# Authoritative land information and Australian property markets

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## SUMMARY

Land information has an important role to play in informing macroeconomic policy. In particular, timely and accurate market information relating to land tenure and value is essential for evidence-based fiscal and monetary decisions, such as interest rates on dept financing and assessing property base taxes. Currently in Australia, there appears to be a gap between the creators of land information at the state level and the users of the information at the federal level. The capacity of evidence-based policy is under-realised as a result. This paper explores the inter-governmental land information flows within three state-based land administration systems and the Reserve Bank and Australian Taxation Office. Results of the study show that integration of land market information is occurring within some state land agencies; however communication with federal government departments is limited, leading to information asymmetries. The paper concludes that new options for enabling more seamless land information flows need to be prioritised. Collaboration will be essential.

## 1.0 INTRODUCTION

Information about land transactions sourced from land registries, gives the most authoritative picture of the property market in Australia. This information is vital to managing the economy. However, due to a federated government structure, responsibilities for managing land information and managing the economy are constitutionally divided between the state and federal governments. Consequently, macroeconomic policy making and land administration operate independently. The failure to include authoritative land information generated by the country's land administration system in macroeconomic policy making can result in a property market that is impeded by information asymmetries, and suboptimal governmental fiscal and monetary decisions.

The property market tree (Tambuwala *et al,* 2011) presents a simple empirical model that demonstrates the relationship between land administration and macroeconomic policy making in federated countries such as Australia. It illustrates the need for adequate information flows between the government land administration and policy institutions, in order to sustain a healthy property market. This paper applies the property market tree in combination with the information flow lifecycle (adapted from Sharma 2011) to three Australian case studies: Victoria, New South Wales and Western Australia. Each case study investigates the flow of property market information between the tiers of government within the state and up to the federal government. Comparisons are drawn within the discussion that follows, and common information asymmetries are identified. Recommendations for a more seamless flow of property information across the country are presented.

## 2.0 BACKGROUND

Land market information has a temporal aspect. The date on which a land transaction takes place is an indicator of the market environment at that point in time. Land markets are dynamic and as the market evolves, the transactions within the market reflect this. Organisations using land market information for decision-making need information that is timely and that accurately reflects the market environment. This makes it important for land information to be appropriately sourced, managed and disseminated.

The concept of information management using lifecycles predates computers, and has developed from the disciples of natural sciences, behavioural studies and organisational theory (Simon, 1977; March and Simon, 1958; Cyert and March, 1963; Wilensky, 1967; Haeckel and Nolan, 1993 and Choo, 1998).

Figure 1 shows the information flow lifecycle model that will be used in this paper. It has been adapted from Sharma (2011)'s five phases of the lifecycle continuum of business records.

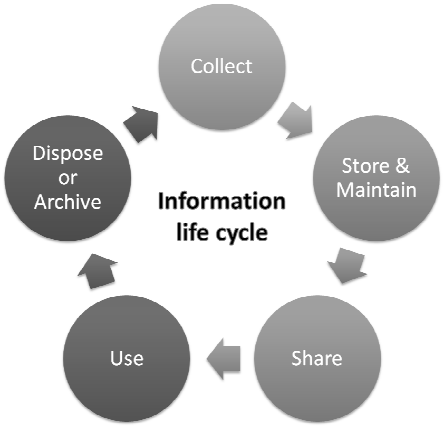


Figure 1. Information flow lifecycle (adapted from Sharma 2011)

This model was adopted for a number of reasons. Firstly, it originated from the management of business records, which translates well to property market information and the management of land records. Secondly it presents a clear chronological structure with clearly defined phases. Information technology and business management jargon is minimised.

The information flow lifecycle in figure 1 is used together with the property market tree to evaluate the flow of market transaction information between the local councils, state land agencies and federal government agencies in three Australian states.

The property market tree was derived from two cases studies: land information in monetary policy and fiscal policy in Australia (Tambuwala *et al* 2011). The case study on monetary policy looked at the role of land market information on interest rates for debt financing. The case study on fiscal policy evaluated the role of land market information in five land taxation processes: stamp duty, land tax, rates, CGT and goods and services tax (GST).

