

# Comparing European cadastres

## Methodological questions

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### 1. INTRODUCTION

Every surveyor claims that the cadastre in his country is the best and the most efficient. Erik Stubkjaer suggested a few years ago that we should systematically investigate this question. Not only to resolve the “Olympic” international competition but also as an aide to the countries in transition which all have to create methods to organize administration of land ownership in registries and should be informed about efficient and less efficient solutions. The original goal of the action under the social science program of COST was set somewhat more general and used a broader perspective focusing on the real-estate market that is served by land registration.

The main objective of the COST action G7 is to improve the transparency of real property markets and to provide a stronger basis for the reduction of costs of real property transactions by preparing a set of models of real property transactions, and then assessing the economic efficiency of these transactions. ... For selected European countries a comparative analysis of the economic efficiency of transactions involved in the transfer of property rights will be presented, supplemented by an exploratory analysis of relations between transaction costs and national practices regarding land management, education and governance (Stubkjaer 2001).

The main benefit of the COST action is that governments, professions, and holders of property rights achieve an improved understanding of how to reduce the cost of the transactions for real estates. The developed model serves for drafting new ordinances, for education of professional staff, and to guide scientific research. The outcome of the comparative analysis can point to opportunities for improving the efficiency of the procedures. The provided descriptions of effects of different organization of property transactions can serve as inspiration for other countries to draft regulations, which reduce cost and improve transparency in the real-estate market. This ultimately improves the national economy.

As this COST action comes to a close it is useful to review what was achieved, what can be learned from the COST action both methodologically and substantially for the organization of real estate registration in general. We have achieved the following results:

- The procedures for registration of real state transaction have been systematically described for several countries.
- Cost of transactions can be deduced from their descriptions; it is possible to assess the time necessary for a transaction and compare the differences in registration procedure across different countries.

- A method to describe and compare the procedures used in different countries has been developed. With this schema the procedure in another, new country can be quickly captured and compared with the countries we have analyzed.

This overview paper concentrates on methodological questions and will not report about country details. It argues first why and how transaction cost influence the market and through optimal or non-optimal allocation of resources the common wealth (Smith 1993). In section 3 definitions for the most important terms are given: transaction, procedure, and cost. Then different ways to assess the transaction cost are listed in section 4. The following section discusses how the delay to complete a transaction influences the cost. Section 6 starts the description of procedures, where I describe in section 7 the minimal procedures necessary for protection of ownership rights and then in section 8 other goals associated with the legal procedure for transfer of ownership.

## 2. INFLUENCE OF TRANSACTION COST ON MARKET VOLUME

Classical national economy assumes that transaction have no cost. However, everyday experience tells that transactions are costly. Everybody has experienced the effort necessary to buy, for example, a new car. One has to obtain information about the cars offered and then to select one, negotiate a price, etc. Similarly, there is an effort by the seller to advertise, to contact prospective buyers, etc. Therefore, there is a substantial difference in the price asked when buying and when selling the exact same car.

Douglass North has introduced the concept of transaction cost in economics and received the Nobel prize in 1993 for this contribution (North 1997). Cost of transactions is important in today's business; the competitiveness of a country in the international market is influenced substantially by the transaction costs in the country and when dealing with businesses in other countries. Hence, the need to compare the transaction cost across Europe.

Transaction cost are not only important per se but have an indirect effect as they influence the market and therewith the optimality of allocation of resources. Following a contribution of Lavrac the change in market volume results in a change in the transaction cost. The diagram shows the market volume which is obtained at a certain difference between the economic value of a piece of land to buyer and seller. The figure shows the amount of transactions which would take place at a low transaction cost  $b$  and not at a higher transaction cost  $a$  (Fig. 1).

