AN OPTIMAL PROPERTY TAX:
CONCEPTS AND PRACTICES

Prepared by

MICHAEL E. BELL
MEB ASSOCIATES, INC.
P.O. BOX 2232
KENSINGTON, MARYLAND 20891-2232
Telephone 301.468.5531
Fax 301.881.9026
e-mail mebassociates@worldnet.att.net

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1.0 INTRODUCTION

Autonomous local governments require that they generate adequate own-source revenues to provide the level and quality of services demanded by residents and businesses. In short,

"To make local autonomy meaningful, subnational governments need adequate locally controlled revenues."1

The power to tax is essential to sustainable, accountable local government. Although they can play a vital role, intergovernmental transfers are not sufficient if local government truly is to be a separate, independent, sphere of government. Without an adequate revenue source that it controls, local government lacks autonomy — it is merely an arm of national or provincial government. Ideally, for full autonomy, local governments should have discretion in determining the base of the tax and tax rates.

The property tax is the single most important local tax in developing countries.2 Internationally, over 130 countries have some form of tax on property, albeit the relative importance varies substantial across countries.3 The purpose of this chapter is to discuss the concepts and issues associated with designing and implementing an optimal property tax system. The issues discussed include both policy issues and administrative issues. Property tax reform must address both sets of issues if the benefits of such reform are to be fully realized.

The remainder of this section discusses why the property tax is an important source of local own-revenues. The next section discusses the characteristics of an optimal property tax system.

1.1 The Property Tax As An Element Of A Good Revenue System

Generally, a good local revenue system would generate a revenue stream that is relatively productive and stable over time, is relatively neutral with regard to its impact on private economic decisions, is simple and predictable, and is equitable. Relative to other potential sources of local tax revenues, a local property tax scores well on all of these criteria. Accordingly, such a tax should be an important part of any local revenue system.

2 Roy W. Bahl and Johannes F. Linn, Urban Public Finance in Developing Countries, Oxford University Press, 1992, p. 79.
3 Joseph K. Eckert (General Editor) and Robert J. Goudemans and Richard R. Almy (Senior Technical Editors), Property Appraisal and Assessment Administration, The International Association of Assessing Officers, 1990, p. 6.
1.1.1 Revenue Productivity

A stable tax generates revenues that change relatively more slowly than income—that is, the tax revenue is income inelastic. Real estate markets reflect long-term asset values, which tend to respond more slowly to annual changes in the level of economic activity than economic flows like business turnover or wages. Also, fluctuations in the property tax base are moderated because few jurisdictions have annual assessment practices that completely capture changes in real estate values. Therefore, the property tax is regarded as a relatively stable revenue source—especially when compared to other potential local tax sources like wage or turnover taxes.

The income-elasticity of the property tax is influenced by three separate characteristics. First, the base-elasticity measures the responsiveness of assessed property value to income changes—i.e. it indicates the extent to which property tax revenues respond to changes in the economic base of the city as reflected in the assessed value of property. Second, the rate-elasticity measures the responsiveness of tax collections to changes in assessed property values—i.e. it reflects the extent to which increases in assessed value are translated into property tax collections. Third, the collection rate-elasticity indicates the responsiveness of tax collections to changes in tax liabilities—i.e. it reflects the impact of collection efficiency on changes in property tax collections.4

1.1.2 Neutrality

Neutrality in taxation requires that taxes have a minimal unintended influence on private economic decisions. The individual or firm that pays the tax may be able to adjust their behavior in ways that shift the ultimate burden of the tax to others or avoids the tax entirely. To the extent that economic actors adjust their behavior to shift or avoid the tax, the tax has distorted private economic decisions.

Taxes that are difficult to avoid have less of an impact on private economic decisions. For example, the property tax is assessed against real property. In the short-run, real estate is immobile and there is little that owners can do to avoid the tax. Thus, the tax has little impact on their economic decisions in the short-run. In this respect, the property tax tends to distort private economic decisions less than other local taxes—especially when the base of the tax is defined as broadly as possible.

1.1.3 Simplicity

Taxes may cause distortions in the allocation of economic resources if they are complex and difficult to administer. In such a situation, the taxpayer may have to spend substantial resources to comply with the tax law, and the local jurisdiction may expend substantial resources administering it. Relative to other potential local tax sources with tax bases that are annual flows that must be monitored and verified, the property tax is easy to administer and involves low compliance costs—especially for the taxpayer.

1.1.4 Equity

The equity, or fairness, concern with the property tax has two dimensions: first, equity across jurisdictions and second, equity across individuals. In the first case, there is a concern that property tax bases vary across jurisdictions putting some at a disadvantage -- jurisdictions with limited property tax bases require higher property tax rates to raise sufficient revenue to provide a minimal level and quality of public goods and services. Available empirical evidence indicates, however, that fiscal disparities are not reduced by increasing reliance on local non-property taxes.\(^5\) In fact, traditional sales and income tax bases tend to have greater disparities across jurisdictions than property taxes. For example, Bowman and Mikesell found that differences in tax bases per capita were larger across jurisdictions in a metropolitan area under a local employment-based income tax and a traditional, point-of-sale, sales tax than under the property tax.\(^6\) Therefore, disparities across jurisdictions must be remedied through equalizing intergovernmental grants, not simply by making additional sources of own revenues available to local governments.

The second concern is with the distribution of the tax burden across income classes because the property tax is regarded, in part, as an example of ability-to-pay taxes. The property tax generates revenues to fund services that benefit the entire community. The ability-to-pay principle of taxation stipulates that the burden of financing such general community services should be distributed across property owners in relation to the value of their property, which is a proxy for ability-to-pay.

The consensus among economists is that a significant portion of the property tax rests on individuals receiving income from capital, who are typically concentrated in higher income groups. Thus, this portion of the property tax is generally thought to be progressive.

To the extent that the property tax is a tax on housing consumption, it is generally considered to be relatively proportional across income classes. When measured against "permanent income," most studies suggest that housing consumption is a relatively constant fraction of income. Thus, a property tax on housing consumption would be proportional. Again, the property tax scores relatively well on this criterion compared with other potential local tax sources.

In conclusion, based on traditional criteria for evaluating a revenue system, the local property tax emerges as a very defensible source of local revenues. The property tax is especially attractive when compared with other potential sources of local tax

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5 With the possible exception of a residence based income tax.

revenues. The manner in which the property tax is administered, however, greatly influences its productivity, neutrality, simplicity, and equity. The next section discusses additional advantages of the property tax as a benefit charge that are not available with other potential local tax sources.

1.2 Property Taxes as Benefit Charges

Local governments provide a variety of goods and services to their citizens and different goods and services are financed by different funding mechanisms. Some services have private good characteristics and are funded through direct charges— or tariffs—based on the level of service consumed. Individual usage is monitored and a bill is sent to each resident based on how much they actually consume.

