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# The Determinants of Revenue Performance

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# Making the Property Tax Work

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# Making the Property Tax Work

*Experiences in Developing and  
Transitional Countries*

*Edited by*

Roy Bahl, Jorge Martinez-Vazquez,  
and Joan Youngman



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# The Determinants of Revenue Performance

*Roy Bahl and Jorge Martinez-Vazquez*

Property taxation in developing countries is a fiscal paradox. On the one hand, it seems to be everyone's candidate for the primary source of local government revenue. On the other hand, the property tax is little used in developing countries. In this chapter, we ask about the determinants of this gap between expectations and reality, and speculate about what this means for the future.

## WHAT ARE THE REASONS FOR ADVOCACY?

The a priori case for heavier use of the property tax at the subnational level in developing and transitional countries is a strong one. There is much to recommend a greater reliance on this revenue source.<sup>1</sup>

### Correspondence

The property tax has the desirable feature that much of the tax burden is likely borne by residents in the jurisdiction where the services financed by property taxes are provided. This property of correspondence between expenditure benefits and tax burdens is an important characteristic of a good local tax. In this case the local governments who levy the tax are more likely

<sup>1</sup> For discussions of the case, see Bahl and Linn (1992) and Bird (2004).

to be fiscally responsible, that is, to be less likely to overspend on the expectation that tax exporting would allow them to pass some of the tax burden to the residents of other jurisdictions. Only a few other taxes, such as taxes on motor vehicle use, payroll taxes, and user charges, possess this important characteristic.

The reality of correspondence advantage of the property tax might be challenged. To the extent that the property tax is concentrated on nonresidential property, and if improvements (versus land) are a significant component of the tax base, there is a greater potential for exporting the burden to other regions. This happens when businesses sell outside the region and are able to pass the taxes on to consumers, when landlords are absentee owners, and so on. In countries where only industrial-commercial properties are taxed, the potential for exporting the property tax burden is greater, and the property tax is a less suitable local government levy.

### **The Benefit Argument**

A second reason why the property tax is a good match for local governments is that it might be seen as a quasicharge for services provided. Businesses and some residential owners may perceive that they benefit from certain public investments approximately in proportion to the value of their properties. For example, property values may be higher, other things being equal, in areas where street lighting is functional, policing is better, schools are of higher quality, and so on. It follows that there is a sense in which property taxes paid roughly correspond to benefits received. This of course assumes that property is correctly valued to reflect the betterment associated with public investments and regularly provided public services, that valuations are regularly updated, that land markets function, and that benefiting properties are not routinely exempted through the political process. It also assumes that property owners/taxpayers believe that this link between tax base and benefits received is more or less accurate.

### **Revenue Potential and Stability**

A major constraint to successful decentralization is the absence of a strong independent revenue source for local governments—one that is revenue productive and one that the higher level governments are willing to turn over to local governments. The property tax can fit this bill.

Certainly, the property tax has the potential to be a significant revenue producer for subnational governments. In the case of Canada and the United States, property tax revenues reach up to 3 percent to 4 percent of

gross domestic product (GDP). The value of land and improvements constitutes a broad base that is growing in virtually all countries, and even a modest statutory tax rate can yield a very significant amount of revenue.<sup>2</sup> However, the realization of large amounts of revenue requires a willingness to impose the property tax at higher levels than now exist, plus it requires a good valuation system and a high rate of compliance, which implies a strong program of enforcement. As we discuss later, industrialized countries have realized this revenue potential to a much greater extent than have developing and transitional countries, mostly because of their valuation and enforcement systems, but also because of the extent to which they have committed to fiscal decentralization.

Another positive feature of property taxation as a revenue source, and one that makes it especially attractive for subnational governments, is the relative stability of its tax base. Fluctuations in prices, income, and employment tend to have a much bigger impact on tax bases such as payrolls, profits, and sales than they have on property values. And the fluctuation in taxable property values is even less because revaluations are infrequent and do not closely follow the business cycle. This is an important consideration for local governments that often are charged with providing essential services and have no recourse to deficit financing.

### The Politics of Assignment

Central governments resist giving up control over important tax bases to their local governments. They argue that

- the resource constraints are more severe at the center, especially given the higher priority services to be delivered;
- subnational governments do not have a comparative advantage in administering these taxes; and
- macroeconomic policy dictates that these revenue sources should be held to the center.

