

Satellite accounting of housing and real estate affairs – The Case of Denmark

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Abstract Following investigations by Pekka Halme at the National Survey of Finland, and suggestions by Ivo Lavrac, University of Ljubljana, during and after the meeting of COST G9, WG 3 Economy, May 2004 in Ljubljana, it appeared that the notion of satellite accounting of the System of National Accounts was worth while exploring. The paper summarizes efforts by the author in this respect, and ends up with an estimate of cost of real property transactions in Denmark. The body of the paper records the path of reasoning from theoretical conceptualizations, via the definition of geographical units, and the identification and quantification of actions and outcomes, to the final estimate.

1. Introduction

Satellite analysis and accounts are described in the System of National Accounts (SNA), 1993, chapter 21. Satellite accounts are 'satellites' relative to national accounts that are prepared by governments across the world according to standards agreed upon under the auspices of the UN and the OECD. Loosely speaking, the satellite accounts are annexes to the national accounts, established with the same rigor as these, in order to allow for "particular social concerns of a functional or cross-sector nature" (SNA, 21.4 a). For example, satellite accounts are being prepared for the environment and for tourism. The 'social concerns' mentioned may however also be those stated as the objectives of the ESF/COST G9 project on *Modelling Real Property Transactions*, namely to improve the transparency of real property markets and to provide a stronger basis for the reduction of costs of real property transactions. These objectives may refer to a national scope, but are in the COST action in fact applied across the countries of the enlarged European Union.

Satellite accounts allow for linkage of physical data sources and analysis to the monetary accounting system (21.4 e). Land and buildings constitute the tangible base for transactions in real estate. However, the important issue in these transactions are the *rights* attributed to the tangible assets. These intangible assets are socially constructed in a way that strongly relates them to the specific, localized and tangible base. Therefore, they cannot be reduced to either financial assets, nor to physical assets. The notion of satellite accounts thus allows for inclusion of *rights* as a complementary concept, relative to the conceptual framework of national accounts (21.4 b). Rights, and specifically rights in real property, is a complex phenomena. The underlying assumption of the following is, that property rights are not just there to be applied, as a legal approach would suggest. Rather, property rights are malleable, and some assignment of property rights within a society is more efficient than other.

This line of thought is related with the notion of *transaction costs*, which developed in economics in the 1960s. It did so in several research traditions, and although these agree on the importance of the concept, there are diverse interpretations of the meaning and implications of the notion. Two main research traditions may be briefly sketched for the non-economist. This outline is needed and presented in section 2, because the purpose of applying the satellite account scheme is precisely to account for the cost of transactions in real estate. Section 3 mentions an alternative approach of assessing transaction costs, and motivates the approach taken here: To take a societal, rather than owner/ household point of view. The following sections aim at identifying the stock of the

geographical units of the segment, and discuss the boundary of the segment in relation to main activities. The agents and their main activities are detailed, and expressed within the categories of the System of National Accounts, and the Danish Industrial Classification. Finally, empirical evidence pertaining to agents and activities is looked up, and an estimate of transaction costs is presented.

As the present research approach is multidisciplinary, a set of definitions are offered that provide the base for the remainder of the paper:

Transaction: The exchange of assets, here involving a commodity or service. Commodities here typically mean ownership rights in real property. The transaction is hampered by the fact that the asset concerned is difficult to identify in detail, thus services are strongly connected to the transaction. Services typically refer to land registration, to the issuing of certificates etc, as well as to related professional services as offered by e.g. notaries, lawyers, and land surveyors.

The transaction relative to professional services regards the exchange of money against the service of the professional. This should not be confused with the main transaction, namely the conveyance. Furthermore, the transaction aspect of subdivision and other cadastral work is the exchange of money against new or reorganized cadastral identification of parcels and units of real property. Transaction is an abstract concept, and it is assumed that it only indirectly can be related to rather routine human activity. Hence, to model human activity, the notion of *procedure* is introduced.

Procedure: A sequenced set of activities with defined outcome. Activities are understood as typical courses of conduct (Weberian ideal types). These make a 'sequenced set' rather than a 'sequence' as the sequence is not assumed to be strictly adhered to, and the mentioned set of activities are intermingled with activities, which have other outcomes (The performing person may task-switch among several cases).

Activity: Loosely applied term, refers to human action performed to complete a task, mostly of economic value.

Asset: a sum of money or other item of economic value, including (the future flow of income from) a unit of real estate.

Institutions are the humanly devised constraints that shape human interaction (North, 1990: 3). Constraints, or norms, may or may not be explicated in writing. If the written norms tend to mirror or direct human behavior, the concept of institution includes statutory law, leading cases of court rulings, as well as professional and civil service code of conduct. Further implications of the term are not developed in the present paper. Rather, it is assumed that the above mentioned procedures are the observable impact of the institutions, which in a specific country relate to real property rights.

Real property (immobile) rights are rights in a parcel of land and its fixtures, e.g. buildings and vegetation. Such property rights may take a variety of forms: Ownership, lease, copyhold, mortgage, and easement are among the familiar types. Property rights are restricted by the right of government to compulsory purchase, to issue taxation, to establish spatial planning measures like zoning, and by other restrictions like preemption rights. For more details see (Bruce, 1993).

Ownership consists in the economic sense of the right to a) use an asset, b) to appropriate the returns from an asset, or in other terms: enjoy the future flow of income from the asset, and c) to change its form, substance, or location (Williamson, 2001).

2. The notion of transaction costs in general, and as applied to real estate transactions

The research in property transactions originated in the analysis of the costs of alternative social arrangements by Ronald Coase (1960). Before Coase, the analysis of markets generally assumed zero transaction costs, and government intervention was taken to correct for 'market failures'. Coase

contested these ideas, as all feasible forms of organization are flawed. A body of subsequent economic works included transaction costs in their analysis of diverse arrangements of property rights. One set of such research has been labeled Common pool problems. They regard the common grazing of land, fisheries, and oil extraction. Others regard the allocation of the electromagnetic spectrum to radio broadcasters, mobile phones, and wireless computer networks. These analyzes investigate the diverse ways in which property rights may be created in resources.

