the real effect of a switch between destination/origin bases is an appropriate change in the exchange rate (or internal prices). Intuitively, a destination-based tax is a tax on consumption, whereas an origin-based tax is a tax on production. In present value terms, however, these are the same: the nation’s budget constraint means that a flat tax on one is thus equivalent to a flat tax on the other. The argument behind this “equivalence result” is spelt out in Box 17.2.¹⁶⁰

¹⁶⁰The most general equivalence results are in Lockwood, de Meza, and Myles (1994); see also Genser (1996).

This result has played a central part in the literature on interjurisdictional VAT issues. However, it relies on strong assumptions. First, equivalence immediately fails if taxes on different commodities are not uniform within each country—and they are not.¹⁶¹ Second, equivalence applies only if the change of principle affects a trade flow that is in balance. While this may be a reasonable approximation in respect of all trade, at least in an intertemporal sense, in many practical contexts it will not be, so that a change from taxing imports to exports can have significant revenue effects. Third, even if taxes are uniform and trade is balanced in an intertemporal sense, any shift of tax basis may have intergenerational wealth effects that create a real distinction between the two regimes.¹⁶²

It is clear that in practice it is not possible to have both production and exchange efficiency, raising the question of which should be given primacy or whether both should be violated.

The key result is the Diamond and Mirrlees (1971) theorem on the desirability of production efficiency discussed in Chapter 2: if producers are price takers, pure profits can be fully taxed, and governments are unconstrained in their ability to deploy distorting taxes (all of which are restrictive conditions) then any optimal tax structure involves production efficiency. While this may seem to favor destination taxation, in an international settings there are a variety of reasons why the Diamond-Mirrlees theorem is not fully applicable:

- With noncompetitive behavior, origin taxation may in principle be useful in discouraging production by inefficient firms so as to achieve a first-best allocation, though it may not be the best means for doing so.¹⁶³
- Consider the case where a domestic tax reform in one country generates huge potential gains in domestic welfare but also affects world

¹⁶¹It might seem enough (Fratiani and Christie, 1981) that (ad valorem) tax rates be collinear across countries, so that an exchange rate adjustment can move one from a situation in which producer prices are equated across countries (under the destination basis) to one in which consumer prices are equated (as under the origin basis). Unless taxes are fully uniform within each country, however, such a realignment will change the real allocation of resources because it will typically affect tax revenues (Keen and Smith, 1996).

¹⁶²See, for example, Bovenberg (1994).

¹⁶³See Keen and Lahiri (1998). Consider, for example, a situation in which two firms, located in different countries, survive in equilibrium, with one less efficient than the other (but able to survive, nevertheless, behind a price above the competitive level). First best policy is to eliminate the less efficient firm and subsidize the output of the other to the level at which price equals marginal cost. This can be achieved under origin taxation simply by setting a large enough origin tax in the country of the inefficient firm to drive it out of business and an appropriate origin subsidy in the other.

Box 17.2. The Equivalence Result

A very general form of the equivalence result is the claim that:

A unilateral shift between destination and origin taxation need have no effect on the allocation of real resources in any country so long as all commodities are taxed at the same rate within each country and the trade to which the change of basis applies is balanced.

To see this, assume that two countries—the United Kingdom and Germany, say—are initially both on the destination principle. Consider some good that initially has a producer price of £1 in the United Kingdom and €2 in Germany. The tax rate in the United Kingdom is, say, 10 percent and that in Germany 21 percent; consumer prices of the good in question are thus £1.10 in the United Kingdom and €2.42 in Germany. The exchange rate is initially £1 = €2. Thus this commodity has the same real producer price in each country, eliminating any arbitrage possibility under the destination principle.

Imagine that the United Kingdom now shifts to the origin principle (while Germany remains on the destination principle). To see that nothing real need change, imagine that all local currency prices in both Germany and the United Kingdom remain unchanged whilst the exchange rate now adjusts to £1 = €2.2 (calculated by reference to the relative tax rates and initial exchange rate as $(1.21) \times 2 / 1.1$). This eliminates any potential gain from arbitraging between consumer prices in the two countries, since £1.10 in the United Kingdom now translates into €2.42. With prices facing all agents unchanged, and no change in government revenues so long as trade affected by the change of basis is balanced, there need be no real effects of this unilateral change of basis.

The key requirements of this argument are that all traded commodities are taxed at the same rate within any country (otherwise no single exchange rate change can eliminate all arbitrage opportunities created by a change of principle); and trade is balanced (otherwise the shift between taxing imports and exports will affect revenues).

As corollaries, this result implies further equivalencies. Applying the same argument now to Germany, *mutual* change of principle need have no real effects. Nor need the adoption of destination taxation by one country while the other remains on origin taxation.

prices in a way that harms other countries. If the latter countries cannot be compensated by explicit transfers, it may be possible to make all better off through origin-based taxes and subsidies that transfer resources between the countries in ways that actually lower aggregate

efficiency.¹⁶⁴ This is likely to be best achieved, however, by the use of tariffs.

- If countries do not cooperate in tax setting (and so will not reach a fully optimal outcome) the outcome under origin taxation may be superior to that under destination taxation.¹⁶⁵

While the theoretical case for the destination principle is therefore by no means flawless, theory provides little practical guidance on the cases in which origin taxation is advantageous. Since the strengths of destination taxation are evident enough, the conventional presumption in its favor seems well founded.

Moreover, unlike a destination basis, an origin-based VAT raises one problem that is distinct to value-added taxation. Taxing value added in different countries at different rates creates an incentive for multinationals to charge artificially low prices for inputs sold from enterprises in high VAT jurisdictions to low VAT ones.¹⁶⁶ An origin-basis VAT thus runs the risk of inviting transfer-pricing abuses of the kind that have long bedeviled corporate taxation.¹⁶⁷

Administration

Some estimates suggest that the administrative and compliance costs of the border controls associated with destination taxation (taking exports out of tax and bringing imports into tax) can be high. This is sometimes taken to imply a major advantage for origin taxation, the claim being that it would dispense with the border controls otherwise required.¹⁶⁸ In terms of the VAT, however, the argument is not so clear-cut. First, implementation of the destination principle does not in itself require border controls, but can be achieved by postponed accounting.¹⁶⁹ Second, an origin-based VAT does require some mechanism to verify the value of imports (for purposes of calculating the input tax credit).

Potentially a more telling administrative point arises in relation to the treatment of exports. As is discussed in Chapter 15, administering the refunds that commonly arise from the zero-rating of exports has given rise to serious problems in many developing countries. In developed countries too,

¹⁶⁴Keen and Wildasin (2000).

¹⁶⁵Lockwood (1993).

¹⁶⁶A point first noted by Cnossen and Shoup (1987).

¹⁶⁷See Genser and Schultze (1997) for further discussion.

¹⁶⁸For the EU, Cecchini (1988) puts the gain at 1.7 percent of the value of intracommunity trade.