A country's wealth is derived from capital, labour and land (Dale and McLaughlin, 1999). These are the factors of production whose management is generally undertaken by a country's central government. Macroeconomic policy tools such as taxation and the setting of interest rates assist in this management of national wealth. They are enacted to balance market fluctuations within the economy. Consequently, these policy decisions require authoritative information about transactions in capital, labour and land to effectively judge the status of the economy. Information about the land market is collected and maintained by land administration agencies.

Land administration has four core functions, namely tenure, value, use and development (Enemark, 2007). These functions are essential for the purpose of recording and producing land information, implementing national policy and delivering a country's sustainable development objectives. Of these, tenure and value are the main functions that directly underpin the efficient operation of land markets. Land development and land use, though interrelated with tenure and value, are indirect participants in efficient land markets. Use and development can both affect the capital value of land, and are reflected in the land

administration function of land value. Hence the information in the case studies was restricted to land tenure and value information.

This paper adopts a similar principle. It looks at the flow of tenure and value information between government agencies for the purpose of land taxation and setting of interest rates. The case studies focus on the first three stages of the information flow lifecycle, namely: *Collect, Store and Maintain* and *Share*. Land data requirements of the Australian Taxation Office (ATO) and Reserve Bank of Australia (RBA) relate to the *Use* stage of the information flow lifecycle and will be discussed in the section following the case studies. The *Dispose* stage of the information flow lifecycle requires further evaluation and is beyond the scope of this paper.

## 3.0 METHODOLOGY

Figure 2 shows the information flow lifecycle model adopted for this study overlayed on the property market tree. It provides an overview of the evaluation approach used.

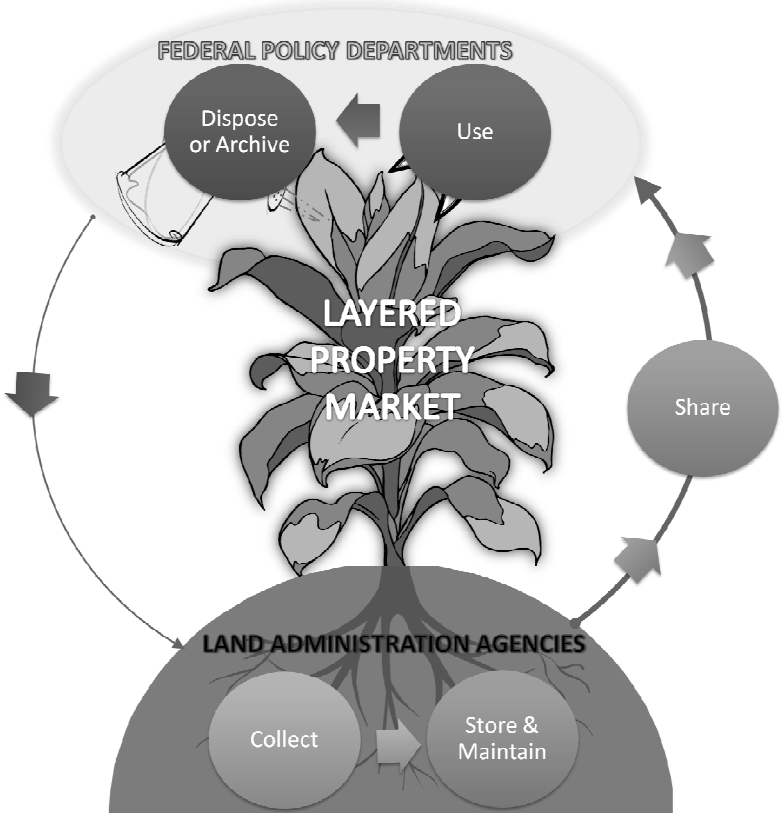


Figure 2. The information flow lifecycle as it relates to the property market tree (adapted from Tambuwala *et al*, 2011)

According to figure 2, land administration agencies collect, store and maintain land market information. Federal policy makers use this information. Sharing must occur between the two

government tiers. Three qualitative case studies follow to examine information flows in these three stages. Each case study looks at one state land administration system and its information sharing with the ATO and RBA. The states of Victoria, New South Wales and Western Australia are evaluated.