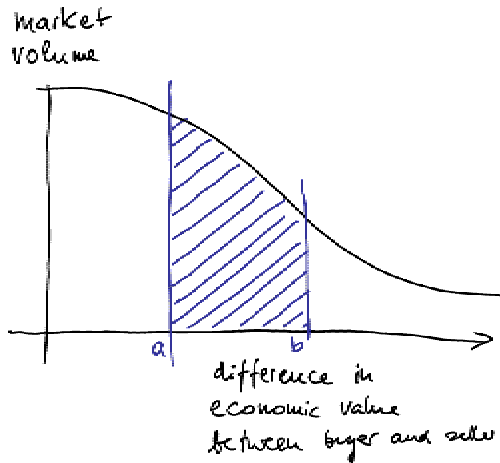


Fig. 1: Market volume as a function of transaction costs

Higher transaction cost result in a smaller market volume: the difference between the value of the utility of the real estate to the current owner and the higher value to a prospective new one must be higher to overcome the cost incurred in the transaction. Allocation of resources is not optimal compared with the allocation when transaction costs are zero and all land is allocated optimally. This is a loss for the economy as a whole.

This viewpoint is not exclusively in monetary terms and includes external cost, primarily social costs. Low transaction cost for real estate may result in too much change in the environment: if new constructions replacing old ones at a rapid pace, faster than what society can adapt too easily, we face equally cost for adaptation.

### 3. SEMANTICS: WHAT ARE WE TALKING ABOUT?

Clarification of terminology and strict definitions are crucial for all scientific research (Gottman, Murray et al. 2002). In a project investigating real estate, the terminology is the terminology of the national law. What is meant by terms like real estate, ownership, mortgage, etc. is defined in the law (Navratil). (Navratil 2002; Navratil and Frank 2003). Therefore, comparison across countries is notoriously difficult, because the same term may be used very differently. Clarification of terminology and strict definitions are crucial for all scientific research (Gottman, Murray et al. 2002). In a project investigating real estate, the terminology is the terminology of the national law. What is meant by terms like real estate, ownership, mortgage, etc. is defined in the law (Navratil). (Navratil 2002; Navratil and Frank 2003). Therefore, comparison across countries is notoriously difficult, because the same term may be used very differently.

#### 3.1 Definition Real Estate and Real Property

Real property: Land and anything growing on, attached to, or erected on it, excluding anything that may be severed without injury to the land; real property can be either corporeal (soil and buildings) or incorporeal (easements). – Also termed realty; real estate. (entry Property, subentry Real Property (Black 1996))

This definition of a legal term points both to a physical object, which is also a legal object, and to non-physical objects, which is only a legal term.

### 3.1.1 Factual term: Real Estate

The first part of the definition is a definition of physical land and buildings: the term real estate is prototypically used to describe land parcels, buildings with the land they are sitting on, but also flats when they are separately owned, etc. This definition seems precise enough. It is considered a term describing a physical object in the tiered ontology (Frank 2000).

After the semicolon, the definition expands the applicability of the term real property to other—non-physical—objects related to land, primarily rights, like easements, securities for debt, etc. This identifies the term 'real property' as a social construction (Searle 1995).

### 3.1.2 Legal term: Real property

The law differentiates between mobile and immobile goods (check with law dictionary) and gives special provision for the transfer of ownerships and other right in immobile objects (for example the Swiss Civil Code (Schoenenberger 1976)). Not every object considered by a layperson as real estate is real property in legal terms and, of course, not everything in the terminology of the law described as real property is seen as real estate by the public (Fig. 2).

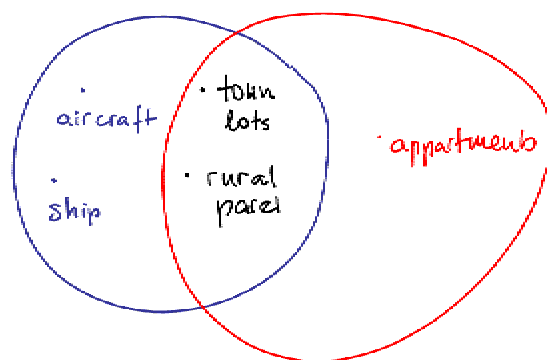


Fig. 2. Examples for real property

The national laws select appropriate words from their language to describe physical objects and legal concepts; these terms do not correspond even between countries, which use the same language. For example, the term *Kataster* is used in Austria to indicate what in Germany is called the *Liegenschaftsbuch*.