¹⁶⁹The classic statement of the argument is Cnossen and Shoup (1987).

this practice can pose some difficulty. Origin taxation avoids the problem altogether, since exports are taxed just as any other sale. It is conceivable that net liability in the country of import would be negative, requiring in effect some refunds, but this is unlikely to be the norm. This might appear a more substantive advantage of origin taxation. Notice, however, that zero-rating is not inherent in the destination principle itself: it is simply the normal way in which the destination principle is implemented. As we shall see, it is possible to implement the destination principle without zero-rating.

Difficulties in Implementing Destination Taxation

However desirable in principle, problems arise, perhaps increasingly so, in the practical implementation of the destination principle for VAT.

Zero-Rating

As already noted, the usual way of implementing the destination principle for VAT involves zero-rating exports. In the EU, for instance, around EUR 70 billion of goods circulate free of VAT. The possibilities for fraud are evident.

Cross-Border Movement of Goods

If countries tax final consumption items at different rates, consumers will have an incentive to arbitrage international price differences. The most visible way of doing this is by traveling over the border themselves and bringing back (legally or not) tax-paid items. The most striking instances of this relate to excises on readily transported high value items. It has been estimated, for instance, that in 1986 about one quarter of all spirits drunk in the Republic of Ireland were bought in Northern Ireland.¹⁷⁰ Cross-border shopping of this magnitude may itself put pressure on tax rates. Thus, the United Kingdom government has explicitly used the prospect of enhanced cross-border shopping into other member states as a reason for not raising taxes on spirits; and cross-border difficulties with the United States underlay the substantial cut in Canadian cigarette taxes in the early 1990s. Cross-border differences in VAT rates applied to low value items are likely to prove less problematic, though experience on the border between Denmark and Germany—where the differential in VAT rates is in the order of 9 percentage points—is a reminder that significant difficulties can arise.

¹⁷⁰Fitzgerald and others (1988).

Physical border controls provide the potential to check that border-crossing commodities are taxed appropriately. As economic integration deepens, however, the pressure to dispense with such formalities grows. The removal of border frontiers, which is a key ingredient in integration programs in the EU, for example, and potentially in other regional groupings too, implies that direct purchases by consumers may be harder to monitor. Some specific options exist. For example, registration requirements may be used to control evasion of tax on big-ticket items, such as motor vehicles.

International Services

Services, almost by definition, are intangible.¹⁷¹ In many cases it is hard to monitor, or even to define, the place of supply: if a United Kingdom-based consultancy provides advice used by a firm based in Germany, is the service supplied in the United Kingdom or in Germany? Broadly, there are two possible ways of addressing the difficulties posed by international services:

- Deem the jurisdiction of supply to be that in which the supplier is resident and do not zero-rate the export of services (to avoid fraud through hard-to-check claims of exported services). Traders registered in other states may then reclaim tax paid in the deemed country of supply directly from the authorities of that country, a process that is presumably less vulnerable to fraud than outright zero-rating.
- Focusing on those services, such as advertising, consulting services, etc., which are preponderantly purchased by businesses, and, accordingly, less likely to be subject to fraud, the alternative is to deem the jurisdiction in which supply occurs to be that in which the customer is resident and place the payment obligation on that purchases: a practice known as *reverse charging*. The input tax to which the purchaser is liable will often be immediately credited against output tax liability.

In the EU, for instance, the default treatment is taxation by reference to the location of the supplier. For a positive list of important items, however, including much consulting and most financial services, reverse charging applies.

In relation to border-crossing services used as business inputs, both approaches ultimately have the same effect, in principle, as zero-rating exports, and are thus consistent with the destination principle. Under the first approach, however, considerable practical problems can arise in implementing

¹⁷¹Practice varies, but “goods” are commonly defined in terms of tangibility and “services” then as all that remains (except, perhaps, land): see Williams (1996), pp. 184–88.

the required cross-border refund claims. In the EU, for instance, procedures for traders in one member state to claim refunds from authorities of other member states are widely perceived as working badly.¹⁷² Difficulties may also arise when traders located in jurisdictions in which no VAT is payable are able to sell services into foreign markets tax-free. A prominent example is the increasingly important one of telecom services, which may be diverted to low tax jurisdictions if tax is based on the seller's location.

For purchases by the final consumer, the first approach means, in effect, origin taxation; and the latter—reverse charging—is likely to mean that no tax is paid, since it will be hard to persuade exempt persons to volunteer the tax due. The destination principle is thus hard to apply to border-crossing services used by final consumers. For many items, the issue will have little quantitative significance. In some cases, however, the potential distortion associated with origin taxation of services can be considerable: tourists' choice of resort, for instance, may be affected by the taxes faced there. In such cases there is evidently scope for mutually damaging competition for mobile tax base.

Electronic Commerce

The tax implications of the Internet have been much discussed but, as yet, little felt (outside, perhaps, the United States). Moreover, much of the discussion is speculative, reflecting the substantial uncertainty concerning future technology. But the key issues that arise in relation to VAT are fairly clear,¹⁷³ as is the fact that other taxes will also be affected, perhaps even more profoundly. The most troublesome of these relate to transactions that cross-jurisdictional boundaries. The essence of the Internet is to reduce the costs of communication and blur conventional notions of location.

A key distinction is that between commodities that are delivered over the Internet and those that are ordered over the Internet but delivered by traditional means.

As regards the latter, established administrative procedures that are conceptually structured around traditional delivery methods, whether through the physical checking of imports or, more important, through invoices, continue to be applicable. Where internal controls are weak, as in most federal sys-

¹⁷²The European Commission (1998) proposed that refund claims be made to the jurisdiction in which the purchaser is registered rather than the jurisdiction of the supplier.

¹⁷³We do not discuss issues related to the corporate tax, though there are clearly links with those affecting VAT, a key issue in each case being how to establish tax nexus in the circumstances of the new technologies.

tems and the EU, the effect of Internet commerce is akin to a dramatic reduction in the transactions costs associated with mail order. In this sense, the Internet does not create qualitatively new problems for the VAT; they are, however, likely to become much more intense.

These problems had not been satisfactorily resolved even before the advent of the Internet. Mail order transactions have been a source of continuing difficulty in the United States¹⁷⁴ and increasingly problematic in the EU. Policy in the EU is to require distance sellers to charge and forward tax according to the residence state of the purchaser once their sales to that jurisdiction exceed some threshold level. Enforcement is by no means easy, however, and may become more costly with the Internet and the enhanced possibility of artificial splitting of companies to bring each below the threshold. Nor is it clear that the tax authorities in one member state have the proper incentive to ensure that firms in their jurisdiction collect taxes on behalf of another state.

The delivery of products over the Internet (music and videos being the archetypal example) raises qualitatively more novel issues. Such commodities should in principle be subject to VAT like any other. In particular, there is no evident reason why digital delivery should itself be proper object for differential treatment.