In addition, local government provides a wide array of services that benefit the community in general. Such community services include, but are not limited to, fire protection, primary health clinics, parks, libraries, street lighting, storm-water drains, refuse removal, traffic police, roads, sports facilities, and the like. These services benefit everyone in the community and they need to be funded through general taxes paid by everyone. The property tax is the way that most people pay for these general community services.

Tariffs that fund the delivery of services with private good characteristics are linked directly to actual consumption of specific goods and services. The amount of the tariff depends on individual consumption decisions. Alternatively, property rates are used to finance community services and property tax liabilities are not linked to actual consumption of specific services. Rather, the amount of rates paid depends on the value of one's property and the level of rates set by the local council.

In this context, the local property tax has many advantages from the perspective of the benefit principle of taxation. First, a majority of community services provided by municipal governments tend to benefit local properties. For example, community services include expenditures for the maintenance, operation, and upgrading of local transportation networks; public safety; sewer and other sanitation; solid waste management; parks, housing, and community development; and general administration. Since these expenditures generally benefit local property owners, the benefit principle of taxation supports financing such expenditures from a local property tax.

Second, the property tax is generally a visible tax. Property owners receive tax bills annually and these bills provide a clear indication of the cost to the property owner of community services provided by the local government. Thus, each jurisdiction will offer an identifiable bundle of public goods and services with identifiable costs to the property owner. Individual property owners will evaluate the bundle of goods and services received and compare it to the taxes they pay. Such a linkage promotes citizen involvement in the local budget process and strengthens accountability.
This argument implicitly assumes that benefits are distributed across properties in proportion to their property tax liabilities. Under the usual standard of tax uniformity, this implies benefits are distributed in proportion to market value. Thus, the property tax on two homes of equal value and which have equal access to community services must, for equity under the benefits principle, be taxed the same.

This is a strong argument for the uniform assessment of all real property. Any assessment or tax non-uniformities tend to depart from the principles underlying the benefits-received case for the property tax, as they cause tax shares to diverge from benefit shares. Such non-uniformities can arise from either extralegal differences in tax treatment (for example, assessment error) or intentional differences resulting from classification, exemptions or other property tax relief mechanisms.7

As a household or firm evaluates alternative locations within a metropolitan area, these bundles of community services and associated property tax liabilities are weighed. In essence, the property tax serves as the "tax price" associated with a specific bundle of community goods and services. The household and firm "shop" for the community that provides the most desirable "package" of goods and services at an acceptable price.

This mechanism tends to bring the demand for public services by individuals into balance with the supply provided by local governments. If a jurisdiction is supplying extraordinary levels of public goods and services, and the benefits exceed the cost to the property owner, more people will want to move to that jurisdiction and bid up real estate prices. Conversely, if taxes in a jurisdiction are high relative to the level of services provided, individuals and firms will locate elsewhere, thereby reducing real estate values in such a jurisdiction. In other words, the link between property tax payments and benefits received improves accountability at the local level by encouraging feedback to local officials on the desirability of the bundle of goods, services, and tax price provided.8

2.0 CHARACTERISTICS OF AN OPTIMAL PROPERTY TAX

If the property tax is to be viable, it must possess the following characteristics:

- **Legitimacy.** Acceptance of the property tax depends upon its legitimacy—the determination of tax liabilities for individual taxpayers according to explicit standards set forth in legislation. Individual taxers must feel that they, along with all others, are contributing their fair share to the general operation

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7 This argument applies to the property tax as a measure of the ability-to-pay as well. Uniform assessments are necessary to allocate the cost of providing community services across property owners in relation to their ability to pay as reflected in property values.

of local government. Therefore, taxpayers must believe the tax is a legitimate levy – i.e., it must be accepted.

- **Openness.** To accomplish the legitimacy described above, the valuation process, and the outcomes of that process, must be transparent and accepted by all taxpayers. If a tax functions in a confusing or unclear manner, it is unlikely that taxpayers will accept readily and unquestioningly their obligations under it. Thus, determination of both the tax base and the tax rate levied upon it need to be understood by all taxpayers. Taxpayers need to be able to understand the workings of the tax – i.e., it must be transparent – and they must be able to have their complaints under it resolved in a simple, low-cost manner.

- **Technical Proficiency.** This characteristic of the valuation process boils down to professionalizing the valuation system by providing appropriate administrative structure, employing valuers who are trained and technically competent, and providing them with the tools and information needed to perform well. In short, the tax must be administered in a professional manner insulated from political influences.

- **Fairness.** The tax must be administered in a manner that treats taxpayers uniformly and fairly. There also must be provision, however, for relief from burdens considered unduly onerous in terms of a broader notion of ability to pay, such as current income.

In some instances, these characteristics and criteria will pull in opposite directions, making tradeoffs between them necessary. These tradeoffs need to be made through an open and transparent political process. Because circumstances and preferences differ across areas, there should be considerable local choice where this would not impinge unduly on legitimate national concerns or objectives.

Finally, it is important to recognize that attaining these characteristics is a long-term process. They cannot be accomplished immediately, or even in a year or two. There must be a transition period from the current system to a new, productive and equitable property tax system.

### 3.0 PROPERTY TAX POLICY ISSUES AND OPTIONS

Designing and implementing a property tax with the characteristics discussed earlier requires making policy decisions and creating a viable administrative framework. The purpose of this section is to identify and discuss major policy issues that must be addressed in designing and implementing an optimal property tax system. The next section discusses the administrative framework.
Policy decisions fall into three main categories – defining the property tax base, promoting the uniformity of the tax base, and determining the property tax rate. These are discussed below.

3.1 Defining the Property Tax Base

The first policy issue to address is that of defining the base of the property tax. The second policy issue is how to denominate value.

The property tax can be either general or selective in its application. A general property tax would apply to all types of property and would treat the various types uniformly. Non-uniformity can be introduced by excluding some property types from the tax base, by differential tax treatment for various property types, or by a combination of these two.

There are two main categories of property – real property and personal property. Real property consists of two component parts – land plus any improvements permanently attached to the land. Personal property is every kind of property other than real property and consists of two component parts – tangible and intangible personal property. Tangible personal property includes things such as inventories that can be seen, touched, or moved about. It also includes things like cars, boats, office equipment, machinery, etc. Alternatively, intangible personal property has no physical existence other than certificates or accounts that represent its value. Fixtures may be either tangible personal or real property, depending on whether or not they can be removed without damaging the real property to which they are attached.9

For the purposes of this discussion we are referring to a selective property tax on real property.

Once the base is defined, property value can be denominated in two ways – 1) on the basis of the rent a property would be expected to yield (its annual rental value or ARV) or 2) according to its expected sales price (termed capital or market value).10

Both definitions are widely used and to a large extent reflect historical associations. The policy choice between these alternative means of denominating value, however, has significant implications for social and political issues of concern. For example, although both capital value and rental value reflect the income to be derived from a property, the choice of one denomination of value over another has important implications for how the property tax burden is distributed across property owners.