The conceptual agreement in European law is based on common roots: the Roman law as collected in the Justinian's Digest. Many national laws originated with the codification of civil law in the time of Napoleon and have evolved since (for example, France, Spain, and South America). Important is the Prussian development of civil and administrative law. Other countries, especially the Nordic countries, Russia but also Muslim countries have separate traditions. This makes it very difficult to find corresponding concepts and to fix translation to a single common terminology. In general, I have tried to use the English language terms in Black's law dictionary (Black 1996) closest in meaning.

Differences are substantial what a national law admits as incorporeal real property. Typically, rights to secure credit (mortgages) and easement (for example a right-of-way) is constructed legally as real property. For the purposes of this study, we admit everything, which can be registered as real property. Countries differ mostly what they exclude: property of apartments in buildings are often constructed as real estate, but not always; sometimes the ownership of land is separated from the property of the building erected on it, etc.

### 3.2 Ownership

One who has the right to possess, use, and convey something; a proprietor (entry owner (Black 1996)).

The concept of ownership seems to be both a factual term and a legal term. The law sometimes separates ownership from possession; possession includes only the right to use, but not the right to convey the object to another owner.

### 3.3 Basic law concepts and prototypical transfer

In order to achieve comparable definitions we had to identify a small number of comparable situations, situations for which comparable definitions are available in all countries. We have used:

1. real estate: a piece of land with everything built on it,
2. transfer of ownership: the full process of selling respectively buying a piece of real estate.

To compare concrete situations we had to select a well-defined, often occurring transfer of ownerships of real estate. The acquisition of a single-family dwelling in a small town recommends itself: it occurs often and in all European countries equally. It is an important transaction in many families' lives, often the most important one in a lifetime.

### 3.4 Procedure

The transfer of ownerships is a *transaction* and performed following a prescribed *procedure*. Steps in a procedure may be seen as sub-procedures consisting again of steps.

## 4. ASSESSMENT OF TRANSACTION COST

The assessment of the transaction efficiency is based on the cost of the transaction. This is first a question of the determination of the different cost components and their addition. We found that we had to select a single point of view to determine costs consistently.

Unfortunately, different points of view must be taken to answer different questions; definition of costs used in one viewpoint does not translate to costs under another view.

## 4.1 Definition *cost*

The use of a resource—labor, but also other inputs into a process—are prototypical costs. However, other cost categories must be considered. North separates enforcement and measurement cost. In a recent article Quigley differentiates six different types of costs, which I explain here with examples from selling or buying a parcel:

- Search Cost: the cost to obtain information about available properties and to identify the one to acquire.
- Legal cost: the cost for assistance with the legal aspects of the acquisition; assessing the legal status of the property offered and guidance with the process.
- Administrative cost: cost of administrative procedures.
- Adjustment cost: cost of adapting the current situation to the new situation.
- Financial cost: the cost of the capital required during the transaction; typically, payment for the new property is expected before the previously owned property is sold.
- Uncertainty cost: the cost associated with the risk involved in the transaction.

Our study concentrates on legal and administrative cost but includes some of the other costs. We found that risk is a substantial factor in some countries, especially in the transition countries.

## 4.2 View points to assess cost

There are at least three viewpoints to assess cost: cost occurs to the parties involved, we can try to collect all the direct costs a transaction produces and there is the viewpoint of the national economy.

### 4.2.1 Parties involved

The cost of the transaction for buyer and seller should be added, because the split of costs between buyer and seller does only influence the net price for the parties compared to the selling price and is defined by local traditions. The cost of the transaction is not influenced by the division of cost between seller and buyer. (Fig 3).

The total transaction cost is the difference between the total acquisition cost to the buyer and the net proceeds to the seller. This transaction cost definition determines if they enter into a transaction, or not. This cost influences the volume of the market (see fig. 1).

