3 Property tax administration

Recurrent taxes on immovable property are among the costliest taxes to administer. That is because their administration involves several activities: fiscal cadastre maintenance, valuation of properties, management of an appeal system, billing, revenue collection and enforcement. A dysfunctional tax administration can lead to asymmetries in tax obligations that can undermine the goals of the tax design while creating horizontal inequality that make charges unfair. As most of the benefits from recurrent taxes on immovable property can only be reaped with value-based tax bases, it is especially challenging to keep a fiscal cadastre with a good coverage and updated property values. Computer assisted mass appraisal (CAMA) systems can be especially relevant for such purposes. Lastly, the billing and appeal process are particularly relevant for raising taxpayers' compliance, with the bills' content and frequency being relevant for raising tax revenues and alleviating taxpayers' liquidity problems.

Key messages

1. A good tax administration is necessary for recurrent taxes on immovable property to have the desired impact on the economy in terms of allocative efficiency, equity and revenue capacity. When cadastres are incomplete, valuations are outdated, or taxpayer compliance is low, taxpayers in similar situations will be taxed differently, damaging the fairness of the tax system.
2. Co-ordination across levels of government and/or agencies responsible for performing the main activities related to property tax administration (i.e. cadastre management, property valuation and billing) is crucial, regardless of the delineation of activities.
3. In decentralised cadastre management systems, horizontal and vertical co-ordination can be used to overcome challenges related to the lack of scale that some local governments might have to administer efficiently their property tax system.
4. Fiscal cadastres can also be used as a tool to support the achievement of other policy goals such as urban, transport, environmental and social policy. In that regard, the registration of informal settlements can improve the property tax system by generating more tax revenues and reducing horizontal inequities, and as a means to increase the access of the poor to public services.
5. Upper levels of government can help lower levels to have some uniformity in the valuation method and basis. In that way, they can maintain similar effective tax rates across jurisdictions and reduce horizontal inequities due to differences in property valuation policies.
6. Implementation of computer assisted mass appraisal (CAMA) system can drastically reduce the costs of property reassessments. Nevertheless, the effectiveness of these systems depends on sales and property data, scale and specialised human resources.
7. A transparent tax system combined with a convenient payment procedure and a fair appeal system can significantly improve compliance. This can be achieved by enabling the taxpayer to pay through multiple methods and by communicating in advance all steps involved in the tax collection and appeal process.

The prominent role of the property tax administration

Balancing administrative costs and operational effectiveness is a major challenge in administering recurrent taxes on immovable property

In OECD countries, costs related to the administration of recurrent taxes on immovable property vary widely and can be, as a share of property tax revenues, as high as 10% (Almy, 2014[1]) or as low as 1% or less (e.g. in some US states).[1] That is because these costs can be drastically reduced when more advanced methods are used such as Computer-Assisted mass Appraisal (CAMA). Despite this high share of costs in tax revenues, it is still challenging to reduce it further without affecting the operational effectiveness of the property tax system, which could defeat the purpose of having this levy in the first place. Differently than for most other taxes, recurrent taxes on immovable property are levied on notional property values, which requires expertise on the part of the assessors and a sound appeal system so taxpayers can contest the estimations. Thus, in summary, the collection of these taxes requires labour-intensive steps, as follows: 1) fiscal cadastre maintenance; 2) valuation of properties; 3) billing, revenue collection and enforcement; and 4) appeal.

As a result of this costly administration, officials might be tempted to reduce the costs of the property tax system through the postponement of revaluations (the most expensive task in the tax administration)[2] and

by neglecting the necessary training that the staff requires to perform satisfactorily the necessary operational activities. In the short term, a reduction in costs might increase the net property tax revenues, but in the long run this effect will be reversed and, in addition, vertical and horizontal imbalances in the valuation and collection processes may arise. The latter is particularly damaging for a property tax administration since, in many cases, policy makers might face popular resistance to re-invest in a dysfunctional property tax system, further harming the perceived fairness of the system, in a vicious cycle that, in some cases, can contribute to the total discontinuation of the levy on immovable property (see Box 3.1 on the French case). Thus, balancing administrative costs and operational effectiveness is a major challenge of managing a property tax system.

The following conceptual model shows the administration role in revenue collection for this type of tax (Kelly, 2012[2]):

$$\text{Eq 3.1} \quad \text{Tax Revenue} = (\text{Tax Base x Tax Rate}) \text{ x } (\text{Coverage Ratio x Valuation Ratio x Collection Ratio})$$

1. The coverage ratio can be defined as a measure of the amount of taxable property that is registered within the government, compared to the total amount available (both registered and unregistered). As such, one of the key steps in a recurrent property tax reform is to identify the properties being taxed, in essence, preparing a cadastre.
2. The valuation ratio compares properties' value as appraised by the government with its real market value.
3. The collection ratio is the ratio of the tax revenue collected versus the total tax billed for a fiscal year. In order to guarantee a high collection ratio, both positive and negative incentives can be used.

The tax base and rate are defined in the tax design process while the coverage, valuation and collection ratios depend on the tax administration. As a result, much of the tax revenue that is collected from taxes on immovable property is a result of administrative efforts rather than policy choices.[3] The effects of all these ratios on the tax revenue are multiplicative and, thus, no ratio can be low for the system to be effective.

Some of these ratios are easier to increase than others. The priority in establishing a tax system with more coverage and higher liability for taxpayers is necessary before the valuation ratio becomes the focus, especially due to the difficulty and expense of determining an accurate market value of all taxable properties. Thus, in many cases, although the valuation ratio still holds its importance, focusing on the other administrative ratios will theoretically increase the tax revenue more significantly at the early stages of the introduction of the property tax.

In addition to revenue collection, other potential aims of the property tax system, such as those related to land use and equity, are unattainable in case the tax administration is inefficient (Kelly, 2012[2]). For instance, if fiscal cadastres do not cover some types of property (e.g. this happen, for instance, in the case of informal settlements),[4] if property valuation assessments are biased (i.e. they estimates values that are systematic higher for some types of property in comparison to others), the distributional and allocative effects of the property tax system are going to be different than the intended. Hence, it is absolutely crucial for a property tax system to be properly administered, otherwise the design features of the tax are going to be drastically hampered.

The second chapter of this report focused on the design features of recurrent taxes on immovable property. This third chapter focuses on the administration of recurrent tax on immovable property. The next three sections focus on the main steps described above: fiscal cadastre management, property valuation and administrative measures for collection of tax revenues. The last section of this chapter focuses on the delineation of responsibilities related to property tax administration across levels of governments.

Box 3.1. Lack of update of property and cadastral values in OECD countries and the discontinuation of the French residence tax

Administrative issues are common in property tax administration. Out of date property values have been identified as lowering SNG property tax revenues and generating distortions across a range of surveys including Austria, Belgium, Estonia, Finland, France, Germany, Greece, Indonesia, Mexico, Portugal and Sweden (Hagemann, 2018[3]; OECD, 2015[4]). In particular, the Austrian survey noted that "up-to-date valuation of real estate is a precondition for strengthening revenue-raising powers of municipalities on the basis of real estate taxes" (OECD, 2005[5]). In some cases, out of date values have been linked to infrequent updating of property registries. In Mexico, the lack of regular valuation kept taxed property values well below market value with data showing cadastral values 55% below market values in about half of the 32 states. In the Belgian case, a similar problem of infrequent valuations was observed. One solution discussed was devolving responsibility for updating the cadastre to the regions by creating regional cadastres. This would resolve the mismatch between the federal responsibility for updating valuations and the increases in regional revenues that would arise from the updates.

Partially due to the lack of update of property values, which is a pure administrative task, the French residence tax (*taxe d'habitation*) will be discontinued. As a result, governments will lose 3.4% of France's GDP in tax revenues. It is worth noting that other recurrent taxes levied on properties will continue to be applied in France such the land tax, the property tax on building, and the business real estate tax.

One of the reasons for the discontinuation of the *taxe d'habitation* regards the fact that it is considered and perceived as unfair. There are two sources of unfairness: horizontal and vertical. Horizontal unfairness is caused by the fact that 1) effective tax rates vary across municipalities for comparable properties; and 2) cadastral values have not been updated in four decades. Vertical unfairness is caused by the tax structure that taxes more, as a proportion of taxpayer income, low-income households. The repeal has been phased in over three years for a group of households (based on annual income thresholds) with the tax reduction amounting to 30% in 2018, 65% in 2019 and 100% in 2020. For the rest of households, the tax will be gradually removed between 2021 and 2023 for the remaining 20% of French.

Sources: Forman, Dougherty and Blöchliger (2020[6]), OECD (2020[7]) and OECD (2021[8]).

Fiscal cadastre

Fiscal cadastres usually have at a minimum all the information necessary to calculate tax obligations such as land use, taxpayers' characteristics, properties' features and geographical records

Fiscal cadastre is a term that usually refers to the repository in which the information about properties and taxpayers are stored for the purpose of managing a property tax system. This cadastre is distinct from the cadastre of property rights (the legal or juridical cadastre), which contains information about the persons who possess the right to property. Such distinction is usually justified on the ground that landlords should not believe that one of the costs of a title registration is the property taxation, which could, as a result, generate an incentive for them to avoid registration. Nevertheless, having both the fiscal and the legal cadastre merged in a multipurpose cadastre brings benefits – more notably a better data consistency and co-ordination across cadastres. Managing such multipurpose cadastres has become easier due to the computerisation of cadastral maps and records. Therefore, although historically different agencies were responsible for fiscal and legal cadastres, the number of countries with single multipurpose cadastres is growing – examples include Iceland, Northern Ireland and New Zealand (Almy, 2014[1]).

According to Enemark (2004[9]), these multipurpose cadastres have four main functions: land tenure (securing and transferring rights in land); land value (valuation and taxation of land and properties); land use (planning and control of the use of land and natural resources); and land development (utilities, infrastructure, construction planning, permits and implementation). It is worth noting that having a complete and multipurpose cadastre yield benefits beyond the collection of revenues through the tax system – fiscal cadastre can be a useful source of information for other policies and activities related to, for instance, urban planning, environment protection, transportation, housing and community amenities, recreation, social policies, mortgage finances (e.g. Denmark, Sweden), fire/home insurance (e.g. Iceland) and expropriation (e.g. Spain).[5]

Although it is not necessary to have all this information for tax purposes, it is crucial for a well-functioning fiscal cadastre to have the necessary information to calculate tax obligations – not only for the recurrent taxes on immovable property but also for other taxes such as transaction taxes, capital gain taxation (e.g. Finland), net wealth taxation (e.g. Austria and Switzerland), water use taxation (e.g. Netherlands) and imputing the income derived from owner-occupied property (e.g. Italy, Netherlands).[6] Thus, the necessary information that a fiscal cadastre should have depends greatly on its purpose and, in case of recurrent taxes on immovable property, on the valuation method employed. Below there is a non-exhaustive list of items that fiscal cadastres may contain (not all information presented below should, in principle, be collected by the managers of the fiscal cadastre – it can be gathered through an integration with other cadastral systems managed by other levels of government or agencies):

1. Land use (e.g. business, rural, industrial or residential), since property tax rates and incidence may depend on it;
2. In case of residential properties, personal information, since property taxes' obligations may vary depending on the characteristics of the taxpayer (i.e. deferrals, allowances and exemptions are, in some cases, based on characteristics of the taxpayer such as his/her income, family size, etc.);
3. In case of non-residential properties, business information, since taxes' obligations may also vary depending on the characteristics of the corporate taxpayer such as revenues, number of employees, business sector, among others;
4. General property information that are useful for estimating a property's value, such as, among others, the year of construction, size, date and value of the last purchases, state of the building, number of rooms, etc.;
5. Geographical records that clearly delineate properties' boundaries and locate them with precision – agencies are increasingly using computerised Geographic Information System (GIS) and oblique aerial photographs of buildings to capture the current state of the building through the detection of physical changes (UN Habitat, 2013[10]);
6. Records of tax obligations and benefits, such as exemptions, deferrals and allowances.

Some types of property, such as public rights-of-way and routes of transportation (waterways, state-owned railroads, streets and roads), are often excluded from cadastres on grounds of administrative convenience (Almy, 2013[11]). That is, they are not considered a taxable asset since the administrative costs to register and value these types of property might exceed the tax revenues that stems from them. In such cases, policy makers decide to exchange cadastre completeness and horizontal equity for administrative convenience.

Up-front investments to keep records updated and accurate are worthwhile since they increase property tax revenues through a higher property coverage and taxpayer compliance

An effective fiscal cadastre increases property taxes revenues through both a higher coverage ratio and collection ratio (i.e. due to increased compliance), which tend to justify the need for a substantial up-front

investment to have an accurate and complete cadastre. In other words, investments in fiscal cadastre management may bring positive returns in terms of tax revenues. In many cases, however, local governments don't have the necessary resources to make these investments, leading to a dysfunctional cadastre. In such cases, horizontal or vertical co-ordination might fill this gap (see Box 3.2 for Brazil's and Mexico's cases).

It is worth noting that although there is some overlap between the process of updating fiscal cadastres and the process of re-valuing properties, they are not the same activity. The former refers to keeping the property and taxpayer information updated, potentially increasing the number of properties to be appraised whereas the latter usually refers only to update of the information that is used to reassess properties' values. Most developed nations, when improving their property tax system, focus more on the update of the values of the property, since they usually have a high coverage ratio, meaning that their records already capture most properties. Nevertheless, this is not the case for some developing countries, which usually struggle to have a complete record of the taxable properties. More precisely, OECD countries have coverage ratios close to 100%, while developing and transitional countries can have ratios of only 40-60% (Kelly, 2012[2]). Therefore, collection-led property tax reforms may generate even more tax revenues for developing nations (or any nation with a low coverage ratio) in comparison to valuation-led reforms, although the latter is substantially more common worldwide.

