ESTIMATING THE ADMINISTRATIVE COSTS OF TAXATION: A METHODOLOGY WITH APPLICATION TO THE CASE OF GUATEMALA

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EXECUTIVE SUMMARY

1. The purpose of this study is to estimate the administrative costs incurred by the Superintendencia de Administración Tributaria (SAT) of Guatemala in carrying out its tax administration responsibilities. Estimates were generated with respect to overall administrative costs as well as the costs of collecting the main taxes that comprise the tax structure. Subsequently, these latter cost estimates were used as a point of reference to derive absolute and relative cost estimates of selected low yield taxes.

2. After initially presenting a breakdown of unadjusted administrative costs by functional expenditure category, said costs were first adjusted by economic classification (current and capital expenditures) and secondly by refining the functional categories. These latter adjustments required the development of a methodology especially designed to fill a statistical gap.

3. During 2001, total adjusted administrative costs reached 2.49% of gross tax collections and 0.26% of GDP. Given that the SAT is a relatively new institution (having fully initiated tax collections in 1999) that is still in the developmental stage and that inherited very little institutional memory, such percentages fall within quite acceptable ranges.

4. A second methodology was developed to estimate the administrative costs associated with the principal taxes that comprise Guatemala's tax structure: income, value-added (VAT), net assets/net revenue, customs duties, etc. For these major taxes, administrative costs were less than 3% of gross collections.

5. More detailed cost estimates were made of three relatively low-yield taxes: vehicles, stamps, and inheritance/gifts. The cost of the first two reached some 10% of gross collections, while that of the latter was 23%.

6. A comparison of proportional administrative costs in Guatemala with those in other countries concluded that the SAT's cost structure was well within the limits established by international standards, especially in view of the newness of the institution. The medium-term goal (three to five years) is to reduce these proportional costs to less than 2% of gross tax revenues.

7. It is important to understand that estimates of administrative costs represent only one side of the coin, in that they do not take into account compliance costs from the perspective of the taxpayers. Studies done in other countries (but not in Guatemala) reveal that compliance costs generally exceed administrative costs. It is therefore important to adopt policies and direct efforts toward reducing both costs, the sum of which represents the total operating cost of any tax system.

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I. INTRODUCTION

The costs incurred by Guatemala's semi-autonomous tax administration agency, the *Superintendencia de Administración Tributaria* (SAT), are of fiscal, economic, and social interest, given that they represent a deduction from the gross yield of each tax comprising the tax structure. It is therefore important to minimize these costs without interfering with any related efforts to strengthen the tax collection process.

At the same time, estimating administrative costs may serve two additional purposes:

- To identify those taxes whose costs comprise a relatively high share of their gross collections; in such cases, it might be advisable either to repeal or modify the tax to increase its net revenue yield.
- To serve as a useful tool for tax administrators and tax policy-makers by allowing international comparisons, in this way helping to identify areas where administrative efficiency should be increased.

Although one of the main objectives of this kind of analysis is to produce information in order to establish international comparisons, its weaknesses must also be noted. The administrative cost of a tax system can be affected by numerous variables. These include the tax structure itself, the country's macroeconomic structure (by sector), tax law regulations, the country's political and legal structure, and the type of taxpayer. A few examples suffice: a complex tax structure, involving numerous tax incentives and/or tax expenditures and multiple tax rates, will be more expensive to manage than a simpler one; it will be more expensive to collect income taxes under a tax regime composed of a relatively large number of self-employed taxpayers than in a system structured almost exclusively on taxes withheld by employers. More examples of these limitations will be presented throughout this analysis, and Section III.B presents a more in-depth discussion of this subject.

This analysis does not take into account the costs of tax compliance from the taxpayer's perspective. By focusing only on administrative costs incurred by the tax collection agency and ignoring the total operational cost of a tax system, the reality is that estimates are generated of merely the smaller portion of total operating costs. This is confirmed by the experience of countries where both costs (administrative and compliance) have been estimated: compliance costs (absorbed by the private sector) are usually two to three times higher than administrative costs (absorbed by the public sector). The importance of estimating compliance costs is discussed in Section V.

II. THE ADMINISTRATIVE COSTS OF ALL TAXES

A. Unadjusted Costs

Table 1 presents an initial approximation to the total amount and the distribution of administrative expenditures actually incurred by the SAT from 1999 to 2001, with budgeted data for 2002. Before analyzing the adjusted figures to be presented in Table 2, an explanation of the concepts and methods used in calculating the figures in this initial table is required.

Table 1
SAT: Administrative Costs by Function, 1999 – 2002
(millions of quetzals)

	Expenditures						Budget	
Function	1999	%	2000	%	2001	%	2002	%
General Administration	7.9	4.6	18.0	6.2	143.6	27.7	34.3	7.2
Human Resource Development	9.5	5.5	10.3	3.5	14.5	2.8	19.0	4.0
Informatics/Systems	26.8	15.5	36.5	12.5	46.5	9.0	43.1	9.1
Financial Administration	16.3	9.4	43.2	14.8	71.8	13.8	51.5	10.9
Planning and Evaluation	1.9	1.1	2.7	0.9	3.2	0.6	3.9	0.8
Auditing	26.8	15.5	49.0	16.8	60.1	11.6	89.6	18.9
Domestic Tax Collections	50.6	29.2	70.0	24.0	86.6	16.7	110.5	23.3
External Tax Collections	29.6	17.1	56.3	19.3	83.2	16.0	110.9	23.4
Legal Affairs	4.0	2.3	6.2	2.1	9.2	1.8	11.4	2.4
Total	173.4	100	292.2	100	518.7	100	474.2	100
Total as % Gross Revenue (a)	1.31		2.02		3.15		1.94	
Total as % GDP	0.13		0.20		0.31		0.27	

Note: (a) Gross tax revenue (before VAT refunds) of taxes administered by the SAT.

Source: Derived from information in Table A-1.

