Data sources

4

Introduction

4.1. In practice, the methods used in compiling estimates of the value of land for the balance sheet can be constrained in large part by the nature of the data available. Types of data available can be classified under two broad headings: administrative sources (cadastre maintained by a land registry office, tax authorities, or land information centre) and collection sources (population and housing census, business survey, or other type of survey data). While data sources for particular countries will vary, data may also be available from government agencies concerned with: agriculture; forestry; fishing; environment; geological survey; urban planning and land administration.

4.2. This chapter begins with the challenges of obtaining data for land estimation then discusses the types of data that are available. The last section summarises the data sources available and the annex provides results from an OECD questionnaire on methods and data sources used to measure land (OECD, 2011).

Description of issue

4.3. One of the major constraints in estimating land is the lack of data from a single source. It appears that most countries that value land do so by combining multiple sources of information. The source of the information used differs by country and has an impact on (as well as being impacted by) the type of method the country uses to estimate the value of land (i.e. direct estimate of land or indirect estimate of land). Results from the OECD questionnaire show that the estimation of the stock of land can be classified into the following three cases:

— Non-existence of data: neither quantities nor prices are available

— Partial existence of data: either quantities or the total value of buildings and structures including land are available

— Existence of data: value estimates for both structures and land shown separately; and/or, both quantity and price information are available

4.4. The following sections describe what types of information may be available for use in estimating land or the combined total value of structures and land on the balance sheet.

Types of data available

Administrative source

4.5. Administrative data (cadastre, land registry, tax data) usually provide detailed quantity data, including type of land (land under dwellings, agricultural, etc.), location, and owner.

4.6. A cadastre is a comprehensive register of the property within a country. It is commonly maintained to record the physical status and legal ownership of land and is often used (or at least initially created) for taxation purposes. A cadastre could also be used for land management or planning purposes. It includes very detailed maps showing the location of the parcels of land and dimensions of land (e.g. square metres). It also typically includes the use of the land, ownership, and value of the individual parcels of land. Many times the ownership of the land is maintained through the use of a land title registry that records the change in ownership and may be combined with cadastral information (referred to by some countries as a 'cadastral system'). In addition, some countries may reassess land values periodically especially if the value is used as a basis for taxation. However, it should be noted that cadastre values may not reflect current market prices. As always with administrative data, adjustments may be needed to align administrative sources with national accounting concepts. Many countries that derive estimates of the value of the stock of land on the balance sheet do so by using cadastral data either fully (quantity and prices) or partly (quantity only).

4.7. The case study below paragraph 4.10 illustrates the type of information that is available from a cadastral system.

4.8. Additional types of administrative data that may be useful in combination with cadastral data, or if cadastral data are not available, are (land) registers. Typically a register will include a list of addresses of buildings and dwellings (so that a very precise location can be determined), type of use and sector of ownership, size of land area, and often transaction prices. The register may be maintained by the national statistical institute (NSI) but it may also be maintained by another government department.

4.9. Tax data can be another source of administrative information because many countries levy a property tax. In many cases, the tax bill is proportional to the assessed value of property and the latter is usually based on valuation undertaken by professional chartered surveyors either under contract or directly employed by the taxation authority [21].

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[21] See for more information on data sources Eurostat, *Handbook on Residential Property Prices Indices*, 2013. Available at http://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-RA-12-022

As such, tax data provides values (the combined total value of structures and land), or the value of land itself. When valuing the property, tax authorities often take into consideration characteristics of the property, such as location and size of plot. In addition, if different levels of taxation are applied to different types of land then land use may be recorded. National compilers of land estimates, usually NSIs, may have difficulty with verifying the valuations of the tax authority. In addition, the updating of the valuations may be infrequent due to the field costs involved.

4.10. Because of these drawbacks, tax data may be of limited use. That being said, this source of official valuation information has been exploited by national compilers. Sometimes countries used information from tax authorities to derive an average price per square metre that is then applied to quantity data from another source to estimate a combined total value of structures and land. Alternatively, countries have directly used the combined total value of dwellings and land from tax data as the value on the national accounts balance sheet. Evaluation of the tax data must be made by each country to assess whether the tax data conform to national accounting definitions and quality standards. If a country's tax valuation is based on up to date transactions that value the asset using a net present value concept then the valuation may be appropriate to use directly in the national accounts. In other cases adjustments will be necessary.