The registration of informal settlements may generate more tax revenues and also be used as a policy tool to increase the access of poor dwellers to private and public services

Regarding cadastre coverage, one of the main problems in developing countries regards informal settlements, which are particularly challenging to register. This challenge is especially important for China, since its rapid urbanisation has created a number of houses with limited property rights,[7] normally situated on residual rural construction land that has been developed by rural collectives to meet the demand for low-cost housing (World Bank/Development Research Center of the State Council, the People's Republic of China, 2014[12]).

A Municipality in Brazil (Belo Horizonte) was able to alleviate this problem by carrying out field inspection and registering informal settlements, while giving possession certificates for tax purposes – this policy has been very well received amongst the benefiting communities, since these certificates have been the only legal document of their properties available to them, while the property tax charged has been very low or they are exempted (Junior, 2017[13]).

Smolka and De Cesare (2012[14]) argued that even if the property tax revenues from informal settlements are small, they may generate significant benefits to the community. First, they contribute to the creation of a fiscal culture. Second, they increase the completeness of the fiscal cadastre, which, as mentioned previously, is used for other purposes ranging from private activities such as mortgages and insurance to policy targeting. Third, the payment of property taxes may legitimise dwellers' right to use public services, potentially creating incentives for public officials to invest in urban improvements in the area. Fourth and lastly, access to credit of taxpayers might be facilitated since they have a property tax certificate.

Smolka and De Cesare (2012[14]) highlighted three reasons that might make it easier to register informal settlements. First, the benefits mentioned in the previous paragraph may help authorities to map these informal houses since dwellers might self-report their informal settlements to enjoy these benefits. Second, informal settlements tend to have vibrant property markets and, thus, valuation of properties might be feasible using similar methods to formal markets. Third, when only legal properties are taxed, potential taxpayers might be reluctant to regularise their properties in order to avoid tax obligations. In this light, the presence of informality might reduce the completeness of cadastre system only in case the cadastre policy neglects the fact that these informal settlements can actually be registered for tax purposes.

Box 3.2. Role of inter-governmental co-operation in cadastre management in Brazil and Mexico

Brazil is in a unique position with regard to recurrent taxes on urban property. Local governments have almost full autonomy to design their own tax systems with minimum interference of upper levels of government. From tax rates, exemption, reliefs and bases to tax administration matters, local governments are almost fully autonomous to design and manage their property tax systems. In a country with 5 570 municipalities (local governments), the 5th largest territory in the world, and substantial inequality within and across regions, Brazil's property tax systems work as a laboratory of practices that are employed under these different circumstances and environments.

Brazil's urban property tax (IPTU) is defined by municipal legislation and is applied to all taxable properties in each municipal urban area. It accounts for, roughly, 0.48% of GDP and, on average, 1.2% of local government's current revenues. Nevertheless, this aggregated number masks the fact that its distribution across local governments is rather unequal: although 60% of the Brazilian GDP is concentrated in 122 local governments, 60% of the urban property tax revenues is concentrated only in 22 local governments. This can be partially explained by asymmetries in administrative capacity. In Brazil, about 70% of municipalities have less than 20 000 people, and thus, municipalities may lack the scale to invest in technologies and human resources. For instance, only 38% of smaller local governments employed GIS technologies against 90% of capitals and local governments in metropolitan areas. Furthermore, in numerous small local governments, fiscal cadastres are not even digital. To make matters worse, in most cases all levels of government (federal, state and municipal/local) manage their own registers in an uncoordinated and unintegrated manner.

In order to overcome this problem, inter-governmental agreements are performed by local governments both with upper levels of government (vertical) or between themselves (horizontal). One of the most important vertical co-ordination arrangements is a programme for supporting local administrative capacity – PMAT (Modernization of Tax Administration Programme) – that was established in 1997 and has been implemented by the federal state-owned BNDES (Brazilian National Economic Development Bank). The programme consists of the provision of subsidised loans to local governments to fund projects aimed at tax modernisation. These projects are assessed and selected by the BNDES, which has the technical capability to aid local governments in designing and implementing the project. The flagship project of this programme involves fiscal cadastre update through digital mapping and, so far, it has been rather successful – a cross-section analysis revealed that own tax revenues of local governments that joined the programme was 30% higher than in municipalities that did not, and this difference reached nearly 100% for local governments that joined it more than nine years ago. The programme was also considered cost-effective since an average of one Brazilian Reais loan led to an extra of 1.8 Brazilian Reais of tax revenues. Despite this success, the coverage of the programme in terms of the number of local governments that joined the programme was unfortunately low. Since the programme requires debt clearance certificates, provision of collateral guarantees and credit approval under the Federal Senate and Municipal Councils, 89% of all local governments in Brazil were not eligible for joining the programme.

Aside from this programme that brings central support to local governments, some municipalities in Brazil also collaborate horizontally. Horizontal co-operation mechanisms are regulated by a Federal Law (No 11 107 of 2005) that defines requirements for any inter-municipal co-operation (not only for tax administration purposes). The co-operation is required to be formalised as a legal, private, or public entity registered under a notary instituted by a contract and approved by municipal councils. This Law requires, among others, that all members involved, its objective, execution times, mechanism of functioning, and share of each municipal government contribution must be defined in the agreement. This instrument has been widely used in Brazil and, in case of tax administration, there are cases in which the agreement encompasses a shared computerised register, infrastructure and human resources.

In **Mexico,** cadastre management is under the responsibility of state or local governments. Cadastral offices are in charge of functions related to the description of real estate such as the identification, location, demarcation, registration, mapping, valuation and update of cadastral values of real estates located within the territorial jurisdiction of the municipality.

Cadastral offices have autonomy in gathering and setting standards for this information and, as a result, there is a high level of complexity and variety in cadastral managing practices across the country. The main discrepancies between information contained in the cadastres derive from: 1) changes in the street names; 2) error measurements (i.e. related to physical references or calibration of instruments); 3) abbreviations used in names and surnames; 4) use of private contracts for transfer of ownership; and 5) constructions not declared to the municipal authority.

In order to set standards and to aid subnational governments in managing their cadastres, the federal government created the Programme for the Modernization of Public Property Registries and Cadastres (PMRPPC), which aims to improve cadastral administration institutions across the country through mainly modernisation of the cadastres and standardisation of processes. The PMRPPC offers Mexican subnational governments technical and financial support to improve the performance of these institutions. The programme includes the evaluation of robust and measurable parameters through the Comprehensive Model of the Public Registry of the Property and the Optimal Cadastre Model, in addition to promoting an integrated vision of cadastres.

In order to benefit from the programme, subnational entities develop a project to modernise their Public Property Registries complying with PMRPPC's proposed methodology from PMRPPC and these projects compete to obtain resources.

The methodology covers, among others:

1. *Professionalisation of the registry function*: Measures professional specialisation and constant training of registrars, operational and administrative officials in legal, administrative and technological concepts.
2. *Modernisation*: The use of paper, autograph signatures and conventional stamps should be eliminated and replaced by electronic signatures and digital stamps, which allows the use of databases as a means to guarantee the operations registered in them (instead of physical documents).
3. *Legal framework*: This component measures the adaptations to various legal systems in order to support the processes contemplated in the project, clarify attributions and responsibilities of the registry officials, and grant full legal validity to all electronic documents issued by the cadastral offices.
4. *Registry processes*: This component evaluates the processes carried out by cadastral offices, in light of a set of pre-established standards that are in accordance with the principles delineated in the legal framework.
5. *Institutional policies*: Evaluates the adequacy of cadastral offices institutional policies. Among the main policies are budget self-sufficiency, the promotion of registration culture, and the creation of cadastral-registry institutes with legal personality and own assets.
6. *Management and documentary collection*: Measures the adequate preservation, physical security and inviolability of the cadastre. Information technologies to digitise the collections and reforms to move from physical libraries to digital galleries are incentivised, which reduces the risk of illegal book manipulation.
7. *Participation and link with other sectors*: Analyses the existing degree of co-ordination between the cadastral institutions and various institutions related to the real estate management. Elements that are measured relate to the integration of information and the concentration of real estate related activities in a single institution. In addition, it analyses the relationships with other

relevant actors, such as notaries and the financial sector.

8. *Performance indicators*: This component assesses the operation and quality of services provided according to international standards, using indicators related to process efficiency, generation of operational statistics and agility of response.

The OECD worked along with officials from multiple levels of the Mexican government and enumerated four main elements that were crucial for an effective modernisation in cadastral management in Mexico. First, the existence of leadership and political support at the highest level of government and hierarchy, which was translated, among others, in the availability of financial resources. Second, inclusion of the staff that works directly with cadastral management in the modernisation process so as to create a shared vision and a sense of membership, both of which contributed to make the improvements robust and permanent. Third, the design of transparent and planned actions, with well delineated and achievable objectives. Fourth, the use of collaboration agreements between states and municipalities, which combined resources and experiences.

As a result of these modernisation programmes, some municipalities experienced significant improvements on their cadastral management. For instance, it is estimated that programmes funded by the National Bank of Public Works and Services (*Banobras*), which benefits municipalities with a minimum of 10 000 cadastral accounts, achieved a 30% average increase in property tax collection for the benefited municipalities. Mexico also used funding from other banks such as the Interamerican Development Bank (BID).

Sources: Junior (2017[13]) and Junior (2018[15]) for the Brazilian case, OECD (2012[16]) and information provided by Mexican authorities.

Property valuation

A non-functional valuation system may generate unfair assessments and horizontal inequities that may undermine the good properties of recurrent taxes on immovable property

Property valuation is considered to be among the costliest activity in property tax administration and is usually the task to which most attention is devoted. Without a proper valuation system, recurrent taxes on immovable property fail to have the expected outcome. A well-designed tax rate and base system may fail to have their intended outcome in case properties are assessed in an unfair and inequitable manner. In other words, even if nominal rates are identical for all types of property, effective rates can differ by property type if property valuation rules differ by type of property, causing horizontal inequalities. Moreover, the buoyancy of recurrent property taxes can only be sustained in a fair manner over time through frequented revaluations. Nonetheless, revaluations that lead to a significant increase in tax obligations are very unpopular and, thus, sometimes blocked politically. As a result, although a well-functioning property valuation process is crucial for the success of property tax reforms, the implementation of such a system is far from trivial and sometimes may suffer political resistance.

Good practices with regard to property valuation are described below – based on Rosengard (2012[17]), Franzsen and McCluskey (2012[18]) and Almy (2014[1]):

- All things being equal, it is generally preferred to align the relative value of properties with their “true” market values. In that manner horizontal and vertical inequities are minimised, improving the credibility of the tax system in the eyes of the taxpayers, which can increase compliance and reduce resistance for future investments on the property tax system.

- It is better to be approximately right than precisely wrong. It is worth highlighting that the purpose of property valuation is to calculate a tax levy and not to purchase a property and, thus, approximations are acceptable.
- It makes more financial sense to spend most of the administrative efforts on the types of properties that generate more tax revenues. The bulk of property tax revenues usually come from one or two types of properties. By trying to assess precisely the value of all properties, the valuation costs may skyrocket, damaging the net revenue raising capacity of the recurrent property tax.
- The tax administration should, when possible, avoid abrupt tax hikes from one year to another even in case property values did increase.[8] Since property values are based on the state of the real estate market, they might not be directly related to taxpayers' income. Therefore, abrupt increases on tax obligations might create liquidity problems. Such abrupt movements can be alleviated through frequent revaluations, indexation or linear increase of property values during the period in between property appraisals.

Capital values are by and large the most-used property value basis for recurrent taxes on immovable property in developed countries for numerous reasons: enough sales data, capital values can be used as a basis for other taxes and it is a buoyant tax base

The first step in property valuation refers to the definition of property value basis. Property values can only be estimated, and countries employ different measures of value. The three most common approaches in determining property values are the capital value,[9] the annual value and the notional value (i.e. usually based on properties' features such as area, region, etc.). The first refers to the net present value of future rents, and thus, in principle aims to estimate the market price of a property assuming a perfect market. The second, on the other hand, uses only a single year's rental value as a proxy for the value of the property. The third is less employed and regards the notional value, which aims at estimating a value that can be used in an adequate manner to calculate tax obligations – it may not be consistent with capital or rental values. In all cases the tax rate is multiplied by the value estimated and, as a result, the definition of the tax rate is heavily dependent on the definition of the tax basis for property values. Table 3.1, below, summarises the main advantages and disadvantages of each value basis.