The primary distinction between the two notions of value lies in how future potential gains are treated. When property is put to its highest and best use, the net

stream of rental payments, discounted to the present value, approximates the current
capital value of the property. In this case, the rental value and capital value would be
approximately equal. However, if the current use diverges from the highest and best use,
this relationship no longer holds. The rental value of the property would be less than the
capital value. In this case, the choice between rental value and capital value as the base
for the tax approximates the choice between a tax based upon income and one based upon
wealth. As a result, the capital value definition will tend to place a higher proportion
of the property tax burden on “underutilized” property – vacant land or built-upon
properties that the market perceives as candidates for conversion to more intensive use.

In practice, however, the implications of using one denomination of value instead
of another may not be as great as theory suggests. For example, given data limitations,
in a annual rental value system, classes of property for which no reliable rental data exist
often are valued on a capital basis and then converted to rental value using an appropriate
capitalization factor. Similarly, in a capital value system, rental income often is
capitalized to yield a capital value for classes of property for which other methods of
determining capital value cannot be used (e.g., using the income method of determining
value or commercial and industrial property and apartments). This suggests that political
credibility and administrative feasibility, not theoretical neatness, should be the
overriding consideration in choosing between the two approaches to denominating
value.

In some cases, however, value-based property tax systems, whether based on
capital value or rental value, have been rejected entirely. The alternative has been a
variation of an area-based property tax. Both land and improvement areas may be
included in the tax base. A more recent development has been adoption of the
acquisition-value as the denomination of value. This values a property for tax purposes
at its most recent purchase price. As a result, there is no relationship between the value
of a property for tax purposes and its capital value or current rental value. While the
acquisition-value approach results in tax certainty, it violates tax uniformity and fairness
concerns.

Another policy issue in determining the property tax base is deciding whether to
include land and improvements in the tax base or tax land only. Total property value is a
concept that most property owners understand. Thus, using total value as the base of the
property tax, including both land and improvements in the tax-base, promotes
transparency. In addition, including land and improvements in the tax base is consistent

11 Joan M. Youngman and Jane H. Malme, An International Survey of Taxes on Land and
12 Alternatively, limited empirical data suggest that in developing countries there may be substantial
differences between the two. Factors contributing to these differences include using net rental value for
determining annual rental value without any clear notion of what expenses are deducted from gross rent to
arrive at net rent, the existence of rent controls in many cities, and difficulties of defining rental values for
non-residential properties and vacant land. For a further discussion these issues see Bahl and Lin, Urban
Public Finance in Developing Countries, op. cit., pp. 84-6.
13 Dillinger, Urban Property Tax Reform, op. cit., p. 15.
14 Ibid., p. 6.
with traditional tax policy objectives of defining a broad tax base so a given amount of revenue can be raised with a relatively low rate that minimizes distortions.

Also, a concern with uniformity stipulates that everyone is equal before the law. This suggests that all citizens within a local government should be treated equally by taxing a comprehensive measure of wealth, not just a portion of wealth whose relative importance will vary across property owners. If the whole property is not included in the tax base, it is difficult to identify which taxpayers are being favored, and to what extent.

Alternatively, taxing only land has merit. Because land values owe less to the decisions and actions of individual land-owners than do improvement values, taxing land merely recaptures for public benefit a portion of the value created by public actions. Further, excluding improvements from the tax provides an incentive for more investment and maintenance in both residential and commercial development.

In addition, it is claimed that it is far less costly to value only land for tax purposes because the local jurisdiction does not need to collect and maintain data on improvements. To the extent this is true, it may be easier to bring areas that previously were outside the tax net onto the tax rolls. Finally, it is argued that a tax on land is likely to be paid by the owners of capital and, therefore, should be more progressive.

In short, arguments for taxing only land emphasize administrative simplicity and non-interference with investment decisions — i.e., efficiency. Simplicity is said to result from the ability to ignore improvements altogether, which greatly reduces data needs and thus valuation costs. A key question, however, is how values of unimproved sites are derived in largely built-up areas with few sales of vacant land. If nearly all sales are of improved properties, how are market values of one component (land) determined if valuers have no data on the other component of sold properties (improvements)? Lack of information on how land values are determined can undermine the transparency and legitimacy of the tax. Thus, to the extent that there are lower administrative costs, they tend to be offset by reduced transparency; taxpayers often have no notion of site value, and estimation methods often are hard to follow. Equity also may suffer — reliance on few sales and complex methods may not produce appropriate values — but it will be difficult to know.

Including improvements in the base is said to enhance equity, for this broader measure does not ignore what is, on average, the largest part of real estate investment. Moreover, when the property tax is viewed as just one component in the overall tax system, not taxing improvements under the property tax may provide greater stimulus to residential investment than to commercial and industrial investment, and thus not be neutral. This is because the benefits from business investment are reflected in income streams that are taxable under the corporate income tax, while the benefits from owner-occupied housing investment are housing benefits that are outside the personal income tax system. Although that non-neutrality arises under the income tax, the property tax could be used to redress, or offset, it. Also, if complete neutrality cannot be attained, efficiency may be enhanced by including improvements in the property tax base, in part
because the lower nominal tax rates needed to produce a given amount of revenue may distort decisions less than the higher nominal rates under a site-value tax. And while taxing improvements might be regarded as punishing investment, it also can be seen simply as taxing wealth increments, in line with the logic of the tax.

3.2 Uniformity of the Property Tax Base

Legitimacy and fairness concerns require that the property tax should be administered uniformly within each jurisdiction. Uniformity is important within each jurisdiction because values set for individual properties determine the distribution of responsibility for funding local government activities across taxpayers. But uniformity must be defined relative to some specific value standard, or concept.

International practice varies in this regard. The options are value in current use and value in highest and best probable use as reflected in the market value of individual properties. A consideration favoring market value over current-use value is that, in taxing under-utilized properties on the basis of their potential use, the former increases the tax base and provides an incentive to utilize properties better, or more fully. The strength of this incentive will depend on several things, including the level of tax rates and the difference between actual and potential use values, but the incentive is consistent with developmental objectives. For properties with no reasonable alternative use in the near term, such as many agricultural properties in remote areas, current use and highest and best probable use will be the same. Operationally, valuers assume current use is highest and best probable use unless there is evidence that a typical user would put a property to more intensive use than the current owner.

When individual property valuations are at the same percentage of market value, they are most likely to be accepted as fair. This would ensure that property tax liabilities — support of general community services — are distributed across individual property owners in relation to their share of the total tax base (i.e., ability to pay, as determined by property value). The ultimate policy objective, therefore, should be to implement the property tax system in an individual local authority uniformly across all property use classes at 100 percent of market value.