In most countries the property tax seems to be exempt from these arguments. The value of land and improvements is not a tax base that the central governments covet; hence, they often seem content to leave it to local

<sup>2</sup> For example, Hernando de Soto (2000) estimates that the total value of Africans' informally owned houses and farmland in 1997 was roughly \$1 trillion, or nearly three times sub-Saharan Africa's annual GDP. However, much of this tax base in developing countries is subject to informal property rights, which does not help with the willingness to pay taxes. As reported in *The Economist*, January 15, 2004, "In Africa . . . less than 10% of the continent's land is formally owned, and barely one African in ten lives in a house with title deeds."

governments.<sup>3</sup> The reasons for this more or less common behavior among central authorities are far from clear. Although the central authorities may see the wisdom of assigning this tax to local governments, it also could be that their lack of interest in the property tax lies in the calculus of central officials regarding revenue potential versus political cost. Or it could reflect the central government's view about the complexity of administration and the low revenue potential of this tax.

### Other Advantages

There are other desirable features of the property tax, though they do not necessarily argue for assignment to local governments.

#### *Vertical Equity*

The property tax might also be seen as vertically equitable in developing and transitional countries. In fact, the property tax can be progressive in developing countries, and therefore can increase the overall vertical equity of the tax system (Bahl 1998; Bahl and Linn 1992; Sennoga, Sjoquist, and Wallace 2006). There are several reasons for this. Property ownership is heavily concentrated among the wealthy in developing countries, and property owners are often not reached by the income tax system. The property tax has the potential of filling the gap. On the basis of the high level of concentration of ownership, a tax on the land value base would seem to be the most progressive. At the other end of the income distribution spectrum, public housing and low-valued properties are generally not taxed at all, which also adds to the progressivity of the tax.

However, property taxes in less developed countries can be made regressive by exemption policies that target the well-to-do, such as in the case of exempting owner-occupied properties. Preferential assessment (or exemption) of certain commercial or industrial properties may have the same effect. The distributional effects of the property tax, then, are heavily influenced by the rate and base structure of the tax, as well as by its administration. These are factors that government can control, to some extent.

#### *Compliance Costs*

The property tax has the advantage that it imposes a relatively low compliance cost on taxpayers because taxpayers play a limited role in determining tax liability, except in the case of appeals. Unlike most other taxes that tend

<sup>3</sup> This is not always the case. For example in China, Indonesia, and Jamaica, the property tax is a central government levy, even though local governments receive most of the revenue.



to be self-assessed, such as income tax or value-added tax (VAT), property taxes are assessed by the tax authorities; therefore, the compliance costs are largely shifted to the assessing authority and billing authorities.<sup>4</sup>

Sometimes compliance costs arise because of harassment of taxpayers by corrupt officials who are charged with setting taxable values or with collection. In the case of Bangalore, India, the argument is that the reality of correspondence advantage of the property tax might be challenged. To the extent that the property tax is concentrated on nonresidential property, and if improvements (versus land) are a significant component of the tax base, there is a greater potential for exporting the burden to other regions. This happens when businesses sell outside the region and are able to pass their taxes on to consumers, when property owners are absentee owners, and under other conditions. In countries where only industrial-commercial properties are taxed, the potential for exporting the property tax burden is greater, and the property tax is a less suitable local government levy.

### *Land Use Efficiency*

Finally, a property tax might be thought of as a charge for land that can lead to significant improvements in the quality of land use. Particularly if land is taxed according to its location value in urban areas and if assessment is at its highest and best use, a more rational allocation of land use will occur. This was the reasoning behind the Chinese adoption of a land use charge. Here the land value version of property taxation has a particular advantage. In developing countries, however, the effective rate of taxation is so low that these incentives are not likely to be effective.

## REVENUE PERFORMANCE

Despite the a priori potential, property taxes are far from being a mainstay of the revenue system in developing and transitional countries. On average, as shown in table 3.1, property taxes in developing and transitional countries raise less relative to GDP than is the case of countries of the Organisation for Economic Co-operation and Development (OECD). In the early 2000s, property taxes in OECD countries represented 2.12 percent of GDP, whereas for developing countries this figure was 0.6 percent and for transitional countries, 0.68 percent. Averages do lie, and there are significant outliers in these country groupings, but for the most part, less developed

<sup>4</sup> In many developing and transitional countries, property taxes are assessed by a central authority, but billed and collected by the local authorities.

	1970s	1980s	1990s	2000s
<b>OECD countries</b> (number of countries)	1.24 16	1.31 18	1.44 16	2.12 18
<b>Developing countries</b> (number of countries)	0.42 20	0.36 27	0.42 23	0.60 29
<b>Transitional countries</b> (number of countries)	0.34 1	0.59 4	0.54 20	0.68 18
<b>All countries</b> (number of countries)	0.77 37	0.73 49	0.75 59	1.04 65

Note: The average of 2000s data is retrieved from data for the years 2000 and 2001.

Source: International Monetary Fund, *Government Finance Statistics Yearbook*, various years.

countries do not approach OECD countries in the intensity of use of the property tax.

It is interesting that the trend for all three categories of countries has been slightly upwards since the 1970s (i.e., the revenue-income elasticities have been positive). However, the gap between the industrialized and the developing countries has widened.