The information flows are as of April 2011 and are often a simplified representation of complex relationships. Simplification here does not imply incompleteness. The connections between entities and hierarchal dependencies are maintained, with no influence on the precision and reliability of the outcomes. As Montello and Sutton (2006) explain, simplification is necessary in scientific work, allowing us to understand complex reality. Simplicity is maintained in order to gain an understanding of the 'bigger picture' relationships and to allow easier identification of information asymmetries between the tiers of government. This relates to the gap between information available within state land administration agencies and what is actually shared with the federal policy departments, namely the ATO and RBA. Market failure, among other problems, can result (Clapp *et al* 1995, Dolde and Tirtiroglu 1997, Milgrom and Stokey 1982, Garmaise and Moskowitz 2004, Clarkson *et al* 2007). The investigation of information flows between these tiers of government allows for a clarification of the current situation and identification of the process or flows that need to be improved to strengthen the market and economic policy decision that support it.

The case studies are based on published work (Kalantari 2008), informal interviews and case study visits to land registry offices. The *Use* stage of the information flow lifecycle represents federal taxes on land and the setting of overnight bank rates that require market transaction information at a national level. This is evaluated from information gathered from ATO and RBA white papers, annual reports, press releases and discussions with personnel from fiscal and monetary policy departments of the ATO and RBA.

Yin (1993), Benbasat et al. (1987) and Maxwell (1996) advocate the use of case studies within a qualitative approach to better understand relationships, information flows and data sharing between organisations.

## 4.0 RESULTS

The case study results presented below are based on the data flow symbology shown in figure 3.

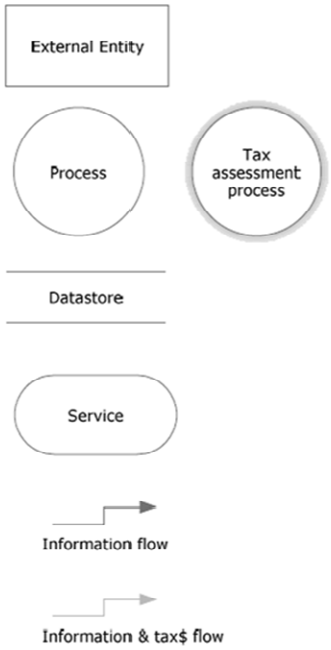


Figure 3. Data flow symbology used in case studies

This symbology is derived from the standard symbols used in Data Flow Diagrams (DFDs), (Agarwal *et al* 2009), and is based on a set of four simple symbols to represent a function or process, external entity, data store and data flow. The context of the case studies requires the addition of an extra symbol for 'Service', to represent a web service or portal for data access provided by a state land agency.

### 4.1 Victoria

Victoria is the smallest mainland state by area and the second largest by population size. It is located in the south-eastern corner of the country, bordered by New South Wales and South Australia. This densely populated state is also highly urbanised, with almost three-quarters of the population residing in the capital city, Melbourne. The information flows within the first three stages of the information flow lifecycle, in the Victorian context, are presented in Figure 4 and discussed below. In this figure, the arrowheads in red highlight the flows that currently allow the federal agencies to access land information. The dotted red line emphasises the lack of land information flowing into a federal policy institution.

Victoria's land administration agencies consist of the land registry and Valuer-General Victoria (VGV) which reside within Land Victoria, the State Revenue Office (SRO) and the local councils.

The land registry is the land titles office in Victoria, responsible for registering all land transactions in the state. The Victorian Online Titles System (VOTS) services the register of all land titles Victoria. It is updated on a transaction by transaction basis. Access is restricted

to authorised staff and some councils. The registry is public and is accessible via LANDATA, an online land records and information service. Information is provided on a cost-recovery basis.

