

The Effect of Potential-based Land Tax on Land Utilization

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1 ABSTRACT

Land as a scarce resource requires efficient allocation, which includes efficiency in producing the highest value and efficiency in consumption conforming to people's willingness-to-pay. Thus methods for controlling proper land utilization are essential for societies to reach sustainability. Like in many countries land and property tax in Austria is based on the profit that everyone could achieve using the land. This concept of a productivity-based land tax was developed centuries ago, when land in European economies was mainly used for agriculture. The implementation was simple, because soil quality, which is the main factor for possible productivity, could be determined. However, economies changed and the profit from agricultural areas – and thus the value of agricultural land – decreased with the effect that also the utilization of former agricultural areas altered. Therefore, also an adjustment in the tax system seems to be appropriate. In the paper the effects of such a change will be discussed.

Determination of land tax should be objective and fair. The value of land is an objective criterion and since it reflects the wealth of the land owner it is also a fair measure. The value of land can be defined in different ways but the obvious meaning should be the market value, i.e., the revenue that will be gained if the land is sold. The market value is based on a number of factors including general economic situation and location, but one of the most prominent factors is potential use. Areas that allow a highly profitable use have a higher market value than areas with many restrictions on the use, e.g., due to regulations on groundwater protection or monument conservation. Austria has a large number of data sources that are suitable to determine land value in a mass appraisal approach (Muggenhuber et al., 2013). The implementation would be simple from a technical perspective, even if comprehensive political discussions are required.

Land and real properties are also commodities within the capital market with rather stable asset values over time. Thus, they also can serve as parking place for investments with minimal maintenance costs. Therefore, people may purchase land in residential areas as a financial investment without improving the land with the consequence that the municipality is forced to create additional residential areas and provide the necessary infrastructure. This stresses the budget of the municipality and has a negative effect on resource management. If land tax is based on the potential of the land, land owners may rethink their strategy. The tax causes financial losses of the potential is not exhausted. Potential buyers will have an interest in the land, because they want to utilize the potential now. In addition, the political decision makers explicitly see the monetary effect of their decisions, and the beneficiaries become visible for the public.

2 INTRODUCTION

Land administration and property tax have a long tradition. In medieval times, for example, farmers had to pay royalties to the owners of the land. Later, with the development of national states and modern administration, tax revenues were necessary to finance state procedures. Tax on local economy and population had a high fluctuation and were thus not easy to predict. Property tax, however, was a stable source of income for a country as land could not be transferred abroad. With the introduction of cadastres and land registers in the 19th century, a solid base for land tax assessment was created. Basis for the assessment of land tax was the revenue produced by the land. Since the national economies in the early 19th century were mainly based on agriculture, farm land was the main source of tax revenues.

However, in the 20th century economics changed, and in many countries tax burden on labour exceeded taxes on capital gains and property. Thus property tax based on the traditional assessment method becomes obsolete. Revenues from property tax do not make a significant contribution to the state budget and do not

justify the maintenance of the expensive cadastral and land registration systems. Although there are still well-founded arguments for these systems, e.g., that the land register provides legal security and the cadastre serves as spatial reference for other data, land tax assessment could be adapted to the new economic situation. An obvious approach would be potential-based land tax, where the tax level is based on the potential revenues of the land. In the paper the effects of such a system are discussed using the example of Austria.

3 LAND ADMINISTRATION

Land administration is one of the basic processes that provide information on available resources. Land administration deals with the resource land, which is specific because it is immovable and cannot be increased. Thus, land is a scarce resource and should not be wasted. Proper land management has to guarantee that land is used in an optimal way. Land administration is the operational implementation of land management. The United Nations define land administration as “the processes of determining, recording and disseminating information about the ownership, value and use of land when implementing land management policies” (United Nations, 1996, p. 108). It provides information on land, which can be used in management processes. Land management, on the other hand, “is the process whereby the resources of land are put to good effect” (Dale and McLaughlin, 1988, pp. 1, 3).

Figure 1 gives an impression of the complexity of land administration. Land administration has a strong legal influence, but has also take public and private interests into account. The separation of the cadastral part dealing with geometry and the land registration part dealing with (private) rights is not always done, but the processes are differently structured due to the requirements of public or private law.