Two difficulties arise, however, with enforcing taxes on this type of commerce. The first is how to identify that a transaction has occurred. The difficulty of intercepting delivery makes this especially difficult when the supplier has no formal establishment within the jurisdiction in which consumption occurs; and the technology makes it easy to do business without one. The second difficulty is that even a well-intentioned seller may be unable to verify the tax status or physical location of the purchaser, and may thus be unable to charge the appropriate destination tax. With traditional delivery, there is at least a billing or delivery address as a guide; this need not be so with digital delivery.

Faced with the realization that existing solutions for handling international trade in services, two main policy responses come to mind, neither satisfactory.

One suggestion is to “level the playing field” for domestic producers by setting low tax rates in items subject to such competition. In the extreme case, it has been suggested that the EU zero-rate the supply of any service threatened by competition from the rest of the world.¹⁷⁵ Clearly, this proposal is tantamount to an admission of defeat.

¹⁷⁴Described and discussed in McLure (1999).

¹⁷⁵Kortenaar and Spanjersberg (1999).

An alternative is to require that firms supplying into a market register there for VAT purposes even if they do not have, in the traditional sense, a fixed presence there. Thus, the EU has required overseas telecom suppliers to register for VAT in any member states in which they supply to private consumers,¹⁷⁶ and the European Commission (1999) proposed amending the definition of place of supply so as to bring this about more generally. The concern with this strategy is simply its enforceability. Some degree of information sharing with foreign countries is likely to be needed; and such agreements have not proved easy to establish in other areas of tax policy, notably those touched by bank secrecy. Indeed the technology is such that it may simply not be feasible for the best-intentioned authorities to identify a seller's true location.

Further issues arise even if traders do register in countries that they sell into. For example, the current treatment of services within the EU already poses problems. Viewing the place of supply as the location of the supplier gives rise to practical problems as businesses are required to claim refunds from the tax administration of the supplier's residence; and reverse charging creates difficulties when the location of the purchaser is flexible or, as will increasingly be the case, readily concealed. The difficulty of reverse charging may be least for business purchases, and with this in mind, the European Commission (1999) and OECD (2001) proposed taxing services delivered over the Internet by reverse charge for purchases by business. Since reverse charging is impractical for sales to final consumers, the European Commission and OECD recommended charging these by location of the buyer; which entails the difficulties just mentioned. This scheme requires, of course, that sellers be able to distinguish between registered and unregistered traders in their online dealings, and moreover, that they be able to identify the location of unregistered purchasers.

Implementing Destination-Based VAT Without Zero-Rating

It is clear that it is becoming increasingly hard to apply the VAT on a destination basis. If, for the reasons stated above, destination taxation is to be preferred in principle, the question is whether steps can be taken to protect the destination basis of the VAT. Any answer to this question will also help address the increasingly important issue of how to apply VAT at lower level governments within federal systems. To elaborate, consider a group of jurisdictions ("member states") that have joined in a federation, which may have a strong

¹⁷⁶The treatment of telecoms is discussed in Ogley (1997, 1998) and Rainer and Claeys (1997).

federal presence, as say in Brazil, or a weak one, as in the EU. Assume that these lower-level jurisdictions wish to implement distinct destination-based VATs but also wish to foster closer integration between themselves and exercise some autonomy in the application of their VATs. This will raise the inter-jurisdictional issues discussed above. While one response could be to coordinate in setting the VAT rates in the jurisdictions—a response that in the limit is akin to full centralization of the VAT—the interesting case is that of determining the measures that will preserve as much autonomy in tax setting at the lower levels as possible.

Much of the discussion of interjurisdictional VAT issues has focused on trade in goods between traders registered in different jurisdictions within the federation. While the usual way of implementing the destination principle is by zero-rating, the destination principle itself bears only on the final tax on a product, not on the way in which the tax is cumulated along the way. That is, zero-rating of exports is not logically inherent in the destination taxation. Thus, the key concern in relation to these trades has been to find some way of dispensing with zero-rating, thereby bolstering revenue by maintaining the VAT chain through all stages of production and distribution, while ensuring that the tax ultimately paid is that of the county in which consumption occurs, and that all revenue continues to accrue there. A further concern is to alleviate some of the complications of compliance that traders face in having to treat differently sales within their own jurisdiction and sales to other states in the federation. In the EU, indeed, the “elimination of any distinction between domestic and intracommunity transactions”¹⁷⁷ has been a primary objective in itself.

There have been three main proposals:¹⁷⁸

Clearinghouse

One possibility is for traders in each member state to treat exports to other member states exactly as they do sales within their own jurisdiction. Registered importers in those other states, however, would be entitled to reclaim from their own authorities the tax charged on their inputs. The member states would then settle up the net claims amongst themselves. Thus goods would ultimately be taxed at the rate of, and revenues would finally accrue to, the member state of final consumption. This is as the destination principle requires.

As originally envisaged by the European Commission (1986), net amounts for clearing would be calculated on the basis of the invoices for

¹⁷⁷European Commission (1996, p. 14).

¹⁷⁸A further alternative, recently proposed by Satya Poddar, is for goods to be released for export once confirmation has been received of payment of import VAT by the importer.

Box 17.3. VAT Clearing Between Israel and the West Bank and Gaza Strip

Israel and the West Bank and Gaza strip (WBG) have a common VAT. There is a provision for a small variation in rates between them, but this has not in practice been used. Transactions between Israel and WBG are not zero-rated, but instead fully taxable. Revenues are then reallocated between the two on the basis of individual invoices.

There is no central clearinghouse. Instead, each jurisdiction receives invoices that enable it to calculate the net flow due. Any sale by an Israeli trader to a Palestinian buyer is recorded on a special invoice coded 'I' and conversely, a sale by a Palestinian to an Israeli on an invoice coded 'P'. Each month, the Palestinian administration reports the total amount of tax reported on I invoices—that is, its view on how much tax paid by Palestinians has been collected by Israel—and the Israeli administration, conversely, enters the amount collected on P. The net claim is then settled, with each jurisdiction able (since each receives all such invoices) to check the claim of the other.

each border-crossing transaction. Such a system is indeed now in operation between Israel and the West Bank and Gaza strip (as described in Box 17.3), and appears to have worked well.

Clearing on the basis of individual transactions was deemed too cumbersome for the EU, and the prospect encountered a reluctance to strengthen the central bureaucracy. More fundamentally, such a system does not provide proper incentives for the proper verification and collection of tax on border-crossing trades.¹⁷⁹ A national tax administration will have little incentive, for instance, to probe its importers' claims for refund of input tax on imports if the cost of those refunds will simply be passed on to another member state.

In its more recent proposal, the European Commission (1996) suggested instead that clearing be on the basis of independent estimates of consumption in the various member states.¹⁸⁰ This, though, runs into even greater incentive problems: if revenue ultimately received depends only on the nominal tax rate structure and an estimate of the base, there is no incentive to collect revenue

¹⁷⁹See the discussion in Lee, Pearson, and Smith (1988).