Table 3.1. Features of property value basis

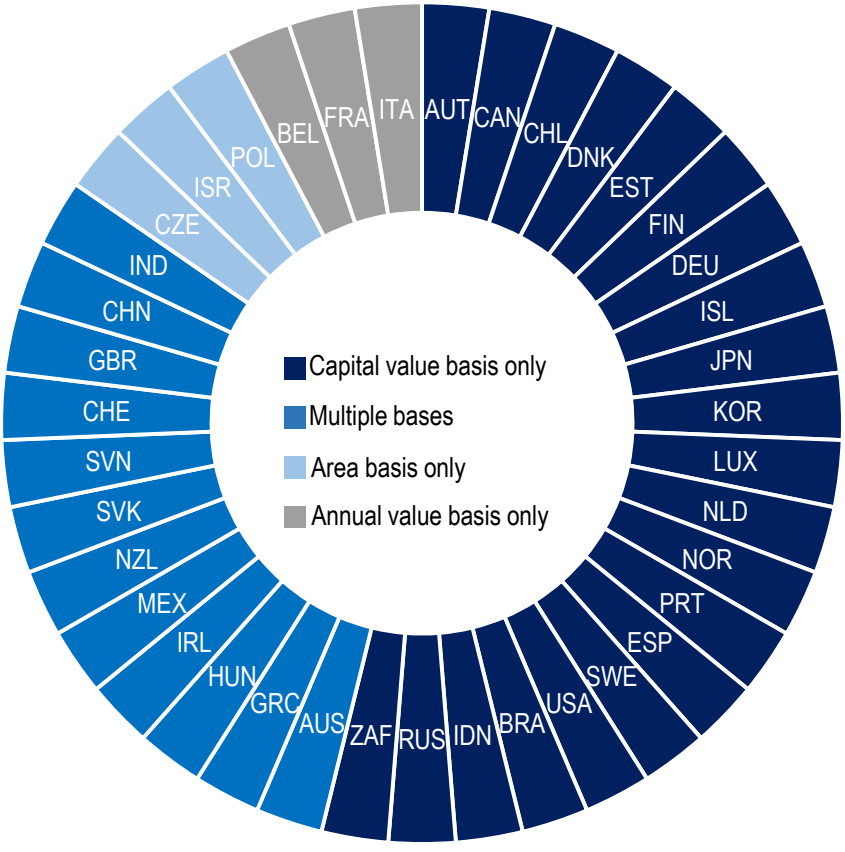
Basis	Advantage	Disadvantage
Annual rental values	• Particularly efficient when there is a vibrant rental market and, in this situation, mass appraisal can be used for similar properties • Rental payment is a better relative measure of the benefits a taxpayer receives in the course of a fiscal year than a property's capital value	• Vacant and owner-occupied properties may create difficulties in estimating rental values • Rental values are usually not consistent with the values used in the computation of other capital taxes
Capital values	• Particularly efficient when there is a vibrant property market, from which sufficient evidence of market prices can be obtained • This value basis is shared with other taxes such as capital, inheritance and transaction taxes, leading to economies of scope for tax departments • Capital values are buoyant when values are updated frequently.	• Depends on the availability of accurate data • Costly to implement in small scale • Requires relatively high level of expertise
Area based values	• Simple to administer since it requires significantly less data • Can be used regardless of market activity	• Can be unfair since desirable/high-end properties may pay the same or less amount of taxes than other properties • Tend to be less buoyant than value-based systems unless there are frequent changes to tax rates and adjustments that should reflect the real estate market

Source: Based on Franzsen and McCluskey (2012[18]) and Almy (2014[1]).

By and large capital values are the most used value basis for recurrent taxes on immovable properties. Figure 3.1, below, reveals that in 21 out of 39 countries capital values are the sole value basis for recurrent taxes on immovable property. In 12 countries multiple value basis are used while only in 3 countries an area basis and annual value basis are used alone. One potential explanation for this prominence of capital value basis is that some of the benefits from property taxation can only be reaped when the tax base is value-based. Value-based tax bases: 1) have a stronger link to taxpayers' income, enhancing progressivity; 2) are more sensitive to the level of economic development, which greatly affects the revenue-raising capacity of the tax in the long run, without resorting to unpopular increases in tax rates; 3) can be more effectively used as a tool to reduce the volatility of house prices since the higher the volatility the higher its effect on property values; 4) are less distortionary and more equitable than area-based taxes (Thomas, 2021[19]); and 5) are also used as a tax base for other taxes such as capital, inheritance and transaction taxes, leading to economies of scope for tax departments.

Despite these benefits, capital value basis can only be effectively employed when real estate markets are sufficiently well developed because capital values are commonly estimated using data on recent property transactions. As real estate markets have developed over a number of decades, OECD and partner countries have been able to gradually shift toward capital value basis for their recurrent taxes on immovable property (Almy, 2014[1]).

Figure 3.1 Value basis of immovable property taxes in OECD and partner countries



Source: Adapted based on Almy (2014[1]).

Sales comparison is the most used method to estimate property values across OECD countries, nevertheless other methods might be particularly useful for some types of properties for which there is not enough sales data available

The second step in designing a property valuation system is the definition of the method employed to estimate properties' value. The three most common valuation approaches are sales (or rent) comparisons, income capitalisation and cost approach. In general, the approach selected usually depends on the type of property being appraised. The income approach is especially employed for expensive income-producing properties, such as office buildings, hotels and retail malls, for which it is less challenging to forecast a property's future cash flows. Properties for which there is a substantial amount of data on sales, such as small offices, retail, and most residential properties, are commonly appraised through the sales comparison approach. Lastly, specific properties for which there is almost no sales or no easy way to forecast their income, such as factories, industrial properties, and transport infrastructure, are commonly valued using the cost approach. The rule of thumb is that for the cases in which there is sales data available, the preferred approach is sales comparisons, since it directly estimates the capital value (when, as in most cases, the capital value basis is used). The Table 3.2, below, summarises the main features of these three approaches.

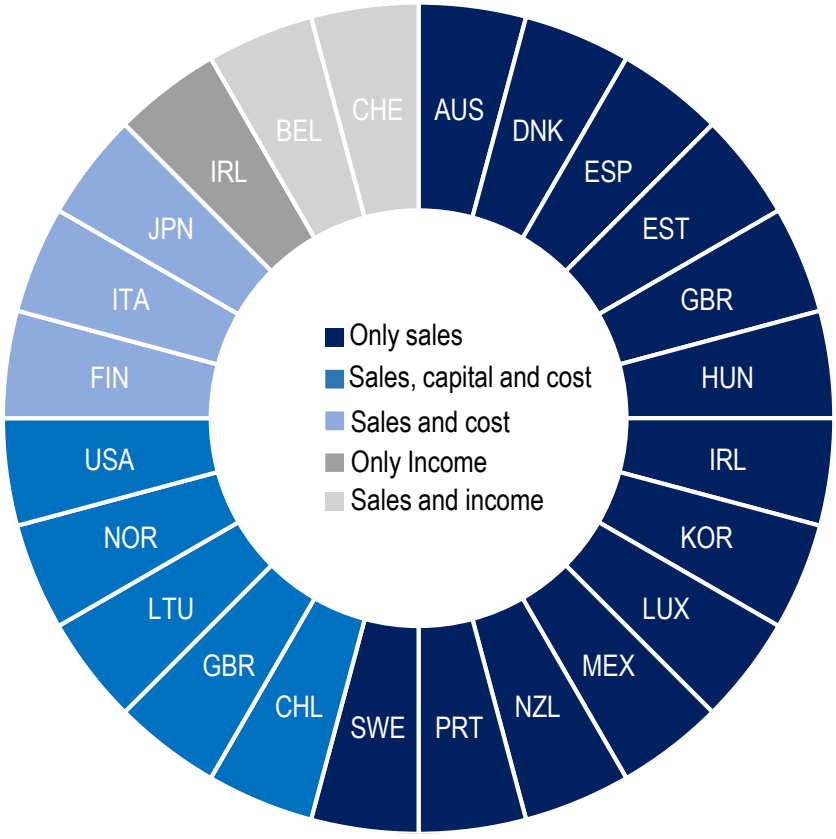
Table 3.2. Features of property valuation approaches

Method	Description	Advantages and Disadvantages
Sales comparisons	Uses recent sales and property specific data in order to compare the property being appraised with other similar properties, adjusting for property differences related to, among others, improvements, location, size, property type, etc.	• (+) Especially good for mass appraisals • (+) Suitable for most common types of properties • (-) Heavily dependent on data availability
Income capitalisation	This approach estimates the net present value of future incomes through either a direct capitalisation or a discounted cash flow.	• (+) Useful to estimate the value of properties for which there is almost no sales data but there is enough data on its revenue generation activity • (-) Difficult to apply since involves a long-term cash flow forecast and cash flows are volatile in times of crisis
Cost	Values both the land and the building (i.e. improvement) of a property separately, and then combines them to obtain an estimated property value. Land values involves factors such as location, area, shape, physical characteristics, and potential improvements that would sell in the open market. Building value is the reproduction cost minus accrued depreciation.	• (+) Can be employed in cases for which there is no comparable sales or rental data • (+) Relatively simple to apply • (-) May fail to approximate market values • (-) Costs of improvements change over time and, thus, the replication cost may differ significantly from the actual cost of the construction • (-) Depreciation is difficult to assess objectively

Source: Adapted from Franzsen and McCluskey (2012[18]) and Almy, (2014[1]).

Figure 3.2 reveals that the sale comparison method is the most used in OECD countries (23 out of 24 of the countries in the sample, being the sole approach employed in 13 countries). Ireland, which is the sole exception, relies heavily on self-assessment (for the role of self-assessments in property valuation check Box 3.3). Furthermore, in ten countries a combination of these three methods is employed, which reflects the fact that some methods are better for some types of properties depending on their sale and rental data availability.

Figure 3.2 Valuation approaches employed by countries



Source: Responses from OECD Survey on Recurrent Taxes on Immovable Property

It is worth highlighting that there are also other less employed valuation methods such as property value banding, used, for instance, in the United Kingdom and Ireland (Slack and Bird, 2014[20]). The general idea is to classify properties into different categories (in general from five to a dozen categories) that represent their value. As a result, the valuation task is heavily simplified at the cost of precision. The discrete nature of this system may create unfair valuations, especially to taxpayers located in a boundary of a band.

Another consideration regards taxable properties that are not being used in a manner that maximises their market values. In many situations, restrictions on use imposed under regulatory regimes (including zoning) influence market values, and any property valuation method can take these restrictions into account in determining assessed values (for tax purposes). For instance, buildings of architectural or historic interest have limited uses other than their existing use, but the site may well have a high value due to the location of the property (Franzsen and McCluskey, 2012[18]). Another example regards land that can only be used for agricultural uses, especially when this land is located near or in metropolitan areas. In this case, the basis for determining assessed value is the use value of the land (e.g. New Zealand employs this approach for agricultural land).

Box 3.3. The role of self-assessments in property valuation

Collecting and maintaining information about land and buildings can be expensive. In some countries (e.g. the United States), inspectors from property tax administrations do this work. Such work accounts for about 75% of the costs of assessment and valuation (Almy, 2014[1]). Elsewhere, taxpayers are required to help by filing declarations that detail their property holdings, thereby reducing administrative costs (while increasing their compliance burdens). Examples of the latter from OECD and partner countries include Slovenia, Sweden, Turkey, Indonesia and the Russian Federation. In Turkey, taxpayers figure their valuations and the taxes due with government support – tax return forms contain the information needed to calculate building values and land value rates are published in books available in tax administration offices so that taxpayers can calculate their charges.

In addition to general reporting requirements, a declaration can be required in connection with an event, such as when ownership was transferred or when there was a reform on the property; or only when the tax administration or cadastre requests. In Canada, Denmark, Sweden and the United States, buyers can be required to file a sales declaration. Owners or occupants of rental properties can be required to report rents and sometimes the expenses of maintaining the rented property. Examples of countries with such requirements include Denmark, the Netherlands, Sweden and the United Kingdom (for the Uniform Business Rate).

Several factors can influence decisions about data collection methods. Reliance on taxpayers to gather information on property values can reduce costs. Nonetheless, the accuracy of the information provided can be low due to conflicts of interest. Even if taxpayers are willing to supply complete and accurate information, they may lack the technical expertise to do so. As a result, self-assessments tend to reduce the budgetary costs of revaluations, but their net effects depend on the extent to which the tax administration needs resources to verify assessments.

Source: Almy (2014[1]).

Frequent revaluations are crucial as indexing leads to unfair assessments in longer term

One of the main difficulties in property tax management is to keep values updated. In many of the OECD reviewed surveys, severely out-of-date assessed property values are highlighted as a serious obstacle to boosting revenues from property taxes. These include Estonia, Finland, France, Germany, Greece, Indonesia, Mexico, Portugal and Sweden (Hagemann, 2018[3]). Revaluations tend to be not only expensive, but also unpopular. When a country doesn't update property values for a couple of years or decades, there often is substantial popular resistance against revaluations since they may increase abruptly and significantly tax obligations. Thus, the more property values are outdated, the more opposition there is to re-valuate them. Another problem regards the fact that when property valuations are defined by law (i.e. a law is required to trigger a revaluation process), the popular resistance can be especially efficient to block revaluations since in this case the valuation process depends on a political rather than technical decision. Sometimes even when legislation specifies a revaluation schedule, revaluations are not performed.

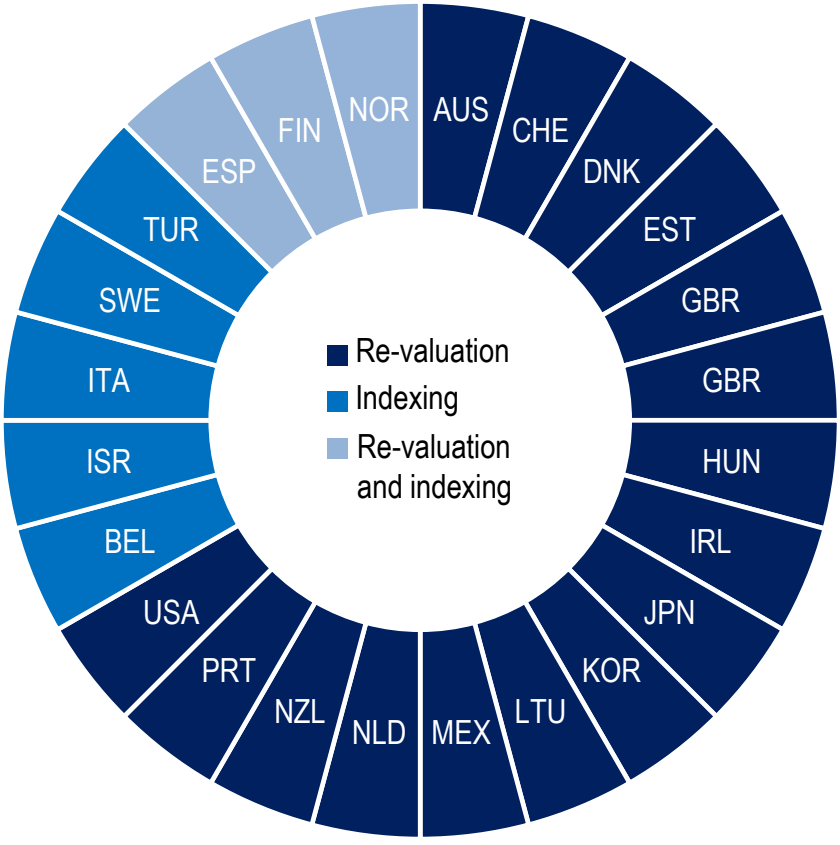
When property values are not reassessed frequently, recurrent property tax revenues may not increase with economic activity. That is, the increase in tax revenues resulting from an increase in cadastral values caused by appraisals will not occur. Nevertheless, it is possible to not reassess property values and still maintain some buoyancy. There are two commonly employed solutions, the first one is indexing. Indexing refers to the update of property values by some index or factor, such as the inflation rate or other price index more related to property prices. In that manner, cadastral values are going to increase in line with

an index, potentially making tax revenues buoyant in case this index is correlated with economic activity. A second solution is to increase tax rates. When tax rates increase in line with the economic activity, tax revenues will follow.