Another dimension of uniformity is the issue of which properties in a local jurisdiction should be subject to the property tax. Full uniformity requires an inclusive tax base; no property should be excluded from the valuation rolls. Exemptions, or other favorable treatment of particular types or uses of property, can remove significant contributors from the property tax base. Typically, the objective of such policies is to promote a variety of distributional or other social objectives. The result is a shift in the cost of supporting community services from some taxpayers, and beneficiaries, to those who do not receive preferential treatment. This undermines the fairness, and therefore the general acceptance, of the property tax.

Probably the most common type of exemption is for government owned property, but there are good arguments for questioning this practice. For example, urban services
are provided to workers in government owned properties just as they are to other buildings and workers. Also, eliminating the property tax on government owned property reduces the cost of owning such property and such a subsidy could provide an incentive for the government to own too much property or make inefficient location decisions. Finally, major cities, especially capital cities, could lose a significant share of their property tax base by exempting government owned property thereby shifting an undue tax burden on other property owners. Thus, the long-term objective is to include in the tax base all properties.

There also is a concern about uniformity across jurisdictions. This is an important policy concern to the extent that the property base either is levied upon by larger governmental units, or used for non-tax purposes. Regarding the latter, the valuation base might be used as a factor in addressing disparities in intergovernmental fiscal capacity, or it could be used to regulate the amount of debt incurred by local governments. In such cases, it is important to ensure that low valuations per capita represent poor jurisdictions, not their valuing property at a low percentage of market value.

In summary, reliance on 100 percent of market value as the base of the property tax promotes the attainment of overall equity across three separate dimensions:

- Taxpayers in similar circumstances – properties of similar value located in the same taxing unit pay similar taxes (horizontal equity).

- Taxpayers with properties of different value have tax differences proportionate to the underlying market value differences (vertical equity).

- Third, if the tax base is used to levy taxes by a broader unit, or is used for non-tax purposes, such as allocating intergovernmental grants or limiting local borrowing, then valuations must be comparable across localities.

Of course, it is not enough simply to set uniform valuation at full market value as the standard. A suitable administrative structure is necessary. Also, monitoring of the outcomes of the valuation, or assessment, system through regular assessment-sales ratio studies will be important, for valuation differences can arise in many ways. Monitoring is considered more fully in a later section, but it is noted here that proper monitoring permits interjurisdictional equalization of tax bases. Thus, concern for uniformity across jurisdictions does not require a uniform national property tax base definition.

3.3 Determining the Property Tax Rate

Tax liability is determined by multiplying the legal tax base – i.e., the taxable value carried on the local tax roll – times the nominal tax rate. Liabilities for individual properties are determined in this manner, and the sum of individual liabilities is the local

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government’s property tax levy. A smaller base can be offset by a higher rate, as long as there is no limit on the nominal rate. Thus, the rate is critically important in determining the revenue productivity, or adequacy, of the property tax for local governments.

Public finance specialists generally take the view that local determination of the tax rate is the minimal local latitude for a truly local tax. While there is wide support for the notion of local autonomy in setting rates, there often is significant sentiment for some limitation on local rate-setting freedom. There even have been suggestions that the national government might determine tax rates, as well as the tax base.

Granting local governments full control of the property tax, including rates, maximizes their flexibility and places accountability for tax decisions at the local level. Moreover, this approach is in keeping with the notion that local government is a distinct sphere of government.

Local control of rates is vital, in this regard, if the national government decides to specify the tax base. The property tax is not truly a local tax unless local governments have control over the tax levy. If both rate and base were set by national policy, the property tax effectively would be a grant from the national government to municipalities based on the location of taxable property.

On the other hand, local rate setting often is not completely unfettered, and some argue for national constraints on local rates. Placing an upper limit on the rate that any local government could impose on its tax base would be one way to help assure that broad macroeconomic targets are heeded. An upper limit on the level of property tax rates that could be imposed might also serve other goals of the national government. One is equity – concern for both the plight of the poor and overall taxpayer equity. Another is development, including the concern that local taxes not interfere unduly with the location of economic activity.

Some argue that these national objectives could be served best by a uniform tax rate set by the national government, but gains would have to be weighed against the damage done to meaningful local government. Even if the case for a uniform rate applied nationwide is not compelling, there might be a case for setting a limit beyond which local governments could not go without national approval. This would allow local choice up to the limit, and also provide the possibility of going beyond the limit if it could make a good case; without such an override provision, limits could be too restrictive in some instances. The cap-with-override approach could be a way to assure that local governments operate as efficiently as possible, and could be seen as part of a national monitoring process. Finally, if the override provision requires approval of the voters, rather than an appeal to a minister in the national government, it would also strengthen local accountability.
4.0 ADMINISTERING THE PROPERTY TAX

The foregoing issues concerning the determination of tax base and tax rates are at the heart of tax policy. A series of administrative issues, considered below, will be very important, whatever decisions are made on the broader policy issues discussed above. After consideration of general administrative matters, we then take up in a separate section the major consideration of how the property tax affects the poor. That section addresses both policy and administrative concerns.

4.1 Monitoring the Administration of the Property Tax

To establish and maintain the legitimacy of a local property tax, legal standards must be met. While frequent revaluation is needed, an important element in a strategy to achieve and maintain legitimacy and acceptance over the long-term is frequent monitoring of valuation results.

The primary tool for monitoring outcomes of the valuation process is the assessment-sales ratio study. Because such studies provide information on how the law is being administered, they help to assure citizens of the fairness of the tax. If results indicate the tax is not being administered fairly, the information enables citizens to seek changes, principally through the assessment appeals process. Similarly, if valuation irregularities are uncovered, that information helps valuers determine where to target additional resources to improve outcomes of the valuation process.

For these benefits to be realized, however, the tax base being estimated must be one to which typical citizens can relate. This is a powerful reason for favoring the market-value standard; property owners can relate most readily to the market value of the entire property. That is the way most properties are exchanged. Sales data provide the independent check on the appropriateness of the taxable (or assessed) values.

Regular monitoring of this sort is important for several reasons. First, the information is important to assuring the fairness of the tax and, thereby, promoting its legitimacy and acceptance.

Second, assessment-sales ratio studies are needed to enable the national government to equalize tax base data across localities, so that property tax capacity can be used as an element in allocating intergovernmental transfers, and possibly for other non-tax purposes. Without equalization, local tax base data will not be suited to such uses, even if all areas are using a mandatory uniform definition of the tax base. This is true in part because valuations for different localities may be for different years, and in part because valuation is an art, not a pure science. If localities employ different definitions of the tax base, the need for equalization is even greater, for the range of differences across localities would be greater if some omitted improvements while others did not.
Capacity for conducting such annual assessment-sales ratio studies need not exist within the central government. The studies could be performed by a governmental staff, or they could be contracted out, possibly to university applied research or service units. Whatever the staffing arrangement, the office would be responsible for annual assessment-sales ratio studies to monitor outcomes of the assessment process in each assessing jurisdiction.