The data in table 3.1 strongly suggest that reliance on the property tax comes with economic development (e.g., compare OECD with developing countries). Some OECD countries make especially heavy use of the property tax. For example, Canada raises a revenue amount equivalent to about 4 percent of GDP, and the United States raises nearly 3 percent of GDP. This pattern of variation among countries in the intensity of use of the property tax is explored later in a more systematic way.

Even though the property tax is not intensively used in the revenue structures in developing countries, it often contributes significantly to financing subnational governments. The results presented in table 3.2 for the percentage of total subnational expenditures financed by property taxes are particularly interesting. Developing countries may not use the property tax more intensely than do OECD countries, but they would appear to rely more heavily on the property tax to finance subnational government expenditures. This finding, which will come as a surprise to many, gives a different perspective about the importance of strengthening the practice of property taxation in the developing countries. It suggests that a foundation is in place for the revenue importance of the property tax to be ratcheted up by assigning more expenditure responsibility to the subnational governments.

**TABLE 3.2** Property Tax as Share of Total Subnational Government Expenditures (Percent)

	1970s	1980s	1990s	2000s
<b>OECD countries</b> (number of countries)	9.7 16	9.88 17	13.65 16	12.40 19
<b>Developing countries</b> (number of countries)	18.65 21	15.97 27	13.49 24	18.37 20
<b>Transitional countries</b> (number of countries)	3.67 1	4.92 4	7.75 18	9.43 20
<b>All countries</b> (number of countries)	14.49 38	12.89 48	11.63 58	13.40 59

Note: The data for 2000s are for the five years from 2000 to 2004.

Sources: Columns 2 and 3 are based on International Monetary Fund, *Government Finance Statistics Yearbook (GFS)*, 2002; columns 4 and 5 have been calculated from *GFS*.

The fact that developing countries finance about 18 percent of subnational government spending from the property tax is a reflection of relatively lower subnational government expenditure share in developing countries and that subnational governments in developing countries generally have fewer options for local taxes by comparison with OECD countries. For example, local government income taxes are a common revenue source at the subnational level in OECD countries.

The averages shown in tables 3.1 and 3.2 tend to hide considerable levels of variation in the use of property taxes within each of the three categories of countries represented there.<sup>5</sup> What we will ask later is, besides the level of economic development, what other external and institutional factors may help explain variations in the use of property taxes.

### WHY SO FEW TAKERS?

There are major drawbacks to the use of property taxes in developing and transitional countries. Particularly the administrative constraints and how the tax is actually perceived by taxpayers go a long way toward explaining the relatively low revenue dependence on this tax by governments in developing countries.

<sup>5</sup> See Bird and Slack (2004) and Malme and Youngman (2001) for descriptions of individual country property taxes.

## Administration Cost

The major problem with the property tax is that it is difficult to administer and costly if administered well. A high administrative cost and a small revenue yield tend to make a good property tax a losing proposition. Moreover, higher level governments have an interest in keeping the political fallout to a minimum, and this goal may not be consistent with a well-administered property tax.

The result of these considerations is that in most developing and transitional countries, property taxes are badly administered. As we discuss in a later section of this chapter, the norm would seem to be that both assessment ratios and collection rates in developing countries are very low. This leads to unfairness in terms of how various categories of taxpayers are treated, to significant revenue leakage, and to a loss in confidence by taxpayers in their revenue source.

Property taxes cannot be self-assessed; hence, a very high staff cost is implied, and a great deal of information and record keeping is required. Significant administrative costs are also associated with collections and appeals. Compounding the problem, there is a shortage of property assessors in virtually all developing countries. Thus, when administrative costs are compared with revenue yield, even in the best of circumstances, the property tax easily can seem a poor financing choice for local governments.

## Enforcement

The property tax is difficult to enforce. Elected local officials are often not in a position to take actions against delinquent taxpayers because they are not provided with adequate penalties to do so. Moreover, those who are not in compliance may be leaders in the community, and local politicians may be hesitant to aggressively enforce penalties.

Potentially effective solutions to penalizing those who are out of compliance, such as confiscation of property, may be considered too extreme and generally are not feasible because of the political fallout. The special attachment to land in many developing countries raises the possibility that broad-based acceptance of a more intensively used property tax is not likely. This problem is much like the problem of collecting user charges for services considered essential (e.g., housing, water, electricity). Ultimately, it becomes an issue of political will, and very few developing and transitional countries have been able to exercise that will. However, there are exceptions; for example, South African local authorities have in the past used the threat of cutting off electricity for failure to pay the property tax or the utility bill.