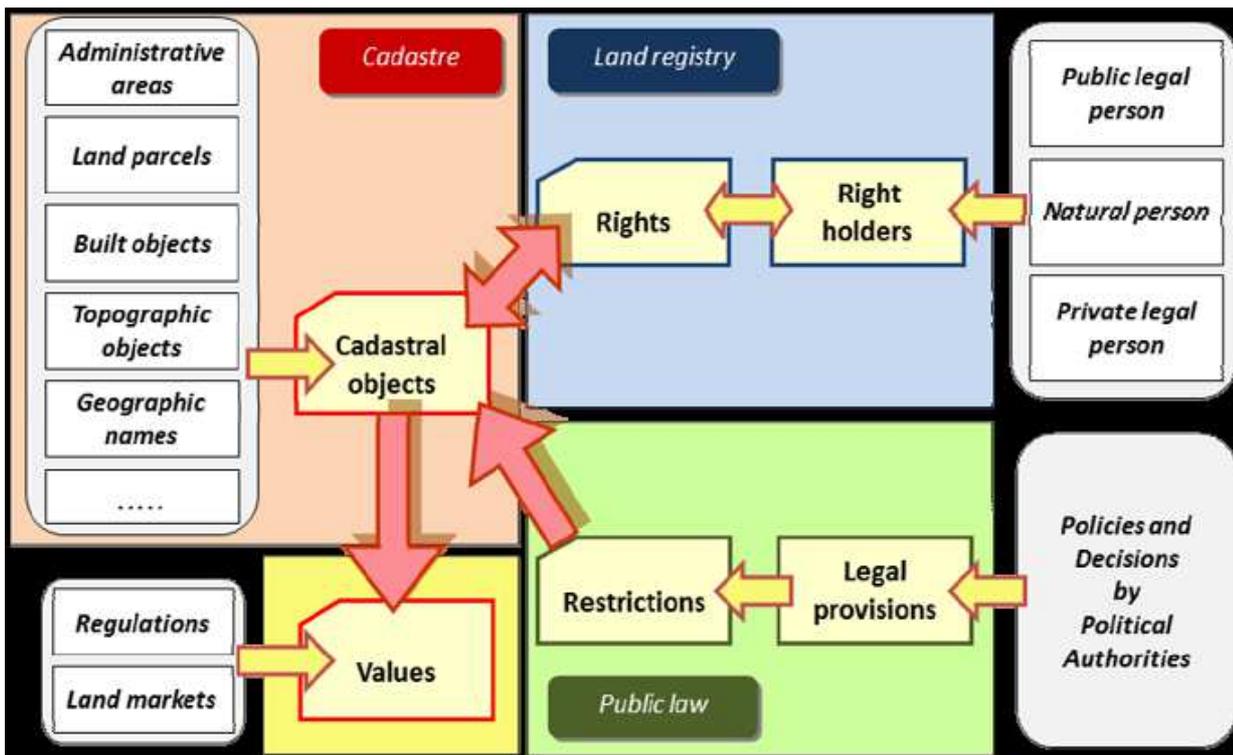


Fig. 1: The system of land administration (Source: Horisberger, 2011, as cited in Muggenhuber et al. 2011)

There are different possibilities for the implementation of land administration: Registration of title and registration of deeds are just two examples for the documentation of ownership rights. In general, a number of decisions are required when implementing a land administration system (compare Bogaerts and Zevenbergen, 2001). It is necessary that the rules of good governance are met (Mansberger et al., 2012). According to Törhönen and Grover, the following principles should be guaranteed (Törhönen and Grover, 2006): transparency and impartiality, legal security and rule of law, predictability and traceability, effectiveness and efficiency, equity and fairness, integrity and accountability, consensus orientation, civic engagement and public participation.

The principles of good governance should be applied to public administration and management in general, and to land administration in particular. Spatial planning will typically lead to NIMBY (not in my backyard) problems. It would contradict fairness, if these types of problems are always solved such that the same group of people suffer. Land administration is able to provide information about the winners and the losers of a taken decision, e.g., by publishing land value data continuously, the capital gain of land becomes obvious. This increases transparency and thus, improves governance.