The studies should follow accepted best practice, including use of large samples drawn randomly, and screened to eliminate sales that do not represent bona fide market sales through arm’s-length transactions. They should include measures of central tendency (including at least the median for each local unit), a measure of assessment-level variability across individual properties (the coefficient of dispersion), and a measure of the relative treatments of high-value and low-value properties (the price-related differential). See Annex 1. Such data should be presented for each major use class (including residential, agricultural, commercial, industrial, and vacant), to the extent the number and nature of sales for the class permits. Study results should be disseminated to the public to promote openness and transparency of the tax.

As noted, ratio studies can provide information needed to assess the fairness of the tax, and to equalize across localities, whatever base definition or definitions may be in use. This is true even for site-value taxation. For local jurisdictions that tax only land value, assessment-sales ratios should be reported for the whole property; data would not permit separate figures for the land and improvements components. Even so, they would provide information on tax base relative to total property value, which can be important in gauging the overall fairness of the tax. Information on the sales prices of improved properties relative to the assessed values on the tax rolls for whatever the legal tax base is will provide an indication of the tax shares of the various classes of property relative to their underlying market value shares. This is important information for evaluating the fairness of the tax. Information on the assessed value of land relative to the sales price of land in a site-value system, however, is important for evaluating how fairly existing law is implemented.

4.2 The Valuation Cycle

Maintaining values at market level requires periodic revaluation or adjustment to reflect changes occurring in a dynamic market setting. Without timely adjustment, property valuations tend over time to fall relative to the market, and to fall at different rates, for market pressures differ across types of properties and areas. Frequent valuations also tend to reduce social protests associated with dramatic shifts in tax burdens that result from large, sudden increases in valuations. Therefore, timely valuation is required.

The valuation cycle needs to be short. To ensure that valuation rolls reflect current market conditions, national legislation should require frequent valuation of properties. Ideally, the goal should be to undertake such valuations at least every three years, but no more than every five years.
To achieve the ultimate objective of frequent valuations, initiatives must be undertaken to invest in the hardware, software, information systems, and training required for mass appraisal tools and techniques to be employed routinely. This includes developing and implementing training courses for current valuers and redesigning the curriculum and training courses for valuers who will be certified in the future. In addition, information systems must be developed and put in place at the local government level to ensure that property descriptions are maintained and updated on a regular and systematic basis. Such systems may include, but not be limited to, recording changes in ownership, tracking building permits, and monitoring and recording other changes that will impact market values.

4.3 Technical Proficiency of Property Tax Administration

This characteristic has several dimensions including: discovery, valuation, assessment of liability, billing, and collection. The valuation process typically receives the most attention in property tax reform initiatives. However, all of these factors need to be addressed if the benefits of reform are to be fully achieved.

4.3.1 Administrative Structure

The primary issue here is what level of government should be responsible for the valuation process. A common argument for centralization is that economies of scale can be achieved in employing specialized staff and computers. Empirical evidence fails to support this assertion. In fact, it shows that, in the United States, smaller units' valuations can be at least as accurate as valuations for larger local jurisdictions. This is because contract appraisal firms or state appraisal staffs, often hired by the smaller units, achieve greater accuracy than local in-house appraisal staffs, all else equal. While the ability to hire specialized resources is important, contracting for outside expertise on an as-needed basis allows even small assessing units to accomplish this. By implication, it is not necessary to make provincial or national government responsible for valuation in order to achieve high-quality assessment outcomes — i.e., uniform valuation levels relative to market value.

In general, property tax matters should be left to local choice unless there is a compelling reason to limit local control. It is important that an overall legal framework provide the setting in which accurate values can and will be determined and maintained. This means specifying acceptable levels of performance and monitoring to assure local compliance. Within those constraints, however, valuation should be the responsibility of the governments levying the property tax, provided that only one set of values is prepared for any area. Two or more local governments with taxing authority in the same area must establish mutually acceptable arrangements for valuation. All localities responsible for valuation, however, should be free to choose the degree to which the valuation functions will be performed in-house, if at all. This is particularly true if municipalities are to be responsible for the costs associated with valuation. They should have the flexibility to
contract for valuation services from any available source – e.g., private valuers, other local governments, and provincial government.

4.3.2 Staffing

An important part of a professional valuation system is a well-trained staff insulated from political interference to the maximum extent possible. Intuitively, it seems preferable to have the official responsible for overseeing the valuation function appointed rather than elected; however, this notion is not supported by the little empirical evidence that exists. Perhaps the difference between these situations is not significant empirically because the appointed official cannot be removed wholly from all political influence, since appointment ultimately is by elected officials. With this in mind, use of a well-trained, thoroughly professional staff is vital, and they must work in an environment that promotes and protects their professionalism.

Part of that professionalism is proper training. In addition to formal training, on-the-job experience has been found to be significant in improving valuation uniformity. Probably because of the importance of experience, full-time valuers have been found to perform better than those employed only part-time. This helps to explain the emphasis above on contracting as a means of obtaining high-quality valuation outcomes. Too small a unit attempting to do its own valuation work could not make effective use of specialized staff, and that staff would tend to have too little to do.

4.3.3 Valuation Tools and Information

There is strong empirical support for the proposition that use of proper valuation tools is important in achieving a high degree of valuation uniformity. More uniform valuations are associated with the use of tax maps, systematic tracking of building permits to monitor property changes, use of standard appraisal manuals, and CAMA techniques. Integration of valuation data with a general geographic information system (GIS) also offers considerable promise, although we are not aware of empirical affirmation of this intuition.

Part of the requirement for attaining uniform valuations is having the appropriate information available to the valuers, so that the property is located properly and it’s salient attributes are described adequately in the property records. Identifying properties and enumerating their characteristics are perhaps the biggest constraints to efficient property tax administration in developing countries.16

The objective of discovery is to find and describe all properties subject to taxation. Two basic approaches are used to develop such information:

- Self-declaration – where the taxpayer is induced to provide the information to the taxing authority, and

16 Ibid., p. 109.
Government inventory – where the taxing authority obtains the information in the field.

The effectiveness of the self-declaration system depends on the cooperation of the taxpayer to provide accurate and complete information, the ability of the local government to verify the information provided, and on penalties to induce compliance. Typically, however, audits are infrequent and although nominal penalties are high, the actual quality and comprehensiveness of the data supplied is often low.17

By far the most common approach to discovery is the inventory system where staff of the taxing authority goes into the field to gather data required for determining value. The problem is that the initial costs of developing such an inventory are very high, albeit the cost of maintaining it may not be high if appropriate information management systems are in place.

Regardless of the source of the information, there is a need for geographical referencing to ensure that all properties are found and assigned unique identifiers. Such information is usually reflected in cadastral maps. There are several types of cadastres – a physical cadastre that reflects the physical area measurements of each property (land and improvements), but it may not indicate the number of stories; a legal cadastre that reflects ownership to the extent it can be determined; and a fiscal cadastre that includes information that affects the valuation of the property for tax purposes. The focus of property tax reform efforts should be on developing an up-to-date, comprehensive fiscal cadastre.18

In addition to developing fiscal cadastres, property record cards that provide descriptions of the land and improvements associated with each parcel must also be development and maintained. Problems often include incomplete or out-of-date information on improvements, poor efforts to maintain property records, lack of information sharing on building permits etc., and a general low priority for maintaining such data files. However, computerized links between property records and other information needed for locating and valuing properties for tax purposes should be developed for all areas. The goal should be to develop and implement computer-assisted valuation systems that would enable relatively low-cost, accurate, and frequent generation of new values. Because frequent revaluation is necessary for achieving important equity objectives, development of these systems also is critical.