## Taxpayer Attitudes

More generally, a major constraint to increased use of the property tax is its unpopularity with voters. Per dollar of revenue raised, property taxes may generate more negative reaction than any other levy does. There are several reasons for this degree of unpopularity. One is that the tax is levied on (unrealized) accretions to the wealth of an individual or a business, and these accretions do not necessarily correspond to income received. The holding of some other forms of property, for example, stocks or other financial assets, is taxed only upon realization. This creates not only special implementation problems (e.g., how to treat those living on fixed incomes), but it also creates a general hostility toward this tax.

The unpopularity of the property tax is also a result of the judgmental approach to assessment that is taken almost everywhere. A proposed increase in the tax rate on a base that is determined in uncertain or even mysterious ways is bound to provoke negative reactions. Finally, the tax is unpopular because it is so visible. Income tax is subject to withholding, but even so, most taxpayers may not be able to accurately report their annual payment. Consumption taxes are paid in small increments and are often obscured in the final price of the merchandise. Most people could not even guess at the annual amount of VAT that they may pay. The property tax, on the other hand, is highly visible. It is usually billed annually or quarterly, and property owners are much more likely to know exactly what they pay.

## Elasticity

Government officials desire a tax that exhibits an automatic revenue growth. This protects them from returning regularly to the voters for permission to increase the tax rates every time the demand or cost of public services increases. The property tax is not an income-elastic tax. The basic problem is that reassessments occur only periodically. In the interim, hence, year-to-year growth in revenues is mostly due to additions to the tax base through new construction or subdivisions. Building some revenue growth into the property tax is no easy matter. Periodic revaluation is the usual approach. But when revaluation is too infrequent, say every five or ten years, it leads to large one-time increases in tax liability and to voter uproar from the shock. As a result, countries use various means to cushion the shock, but these many times end up reducing the effective rate of property tax. Some innovations introduced internationally to deal with the issue of low elasticity include indexation used, for example, in Jordan, Colombia, and

Brazil, and the phasing-in of the reassessed values, as in the Philippines (Guevara and Yoingco, 1997). Neither of these solutions is flawless.

## HOW CAN THE PROPERTY TAX REACH ITS POTENTIAL?

Two routes to increasing property tax revenue mobilization in developing countries exist. One is a move toward fiscal decentralization as a development strategy. Even if the property tax share of subnational governments did not rise beyond the present level of 18 percent of expenditures, increased expenditure responsibility for subnational governments will lead to a higher property tax share of GDP. The second route to an increased rate of revenue mobilization is improved tax administration.

### Fiscal Decentralization

A useful approach to explaining the relative demand for property taxation in a country is to view this demand as derived from the demand for fiscal decentralization on the part of the national electorate in that country. A reasonable working hypothesis is that countries that seek greater fiscal decentralization will spend more through local governments and will rely more heavily on property taxation to finance these expenditures.

The argument for choosing the property tax is straightforward. Fiscal decentralization, to be truly effective, requires autonomous subnational government taxes. The criteria for choosing a good subnational government tax point to property taxation as a logical choice. Consider the following:

- A good local tax is one where there is a correspondence between the boundaries within which the expenditure benefits are received and the boundaries within which the tax burden falls. The property tax comes close to satisfying this condition for both second-tier and third-tier governments.
- Under good administration, and with a commitment to provide important services, the property tax can be a significant source of revenue for subnational governments. Potentially, the tax base is large and income elastic.
- Subnational governments, particularly third-tier local governments, may have a comparative advantage in assessing the property tax base because of their familiarity with the local economy and its land use patterns.
- Higher-level governments are not likely to aggressively compete for the right to levy property taxation because it is a high cost method of raising revenue, it is politically unpopular, and because central governments do not have a comparative advantage in assessing the base.

We test the hypothesis that fiscal decentralization drives the intensity of use of the property tax with an empirical analysis. The data are drawn from a multicountry panel data set drawn from the *Government Finance Statistics Yearbook (GFS)* of the International Monetary Fund and from several other sources. We measure fiscal decentralization as subnational government expenditures as a percentage of total government expenditures. To test the role of fiscal decentralization on the relative use of property taxation, we need to control for other variables expected to affect the dependent variable. In particular, we expect that reliance on property taxation may be higher across countries and over time the greater the degree of urbanization. Both land and improvement values tend to increase significantly in value in urban centers, and with this comes a heightened attractiveness of property taxation. We also control in the regression analysis for GDP per capita because we have seen that for a variety of institutional reasons richer countries tend to make a higher use of property taxation. Transitional countries are identified by a dummy variable. Even controlling for income per capita differences, transitional countries present very distinct institutional peculiarities such as history of land ownership and titling, which may affect the relative use of property taxation. We also control for population size and the rate of growth of population.