In the direct cost of the transaction to the parties, we have to include the taxes and fees, which must be paid. *Fees* are payments to the administration, which cover the cost to the administration to provide the desired series to the parties. The amount of a fee is set such that the sum of the fees covers the cost of providing the service; generalization when assessing fees are permitted. *Taxes* in contradistinction are payments to the government to cover general expenses of the state and are not related to services rendered.

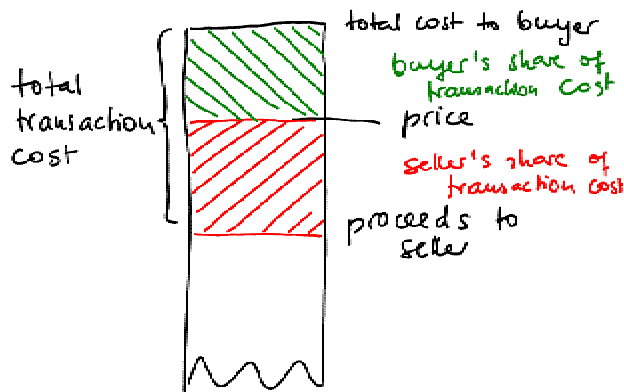


Fig. 3 Transaction cost split between buyer and seller

#### 4.2.2 All Direct Cost

A transaction causes expenditures not only for the parties involved but also for the public administration, which maintains the registries. To estimate these cost is possible but difficult. From the national budgets one can obtain figures for the total expenses of the parts of administration, which is concerned with land registration procedures. National accounts are not often precise enough and it is sometimes necessary to calculate cost of a service based on the numbers of employees in the different groups multiplied with an average personnel cost. Next, the total number of transactions is obtained and the cost of the service divided by number of transactions. This gives an average cost of one transaction, which is not necessarily the typical transaction we are interested in.

The cost to the parties plus the cost to administration gives the total direct cost associated with the transfer of a real estate property. Care must be taken to avoid double counting of fees paid for service by the administration (included in cost to the parties) and the expenses for the same services contained in the expenses of the administration (fig 4).

#### 4.2.3 National Economy View point

If we want to compare the efficiency of real estate registration systems across countries, we should embrace the viewpoint of the national economy as a whole. This means that we have to exclude taxes from the cost of the transaction because they are a transfer within the national economy and do not affect efficiency over all (see figure 4).

### **5. TIME USED FOR A TRANSFER**

An important element in assessing the efficiency of a method to transfer of ownership in real estate is the time necessary to conclude a transaction.

#### **5.1 Prediction of time necessary to complete a transaction**

The method to describe procedures we have selected gives immediately the critical path and its length. The time necessary for operations and the average wait time until operations start are separated. This allows the assessment of the total time necessary to complete a transaction and identify delays added by administrative problems like insufficient staff, etc.