It is worth noting that these two solutions increase buoyancy at the cost of fairness because they fail to capture the asymmetrical growth in property values and, thus, if used extensively without revaluations, they will create distortions. For instance, in many jurisdictions, especially cities, property values rise rapidly in some areas (e.g. due to gentrification) and stagnate or even decline in others. Without re-evaluation, the effective tax rates of households in locations where values appreciate would be smaller than the relative effective rates of households in areas with stagnating values. If, as is often the case, higher income households live in value-appreciating areas, the net result is an increase in the tax regressivity. As a result, in the long run, indexing and uniform increases in tax rates can have a similar distortionary effect as the non-revaluation of properties.

Figure 3.3 depicts the methods used to update property values across OECD countries. In most cases (19 out of 24), revaluations are used alone. In three countries (Spain, Finland and Norway) revaluation and indexing are used jointly. In five countries only indexing is used. Although, in principle, most countries rely on revaluations of property to keep the values current, in some cases properties are not re-valued for decades. Belgium, for instance, plans to re-value properties once every ten years but the last valuation was in 1975. In Germany, the last valuation occurred in the first half of the last century. In the United Kingdom, bands for residential property were established and have not been changed since 1991. The last valuation in Estonia was in 2001.

Figure 3.3 Method used to update property values

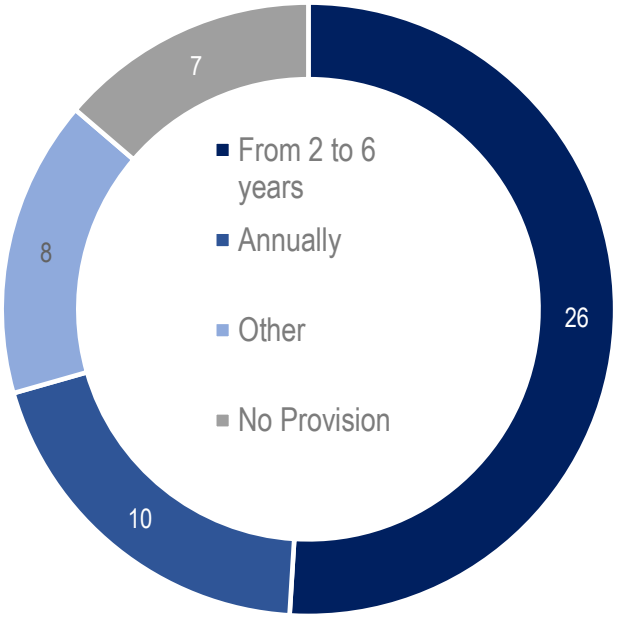


Source: Responses from OECD Survey on Recurrent Taxes on Immovable Property.

In a number of countries, though, properties are updated frequently. In Hungary, Korea, Mexico, Netherlands they occur every year; in Australia, Japan, New Zealand and Portugal every three years; in Chile every four years; Lithuania every five years; in Norway as the general rule every 10 years but varies (main residence valued every year if valued according to a model based on market value). Most of these countries follow IAAO (2017[21]) guidelines that recommend that property characteristics should be reviewed and updated at least every four to six years. The IAAO (2017[21]) suggest three ways to achieve this goal: 1) Re-inspection of all properties at periodic intervals; 2) Re-inspection of properties on a cyclical basis (e.g. one-fourth or one-sixth each year); and 3) Re-inspection of properties on a priority basis as indicated by ratio studies or other considerations while still ensuring that all properties are examined at least every sixth year.

In the United States, the frequency of reassessments depends on the state and, in some cases, on local governments. Higginbottom (2010[22]) revealed that most states follow IAAOs recommendations and reassess properties at least once every six years. More precisely, 26 states reassess property values at least once every six years[10] while 10 states do it annually. Two notable exceptions are the state of New York and California – they reassess properties only when new improvements are made or ownership is changed, respectively. Figure 3.4, below, summarises the minimum requirements for frequency of property reassessment imposed by American states – see Higginbottom (2010[22]) for details.

Figure 3.4 Frequency of reassessments in the United States



Source: Higginbottom (2010[22]).

When high-quality data and human resources are available, computer assisted mass appraisals (CAMA) can significantly reduce the costs of valuations

In many countries, computer assisted mass appraisals have changed the process of property re-appraisals, leading to, in a number of cases, a substantial reduction in costs. The term “mass appraisal” refers to the procedure in which a group of properties are jointly appraised, following standardising procedures and testing. While similar to a single property appraisal, the key difference is its scale and methods. Usually, mass appraisals are based on mathematical modelling (most commonly a multiple regression analysis).

Due to its heavy data reliant nature, mass appraisals are better implemented when aided by computer assisted valuation techniques, which is then referred to as CAMA or automated valuation model (AVM). The International Association of Assessing Officers (2018[23]) defines AVM as follows:

> *"A mathematically based computer software program that market analysts use to produce an estimate of market value based on market analysis of location, market conditions and real estate characteristics from information that was previously and separately collected. The distinguishing feature of an AVM is that it is a market appraisal produced through mathematical modelling. Credibility of an AVM is dependent on the data used and the skills of the modeller producing the AVM. AVMs should be developed by appropriately qualified market analysts, e.g. appraisers/valuers, who use statistically based applications to analyse data and select the best simulation of market activity for the analysis of location, market conditions and property characteristics from previously collected data. AVMs are designed to generate value estimates for properties at specified points in time (retrospective or prospective dates as required by client)."*

In order to set up a mass valuation system many steps are required. The International Association of Assessing Officers (2018[23]) suggests the following nine steps: creation of a scope of work, identification and acquisition of property data, exploratory data analysis, stratification, determination of data representativeness, model specification and feature selection, model calibration, quality assurance and model application and value review. Among these nine steps, two steps are highlighted here. First, regarding data gathering, it is worth noting that a CAMA system requires a substantial amount of high-quality property data (i.e. physical attributes of the property), locational data (i.e. market demographics, traffic, land-use policies and other geographic factors), and market data (i.e. sales, income and replacement cost information).[11] It is crucial that the data represents all types of properties whose values are being modelled. In some cases, this data can be obtained in the private sector. A second point that is worth highlighting is the quality assurance. The performance of the model should be compared with a minimum set of standards regarding accuracy and uniformity. That is, it is important for modelers to check whether the values given by the model to comparable properties are similar and whether the error terms are correlated with property values.

CAMA systems perform even better when integrated with a Geographic Information System (GIS), which is used for input, storage, processing and retrieval of spatial data. The integration of both is particularly valuable because the location of a property and the properties in its vicinity are important elements of a property price. Combining GIS with CAMA might significantly increase efficiency and reduce staff costs (see Box 3.4 for an example of a well-functioning CAMA system integrated with a GIS in China). According to Almy (2014[1]), the cost of operating a system which uses CAMA (in combination with GIS) is about EUR 20 (based on experience in Canada, Netherlands and the United States) compared to EUR 50 per property of a comprehensive revaluation, which is about one-tenth of the cost of an appraisal of a house for mortgage purposes.

Mass appraisal has a lot of benefits (McCluskey et al., 2013[24]): 1) valuates properties in a standardised and accurate way; 2) can provide a large number of valuations in a short scope of time; and 3) is a system that gets better accuracy and consistency over time (if given proper attention). Despite these benefits, mass appraisal is not recommended for all governments due to constraints and limitations. Mass appraisals require staff with technical expertise and high-quality data on property features, location and transactions. The modelling maxim "garbage in, garbage out" also applies to CAMA – when the data has poor quality, so the model outcomes. Problems in the model may generate mass horizontal (in case similar properties are valued differently) or vertical (in case high end values are valued as a lower percentage of the "true" market value than low end properties) inequities. The number of properties analysed should be sufficient to cover the up-front investment necessary to design a CAMA – at least in the longer term. In this light, similarly to the discussion on fiscal cadastre, local governments with limited capacity can make co-operative arrangements with other governments in order to fund a proper CAMA system[12] (see Box 3.8).

Almy (2014[1]) raised another (solvable) issue with mass valuation systems: they might be too complex to explain to the average taxpayer. The author suggested two approaches to communicate better model outcomes to taxpayers: 1) strive for simpler models that can be presented with ease, highlighting how features of their properties affect the assessed value; and 2) convert multivariate models into a series of tables that display prices per unit of area for different classes of properties. Although not trivial, some countries have successfully implemented and communicated model outcomes to taxpayers, and they have a small appeal rate. For instance, the Netherlands made models public and taxpayers can request a valuation report that includes valuation data for several comparable properties (see more on the Dutch case in Box 3.9, at the end of this chapter).

Box 3.4. Shenzhen's CAMA

Shenzhen is a southern Chinese city that has more than 12 million inhabitants. In 2003, the Chinese central government selected six cities to serve as pilots in an experiment aimed at appraising properties, with Shenzhen being one of these six cities. In collaboration with the Lincoln Institute of Land Policy, the Shenzhen Assessment Centre—a municipal statutory agency that was established to assist the collection of taxes on real estate sales and transactions—has developed a state-of-the-art CAMA system.

After fifteen years of progress, Shenzhen's CAMA is able to valuate properties using numerous indicators such as location, number of rooms, floor space, recent market prices, among others. The impact of the location on the price considers the value of being near to specific valuable services providers, such as schools and transport infrastructure, such as a metro station. In addition, Shenzhen's CAMA system models properties in three dimensions, which allows the valuation process to consider elements such as a property's view and the amount of sunlight it gets. Furthermore, the valuation assessment also encompasses the effects from noise on a property's value. For instance, a property facing busy traffic is estimated to have a lower value than a property facing a quiet street, all other things being equal. All these characteristics put together can amount to a 20% difference in value between two units in the same building.

This technology is not common in most countries or cities. Although there are no recurrent taxes on residential properties in Shenzhen, the system is being used to estimate values for the property transaction taxes. The number of properties valued amounted to 10 million, of which only 27 106 appraisals were challenged and only 282 assessments had to be readjusted (as of January 2017).

Despite this impressive system, Shenzhen's CAMA faces numerous challenges. The privatisation of urban housing is recent in China – it started in the late 1990s. As a result, the market is not as dynamic as in many cities in OECD countries that have had private markets for centuries, which forces the system to operate with a relatively limited amount of data. As discussed throughout this report, one of the main if not the key challenge of having an effective CAMA system is data availability. Furthermore, since the data that the system is based upon is also used to calculate transaction tax obligations, taxpayers tend to report artificially small values for their transactions in a manner to avoid taxes. The high rate of growth of the city is also an obstacle. As long as Shenzhen continues to grow at such a rapid pace, the fiscal cadastre administration will face an immense challenge to keep track of all the new buildings and properties. These challenges are caused by characteristics that most Chinese cities have in common. Nevertheless, Shenzhen's CAMA system and its fiscal cadastre management can be used as a benchmark for other Chinese cities.

Source: Nunlist (2017[25]).

Collection and appeal systems

Transparency and convenience are two important elements in collection and appeal systems that tend to maximise taxpayer compliance and, as a result, tax revenues

After having the taxable properties registered in a cadastre along with an estimation of their values, the third and last step is to effectively collect tax revenues, giving room for taxpayers to contest the assessed value of their property, in case they consider it to be inaccurate. These activities are the ones that determine the collection ratio, which is the ratio of the tax revenue collected versus the total tax billed for a fiscal year. The collection process encompasses mainly four main activities: 1) assessment of tax liability for each taxable property; 2) proper delivery/billing and accounting of tax obligations; 3) reinforced taxpayer compliance; and 4) administration of appeals.

For tax revenue maximisation, all these activities should be performed in a manner that taxpayer compliance is maximised. For such, the following set of principles are generally followed – based on Kelly (2012[2]):

1. The process should be transparent. Ideally timely information should be available for taxpayers, so the process is as predictable as possible;
2. Procedures should be as seamless and convenient as possible to minimise governmental and compliance costs;
3. Computer assistance and automation can be used to treat taxpayers in an equitable and fair manner and to minimise employee workload and costs; and
4. Ideally taxpayers should be previously educated on the tax policies and payment process – fiscal culture is considered an important aspect for increasing voluntary compliance.

An essential component of a good property tax system is an accessible and responsive appeal system

In regard to the appeal system, differently than other taxes, the taxable value of property taxes is notional – that is, exists only in theory and, thus, should be estimated. It contrasts heavily with, for instance, a transaction tax in which the value of the property is an element of the transaction. Therefore, the tax authority and taxpayers might disagree with regard to estimated property value and appeals are key to ensure a balance between them. In order to be as fair as possible, appeals usually are judged by multiple institutions/committees in a hierarchical structure. Initially appeals are head by assessors, then by committees (sometimes partially composed by ordinary citizens) and, lastly, by specialised tribunals/courts (Almy, 2013[11]).