4 PROPERTY TAX

“The property tax is, economically speaking, a combination of one of the worst taxes - the part that is assessed on real estate improvements ... - and one of the best taxes - the tax on land or site value”. (Vickrey 1999: 17). George & Drake (1879) argued that land tax shall relate to the location value of land instead of the value of improvements.

As land tax usually is paid by either the owner or the user of land, these persons must be identified by the tax authority. The tax object is the parcel, a defined piece of land with a unique ownership situation. Taxation requires an objective basis for calculation, which is typically provided by the cadastral system, a systematic inventory of the parcels in a country. Tax assessment shall be fair, equal, and transparent. Thus, the systems developed in the 19th century are based on productivity.

4.1 Tax Policy

Tax policy in general has several goals (Muggenhuber & Twaroch, 1998), like:

- **Guidance:** Taxation is a simple method to increase the costs of something. Income tax increases the costs of workforce, petroleum tax increases the costs of transportation, and land tax increases the costs of land ownership. Increasing a specific tax possibly lead to avoidance of the taxed goods. High land tax, for example, may motivate land owners to sell land, which they do not need.
- **Distribution:** Tax is an instrument to reallocate wealth. People with a high income have higher tax rates than people with a low income.
- **Income:** Fees and taxes are usually the only means of income for a state. Trade, labour, and assets are the traditional elements of taxation. In times of internationalization of productions processes, taxation of land and real property is becoming more important, because it is the only type of tax where the basis (the land) cannot be transferred to another country. Another benefit is the observation of quantity, which is easier for land than for other elements.

4.2 Property Taxation

In Austria, size or value of a parcel is the basis for numerous taxes and fees. Land tax is the obvious example for such a tax, but there are other taxes like land purchase tax, possible tax on rise in land value, property tax, inheritance tax, etc.

Land tax in Austria is based on the so-called unit value. The concept was developed in the end of the 19th century for agricultural land. The unit value was determined mainly by soil quality considering the availability of water and climate. The unit value does not take into consideration any improvement of the land for stimulating investment. Additionally, the concept of unit values does not work properly in more complicated situations, i.e., in built environments. In these cases, taxation of income (from renting houses or apartments) provides more revenue for the state than taxation of the land itself.

4.3 Reform of the Austrian Land Tax

The unit values in Austria are problematic, because the last complete survey has been done in 1973. Some adaptations have been performed since then (e.g. in 1982 the unit values were increased by 35% to compensate inflation), but they do not reflect the developments in different parts of the country. Therefore, the constitutional court requested a correction of the system.

Determination of land tax should be objective and fair. The value of land is an objective criterion and since it reflects the wealth of the land owner it is also a fair measure. The value of land can be defined in different ways, but the obvious meaning should be market value, i.e., the revenue that will be produced if the land is sold. The market value is based on a number of factors including the general economic situation and the

location of the land, but the most prominent factor is still the potential use. Areas that allow a highly profitable use have a higher market value than areas with many restrictions on the use, e.g., due to regulations on groundwater protection or monument conservation.

A possible solution is the estimation of market values and the assessment of land tax based on the market value. Various countries use such a system, like Denmark, Sweden, Russia, and the USA. Discussions in Germany seem to lead to a similar decision (IWKöln 2014). There are different methods to get approximate market values, most of them perform a multiple regression analysis by using transaction data and other data (Wessely et al. 2013). This would be in accordance with the recommendation of the Organisation for Economic Co-operation and Development (OECD, 2010: 77) and would implement a concept that is quite old (George & Drake, 1879).

5 POTENTIAL-BASED LAND VALUE

One of the most important principles of real property valuation is the determination of value based on “the highest and best use”, i.e. taking into account the potential of real property for further development. The International Accounting Standards Board (IASB), which sets the rules for accounting and financial reports since 2005, has worked on the definition of a “fair market value”. In its International Financial Reporting Standard 13 (IFRS 13) it has included the “highest and best use” as an element for determining the market value of an asset. The principle of “highest and best use” is used to achieve a true market value balancing the interests of a seller and a buyer, who intends to make the maximum use of the property allowed under the regulatory conditions. In most instances, such a situation reflects the condition of a piece of land not yet used to its full potential. “Highest and best use” is that the potential use of the property would be fully exploited, regardless to the current use.