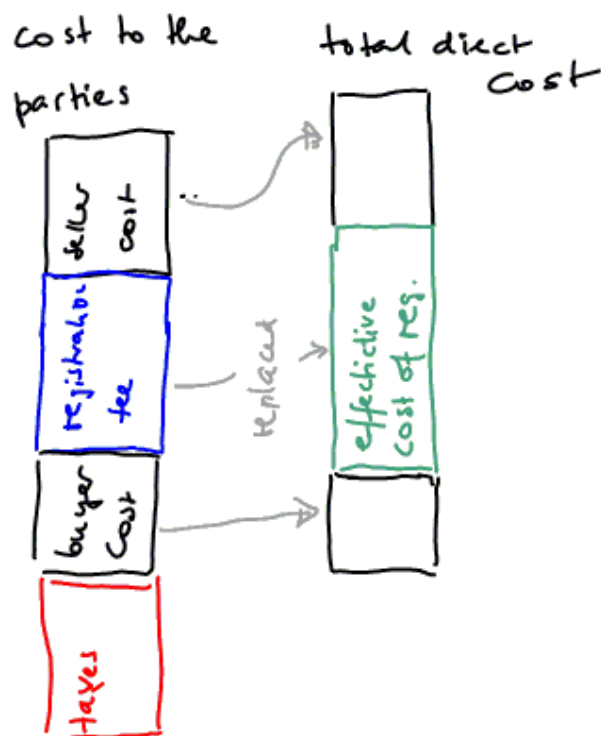


Figure 4: difference between cost to the parties and total direct cost

## 5.2 Cost of time

The time necessary to complete a transaction must be translated to cost to make an overall comparison. The delay from deciding on the transaction till it is completed adds cost in two forms. Firstly, during the transaction, capital is fixed. Secondly, during the transaction, the parties are exposed to more risk: fraud, bankruptcy etc is more likely because the guarantees of the registration are not yet available. Hence the longer the delay between deciding on a transaction and its completion, the higher the risk will be.

Delays in completing the transaction must translate at least at the current interest rate to cost of the capital bound during the transaction. The assessment of the risk depends on the country and the current political and administrative situation. The “corruption index” (Research) could be used to obtain some justification but it is not clear how to translate this index in a risk factor and added to the interest rate. It is a general observation that risk is perceived as high in the transition countries and as low in the Nordic countries; this coincides with the figures from the corruption index.



## **6. DESCRIPTION OF PROCEDURES**

To compare procedures we have first to describe them in a comparable format. A procedure to transfer ownerships of a property is like a project. It consists of individual steps that must be carried out one after the other and that are linked in a network of dependencies.

We have therefore used the terminology of project descriptions and used corresponding software to organize the descriptions. The software leads to a subdivision of procedures in tasks and associates with each task the time necessary to complete the task. This allows to determine the critical path and to calculate the minimal time necessary to complete the procedure. For each task, the cost to carry out the procedure in terms of manpower and other related cost can be identified. Additionally taxes to be paid by the parties must be recorded.

With these descriptions, it is possible to compute total cost to the parties or total direct cost for a transaction as defined above. This permits the comparison of cost and time necessary across countries. It is possible to compare the cost or duration of individual tasks or parts of the procedure as well.

## **7. WHAT CAN BE COMPARED?**

The comparison across different European countries for the prototypical case we investigated shows substantial differences in the number of procedural steps, cost, time necessary and taxes to be paid. In this section, we discuss points where the procedures are comparable and the next section lists issues where comparison is difficult if not impossible.

### **7.1 Separation between the registration of real-estate ownership per se and additional tasks**

The process of registration of real-estate ownership per se requires a public registry with a map and some indices to find entries for a given name of owner, buyer or seller, a property, etc. Transfer of ownership or other rights in real estate are recorded chronologically and referred to by the indices. This organization of registration is common in Romance language countries (figure 5). The Germanic tradition countries register in a book for each property the owner, mortgages and other liens, additional indices link names of owners to the properties. Logically the two methods of registration are equivalent: the same information can be retrieved. Practically they differ in resistance to error when entries are not complete, indexes wrong, etc.