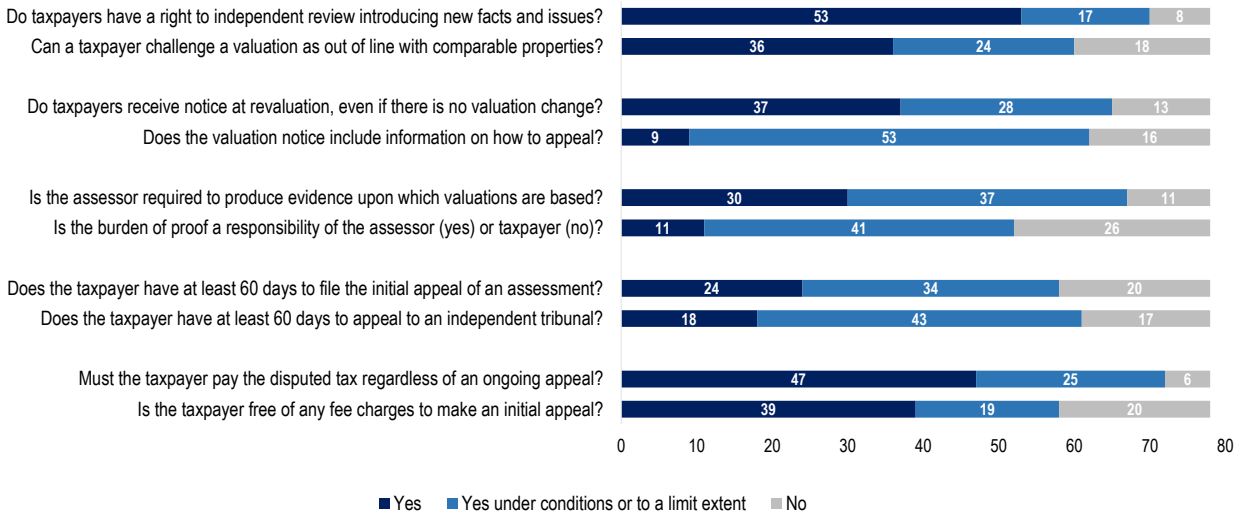
Following the good principles mentioned in this section, the appealing system should be as transparent and as convenient as possible, stating in which conditions, when and how can the taxpayer appeal to his/her tax obligation so the whole appeal process is done smoothly and predictably. It is worth noting that appealing against valuation rules is normally different than appealing against a single property-specific appraisal. The tax department can organise the appeal process in a manner that appeals against the valuation method occur in a different period than appeals against property assessments in order to avoid the simultaneous judgment of multiple appeals of different nature, which may reduce the operational effectiveness of the appealing system.

Nevertheless, as important as having an efficient appeal system is to reduce as much as possible the number of appeals. For that avail, taxpayer education and transparency are important but are not the only strategies. Some countries only allow appeals in case the alleged error is higher than a certain threshold (e.g. 20% for Estonia).[13] Others use information from taxpayers not only to improve data collection but also as a manner to legitimise the appraisal and, thus, reducing the number of appeals (e.g. Netherlands,

explored in Box 3.9, found at the end of this chapter). Lastly, conservative valuations (that is, that aims at estimating a value slightly below property value) might also significantly reduce appeals since when taxpayers believe that the assessed value is below market values they are less likely to appeal. The last practice is found in Denmark (who aims to produce values that are about 5% less than actual market prices) and in some Canada and US states, which aim to estimate values up to 10% lower than those of the market (UN Habitat, 2013[10]).

Figure 3.5 illustrates the responses from a questionnaire handled by Dobay et al. (2019[26]) about property tax appeal process in some OECD countries, Singapore, South Africa, and Australian states, Canadian provinces and US states.

Figure 3.5 Characteristics of appeals process in tax administrations across states/countries



Note: Countries/States covered: Australian Capital Territories/AUS, New South Wales/AUS, Northern Territories/AUS, Queensland/AUS, South Australia/AUS, Tasmania/AUS, Victoria/AUS, Western Australia/AUS, Alberta/CAN, British Columbia/CAN, New Brunswick/CAN, Newfoundland and Labrador/CAN, Nova Scotia/CAN, Ontario/CAN, Quebec/CAN, Saskatchewan/CAN, England/UK, Northern Ireland/UK, Scotland/UK, Wales/UK, Alabama/US, Alaska/US, Arizona/US, Arkansas/US, California/US, Colorado/US, Connecticut/US, Delaware/US, District of Columbia/US, Florida/US, Georgia/US, Hawaii/US, Idaho/US, Illinois/US, Indiana/US, Iowa/US, Kansas/US, Kentucky/US, Louisiana/US, Maine/US, Maryland/US, Massachusetts/US, Michigan/US, Minnesota/US, Mississippi/US, Missouri/US, Montana/US, Nebraska/US, Nevada/US, New Hampshire/US, New Jersey/US, New Mexico/US, New York/US, North Carolina/US, North Dakota/US, Ohio/US, Oklahoma/US, Oregon/US, Pennsylvania/US, Puerto Rico/US, Rhode Island/US, South Carolina/US, South Dakota/US, Tennessee/US, Texas/US, Utah/US, Vermont/US, Virginia/US, Washington/US, West Virginia/US, Wisconsin/US, Wyoming/US, New Zealand, Singapore, South Africa, Spain, The Netherlands.
Source: Authors based on data from Dobay et al. (2019[26])

Regarding the right to appeal, it is common for property tax administrations to grant to taxpayers a right to review their assessments and introduce new facts that could change the assessments (53 out of 78). Nevertheless, some tax administrations impose restrictions on assessment reviews or do not fully provide an independent court for the judgment. For instance, in the state of New York/US the appeal right only applies to small assessment review claims. In Indiana/US appeals are judged by the Indiana Board of Tax Review, not the Tax Court. Rarely can the taxpayer not challenge valuations on the grounds that they are out of line with comparable properties (18 out of 78). However, in most cases challenging on such grounds can only be made under certain conditions, or if more information is provided. For instance, in the Netherlands only residential properties can be challenged on these grounds. In Alabama/US, additional evidence on the top of a difference in assessed values is required.

When it comes to notification, in most cases (62 out of 78) some information regarding the appeal process comes in the valuation notice. In some cases, the appeal form comes together with the note as well (e.g. in many Canadian states and in four US states). In some US states the state does not require that such information is given in the valuation notice, but some counties do include (e.g. Alabama/US). In the most complete case, the notice letter includes all the details and also the instructions of how to appeal but not the appeal forms (e.g. Spain, Florida/US, Kansas/US, the Netherlands, among others). In a small number of cases the notice does not include any specific information on appeal, but the information can be found elsewhere (e.g. in Oregon/US the information can be found in counties' websites).

Only a few tax administrations do not send a valuation notice in case there is no valuation change (only 13 out of 38 do not). 37 do send such notices – for instance, Spain, Singapore and South Dakota/US send annually while many US states (e.g. Virginia/US, Texas/US, among others) send always when there is a revaluation even if there is no significant change in cadastral values. In other cases, the note is only sent in case the value changes (e.g. Kentucky/US), increases (e.g. Delaware/US) or increases above a certain threshold (e.g. 15% in Louisiana/US, USD 1 000 in South Carolina/US,[14] among others).

Concerning the evidence used for analysing appeals, in most cases (67 out of 78) assessors produce evidence upon which valuations are based. Most tax administrations provide appraisal reports upon request (e.g. the Netherlands, Virginia/US, among others). In some cases, the complete information is given only during the appeal process (e.g. Louisiana/US, Missouri/US, Northern Ireland/UK, among others). In some rare cases the information is either not given (e.g. Ohio/US, New York/US, among others) or only given after the taxpayer has provided supporting evidence (e.g. England/UK).

When it comes to the burden of proof, the balance is a bit more skewed towards the taxpayers – they have to generate evidence in 26 cases (out of 78), against only 11 cases in which assessors bear the burden of proof. The most common situation, though, is in between – in 41 cases both the taxpayer and the tax administration bear some burden of proof. That is, equal weight is generally given to evidence provided by both parties, however, the burden is on the taxpayer on a preponderance of evidence basis (e.g. Scotland/UK, England/UK, Idaho/US, among others). In some exceptional cases, this definition depends on the type of property (e.g. in Kansas/US the burden of proof is on the appraiser, except for leased commercial and industrial property, where it is on the taxpayer by preponderance of the evidence).

With reference to appeal deadlines, the most common situation is when taxpayers have between 30-59 days to file the initial appeal assessment or to appeal to an independent tribunal. Notably tax administrations in the United Kingdom tend to give taxpayers more than 60 days to file appeals. Most tax administrations grant at least 30 days. The tightest deadlines are generally given by some US states and are, roughly, 13-15 days (e.g. Vermont/US, Kentucky/US, among others).

Regarding the costs, in most cases there is no fee requirement to file an initial tax appeal (39 out of 78). In some cases, some fees might apply at a later stage or only under certain conditions. For instance, in Scotland there is no fee for submitting an appeal to the tax administration, but fees are payable for appeals to the Lands Tribunal for Scotland. In Wisconsin/US, fees are only applicable for state assessed manufacturing property. Often they are also progressive – the higher the value of the property the higher the fee. For instance, in New South Wales/AUS there is no fee for the initial objection, but on a later stage appeal fees range from AUD 336 to 1 912. In Northern Ireland fees are 1% of the pre-appeal value to a max of GBP 15 000. When they are fixed, they tend to be small. In Vermont/US it is USD 75 and USD 30 in New York/US.

In most cases (47 out of 78) an appeal submission does not suspend the obligation to pay the property tax bill (e.g. Spain, New Zealand and most US, Canadian, British and Canadian states). Not rarely only a portion of the tax obligation should be paid. For instance, in South Carolina/US 80% of the disputed tax must be paid if an appeal is likely to extend beyond the end of the fiscal year. In Maine/US the undisputed amount must be paid to advance an appeal in case the case's value is greater than USD 500 000. In the

Netherlands it depends on the case – the municipal tax administration can grant a suspension of payment for the assessment that is contested, but it may charge interest if the objection is dismissed.

Many lessons can be drawn from the experience of these countries. First, it is important to grant to taxpayers a right to challenge assessments and, ideally, an independent institution (in most cases a tribunal) should be involved in the judgment. Second, the valuation notice is a very effective and widely used tool to convey the necessary information for taxpayers to appeal. A good practice is to send the appeal form with the notice or, at minimum, instructions on how to appeal. In that light, sending revaluation notices frequently (even when the value assessed does not change) can provide greater transparency. Third, evidence used to appraise properties is normally provided to taxpayers in case they request. Nevertheless, in most cases further evidence is necessary for taxpayers to be able to appeal. Pieces of evidence have, in principle, equal value regardless of who is providing them. Fourth, most tax administrations give at least 30 days for taxpayers to file an appeal, but rarely more than 60 days. This seems sufficient for taxpayers to prepare an appeal case. Fourth, typically there are no required fees to make an initial appeal. In case there are, they can be made progressive or small, so they do not represent a significant burden to taxpayers. A fair system should allow all taxpayers to appeal in case they deem necessary. Fifth and lastly, an appeal submission typically does not suspend the obligation to pay the property tax bill. Two potential reasons for this are to not incentivise appeals just to postpone payments and to maintain a predictable inflow of tax revenues.

Billing: measures aimed at increasing payments convenience and improving communication can improve the compliance rate

One way to facilitate the payment process is through the provision of multiple payment methods. Examples include cash, e-banking and credit/debit cards though commercial banks, regional tax centres and post offices (Kelly, 2012[2]). When payments can be made in conjunction with other bills such as mortgages and utility, compliance tends to increase (for instance, in the case of Netherlands, the payment is made together with the charges from the Real Estate Tax Water board). For that purpose, some innovative methods have been employed recently, such as the Irish case of allowing property taxes to be deducted at source from salary or occupational pensions (for more on the Irish case see Box 4.1 in the next chapter). Payment in instalments is also a good practice to help illiquid taxpayers to make the payment – usually instalments are offered along with an option of an early lump payment with a discount to encourage compliance (see Box 3.5).

The billing process can also be used to increase transparency. So as to make the process more transparent, the tax bill notification may serve as a communication channel, in addition to other channels such as television, newspapers and posters advertisements. It is important for taxpayers to know the role of the property tax in funding public services, the billing and appeal processes and channels (e.g. website, telephone) for gathering further information. Box 3.5 covers how the compliance rate can be improved through better communication with country examples.

Box 3.5. Improving the compliance rate

The content and format of tax notifications can have a significant impact on compliance rates

In Lima, Peru, Carpio (2014[27]) found evidence that disclosing information on the compliance rate of property taxes can have a large positive impact on compliance (20% on average). In contrast, mentioning the average level of municipal enforcement did not raise compliance significantly. A similar conclusion was drawn from a by Hallsworth et al. (2017[28]) , as cited by the World Bank (2019[29]), analysing data from the United Kingdom. The payment of declared tax liabilities was boosted by up to 5.1 percentage points when the average number of people who pay on time was informed to taxpayers. Thus, disclosing positive behaviour of other taxpayers seems to have a significant impact on compliance.

Letters with simplified messages also tend to increase compliance. As cited by the World Bank (2019[29]), Behavioural Insights Team (2012[30]) found evidence in the United Kingdom that letters that clearly delineated the actions required to pay the tax saw a 15 to 30% higher response rate than other types of messaging. In Belgium, Neve et al. (2020[31]) found evidence that simplifying communication by the tax administration and including deterrence messages consistently improves tax compliance. Similarly, in the Pampas/Argentina, Castro and Scartascini (2015[32]) found evidence that deterrence messages increased the property tax compliance by roughly 5%.