The parameters applied to the definition of “highest and best use” are:

- The potential use is legal.
- The potential use is physically, economically and financially feasible.

Austria has a large number of different data sources that are suitable to determine land value in a mass appraisal approach (Muggenhuber et al., 2013). Data describing physical and geometrical properties and data outlining private law or public law restrictions are available and it is not necessary to collect new data. However, some data may be protected and are not publicly available but this does not generally prohibit their use in a mass appraisal process. The implementation of such a process would be possible from a technical perspective, even if comprehensive political discussions are required. The biggest challenge for an implementation would be the integration of data describing public law restrictions, as not all of these data are available in a proper format and they are inhomogeneous as often being defined by communes. Building restrictions are an example: Theoretically, all communes must provide these restrictions in digital form, but it is not yet possible to obtain the data online. Delays come from the fact that not all communes have the technical possibilities and knowledge to provide online access to their data. Another problem is that not all public law restrictions are obvious. Thus, if soil pollution is determined, the land owner is forced to improve the soil. This obligation is documented in the cadastre on legacy of pollution. However, if it is unknown that there is any pollution, the area will not be in the cadastre.

Some of the most important sources of information on aspects influencing the land value are (Muggenhuber et al. 2013):

- Land register
- Cadastre
- Land use maps
- Topographic maps
- Orthophotos and satellite images
- Noise maps
- Road network datasets (e.g., GIP – Graphenintegrationsplattform)
- Environmental data

- Land transaction data

These geodata enable the modelling of potential use (e.g., existing infrastructure or legal restrictions) including regional peculiarities of the land market. E.g. in the region of the Austrian town Kitzbühel the land market is significantly different from the land market of the surrounding areas. The obvious explanation is a strong influx of wealthy people and the limited supply of available land. By using geodata and proper models, it can be showed, that there many of the areas available are kept as reserve (Steinnocher et al. 2012).

6 EFFECTS OF POTENTIAL-BASED LAND TAX

Potential-based land tax is a system, where the amount of land tax is a function of the potential. Since land value and potential are highly correlated, both could be used as a basis. The following examples are based on the assumption that potential use and market value are directly proportional.

6.1 Economic and ecological considerations

Potential is an important aspect of land. Land is wasted, if the potential is not used. An investor, for example, may buy building land with the intention of selling it 10 years later and profiting from the increasing land prices. However, he is not necessarily interested in improving or even using the land. If the owner does not use the land, then all public investments in connection with this land (e.g., roads, water supply, power supply, etc.) are wasted. This is the reason why the IASB proposed the use of “highest and best use” for the valuation of a real property, i.e. in most instances of a land parcel, under the parameters indicated above.

In an economic context, the pursuance of optimization of economic gains would include the investments in assets, which will increase in value over time. From an environmental point of view – considering the preservation of the non-renewable resource “land” – a speculative investment in land is not desirable, because the land will not be used. Optimality from an environmental point of view requests, that the land produces a maximum value and profit through utilization. Furthermore, it puts a undue burden on the communities, which have invested for infrastructure but will not gain any benefits from taxable income.

What would be the effect of potential-based land and property taxation? Proposals made by Muggenhuber et al. (2013) demand that property taxation in Austria should be based on a mass valuation system taking advantage of the vast volume of geo-data available in order to arrive at a fair property tax. This system shall include – as the authors of this article opined – the “highest and best use” principle. There are some arguments that support such a development:

- Land tax based on market value will be fair, because if the value of land increases or decreases it is related to the tax. Land with high potential also provides the basis for high (not necessarily financial) revenues.
- Decreasing land value (e.g., because the population in the area is decreasing) results in a decrease of the overall wealth of the land owners. It would be an additional burden if the tax remains unchanged. This could affect land owners to sell their land making abundant land available, which again would lower the prices. Land tax based on market values will automatically decrease the land tax and this could prevent or weaken such a development.
- The system should be simple and avoid unnecessary expenses. One of the main cost factors in every system is data acquisition. A system that uses data that area already available is preferable to a system that needs extensive data collection. Austria already collects numerous data that are useful for mass appraisal.