The estimation is based on a panel of 70 countries for three years, 1990, 1995, and 2000. Although data for many of the variables are available annually, the restriction to three years is imposed by the data availability for the urban population ratio. Besides the International Monetary Fund *GFS*, we use data from the World Resource Institute<sup>6</sup> for GDP per capita, population, and population growth rate. The data for urbanization are from the United Nations.<sup>7</sup>

Because of the possible nonlinear effects of population and GDP per capita, these two variables are entered in the regression in logarithms. Given the cross-country nature of the data set, there are potentially a number of issues specific to each of those countries for which we cannot control in the regressions, but may have an impact on the behavior of the dependent variable (property taxes relative to GDP). In this case the appropriate approach may be fixed or random effects estimation. However, because we are restricted to three years and because of missing data for some of the variables, we end up with an unbalanced panel data set with 107 observations. This does not support a fixed effects estimation approach for 70 different countries.

<sup>6</sup> The World Resource Institute, [www.earthtrends.wri.org](http://www.earthtrends.wri.org).

<sup>7</sup> "The World Urbanization Prospects: The 2003 Revision" from the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat 2004.

Instead, we allow for the presence of time effects by using dummy variables for 1990 and 1995.

In table 3.3 we present the two-stage least squares (2SLS) results. The need for using 2SLS arises from the potential endogeneity of the main control variable of interest, the level of fiscal decentralization. It may be that decentralization not only affects the relative use of property taxation as hypothesized here, but also that, in a reverse causation, the presence or relative ease of property taxation may also affect the extent of decentralization. In fact, the Hausman test for endogeneity shows that we cannot reject the possibility that the decentralization variable is indeed endogenous. For

**TABLE 3.3** The Determinants of the Relative Use of Property Taxation (Dependent Variable: Property Tax Revenues to GDP), 2SLS Estimation

Variables	Coefficient estimate	T-stat	Probability > t
Constant			
lgdpcap	0.008	0.11	0.909
lpop	-0.306	-6.04	0.000
p_decent	10.355	4.50	0.000
urbanpct	1.057	-0.11	0.915
pgr	57.673	4.83	0.000
transition	0.005	0.02	0.981
dy90	-0.237	-1.23	0.222
dy95	-0.295	-1.61	0.111

Number of observations	107
F (8,99)	40.74
Probability > F	0.0000
R-squared	0.7670
Adjusted R-squared	0.7482
Root Mean Square Error	0.7336

*Notes on variables:* lgdpcap = logarithm of GDP per capita; lpop = logarithm of population; p\_decent = predicted value of decentralization variable from the first stage estimation; urbanpct = percent urban population; pgr = rate of population growth; transition = dummy of countries in transition; dy90 = dummy for 1990 (the control year is 2000); dy95 = dummy for 1995 (the control year is 2000).



**TABLE 3.4** Fiscal Decentralization Indicators (Percent)

	1970s		1980s		1990s–2000s		
	Developing countries	OECD countries	Developing countries	OECD countries	Developing countries	OECD countries	Transitional countries
Subnational government tax as a share of total government tax	10.68 (43)	17.91 (24)	8.87 (33)	18.18 (23)	10.61 (28)	18.39 (21)	22.41 (23)
Subnational government expenditure as a share of total government expenditure	13.42 (45)	33.68 (23)	12.09 (41)	31.97 (24)	12.97 (54)	32.68 (24)	30.32 (24)

Note: Sample sizes are in parentheses.

Source: International Monetary Fund, *Government Finance Statistics Yearbook*, various years.

this reason we run as an alternative two-stage least squares, where in the first stage we use as instruments for decentralization population, population growth rate, and per capita GDP.

Results from the 2SLS estimation show that the coefficient for fiscal decentralization is positive and statistically significant. This supports the hypothesis that the demand for the use of property taxation is driven by the level of decentralization. The log of population is negative and significant, and the growth rate of population is positive and significant.

We may use these findings to help explain the slow growth of the property tax in developing countries, as reported in table 3.1. Based on the significant coefficient for decentralization in table 3.3, we can say that, other things equal, if the decentralization ratio had increased by 5 percent for developing countries in the 1990s, the ratio of property tax revenue of GDP would, on average, have been in that decade close to 0.6, or the average level reached in the 2000s by that group of countries. However, as we show in table 3.4, there has been little growth in the fiscal decentralization ratio over the past three decades. For developing countries, the level of fiscal decentralization, measured by subnational government expenditures as a share of total government expenditure, was about 13 percent, on average, in the 1970s, and was marginally lower in the 1990s and early 2000s.

**TABLE 3.5** Ratio of Third-Tier Government Expenditures to Total Subnational Government Expenditures, Selected Countries (Percent)

	1990s	2000s
OECD countries (number of countries)	53.91 10	46.89 10
Developing countries (number of countries)	40.97 8	40.63 8
All countries (number of countries)	47.44 18	29.17 18

Notes: The table excludes countries with 100 percent of subnational expenditures at the local level (that is, those countries without intermediate regional or provincial governments). The data for 2000s are for the five years from 2000 to 2004.