¹⁸⁰In its less widely noted proposal concerning the recovery of input tax charged in other member states, the European Commission (1998) envisages replacing the current system, which requires traders to approach the authorities in the jurisdiction in which tax was charged, by a form of clearing between national authorities (traders then dealing only with their own authorities), and, moreover, a form of clearing based on invoices.

at all. Even if the total revenue to be allocated across all member states were to be restricted to the aggregate collected, incentives to collect would be considerably diminished by the prospect of sharing them with other member states.

CVAT

A more recent proposal, originating with Varsano (1999) and developed further by McLure (1999, 2000), preserves the zero-rating of sales between the states but protects the VAT chain by instead charging a “compensating VAT” (CVAT) on sales between them. This tax would be fully creditable to the importer, so that no jurisdiction would collect any net revenue from the tax on interstate sales to registered traders (though they would, in the McLure version, collect CVAT on sales to final consumers and unregistered traders). Exports to the rest of the world would be zero-rated, as under the usual arrangements. Again, therefore, the final outcome is as the destination principle requires.

It is envisaged that administration of the CVAT would be wound into that of a federal VAT. That is, CVAT would be paid to the federal government and then credited by the importer against federal output tax due (and, if necessary, refunded by the federal government).

If it is to avoid the collection difficulties associated with a clearinghouse, the CVAT requires, at the least, the existence of a central administration to collect and refund the tax. While this clearly exists in a number of federal settings, in others it evidently does not. In the EU, in particular, creation of a new central bureaucracy would likely prove politically difficult. Moreover, CVAT preserves an asymmetry in the treatment that sellers must provide to those within the federation for purposes of the state VAT: buyers in the same state as the seller are charged output tax at the rate of that state; those in other member states are charged the CVAT.

VIVAT

A third alternative, the ‘VIVAT’¹⁸¹ is to charge tax at a common rate on all transactions between registered traders within the federation, including those that cross internal borders. Sales to final consumers (including exempt businesses) would then be taxed at the rate of the jurisdiction in which the supplier is located (subject, perhaps, to standard restrictions on distance selling and the like

¹⁸¹The “viable integrated VAT” proposed by Keen and Smith (1996) in the context of the EU debate on VAT. Keen (2000) provides a detailed comparison between CVAT and VIVAT. See also the symposium on sub-national VAT in *International Tax and Public Finance*, with contributions from Bird and Gendron (2000), Keen and Smith (2000) and McLure (2000).

currently in place in the EU). The outcome is again just as the destination principle requires. The scheme, moreover, preserves the VAT chain on internal trade and also ensures that sellers extend the same treatment to all traders within the federation, irrespective of the particular state in which they are located.

VIVAT does create a new asymmetry in compliance requirements. Traders would need to treat sales to other traders differently from trades to final consumers (charging the former at the common intermediate rate and the latter at the country-specific final rate). This distinction by type of buyer is not normally required under the VAT. How big a burden it would prove is not entirely clear. The distinction is already familiar, for instance, under retail sales taxes. Moreover, current VAT arrangements within the EU already require traders to divide their customers in other member states into registered and unregistered traders (zero-rating only sales to the former). Recent observations by the European Commission (1999) in relation to the Internet even anticipate the possibility of verifying purchasers' tax identity instantaneously in online transactions.

As with the CVAT, the VIVAT works best if there is an overarching federal VAT, or, more generally, some federal administration within which all the costs and benefits of revenue collection can be internalized. It might simply be administered, for example, as a withholding tax on all transactions between registered traders levied at a rate equal to the common rate on intermediate transactions. The states would then levy, in effect, a single stage tax at the time of final sale. This would, however, differ from a simple retail sales tax in being supported by all the benefits associated with the multistage collection of the VAT.

A couple of general points can be made about all three schemes. First, all three are much easier to implement if there is a substantial federal presence to facilitate the proper collection of taxes on trade across internal frontiers. Recent developments have indeed made it clear that, in the presence of a federal VAT, it should not be too difficult to dispense with zero-rating of interstate trades for purposes of a lower-level VAT. Doing so in the absence of an overarching federal administration, however, looks problematic.

Second, the focus, at least implicitly, has been on the treatment of physical goods, assuming the ultimate possibility of enforcement through monitoring the movement of commodities. As indicated in the previous section, services that are traded across borders are far harder to intercept: and here the Internet will be especially keenly felt.

Would the three schemes discussed above permit further progress in this difficult area? Under a smoothly functioning clearinghouse system, suppliers

could charge tax at the rate of their location and business purchasers obtain refunds relatively straightforwardly through their own local tax administration. Under VIVAT, the supplier could simply charge all business purchasers the intermediate rate, irrespective of their location. Indeed, the distinction between registered and unregistered traders that is needed to implement the system advocated by the European Commission and the OECD—and which the latter suggests is feasible to implement in real time for online transactions—is precisely the distinction needed to implement VIVAT more generally.

Ultimately the most perplexing difficulty is thus that of bringing operators located outside the federation into the tax net. Some degree of international coordination may ultimately prove indispensable.

Experience

This subsection considers two cases in which interjurisdictional aspects of the VAT have proved crucial.

Commonwealth of Independent States (CIS)

The former members of the Soviet Union all adopted VATs based on legislation enacted by the Supreme Soviet shortly before the dissolution of the union in December 1991. The form adopted diverged in several ways from that normally prescribed for the VAT.¹⁸² Most of the successor states adopted a “restricted origin” system under which trade among themselves was on an origin basis¹⁸³—exports to other CIS countries taxed, imports from other CIS countries taxed but with a credit at the rate of the importing country—while trade with the rest of the world was on a destination principle.

For its part FAD has consistently pressed, both in its bilateral advice and in multilateral forums, for the application of the destination principle to trade within the region. Moreover, it was this setting that demonstrated that implementing the origin principle for VAT is far from simple. The requirement for origin-based taxation that imports be valued (in order to apply the proper credit in the importing country) makes origin taxation far less straightforward for VAT than it would be for excises. Destination taxation

¹⁸²Summers and Sunley (1995) describe the difficulties with VAT in the CIS.

¹⁸³This is a generalization, as treatment was by no means uniform (Baer, Summers, and Sunley, 1996). From early on, Ukraine applied the destination principle to all its trade. Some others give credit on imports from other CIS countries at the rate of the exporting country: the aggregate tax collected would thus be as under the destination principle, but its allocation in line with value added in the two countries.

for trade with the rest of the world also raised problems in the CIS: the refunds required on exports outside the region were rarely forthcoming.¹⁸⁴

Two main considerations seem to explain the delay in moving to destination taxation internally. One is the perceived difficulty of implementing the destination principle without strong internal border controls between the CIS countries. While the EU experience indicates that it is feasible to do so by postponed accounting, the absence of previous experience with the VAT in the CIS was clearly a restraining feature. Second, moving internal trade from an origin to a destination basis would potentially imply substantial transfers of revenue from those countries running a surplus in their trade with other CIS members to those running a deficit. While the data are by no means clear-cut, it seems that Russia has run a significant surplus with other CIS countries, and so stands to lose from adoption of the destination principle internally. Baer, Summers, and Sunley (1996) estimate an annual revenue loss to Russia, on 1993 data, of \$1 billion.