The original source (see Table A-1) presents the expenditures incurred by each SAT division (Intendency, Directorate, etc.). As such, its reference point is from an accounting perspective that, although approximating a functional grouping, does not completely lend itself to such a classification. It is not, nor is it intended to be, a presentation of expenses by functional category. Table 1 makes an attempt to adapt the original source to the desired functional grouping, although it does fall short of accomplishing the desired objective. For example, a detailed examination of the cost figures under the function "External Tax Collections" (which includes total costs for customs administration at both the central and regional levels) is likely to disclose some activities that are linked to other functions, such as General Administration, Auditing, and Planning. Subsequently, in section II.B.2, an initial attempt is made to develop an "improved" breakdown of SAT's administrative expenditures by functional category.

Figures from Table 1 reveal a significant increase of total expenditures, from Q173 million in 1999 to Q519 million in 2001. As a share of gross tax revenues, total administrative costs rose from 1.31% in 1999 to 3.15% in 2001; relative to GDP this represented an increase from 0.13% to 0.31%. Total administrative outlays for 2001 must be taken with a grain of salt, as they include a Q88 million charge for the purchase of a new building to house the SAT (some SAT entities moved there in February, 2002). This clearly represents an extraordinary expense and, consequently, the fact that it was recorded in the year it was incurred distorts total expenditures. In Section II.B.1, this distortion (and others) will be corrected, given that outlays on capital goods whose useful life extends beyond the original purchase period should be allocated over a number of years.

B. Adjusted Costs

1. Expenditures by Economic Classification

Expenditures by economic classification separate total expenditures into two groups: current and capital outlays. In general, it is quite easy to differentiate one from the other. For example, staff payroll and other compensation-related expenses are considered current expenditures, as money is disbursed for services that are performed at the present time. On the other hand, a capital expense (buildings, plants, equipment and intangibles) is defined as an outlay on an asset whose useful life extends beyond the period (year) when it was purchased. Therefore, in order to better allocate the service cost of such an asset its acquisition cost (in a specific year) should be distributed across its entire productive life. Similar reasoning also lies behind the purely accounting treatment of capital assets, whereby the original purchase cost of a long-term asset is depreciated over a specific number of years. This principle also applies to certain annual administrative costs related to fixed assets acquired by the SAT.

Table 2 displays a breakdown of SAT's administrative expenses by economic classification for the period 1999-2001, with an extension to 2002 based on budgeted outlays. Capital expenditures include all budget items falling under line 300 in SAT's budget definitions: expenditures for assets such as office, communications, production, and transportation equipment, computers, machinery, land, property, and other physical facilities. Looking first at part A of the table (unadjusted expenditures), the fact that capital outlays averaged over 10% of total expenditures in 1999 and 2000 is quite reasonable considering that the SAT was in its early formative period, having actually initiated work in 1998. What at first glance seems to be distinct break from a "normal" trend in capital expenditures is the jump to 24.3% of total outlays in 2001. This "abnormality" is easily explained by the SAT's purchase its own building (in Zone 9) at a cost of Q88 million. Subtracting this amount from capital outlays in 2001 generates a smoother trend.

Table 2
SAT: Administrative Expenditures
by Economic Classification, 1999 – 2002
(millions of quetzals)

	Expenditures						Budget (a)	
Economic Classification	1999	%	2000	%	2001	%	2002	%
A. Unadjusted								
Current	151.1	87.1	261.8	89.6	392.4	75.7	444.9	93.8
Capital (b)	22.3	12.9	30.4	10.4	126.3	24.3	29.3	6.2
Total	173.4	100	292.2	100	518.7	100	474.2	100
Total as % Gross Revenue (c)	1.31		2.02		3.15		1.94	
Total as % GDP	0.13		0.20		0.31		0.27	
B. Adjusted								
Current	151.1	94.7	261.8	93.8	392.4	91.8	444.9	94.3
Capital (b)	8.4	5.3	17.3	6.2	35.0	8.2	27.0	5.7
Total	159.5	100	279.1	100	427.4	100	471.9	100
Total as % Gross Revenue (c)	1.20		1.93		2.59		1.93	
Total as % GDP	0.12		0.19		0.26		0.26	

Notes:
(a) Figures based on SAT's budget for the year 2002. SAT expects that 80% to 85% of the budget will be carried out.
(b) Capital expenditures refer to all items under line 300 of SAT's budget; i.e., property, plant and equipment, and intangibles. Although for conceptual reasons line item 158 (rights on tangible assets or software licenses) might have been included, it was not done; annual outlays on said line item for the period 1999-2001 were as follows: 0.9, 14.6 and 17.2, respectively (in millions of quetzals).
(c) Gross revenues (excluding tax credit refunds) from taxes administered by the SAT.

Source: For the years 1999-2001, SAT, Administration and Finance Office, Report on the State of Budget Implementation, each year; for 2002, SAT Revenue and Expenditure Budget for Fiscal Year 2002.

Part B of Table 2 presents an adjusted overview of capital expenditures; there are no adjustments made to current expenditures. The following depreciation assumptions were made: three-years for all capital goods except buildings, which are assumed to be depreciated over a 20-year span (although the tax law allows a five year depreciation period). This means the acquisition cost of the SAT building is allocated in equal parts (Q88/20 = Q4.4) and distributed over a 20-year period. The results of allocating fixed asset costs over multiple years appear in Table 2.B. This cost allocation method clearly generates a smoother growth tendency compared to the one initially presented in part A.

In proportional terms, these adjusted administrative costs do not seem to exceed rational limits set by international standards, particularly considering the SAT's recent establishment (essentially three years) and its lack of institutional

history. Naturally, as the SAT has bulked up its staff and system requirements, the ratio of administrative expenditures to GDP and tax revenue has increased. However, as will be pointed out in section III.B, these outlays, which weighed in at 0.26% of GDP and 2.59% of gross tax revenue in 2001, can be considered quite acceptable by international standards. It is expected that three to five years down the road, after having reached "optimal" levels for staff, equipment, and systems, these administrative costs will slowly decrease and remain under 2% of gross tax collections.

2. Expenditures by Functional Category

Before focusing on the administrative costs of the principal taxes administered by the SAT, a necessary intermediate step is to generate more accurate estimates of expenditures grouped according to functional category. Moreover, this exercise by itself it generates information that is useful to SAT's management. The information previously presented in Table 1 is merely a first approximation to a functional expenditure breakdown. The purpose of Table 3 is to generate, only for the year 2001, a more accurate allocation of outlays by function. It is based on interviews with SAT's top-level directors and managers. Admittedly, this approach lacks the precision that would be provided by a more in-depth analysis of each function of each entity within SAT using a time study methodology for each function and/or by analyzing data generated by converting each unit into a cost center. However, the result does reflect the opinions and judgments of those individuals intimately involved in SAT's operations on a daily basis. For this reason alone, it can be assumed to be a rational approximation to the desired estimate.