Note the term *created*. Property rights are social constructs. This does not imply that institutions like property rights can be constructed like bridges or information systems, although you can attend a workshop on Institutional Analysis and Design (Ostrom, 2002). The notion that property rights can be created does, however, point to an important faculty of social man. The creation of institutions differ from the creation of statute laws or articles of an organization in the fact that institutions are carried and maintained by human mind. A statute law which is produced according to Parliamentary rules is thus valid and binding, but may be largely disregarded, in fact a piece of written paper. Still the ignored rules constitute a law. An institution must be operated and maintained by people to exist. Exactly of this reason, the institutions are hard to change: You have to change the habit of people.

The analyzes of property rights and transaction costs were made from different points of view. One tradition of research is based on a theory of the firm (i. e. company, corporation), and although addressing a broad array of issues, it seems to be doing so from a company or corporation point of view. Another approach is addressing property rights and transaction costs from the point of view of *institutions*, and it is this latter tradition that appears to make sense for the kind of investigations pursued in the present context of COST action G9: *Modelling Real Property Transactions* (Stuckenschmidt et al, 2003; Auzins, 2003). The former tradition of research is connected to the research of Oliver E Williamson and O Hart, among others, the latter to Douglass C North (Williamson, 2001; North, 1990).

Following North, economic gains are made possible through *trade* in free markets. Especially international trade fosters specialization and economics of scale. Commodities can thus be provided more efficiently, but while the size of markets grows, the number of exchanges grows as well, and they tend to grow more complex. Standard economic theory modelled the performance of markets without taking the cost of exchanges into account. However, the cost of exchanges in the US economy was estimated to amount to 45 percent of national income in 1980s, while it was about 25 percent a century earlier (North, 1990: 28). Consequently, because of the magnitude and tendency of growing, production relationships have to be restated. The total cost of production consists of the resource input of land, labor and capital involved in both the *transforming* of physical attributes of a good (size, weight, location, chemical composition, etc) and in *transacting* – defining, protecting, and enforcing the property rights to goods.

Enforcing property rights to land includes police assistance in case of invasion of privacy, execution procedures in case of mortgage default, and court rulings in case of breach of contract and boundary disputes. Protection of property rights implies the provision of the means needed to make the future income stream of the property predictable. If the future income stream is dependent on some other party, both parties will try to capture some part of it (North, 1990: 32). The protection measures include the provision of impartial and skillful third parties to oversee or conduct property transactions, including land registry and cadastral identification of land parcels, as well as provision of effective settling of disputes, and the assessment of property value in case of mortgaging and of improvements in case of lease termination. Furthermore, protection measures include the education of the various professions and occupations needed to fill the posts as third parties and to run the recording systems.

The concept of transaction costs has been set out by North, first in the context of transactions in general (1990: 27ff), then further detailed as regards property transactions (: 61ff). The parties who are engaged in a potential transaction need information to decide, whether the transaction sufficiently matches their preferences. This information is costly, and according to North the costs comprises of *measurement costs* and *enforcement costs*.

Measurement costs are the costs of measuring the valuable attributes of what is being exchanged. A surveyor's measurement of the size of an area might be one example of attributes only, as 'measurement' is here taken in its wider sense, and no assumption should be made that the 'measurements' are always quantified. A good or service is characterized by a number of attributes that each contributes to or detracts from the utility of the good for a prospective buyer. The number and value of these attributes tend to vary among potential buyers. Thus, each has to identify and assess (measure) the value of these attributes. Transaction costs are made up of the information costs in ascertaining the level of individual attributes of each unit exchanged.

Now, as these attributes are not necessarily objective facts that are publicly available, the measurement task is further complicated by the fact that parties of the exchange have different access to information on the attributes. The seller of a used car would know much more of the peculiarities of the car, in other words: of the valued attributes of the car, than the buyer. Similarly, a doctor knows more about the quality of his services than the patient. Depending on circumstances, a party might conceal information or even lie, if the payoff of such behavior exceeds the value of alternative behavior. This *asymmetry of information* may be partly compensated for, either through specific investigations on behalf of the buyer, or by institutional arrangements in terms of guaranties, bonding of agents, etc. Again, this adds to measurement costs.

Enforcement costs are the costs needed to make parties fulfill the obligations they agreed upon. Enforcement can come from internally enforced codes of conduct (North, 1990: 36f), from second-party retaliation, or from third-party sanctions, be it social exclusion or state coercive measures. Enforcement measures are cost effective only as far as the costs of policing are less than the benefits of such enforcement. The likelihood of failure of compliance by the other party has to be included into the estimate of costs as a risk premium. The amount of the risk premium may be high enough as to prevent more complex exchanges, or to restrict the exchange to take place within the circle of personally known parties, where the risk can be reasonably taken into account.

The above categorization may be modified as prompted by empirical research. For example, it is not obvious how the cost of elapsed transaction time shall be accounted for. A land registry may demand several months for the processing of documents, and a municipality similarly may extend the decision process, whether to invoke its preemption right. In both cases, resources of the parties are kept in an idle state, which can be accounted for by applying some interest rate to the idle resources. When the elapsed time amounts to years, as documented by de Soto (2000), or is influenced by rewards to masters of red tape, cf. Guriev, 2004, transactions tend to crumple. It is outside the scope of the present paper to address such situations.

The scope is thus restricted to those countries, which have institutions that in fact allow for complex exchanges regarding rights in immobile property. The state here plays a dominant role in providing stable and skillful third parties that drastically reduces individual enforcement costs and thus allows for impersonal exchanges. Opportunism and cheating are present as everywhere, and the complexity of the modern society increases the return of such behavior. However, the formal rules of law, public agencies, and eventually coercive power supplements informal constraints of behavior, thereby reducing the tendency to opportunistic behavior.

Costs of conveyance of immobile property

The asset to be exchanged appears for the eye as a piece of the surface of the Earth, with buildings and other fixtures, but essentially what is exchanged is a set or a bundle of rights over such physical object. The *measurement costs* thus include measurement of the physical as well as the legal attributes of the unit. Some of these may be straightforward to establish, e.g. size, general features, and access to nearby services like shops and school. Others, like maintenance costs and characteristics of neighbors may be more difficult to ascertain. As regards the legal attributes, measurement costs arise not so much due to the rights explicitly stated in the deed, but rather from uncertainties whether all liabilities are taken into account, whether the seller is fully entitled to dispose of the property, or whether restrictions in terms of expropriation or spatial planning measures will reduce owner rights in the

future. Furthermore, the risk due to imperfect measurement has to be taken into account as well. This risk has to be assessed for the specific exchange, e.g. the condition of the house (best known to the seller), the financial condition of the buyer (best known to the buyer), for the local circumstances, e.g. availability of services in terms of quality of schools and effectiveness of crime prevention, and national factors as stability of prices.