VGV maintains the official record of valuations for all rateable properties in the state.

The SRO collects stamp duty and land tax on behalf of the state government. In Victoria stamp duty is paid at settlement, by the buyer. The time limit for submission of stamp duty documents to the land registry is thirty days after settlement. Financial institutions lodge documents for stamp duty and registration in bulk. Once stamp duty is paid, it is not unusual for documents to be lodged at the land registry up to three months after settlement.

The SRO also calculates land tax and sends notices to property owners. Similarly local councils calculate and send rates notices to all owners of rateable property owners in their respective municipal districts.

Land Victoria maintains a historic property sales database, Property Sales and Valuation (PSV). The database stores sales history as far back as 1975 and is updated at least weekly. However it is often about six months after transaction that the data in PSV is complete and reliable. The SRO maintains its own property sales database and has no access to PSV.

Land Victoria has one-off information exchanges with the ATO. However, there are currently no formal data exchange arrangements in place between the state land administration agencies in Victoria and the federal policy institutions.

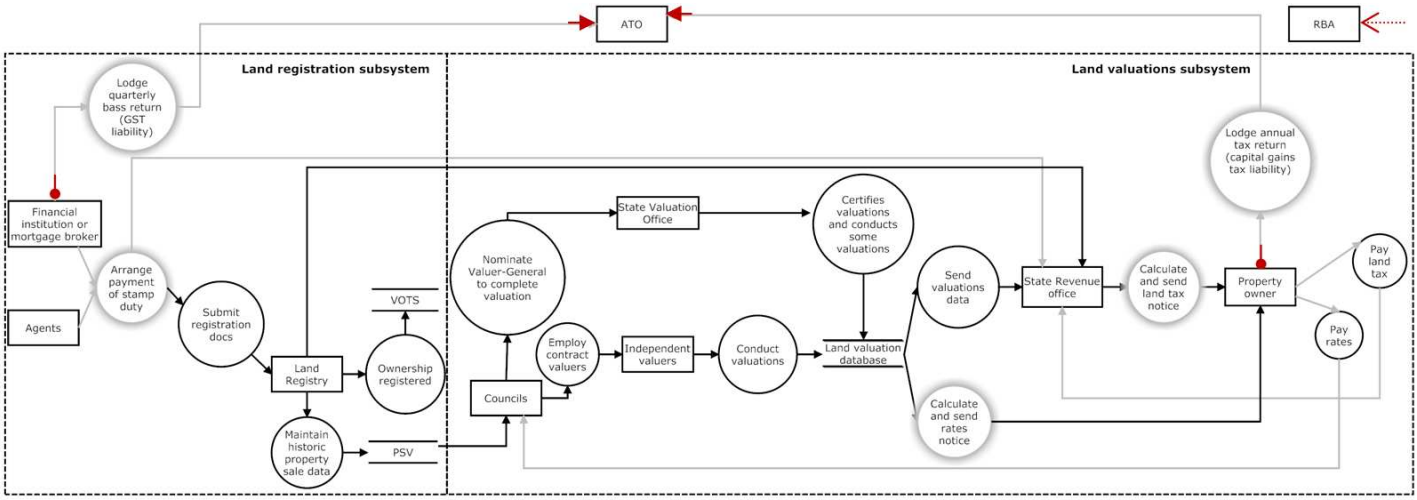


Figure 4. Information flows between state land administration agencies in Victoria and federal policy agencies for the purposes of taxes on land and setting of interest rates.

### 4.2 New South Wales

New South Wales (NSW) is the state with the largest population in Australia. Located to the north of Victoria, it also shares a boundary with Queensland, South Australia and encompasses the whole the Australian Capital Territory. A large percentage of the population in NSW reside in the state's capital city, Sydney. Sydney is also the most populous city in the

country. The information flows within the first three stages of the information flow lifecycle, the NSW context, are shown in figure 5 and discussed below. In this figure, the arrowheads in red highlight the flows that currently allow the federal agencies to access land information.