Based on interviews carried out with SAT's high-level management, for each administrative unit the time-share allocated to the various functional expenditure categories was derived; these proportions are found in Table A-2. For example, this table shows that the Informatics/Systems function provides support to all other SAT units; i.e., it allocates a share of its overall effort to all of the SAT's multiple tax collecting functions.

The next step involved applying these shares to the adjusted expenditures of each administrative entity (using the same procedure previously explained in Section II.B.1). This required a detailed analysis of the expenditures incurred by each of SAT's entities for the year 2001; the results are presented in Table A-3. It should be noted that total expenditures distributed by entity and function is Q410.1 million, a figure that differs slightly from the Q427.4 million previously shown in Part B of Table 2. This difference arises from limiting the functional breakdown 2001, meaning that capital expenditures for 1999 and 2000 were not allocated to 2001.

The results of allocating SAT's 2001 adjusted functional expenditures are displayed in Table 3. More than one-fifth of the total (21.3%) represents disbursements on general administration and another 16% on financial administration. Although there are no international benchmarks for tax administration expenditures by function, if the SAT follows a normal developmental trend, the share of purely administrative expenses will slowly decrease while, at the same time, outlays allocated to such key functions as auditing and legal matters will increase.

As to total administrative expenditures, it can be noted that they reached 2.49% of gross revenues and 0.25% of GDP in 2001. To reiterate, these figures fall within acceptable limits for an entity that finds itself in the early stages of development. It should be expected that over the next three to five years these proportions will decrease toward (and thereafter remain under) 2% of gross tax revenue.

Table 3
SAT: Adjusted Expenditures by Function, 2001
(millions of quetzals)

Function	Expenses Incurred	%
General Administration	87.3	21.3
Human Resource Development	26.8	6.5
Informatics/Systems	32.0	7.8
Financial Administration	65.6	16.0
Planning and Evaluation	35.5	8.7
Auditing	49.8	12.1
Domestic Tax Collections	49.0	11.9
External Tax Collections	54.9	13.4
Legal Affairs	9.2	2.2
Total (a)	410.1	100
Total in % Gross Collected (b)	2.49	
Total in % GNP	0.25	

Notes: (a) Differs from the total expense (Q427.4 million) shown on Table 2, part B, because the functional breakdown applies to the year 2001 exclusively, whereas the total shown in Table 2 carries over part of capital expenditures from previous years.
(b) Of taxes administered by the SAT.
Source: Tables A-2 and A-3 and the methodology explained in the text, Section II.B.2.

III. THE ADMINISTRATIVE COSTS OF THE PRINCIPAL TAXES

A. Methodology and Results

Two different methods were used to allocate administrative costs by tax. Using as a reference point the functional category data previously derived, in those instances where the linkage between functions and tax collections is fairly well defined (e.g., auditing, legal affairs, domestic and external tax collections), the estimates of the time allocated to each tax are based on interviews with the directors and top administrative personnel in each unit. In those cases where the link between costs and taxes is less clear, two different distributive series were derived to allocate functional administrative costs to specific taxes. To allocate the costs incurred by informatics/systems, a series was generated based on the annualized number of tax returns per tax. The allocation of the costs incurred under such functions as general and financial administration is based upon a series reflecting tax collections per tax. Table A-4 presents the proportions that were used.

These proportions were subsequently applied to the expenditures by functional group previously generated in Table 3. The result, found in Table A-5, is a matrix of columns (administrative costs per function) and rows (taxes), where the last column contains estimates of the administrative costs linked to each tax.

Based on this methodology, Table 4 below presents the administrative costs for each main tax in the year 2001 as a percentage of gross tax revenue and of GDP. The fact that administrative costs as a proportion of gross revenue for the principal taxes (income, VAT, IEMA, and customs) fall within the 2% to 3% range is not a serious departure from international standards, particularly when taking into account the SAT's relatively short existence. For the

same reason, an administrative cost for the entire tax system averaging 2.49% of gross tax revenue and 0.25% of GDP is also acceptable. To reiterate, the medium-term goal (three to five years) is to bring total costs down below 2% of taxes collected.

Table 4
SAT: Relative Administrative Costs of Principal Taxes, 2001
(percentages)

Tax	Gross Revenue	GDP
Income (ISR)	2.59	0.03
Commercial and Agricultural Enterprises (IEMA)	2.60	0.02
Domestic VAT	2.99	0.06
Import VAT	1.76	0.05
Customs Duties	2.80	0.03
Excises (a)	4.15	0.01
Petroleum and derivatives	1.70	0.02
Vehicle Circulation	7.01	0.01
Stamps /Stamped Paper	4.73	-
Financial Products	2.96	-
All Taxes	2.49	0.25

Note: (a) Taxes on the distribution of beverages and tobacco and its by-products
Source: Derived from the information shown in Tables A-4 and A-5 and the methodology explained in the text, section III.A.

The proportions found in Table 4 are closely linked to common sense. For example, it is not surprising that relative domestic VAT costs exceed those for VAT on imports given the large number and geographical dispersion of firms and individuals subject to the domestic VAT. However, the separation between VAT on imports and on customs duties is at least somewhat artificial, since both taxes are levied and collected simultaneously. The relatively high estimates for stamp taxes and vehicle circulation are not surprising, considering the low denominations of many stamps (as required by law) and the amount of paperwork involved in collecting the vehicles tax. In fact, the more in-depth analyses found in Sections IV.B.1 and 2 reveal even higher administrative costs for these two taxes than what is suggested in this first approximation.

B. International Experience

1. General Considerations

On a annual basis, most countries do not routinely carry out a detailed allocation of the administrative costs of collecting individual taxes. The United Kingdom and the United States (but only at the federal government level, not at the level of state and local governments) are some of the few countries that do so. Nevertheless, in the United Kingdom capital expenditures are treated as current outlays without spreading them over the useful life of the asset. Moreover, very few countries incorporate as administrative costs the opportunity costs that should be assigned to the public buildings and offices that they use, adopting the conventional (and incorrect) view that, because the buildings belong to the public sector, their use by a public agency does not involve any direct cost.