At the outset, North discerned between *measurement costs* and *enforcement costs*. However, in detailing the transaction costs of a transfer of residential property, he introduces *market costs* and *search costs* in addition to the cost of time each party devotes to information gathering. Market costs include legal fees, realtor fees, title insurance, and credit rating searches. Search costs include obtaining information about crime rates, police protection, and security systems. In the following, *measurement costs* is taken to include all kinds of obtaining information on the specifying of relevant attributes, 'measuring' the values of these attributes, as well as assessing the risk related to imperfect measurements. The cost of the assistance of professionals: Realtors, lawyers, civil engineers, etc in the conveyance process is taken as measurement costs, as this assistance replaces the buyer's measurement efforts. A well written deed potentially reduces enforcement costs. However, as *enforcement costs* are considered only the legal fees and duties, including costs related to forced sales in case of default.

North points to the fact that the institutional arrangement of conveyance need not be optimal, that is: minimize transaction costs. Rather it should be expected that the mixture of legal rules, agency objectives and practices, professional codes of conduct and actual behavior, degree of honesty in information exchange among parties, etc, sometimes reduces and sometimes raises transaction costs. The purpose of the present effort of the COST G9-activity is precisely to identify those components that make the costs differ.

In closing this section, mention is made of works of Arrunada (.2003), the contribution of which to the outlined research ought to be further recognized.

3. Modelling the costs of real property transactions - Alternatives are needed

The research effort of COST G9 has so far produced comparable and fairly detailed descriptions of the procedures through which main property transactions are performed: Conveyance, subdivision, and mortgaging. On this basis, the cost of performing these transactions can be assessed in several ways: An obvious approach (a) is to assess the costs for the parties concerned, typically seller and buyer. The costs include the fees and duties to public services, as well as the charges and honoraries to private companies. The fees, etc seem to be fairly easy to record. The costs of honoraries is more difficult to establish, among others because of the different complexity and hence costs of cases. The cost of the parties' own efforts may be accounted for in verbal form, including references to search facilities available and their charges. These costs may then, for comparable procedures, be converted from national currencies to euro, and compared. National accounts have been prepared according to this scheme and compared, e.g. Viitanen, 2003 for Finland, and Lisec, 2004 for Finland and Slovenia.

This approach only very indirectly accounts for the national investments in the judicial-administrative infrastructure that supports the above mentioned transactions. Without governmental services in terms of cadastre and land registration, natural assets would not be manageable in terms of units of real estate. Such units are not physical evidence, but provided through an institutionalized process, in order that natural assets can included in balance sheets of national accounts, cf. SNA 21.126. The provision of these governmental services, as well as the related professional services, may thus be considered as a capital formation of some sort. The amount of fees may reflect a governmental cost-recovery scheme, but can also include a substantial fiscal element as well as a more or less intended subsidy. This fact could be addressed by (b) establishing the yearly governmental (state, and where applicable: municipal) gross expenditure for land registry, cadastre and taxation, and verbally assess the implication of long term investments, e.g. in terms of computerization of land registry, etc, as well as the amount and costs of court cases related to boundary dispute and compulsory sale due to default of mortgage. Possible subsidies and discounts, e.g. for specific user groups, should be taken into account

as well. The remainder of the paper pursues this latter, societal approach. In order to do so, a specific segment of society must be defined. The term *segment* is preferred to, e.g. sector, as real property transactions relate to several sectors: Construction, Finance, Housing, and is integrated with public services as well. The definition of the segment proceeds from the more physical, palpable evidence: pieces of land, and buildings, to the more subtle handling of property rights. This approach is assumed to be robust enough to produce comparable outcome across different (European) countries. Alternative approaches, e.g. departing from available statistics or current legislation are likely to reflect the various configurations of real property rights in an implicit way.

4. Defining the core of the real estate segment: The basic geographical units

The unit of immobile property consist of one or more pieces of land. These pieces, identified as *cadastral parcels*, and their possible unification are identified through a cadastral process, into what may be called a Cadastral Unit (Danish: samlet fast ejendom). This unit is defined in the horizontal plane only, and provides the geographical base for a variety of units, the most important being the Real Property Unit (Danish: bestemt fast ejendom, abbreviated: RPU), which is horizontally delimited by the Cadastral Unit.

The RPU has a number of attributes. It is these attributes, which have to be assessed in the context of a transaction, and it is the cost of these assessment that contributes to the overall transaction costs. For the purpose of the following exposition we introduce three attribute classes: Shape, Type, and Rights. Of cause, more details are needed in real life, for example area in square meters, but this belongs to and can be derived from the class Shape. Also, the class Rights has to be detailed, e.g. into OwnerRights, but this is deferred as well.

The above mentioned pieces of land may include *buildings*. It is assumed that a Building Unit does not trespass the boundary of a Cadastral Unit. Normally, a Building Unit is built and owned by the owner of the Real Property Unit on which it rests, but if a Building Unit is built by a person, who has leased the area, the Building Unit constitutes a kind of Real Property Unit (Danish: bygning på fremmed grund) in its own right. We may call it a Registered Building Unit.

Buildings may include *dwelling*s. The whole building may be only one Dwelling Unit, as you have it in detached houses. In multi-storage houses, a Dwelling Unit may consist of one or more rooms, which are secluded from staircases and other joint areas of the building. A Dwelling Unit may be identified through a quasi-cadastral procedure to constitute a Condominium Unit (Danish: ejerlejlighed). A Condominium Unit is a special type of RPU, like the individually owned Building Unit. The Dwelling Unit has attributes as well. What we need is the Post Address that identifies the dwelling, and the Occupant, who uses it. The Occupant is the representative of the *households*, who appear in national accounts.