4.4 Enforceability of the Property Tax

The property tax must be enforceable. This requires that tax liabilities be determined in an unambiguous fashion, that bills be deliverable to those responsible for

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17 Dillinger, *Urban Property Tax Reform*, op. cit., pp. 11-2. Also, self-declaration systems may not produce good results because of disputes among heirs over ownership, problems with illegal or squatter settlements, uncertainties about ownership, and different valuations for family-owned properties. See Bahl and Linn, *Urban Public Finance*, p. 110.

18 Dillinger argues that linking a fiscal and legal cadastre should be avoided (page 14).
paying the tax, and that there be a mechanism for collecting the amounts determined. Low collection efficiency is a major constraint on the yield of the property tax and can offset any gains made from improving discovery and valuations. When payment is not made in a timely manner, there must be a way to assure payment; ultimately, this may include sale of the taxed property to satisfy the tax obligation.

Ultimate liability for the property tax should attach to the individual property. In this context, the taxpayer should be the land owner, except in some unique circumstances. Designating the owner as the person liable for the property tax has two administrative virtues:

- It reduces the number of individual taxpayers, because only one bill is issued for each property; and
- It exploits one of the few administrative benefits of property – its immobility.

In some cases, however, it may be appropriate to designate someone other than the land owner as being liable for the property tax. For example, when land is occupied under a long-term lease or an assignment of rights under such a lease, the tax department should have the flexibility to designate the lessee, or sub-lessee, as the taxpayer. When land is subject to contractual license, the licensee should be designated the taxpayer. Finally, when land is occupied by a person with no formal right to do so, it should be feasible to designate the occupant as the taxpayer. The local treasury department should have the flexibility to designate the appropriate party as the taxpayer for each parcel of land.

If the property tax is not paid within a specified period after the due date of the property tax bill, a significant late fee should be assessed – e.g., a penalty equal to 10 percent of the tax liability. In addition, a market interest rate should be charged on the unpaid balance. No property transfer should be permitted until the property tax has been paid in full. In cases of serious delinquency (say, taxes overdue by six to 12 months) other enforcement measures should be implemented. These might progress, for example, from removal and sale of goods, to attachment of pay and/or bank accounts, to placing liens on the property, and eventually to confiscation and sale of property.

Finally, there must be a mechanism for keeping track of billing and collections. This is primarily an administrative matter and may be most effectively accomplished by decentralizing it.

4.5 A Simple and Inexpensive Appeals Process

Valuation is a blend of art and science. The valuer’s task probably is the most difficult in property tax administration. The valuation of an individual property may not represent market value accurately – especially in the eyes of the taxpayer. Therefore, it is

19 Ibid., p. 24.
essential that a high-quality tax system include a simple and expedient appeals process that provides taxpayers the opportunity to address perceived errors.

Empirical evidence suggests that taxpayer appeals improve the equity of the property tax, but it also suggests that appeals become more important as the level of the tax rises. Because relative costs and benefits tend to be taken into account in deciding whether to appeal, a lower tax makes appeal less attractive for any given cost of appeal; similarly, for a given rate of tax, a higher cost of appeal makes an appeal less likely. It is important, therefore, that the appeals system be kept as simple and low-cost as possible. This means informal proceedings without need of legal representation, at least in the early stages. Taxpayers generally will not find pursuit of their grievances worthwhile if the expected cost of appeal outweighs the likely gains from a successful appeal.

In keeping with the objective of low cost, the appeals system should include several stages. The first should be informal review at the level of the municipal valuation office. This affords an opportunity to correct factual errors or simple misunderstandings at the lowest possible cost. Differences not resolved at that level then would proceed to a local valuation review board made up of people with experience and/or training relevant to property valuation and property tax law. Differences not resolved by the valuation review board would go to a provincial review board (in essence, a specialized tax court). Legal representation may become more desirable in the later stages, but it should not be mandated.

Taxpayers pursuing an appeal nevertheless should be required to pay the disputed taxes; successful appeals would result in refunds, with market interest paid on the excess payment for the time between the payment and the refund. Such prepayment serves to discourage frivolous actions that may be intended only to delay payment of taxes. And payment of a market interest rate on refunded taxes should discourage a locality from pursuing a weak case just to gain the use of the taxpayer’s tax payment at an early date.

While the right of appeal is important, it also is important that appeals not be too numerous, for they represent costs for both the taxpayer and for the government. Recognizing this, and also that valuation necessarily involves some degree of judgment, it probably is desirable to restrict appeals – at least beyond the initial level – to cases in which the adjustment sought is greater than some level, such as 5 percent.

5.0 Making the Property Tax Pro-Poor

Part of the equity objective is that the property tax not place unduly heavy burdens on those least able to pay. This often is expressed as a concern that the tax be pro-poor. Making the property tax pro-poor implies introduction of relief provisions. While some relief may be highly desirable, care must be exercised.
5.1 General Considerations Regarding Tax Relief

First and foremost, property taxation is a means of raising revenue, not a tool for achieving various social policy goals. A broad tax base is desirable, for most tax criteria are advanced by a broad tax base. Everything else equal, a larger tax base is better able to support local services than a small base, so revenue adequacy is greater with a broad base. Similarly, equity tends to be greater when the tax net is cast broadly because the burden of supporting government is shared more broadly. If it is clear that there are no favored categories, public acceptance will tend to be higher—the tax is more likely to be thought fair, and thus have more legitimacy. Furthermore, if there are no tax differences, tax differences cannot distort economic choices as to location of residence or business, land use within an area, and the like; such neutrality is an important part of what economists have in mind when they talk about efficiency. Another aspect of efficiency is simplicity of compliance (taxpayer effort to make the tax work) and of administration (governmental activity to make the tax work); this also is promoted by a broad tax base with few or no exceptions to general provisions.

An appropriate policy goal, therefore, is elimination of special tax breaks and avoidance of future ones. If circumstances are thought to warrant relief for a given property use class or set of owners, it is better to extend such relief through expenditures pursuant to appropriations than through tax reduction. That way, the relief is less hidden—there is greater openness, or transparency. If tax reduction is preferred because of administrative or other legitimate concerns, however, it is best that such reduction be made through adjustments on the rate side, or through tax credits, rather than through adjustments to the tax base. For a variety of reasons, it is important to protect the integrity of the tax base.