Previously in Section I.A, brief reference was made to the difficulty of making international comparisons of the administrative cost of taxation. This theme is retaken at this juncture in order to give some perspective to the figures generated in this study. It is important to recognize that international comparisons are difficult to use given the absence of a standard conceptual point of reference. Unfortunately, most cases of international comparisons wind up comparing bananas with apples; i.e., making comparisons not based on the same definition. Moreover, a large number of variables—legal, structural, economic, social, and political—determine taxation costs in any given country.

The following examples highlight the questionable validity of international comparisons:

- An oft-cited standard for administrative costs is that of the federally-imposed income tax in the United States, which averages around US$0.50 for each $100 of tax collections. Nevertheless, this figure does not take into account the fact that a large majority of states (and even some local governments) also impose an income tax. Thus, the 0.50:100 ratio does not reflect the overall cost of collecting the income tax, as there is no doubt that adding state administrative costs to those of the federal government would raise this ratio. The administrative cost of collecting an income tax in other developed countries normally falls in the 1% to 2% range (as a percentage of gross revenues).

- The internal structure of any tax affects its collection cost. It is merely common sense that any tax which has a multitude of tax rates, exemptions, incentives and other special provisions will be more difficult, and therefore more costly, to collect than a simpler impost. Good examples of this are tax thresholds (legislated and/or incorporated in tax regulations), which seek to exempt from the tax obligation taxpayers below a given net income level. In Guatemala the first Q36,000 of net taxable income, equivalent to almost three time per capita GDP, can be legally taken as a personal income tax deduction. By reducing the number of persons that have to file tax returns, this most certainly decreases administrative costs. Or, under the VAT, by placing all those firms whose gross monthly revenues are less than Q5,000 under a simplified regime, costs are also reduced, since the collection of small amounts from a multitude of persons or firms would probably generate much larger costs.

- The number of tax rates is another factor that impacts administrative costs. A single rate VAT generates (other factors constant) lower costs than one with multiple rates. The unification of a multi-rate VAT into a single rate in the United Kingdom in 1979 reduced the cost/yield by almost 50%.

- The method used by a country to offer tax benefits and incentives influences administrative costs. A benefit or incentive delivered as a tax expenditure (defined as reductions in tax obligations generated by preferences

incorporated in the tax code) increases administrative costs and decreases collections. The same benefit or incentive that is directly delivered in the form of a public expenditure does not reduce collections nor costs. Guatemala's tax laws contain a multiplicity of tax expenditures, whose fiscal sacrifice has been estimated by the SAT in a study carried out by the Planning and Institutional Development Department.

- International comparisons of administrative costs define this cost as proportion of collections from an individual tax or from the overall tax system. However, there is another reason that this cost/revenue ratio must be very carefully interpreted, for it strongly depends on tax rates. For example, with other factors constant, if the VAT rate were doubled, this would immediately reduce the cost/yield ratio almost by half. It is for this reason that all tables in this study present two ratios: one relating costs to gross revenues and another linking them to GDP, the latter representing a variable that is not directly affected by tax rate modifications.

- As a general rule, the ratio of total administrative costs to total gross tax revenues in developed countries with many years of administrative experience and stable tax structures fluctuates between 1% and 2%; in less developed countries having achieved a certain level of administrative efficiency, this ratio varies between 2% and 3%.

- A vital consideration when carrying out international comparisons of cost/revenue ratios is the magnitude of tax effectiveness, that is defined in terms of the percentage of **potential** revenue a government manages to collect. The difference between revenue actually collected and potential revenue is labeled the "tax gap". The most valid international comparisons of administrative costs are achieved when comparisons involve countries with similar tax effectiveness levels. The size of Guatemala's tax gap is unknown, although the VAT gap is estimated at 35%.

2. Evidence Regarding Selected Taxes

a. Value-Added Taxes (VAT)

Europe's long-term experience with the VAT displays a rather large variation between countries in terms of the administrative cost/gross yield proportion, varying from 0.32% to 1.09%; as a proportion of GDP the limits are 0.02% to 0.08%. In general there exists a positive correlation between cost and the number of tax rates, the complexity of tax laws, and the number of registered firms; the correlation is negative vis-à-vis the height of the threshold required to register. In other words, in order to minimize VAT collection costs, the tax authority and the government should adopt a single rate VAT subject to limited exemptions accompanied by a relatively high registration threshold to exempt small firms from the normal tax regime. Another factor that contributes to administrative cost reduction is the adoption of an integrated audit framework linking the VAT and income taxes.

Although the VAT has not been adopted in the United States, an important state-level source of tax revenues are sales taxes, whose base is the consumer retail price of goods and services. At this level there is a large range of administrative cost/yield ratios ranging from 0.30% to 1.70%

Placed in an international context, Guatemala's administrative cost for the domestic VAT expressed as a percentage of collections (2.99%) is relatively high. On the other hand, relative to GDP (0.06%) it falls within acceptable limits. The conclusion here is simple and straightforward: despite the 2001 increase in the VAT rate from 10% to 12% it remains low by international standards, especially compared to that in European countries. The easiest way to

decrease relative administrative costs is by increasing the tax rate. Naturally, the social and political impact of such a measure is another issue.

Although the conceptual validity might be questionable, combining and averaging the administrative costs for the Guatemalan domestic and import VAT has the effect of lowering VAT proportional costs. A simple average produces a figure of 2.38%; a weighted average (by amounts collected) generates a figure of 2.20%.

b. Income Taxes

In those countries where a VAT and income taxes represent a large proportion of total tax collections, it is generally the rule that the relative cost of income taxes is greater than that of the VAT by a multiple of between 1.5 and 2.0. This is not the case in Guatemala, where the administrative cost of income taxes (and the IEMA) is 2.6% of gross revenue, a figure only slightly above the relative VAT cost. This is probably due in large part to the high threshold for personal income taxes.