Case study sources: Australian cadastral system

The Australian cadastral systems typically comprise the following components:

— Textual component — the land register identifies real property parcels, which includes all land parcels and identifies owners' rights, restrictions, and responsibilities, ownership, easements, mortgages etc.

— Spatial component — cadastral maps show all land parcels graphically corresponding to the registered title with plan numbers and unique identifiers. These are all now digitised. Cadastral maps consist of fixed and general boundaries, about 90 % and 10 % respectively:

• Fixed boundaries are those with legally surveyed measurements used to precisely identify most parcel boundaries determined by cadastral surveys such as subdivision etc.

• General boundaries (graphical) are not survey accurate and are based on natural or man-made physical features, such as high water mark, or walls and buildings as found on cluster or strata titles.

Additional legal, valuation, local government, utilities and planning activities are involved in land administration, and are heavily reliant on the fundamentals of the cadastral system. In particular local government rates, land tax and stamp duty (as a result of land transfer) on land parcels is a major revenue raiser for the economy.
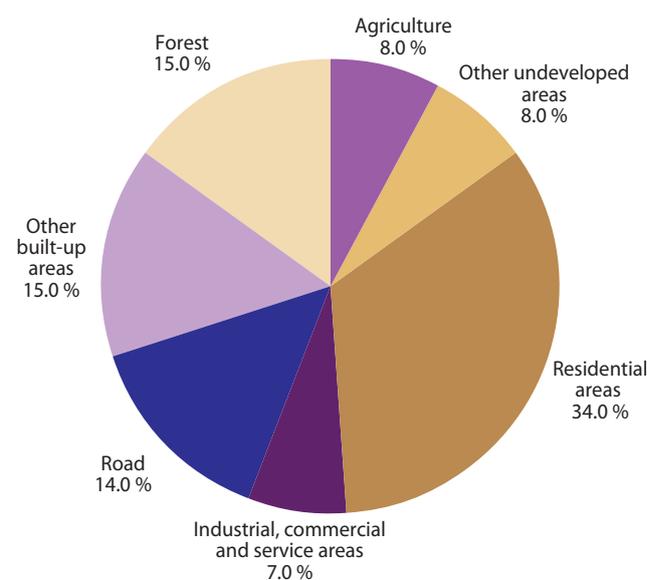
Crown Lands Management have the management and administrative responsibility for public state-owned lands

Source: Australia country report at http://www.cadastraltemplate.org/

Collection sources

4.11. Various national land surveys can be used to provide information for an NSI. Typically these types of surveys capture various characteristics of land such as how the land is used and the size. This data is often collected for land management and planning purposes. For example, land use statistics often provide information on built-up areas that cover dwellings, businesses, recreation, and roads and data on undeveloped areas like forest and other natural resources. Many times this type of survey is conducted by another government department or agency and not the NSI that compiles the national accounts. Figure 4.1 illustrates the type of information that is available from land use statistics.

Figure 4.1: Proportion of land use and land resources in urban areas, by category. The whole country, 2011 (% share of land use)

Forest 15.0 %
Agriculture 8.0 %
Other undeveloped areas 8.0 %
Other built-up areas 15.0 %
Residential areas 34.0 %
Road 14.0 %
Industrial, commercial and service areas 7.0 %

Source: Statistics Norway

4.12. A survey or census of agriculture is a common source of information for various types of land used for agricultural purposes, such as land under cultivation. Many times this information is collected by another government office with a particular focus on agriculture, such as a department or Ministry of Agriculture.

4.13. Population censuses or housing surveys are common sources for counts of the number of dwellings in a country. In general, this information is combined with price information (usually from another source) to derive a total real estate value, that is the combined value of the dwelling and the land. Since census information is usually not available every year, construction statistics (such as dwelling completions and demolitions) can be used to interpolate between census years and to extrapolate from the latest census year. This allows NSIs to maintain a more up to date stock of dwellings.

4.14. Another potential source of information that does not appear to be commonly used by NSIs is statistical surveys requesting the value of land. Business accounting data record the value of the land separately from the value of buildings and structures but such estimates would most likely be valued at historical cost on their balance sheets instead of current market values. In addition, only corporations keep a complete set of accounts so data would most likely not be available for unincorporated enterprises. Moreover, if data are collected using a sample survey rather than a census then account should be taken of the fact that many businesses rent land rather than own it, with ownership concentrated in certain industries. As a result, the optimal survey design for land may be different than a design of a general economic survey.