Mentioning what public goods are funded with the tax was found to increase compliance. In Rwanda messages indicating that the taxes are used to fund education, healthcare and safety led to a persistent increase in tax compliance (Mascagni, Nell and Monkam, 2017[33]).

Communicating sanctions are also found to increase compliance. For instance, In Washington State/United States, Iyer, Reckers and Snaders (2010[34]) concluded that mailed letters that enhanced perceived detection risk and/or raised penalty awareness resulted in an increase in tax compliance.

Finally, in an overarching study covering five countries (Costa Rica, Guatemala, Poland, Latvia and Kosovo), the World Bank (2019[29]) found evidence that slight changes in communication policy can produce a significant increase in compliance rate. Nevertheless, countries differ and the tone in the message and mean used to send it (e.g. e-mail, letter) have a different impact depending on the country. Thus, the tax administration can test different messages to tune the message tone and format to its specific audience.

Increasing the number of instalments can affect positively the compliance rate

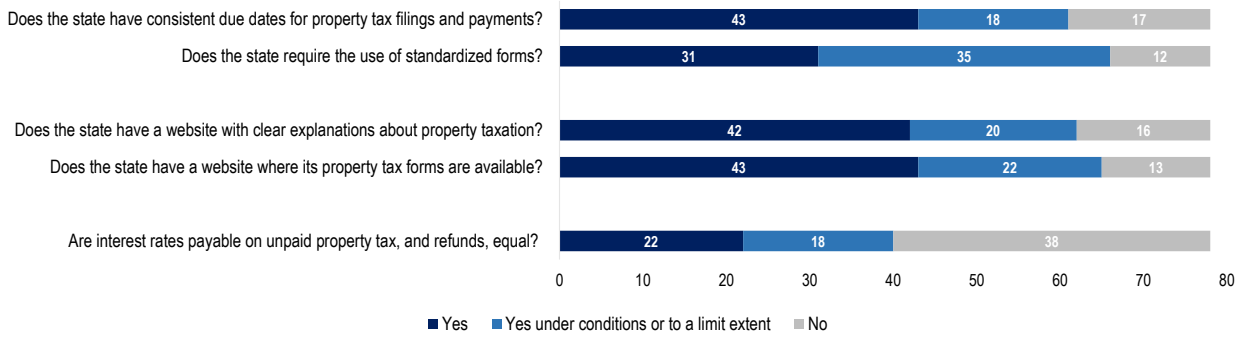
Compliance rates can also be increased when taxpayers can pay their property tax obligations in multiple instalments. Waldhart and Reschovsky (2012[35]) investigated the relationship between the number of annual payment instalments and the property tax delinquency rate using five years of data from Wisconsin municipalities. Their analysis indicated that an increase in the number of instalments from two to three per year reduces the delinquency rate by nearly half. Nevertheless, increasing further the number of instalments did not lead to a statistically significant reduction in delinquency. As a result, it seems that increasing the number of instalments has a positive effect on compliance. Nevertheless, this effect is non-linear and can cease to exist when a certain number of instalments is reached. Of course, this number can change depending on the region and, thus, a tax administration can test which number of instalments work best for it. In addition, in order to select this number, other elements should be considered such as the impact of an increase in the number of instalments in government finances.

Source: World Bank (2019[29]).

In addition to convenience and transparency, another tool to increase compliance is the penalisation of non-compliant taxpayers. In general, the most common penalties are the imposition of fines and tax liens, incidence of interest rates on the arrears, impediment of the use of certain government services, "shaming" through the publication of delinquency list and, ultimately, property seizure (Kelly, 2012[2]). In order to avoid penalising taxpayers unfairly, such more extreme non-financial penalties can be employed only in case of a lasting delinquency (typically ranging from one to three years), stipulated beforehand. The tax system is considered fairer when penalties are transparent and predictable. For instance, in the specific case of property seizure, the taxpayer should be informed of the deadlines of all steps in advance, such as demand notice, warnings, periods to respond to each demand, judgement, release period and sale/auction.

Figure 3.6 reveals practices employed by property tax administrations across countries with regards to collection, transparency and penalisations. Concerning due dates for property tax filling and payments, in most cases (43 out of 78) the country/state defines the due date. Due dates vary widely and can be as early as January 31 (e.g. Singapore) or at as late as December 31 (e.g. for the 2nd instalment in Oklahoma/US). Usually instalments are apart from one another by roughly 3-6 months. Due dates can also vary by property type (e.g. in Wisconsin/US and Wyoming/US). Some tax administrations (18 out of 78) have limited freedom to set their own filing and payment dates. For instance, in Western Australia/AUS, payment dates for Land Tax are consistent across tax administration but not the payment dates for the Council Rates. In Spain, local governments can choose the date, but the taxpayer must have at least two months to pay. Lastly, in a minority of states/countries due dates are not consistent across jurisdictions (17 out of 78).

Figure 3.6 Characteristics of collection process in tax administrations across states/countries



Note: State here may refer to the immediate upper level of government (e.g. in the United Kingdom, England, Northern Ireland, Scotland and Wales; in the Netherlands and New Zealand the central government). Countries/Jurisdictions covered: Australian Capital Territories/AUS, New South Wales/AUS, Northern Territories/AUS, Queensland/AUS, South Australia/AUS, Tasmania/AUS, Victoria/AUS, Western Australia/AUS, Alberta/CAN, British Columbia/CAN, New Brunswick/CAN, Newfoundland and Labrador/CAN, Nova Scotia/CAN, Ontario/CAN, Quebec/CAN, Saskatchewan/CAN, England/UK, Northern Ireland/UK, Scotland/UK, Wales/UK, Alabama/US, Alaska/US, Arizona/US, Arkansas/US, California/US, Colorado/US, Connecticut/US, Delaware/US, District of Columbia/US, Florida/US, Georgia/US, Hawaii/US, Idaho/US, Illinois/US, Indiana/US, Iowa/US, Kansas/US, Kentucky/US, Louisiana/US, Maine/US, Maryland/US, Massachusetts/US, Michigan/US, Minnesota/US, Mississippi/US, Missouri/US, Montana/US, Nebraska/US, Nevada/US, New Hampshire/US, New Jersey/US, New Mexico/US, New York/US, North Carolina/US, North Dakota/US, Ohio/US, Oklahoma/US, Oregon/US, Pennsylvania/US, Puerto Rico/US, Rhode Island/US, South Carolina/US, South Dakota/US, Tennessee/US, Texas/US, Utah/US, Vermont/US, Virginia/US, Washington/US, West Virginia/US, Wisconsin/US, Wyoming/US, New Zealand, Singapore, South Africa, Spain, The Netherlands.
Source: Based on data from Dobay et al. (2019[26]).

Upper levels of government often standardise the forms that local governments provide to taxpayers (31 out of 78). Occasionally upper levels of government do not provide a form for local governments (12 out of 78). It is, however, more common for standard forms to be provided by upper levels, but not required to be used – in this case localities may use their own preferred forms and the forms sent by upper levels work as a suggestion (35 out of 78).

With regards to transparency, websites are a widely used tool to both provide general explanations and information about property taxation and to provide forms to taxpayers. The majority of state/central governments (42 out of 78) have a centralised website in which standard forms can be found and further information is provided. For instance, in the Netherlands the Council for Real Estate Assessment has a website that gives comprehensive details about property tax assessment. In Northern Ireland/UK, The Land & Property Services (LPS) website (part of ni.gov.uk) provides links to other sites providing property tax information. In South Africa the Cooperative Governance Traditional Affairs website provides an explanation of the rates system, valuation, rate setting and the appeal process. In most cases (43 out of 78) these websites also provide the forms to taxpayers. In some cases, though, not all forms are provided on the same website. For instance, in New South Wales/AUS, Objection forms are on the state website while forms for rebates and exemptions are on the individual Council websites. Exemption forms are not provided by some tax administrations in their websites (e.g. Arkansas/US, Kentucky/US and West Virginia/US).

Lastly, with regards to interest rates payable on unpaid property tax and refunds, the largest group of tax administrations (38 out of 78) applies a higher rate to unpaid property tax than to tax refunds. Annual interest rates applied to unpaid property taxes range from less than 2% (e.g. Oregon/US) to 15-18% in some US states (e.g. 15% in Alaska/US, 16% in Arizona/US, 18% in Wyoming/US). On the other hand, interest rates applied to tax refunds (overpayment) are generally lower than 2% and their values are equal or similar to rates applied to underpayment in a minority of countries/states (22 out of 78). Some states/countries work with a variable interest rate (e.g. in Ohio/US, the interest rate applied to both over and under payment is 1/12th of the federal short-term rate per month).

Many lessons can be drawn from the experience of these tax administrations. First, country/state-wide standardisation with regard to due dates and forms is relatively common, which reveals that the upper levels of government do have some role in setting guidelines for lower level of government's procedures. Second, there is no clear period of the year in which tax obligations are paid but, in general, multiple instalments tend to be spaced by 3-6 months. General guidelines can be given to establish a minimum period for payment (e.g. Spain). Third, websites are a widely used tool to increase transparency and to provide forms in a convenient manner. Commonly states/countries have a centralised website that provides general information and forms to the taxpayers. Websites can provide a wide range of information with regards to rates system, valuation, rate setting and the appeal process. Fourthly and lastly, interest rates are commonly used to penalise taxpayers given that interest rates applied to underpayment tend to be higher than market rates and the rate applied to overpayment. It is worth noting that a penalisation of underpayment can also be achieved with a fee plus an interest rate in line with market rates.

Responsibility for property tax administration across levels of government

Local governments often have the autonomy to set property tax rates within limits

There are multiple reasons to give SNGs some autonomy over tax rate setting. First, much of the economic and political benefits of decentralised public finance come from the ability of SNGs to make their own decisions about taxation. That is, SNGs should be autonomous enough to define its taxation in line with the level of spending that they deem necessary to provide public services for its citizens. Without that discretion, SNGs cannot be fully accountable for a fiscal crisis or poor-quality public services since they are not able to raise the necessary revenues to balance their budgets or to improve public services. As Ahmad (2017[36]) puts it, *"direct linkage between taxes and spending, especially at the local and city level, is critical for both accountability and good governance and sustainable development"*. Second, tax bases are unevenly distributed across regions and, thus, when the tax rates are set by the central government, local governments would not be able to compensate for their regional differences, creating regional asymmetries in terms of revenue capacity. Thus, tax rate and relief settings are considered a key element of subnational autonomy (Dougherty, Harding and Reschovsky, 2019[37]), without which hardly

one can consider a government autonomous. Some authors, such as Ahmad (2017[36]), consider the control over rates at the margin even more important than the decentralisation of the tax collection.

Despite this important role of tax rate and base setting for subnational autonomy, an excessive discretion over elements of a subnational property tax policy poses some risks. First, it is common for inter-governmental grants' systems to have an equalisation component that provides more funds for SNGs that have, in comparison to other jurisdictions, less own revenues[15] and, as a result, SNGs might be tempted to use their tax power to under-tax their own citizens[16] since their losses in tax revenues will be compensated (partially or fully) with higher equalisation grants. Second, SNGs might use their tax power to minimise the tax burden on their citizens and maximise the burden on citizens from other jurisdictions, such as by setting lower tax rates for residential properties and higher tax rates for business properties, which can lead to tax exporting. Third and lastly, asymmetrical tax bases and exemptions across jurisdictions leave room for horizontal inequities within a country – that is, taxpayers in some jurisdictions might be disproportionately taxed in comparison to taxpayers from other jurisdictions. Sizeable differences of tax burden across jurisdictions can affect behaviour and lead to distortions. Thus, although subnational autonomy to set tax rates and bases is desirable, granting too much autonomy to SNGs can also be problematic.

Box 3.6. Israeli case of different effective tax rates across jurisdictions when local governments have little autonomy to change tax rates

Israel has 257 local governments, whose primary source of its own revenues come from the Israeli property tax (*Arnona)*. This recurrent property tax accounts for approximately 80% of all local taxation, while this share is roughly 33% in OECD countries (see Figure 1.5). The *Arnona* has some similarities and dissimilarities with other recurrent property tax systems of OECD countries. Regarding similarities, first, the same tax levies on both residential and non-residential properties; second, tax reliefs are given to certain groups of households such as low-income families and the elderly. Concerning dissimilarities, first, the tax base for the Israeli recurrent property tax is unusual: the *Arnona* is based on the size of a property (territorial area in square meters), whereas in most OECD countries capital values are used; second, the autonomy granted to local governments to set tax rates is very limited; and third, annual increase in tax rates are linked to the inflation rate. Rates are typically higher for non-residential than residential property and vary substantially by type of non-residential property.

In this situation, it would be expected that the very limited local discretion over tax rates would make the effective tax rates similar across jurisdictions. Nevertheless, this is not the case in Israel. Since *Arnona* rates vary by the type and use of properties and since local governments are, to some extent, in charge of property classification, tax rates can differ across regions if the same type of property is classified differently across jurisdictions. Although the central government has defined only 13 main classes of property, local governments can establish their own set of subclasses. As a result, local governments have created thousands of subclasses, and they differ substantially across local governments. The myriad of subclasses contributes to economic inefficiency, horizontal and vertical inequities, and conceal the effective tax rates that are applied across jurisdictions. In effect, local governments use their control over properties' sub-classification as a way to gain more control over local effective tax rates. This situation could be avoided if the central government established a standard classification system or if local governments were given more autonomy to set tax rates.

Source: OECD (2021[8]) and Thomas (2021[19]).

When limiting subnational autonomy to set tax rates, it is important to also limit local autonomy to change effective tax rates through tax administration policies, otherwise SNGs may seek ways to overcome these restrictions as a means of asserting more local fiscal control (see Box 3.6 in the Israeli case).