It was previously mentioned that at the federal government level in the United States the collection cost of the income tax is a mere 0.50% of the gross yield. There do not exist systematic data pertinent to this same cost at the state government levels. Nevertheless, it is probably fair to state that these vary significantly due to differences in coverage, rates, and complexity. Due to economies of scale few countries can aspire to reach that of the U.S. federal government. Disperse sources reveal that for many developed countries these costs normally range from 1.0% to 1.6% of gross collections.

c. Selected Excise Taxes

These levies include those on alcoholic and non-alcoholic beverages, tobacco products, and petroleum products and their derivatives. Published international studies on the administrative costs of these taxes appear to be few and far between. In those few cases where data have been published, costs fall well below 1% of revenues. In general, the relative costs of taxes on tobacco and petroleum products are less than those on beverages, with the explanation being that for the former there are fewer points of collection.

In the Guatemalan case (see Table 4), the figure of 4.15% associated with the collection cost of beverages and tobaccos is well above international standards. One explanation for this disparity might lie in the methodology applied, whereas another is linked to the numerous legislative and legal problems that arose in 2001 regarding beverage taxation. Nevertheless, the 4.15% figure does raise a red flag that signals the need to analyze more deeply the "true" cost of these types of taxes.

IV. SELECTED LOW-YIELD TAXES

A. Introduction

Referring to Table 4 and using the cost/gross revenue criterion, at first glance two taxes stand out as possibly being labeled as "unproductive taxes." In this instance an unproductive tax is defined as any levy that combines a relatively low revenue yield with a proportionally high administrative cost. There do not exist any absolute quantitative criteria regarding this latter variable, but, in general, if the cost is greater than 5% of yield it becomes worthwhile to analyze the administrative procedures and systems supporting the tax. If the proportion exceeds 10%, both the administrative procedures and the structure of the impost must be called into question, and if the cost falls into the 15% to 20% range (or greater) the very existence of the tax should be questioned.

Before reaching definitive conclusions on this matter, it must be recognized that the methodology previously described was applied at quite a "global" level. It merely represented an initial attempt in quantitatively evaluating the cost/yield performance of the most important taxes in the Guatemalan tax system. The next step is to apply a different and more detailed methodology to certain selected taxes using additional information culled from in-depth sources. It is for this reason that the administrative cost estimates derived for these selected levies will quantitatively differ from those previously found in Table 4.

As a product of interviews with upper level SAT management personnel, the following low-yield taxes emerged as candidates for more detailed analysis regarding their possible lack of "productivity":

1. Tax on vehicle circulation ("circulación de vehículos terrestre"), Decree 70-94. There exists a consensus of opinion that the administrative procedures and red tape generated by this levy are very burdensome. Moreover, the issue arises if the SAT is even the best or most effective tax collector; gross revenue in 2001 = Q221.16 million (1.34% of total taxes).
2. Stamp Taxes ("timbres fiscales y de papel sellado especial para protocolos"), Decree 37-92. Although it is well understood that by law certain documents require stamps to be attached and special paper to be used, stamps issued in very low denominations generate administrative costs (including printing) well above their price; gross revenue in 2001 = Q158.40 million (0.96% of total taxes).
3. Tax on inheritances and donations ("herencias, legados y donaciones"), Decree 431. This levy dates from the 1950s and requires a multiplicity of legal steps no matter what the value of the estate or donation; gross revenue in 2001 = Q7.56 million (0.05% of total taxes).
4. Tax on banana and timber exports ("exportación del banano y madera"), Decree 23-86. In addition to their very low yields, these two levies make no sense in an open economy that wants to foment exports; gross revenue in 2001 = Q2.10 (bananas) and Q0.10(timber), or 0.01% and 0.001% of total taxes respectively.

It should be emphasized that the mere fact that a tax displays a low yield does not necessarily convert it into what is defined here as an unproductive tax. What does make it unproductive is a relatively high ratio between cost and yield. Both the vehicle circulation and stamp taxes do generate appreciable yields that are not easy to replace. But, they become unproductive due to proportionally high administrative cost, given that the SAT has only a limited amount of resources that might be better used in collecting higher yield and more productive levies. Two examples of low yield but productive taxes are those on cable television (Decree 41-92) and external airplane tickets (Decree 17-52). Both are directly collected from a limited number of firms and simultaneously strengthen the equity function of taxation.

B. Quantification of the Administrative Cost of Three Potentially Unproductive Taxes

The data found in Tables 5 and 6 contain information regarding the direct and indirect costs of two of the three taxes to be analyzed. Some the direct costs are obvious: salaries of personnel who work in the unit responsible for the administration of the tax and the costs of materials and forms used to administer the levy (license decals and tags for vehicle circulation and stamps for stamp taxes). Two items included as direct costs merit further explanation. The depreciation of equipment (assets such as computers and office furniture), although an accounting entry not involving an actual cash disbursement, clearly represents a cost to be taken into account. In similar fashion, a charge for the imputed rent on the office space occupied by the administrative unit also represents a cost. An example of this latter cost is the following: since the beginning of 2002, when the SAT moved most of its operations to a new building in Zone 9, the tax administration units responsible for the taxes on stamps and vehicle circulation

remained in their offices in the Ministry of Finance, which now (reasonably) wants to charge the SAT rent for the office space it continues to use.

Indirect costs represent those expenses incurred by those SAT units that support the tax collection efforts of the unit directly responsible for a given levy. For example, Informatics/Systems offers support services to each and every SAT administrative unit. It is evident that these support services involve costs that must be absorbed in the SAT's budget.

It was not possible to gather information pertinent to all direct costs. Therefore, until such time as such items can be costed out, total costs for each tax are underestimated in an unknown proportion. It is for this reason that Tables 5 and 6 present data relative to so-called "Total Computable Costs;" i.e., only those costs that have been quantified.

1. The Vehicle Circulation Tax (Decree 70-94)

Table 5 represents a more detailed attempt to estimate the total administrative cost for this tax. Although it proved possible to gather data pertinent to the most important components of this levy, information covering some minor items was not available. Moreover, one cost that will have a major future impact on the cost structure of this tax is the forthcoming production of permanent license plates to replace those in use since 1988.

As may be noted from Table 5, in 2001 total computable costs reached just over 10% of total collections. Given this fact and in line with proportional cost criteria previously laid out, both the administrative tax collection process and the rate structure itself call for examination and readjustment. Most obviously, a mere rate hike would reduce the proportional administrative cost, although its political cost might well be high.