4.15. Yet another statistical source is to ask construction survey respondents to provide a value for land. This approach will mainly capture the value of land that is purchased for new development so it might not be representative of the value of land underlying existing buildings. Also, it might introduce a fairly high level of subjectivity because timing plays an important role in that builders often purchase large areas of vacant or undeveloped land but only develop it with some time lag that could be significant.

4.16. Sometimes the sources of information discussed above are not used directly in deriving a total estimate of the value of land but are instead used to allocate the value of land across sectors. For example, land use statistics can be used in allocating land across sectors while another source is used to derive the total value of land in an entire country [22].

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[22] For information on estimating data see Balabanova Z. and R. van der Helm, *'National Data on Housing Wealth and ECB estimates'*, 11 March 2013.

Prices

4.17. Many countries utilise separate information on prices and quantities when valuing either the total value of the real estate (the combined value of the building or structure including land) or just the value of land (a common method for valuing land under cultivation where a structure is usually not situated). Therefore, a brief discussion of price information is needed because many times the price information does not come from the same source as the quantity information.

4.18. In practice, reliable information on land prices is often limited with either no relevant price indices existing or the coverage is not appropriate. Prices are typically based on real estate transactions, publically-appraised market prices, property tax information converted to a market price, survey of existing land values, housing price or construction price indices, and thus are often affected by the methods used to differentiate between land and buildings. Obtaining different prices for different types of land is also a challenge, with prices needed for residential, non-residential and cultivated land, because each type of land has different characteristics. Approaches vary widely from country to country and the price information used is dependent on the source information available and the method used; for example, sometimes the total real estate price is used to derive a combined total value of buildings including land.

4.19. Some of the sources described in the administrative and collection sources sections are also used when constructing price indices. For example, land registries often record the transaction price of the property sold. Sometimes national land use surveys record the purchase price of the land. However, because there may be few purchases of land for a particular use (a thin market) the prices are often not representative for valuing the whole land use category. It is also possible to have bias on frequently traded land due to overestimation based on a limited sample that contains a predominance of a particular location and/or purpose. A specific example of an administrative source used for constructing price indices is the case for Germany where every disposal of real estates has to be concluded by a notary, who is then committed to report each disposal to an institution called 'Gutachterausschuss' which can be translated as 'committee of valuation experts'. They value single plots and determine the standard land values (or sometimes called generalised standard land values), that is the land values are defined as average local ground values.

4.20. Residential property price indices (RPPI) are often used in measuring the aggregate real estate housing wealth in an economy. In addition, the RPPI could be decomposed into two components: a quality adjusted price index for the dwelling and a price index for the land on which the house is built. The Eurostat Handbook on Residential Property

Prices Indices (Eurostat, 2013) dedicates a chapter on how to do this, as well as Chapter 6.4 in this guide which discusses the hedonic approach.

Other types of information

4.21. If the information discussed above is not available, a country can look to other sources of data that could be used as a proxy. For example, a country may be able to estimate the total value of land in their country but not have the detailed data to allocate the land to a given institutional sector (see the Netherland's case study in Chapter 7). In such cases, a country could analyse various indicators related to land — like fixed assets of structures — to develop an adequate proxy. Another potential source of data is information available from another country if it is determined to be an adequate proxy. For example, the retirement and depreciation rates of other countries with similar investment structures could be used to estimate the value of the structures for a country where no estimate is available or the average ratio of residential properties to the dwelling stock of another similar country could give an adequate estimate of the total property value. A case study provided by the European Central Bank that utilises proxy data in constructing the euro area estimate of households' housing wealth is discussed in the annex to this chapter.

4.22. Remote sensing methods could be another source for estimating land use and land area. Remote sensing is the acquisition of information about an object without making physical contact using satellite or aerial images. Remote sensed imagery can be integrated into a geographic information system. A geographic information system manages location-based information and provides tools for display and analysis of various statistics, including population characteristics, economic development opportunities, and vegetation types. These methods may be useful in identifying when a certain type of land changes use.

4.23. Many countries maintain land cover databases which could be a source to construct estimates by land use using the underlying data.