Source: International Monetary Fund, *Government Finance Statistics Yearbook*, various years.

With an adjusted R-square of 0.75 for the regression in table 3.3, we have not explained all of what goes in to determining the intensity of use of property taxation. One source of this specification error is the failure to account for differences among countries in the fiscal importance of third-tier (local) governments. For example, the arguments for property taxation are that it is a tax most suitable for third-tier local governments, that is, for city and municipal local governments that are small enough to capture the advantages of familiarity in setting tax rates that reflect voter preferences for financing local services and small enough to capture the comparative advantages of familiarity in assessing property. Thus, a reasonable additional hypothesis would be that the larger the importance of local governments in the subnational government sector (local plus regional), the higher the intensity of use of property taxation.<sup>8</sup> Unfortunately, the International Monetary Fund's *GFS* does not always show this breakdown (or shows it on an inconsistent basis). From the partial evidence in table 3.5, it would seem like the relative importance of third-tier (local) governments has declined in the 2000s vis-à-vis the 1990s, at least for the case of developed countries. Therefore, it is not possible for us to introduce this type of variable in the regressions in table 3.3.

<sup>8</sup> A corollary of this reasoning is that other taxes, such as personal income or consumption taxes, are more easily applicable at the regional level so that the larger the importance of the intermediate level governments in the subnational government sector, the lower the relative use of property taxation vis-à-vis other taxes.

### Improved Administration

As shown in table 3.1, the property tax share of GDP has not increased significantly over the past 30 years. In the previous section of this chapter, we have identified the lack of a deepening of fiscal decentralization as a constraint. There are other internal institutional constraints, having to do with how property taxes are actually structured and administered, that no doubt contribute to the overall lackluster performance of property taxation. These factors are especially relevant in the developing world. Data are not available for us to analyze these internal determinants of property tax revenue growth in a regression analysis. However, we might use a priori reasoning to speculate on the constraints and then try to illustrate these conjectures with examples and information from selected countries.

In order to identify some of the elements at play, we use the following identity, which describes the components or steps that go into identifying the ratio of property tax revenues to GDP in any particular country.

$$\frac{T_C}{y} = \left( \frac{T_C}{T_L} \right) \left( \frac{T_L}{AV} \right) \left( \frac{AV}{TMV} \right) \left( \frac{TMV}{MV} \right) \left( \frac{MV}{y} \right)$$

where

$T_C$	=	property tax revenue collections
$y$	=	GDP
$T_L$	=	property tax liability
$AV$	=	taxable assessed value
$TMV$	=	taxable market value
$MV$	=	full market value

The term on the left of the identity is the ratio of property tax revenue collections to GDP. It is the wide variation in this ratio (reported in table 3.1) that we would like to explain. Why do some countries realize a much higher effective property tax rate than do others? Our focus here is on the components of the tax structure and its implementation, particularly on assessment and collection.

The first term on the right is the collection ratio, that is, the percentage of true liability that is collected. In developing countries, where enforcement is often lax, collection rates as low as 50 percent are normal. Some examples, presented in table 3.6, support this argument.

Even the low rates reported in table 3.6 may be overestimates because in some cases they include collections of arrears in the numerator, but only

**TABLE 3.6** Selected Measures of Property Tax Administration

Country	Collection rate	Assessment ratio	Selected exemptions (partial or total)
Philippines (Rosengard 1998; Guevara 2004)	50–60 percent of current billings in 1990	Legal assessment ratios vary from 15 percent to 80 percent	Assessment ratios vary by value class and by property use
Jamaica (Sjoquist 2004)	40 percent in 2004	The median assessment ratio was 11 percent between the general revaluations	Certain agricultural properties
Chile (Rosengard 1998)	73 percent in 1990	—	Two-thirds of all property is exempt
Indonesia (Rosengard 1998)	80 percent in 1990	Legal assessment rates of 20 percent	—
Kenya (Kelly 2004)	10–60 percent	Actual rates vary between 20 percent and 70 percent	—
Colombia (Iregui et al. 2004; Bird 2004)	80 percent	70 percent in Bogota, 85 percent in Medellin	—

Source: Various works cited in the table.

current year liabilities in the denominator. Moreover, the demand for property tax payments may be based on a very low assessment ratio.

The second term, the ratio of tax liability to assessed value, describes the tax rate. The higher the legal tax rates, the higher value of this term. Governments in all countries face great pressure to keep the nominal rates low because of the unpopularity of the property tax. A typical range for tax rates under a capital value system may be between 0.5 percent and 1.0 percent, but can be much lower. The statutory rate is set to achieve a revenue target, given the size of the tax base and the assessment ratio.