Table 5 gives rise to another (problematic) feature of this levy—that the SAT actually strongly "subsidizes" the existence and collection of the vehicle circulation tax. Given that the SAT receives only 2% of total tax collections (from all taxes it collects) to cover its administrative expenses, in this instance expenses are more than 10% of these same expenses. In other words, the 8% differential (or Q18 million in 2001) must be absorbed by the SAT or compensated for by greater efficiencies in the collection of most other taxes.

Table 5
Administrative Costs of the Vehicle Circulation Tax, 2001

	Quetzals
Direct Costs:	
Salaries	6,916,370
Production of Decals	4,388,250
Development and Production of License Plates	NA
Forms	NA
Materials	NA
Contracts with Banks	NA
Equipment Depreciation	433,710
Imputed Rental Value of Offices in MOF	NA
Indirect Costs Incurred by Support Units:	
General Administration	900,000
Human Resource Development	300,000
Informatics/Systems	5,100,000
Financial Administration	600,000
Planning and Evaluation	1,100,000
Auditing	2,500,000
Legal Affairs	100,000
Total Computable Cost (a)	22,338,330
Tax Revenue	221,164,825
Cost/Revenue Ratio	10.1
2% SAT Expense Reimbursement	4,423,297
Difference Absorbed by the SAT	17,915,033

Notes: (a) Sum of all items for which data are available.
NA = Not Available.
Source: SAT, Finance and Administration Office and Vehicle Registration Agency.

At first glance, it might be easily concluded that a tax whose collection costs constitute one-tenth of the revenue it generates is poorly and inefficiently administered. Although this might certainly be the case, such a conclusion should be examined with caution. Many of its characteristics need to be thoroughly examined, including all administrative processes, the tax law and accompanying regulations, and the tax rate level.

Apart from the issue of administrative efficiency, the need also arises to examine whether or not the SAT is the most appropriate agency to collect this tax. In most industrialized countries its administration and collection are both decentralized and collected by an agency not directly linked to the principal national (central) tax collection authority, be it the Ministry of Finance or an autonomous revenue collection agency such as the SAT. In Latin America many countries have decentralized vehicle registration and tax collection down to the municipal level. Moreover, the actual vehicle registration process is the responsibility of a ministry or other public entity that is not the nation's main tax collector.

One aspect should be cleared up. Tables 4 and 5 present different estimates regarding the administrative cost of this levy. In Table 4 the cost constituted 7% of gross collections, whereas in Table 5 it reached 10%. This apparent contradiction is not erroneous. Rather, its explanation lies in the different methodologies applied, with the methodology supporting the Table 5 figures being far more detailed and precise.

2. Stamp Taxes and Stamped Paper for Notarized Instruments (Decree 37-92)

The data corresponding to the administrative costs of this levy appear in Table 6, where it is readily noted that total computable costs amounted to almost 10% of gross collections in 2001. As in the case of the vehicle circulation tax, the SAT had to absorb the differential over and above its allotted 2% of total revenues. Once again there appears a large difference between the cost figures derived by the two different methodologies that lie behind Tables 4 and 6. In the more general case (Table 4) costs in 2001 were 4.73% of gross collections, whereas in the more detailed and precise version (Table 6) this proportion weighed in at 9.89%.

Deciding what to do with this tax is not easy. Legal and official documents require stamps and stamped paper for notarized instruments. Consequently, repealing the law is not a solution, as it would impact other Guatemalan laws and deeply-rooted legal procedures. One solution is to modify the cost of these legal procedures by reducing the number of currently available (stamp) denominations: ten and fifty cents (of a quetzal) and one, two, three, four, five, ten, twenty-five, forty, eighty and one hundred quetzals. Since over the years inflation has reduced the real value of these denominations, it would make sense to eliminate the smaller ones. What law(s) should be amended in order to implement this change is not clear, but elimination would certainly lower overall printing costs. Of course an alternative way of reducing the cost to revenue ratio would be to increase the prices of the procedures.

Table 6
Administrative Costs for Stamp Taxes and Stamped Paper for Notarized Instruments, 2001

	Quetzals
Direct Costs	
Salaries	1,086,848
Printing of Stamps	1,436,252
Forms	7,602,543
Materials	NA
Personnel Costs in 26 Regional Offices	NA
Contracts with Banks	NA
Equipment Depreciation	47,540
Imputed Rental Value of Offices in MOF	NA
Indirect Costs Incurred by Support Units	
General Administration	900,000
Human Resource Development	300,000
Informatics/Systems	1,900,000
Financial Administration	600,000
Planning and Evaluation	1,100,000
Auditing	500,000
Legal Affairs	200,000
Total Computable Cost (a)	15,673,183
Tax Revenue	158,398,890
Cost/Revenue Ratio	9.89
2% SAT Expense Reimbursement	3,167,978
Difference Absorbed by the SAT	12,505,205

Notes: (a) Sum of all items for which data are available.
NA = Not Available.
Source: SAT, Finance and Administration Office and Collections Department, Central Region.

3. Estate and Gift Tax (Decree 431)

This tax, which generated a mere Q7.56 million in 2001, is administered by DICABI, the Ministry of Finance's Department of Cadastre and Property Appraisal. Of the 137 persons working in this department, only 30 are involved full-time in the administration of this levy. According to DICABI's director, payroll and operational expenses amounted to Q1.75 million in 2001. Therefore, taking into account only these direct costs (excluding indirect support costs and some direct costs), the computable cost/gross revenue percentage amounted to 23.15%.

Administrative procedures for this tax are done manually (not computerized), and the average number of cases handled per year is 6000. Each case, regardless of its value, essentially requires identical procedures. Although this

legal process is mandatory, the amounts collected are so low that tax collections at current rates can be easily repealed without having any impact on public finances. A bill not yet submitted to Congress envisions a new version of this tax, which would generate an estimated Q50 million in revenue. It simplifies and facilitates administration and collection, and sets fixed (and relatively low) rates for the stamps and stamped paper that must be attached to the legal documents.