5.2 Regressive Valuation Bias – An Administrative Problem

Accepting that property taxation should be used to raise revenues, not as a tool to pursue various social policy goals, implies that the cost of providing community services should be borne by property owners in proportion to their respective shares of the tax base. Thus, effective tax rates for individual properties within a given locality should be the same, or quite similar. To the extent effective tax rates vary significantly across properties, however, this problem should be addressed through property tax administration reform, not property tax relief.

5.3 A Case for Limited Relief: Low-Value Properties

Cash-flow problems can result when an annual property tax must be paid out of current income. Cash-flow imbalances are most likely in the case of non-income-producing properties, especially residences occupied by people with very low incomes. To keep a cash-flow imbalance from becoming a true hardship, property tax relief is desirable. Explicit relief should take pressure off valuers to provide ad hoc relief and, thus, free them to perform the valuation task better. This promotes openness and
accountability by making it clear that responsibility for tax relief rests not with the valuer, but with political decision makers.

But any relief departs to some extent from the fundamental principle of property taxation as a tax on capital or rental value and redistributes tax burdens on some other basis. Relief mechanisms therefore should be designed with care, and relief should be limited to those most in need. Relief for those with cash-flow hardships should not become the excuse for wholesale relief for all residential properties.

If there is a decision to provide property tax relief to those most in need, two policy issues arise. First, should that relief be mandated by the national government, or should local governments be allowed to decide? Second, regardless of the level of government providing relief, how should that relief be provided — i.e., what policy tools should be used?

5.4 Determining Property Tax Relief Policies

One consideration is accountability. If the cost of relief is to be borne by local governments through reduced revenues, then local governments should be free to decide what relief is to be given. Accountability is enhanced when those who make the policies bear the costs.

If other important aspects of property tax policy are left to local discretion, then the case for local choice of relief policies is strengthened. One consideration is the logical consistency of an overall decentralized approach to property taxation. Moreover, if some areas tax only land values while others tax both land and improvements, and if some of those taxing both land and improvements use a single rate for both while others tax land more heavily, then setting a uniform national tax relief policy is much more complicated.

On the other hand, the national government’s interest in equal treatment of taxpayers might be served better by a uniform national policy governing property tax relief. Such a policy could specify the departures to be made from uniform effective rates across property uses and categories of taxpayers. In this way, too, property tax relief could be targeted better so as to serve national redistribution objectives. Additionally, a uniform national policy on property tax relief could assure that relief is targeted rather narrowly, which is consistent with the concern that local governments fully exploit their taxes in attempting to meet local needs.

Given some important arguments for both decentralization and centralization of tax relief policy, an intermediate course might be more appropriate. Such an approach would permit local choice within limits specified by the national government. This would allow local governments some discretion, while addressing national policy concerns. For example, if the national government wished to assure either a minimum level or a maximum level of relief for certain groups of taxpayers, such constraints could be imposed. Similarly, if it wished either to specify or to preclude a certain relief approach,
this also could be done. But within the constraints, local governments would have latitude to pursue local priorities in setting specific policies.

This intermediate route, however, may favor one level of government over the other. The narrower the menu of choices allowed local government, the less meaningful local choice would be. A broader range of choices, on the other hand, would enable local governments to tailor their policies better to local circumstances, but this would mean a less complete or precise pursuit of national objectives. The narrower the range of choices allowed local governments, the stronger is the case for national payment of the costs of relief. This case is strongest if the national government mandates certain levels of relief.

5.5 Determining Which Tax Relief Tools to Use

As argued above, outright property tax relief (i.e., relief that is a subsidy, rather than a loan) changes relative property tax burdens from those indicated by the strict logic of the tax as a tax on asset or rental value. Ideally, therefore, one might opt to grant no outright relief. However, a rather compelling case can be made for limited relief to those for whom property tax burdens are most onerous. The more relevant question, thus, is the form relief should take, rather than whether there should be any relief. The basic forms are summarized below.

- **Exemption.** An exemption removes certain property from the property tax base. The exemption may be complete (100 percent), or it may be partial (less than 100 percent). It works by reducing the tax base before tax rates are applied. For example, in South Africa a 30 percent homestead exemption reduces the tax base for a R100,000 home to R70,000, and reduces the tax base for a R500,000 home to R350,000. A uniform rate then applies to each net valuation amount (at least within a given property class or use category). If that rate were 0.9 percent, the tax liabilities for the two homes would be R630 and R3,150, respectively.

- **Differential Rates.** An alternative approach leaves the tax base alone and provides relief on the rate side of the tax equation. The result can be the same as with an exemption coupled with a uniform rate. For example, valuing both the R100,000 and R500,000 homes in the foregoing example at those full market value figures but applying a tax rate of only 0.63 percent rather than the general 0.9 percent rate also produces tax liabilities of R630 and R3,150.

- **Credit or Rebate.** This tax relief approach alters neither tax base nor tax rate. Instead, tax liability is reduced after calculation of the gross tax amount; only the net amount is collected. Again, the same result can be obtained as in the two foregoing examples. Staying with the same homes as in those examples, the general 0.9 percent tax rate would give gross tax liabilities of R900 and R4,500 for the R100,000 and R500,000 homes, respectively. A 30 percent credit (or rebate) would reduce net tax liabilities to R630 and R3,150, as before. Alternatively, the credit or rebate could be set equal to the tax on a
given amount of taxable value for every property in a given category—e.g., R20,000. A 0.9 percent tax on R20,000 is R180. This amount could be subtracted from each tax bill for properties in the category receiving relief. This constant amount would give a larger percentage reduction for those with the least valuable properties, and would remove properties worth less than R20,000 (in the example) from the tax roll.

- **Deferral.** A deferral of tax liability, with market interest applied to the deferred amount, is a loan rather than an outright subsidy, or gift. Like the credit or rebate, the deferral amount would be determined after application of the general tax rate to the full measure of the tax base for the property in question. The amount eligible for deferral could be either 100 percent or less than 100 percent. Some maximum total amount should be set, however, so that the debt (the deferred amount plus interest) does not exceed the value of the collateral (the taxed property).

- **Circuit Breaker.** A different sort of property tax relief relates current property tax liability to current income, and provides relief equal to some portion of the gross tax liability. The key distinguishing factor in the circuit breaker approach is that tax relief decreases as income increases. This approach permits targeting the tax relief narrowly to those who for whom the property tax otherwise would be the most burdensome, in relation to income.

Each of the above approaches can be used to address the cash-flow problem that property taxes can present. Many students of public finance prefer the deferral, because it constitutes a loan rather than a gift. They argue that property owners as a class are better off than those who do not own property; thus, they see outright tax reduction as a perverse sort of subsidy. Property owners generally like deferral the least, also because it is a loan rather than a gift, or subsidy. They do not like the idea of the unpaid taxes and interest accumulating as a liability against their homes, and thus diminishing their estates.