Summary

4.24. The use of a timely survey or census (at least annually), or comprehensive register information will greatly assist in the compilation of a complete set of attributes related to land and dwellings and other buildings and structures. If a regular or irregular census is used then an appropriate method needs to be used to provide up to date information between each census. When register or cadastral information is used, then an NSI should ensure that up to

date valuation information is available. In practice, it may be desirable that a combination of different data sources is used.

4.25. The statistical uncertainty associated with administrative data should not preclude its use. As with all data sources, there is a need to carefully assess the source data and apply appropriate conceptual, scope and quality adjustments if necessary. Adjustments in this case could include smoothing values over time or the use of supplementary information (such as an alternative more regular survey) so as to improve coverage and minimise any volatility from the administrative data.

4.26. The availability and quality of relevant price information will depend on country practices. The development of reliable price information is an important input to the calculation of the value of land.

4.27. The table in Annex 4.1 presents the responses to the OECD questionnaire on methods and data sources used to measure land. The results are displayed by country and the table briefly describes the asset type, source data, and the corresponding estimation method.

Case study proxy data: European Central Bank

The European Central Bank (ECB) estimates and publishes the two components of euro area households´ housing wealth (HHW) — that is the current market value of all residential dwellings owned by the euro area households sector (including non-profit institutions serving households) and the value of the land on which the properties are built. The compilation of households' stock of dwellings as produced fixed assets is based on the reported annual country data from Tables 26, 20 and 22 of the ESA 2010 transmission programme (ESA 2010 TP). For countries where there is no data available the perpetual inventory method (PIM) is used for the compilation of the stock series.

The compilation of the euro area figures for value of land is more challenging due to the scarce country data on land provided by euro area Member States and also due to the fact that land is a non-produced asset, thus methods like PIM cannot be used directly. In order to obtain estimates for euro area value of land underlying dwellings the ECB has developed an optimisation model that uses proxy data. The presented method estimates country-specific figures for non-financial assets by sector as well as HHW. The value of land underlying dwellings for the households sector is calculated as a residual of HHW and capital stock of households' dwellings. The euro area aggregates are compiled

based on the existing reported data and the estimates for missing countries.

The paragraphs below describe the optimisation model used for the estimation of non-financial assets by sector and an indirect estimate of value of land underlying dwellings for the households sector.

As of early 2014 there are only 10 euro area countries that report the complete balance sheet information of non-financial assets by asset type and institutional sector (Table 26). Total economy capital stock by assets is reported by most of the euro area countries in Table 20 from the ESA 2010 TP (with few exceptions). In addition, for all euro area members' data on gross fixed capital formation (GFCF) broken down by asset type and activity (Table 22) are available. Only three euro area countries report the value of land underlying dwellings (Table 26). In order to estimate the euro area figures for value of land underlying dwellings held by households an optimisation model to estimate non-financial assets by sector is used based on proxy data taken from Tables 26, 20 and 22.

The model (Balabanova and Van der Helm, 2015) (²³) is a two-step procedure, which compiles a full institutional sector breakdown for each asset type for each euro area country. The main assumption is that countries that have very similar activity shares also have similar sector shares.

In the first step of the estimation, data on GFCF broken down by activity (Table 22) are used to estimate a measure that indicates how close the activity breakdown of each non-reporting country is to the activity breakdown of each of the reporting countries. Subsequently, based on the result from the first step, the shares of all reporting countries are weighted to form the breakdown for the non-reporting countries. In this respect, the breakdown of assets by institutional sectors for each non-reporting country is a linear function of the breakdown of all reporting countries.

Since land is a non-produced asset, the PIM cannot be used for its calculation. Usually, land is estimated using administrated data or surveys. Alternatively, land can be estimated as residual of HHW and households' housing stock (HHS). For the current estimates the ECB uses available national data on HHW to calculate the average ratio of net HHW over net HHS. This ratio is subsequently used to estimate HHW for non-reporting euro area countries. Next, the euro area HHW is derived as an aggregate of the reported country HHW and the estimated ones. Euro area land underlying dwellings is calculated as the difference between HHW and HHS.

Figure 4.2 shows the euro area estimates of land underlying dwellings for the households sector based on the above described method.