The land registry and Valuer General's office (VG) in NSW, prior to April 2011, resided within the Land and Property Information division (LPI) of the Land and Property Information Authority (LPMA). The LPMA was abolished under the NSW Government restructure in April 2011. The LPI now resides within the Department of Finances and Services. Other agencies in NSW with land administration functions include the Office of State Revenue (OSR) and local councils.

The OSR collects stamp duty, which in NSW is paid at time of contract. LPI supplies OSR with a daily update of changes to the registry via the Integrated Property Warehouse (IPW). The IPW is a whole-of-government approach to data sharing. It centralises land information across the different land administration agencies.

The VG conducts valuations to provide land values for all properties in a local government area. VALNET is the valuations database in NSW, maintained by the VG. VALNET shares information with IPW. VALNET also stores sales history, electronically back to 1990. Access to transaction history is publically available via SIX, on a cost-recovery basis.

Councils are also supplied with valuations data. Councils use this data to calculate and send out rates notices to all owners of rateable property in their municipal districts.

LPI supplies ATO with a complete history of ownership changes and subdivision changes for all lots on a six monthly basis. The data supply is for all lots and all transaction since 2002.

No information is regularly supplied to the RBA, although the bank does make one-off enquiries for specific extracts. The last request was for mortgage value information, which LPI could not supply as the information is not collected in their system. LPI does provide property sales information to the Australian Property Monitors (APM) under a licence agreement. The APM is a regular supplier of data on dwelling prices to the RBA.