In addition to the arguments of the quoted article, the consequences of a potential-based property tax (by taking into account the “highest and best use” principle) are:

- Saving non-renewable resources and the environment thereby contributing to the sustainability of our eco-system, and
- Avoiding infrastructure expenditures by communities for not utilized properties (which are unproductive).

6.2 Political and social considerations

Transparency is an increasingly important aspect of public administration. The United Nations (1996) has identified transparency as one of the key aspects of good governance. Main influences for changes of land value are:

- Changes in the geometrical properties of the land
- Changes in the potential use of the land (regulated by laws)
- Changes of the land market

Changes of the physical properties are typically the result of cadastral processes, like subdivision and unification. As all these activities have to be applied, the modification of the physical properties are known to land administration and thus can be easily taken into consideration. However, physical processes like meandering of a river can also change the shape of a parcel. Monitoring these processes is more difficult. However, pragmatic solutions would be possible. The easiest solution would be leave the decision about resurveying the parcel to the land owners. Land owners would be willing to pay for the survey, if the lower land tax justifies the costs for the survey. Based on the average price per m², the costs of the survey, and time period used in the calculation, a decision can be made.

Changes in the potential of the land are also easy to assess. Since fundamental physical properties, like slope, orientation, or soil type do not change, any significant change of potential is the effect of some action. Most of these actions will be changes in public law ownership restrictions, e.g., a changed land use policy, a new infrastructure concept, or a new nature protection project. Each of these actions will have an impact on the value of the affected parcels and parcels in the surrounding area. Typically, there will be parcels that rise in value and others that drop in value. These effects can be easily visualized using the results of a mass appraisal system if the design of the system remains stable. Since it becomes visible, which areas profit from the change, it is also obvious who is benefiting from the change. In a fair society, the actions should have different beneficiaries, although obviously people owning more land may profit more often. A transparent mass appraisal system can show, if this condition is met.

The obvious question rises, if it is fair that a land owner pays higher land tax, if the value of his land increases. One argument is that he benefits from something that happened without any effort from the owner's side. The current situation in Austria (and probably other countries) is, that gains are privatized and losses are socialized, i.e., land owners do not pay for rise in value but are compensated for any loss. It is questionable, if this strategy is outdated in times of tight national budgets. The discussion is not restricted to Austria. Freyfogle, for examples analysed the situation in the USA from a legal perspective (Freyfogle, 2007, pp. 105ff).

Another aspect is the availability of data. A current buzzword is Open Government Data (OGD). Currently many European cities provide data to the public (e.g., <https://open.wien.at/>). Some of these data have already been published in different form (e.g., if it has been issued by public authority), but other data have never been published in aggregated form and can even save lives (e.g., the locations of defibrillators). Data on the value of land and its change over time are not yet available. Data from mass appraisal could be relevant not only for the tax authority and the land owners, but also for credit institutes, people thinking about immigration, developers, or economists.

7 CONCLUSIONS

The paper discussed some aspects of a potential-based land tax. Data required to assess the potential use of land in general and land parcels in particular are available in Austria. A methodology to use these data for value assessment in a mass appraisal system can be developed, although intensive political and economic discussion is still needed. But why should it be done? One argument in Austria is that land is currently not fairly taxed. This could be resolved by mass appraisal of land values and by taxing the land based on these results. However, the effect of estimating market values of real properties by mass appraisal would influence other economic and political decisions:

- Land tax on the potential “punishes” land owners, who do not exploit the full potential of their parcel. So a potential-based tax would stimulate a proper use of the land. The effects of an improved land use would result in reduced land consumptions and reduced spreading of cities. These effects

are ecologically reasonable and improve sustainability. On the other hand, improved utilization also makes better use of existing infrastructure. Since less new infrastructure is needed, the expenses of the communes are reduced with a positive effect on their budget.

- Mass appraisal systems document the effects of political decisions. Comparison of the results from different years allows estimation of the economic development and on the impact of political decisions. This makes the beneficiaries of political decisions more visible and improves the transparency of public administration.

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