We now has the set of units of geographical nature needed to establish the stock of the segment, and the main activities:

Unit	Category	Number in DK	Change of physical nature	Change of legal nature
Units of real property	Approximated by taxed properties	1.892.000	Change of shape Soil improvement Excavation	Sale, mortgage, lease, ..
			Development	
Buildings	Residential buildings	1 457 509		
	Non-residential farm buildings	493 304		
		161 478		

	Factories, offices, education Weekend cabins, other DSt, BYGB1, 2003	334 493		leased plot
			Development	
Dwellings	Farm houses	127 682	Improvement	Rent agreement (Housing subsidies?)
	Detached houses	1 039 192		
	Semi-detached houses	333 312		
	Multi-dwelling houses	984 827		
	Other residential building, not including weekend cabins DSt, BOL3, 2003	73 185		

5. The main activities of physical nature, and the boundary of the segment

The segment of society, which we are addressing, may be delineated by referring to neighboring or - from the present point of view - secondary activities. The housing sector uses and maintains the buildings, etc. The construction sector produces buildings, etc and thus changes the stock of fixed capital as well as physical accounts. The financial sector produces financial instruments, including mortgages. However, the primary activity of the proposed use of satellite accounts is the *change* of the rights in or the attributes of units of real estate (e.g. boundaries), including classification changes (e.g. from agricultural to urban use of land, from commercial to housing use of buildings, etc).

Activities regarding Units of Real Property may be of a physical or of a legal nature. The changes of a physical nature, especially construction and excavation, are basically not part of the segment of real estate, as such changes belong to 4500 Construction, and C Mining and quarrying. The codes (numbers) refer to the Danish Industrial Classification of Statistics Denmark. Improvements of dwellings are equally excluded. Some part is covered by the national account on households' expenditure on durable goods. This leaves change of Shape and Development as activities to be further described, together with changes of legal nature.

Development is a compound type of change. It is included within the segment, as the characteristic change is a change of legal nature, namely from one type of property unit to another. Often, however, this goes along with Construction in a way that cannot presently be detailed.

We apparently now need a specification of the RPU Type attribute. The following coding of use of RPUs is adapted from the property assessment (Danish: offentlig ejendomsvurdering, benyttelseskoder).

Codegroup	Use code	Category	Number RPU (1000, 1996)	Development potential
Urban housing	01a	One-family houses	1045	
	01b	Housing for rent	51	to Condominium, etc
	21/29	Condominium	175	
Other urban	02/04	Mixed and industry	85	to Urban housing
	09	Unbuilt plots	83	

Land	05 17	Agriculture, built Units without buildings	123 15	to Urban housing or Summer cottage
	06/07	Forest, market garden	7	
	08	Summer cottage	174	
	..	Other	134	
		Total	1892	

Source: Told Skat: Vurderingsvejledning I.2.1.05.12.96

The table's 'Other' includes units owned by government or corporations, which strictly is not a use coding, as well as diverse types of Registered Building Units, which in a more elaborated version should be allocated to the respective use categories.

Urban housing

The large number of One-family houses (01a) were established on plots, which were made through cadastral procedure, based on land from 05 Agriculture and 09 Unbuilt plots, located mostly, but not exclusively in the urban fringe. On these plots, local bricklayers and other masters would construct the house. From the 1970s, larger construction companies took over, often in alliances with commercial or saving banks. The construction phase now often preceded the cadastral subdivision process.

Multi-storage buildings for dwelling are rendered by the number of Real Property Units. A better way of rendering the relative importance of this group is through the number of dwellings. The following table introduces some of the main agents of the segment as well.

All dwellings in multi-dwelling houses by ownership	
Type of ownership	Number (1000, 2004)
Individuals, inclusive partnerships	146
Non-profit building society	355
Limited liability company, etc.	97
Housing societies	134
Public authorities	23
Owner-occupied flats (condominiums)	195
Other or unknown	42
Total	992

Source: Statistics Denmark, Statistikbanken, BOL3

The *Non-profit building societies* (Danish: almennyttige boligselskaber, 70.20.10) care for the housing of the less affluent, who do not have the resources, financial or otherwise, to transact on market conditions. This does not mean that the activities related to building societies are without transaction costs. It is, however, not possible within the scope of this first survey to engage into this issue. The management of the dwellings are accounted as 70.32.10 Management of real estate on a fee or contract basis.

The *Housing societies* (Danish: private andelsboligforeninger, 70.20.20) are associations, which are legal persons and as such are registered in the Land Registry (Danish: tingbogen) as the owner of a RPU with a multi-dwelling building. A person may become member by acquiring a share (Danish: andel), which gives an exclusive right to the use of a flat. The acquisition transaction has to include the representative of the society, while in practice the present shareholder appear as the 'seller' of the share. The value of the share is dependent on the general market, but also on possible municipal regulations of the housing market, as well as specific provisions in the articles of the association. It is thus quite complicated to measure key attributes of the transacted asset. The institution of Housing societies has so far drawn on generally held preferences inspired by the cooperative movement. An increased liberalistic mood has increased interest in Owner-occupied flats (condominiums).

Condominiums are by statutory law (Danish: ejerlejlighedsloven) declared Units of Real Property, and the owner of such unit (flat, etc) is recorded in the Land Registry, and can individually mortgage his condominium. Every owner of a condominium has a mandatory membership of an owner association, who is in charge of joint affairs: keeping of roof, etc. The maturity of a charging by the owner association has to be taken into account in the context of conveyance of ownership rights in condominiums.

The *Individually owned multi-dwelling houses* may be managed by specialized offices, either accounted for in 70.32.10 Management of real estate on a fee or contract basis, or included in 74.11.00 Legal activities. The transactions regarding rent agreement are mostly rudimentary, as no written document is requested by law. The rights of the tenants are in stead protected by comprehensive statutory law (Danish: Lejelovgivning). A municipal office and other bureaus may assist in Allocation of housing [70.31.20].

The *Limited liability companies*, which own multi-storage buildings includes 66.02.10 Pension funding companies (Danish: Pensionskasser), who found it beneficial to invest some of their funds in real estate, which could be rented largely to their members.

Other urban

Returning now to the general scheme of real property units, we note that industrial buildings, especially in downtown and harbor areas, may be developed for housing purposes. Frequently, the property concerned is turned into a condominium unit.

Land

Agricultural land may be turned into summer cottages through a proses similar to the one, which lead to One-family (detached) houses in urban areas, that is through a cadastral procedure and construction.

The property units on agricultural land are quite complex, with implications for the transactions among the agricultural units. The Real Property Unit is the entity, which is recorded in the Land Registry, and it is also the basic entity referred to in agricultural law. Since the beginning of time (mid 1700s), statutory provisions have requested the farmer to reside on his property, keep sufficient buildings for that purpose, and keep the size of the farm land within minimum and maximum limits, which largely fitted to what was needed to sustain a family. As mechanization took on, agricultural legislation after the 1960s increasingly allowed farmers to integrate more agricultural RPUs into one. Compared to the about 138.000 agricultural RPUs mentioned above, there are at present 48 613 farms (Danish: bedrifter; Statistics Denmark, BDF, 2003). Reasons for the difference include:

1. the definition of farms excludes units of size less than 5 hectares, while the minimum size for an agricultural RPU is 1.0-0.5 hectare. The difference is in the order of 30.000 RPUs,
2. 10.600 farmers own two RPUs, 1.500 farmers own three RPUs, and 424 farmers own more than

three RPUs (Ærø, 2000: 43), which may account for a difference in the order of 16.000 RPUs.