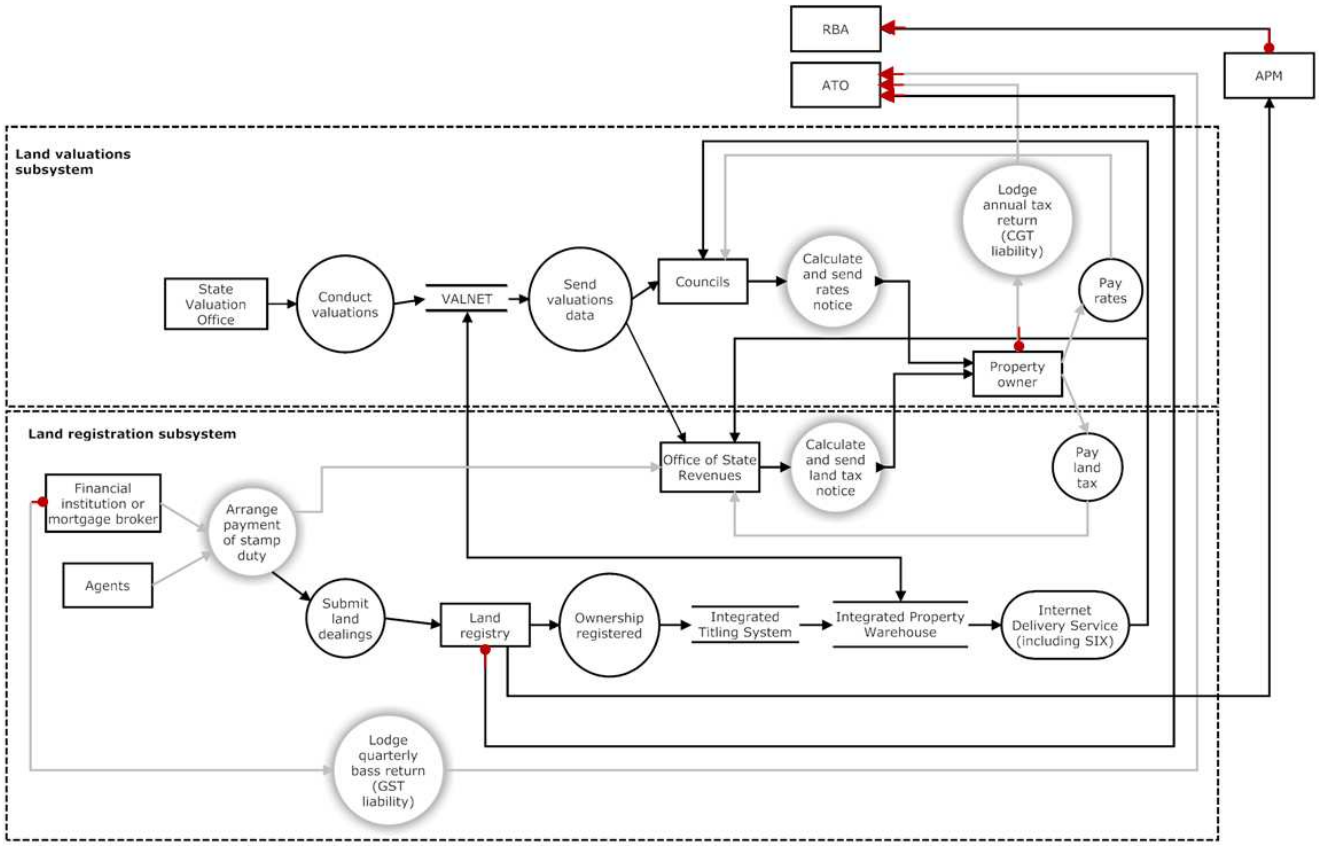


Figure 4. Information flows between state land administration agencies in NSW and federal policy agencies for the purposes of taxes on land and setting of interest rates.

### 4.3 Western Australia

Western Australia (WA) is, geographically, the largest state in Australia. It shares borders with the Northern Territory and South Australia. Majority of the population resides in the south-west corner of the state, in and around the capital city Perth. The information flows within the first three stages of the information flow lifecycle, the WA context, are shown in figure 6 and discussed below. In this figure, the arrowheads in red highlight the flows that currently allow the federal agencies to access land information.

Land administration agencies in WA consist of the land registry and Valuer General's office (VG) under Landgate, the Office of State Revenues (OSR) under the Department of Treasury and Finance, and local councils. The land registry maintains a Smart Register (SMR) of all land dealings in WA. SMR stores ex-proprietors and all new transactions.

The VG is responsible for all property valuations in the state. Valuation System (Valsys) is the land and property information system, maintained by the VG. Valuations receive data from SMR either periodically or on a transaction-by-transaction basis.

Sales information is provided to valuations via Electronic Advice of Sale 2 (EAS2). EAS2 is an online service that assists the conveyancing process in WA. Sales history is maintained

back to 1988. Sales information is publically available via the Landgate website on a cost recovery basis.

The OSR collects stamp duty, which is paid at time of contract. The land registry periodically sends official land and ownership records to the OSR. The OSR maintains its own data base for purposes of stamp duty and land tax collection, Revenue Collection Information System (RCIS).

Councils receive valuations data from the VG to calculate and send rates notices to all owners of rateable property within their jurisdiction.

ATO gets regular updates about new transactions registered in SMR. ATO also requests information periodically. However on occasion acquired data cannot be loaded into the ATO's system due to data incompatibilities. Landgate has no direct information exchange arrangements with the RBA. They provide information to the APM, who are supplies of dwelling price data to the RBA.