Progress has nevertheless been made toward the adoption of the destination principle within the region. A number of CIS countries did so unilaterally, other did so on a bilateral basis, resulting on something of a patchwork. The expectation has been that there will be a general move to destination taxation once Russia moves. And in July 2001 Russia did indeed adopt the destination principle for its (non-energy) trade with other CIS countries, initiating a potentially major reform process for the region.

Brazil

Brazil has long been of particular interest to students of VAT.¹⁸⁵ For many years, the country was unique in two respects: in having a VAT levied by lower-level jurisdictions (the “ICMS”); and, moreover, in having the tax levied on something akin to origin basis. The experience has been cited in support of the conventional wisdom (in favor of the destination principle) as “. . . a horrible example that proved the point” (Bird, 1999).

The ICMS has the feature that, while states choose the rate applied to intrastate sales, a common rate is imposed on trade between states (currently 12 percent, reduced to 7 percent for sales to poorer states). This tax on interstate sales is fully creditable in, and at the expense of, the importing state. Note that this is *not* the origin principle as defined above: because the tax on interstate sales is fully credited, the total tax payable on the production and sale of any

¹⁸⁴Summers and Sunley (1995).

¹⁸⁵See Guerard (1973). A more recent detailed account is also provided by Longo (1991).

goods is dictated solely by the rate of tax in the state of final consumption, as under the destination principle.¹⁸⁶ While the Brazilian scheme thus implies the same overall liability as under the destination principle, the allocation of that sum is quite different. The exporting state receives revenue equal to the product of the interstate rate and the value added there; the importing state collects the amount by which the tax collected on final sales at its own rate exceeds the amount retained by the exporting state.

There have been proposals to implement a federal VAT, revenue from which would be shared with the states, and replace the ICMS with state level retail sales taxes. This implies, however, that the advantages of a VAT over a retail sales tax are lost at the state level. The recent developments described above, however, suggest that this need not be the case. The CVAT, for instance, in principle enables destination-based VATs to coexist at both levels of government. Indeed, the scheme was originally proposed precisely with Brazil in mind (Varsano, 1999). VIVAT too has close similarities with the scheme just mentioned: structurally, VIVAT is equivalent to a federal VAT levied at the intermediate rate and state-level RSTs at rates equal to the excess of the state VAT rate over the intermediate rate.

Conclusions

Four lessons stand out:

- Interjurisdictional issues are likely to loom increasingly large. In large federations, the desire to allocate genuine VAT powers to state level can be expected to strengthen. As several transition countries move closer to membership of the EU, so the difficulties that have arisen within the EU will affect those countries too.
- The presumption in favor of the destination principle, though it would not pass uncontested, is broadly consistent with the professional consensus.
- The destination principle, as usually implemented, comes at a cost that is often overlooked. As emphasized in Chapter 15, one of the themes of this report is that the processing of refunds in relation to exports is one of the most problematic features of the VAT in developing countries; and it is precisely the usual way of implementing the destination principle that creates the need for such refunds.

¹⁸⁶Recall that origin taxation for the VAT, as defined here, requires the importing state to give credit not for tax actually paid but for the hypothetical amount that would be paid at the rate of that state.

- Implementing the destination principle is likely to become increasingly difficult as economic integration proceeds, not least because of the increasing importance of e-commerce. Doing so may require imaginative thought. Recent proposals that dispense with zero-rating of exports hold out some prospect of progress, though thorny problems remain: including, not least those from the provision of intangible services by those with no physical presence in the jurisdiction of consumption. Some form of international coordination may ultimately be required.

18 What Next for the VAT?

The VAT is now a commonplace of tax systems around the world. What of its future? Will this also be commonplace—or are its scope, nature, and role set for further major change?

The safest prediction is that the spread of the VAT will continue. Indeed, several countries have already announced their intention to introduce a VAT and are in the process of doing so. While the United States remains the most prominent outlier, with no immediate prospect of a federal VAT being introduced there, there also remain many countries in Africa and the Middle East with no VAT. The particular issues associated with small and often island economies—the central question (discussed in Chapter 16) being whether a VAT extended to retail level offers much advantage over a mix of tariffs and excises—is likely to arise with increasing frequency.

One lesson of experience, however, is that, to a greater extent than has often been recognized, the work needed to put an effective VAT in place does not stop with its formal introduction. The difficulties in establishing proper audit capacity and effective refund systems (Chapters 14 and 15), for instance, may only become apparent after some months of operation of the tax (indeed it is not unknown for a strong initial revenue performance to reflect in part underpayment of refunds). These are deep-seated difficulties, and can require a sustained effort to overcome.

The nature of “best-practice” within the VAT is also likely to change, reflecting wider developments in the structure of economic activity and policy, and intellectual advances. As the trends toward decentralization within nation states and the formation of regional trading blocs continue, for instance, so the search for ways of implementing lower-level VATs without zero-rating interstate trade (Chapter 17) will intensify. And as the financial sector continues to grow in importance, so pressure will increase to find a

better way of taxing financial services than by the exemption now normal (Chapter 8).

More generally, indeed, the damage done by current widespread exemptions—both the commonplace exemptions generally prescribed and nonstandard ones adopted in particular countries—is likely to become increasingly apparent: they take the VAT away from being a broad-based tax on consumption just as much as does outright rate differentiation; indeed exemptions are in a sense even more damaging, being far less transparent in their design and effects. Thus the battle against exemptions is likely to intensify. This will require improvements in administrative capacity, whose weakness in some cases underlies the choice to exempt. It requires new thinking, as described here in relation to both financial services and the treatment of the public sector (Chapter 8). It touches too, moreover, on deeper questions as to the proper role of the state in providing below market value (perhaps free) what are essentially private goods (ones, that is, for which a price could be charged)—notably health care and education—and doing so whilst essentially the same items are provided by private enterprises. For the proper tax treatment of such items is intimately tied to the competitive relation between public and private sector in the provision of such services.

A still deeper set of issues, likely to loom more prominently in the years ahead, concern the relationship between the VAT and income tax. These arise at a variety of levels.

In terms of tax administration, the VAT has often been seen as a catalyst for wider reform, laying a groundwork that can subsequently be used, in particular, for the development of a more effective income tax. Restructured organizations (Chapter 12), the development of self-assessment (Chapter 13), and the enhancement of audit capacity (Chapter 14) are all prerequisites for income tax systems, especially at personal level, that overcome the severe limitations which many developing countries encounter in this area.