The remaining unexplained difference may be unsatisfactory, but hardly influences assessment of transaction costs. This does, however, another trait in agricultural management, namely the widespread practice of leasing land from neighbors, who for reason of age, etc. are prepared to do so. Some main figures are provided below to suggest that transaction costs in the case of leasing at least in principle be taken into account.

Number of farms: 48 613	Total agricultural area: 2 657 706 ha
Farms with area in tenancy: 26 011	Area in tenancy: 752 661 ha

Source: Statistics Denmark, BDEF2, 2003

Concluding this section, it can be summarized that the stock of Real Property Units has been described in some quantitative detail. Changes in the physical sense have been identified verbally, and the interplay between construction and cadastral procedures has been described. This interplay makes it not easy to separate activities within 4500 Construction from the proposed segment, but the description may provide a basis for more precise delimitations. We are now prepared to provide an overview of the changes in the stock of RPU of a legal nature.

6. Satellite accounts - A standardized frame for assessing transaction cost

Satellite analysis and accounts are described in the System of National Accounts (SNA), 1993, chapter 21. The following aims at introducing this way of thinking to the uninitiated, and to relate this frame to the above mentioned concerns. Satellite accounts are 'satellites' relative to national accounts that are prepared by governments across the world according to standards agreed upon under the auspices of the UN and the OECD. The task at hand may be illustrated by the following sentence:

"Who does what by what means for what purpose with whom in exchange for what with what changes in stocks?" (SNA, Section 2.12)

Loosely speaking, the satellite accounts are annexes to the national accounts, established with the same rigor as these, in order to allow for "particular social concerns of a functional or cross-sector nature" (SNA, 21.4 a). For example, satellite accounts are being prepared for the environment and for tourism. The 'social concerns' mentioned may however also be those stated as the objectives of the ESF/COST G9 project on *Modelling Real Property Transactions*, namely to improve the transparency of real property markets and to provide a stronger basis for the reduction of costs of real property transactions. These objectives may refer to a national scope, but are in the COST action in fact applied across the countries of the enlarged European Union.

Satellite accounts allow for linkage of physical data sources and analysis to the monetary accounting system (21.4 e). Land and buildings constitute the tangible base for transactions in real estate. However, the important issue in these transactions are the *rights* attributed to the tangible assets. These intangible assets are socially constructed in a way that strongly relates them to the specific, localized and tangible base. Therefore, they cannot be reduced to either financial assets, nor to physical assets. The notion of satellite accounts thus allows for inclusion of *rights* as a complementary concept, relative to the conceptual framework of national accounts (21.4 b).

An excursus into the COFOG classification

In addition to the above mentioned *satellite accounts*, mention is made of the "functional classifications" of the System of National Accounts (section 18). These classifications are proposed for classifying certain transactions of producers and of three institutional sectors - namely households, general government and non-profit institutions serving households. They are described as "functional" classifications because they identify the "functions" - in the sense of "purposes" or "objectives" - for which these groups of transactors engage in certain transactions. The classifications concerned are:

- Classification of individual consumption by purpose (COICOP)
- Classification of the functions of government (COFOG)
- Classification of the purposes of non-profit institutions serving households (COPNI)
- Classification of outlays of producers by purpose (COPP).

For the COFOG classification, it is stated that (section 18.10): "For most other outlays it may not be possible to classify transactions and, as an approximation, the units of classification may have to be agencies, offices, bureaux or project units within government departments. All outlays by the selected classification unit will be assigned a single COFOG code. It may happen of course that the smallest units that can be identified still perform two or more government functions; in such cases it will usually be best to make an approximate division of the unit's outlays among the different functions performed rather than to allocate them all to that which is judged the largest."

The present use of the COFOG classification appears to be coarse for the task at hand, as it does not go below level of governmental units.

The SNA classifications

The SNA offers the following classification of agents, separating the production aspect from the consumption aspect (21.83):

- a. Market producers;
- b. Non-market producers (producers for own final use; and other non-market producers);
- c. Government as a collective consumer;
- d. Households as consumers;
- e. Rest of the world;

The Market is here assumed to be the total of transactions regarding immobile property. The notion of transaction is taken in the wider sense, implying that making a tenancy agreement on a rented flat or the leasing of agricultural land is considered part of the market.

a. Market producers;

The 'production' in this segment of society consists of transaction services that are consumed by owners, buyers, and other asset holders. The class of Market producers thus includes a number of professions, including lawyers, estate agents, civil engineers, and land surveyors, who offer their services to be detailed below. The Market producers also include banks, mortgage credit institutes and others, who offer their financial products or lending services in the context of real estate trade.

b Non-market producers (producers for own final use; and other non-market producers);

The main Non-market producer in the segment is the government. The 'product' relevant for property transactions includes the enforcement of contracts, and is some subset of general law and order, which is produced through the operation of law courts. However, government also contributes towards the enforcement of contracts through proactive means. According to SNA, natural assets have to be under the effective control of an institutional unit in order to be taken into account by the SNA (21.126). Government recordings of the institutional units 'produces' a public available account of rights in Real Property Units through the Land Registries, which are part of the law courts. The RPU's themselves are specified through the Cadastre, which is an organizational unit within the National Survey and Cadastre of the Ministry of the Environment. The transparency of the market is, furthermore, advanced through the collection of sales reports and the production of sales statistics, and through the general service of Statistics Denmark.

Furthermore, this class includes the sellers and buyers of the market, who produce 'measurement activities' for own final use in order to assess the attributes of the market commodity, the RPU.

c. Government as a collective consumer;

Government, central as well as local, appears as consumer in its role of owner of a RPU, be it for office, prison or military purposes. Also, the government is in possession of notable areas of public

roads and of railway lines. These possessions hardly appear in the market, except for office RPU's and the renting of office floors on the market.