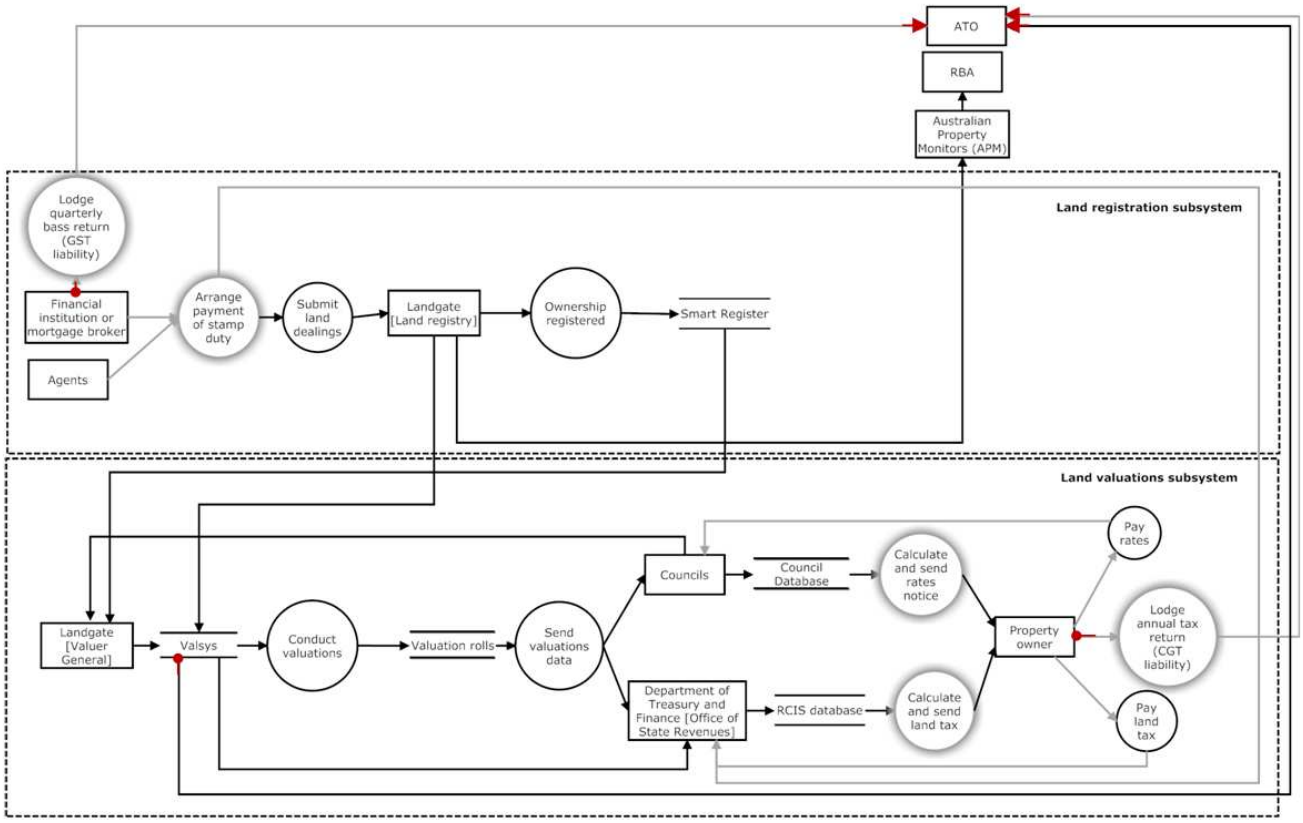


Figure 5. Information flows between state land administration agencies in WA and federal policy agencies for the purposes of taxes on land and setting of interest rates.

## 5.0 DISCUSSION

### 5.1 Key comparisons

Land information being collected, stored and maintained is unique to each state. Databases are diverse, with data models tailored to meet individual agency needs. Processes are labyrinthine and again unique to each state. Of all the case study states, WA has achieved highly streamlined processes for data collection, storage and maintenance. Here, integration of databases and data sharing is occurring at a higher degree than other states. Direct and regular information exchange with the ATO is already underway; however improvements in terms of data compatibility and timeless can be made. NSW has also achieved significant data integration and inter-governmental sharing via its IPW. Here too, direct and regular information exchange with the ATO is occurring. However, processes within the registration and valuation subsystems are still complex. Victoria is yet to achieve integration and sharing to the same extent as the other case study states. Legacy systems still dominate here, with databases being highly accurate but stale. Victoria is also distinct in terms of the inaccessibility of property sales information and no established relationships for data exchange with the ATO. None of the three case study states currently have direct data exchanges with the RBA.