Figure 4.2: Euro area households' housing wealth and components (billion EUR)
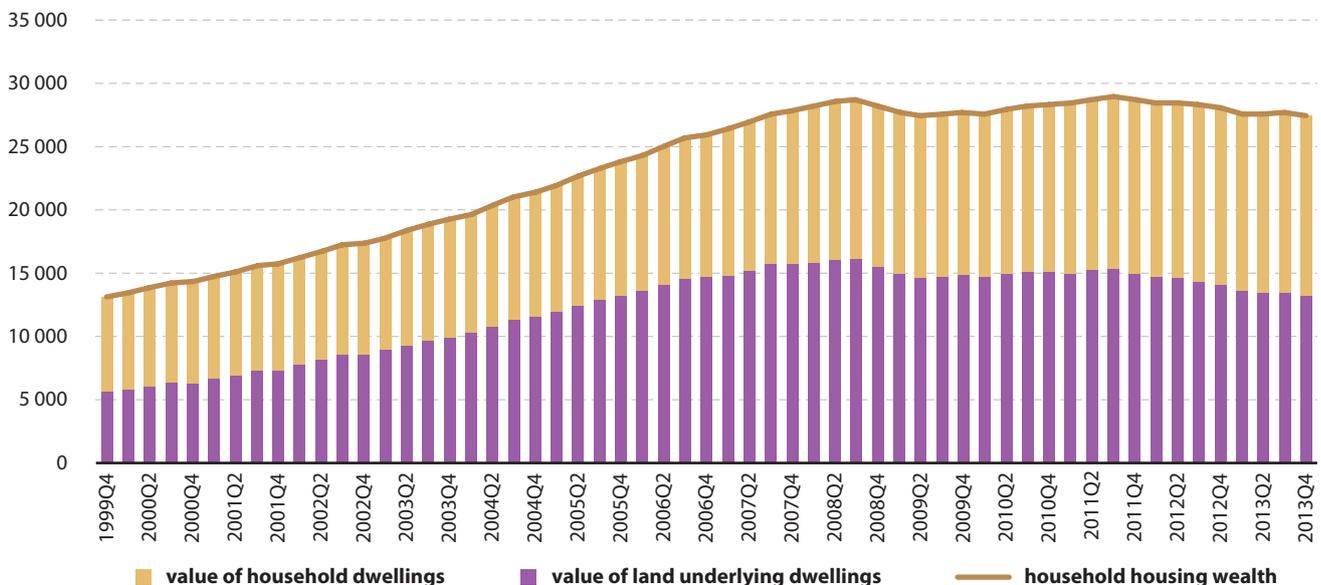
Source: European Central Bank

(²³) Balabanova, Z. and R. van der Helm, *'Enhancing Euro Area Capital Stock Estimates'*, 2015.
Available at http://www.bis.org/ifc/events/7ifcconf_balabanova_helm.pdf

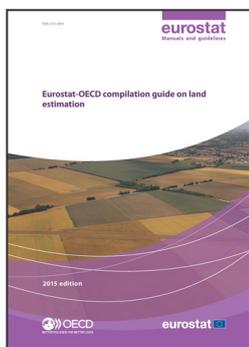# Annex: Results from 2011 OECD survey on land valuation in the national accounts

Table 4A.1: Results from 2011 OECD Survey on Land Valuation in the National Accounts

Country	Asset category	Data sources concerning land types	Data sources concerning prices	Estimation method	Separately published land value
Australia	Residential (Value of land & structure)	Census of Population and housing (every 5 years); Inter Census years extrapolated forward using dwelling completions net of demolitions	Administrative - Publicly asses value of land by government (Valuer's general data)	Price * Quantity approach for total; Land derived residually	Yes Land by sector (where applicable)
	Commercial	Publicly assessed values by government (Valuers general data for total value by state and territory)		Directly from value. Value of national aggregate allocated to sector based on ratio of land to structures	Yes Land by sector (where applicable)
	Rural	Publicly assessed values by government (Valuers general data for total value by state and territory)		Directly from value. Value of national aggregate allocated to sector based on ratio of land to structures	Yes Land by sector (where applicable)
	Other land (land owned by Government which is not zoned residential)	Public Finance data		Directly from value. Value data assigned to government sector	Yes
Austria	Land underlying building & structures	Federal Office for Calibration and Measurement Statistics Austria: Information from the address, buildings, dwellings register	Austrian Economic Chamber Different prices for factory premises and for building sites	Direct method (Price * Land area)	No
	Land under cultivation		No appropriate source at present		No
Bulgaria	Land	Total value for land and structures: Reported annually in the investment report filled in by all institutional sectors except households		Does not separate the value between land and structures	
Canada	Residential	Land-to-structure ratio- New building activity by type (single or multiples) across the country. Consists of three key details: 1) Building Permit Values; 2) Sales value of the total residential real estate unit; 3) Physical address of the unit completed and sold.	Residential real estate (no break out of land): 1) Teranet-National Bank house price index based on a repeat-sales methodology; 2) Multiple Listing Service (MLS) average prices published by Canadian Real Estate Association are simple average transaction prices for residential properties sold through MLS. Both are used in the projection of the land-to-structure ratio. Land: Price index for land is available as part of Statistics Canada's New Housing Price Index (NHPI). Survey collects contractors' estimates of the current value (evaluated at market price) of the land. However, not currently used in estimation.	Land-to-structure ratio applied to dwellings stock. Residential structures estimates are constructed using PIM	Only total land by sector is published; internal estimates of details
	Non-residential	Land-to-structure ratio- historical ratio derived from business survey data projected quarterly using current indicators of real estate activity and prices	Real estate prices	Land-to-structure ratio applied to non-residential structures stock. Non-residential structures stock are constructed using PIM	See above comment
	Agricultural land	Census of Agriculture Allocated to sector based on percentage of farm capital held by the corporate sector to the total value of farm capital. Residual is allocated to the household sector.		Directly from value	See above comment