In structural terms too, the links between the VAT and income tax raise deep issues, and ones that have as yet received very little attention. For in its basic structure the VAT is, after all, essentially equivalent to a tax on wages and pure profits (Chapter 2); and seen in that light it clearly has many similarities to an income tax. Indeed it is some respects a superior form of income tax. Some would find merit, in particular, in its exclusion from tax of the return to savings (being ultimately a tax on consumption). Moreover, the component of the VAT that bears on business income has some advantage relative to the corporation taxes commonly observed, having the strengths that many see—in the avoidance of distortions to the level and composition of investment—in the cash-flow form of corporate tax. As corporate taxes come under increasing

pressure from international tax competition, so this role of the VAT as, in part, an implicit corporate tax may come to be both more clearly apparent and more valued. Where these resonances will lead is far from clear: the treatment of international trade under the VAT, for instance, is an important source of difference from a residence-based corporate tax (a point which perhaps underlies a lingering concern in the United States that European firms enjoy a competitive advantage in world markets from the zero-rating of exports under the VAT). At lower levels of government, there are already signs that income-type accounts-based VATs may have a role to play as a form of local income tax, the recent Italian IRAP being a prominent example. Bird and Mintz (1999) make a general case for such taxes at lower-levels of government.

The future of the VAT could hardly be as dramatic as its recent past, but the power of its inner logic is likely to be felt even more strongly.

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Appendices

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Appendix I Data

This appendix describes the nature and sources of the data used in the background chapter and in the regression analysis. Except where indicated, the analysis is based on the data available in early 2000.

Aggregate Revenue Variables

- *General government total revenue and grants* (GGTRG). This comes from the IMF's *World Economic Outlook* (WEO), and is available for almost all countries. This is intended to include all levels of government, nontax revenues and grants (meaning aid). WEO does not have a breakdown of GGTRG into these various components.
- *General (GTX) and central (CTX) government tax revenue*. These are collected from Recent Economic Developments (REDs) papers prepared by IMF staff, which typically report one or the other. The most recent data for each country were available from 1994–97 by calendar year and 1995/96–1996/97 by fiscal year. There is also variation in presenting data: 87 percent are by calendar year and 13 percent by fiscal year. (The countries in the latter category are: Bangladesh, Belize, Egypt, Indonesia, Jamaica, Kenya, Malawi, New Zealand, Pakistan, Samoa, South Africa, Tanzania, Thailand; and Uganda). The percentage of countries with data in each year are: 1994: 2 percent, 1995: 20 percent, 1995/96: 2 percent, 1996/97: 10 percent, and 1997: 15 percent.

The RED fiscal data are based on information supplied by country authorities and Fund staff estimates. Reporting practices vary across countries: (for example, about 47 percent of the countries report central government and 53 percent of the countries report general government (including lower levels)).

The definition of “tax” should follow that of Government Financial Statistics (GFS) and also include social security, though in practice this may be omitted in some cases.

There are three definitions of fiscal years in this report, depending on the country: April 1 to March 31; July 1 to June 30; and October 1 to September

30. The data for trade, value of imports of goods, value of exports of goods, GDP per capita, population, and private consumption are presented in calendar years. To make these data consistent with the revenue data for the countries stated above, the fiscal year was constructed by averaging pieces of two calendar years. For example, if the fiscal year runs from April 1 to March 31, then the observation year is the year corresponding to April to December (75 percent of 1995) and from January to March (25 percent of 1996).

VAT Variables

Revenue. Taken from Recent Economic Developments (REDs). Data are again for the most recent period. The definition is as for the GFS category “general sales, turnover, or VAT.” In some cases, countries that replaced a turnover tax with a VAT may continue to receive some lagged revenue from the former—this may therefore include taxes other than VAT. Information on VAT revenues has in some cases been corrected, on the basis of information provided by staff, to ensure that it includes all VAT collected on imports.

Rates. The VAT rates have been taken mainly from internal IMF sources. The variable SR in the regressions is the standard rate, in percent. The rates used in the econometric work were for the most part those effective as of August 1998. The variable RANGE is the difference between highest and lowest nonzero VAT rate, in percentage point.

Threshold. Various sources, including FAD technical assistance reports and tax guides. The variable THRESH used in the regressions of Chapter 4 is the threshold for traders in goods, measured in US\$10,000 (converted at the nominal exchange rate).

Base. This is taken from Cnossen (1998). The variable GS takes the value unity if coverage is broadly all goods and services, zero otherwise.

Coverage. This is also taken from Cnossen (1998). The variable RETAIL takes the value unity if the VAT extends to the retail stage, zero otherwise.

Other

Import and export values have been taken from the WEO. The value of foreign trade is derived from corresponding balance of payments values unless otherwise specified by desk economists. WEO data are for the same period as the fiscal data. In addition, for calculation purposes, GDP data are obtained from the same source (WEO).

Gross domestic product (GDP) Data are directly from the same source as the revenues for most of the countries, which is the Recent Economic Developments (REDs). However, OECD Revenue Statistics, WEO, and unpublished IMF sources have been used when data are not available. Data are for the latest available year.

Illiteracy rates have been taken from The World Bank database and from various miscellaneous sources. ILLRATE is the percentage of people over 15 years old who are illiterate. These data were not readily available for consecutive years for each country, so data for the latest available year was used.

Agricultural output data are from the World Bank database. Data are for the latest available year and cover the same period as for tax revenues. The variable AGR is agricultural output relative to GDP, in percent.

Population (POP) has been obtained mainly from the World Economic Outlook (WEO) for the same period as the fiscal data.

Regional groupings used are shown in Table AI.1.

Table AI.1. Country and State Groups

European Union (EU) ¹	Americas (AS)	Sub-Saharan Africa (AF)	Central Europe and BRO (CBRO)
Austria	Argentina	Angola	Albania
Belgium	Belize	Benin	Armenia
Denmark	Bolivia	Botswana	Azerbaijan
Finland	Brazil	Burkina Faso	Belarus
France	Canada	Burundi	Bosnia and Herzegovina
Germany	Chile	Cameroon	Bulgaria
Greece	Colombia	Central African Republic	Croatia
Ireland	Costa Rica	Chad	Czech Republic
Italy	Dominican Republic	Congo, Rep. of	Estonia
Luxembourg	Ecuador	Congo, Dem. Rep. of	Georgia
Netherlands	El Salvador	Côte d'Ivoire	Hungary
Norway	Guatemala	Equatorial Guinea	Kazakhstan
Portugal	Guyana	Eritrea	Kyrgyz
Spain	Haiti	Ethiopia	Latvia
Sweden	Honduras	Gabon	Lithuania
Switzerland	Jamaica	Gambia, The	Macedonia, former
United Kingdom	Mexico	Ghana	Yugoslavia Rep. of
	Nicaragua	Guinea-Bissau	Moldova
	Panama	Guinea	Poland
	Paraguay	Kenya	Romania
	Peru	Lesotho	Russia
	Suriname	Liberia	Slovak Republic
	Trinidad and Tobago	Madagascar	Slovenia
	United States	Malawi	Tajikistan
	Uruguay	Mali	Turkmenistan
	Venezuela	Mauritania	Ukraine
		Mauritius	Uzbekistan
		Mozambique	
		Namibia	
		Niger	
		Nigeria	
		Rwanda	
		Senegal	
		Sierra Leone	
		Somalia	
		South Africa	
		Sudan	
		Swaziland	
		Tanzania	
		Togo	
		Uganda	
		Zambia	
		Zimbabwe	
17	26	43	26

Source: IMF, staff classification.