The fact that government collect duties: Registration duty (Danish: tinglysningsafgift), formerly stamp duty, as well as a cadastral duty (Danish: udstykningsafgift) from the market may well be considered a kind of consumption. The question remains, to what extent these duties are collected for fiscal purposes or are part of a cost recovery scheme.

d. Households as consumers;

Households are consumers in their search for a home. However, this segment of society have companies (Synonym: firms, establishments) as consumers as well, as the companies are in need of a physical base for their activities.

e. Rest of the world;

A (small) number of owners of Danish RPU's are not Danes. This applies to the embassies, to non-Danes owning farms, and to foreign companies. More often, however, the foreign company will own the shares of a Danish registered company.

A (small, but growing) number of Danes own RPU's abroad, and to some extent draw on Danish expertise (and mortgaging?) for the foreign transactions.

The specific conditions for Greenland and Faeroe Islands may be mentioned as well.

The main procedures related to immobile property, and the performing agents

"In a given field a list of characteristic activities have to be established" (SNA93, 21.99). In the context of the COST G9 action, such activities have been modelled in quite detail. The table below on the main procedures is taken from this effort (Stubkjær, 2003).

- Cadastral procedures, identifying the RP unit and its boundaries
- Transfer of immobile rights
 - Sale of a unit of real property
 - Inheritance
 - Foreclosure auction, Compulsory sale
 - Expropriation, Compulsory purchase, Forced sales
 - Mortgaging
 - Leasing
 - Granting of servitude
- Court cases of title and boundary disputes
- Inducement of restrictions due to spatial planning; public preemption rights
- Assessment of property value for mortgaging and for taxation
- Taxation of real property

Main categories of procedures related to immobile property

The grouping of procedures is now rearranged in order to fit better the above classification of agents. This leads to the following:

Land surveyors	Cadastral procedures, identifying the RP unit and its boundaries Granting of servitude
Civil engineers	Building surveys (Danish: Tilstandsrapport; Energimærkning)
Real estate agents	Sale of a unit of real property

Diverse offices; Agricultural consultancies	Allocation of housing; Leases of agricultural plots
Lawyers	Transfer of immobile rights: <ul style="list-style-type: none"> • Inheritance • Mortgaging • Leasing • Granting of servitude
Mortgage banks, banks, pension funds	Mortgaging;
Law courts	Land Registry (Danish: Tinglysning) Foreclosure auction (Synonym: Compulsory sale, Forced sales) Court cases on compensation for expropriation Court cases of title and boundary disputes
Cadastre; Other state activities	Recording of Real Property Units in files and on maps Assessment of property value for taxation Expropriation (Synonym: Compulsory purchase)
Municipalities	Taxation of real property Maintenance of public RPUs (parks, cemeteries, etc) Inducement and lifting of restrictions due to spatial planning, etc. Exercise of public preemption rights

Main categories of agents and procedures related to immobile property

The division of labor among the professions may be described as characterized by core activity domains, which by statutory law or practice are generally exclusive to that profession, and accessory activities, which may be performed by neighboring professions as well. The compartmentalizing of the activities is sustained by the fact that all professions have established professional Codes of Conduct and provide professional liability insurance for activities within their core competencies.

The boundary of the segment is blurred: While real estate agents operate almost totally within the segment of real estate transactions, the other professions perform activities within other fields: Engineers and surveyors within construction, and lawyers within business, family, and international, etc. affairs. Some professional associations prepare statistical accounts on the time spent on the different main activities.

Financial intermediation is mostly provided to owners and property purchasers through local branches of commercial banks, while the mortgage loans themselves are provided by mortgage credit institutes (Danish: kreditforeninger). The mortgage institutes used to be quite specialized in offering only mortgage loans to rather well defined owner groups, but from the 1980s, mergers in the financial sector have blurred the picture. Some pension funds (Danish: Pensionskasser) invest in real property as well.

The boundary of this segment seems to be less blurred. The amount of mortgages recorded in the Land Registry is well described in terms of number of documents. As regards amounts, mention is made of the practice that in the case of conveyance of one-family houses, mortgaging normally amounts to 80

% of the sales price, while the seller accepts a mortgage deed amounting to 15% of the price. The amount of these private mortgage deeds have been assessed (Danmarks Statistik, Nationalregnskabet 2003:3, p 5)

The government provide services to the segment mainly in terms of the Land Registry within the court system (Danish: Domstolsstyrelsen), and the cadastral part of the National Survey and Cadastre within the Ministry of Environment. The Land Registry has the major volume of activities in checking and recording conveyance and mortgage deeds, etc. Foreclosure action is performed by the execution office of the court (Danish: Fogedretten), who handles non-real estate business as well. The court cases on compensation in case of expropriation, and on title and boundary disputes are mentioned for the sake of completeness. The cadastral procedures includes a quasi-judicial procedure (Danish: skelforretning) , which has to be completed before a case on boundary disputes can be heard by the ordinary court. As the court rulings generally support the land surveyor's case work, court cases are indeed few.

The Cadastre is in Denmark made up of a central unit only. This differs from many other countries, where the organization includes regional or even local units. The cadastral map is updated through the cases submitted by the land surveyors, who are scattered in about 100 offices all over the country. However, recurrent improvements, e.g. of the set of control points (Danish: fikspunktnettet) and other basic mapping is integrated with the general mapping tasks of the National Survey and Cadastre.

Expropriation is performed by specialized units within the Ministry of Transport: The State Commissioners for Expropriations, and by the municipalities. The amount of compensation may, after appeals within the specialized system, be brought before the High Courts (Danish: Landsretterne).

The Central Customs and Tax Administration (Danish: Told og Skat, Ejendomsvurdering) perform assessment of the market value of real property, largely based on compulsory sales reports, a national Real Property Data System, maintained by the municipalities (Danish: EjendomsStamRegistret, ESR, og Bygnings- og Boligregistret, BBR), and own analyzes. The municipalities thus provide assistance for the assessment activity, but this is now substantially reduced for efficiency reasons.

The Municipalities perform an array of activities, which may or may not be considered part of the segment concerned. The Real Property Data System (ESR/BBR) provides the base for collection of the property tax and for municipal fees as well (water, sewer, refuse disposal), as well as the base for property assessments and the reporting of data for construction statistics. This definitively should be included under the segment. Furthermore, the municipality owns and maintains RPUs for administrative purposes (excluding institutions for purpose of education, social work, health and culture), public areas (parks, sport centers and other leisure areas, and cemeteries, excluding public roads and other areas for technical infrastructure), and areas to be further developed into housing or industrial purposes. Also, the activities pertaining to these property units be in general included under the segment, understood, e.g. as collective consumption by (local) government. Whether spatial planning and other land management activities should be counted to the segment may be a more open question. These activities do definitively have impact on real estate transactions, but this holds for construction activities as well. If the spatial planning activities are not included within, e.g. environmental accounting schemes, they are probably most appropriately included within the real property segment.