Country	Asset category	Data sources concerning land types	Data sources concerning prices	Estimation method	Separately published land value
Croatia	Land underlying dwellings	Census of Population dwelling stock		Residual	
Czech Republic	All Land	Information on land area (types of land) from Czech office of Surveying, Mapping and Cadastre	Average purchaser's prices of building sites by district; average purchaser's prices of agricultural landed estate for national economy; forest land according to price decree for national economy. Estimate of water and other land for national economy from data available on Internet	Direct method (Price * Land area)	Yes
	Land underlying buildings and structures	Statistical survey		Direct method (Price * Land area)	Yes
	Land under cultivation	Structural surveys conducted in the agricultural industry and from annual reports of the Land Fund		Direct method (Price * Land area)	Yes
	Forest land	Forest Management Institute		Direct method (Price * Land area)	Yes
Finland	All land including land underlying buildings and structures	Cadastre and land register held by the National Land Survey. Data available are area by land use categories, location, and by owner	Prices are available in official purchase price register based on real estate transactions maintained by National Land Use Survey	Direct method (Price * Land area)	No, not in official statistics but calculated for special purposes
France	All land including land underlying buildings and structures	Annual survey led by the Ministry of Agriculture	Price index of existing dwellings. Selling value of lands from annual survey led by the Ministry of Agriculture	Residual approach for land underlying buildings	Yes
Germany	Land underlying building and structures	Land Survey from Federal Statistical Office compiled quadrennial as a census of total surface area of land by type of actual use	Purchase Values of Building Land from Federal Statistical Office	Direct method (Price * Land area)	Yes
Iceland	Land underlying buildings and structures; Land under cultivation	Icelandic Property Registry- responsible for valuing property for taxation and for compulsory domestic fire insurance purposes. Icelandic Property Registry maintains The Property Registry Database that consists of four parts: Title and Interests, as well as Base (such as location and boundary), Building, and Valuation.	Sale prices and methods of payment from every sale contract are collected into the Land Registry Database and used for the calculation of economic indicators, such as the real estate price index		
Italy	Land underlying dwellings and some types of non-residential buildings (offices, shops, arts and crafts workshops, garages and other storage structures) (Value of land & structure)	1) Number of dwellings: Population and Dwellings Census updated using dwelling completions; 2) Number of non-residential buildings: Cadastral data provided by the Observatory Real Estate OMI- Tax office; 3) Average surface per square meter: Cadastral data provided by the Observatory of the Real Estate OMI- Tax Office	Average current market prices for residential and non-residential buildings are provided by Observatory of the Real Estate OMI - Tax Office; prices are estimated by matching a number of sources: all the notary deeds of sales, stipulated during the relevant year, integrated with suggestions deriving from real estate agents and from experts of Tax Office.	Number of buildings * average surface of buildings * average price per sqm; land is derived residually	No
	Land underlying other non-residential buildings (factories, hotels, banks, shopping centres, etc.) (Value of land & structure)		Cadastral values provided by Observatory of the Real Estate OMI- Tax Office.	Cadastral values adjusted to current market price; land is derived residually	No
	Land under cultivation	Annual survey on structure & production of agricultural enterprises (SPA); Census of agricultural holdings	Market prices per hectare provided by National Institute of Agricultural Economics	Direct method (Price * Land area)	No