The time of data collection is notable in all states. In NSW and WA, though stamp duty is paid at time of contract, there is no requirement to inform the registry of the land transaction at this time. In Victoria, there is a similar lack of reporting requirement at time of contact.

As a result, though property market information is eventually available, it is not always authoritative, and is held in separate state databases. Authoritative implies publically sourced, timely and accurate data. Wallace and Williamson (2011) advocate the need for 'AAA' (Accurate, Authoritative, Assured) land information at national and federal level for taxation and governance including monetary policy. Information used in policy making needs an audit trail. It must be assured by statutory functions, risk management systems, and, in case of Torrens and other successful systems, guaranteed. Current land information sharing process in Australia fall short of these requirements. Additionally, as the RBA points out, 'data timeliness' is a major problem with access to housing price data (RBA, 2004; 2005). This is attributed to the lack of consistency in transaction reporting requirements between the states. The case studies show an absence of reporting requirement at the time of sale.

From the perspective of efficient economic policy, it is desirable for market analysis on house price data to be based on the period in which the price was determined, rather than when the transaction was later settled (RBA 2005). Due to insufficient and untimely information flows, and poor data integration at a national level, the RBA purchases sale and transaction data from the private sector. For instance the RBA collects aggregated statistical information about the commercial property sector, including vacancy rates, property prices and rents from the Australian Bureau of Statistics and other organisations such as Jones Lang LaSalle, the Property Council of Australia and Savills Research (RBA 2009). Sales transactions are obtained from the Australian Property Monitors (APM) among others. Not being publically sourced, this land information is not authoritative or assured. Consequently evidence-based policy decisions are undermined.

### 5.2 The *Use* stage

The *Use* stage of the information flow lifecycle relates to the information needs of the federal macroeconomic policy agencies. The ATO requires land information with accurate owner identities. The current state land registration systems do not support thorough identity checks when registering land titles.

Additionally, the ATO requires authoritative information about primary places of residence and a cost base for CGT purposes. Land registries do not currently capture this information and historical data is often problematic and prone to inaccuracies.

The ATO currently gets 6 monthly data updates from some state land registries and revenue offices, as part of arrangements initiated in 1985. For income tax lodged annually, 6 monthly data is often sufficient. However for GST purposes the ATO requires data in much smaller time increments. Though most land registries in Australia cooperate with data requests from the ATO, refusals to provide information on privacy grounds are not uncommon. Additionally, the data models and reporting requirements in each state are different, making it difficult to integrate information at a national level.

The information needs of RBA are also sophisticated and sometimes beyond the capacity of existing systems to deliver. For instance, a recent RBA research project (Kulish *et al*, 2011) looked for information on land zoning in Australia's major cities, including the proportion of land zoned for high, medium and low density residential use. It also looked for data on unimproved land values in Australia's major cities. However, most land agencies, including the planning agencies, do not have this information. Those that do are disparate and operate in silos. Property valuation methods are as varied as the property laws in various jurisdictions, and data relating to ownership and value of properties is stored in multiple databases. RBA requests for mortgage information are also difficult to meet as most state land agencies do not collect this information. Information is currently sourced as aggregated statistics mainly from private sector organisations. Often this information is obtained from real estate agencies, who do not always have any statutory obligation to report transaction information.

## 6.0 RECOMMENDATIONS AND CONCLUSION

Lack of consistency in land information collection, storage, maintenance and sharing is evident through case studies on three Australian states. The problem here is two-fold. There is a mismatch between the land information requirements of federal policy makers, and the land information processes at state level. The type, timeliness and quality of information being collected, stored and maintained does not align with national requirements. Additionally, the data available at state level is not being adequately shared with agencies at federal level. There is an information asymmetry in operation here. Authoritative land information in this context needs better recognition as a critical input to evidence-based policy at all levels of government. Additionally, land information collected needs to be fit-for-purpose.

Technological advancements have enabled land administration processes to evolve from paper-based to digital systems. Better integration at a nation level can be achieved and needs to be prioritised. Collaboration will be key in meeting the land information requirements of federal policy makers.

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