For instance, SNGs can influence effective tax rates by 1) under/over-valuing some types of property; and 2) classifying properties in a manner that the desired statutory tax rate is applied to them (in case there are a myriad of tax rates depending on the type of property). Tax policy can be (and often is) decentralised in a manner that SNGs have control over their tax policy while horizontal inequities and distortions are minimised.

Box 3.7. Piggybacking on national taxes in some OECD countries

Piggybacking refers to a mechanism in which lower levels of government can levy a supplemental rate on an upper level of government's tax base, which reduces the costs of the tax administration (through economy of scale) and simplify the tax system in comparison to the case in which each jurisdiction can define and operationalise their own tax policies (i.e. setting tax rates and reliefs). Piggybacking may also cover tax reliefs and have bands for the piggybacking rates. In countries using piggyback taxes, rates are generally low, but these taxes provide a substantial amount of revenue because of the large size of the taxable base. Undoubtedly the control at the margin of the tax rates can provide some degree of autonomy and accountability to lower levels of government.

In the most extreme case, upper levels of government administer the whole tax system and transfer the collected tax revenues to each jurisdiction considering the supplemental rates accordingly. Such a system is similar to tax sharing, the main difference being the fact that lower levels of government enjoy an additional autonomy. As a result, piggybacking suffers from one of the same disadvantages of tax sharing arrangements: upper levels of government might not have the proper incentives to collect tax revenues effectively since they are not accrued to them.

Many countries supplement upper levels of government taxes with piggybacked rates from lower levels of governments. In **Sweden**, personal income taxes administered by the central government are subject to piggybacked rates levied by municipalities that tend to be lowest in rich suburbs of large cities and higher in the rural north and municipalities suffering from industrial decline. Similar situations occur in other Nordic countries such as **Denmark**, **Finland** and **Iceland**. A group of local governments in the **United States** also levy supplements to state individual income taxes and retail sales taxes. In **Switzerland**, local governments may levy supplements to canton (i.e. state/regional level) personal income taxes. In **Canada**, for the harmonised sales tax and corporate income tax, the provinces or territories may select their rate but must use the national base.

In the **United Kingdom**, since 2009 piggybacked rates are levied by local governments and applied to business property taxes, which are paid into a central pool and distributed to local governments. Local governments are required to consult with taxpayers that are liable to the tax before implementing the supplement. The supplement is, thus, subjected to the approval by these taxpayers, which vote in a referendum. In addition, the supplementary rate cannot be higher than 2% of rateable values. The funds may be spent locally on economic development. The City of London, for example, levied a 2% business rate supplement on businesses in the area of the Crossrail to help pay for the Crossrail.

Sources: Mikesell (2012[38]) and Slack and Bird (2014[20]).

One option is to give SNGs only the control over tax policies that have limited impact outside their jurisdictional borders (i.e. over recurrent taxes on residential properties, while tax policy regarding recurrent taxes on business property is assigned to upper levels of government). A second option is to limit the potential differences in tax rates across jurisdictions so these differences will be unlikely to cause a change in taxpayers' behaviour. In the latter case, small differences in tax obligations would be outweighed by other factors that are relevant in the decision-making process and, thus, distortions would be minimised. A third option is to grant to upper levels of government the responsibility of providing tax reliefs and/or exemptions. A fourth and last option is to increase subnational autonomy in the form of supplemental rates

on an upper level of the government's tax base (see Box 3.7 on piggybacking in some OECD countries). There is room for adopting multiple options simultaneously.

In OECD countries, it is common for local governments to have a limited discretion over tax rate, base and exemptions of their recurrent taxation on properties. Usually local governments 1) can set tax rates within bands set by the upper levels of government; 2) can only create exemptions in a limited manner; and 3) have no or little discretion over tax bases. It is worth noting that these tax rates' bands can be used to limit not only discrepancies across jurisdictions but also discrepancies between different tax bases within a jurisdiction (i.e. business and residential properties). As mentioned above, when tax bases differ widely in terms of tax rates, taxpayers might try to avoid taxes by concealing the true nature/use of their properties.

Table 3.3 reveals the degree of decentralisation of property taxation policy in multiple countries. In most countries in the sample (31 out of 35) local governments have some autonomy over tax rate setting (usually subjected to limits) whereas only in a few (5 out of 35) they can define tax bases. Regarding exemptions, in less than one third of them (10 out of 35), local governments have discretion over exemptions and reliefs.

Table 3.3. Recipients of revenue from recurrent taxes on immovable property by level of government and local government discretion over property tax policies

Central, regional & local	Central & local	Regional & local	Local only
Spain (R)	Norway (B, R)	Switzerland (B, R)	Hungary (I, B, R, E)
	Israel (R, E)	France (R, E)	New Zealand (I, B, R)
	Brazil (I, B)	United States (R, E)	Colombia (R, E)
	Iceland (R)	Australia (R)	Estonia (R, E)
	United Kingdom (R)	Mexico (R)	Lithuania (R, E)
		Russia (R)	Netherlands (R, E)
		Denmark (I)	Poland (R, E)
			South Africa (R, E)
			Austria (R)
			Canada (R)
			Czech Republic (R)
			Finland (R)
			Germany (R)
			Ireland (R)
			Japan (R)
			Korea (R)
			Luxembourg (R)
			Portugal (R)
			Slovak Republic (R)
			Slovenia (R)
			Latvia (E)
			Turkey (N)

Legend:

Countries with the same colour have the same SNG classification

"B" means discretion over the base

"E" means discretion regarding certain exemptions and relief measures

"I" means discretion over whether to impose a tax

"N" means no local discretion regarding rates (or other features of the tax)

"R" means some discretion in setting tax rates (usually subject to limits)

Note: This table should be read in the following manner: in Spain, revenues from recurrent taxes on immovable property accrue to the central, regional and Span's SNGs have discretion over tax rates only.

Source: Based on data from Almy (2013[11]).

China and rate setting

In China, local government's expenditure as a share of general government expenditure has been increasing while, at the same time, their tax revenues as a share on general government tax revenues has been decreasing. As a result, the vertical fiscal gap is widening (CDRF, 2020[39]), which can have many adverse effects (this topic was discussed in detail in the first chapter).

Moreover, China's local governments have little to no discretion over a great portion of their revenues, which hinders local fiscal policy to adapt to local needs and conditions. Liu (2021[40]) explains that a tax-sharing system currently in place in China in which local taxes are collected and fully retained by local governments while some taxes are collected by the central government and shared in a predetermined proportion with lower levels of government. In this system lower levels of government have autonomy only over small local taxes.

In these conditions, it may be difficult to hold local authorities accountable for their fiscal outcomes given that they cannot choose the necessary level of taxation to fund public services. In addition, Ahmad and van Rijn (2020) suggest that when subnational governments have little to no revenue sources over which they can exert control, subnational fiscal rules are not credible and funding through a municipal bond system or the use of public-private partnership are impaired. In this light, if China were to follow the most adopted practice of giving to local governments some autonomy in tax rate setting for recurrent taxes on immovable property, local governments' autonomy would be improved, with overarching positive consequences throughout the intergovernmental fiscal system. As explored in the first chapter, since recurrent property taxes tend to generate a substantial amount of revenue, often being the most important local tax in OECD countries, the impact on local autonomy can be significant.

Tax policy and administration are closely intertwined and often involve a trade-off between greater technical capacity at the central level and better incentives for revenue collection at the local level

After having discussed decentralisation of tax design, it is worthwhile to discuss decentralisation of tax administration. In principle taxes need not be administered by the government that levies them. There are multiple examples of taxes for which tax revenues are accrued to one level of government but tax administration is assigned to another level of government. The choice of the level of government responsible for tax administration generally involves a trade-off between technical capacity and incentives (Mikesell, 2012[38]).

On the one hand, upper levels of government tend to have more resources to fund a better technical capacity and they may also enjoy economies of scale and scope. Economies of scale are obtained, in the case of property taxes, mostly by using the same fiscal cadastre and mass valuation systems and they can not only reduce costs but also improve the scope and quality of fiscal cadastres and valuations. On the other hand, lower levels of government tend to have more incentives to collect tax revenues that are accrued to them, which can affect all phases of revenue collection, from cadastre management to settle disputes over regional interests. According to Mikesell (2012[38]), slow and inaccurate payment has been a common complaint among localities in the United States when local governments depend on taxes that are administered by state governments. The same author also mentioned that when US states have budget problems, they sometimes delay scheduled payments to their local governments. Another advantage of having local tax administrations refers to the fact that local governments tend to have more information on the local conditions due to their licensing and regulatory responsibilities, which may help them to run a property tax administration system and to create a fiscal culture, necessary for compliance. The case for federalism as a "laboratory for democracy" works in tax administration as well: effective tax systems in place in some jurisdictions can be "exported" to different regions,[17] promoting innovation across jurisdictions. Lastly, economies of scale can also be obtained through inter-governmental co-ordination arrangements (see Box 3.8 on the US case).

Box 3.8. Economies of scale and scope in property taxes: examples from the United States

In the **United States**, usually state governments determine guidelines for property valuation and tax collection while local governments execute these activities under the state oversight. Since US local governments differ significantly in size, with some local governments with a low administrative capacity, it is common for them to make co-operative arrangements to reduce costs related to these activities.

In 2013 the International Association of Assessment Officials (IAAO) conducted a survey on assessment offices in these two countries. The survey identified nearly 8 700 agencies and received 500-700 valid responses to each question. The survey found a strong positive (nonlinear) relationship between the number of parcels in a jurisdiction and staffing levels, pointing towards a clear economy of scale in the assessment function. More precisely, for the average size jurisdiction (about 15 000 parcels), a 10% increase in the number of parcels is associated with a 0.9% decline in the average cost per parcel for counties and a 0.8% decline for cities and townships. IAAO believe that this reduction is likely due to the fact that a 10% increase in parcels at the mean is associated with a 2.8% increase in the number of parcels per employee for counties (3.0% for cities and towns).

In addition, the type of agency also seems to significantly affect the costs per parcel. The median budget per parcel in agencies that work for a single county, municipality and township was USD 21.85, 30.79 and 23.71, respectively. When agencies work with multiple jurisdictions or for a state/province the necessary budget reduces. Public agencies, private agencies and state agencies working for multiple have a median budget per parcel of USD 17.35, 12.53 and 24.05. These agencies that cover multiple jurisdictions also tend to have better access to technology such as aerial image, GIS, cell phones in field inspection, electronic distance measuring device used in field inspections, real-time remote access to assessment data used in field inspections, among others. Indeed, the adoption of technology advancements is related to the parcel count that an agency is responsible for assessing.

Source: Walters, L. C. and International Association of Assessing Officers Research Committee (2014[41]); OECD (2021[8]).

Country-specific conditions, such as SNGs' typical size and structure, and the scope for vertical and horizontal co-operation are important factors in determining the degree of tax administration decentralisation

Tax administration involves multiple activities and only some portion of them can be decentralised, which generates a myriad of possible administrative arrangements depending on how the distribution of activities across levels of government is organised. China, for instance, has a strong central tax department (the State Administration of Taxes, SAT) that defines the guidelines and oversees the tax administration that is performed by subordinated SNGs tax departments. The revenues are accrued to upper levels of government and, then, partially shared with lower levels of governments through an inter-governmental transfer system and revenue sharing system. With these systems, the discretion for setting tax policies are centralised and, thus, to a great extent also the tax policy accountability.

Regarding recurrent taxes on immovable property, the delineation of activities involves the distribution across levels of government and agencies of the main steps discussed throughout this chapter: fiscal cadastre, property valuation and tax collection. Although there is no arrangement that is superior to others in all possible criteria, it is paramount for the different levels of government and/or agencies involved in the process to co-operate and communicate efficiently. The data that is gathered for the fiscal cadastre is the data used in the property valuation step and both the valuation and the fiscal cadastre data are used for billing. Thus, data flows should be smooth and integrated across levels of government/institutions. Moreover, in case guidelines and policy aspects are defined by upper levels of government and lower levels of government only execute the policy, there is a need for a supervisory or monitoring activity.[18]

Box 3.9, found at the end of this chapter, shows the Dutch case, which is a good example of an effective property tax administration that applied these principles.

Fiscal cadastres are generally managed at the central level in European countries, contrasting heavily with the decentralised cadastral management in the United States.

In European countries, fiscal cadastres are normally managed at the central level (UN Habitat, 2013[10]), provides country-specific information on fiscal cadastres). European central governments usually either consolidate the data obtained through self-assessments or assessments done by SNGs or gather the data themselves through subsidiaries. For instance, according to UN Habitat (2013[10]), in Belgium, Denmark, Italy, Latvia, Lithuania, Norway, the Slovak Republic, Spain, Sweden and Turkey there is a central agency or department responsible for maintaining property records; Germany is a noteworthy exception as fiscal cadastral systems are managed by state governments; in Hungary both local government agencies and a central government ministry are involved in the cadastral maintenance; in the Netherlands, municipalities are required to continuously update the sales register, which is managed at the central level by a cadastral agency.