¹Plus Norway and Switzerland.²Island economies of under 1 million, plus San Marino.

North Africa and Middle East (NMED)	Asia and Pacific (AP)	Small Islands (SI) ²
Afghanistan, Islamic State of	Australia	Antigua and Barbuda
Algeria	Bangladesh	Bahamas, The
Bahrain	Bhutan	Barbados
Djibouti	Brunei, Darussalam	Cape Verde
Egypt	Cambodia	Comoros
Iran, Islamic Rep. of	China	Cyprus
Iraq	India	Dominica
Israel	Indonesia	Fiji
Jordan	Japan	Grenada
Kuwait	Korea	Iceland
Lebanon	Lao People's Dem. Republic	Kiribati
Libya	Malaysia	Maldives
Morocco	Mongolia	Malta
Oman	Myanmar	Marshall Islands
Qatar	Nepal	Micronesia
Saudi Arabia	New Zealand	Netherlands Antilles
Syrian Arab Republic	Pakistan	Palau
Tunisia	Papua New Guinea	Samoa
Turkey	Philippines	San Marino
United Arab Emirates	Singapore	São Tomé and Príncipe
Yemen	Sri Lanka	Seychelles
	Taiwan Province of China	Solomon Island
	Thailand	St. Kitts and St. Nevis
	Vietnam	St. Lucia
		St. Vincent and the Grenadines
		Tonga
		Vanuatu

Appendix II Effective Rates of VAT

There are two quite distinct concepts and measures of the “effective rate of VAT” to be found in discussions of VAT policy. This appendix discusses these concepts and the relationship between them.

As a common framework, consider a closed economy of N commodities. Denote by t_i the ad valorem tax rate on commodity i , by p_i the net price and by q_i the tax-exclusive price paid by buyers: thus $q_i = p_i(1 + t_i)$. It will also prove useful to denote by δ_i the proportion of input tax that is recoverable in the production of commodity i . Thus commodity i is exempt if and only if $t_i = \delta_i = 0$.

Denoting by A the matrix whose typical element a_{ik} is the input of commodity k required per unit of output of commodity i , net output $x \equiv (x_i)$ is related to gross output as

$$x = (I_N - A') \cdot y \quad (\text{II.1})$$

where I_N is the N -dimensional identity matrix, and a prime indicates transposition. As a final preliminary, note that since tax revenue is raised on all gross sales y but credited to the extent that intermediate purchases $A' \cdot y$ are to nonexempt sectors, the total tax revenue collected is

$$R = \sum_{i=1}^N t_i y_i p_i - \sum_{i=1}^N \delta_i y_i \sum_{k=1}^N a_{ik} p^k T_k = y' (I_N - \Delta A) \cdot p \cdot t \quad (\text{II.2})$$

where $\Delta = \text{diag} \{ \delta_1, \dots, \delta_n \}$ and $P = \text{diag} \{ p_1, \dots, p_N \}$.

Input-Choice Distortion: The Type-I Effective VAT Rate

A key attraction of the VAT is that it leaves firms' input choices unaffected, so long as all input taxes are effectively recovered. And it is a central disadvantage of exemption that it undoes this effect and so potentially distorts production decisions. Moreover, and as emphasized in Chapter 8, this distortion arises not only in the input choices made by the exempt sector itself but also in the input choices of downstream sectors which use the output of the exempt sector as

an input: for that exemption can be expected to lead to a tax-induced increase in input prices faced downstream.

One concept of the effective rate of VAT—discussed and applied, for instance, by Gottfried and Wiegard (1991)—seeks to describe this potentially complex pattern of distortion. This concept of the effective VAT rate on a commodity i —which we refer to as the “type-I” effective rate—is defined to be the difference between its tax-inclusive selling price, q_i , and the price at which it would sell if VAT were removed and factor prices remained unchanged.

To calculate this, note first that, as a matter of definition

$$q_i = v_i + \sum_{k=1}^N a_{ik} (q_k - \delta_i t_k p_k) + t_i p_i \quad (\text{II.3})$$

where v_i denotes the per unit value added in the production of i , defined as the difference between the net selling price ($p_i = q_i - t_i p_i$) and the tax cost of material inputs (each unit of input k costing q_k if good i is exempt (so that $\delta_i = 0$) and $q_k - t_k p_k$ if it is not exempt ($\delta_i = 1$)). Writing (II.3) in vector form and solving gives:

$$q = (I_N - A)^{-1} \cdot v + (I_N - A)^{-1} \cdot (I_N - \Delta A) \cdot P \cdot t. \quad (\text{II.4})$$

At unchanged factor prices and input usage, selling prices in the absence of tax would thus be $(I_N - A)^{-1} \cdot v$. Type I effective tax rates—expressed (like the statutory rates) tax-exclusive relative to prices p_i —are consequently:

$$t_i^* \equiv [(I_N - A) \cdot P]^{-1} \cdot (I_N - \Delta A) \cdot P \cdot t. \quad (\text{II.5})$$

If there are no exemptions, so that $\Delta = I_N$, the type-I effective rate on each commodity k is thus precisely the statutory rate applied to sales of k . Exempting any commodity k , however, potentially distorts the effective tax rate on any other commodity j away from the statutory rate t_j . So long as all tax rates are positive moreover, the direction of the effect is clear: the type-I effective rate on any commodity is always at least as large as the statutory rate,¹ reflected in the increased input costs associated with exemption.

Note too, combining (II.2) and (II.5), that revenue raised by the VAT can be written as

$$R = x' \cdot P \cdot t_i^* \quad (\text{II.6})$$

¹This follows on noting from (II.5) that $t_i - t = P^{-1}(I_N - A)^{-1} \cdot A \cdot P \cdot (I_N - \Delta) \cdot t$, the product of non-negative matrices and a vector whose elements are all nonnegative.

In revenue terms, the outcome is thus equivalent to taxing all final sales at the type-I effective rate.

Self-Supply: The Type-S Effective Rate

A quite different definition of the effective VAT rate on commodity i is that developed and applied by Kay and Warren (1980) and Hemming and Kay (1981). Referred to here as the “type-S” effective rate of VAT, this is the net tax paid per unit of good i (output tax less input tax recovered) as a proportion of the value added in its production:

$$t_{Si}^* \equiv \frac{t_i p_i - \delta_i \sum_{k=1}^N a_{ik} p_k t_k}{p_i - \sum_{k=1}^N a_{ik} p_k} \quad (\text{II.7})$$

This concept takes account only of VAT levied directly in relation to sector i . It is best thought of as indicating the strength of the incentive that an exempt person—most obviously, the final consumer, though the logic applies to exempt persons more generally—has to supply himself/herself with i rather than purchasing it directly: such self-supply avoids the need to pay output tax at t_i but also removes the possibility of recovering input tax.