Of the other approaches, the next best—in the eyes of public finance students—is the circuit breaker. Its targeted approach means a given amount of tax relief can be provided to those most in need at a relatively low total cost. Unlike the broad homestead exemption or credit, for example, the circuit breaker does not reduce the taxes of all homeowners in the process of granting relief to those most in need of relief. Some object, however, to using income as a factor in granting property tax relief. They argue that it undermines the logic of the property tax—which, they note, is not intended to be an income tax. This argument must be considered relative to the other relief options, however; any relief other than deferral undermines the logic of the property tax. But the circuit breaker can be structured to minimize the departure from property tax principles. However, the lack of income data sufficient for the narrow targeting envisioned by this relief approach may be a problem in many areas.

In choosing among the other relief approaches, the key distinction is in whether the tax base is reduced. Under the exemption approach, it is. There generally is a strong
preference among public finance students and practitioners for preserving the integrity of the property valuation rolls. This suggests use of the credit or rebate approach, or perhaps the differential rates approach.

Using a credit, or rebate, approach has the advantage of transparency, or clarity. As noted above, the credit can be shown as a subtraction from gross tax liability. This information can be included in the tax bills sent to individual taxpayers to make them aware of exactly what relief is being provided, and how it is determined. This approach combines the advantage of interfering with neither the tax base nor the tax rate with the advantage of clarity of understanding. These considerations are strong arguments in its favor.

If the credit/rebate approach is selected, however, it may be preferable to use the second variant noted above. Under that variant, the credit amount is set equal to the tax on some amount of tax base that is constant throughout the locality. In the example given above, the constant base amount was R20,000 and the relief amount, assuming a 0.9 percent rate, was R180. This approach has the advantage of providing more significant tax relief (as a percentage of gross tax liability) to those with the lowest-value properties, who generally will be those least able to pay the property tax. This approach also reduces the total cost of the relief, compared to the practice of granting uniform percentage reductions to all homeowners. The differences are highlighted in Annex 2.
### Annex 1

**Level and Uniformity of Residential Property Assessment in South Africa, Selected Localities, Mid-1990s**

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Assessment/Sales Ratio</th>
<th>CD*</th>
<th>PRD**</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median</td>
<td>Mean</td>
<td>Aggregate</td>
<td></td>
</tr>
<tr>
<td>Johannesburg</td>
<td>125.0</td>
<td>167.0</td>
<td>133.0</td>
<td>47.0</td>
</tr>
<tr>
<td>Cape Town</td>
<td>8.0</td>
<td>9.6</td>
<td>7.2</td>
<td>46.7</td>
</tr>
<tr>
<td>Witbank</td>
<td>75.0</td>
<td>80.2</td>
<td>75.1</td>
<td>25.7</td>
</tr>
<tr>
<td>King William’s Town</td>
<td>51.5</td>
<td>48.1</td>
<td>48.0</td>
<td>15.4</td>
</tr>
<tr>
<td>Bisho</td>
<td>88.9</td>
<td>87.6</td>
<td>87.1</td>
<td>16.7</td>
</tr>
<tr>
<td>KWT &amp; Bisho</td>
<td>52.5</td>
<td>58.9</td>
<td>56.2</td>
<td>29.6</td>
</tr>
<tr>
<td>Oyster Bay</td>
<td>91.0</td>
<td>89.0</td>
<td>85.0</td>
<td>24.6</td>
</tr>
<tr>
<td>Seafield</td>
<td>86.0</td>
<td>111.0</td>
<td>85.0</td>
<td>55.3</td>
</tr>
<tr>
<td>Seaview</td>
<td>80.0</td>
<td>86.0</td>
<td>76.0</td>
<td>24.9</td>
</tr>
<tr>
<td>Exhibit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KWT non-residential</td>
<td>30.8</td>
<td>80.4</td>
<td>50.5</td>
<td>214.9</td>
</tr>
<tr>
<td>KWT total</td>
<td>53.4</td>
<td>53.2</td>
<td>49.3</td>
<td>34.3</td>
</tr>
<tr>
<td>KWT &amp; Bisho total</td>
<td>52.0</td>
<td>61.5</td>
<td>53.5</td>
<td>42.5</td>
</tr>
</tbody>
</table>

* CD = coefficient of dispersion, the average absolute deviation of individual-parcel ratios from the median ratio, expressed as a percentage of the median ratio.

** PRD = price-related differential, the ratio of the mean ratio to the aggregate ratio.

## Annex 2

Residential Tax Relief Alternatives: Comparison of Uniform Percentage Rebate with a Credit Equal to the Tax on a Specified Amount of Value, Hypothetical Data by Property Value (Amounts in Rands)

<table>
<thead>
<tr>
<th>Property Value</th>
<th>Gross Tax at 0.9% Rate</th>
<th>25% Rebate</th>
<th>Credit on R20,000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Net Tax</td>
<td>Relief</td>
</tr>
<tr>
<td>15,000</td>
<td>135</td>
<td>101</td>
<td>34</td>
</tr>
<tr>
<td>25,000</td>
<td>225</td>
<td>169</td>
<td>56</td>
</tr>
<tr>
<td>50,000</td>
<td>450</td>
<td>338</td>
<td>112</td>
</tr>
<tr>
<td>75,000</td>
<td>675</td>
<td>506</td>
<td>169</td>
</tr>
<tr>
<td>100,000</td>
<td>900</td>
<td>675</td>
<td>225</td>
</tr>
<tr>
<td>125,000</td>
<td>1,125</td>
<td>844</td>
<td>281</td>
</tr>
<tr>
<td>150,000</td>
<td>1,350</td>
<td>1,012</td>
<td>338</td>
</tr>
<tr>
<td>175,000</td>
<td>1,575</td>
<td>1,181</td>
<td>394</td>
</tr>
<tr>
<td>200,000</td>
<td>1,800</td>
<td>1,350</td>
<td>450</td>
</tr>
<tr>
<td>300,000</td>
<td>2,700</td>
<td>2,025</td>
<td>675</td>
</tr>
<tr>
<td>400,000</td>
<td>3,600</td>
<td>2,700</td>
<td>900</td>
</tr>
<tr>
<td>500,000</td>
<td>4,500</td>
<td>3,375</td>
<td>1,125</td>
</tr>
<tr>
<td>750,000</td>
<td>6,750</td>
<td>5,062</td>
<td>1,688</td>
</tr>
<tr>
<td>1,000,000</td>
<td>9,000</td>
<td>6,750</td>
<td>2,250</td>
</tr>
<tr>
<td>1,500,000</td>
<td>13,500</td>
<td>10,125</td>
<td>3,375</td>
</tr>
<tr>
<td>2,000,000</td>
<td>18,000</td>
<td>13,500</td>
<td>4,500</td>
</tr>
</tbody>
</table>

Note: In the rebate example, amounts have been rounded to the nearest whole rand – rounding down (up) if .5 follows an even (odd) number. The credit is the amount of tax on R20,000 (R20,000 times 0.9 percent = R180) – equivalent to exempting R20,000.