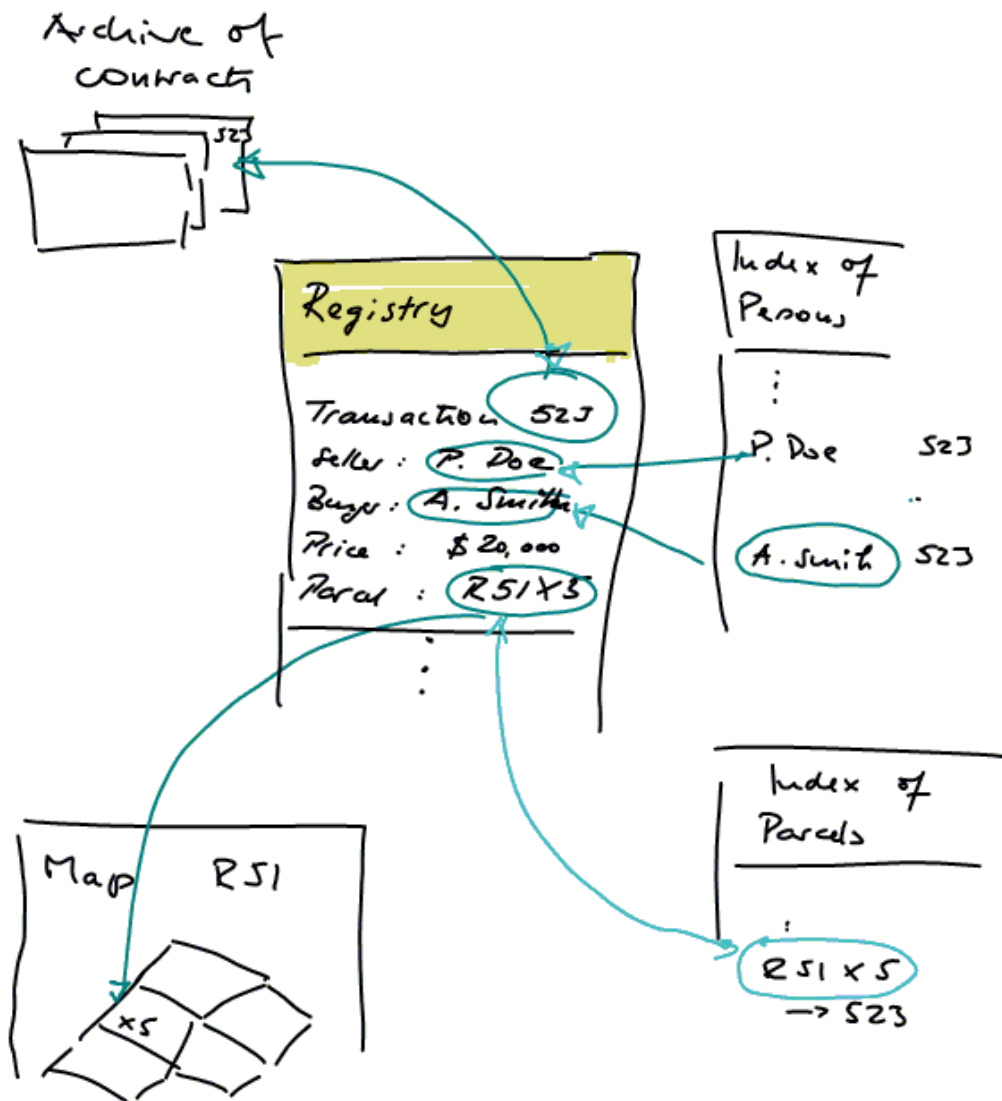


fig. 5: Database Schema for Small Cadastre

## 7.2 The small land registry

The comparison across countries shows that the cost of running these minimal functions of a real-estate registry is comparable and the amount of time necessary for registration is similar, if one considers only working time. Substantial differences are reported in the expected (average) wait time until the transfer can be registered—many countries have large backlogs. For example in Slovenia the registry of real estate was neglected during the socialist years and required a restructuring of the institution, with additional staff etc; a special program is now underway to reduce the backlog and the wait times for transactions are reduced. In other transition countries, the situation is similar.

### **7.3 Small property registration procedure**

The minimal procedure for registration of a property transfer consists of the following steps: Parties draw up a contract, which must mention minimally the names of the seller and buyer, the property and include an instruction to register the transfer.

The registry enters the contract in the journal with date and hour of presentation. Later an abstract of the contract is entered in the registry (with date and hour of the journal entry), provided the seller is the current registered owner. The original contract is archived and the name of the new owner and the transfer is entered in the indices.

The cost of this procedure can be computed by adding the cost of the necessary steps. The result for cost and time necessary are very similar across Europe. A comparison with the registration procedure in the USA and the cost of title insurance where required gives similar figures.

### **7.4 Differences in the registration procedures**

Substantial differences are found between the registration processes in different countries. These differences are not related to the goal of securing ownership per se, but should achieve other goals. This will be discussed in detail in the next section.