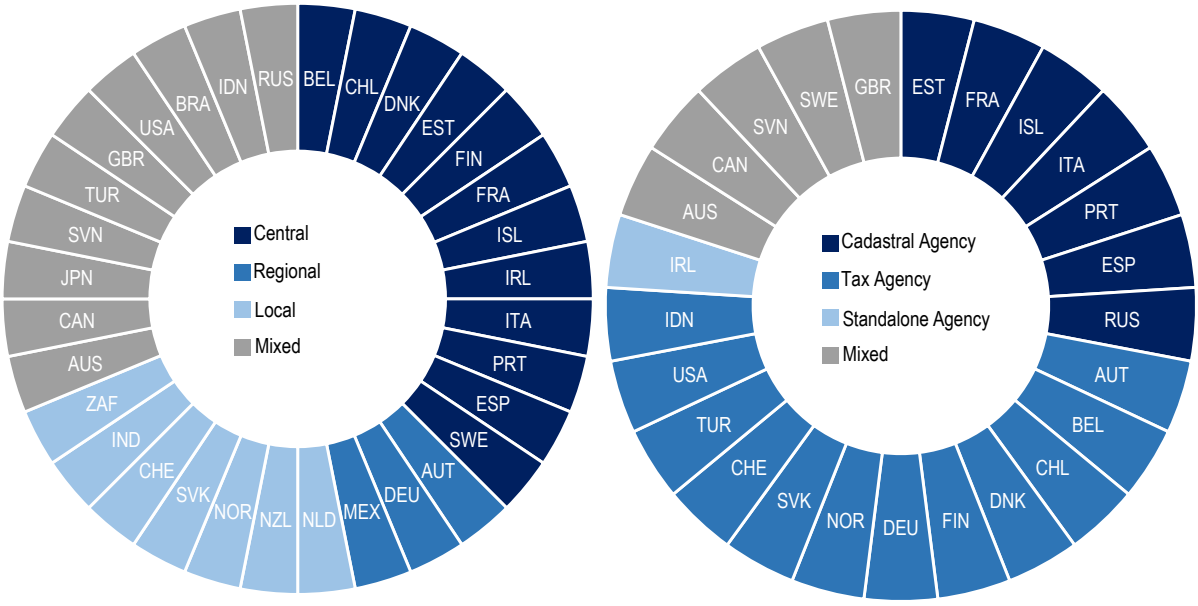
This situation heavily contrasts with the United States, where fiscal cadastres are administered at the subnational level, resulting in a wide variety of cadastral procedures and standards across the country. Nevertheless, since all other activities related to property tax administration are also performed at the subnational level, for the sole purpose of recurrent taxes on immovable property administration, there is no need for federal integration.

It is worth noting that China already has in place a decentralised property cadastre management system. In this situation, special attention should be given to asymmetries in local capacity and harmonisation of cadastral procedures and standards. Local capacity is sometimes an issue for local governments that don't have the necessary scale to operate a fiscal cadastre efficiently. This problem can be tackled with inter-governmental co-operation – horizontal or vertical (Box 3.2 and Box 3.8 covered this topic). Regarding oversight, China's upper levels of government already have the role of ensuring that cadastres are coherent with one another and sufficiently accurate and complete.

Subnational governments are typically involved in property valuation, either alone or jointly with upper levels of government – the latter case requires co-ordination across levels of government

Concerning the responsibility to assess property values, there is significant variation not only regarding the level of government responsible for it but also regarding the type of agency that performs the valuation. In a sample of countries, Almy (2014[1]) identified that the central government is responsible for valuation in 12 countries; regional governments in 3; local governments in 7; and mixed arrangements in 10. Regarding the type of agency responsible for property valuation, the same author identified that a tax or revenue agency was responsible for that task in 12 countries; a cadastral agency in 7; a standalone agency in 1; and mixed arrangements in 5. Figure 3.7, below, reveals how OECD and partner countries assign valuation responsibilities.

Figure 3.7 Level of government and type of agency responsible for valuation in OECD and partner countries



Note: In the United States valuation is overwhelmingly the responsibility of local governments – only two states have responsibility for valuation.
Source: Based on data from Almy (2014[1]).

In all countries that are among the 15th largest in terms of territory (i.e. Australia, Brazil, Canada, India, Mexico, Russia, the United States), and thus, with a territory size closer to China's, SNGs are involved in property valuation.[19] In large countries, differences between regions tend to be wider, making the familiarity of subnational administrations with regional and local conditions especially relevant.

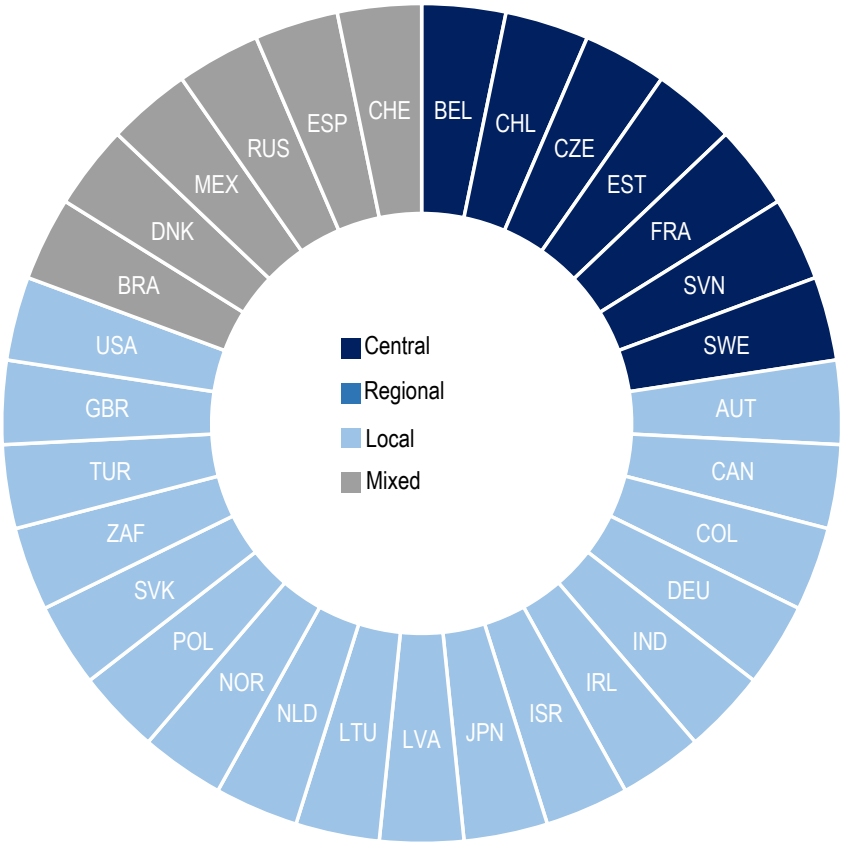
Co-operative arrangements can also be used in property valuation as a way to increase local capacity. Scope of these co-operative arrangements vary widely (Mikesell, 2012[38]). For instance, a co-operative agreement might not necessarily involve all types of properties. Non-residential properties that have an illiquid market – such some specific industry factories, football stadiums, and transportation infrastructure like train stations – are challenging to appraise and co-operative arrangements can be made to deal only with these more complex properties.

Figure 3.7 also revealed that in 10 countries different levels of government are involved in the valuation process. In some cases, this involvement is voluntary but in others it is mandatory. In these mixed arrangements a good delineation of activities coupled with inter-governmental co-ordination might combine the benefits of a larger fiscal capacity with the local familiarity of conditions and local autonomy, resulting in more uniform and precise valuations. In these arrangements upper levels of government are typically involved in the definition of valuation standards and guidelines, while local governments perform the valuations based on these guidelines.

Billing and tax collection are commonly managed at the local level since property tax revenues are often accrued to local governments

Billing and tax collection are usually decentralised to local governments. These activities can be assigned to local governments through a central/federal legislation that provides local governments with the authority to levy and collect property taxes. In no country in the sample of OECD and partner countries state/regional governments are responsible for collecting recurrent taxes on immovable property. Figure 3.8 reveals that in 18 out of 31 countries in the sample local governments are the sole responsible for these activities and only in 7 countries central governments are the sole responsible for them.

Figure 3.8 Level of government responsible for tax collection in OECD and partner countries



Source: Based on data from Almy (2014[1]).

There are multiple reasons for this prominent role of local governments in the administration of billing and tax collection activities. First, recurrent taxes on immovable property revenues typically accrue to local governments, which put local governments at the level of government that has the highest stake in their collection. Second, tax billing and collection involve important definitions that directly impact cash flow management such as regarding the distribution of the receipts over time in a given fiscal year (i.e. that is, in which months the parcels must be paid) and regarding the trade-off between increasing compliance at the cost of a higher discount for up-front payments.

Nevertheless, central administration of tax collection and billing activities also has its advantages. When central governments administer the billing and collection systems, the same enforcement system can be used across jurisdictions, which enhances the overall consistency of the tax policy and reduces costs. Central administration can also centralise communication and collection of multiple taxes, making it more unlikely for taxpayers to get confused about which tax department he/she should contact in case of necessity.

It is worth mentioning that since recurrent taxes on immovable property often generate a substantial amount of revenues, China's local governments might have more incentives to invest in local tax administration in case they are in charge of the collection of property tax revenues. Today China's local governments are in charge of multiple minor taxes,[20] which, alone, cannot be used to raise their local revenues substantially through only an improvement in tax administration. In this regard, recurrent taxes on immovable property can play an important role to boost investments in local tax administration, also helping to create a fiscal culture.

Box 3.9. The Dutch recurrent property taxes on immovable property

The Netherlands offers an example of a successful nationwide decentralisation of property tax administration. Since 1992, the administration of property taxes has been decentralised from the central government to 399 Dutch Municipalities. Local governments are responsible for activities related to the maintenance of fiscal cadastres, property valuation, tax collection and tax rate setting while the central government is responsible for controlling and levelling the quality of the tax administration across the country. Local governments have some autonomy to decide how these activities are performed – for instance roughly half of them use civil servants for assessment, while the other half employ private firms. Properties are re-valued every year by local governments, but they are subjected to central government oversight. The National Valuation Board examines the uniformity of the valuations performed by local governments, so the values are comparable across jurisdictions.

The Dutch recurrent property tax system is considered effective. The administrative costs are around 1.5% of tax revenues and decreased from EUR 22 per object in 1997 down to EUR 16 in 2017. Only roughly 1.4% of taxpayers complain or appeal. Communication with taxpayers is mostly online (80% online and 20% by mail). Properties' assessed value are also used for tax of water boards, income tax and inheritance tax.

Regarding the valuation process, residential properties are valued through the sales comparison approach, operationalised using a CAMA system. Non-residential properties take the highest value of market value (estimated based on rent prices) and reproduction costs (actual costs of rebuilding the same object, using the latest techniques and building materials corrected by depreciation, aging, etc.). Seven elements are regarded as key for this good performance: decentralised valuation process, centralised quality control, annual valuation of market value, use of a mass appraisal system, uniform working procedures, uniform quality standards and uniform valuation reports.

Dutch mass valuations use information from the System of Register Database, information from real states adds, specific information collected by Municipalities, and specific information from interaction with taxpayers. Characteristics of properties' buildings such as improvements' quality and maintenance can be provided by taxpayers (in some cases even the size and the year of construction are self-reported) through online questionnaires or in the form of complaints and appeals. Other pieces of information that are not gathered automatically are collected through fieldwork (e.g. location features) or from aerial photo/street view. Data on cadastral registration, registration of buildings, registration of addresses, registration of inhabitants, registration of foreigners, registration of companies, large scale base maps and value of real estate are shared between governments.

The appealing system involves opposition procedure at the municipality, appeal proceedings at the District Court, legal recourse (second appeal) at Appeal Court and cassation at the Supreme Court. Municipalities have to prove the correctness of the appraised value and procedures are the same for every tax (national or local).

Source: Mikesell (2012[38]) and Dutch authorities.

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Notes

[1] See Walters and of Assessing Officers Research Comittee (2014[41]).

[2] See Almy (2014[1]).

[3] This dependency on the tax administration for the collection of tax revenues is not exclusive for recurrent taxes on immovable property.

[4] Topic explored in more detail in the Fiscal Cadastre section.

[5] Almy (2014[1]).

[6] Almy (2014[1]).

[7] According to CDRF (2020[39]), this refers to the situation in China in which farmers sell their houses to urban residents, which is not recognised and protected by the law – rural residential land is collectively owned, and villagers only have the right to use the land. As a result, dwellers cannot apply for land-use certificates, property ownership certificates, tax deed certificates, etc. Through an on-going national programme, it is estimated that more that approximately three-quarters of rural, collectively owned land has gone through a land ownership registration process.

[8] It is worth mentioning that calculations of market value should be independent from decisions about property tax revenues. Tax hikes can be avoided without changes in tax rates. Some tools implemented for that purpose are discussed in depth in the fourth chapter on property tax reforms.

[9] In the case of capital values, it is important to know the taxable items since valuations aim at estimating only the values of these items. As shown in Figure 2.1, in the previous chapter, taxable items refer to land and improvement. In most OECD countries (26 out of 31 in the sample) both lands and buildings are taxed; only three OECD countries feature a pure land tax; and only two a pure land tax. Having both land and improvements as taxable items make it easier to use a property's market value, which captures both land and improvements simultaneously.

[10] Four every two years, five every three years, eight every four years, seven every five years and two every six years.

[11] For instance, in case the cost approach is used.

[12] This topic will be covered in more detail at the end of this section.

[13] Country examples based on Almy (2013[11]).

[14] This is what the South Carolina/US Law requires but often the note is also sent even in the absence of such an increase in assessed property values.

[15] Revenue equalisation systems are often based on revenue capacity. Nevertheless, it is not uncommon for countries to assess revenue capacity with actual tax revenues (Dougherty and Forman, 2021[42]).

[16] It is worth noting that tax benefits can also be granted through valuation policies (e.g. not updating property values, deliberately under-valuating properties, etc.).

[17] This occurs frequently in the United States due to their heavily decentralised tax system.

[18] Note that these recommendations of clearly delineating responsibilities and enhancing inter-governmental co-ordination apply to many other aspects of fiscal decentralisation, as explored in Forman, Dougherty and Blöchlinger (2020[6]).

[19] Although only India has a comparable population to that of China, aside from Australia and Canada, all these countries are among the 10th largest in terms of population.

[20] Business tax and urban construction tax (some industries excluded), city and town land-use tax, farmland conversion tax, land appreciation tax, property tax, vehicle and vessel tax, deed tax, slaughter tax, feast tax and tobacco tax (CDRF, 2020[39]).