7. Quantification of activities in terms of the Danish Industrial Classification (DIC)

"The production activity of characteristic producers is studied in detail. This covers .. the analysis of output by kind of products and the number of units produced, the destination of this output (consumption, capital formation, exports) and the labor and fixed assets used. As to labor, .. the number of people employed is shown in detail. Fixed capital formation is covered. Stocks of fixed assets in monetary value and/or physical quantities .. are essential" (21.100)

In responding to the quoted demands, the above table is modified to accommodate to the Danish Industrial Classification (DIC) of activities. It appears, that the DIC allows for discerning production for own final use (70.12.00 and 70.20.xx), relative to the production of services (70.31.10 and 70.32.10, cf. 74.11.00: Lawyers offering management services as main activity). Next, the DIC hardly details public activities. This needs to be redressed as the presently investigated segment of society comprises official activities as much as market activities. To increase specification of public activities, codes from the Danish Budget system (Danish: Regnskabsførende institution, <http://www.oes-cs.dk/nummerstruktur/index.cgi>) are rendered. Finally, some entries were made for completeness (91.33.10, and 01.4), without being based on detailed knowledge of the activity.

The 'characteristic producers' include the above mentioned governmental services, which may or may not coincide with organizational boundaries, as well as the companies of the professions. The kind of products are the services offered. The bundling of these services differ from country to country, but the modeling seems feasible in sufficient detail to allow for cross country comparison. The *output*, the number of units produced may be rendered by the number of cases of different kind, but the units selected could also be more specifically related to outcome, for example as number of new cadastral identifiers, new and changed property units, and new and changed entries (rights, summarized in a line) in the Land Registry. The *fixed assets used* include the national information systems with databases, which are established and used by the Cadastre and the Land Registry. The labor force may be accounted in categories as graduated and technical staff. As stocks of fixed assets, the number of units of real estate, buildings, etc. first comes to mind, but office and measurement equipment used may be worth considering as well.

Agent DIC code	Activity within segment	Quantification of activities, which include the segment activities
Land surveyors 74.20.70	Cadastral cases	301 surveyors, 43 pCt of working hours devoted to cadastral work.
Engineering consultancy, construction 74.20.10	Building surveys (of existing buildings, in context of sale)	Total: 15.346,9 mio DKK Construction: 4.568,6 mio DKK (DSt, RADGIVN3, 2002)
Developers 70.11.00	Development	New buildings 6 532 020 sq.m/year Extensions 1 404 778 sq.m/year Conversion -5 643 sq.m/year (DSt BYGV2, 2003)
Owners: 70.12.00 Real estate agents: 70.31.10	Buying and selling of own or leased real estate Estate agency	91 854 sales/year in total (DSt, EJEN8, 2002)
Owner categories: 70.20.10/.40 Professional management: 70.32.10 Houseowners' associations: 70.32.20 Tenants' associations: 91.33.10	Management of real estate for own final use Management of real estate on a fee or contract base Managerial activities of condominium and similar owner associations ??	Building stock, see above, section 4
Diverse offices: 70.31.20/.30 ?? (consultancies: 01.4)	Allocation of housing; Letting of holiday homes (Synonym: weekend cabins, summer cottages) Leasing of agricultural plots	

Legal activities (Lawyers) 74.11.00	Transfer of immobile rights, incl foreclosure processes	Total turnover 7 mia. DKK (2003) 22 pCt covers property transfer and debt-collecting activities, is 1.540 mio DKK (DSt Nyt 428/2004)
Mortgage credit institutes: 65.22.30 Banks: 65.12.00 Pension funds: 66.02.10	Mortgaging;	
Law courts: 75.23.10 0175 Domstolsstyrelsen	Land Registry (Danish: Tinglysning) Foreclosure auction (Synonym: Compulsory sale, Forced sales) Court cases on compensation for expropriation Court cases of title and boundary disputes	3.533.325 Land registry cases (2003) Court cost 116,7 mio DKK Duties and fees 275,7 mio DKK
State activities: 75.?? National Survey and Cadastré; 0033 Kort- og Matrikelstyrelsen	Recording of Real Property Units in files and on maps	7.800 new RPUs. Cadastral costs 42,4 mio. DKK Cadastral duty 36,0 mio DKK (KMS: Årsrapport 2003)
Told · Skat § 9 0066/67 Kommissarius 0043 SlotsEjendomsstyrelsen	Assessment of real property value for taxation Expropriation (Synonym: Compulsory purchase) Managmt of real estate and rented rooms for own consumption (administration)	
Municipalities;	Taxation of real property; Spatial planning, etc.; Expropriation Managmt of real estate and rented rooms for own consumption (administration)	

The *Land surveyors*, who are doing cadastral work, are organized into about 100 private companies all over the country (2002). The companies offer consultancy and provide technical maps as well, leaving about 43 pCt of total working hours to cadastral work (1997) (Enemark (2002) *The Surveying Profession in Denmark*; Fig 6, p. 7).

For *Civil engineers* and for *Lawyers* Statistics Denmark offer accounts of the activity. Similarly, the construction activities, and the number of sales are provided though the on-line available 'Statistikbank'.

The economic aspects of the governmental units appears from the yearly Budget, but only in gross figures. For the present purpose, newly developed Yearly Reports (Danish: Årsrapport) provide the necessary detail.

The *Law courts* are monitoring the consumption of resources, following investigations by the National Audit Office on the productivity of the courts (Rigsrevisionen, 15. aug. 2003 <http://www.ft.dk/BAGGRUND/statsrev/00807349.htm>). The annual report for 2003 mentions that the tasks of the Land Registry is almost totally performed by clerical staff (Danish: Domstolsstyrelsens Årsrapport, 2004, p. 21). Due to improved procedures, productivity recently raised by 17 pCt p.a.

The number of completed court cases in 2003 amounted to a total of 4.122.105 completed cases (2003), of which 3.533.325 regarded the Land Registry. More specifically, 195.748 deeds of conveyance, and 759.445 mortgage deeds were processed, as well as a large number, 2.458.862, of 'other' documents (easements, etc?). Finally, 119.270 documents regarded movables (security in cars). The process time varied between 1,1 and 11,3 days, the mean being 5,6 days. Foreclosure action on real estate was requested in 9123 cases (2003) and actually performed in 1842 cases.