Differences are also found in the distribution of the tasks between the parties and the public administration, and possibly other professionals. For example, the survey, which is necessary for the subdivision of a land parcel, is in some countries carried out by a private surveyor selected by the owner, in some countries by a private surveyor contracted by the public administration, and in some countries by a public official with surveying expertise. Likewise, the maintenance of the registry itself is often part of the public administration, sometimes part of the judiciary and sometimes contracted to a notary public in private practice (so-called Roman notary system); an extreme case are areas in the USA, where the whole registration process is carried out by a private company, the so-called title insurance companies, which are not really insurance companies that spread the risk of an accident among a larger group, but private registries that 'insure' only property for which the title insurance company has sufficient proof of ownership.

Discuss this earlier in a second prototypical case

Most experts assume that the two functions of a cadastre—for registration of land to achieve a fair taxation—and the function of an ownership registry—to assure secure ownership do not require two separate registries. But only one country reports a single registry that serves both purposes (Schoenenberger 1976); Austria has a single electronic registry, jointly managed by the ministry of justice and the ministry of finance. This computerized database contains what was before two separate registries and is maintained by two different types of registration offices accessing each the part of the database, which is relevant for its operation. This joint database reduced greatly the potential for discrepancies between the two registries and the need for communications between the offices.

Most countries seem to have two or even three different registries, operated by different agencies (e.g., ministry of justice, judiciary, ministry of finance, ministry of housing, ministry of agriculture, etc.). The widespread tradition of a separation between ownership registration and tax registries is perhaps justified. Ownership registration is part of civil procedures and

works under strict, typically constitutional guarantees of ownership rights; procedures can only be initiated by the parties. Tax registration is an administrative procedure, initiated by the tax office. Constructing a tax registry from scratch is a feasible proposition, to establish a property register is very difficult and requires special legislation. Ultimately, the difference between two registries, which register what seems to be the same thing—namely ownership of land—is the result of very small differences in the definition of the terms in different laws (civil law and tax laws).

## **8. OTHER GOALS ASSOCIATED WITH THE REGISTRATION OF REAL-ESTATE**

The comparison revealed an enormous variety and number of other goals the national legislators have linked with the registration procedures. They are primarily and nearly everywhere the goal of collecting a tax, but there is a diverse list of other goals, which will be discussed here:

### **8.1 Taxation of ownership**

One of the original functions of a cadastre is the equitable taxation of land. Land registration is based on a survey map and therefore all land is necessarily included and taxed. The base for taxation is the assessed value, computed from historical assessments. We have heard that Slovenia plans to use modern mass appraisal methods to update their land values for taxation. Taxation of land value and ownership—specifically when the actual value is taxed at a reasonable rate has most likely positive effects on allocation of land. It becomes more expensive to ‘park’ wealth in land, e.g., a parcel in town, and not develop it. Land parcels, which have access to all public services but are not used, are at a cost the community for providing services, which are not used. They indirectly produce additional cost to the community because new land must be developed and services extended to quell the demands for land; this makes towns less compact, reduces efficiency of public transportation, etc. An empirical study has shown that the energy consumption of a town is proportional to its area, not proportional to the number of inhabitants!

### **8.2 Taxation of transfer**

Legislators have also found that the time of a sale of land is a good opportunity for taxation: the seller most likely has cash. Therefore, land transfer is also, and separately from ownership, taxed, typically based on the value of the contract.

This tax has several effects: First, the parties are induced to mention in the contract a lower price than what was actually paid. Second, parties are lured to have private (unregistered) contracts—in some South American countries, I have found the practice to use adverse possession as a method to register sales: the parties swear that the necessary period of undisturbed use has been completed. This form of registration of ownership based on undisturbed adverse possession is not taxed, whereas sales are taxed by different authorities and to get the necessary documentation that the taxes are paid is difficult.

Taxation of transfer has negative effects on allocation of land; the difference between new use and current use must be larger to overcome the hurdle of the transaction cost. It has also

negative effects on the reliability of reported sales prices, which in many countries are used to compute average prices for land for national statistics.

### **8.3 Preemption rights**

When a parcel changes ownership it is a perfect time to allow others to preempt the contract and to acquire the property at the same price than the negotiated buyer. This should reduce cheating with underreporting of sales prices (because the preemptor will pay only the reported price).