Country	Asset category	Data sources concerning land types	Data sources concerning prices	Estimation method	Separately published land value
Japan	Land underlying buildings and structures	Ministry of Internal Affairs and Communications	Publicly assessed values of land by Ministry of Land, Infrastructure and Transport	Direct method (Price * Land area)	Yes
	Land under cultivation	Ministry of Internal Affairs and Communications	Publicly assessed values of land by Ministry of Land, Infrastructure and Transport	Direct method (Price * Land area)	Yes
	Other land (including land underlying forests)	Ministry of Internal Affairs and Communications	Publicly assessed values of land by Ministry of Land, Infrastructure and Transport	Direct method (Price * Land area)	Yes
	Government land	Ministry of Finance Statistics	Ministry of Finance Statistics	Direct method (Price * Land area)	Yes
	Government-related organisations	Information collected from inquires	Information collected from inquires	Direct method (Price * Land area)	Yes
	Land owned by local government	Ministry of Internal Affairs and Communications; for selected items information collected from inquires	Unit price from the prefecture	Direct method (Price * Land area)	Yes
	Non-profit institutions	Agency for Cultural Affairs; Ministry of Land, Infrastructure, Transport and Tourism; Ministry of Education, Culture, Sports, Science and Technology; Ministry of Health, Labour, and Welfare;	Unit price from the prefecture	Direct method (Price * Land area)	Yes
Korea	Land underlying buildings				
	Land underlying dwellings	Cadastral records from Ministry of Land, Infrastructure and Transport	Publicly appraised and noticed individual land prices from Ministry of Land, Infrastructure and Transport		Yes
	Land underlying other buildings				
	Land underlying other structures	Land underlying dwellings is separated from land underlying buildings by using information of the current state of use of land, whereas the residual of land underlying buildings minus land underlying dwellings belongs to land underlying other buildings.	The price of land underlying dwellings is separately identified from the publicly appraised and noticed individual land prices by using information of the current state of use of land.	Direct method (Price * Land area)	
	Agricultural land		The publicly noticed individual land price is raised to market prices (or equivalents) by using real estate actual transaction price reporting system and precedent appraisal information.		
	Forestry land				
	Surface water used for aquaculture				Included with agricultural land
	Recreational land				Yes
	Other land				
Latvia	Total Land	1) For financial and non-financial sector: Survey collecting the value of land as reported on business accounts 2) For general government: annual surveys and The Treasury No estimates for Households			
Mexico		National Institute of Statistics and Geography and Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food			

Country	Asset category	Data sources concerning land types	Data sources concerning prices	Estimation method	Separately published land value
Nether-lands	Residential (Value of land & structure)	Tax data adjusted by owner-occupied dwelling price to estimate current market price		Direct estimate of value; land derived residually	Yes
	Non-residential (Value of land & structure)	Tax data adjusted to current market price		Direct estimate of value; land derived residually	Yes
	Land under cultivation	Agricultural census and land use statistics		Direct method (Price * Land area)	Yes
	Land underlying building & structures	Information system of Chief Office of Geodesy and Cartography, which keeps registers of land by land users by voivodeships	Information about transaction prices for built-up land and land properties from Registers of Prices and Values of Real Estate, kept by the Starosta (district officer) and mayors of the cities with district status, by using the data derived from notarial deeds.		No
Poland	Forest land	Information system of Chief Office of Geodesy and Cartography, which keeps registers of land by land users by voivodeships	Estimated prices - from the National Forest Holding - Lasy Państwowe (about 80 % of the forest area in Poland is held/managed by the company)		No
	Agricultural land	Information system of Chief Office of Geodesy and Cartography, which keeps registers of land by land users by voivodeships	Agricultural Property Agency		No
Portugal		Census of population and dwellings for data on dwellings; Some balance sheet information on the corporation sector			No
Slovenia		The Real Estates Register was established in 2008 by the Surveying and Mapping Authority of the Republic of Slovenia (SMA). This database is composed of data from the Real Estate Census in 2007, the Land Cadastre, the Register of Buildings (established in 2000).			No
Sweden	Land except government	Tax data adjusted to current market price			No
	Government owned land	Physical data in square meters			No