The third term is the ratio of assessed value to taxable market value. This term varies with the efficiency of the valuation process. It also is affected by discretionary decisions to reduce the taxable base by applying an assessment ratio that is less than 1.0, for example, in the case of classified property taxes where industrial and residential properties often are assigned different assessment ratios. If no discretionary assessment ratio were

**TABLE 3.7** Simulated Impacts of Alternative Property Tax Administration Reform

	$T_c/y=$	$(T_c/T_L)$	$(T_L/AV)$	$(AV/TMV)$	$(TMV/MV)$	$(MV/y)$
Baseline	0.6	0.5	0.05	0.5	0.8	60
Scenario 1	0.84	<b>0.7</b>	0.05	0.5	0.8	60
Scenario 2	0.9	0.5	0.05	<b>0.75</b>	0.8	60
Scenario 3	0.75	0.5	0.05	0.5	<b>1.0</b>	60
Scenario 4	1.58	<b>0.7</b>	0.05	<b>0.75</b>	<b>1.0</b>	60

Note: **Bold** figures indicate parameter deviations from baseline values.

applied and all properties on the roll were valued at 100 percent of full market value, this ratio would be 1.0. The overwhelming evidence from developing countries is that properties are dramatically underassessed. In practice, valuation rates can be as low as 20 percent. Some evidence on the degree of variation in assessment ratios is given in table 3.7. Even these very low estimates may be an overstatement because they do take into account the fact that many properties are not valued at all.

The ratio of taxable market value to total market value indicates the impact of exemptions and preferential treatments on the property tax base, as well as exclusions. In many countries sizeable exemptions have been provided, depleting the tax base. These range from preferential treatment for homeowners to property tax holidays for new businesses. Again, some indicative evidence is presented in table 3.6. For example, in the case of Chile, two-thirds of all property is reported to be exempt. Another cause for the divergence between taxable market value and total market value is the failure to discover and incorporate new construction to the tax rolls.

Finally, the ratio of market value of real property to GDP tells us how property values match up to total output in the economy. For example, in an urbanized country, one might expect a higher (and growing) ratio of market value of property to total GDP. Local governments can exert little short-run control over this component of revenue performance.

What this identity tells us is that the reasons for the poor revenue performance of the property tax in developing countries are numerous, but are largely within the control of the local governments.

The importance of this point can be illustrated with a simple simulation that identifies the potential revenue impacts of local government administrative reform, as shown in table 3.7. In the columns we show the components of the property tax identity presented earlier, for example, in column

1 is the ratio of property tax to GDP, in column 2 is the collection rate, and so on. The first row of table 3.7 shows the baseline simulation, where the values of all the parameters are reasonably chosen so that the resulting property tax effort is 0.6 percent of GDP, the international average for developing countries as reported in table 3.1. The parameters of concern are the collection rate, the assessment ratio, and the exemption policy, and in those cases we have chosen values that seem more or less reflective of the actual practice. Apart from these policy variables, there are two controls that we do not vary in the simulations. A statutory tax rate of about 0.5 percent seems a reasonable assumption. The ratio of market value to GDP (which may hold many other factors) is calculated as a residual to satisfy the identity.

The results of the simple simulation show the following:

- In row 2 we vary only the collection rate from 50 percent to 70 percent. The result is that the property tax ratio to GDP increases from 0.6 percent to 0.84 percent, an increase of 40 percent.
- In row 3 we vary only the assessment ratio from 50 percent to 75 percent. The result is that the property tax share of GDP rises to 0.9, an increase of nearly 50 percent.
- In row 4 we eliminate exemptions and do not change anything else. The result is that the property tax share of GDP rises to 0.75, an increase of about 25 percent.
- In row 5 we vary all three of these factors together and estimate a more than doubling of the property tax share of GDP.

This simple simulation illustrates well that plausible improvements in government administrative and design practices can move the property tax to a much more significant place in the revenue system of developing countries. Getting property taxes to rise 1 percent of GDP implies a significant jump in the financing capacity of local governments in many countries around the world. In table 3.8 we report the results of an additional simple simulation to illustrate that point. If for the sample of countries in our data set (used to run the regression reported in table 3.3) we select first those countries that collect less than 1 percent of GDP in property taxes, and then we allow those countries to collect up to 1 percent of GDP in property taxes, the average increase in subnational government revenues would be around one-third.