V. THE TOTAL OPERATING COST OF TAX ADMINISTRATION

To this juncture the discussion and analysis of the administrative costs of taxation has been limited to only one side of the equation: the costs incurred by the public sector's tax collection authority. The reality is that such estimates tell only part of the story, for they do not take into account the compliance costs that have to be absorbed by the private sector taxpayer. Compliance costs are those monetary and non-monetary expenses that confront the taxpayer in attempting to decipher tax laws and file tax returns. They represent costs over and above payment of the actual tax obligation. From the perspective of the Guatemalan economy, what is truly important is the total operating cost of the overall tax system; i.e., the sum of all real resources absorbed by both the tax administration authority and the taxpayer. Most international studies of these issues conclude that compliance costs, both for the overall tax system as well as for individual taxes, are some multiple of administrative costs. Although there is no estimate of Guatemalan compliance costs, there is certainly no reason to think that Guatemala might be an exception to the international rule.

Some examples of tax compliance costs from other countries will suffice. In the United Kingdom for the period 1986-87, the administrative cost of the central government's tax authority constituted 1.12% of gross revenues, whereas taxpayers' compliance costs amounted to 2.79% of gross collections. In other words, the total operating cost of tax administration reached 3.91% of tax revenues. Regarding specific taxes, the administrative and compliance costs of the income tax were 1.53% and 3.40% respectively; for the VAT the figures were 1.03% and 3.69%; and for excises (excluding petroleum) the corresponding percentages were 0.25% and 0.20%. With respect to the VAT, compliance costs dropped significantly from 9.30% to 3.69% between 1977-78 and 1986-87, due principally to a rise in the VAT rate from 8% to 15% (which increased the value of the denominator).

In the United States, although the combined administrative cost of the income tax at the federal and state levels ranges from 1.2% to 2.0% of revenues (a mere 0.50% at the federal level), compliance costs are far higher at around 7.0% of collections. For this same tax in Australia and Canada, administrative costs have been estimated at 1.13% and 1.00% respectively, while compliance costs weigh in at a much higher 9.16% and 6.13%. For the VAT in New Zealand, compliance costs have been estimated at 7.30% of VAT revenues collected.

Another conclusion gathered from international experience is also relevant to the Guatemalan case. The burden of compliance costs is strongly regressive, implying that it is significantly higher on small and medium-size firms than on large firms. Using gross firm revenues as the reference point, this burden has been estimated to be as much as twenty times higher on the small firm than on the large firm. It is clear than this finding should be an important element to take into account in the design and operation taxes such as the VAT as it relates to small and medium-size firms.

Some examples of compliance costs with respect to the individual taxpayer are: gathering and saving tax receipts and other information required by tax regulations; obtaining the knowledge necessary to comply with tax laws and regulations; paying tax preparers for advice and completion of tax forms. From the perspective of the firm compliance costs include: obtaining the training and knowledge required to comply with tax obligations, including penalties and

fines; withholding and/or collecting taxes; accounting; storing tax and information files. These costs involve both actual monetary outlays and opportunity costs in terms of time and effort not directly remunerated.

There does exist a significant trade-off between administrative and compliance costs; i.e., between the burden absorbed by the public versus the private sector. For example, the tax authority can reduce administrative costs by modifying tax laws and regulations that shift responsibilities toward private sector firms and individuals. However, unless it is clearly evident that the private sector is more efficient in carrying out specific tax collection functions, a better tax administration strategy should be create efficiencies within the public sector's tax authority while simultaneously reducing compliance costs.

Estimating compliance costs is not easy. There are essentially two methods for doing so: via a questionnaire mailed to a representative sample of taxpayers or via professionally conducted face-to-face interviews (also using a questionnaire) with a sample of taxpayers. The former can cover a large number of taxpayers, but may also be statistically biased depending on the response rate. The latter may assure a higher level of (statistical) confidence, but is more costly given the need to employ experienced interviewers.

Based on the foregoing summary discussion, government policy toward compliance costs should adopt the following guidelines:

- Compliance costs should be explicitly recognized and taken into account in the design of tax laws and regulations.
- Measures to reduce administrative costs at the expense of increasing compliance costs should be avoided.
- Policies to lower compliance costs, especially for small firms, should be adopted. Said policies are very similar those adopted to control and reduce administrative costs: taxes with few rate levels (one alone for the VAT); broad-based taxes with limited tax incentives cum expenditures; rationally set thresholds to reduce the number of taxpayers legally obligated to register for the more sophisticated version of a given tax (the VAT and income taxes); simplified tax forms; and differential tax-paying dates.

Table A-1
SAT: Expenditures by Administrative Entity, 1999-2002
(millions of quetzals)

	Expenditures				Budget			
Administrative Entity	**1999**	**%**	**2000**	**%**	**2001**	**%**	**2002**	**%**
Central Administration	6.0	3.5	15.0	5.1	137.5	26.5	22.9	4.8
Internal Auditing	1.9	1.1	3.0	1.0	3.6	0.7	5.7	1.2
Human Resources	8.8	5.1	8.5	2.9	10.6	2.0	19.0	4.0
Informatics/Systems	26.0	15.0	34.5	11.8	37.7	7.3	34.6	7.3
Regional Informatics/Systems	-	-	-	-	4.9	0.9	8.5	1.8
Regional Administration and Coordination Office	-	-	-	-	2.5	0.5	5.7	1.2
Financial Administration	15.9	9.2	42.6	14.6	63.6	12.3	24.5	5.2
Regional Financial Administration	-	-	-	-	8.1	1.6	27.0	5.7
Planning and Evaluation	1.9	1.1	2.7	0.9	3.2	0.6	3.9	0.8
Auditing	22.4	12.9	38.6	13.2	3.6	0.7	7.9	1.7
Regional Auditing	-	-	-	-	36.9	7.1	55.0	11.6
Legal Affairs	4.0	2.3	6.2	2.1	9.2	1.8	11.4	2.4
Domestic Tax Collection	47.5	27.4	63.0	21.6	43.0	8.3	45.0	9.5
Regional Domestic Tax Collection	-	-	-	-	39.8	7.7	65.3	13.8
External Tax Collection	28.2	16.3	54.1	18.5	9.8	1.9	16.6	3.5
Regional External Tax Collection	-	-	-	-	63.7	12.3	94.6	19.9
Strengthening Customs Systems	-	-	-	-	1.8	0.3	-	-
Project Coordination Unit	7.2	4.1	18.4	6.3	39.2	7.6	-	-
Large Taxpayers Administration	-	-	-	-	-	-	26.6	5.6
Unassigned Expenditures	3.6	2.1	5.6	1.9	-	-	-	-
Total	173.4	100	292.2	100	518.7	100	474.2	100

Source: For the years 1999-2001, SAT, Financial Administration Office, Report on the State of Budget Implementation, each year; for 2002, SAT, Revenue and Expense Budget for Fiscal Year 2002.