Preemption rights, to be effective, must give the party, which can use the preemption right, a reasonable amount of time to learn about the contract and to make a decision. This time is added to the time necessary to complete the transfer and increases its cost by increasing the risk.

It makes land transaction much more risky, because the parties are never certain that the transfer will occur as planned. The up-front cost of the buyer to investigate the parcel and to make a decision may be wasted. Preemption rights further require seller (or registry) to inform the potential preemptor about the sale, further adding to the cost.

Are there any preemption rights for another price than the sales price, i.e. making it possible that the seller gets less?

Protection of family farming is often furthered by a provision that neighbors can preempt a sale. Preemption for family members is also often encountered, but preemption rights may also be given to the town.

### **8.4 Certifications**

By certification, we mean all procedures, which introduce other parties—public agencies—which must make some positive statement that the procedure should go forward. For registration of an ownership transfer often some certification is required. Certifications are introduced to further some interests of the state at the time of transfer of ownership. This may be the protection of farming or land use planning, already encountered as a reason for preemption rights. For example Austria requires for a subdivision in agricultural land certification from the ministry of agriculture that the new parcel maintain form and access necessary for productive agriculture. In some Scandinavian countries, a certification of conformance with the planned land use must be issued by the commune. Certification is used in Austria to protect certain classes of sellers to make it more difficult for them to sell their property (e.g., the church).

Certification is always costly and increases the length of the procedure. The cost can be direct when the parties must acquire the certification themselves from a public agency or an authorized agent. The cost can be born by the public, when certification is obtained by the registry as part of its internal procedure; this cost is sometimes passed on to the client as part of the fee.

### **8.5 Generalization to ‘social burdening’ the registration process**

We can see these different procedures, which are linked to the registration of ownership as ‘social burdens’, which are linked to the transfer of ownership. They have the same effect as taxes: they reduce the volume of transfers and thus move the economy from an optimal

allocation of the resource land. This in itself may however be socially beneficial, as it reduces social strain connected with change; Portugali has shown in simulations that slow transfer—in his case of changing the family apartments, either by lease or ownership—affects the mixing or separation of different social groups in a city (Benenson and Portugali 1995). It is tempting for the legislator to burden the transfer of ownership in real estate with various other social goals. It seems difficult to achieve an assessment of the benefits and compare them with the cost: they arise to different masters, at different times. It is a political decision, whether the cost outweighs the advantages. Sceptics may think that the cost is real, but the benefits are not, or not as clearly as imagined by the politicians.

## 9. CONCLUSIONS

This project was teaching us some important lessons:

First: Good science starts with clear terminology (Gottman, Murray et al. 2002). Scientific investigation in a field where terminology is confused or not comparable across national boundaries is extremely difficult. Social science is often faced with this problem and this project was not an exception.

A major result of the project is the method found to compare non-comparable terminology by identifying physical objects, which are the same across cultural boundaries (or close) and basic social processes (use, full economic control, inheritance, security, etc.), which again are comparable across nation boundaries. We found—the hard way, denying initially the need—that we had to construct a new terminology.

Second: comparison shows that comparable parts of the system of ownership registration and transfer of real estate ownership are similar across nations and the differences in efficiency and cost are bound to disappear. Typically, countries in transition have difficulties with renewing and rebuilding their land registries, educate the necessary personnel and cope with the large number of updates in conjunction with the transition from socialist to market economies at the same time results in backlogs.

Third: legislators are tempted to burden the process of registration of an ownership transfer with various other socially desirable restrictions. Taxes associated with the transfer of ownership are nearly universal but various other goals are furthered by restrictions on the transfer of ownership. They invariably increase the cost of the transaction financially and by slowing down the transfer. These differences are not part of a simple comparison; they are as political decisions not directly related to the goals of securing ownership of real estate. It is, however a worthy goal of scientific research to assess the cost of such burdens and provide information to the legislator who can then decide if the cost is worth the expected benefits.

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