Comparing the number of deeds of conveyance, 195.748, with the number of sales, 91.854, a substantial difference appears. It may be that (most?) deeds are recorded twice during the course of the transaction: Firstly as an encumbrance to secure the buyer right in the RPU before the agreed sum is transferred to the owner, and next as a title deed. However, this is far from explain the difference.

In economic terms, the activity may be detailed as follows:

Profit and loss account for Land Registry, mio. DKK	1999	2000	2001	2002	2003
11.41.02 The law courts	120,4	106,2	107,4	108,1	116,3
11.42.03 Compensations	0,4	0,8	1,2	1,1	0,4
11.43.01 Duties (~stamp duties; Danish: Retsafgifter m.v.)	3,3	3,5	3,5	4,3	5,1
Net primary activity (Danish: Primær drift netto)	117,5	103,5	105,1	104,9	111,6
11.41.02 Cost of conversion to IT	75,8	61,4	0,0		
11.43.02 Revenue from the computerized Land Registry	166,5	172,8	209,5	231,0	270,6
Return of the year (Danish: Årets resultat)	-26,8	7,9	104,4	126,1	159,0

Source: Domstolsstyrelsen (2004) Årsrapport 2003; Bilag 2, p 38

The courts apparently do not discern between duties collected for fiscal purposes, and fees charged as part of a cost recovery scheme. The total costs of the courts amounted to 1.567 mio DKK (2003), all court duties to 470 mio DKK, revenue from the computerized Land Registry to 271 mio, summing up into a cost for the state of 826 mio. DKK (Årsrapport, p 8). From a citizen point of view, the 'revenue' of the computerized Land Registry is a cost, and again restriction us to the Land Registry affairs, it seems that the citizens pay 116,7 mio DKK plus duties 5,1 mio DKK plus the 'revenue' of 270,6 mio DKK for the Land Registry activities.

The *National Survey and Cadastre* (KMS) has prepared accounts in terms of a fairly detailed report (Danish: Årsrapport - KMS > Om KMS > Årsrapport <ftp://ftp2.kms.dk/download/pdf/aarsrapport-2003.pdf>), as participant of a pilot experiment, which is headed by the Ministry of Finance.

The cadastral activity proper (Danish: 3000 Matrikel- og Landinspektørvæsen) amounts to revenue (fees) 25,5 mio DKK and costs 42,4 mio DKK, rendering net costs of 16,9 mio DKK. The corresponding figures for KMS' totals amount to 95,8, 281,8, and -186,1 respectively, the deficit largely being covered by the appropriation. The cost recovery degree thus amounts to about 60 pCt on the cadastral activities proper, and 34 pCt in general. The figures for cadastral activities proper renders the minimum. Administrative costs (overhead, code 9000), which amounts to about 6 pCt, should be added, as well as a part of the costs for general mapping (codes 1000 and 2000).

In addition to the fees, the KMS collects a duty (Danish: udstykningsafgift) for pure fiscal reasons. The duty amounts to 36,0 mio DKK. During 2003, 7.800 new RPUs were established. The figure does

not indicate the substantial number of cases, where the attributes of existing RPU have been changed.

In closing, the report notes that the cadastral, topographic and maritime databases constitute very important assets for the KMS. The report goes on by informing that the value of these databases are difficult to assess in a reliable way, and hence the value is not quantified. The KMS is contemplating methods to account for the updating costs and provide a stock valuation, as part of a general cost accounting system. The implementation of such methods may change the accounting of the databases.

8. Estimation of the costs of real property transactions in Denmark

The effort to assess the costs of transactions in real property units (RPU) has to be based on available evidence as well as estimates, if not better termed guesswork. The account made here suggest two major kinds of costs: Cost of consultancy activities, and cost of governmental services. The latter is simply made up of the amounts taken from the Yearly reports, which were quoted above. The former is based in the consultancy service renders by Lawyers. It is assumed, that the services provided by Real Estate Agents amounts to the same as the lawyers, while the sum of the engineering services amounts to the half of the lawyers. In table form this means:

Agent - DIC code	Estimate 1 of activity costs mio DKK	Estimate 2 of activity costs mio DKK
Land surveyors 74.20.70	Consultancy 770	770
Engineering consultancy 74.20.10		
Developers 70.11.00		
Real estate agents: 70.31.10	Consultancy 1.540	3.080
Legal activities (Lawyers) 74.11.00	Consultancy 1.540	1.540
Mortgage credit institutes: 65.22.30 Banks: 65.12.00	?	?
Law courts: 75.23.10	Court cost 116,7 Duties and fees 275,7	471
National Survey and Cadastre: 75.??	Cadastral costs 42,4 Cadastral duty 36,0	
Total (2003)	~ 4.300	~ 5.900
Number of sales: 91.854;	Transaction costs/sale: ~ 45.000 DKK	Transaction costs/sale: ~ 64.000DKK

Estimates of cost of real property transaction in Denmark for the year 2003

Real estate agents have in recent years engaged more visibly in the transaction market, while the prerogatives of lawyers in terms of setting up deeds have been diluted. This motivates the alternative estimate, where the contribution by estate agent services is doubled. The number of sales is based on the collection of mandatory Sales reports, and assumed to be a valid indication of the amount. The resulting figure of transaction costs per sale is low, compared to my expectation. However, assuming transaction costs due to financial services in the order of 2.500 mio DKK would probably provide a more adequate figure. The SNA coverage of financing (21.87 ff) is difficult to relate to the property business described here, and this may in part explain the lack of details presented.

9. Conclusion

An estimate of the cost of real property transactions has been provided. The estimate was preceded by a lengthy chain of reasoning, which requested data not presented here. Due to restrictions in terms of

time and knowledge, the present estimate is made based on incomplete use of information available. The reasoning is presented here in some detail, as an input to further discussions on how to sift the essential from the unimportant. The emphasis on basing the investigation on physical evidence, and moving from there to the details of the institutional superstructure, is perhaps the main message of this paper.

Acknowledgment

The contribution by Christian Gysting was known to me in writing the above alternative. He states a total of 8.491 mio DKK on transfers (regarding 'buildings' only?), as well as rising contributions by real estate agents relative to lawyers.

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