Table A-2
SAT: Time Allocated to Each Functional Category by Entity, 2001
(percentages)

	Administrative Entity									
	GA	HR	IS	FA	PE	AD	DT	ET	LA	PC
Function										
GA	100	5	4	5	5	3	10	12	10	10
HR		80	4	5	5	4	8	4	10	5
IS			3	5		8	15	10		15
FA			8	80		5	5	5		
PE		15	2	5	90	8	20	10	5	
AD			23			70		5		30
DT			25				42			20
ET			26					54		20
LA			5			2			75	
Total	100	100	100	100	100	100	100	100	100	100

Note: Weights, based on information generated by the IS Directorate, were used to allocate time for the following entities: IS, AD, DT and ET.

Legend:
GA: General Administration
HR: Human Resource Development
IS: Informatics/Systems
FA: Financial Administration
PE: Planning and Evaluation
AD: Auditing
DT: Domestic Tax Collection
ET: External Tax Collection
LA: Legal Affairs
PC: Project Coordination Unit

Source: Derived from interviews with SAT's management staff.

Table A-3
SAT: Expenditures by Functional Category, 2001
(millions of quetzals)

	Administrative Entity										
	GA	HR	IS	FA	PE	AD	DT	ET	LA	PC	Total
Function											
GA	59.7	0.5	1.3	3.3	0.1	1.2	8.1	8.8	0.9	3.4	87.3
HR	-	8.4	1.3	3.3	0.2	1.6	6.5	2.9	0.9	1.7	26.8
IS	-	-	1.0	3.3	-	3.2	12.2	7.3	-	5.0	32.0
FA	-	-	2.6	53.4	-	2.0	4.0	3.6	-	-	65.6
PE	-	1.6	0.6	3.3	2.9	3.2	16.2	7.3	0.4	-	35.5
AD	-	-	7.7	-	-	28.4	-	3.6	-	10.1	49.8
DT	-	-	8.2	-	-	-	34.1	-	-	6.7	49.0
ET	-	-	8.6	-	-	-	-	39.6	-	6.7	54.9
LA	-	-	1.6	-	-	0.8	-	-	6.8	-	9.2
Total	59.7	10.5	32.9	66.6	3.2	40.4	81.1	73.1	9.0	33.6	410.1

Legend:
GA: General Administration
HR: Human Resources
IS: Informatics/Systems
FA: Financial Administration
PE: Planning and Evaluation
AD: Auditing
DT: Domestic Tax Collection
ET: External Tax Collection
LA: Legal Affairs
PC: Project Coordination Unit

Source: Figures were derived for each administrative entity from the Report on the State of Budget Implementation and the subsequent application of the percentages shown in Table A-2.

Table A-4
SAT: Share of Time Allocated to Each Principal Tax, 2001

	Administrative Entity									
	GA	HR	IS	FA	PE	AD	DT	ET	LA	PC
Tax										
Income	13	13	11	13	25	17	18	-	5	13
Assets/Revenues	9	9	12	9	10	12	18	-	5	9
Domestic VAT	19	19	35	19	10	38	40	-	60	19
Import VAT	29	29	6	29	15	8	-	40	8	29
Customs Duties	12	12	6	12	15	8	-	40	8	12
Excises	3	3	1	3	10	5	5	10	5	3
Petroleum Products	10	10	1	10	5	2	1	10	5	10
Vehicles	1	1	16	1	3	5	10	-	1	1
Stamps	1	1	6	1	3	1	4	-	2	1
Financial Products	2	2	4	2	2	3	3	-	1	2
Others	1	1	2	1	2	1	1	-	-	1
Total	100	100	100	100	100	100	100	100	100	100

Legend:
GA: General Administration
HR: Human Resource Development
IS: Informatics/Systems
FA: Financial Administration
PE: Planning and Evaluation
AD: Auditing
DT: Domestic Tax Collection
ET: External Tax Collection
LA: Legal Affairs
PC: Project Coordination Unit

Source: Derived from interviews with SAT's management staff.

Table A-5
SAT: Administrative Costs of Main Taxes, 2001
(millions of quetzals)

FUNCTIONAL CATEGORY	GA	HR	IS	FA	PE	AD	DT	ET	LA	Total
Tax										
Income	11.3	3.5	3.5	8.5	8.9	8.5	8.8	-	0.5	53.5
Assets/Revenue	7.9	2.4	3.8	5.9	3.6	6.0	8.8	-	0.5	38.9
Domestic VAT	16.6	5.1	11.2	12.5	3.6	18.9	19.6	-	5.5	93.0
Import VAT	25.3	7.8	1.9	19.0	5.3	4.0	-	22.0	0.7	86.0
Customs Duties	10.5	3.2	1.9	7.9	5.3	4.0	-	22.0	0.7	55.5
Excises	2.6	0.8	0.3	2.0	3.6	2.5	2.5	5.4	0.5	20.2
Petroleum Products	8.7	2.7	0.3	6.6	1.8	1.0	0.5	5.5	0.4	27.5
Vehicles	0.9	0.3	5.1	0.6	1.1	2.5	4.9	-	0.1	15.5
Stamps	0.9	0.3	1.9	0.6	1.1	0.5	2.0	-	0.2	7.5
Financial Products	1.7	0.5	1.3	1.3	0.7	1.5	1.5	-	0.1	8.6
Others	0.9	0.2	0.8	0.7	0.5	0.4	0.4	-	-	3.9
Total	87.3	26.8	32.0	65.6	35.5	49.8	49.0	54.9	9.2	410.1

Legend:
GA: General Administration
HR: Human Resource Development
IS: Informatics/Systems
FA: Financial Administration
PE: Planning and Evaluation
AD: Auditing
DT: Domestic Tax Collection
ET: External Tax Collection
LA: Legal Affairs

Source: See methodology explained in text, Section III.A.