The type-S effective rate on commodity i may be above or below the statutory rate.² It coincides with the statutory rate if i is taxable and all inputs and outputs are all taxed at the same rate: for value added in producing i is then taxed at precisely the statutory rate, and it is this rate that therefore indicates the incentive that an exempt person has to self-supply.³ If, on the other hand, the production of i is taxable and output is taxed at a rate above the weighted average rate on inputs in the sense that⁴

$$t_i > \sum_k w_{ik} t_k \quad (\text{II.8})$$

where $w_{ik} \equiv a_{ik} p_{ik} / \sum_j a_{ij} p_{ij}$, then the type-S effective rate exceeds the statutory rate. That is, the statutory rate understates the incentive to self-supply. For highly taxed outputs produced from lightly taxed inputs—the archetypal example being restaurant meals produced from zero-rated food—the type-S

²This is in contrast to the type-I rate, which, recall, is always at least as large as the statutory rate.

³This again is in contrast to the type-I rate, which coincides with the statutory rate even if multiple rates of VAT are applied (so long as there are no exemptions).

⁴Assuming value added at net prices to be strictly positive.

effective rate is higher than the statutory rate. Similar arguments would apply, for example, to home repair items, personal services and the like.

For an exempt commodity, the type-S effective rate is zero: there is neither advantage nor disadvantage in producing i for oneself rather than buying it, since the seller would also be exempt.

Note that in vector form (II.7) becomes

$$t_S^* = S^{-1} \cdot (I_N - \Delta A) \cdot P \cdot t \quad (\text{II.9})$$

where S is the diagonal matrix with kk th element $p_k - \sum_j a_{kj} p_k$. Comparing this with (II.2) gives

$$R = y' S \cdot t_S^* \quad (\text{II.10})$$

so that, in revenue terms, the situation is as it would be if the type-S effective tax rate were charged on the value added associated with each gross sale.

Relating the Two Effective Rates

While the definitions of both effective rates are purely mechanical, with no behavioral content, the underlying rationale is in each case to derive some sense of how the VAT is likely to affect resource allocation. The two measures correspond to different dimensions of possible distortion.

These dimensions are related: self-supply mitigates the distortion of input choices by eliminating the unrecovered output tax that would otherwise be borne on the exempted input. The two concepts are also related in a more formal sense. Comparing (II.5) with (II.9) gives:

$$t_S^* = S^{-1} \cdot (I_N - A) \cdot P \cdot t_I^* \quad (\text{II.11})$$

The two sets of effective rates thus coincide if either is uniform over commodities.⁵ It is sufficient for this that there be no exemptions and that statutory rates be uniform across commodities. In general, however, the two will evidently differ.

Note too that, interpreted as guides to resource allocation effects, both measures are very partial ones. The type-I effective rate, for instance, rests on an assumption that factor prices are unaffected by the presence of the tax, which is thus shifted entirely to consumers.

⁵Uniformity of type-I rates, for example, implies that $t_I^* = \tau e$ where e is an N -vector of ones, and the result then follows on observing that, from the definition of S , $S^{-1}(I_N - A) \cdot P \cdot e = e$.

Appendix III Sources of Gain in Replacing Tariffs by a Consumption Tax

Consider a small open economy inhabited by a representative individual whose preferences are characterized by an expenditure function $E(q, g, u)$ defined over consumer prices q , public expenditure g and utility u . Suppose further that $E(q, g, u) = e(q, u) - \delta g$, where $\delta > 1$ is the marginal social value of public funds. The production side is characterized by a revenue function $r(p)$ defined on producer prices p . World prices are ρ .

We compare two regimes. In one (indicated by superscript τ), only tariffs are levied, so that

$$g^\tau = (q^\tau - \rho) \cdot e_q(q^\tau, u^\tau) - r_p(\rho) \}. \quad (\text{III.1})$$

In the other, indicated by superscript c , only destination-based consumption taxes are levied, so that

$$g^c = (q^c - \rho) \cdot e_q(q^c, u^c) - (q^c - p) \cdot e_q(q^c, u^c) \quad (\text{III.2})$$

In either case, the national income-expenditure identity requires that

$$e(q^i, u^i) - \delta g^i = r(p^i), \quad i = \tau, c \quad (\text{III.3})$$

It is also convenient to denote by

$$L(q^i, u^i) \equiv e(q^i, u^i) - e(\rho, u^i) - (q^i - \rho) \cdot e_q(q^i, u^i) \quad (\text{III.4})$$

the deadweight loss (defined as in Kay (1980)) from the distortion of consumer prices away from world prices under regime i .

Adding and subtracting $g^\tau + e(\rho, u^\tau)$ in (III.3) (evaluated for the tariff regime) one finds, on using (III.1) and rearranging, that

$$0 = (\rho - q^\tau) \cdot r_p(q^\tau) - r(q^\tau) + (1 - \delta)g^\tau + e(\rho, u^\tau) + L^\tau \quad (\text{III.5})$$

Proceeding similarly for the consumption tax regime, adding and subtracting

$g^c + e(\rho, u^c)$, one finds

$$0 = r(\rho) + (\delta - 1)g^c - e(\rho, u^c) - L^c. \quad (\text{III.6})$$

Adding (III.5) and (III.6), rearrangement gives

$$e(\rho, u^c) - e(\rho, u^\tau) = (\delta - 1)(g^c - g^\tau) + \{L^\tau - L^c\} + \{r(\rho) - r(q^\tau) - (\rho - q^\tau) \cdot r_p(q^\tau)\} \quad (\text{III.7})$$

showing the welfare gain from moving to the consumption tax to consist of the three terms discussed in Chapter 16: the revenue effect, valued at the excess of the marginal social value of revenue over unity; the reduction in dead-weight loss from distorted consumption decisions; and improvement in production efficiency (nonnegative by convexity of the revenue function).

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Reviews of

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“Despite the dramatic recent spread of the VAT, the literature on value-added taxation is very scarce. The authors of this book fill this gap in a most admirable manner. Drawing on the vast experience accumulated by the Fiscal Affairs Department of the IMF, they discuss matters of principle as well as all of the practical issues associated with implementing a VAT, covering both developing and developed countries. The book will be a standard reference on VAT for years to come and a most valuable source of information for practitioners and academics working in the area of Public Finance.”

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“Every once in a long while, an institutional innovation comes along that conquers the fiscal world. The value-added tax is such an innovation. Over the last few decades, VATs have been put into place all around the world. Those countries that do not yet have one seem usually to be considering adopting one soon. The IMF’s Fiscal Affairs Department has played an important role in assisting many developing and transitional countries to enter the brave new world of VAT. In the course of doing so, of course, FAD’s experts have learned a great deal about the design and administration of VATs. Much of this knowledge is on offer in this book, which thus updates and complements several valuable earlier IMF publications on the subject. In addition, however, and most intriguingly, this book also raises some very interesting questions about a number of aspects of VAT about which there is, it appears, still more to learn. It should be on the shelves not only of all those involved in VAT administration but also of those interested in tax policy and administration more generally.”

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