Improvements in the administration parameters are possible and clearly can be made. But they are not easily made. Even more bothersome is the fact that big efforts are often put together to improve one of two of the critical parameters just to see the deterioration of other parameters with overall little

**TABLE 3.8** Simulations of Revenue Implications of Property Taxes Representing 1 Percent of GDP, Year 2000 (21 Countries)

Selected countries	Actual property tax per GDP (percent)	Percentage revenue increase of subnational government by topping 1 percent of GDP
Austria	0.1	4.7
Bulgaria	0.3	9.2
Chile	0.7	13.1
Croatia	0.5	9.2
Czech Republic	0.5	1.4
Estonia	0.5	7.7
Ethiopia	0.2	7.0
Hungary	0.7	2.2
Indonesia	0.1	66.0
Iran	0.2	45.5
Italy	0.9	0.6
Jamaica	0.2	141.9
Lithuania	0.6	6.0
Romania	0.5	11.5
Slovak Republic	0.6	17.8
Slovenia	0.7	3.9
Sri Lanka	0.7	79.9
Swaziland	0.1	130.0
Thailand	0.3	34.5
Uganda	0.1	20.1
Ukraine	0.0	9.2
Mean values	0.4	29.6

impact on actual revenue collections. For example, Dillinger (1988) reports how the Philippines' Property Tax Administration Project was successful in producing tax maps and updated property assessments, but this effort never yielded a substantial increase in revenue because the poor collection practices were never addressed. Even though valuations increased by 37.5 percent and collectibles by 13.6 percent, actual tax revenues increased by only 1.1 percent. In contrast, as Kelly (1993) reports, the Indonesian reform was more successful. By focusing on improved collection efficiency and improved valuation and assessment, property collection efficiency rose from 65 percent to 79 percent, and the share of property tax revenue in total own source revenue almost doubled between 1990 and 1991.

## THE FUTURE OF THE PROPERTY TAX IN DEVELOPING COUNTRIES

Making property taxes work in developing and transitional countries is a complex challenge. Although many internal and external factors are involved, we speculate that the future of the property tax in these countries depends mainly on four factors: (1) the efficacy of shortcuts to valuation of property; (2) technology catch-up; (3) the willingness of the central governments to give local governments access to other productive tax bases; and (4) the pace of decentralization.

### Factor 1: Administrative Shortcuts

Administrative cost is arguably the biggest constraint to the growth of the property tax. For the revenue it generates, it is just too expensive to properly levy and enforce. So countries are turning increasingly to shortcuts to address this problem. Introducing notional valuation based on location and area, self-assessment, indexing between valuation periods, and exempting properties that are hard to tax are all examples of such shortcuts. Will these innovations save the property tax or destroy it?

The approach that seems to be gaining currency in developing countries is area-based assessment. This is both inexpensive to do and understandable enough to be acceptable to taxpayers. However, at base it requires a judgmental assessment of value per square meter in each of the valuation zones prescribed by the regional or local government, and it requires judgment in setting the boundaries of the zone. The resulting notional values will require adjustment each year to build any elasticity into the property tax, and the zone boundaries may need to be changed periodically. More-



over, the idea that all properties in a zone can be subjected to the same notional valuation per area unit will turn out to be an enemy of fairness in property taxation. Area-based assessments are likely to improve the revenue yield of the tax and to give a better ratio of administrative cost to collections, but local governments are not likely to move to a higher intensity of property tax use with this approach to valuation.

### **Factor 2: Technology**

Will technology save property tax administration in developing countries? In fact, developing countries appear to be closing the technology gap at a much faster rate than they are closing the income gap. Can new technologies such as computerized mass appraisal, satellite-aided mapping, and cross-referencing<sup>9</sup> circumvent the high costs and time delays associated with the valuation process? Will it soon be possible for local governments to keep up-to-date records of land characteristics and ownership? If new technologies in property tax assessment, collection, and record keeping do catch on, they could minimize much of the current problem with the property tax in developing nations.

### **Factor 3: Alternative Revenue Sources**

Will central governments release other productive revenue sources to local governments? Examples are payroll taxes, piggyback personal income taxes and excises, business taxes, and taxes on the use and ownership of motor vehicles. To the extent these "easier" tax sources are available to local governments, the property tax might be minimized as a subnational government revenue source.

Property taxation is still full of potential, but also full of uncertainty, as an instrument for bringing revenues and accountability to subnational governments in developing and transitional countries.

### **Factor 4: Decentralization**

Despite being one of the hottest development strategies in the past two decades, decentralization has hardly taken off (see table 3.4). Although there are now many more decentralized and decentralizing developing countries than in the past, the average expenditure share of subnational governments in total government spending is considerably less than in developed countries and has barely budged from its 15 percent level in the 1970s. However,

<sup>9</sup> Dillinger (1989) describes the successful practice in some Brazilian municipalities of using data provided by other agencies to flag changes in the tax base.

more elected officials are bringing pressure, there is a continuing reaction against central governments that have become too controlling, and there is a political strategy to promote bringing governments closer to people. All of this could lead to increased decentralization. As decentralizing countries turn to the job of identifying revenue sources for local governments, an expanded property tax will be an obvious choice. Moreover, the increased local government expenditure responsibility that comes with fiscal decentralization will give an increased incentive for undertaking difficult administrative reforms.

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