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TITLE: Accounting for Housing in the National Accounts

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Accounting for housing in National Accounts

1. Summary: Housing in a general National Accounts perspective

From the National Accounts perspective, the big issue about housing is the imputation of dwelling services for owner-occupiers. These imputed services have a big impact on GDP; 6% of GDP of Main-land Norway and 11.3% of final household consumption expenditure (as of 2001). Imputed income (net operating surplus) of owner-occupiers from their production of dwelling services amounted to 5% of household disposable income (2001). There are, for Norway, tax assessments for the value of the dwellings and imputed taxable income from owner-occupied dwellings. The values of the tax assessments are believed to be far from market values in most cases. The income from own-account housing according to tax statistics, was 2% of assessed net income less net taxes (2001). One of the challenges of dwelling services compilers is to persuade non-accountants that owner-occupiers indeed have a significant income from their ownership. We must admit, however, that this imputed operating surplus is not like other cash income.

In between market renting and owner occupancy of dwellings, there are a variety of legal forms of ownership. An example is co-operative ownership, which could be organized in different ways, often charging rents covering the costs of the cooperative. In Norway, the rights of the members/ occupants of such co-operatives are close to those of owner-occupiers, and in the Norwegian NA, co-operative dwellings are classified among owner-occupied dwellings. This interpretation was discussed a lot, and the main points from this discussion are summarized in the paper.

For owner-occupiers, the SNA suggests to impute production on basis of observed market rents of comparable rented dwellings. Alternatively, the imputation could be based on the 'user cost' of the dwelling capital. The user-cost method is also suggested in cases where there are too few market rents to observe. Both these methods have been tried historically in Norway. Both methods were tried for our first implementation of SNA93. In our experience, the stratification method should be chosen when possible.

The value of the dwelling stock is the main entry in the balance sheet of households. However, this value labeled 'Dwellings' in the National accounts is just a part of the total household wealth related to housing. This wealth would also include the value of the land that is associated to the dwellings. The Norwegian National Accounts only include the (net) value of the produced capital inherent in the dwelling stock; there is no estimate of the value of the land associated to the dwellings. This is a continuing source of confusion to analysts of dwelling prices. There is a challenge to our National Accounts to compile more complete balance sheet data for the households, including value of land.

Assessing the produced dwelling capital stock and its consumption is perhaps not so different from estimating other types of capital, but the long service life for a dwelling makes the general problems stand out more clearly. In general, the life of a dwelling is so long, that a lot of relevant events/changes happen to it during its service life. There is, at least in the Norwegian accounts, a need for more statistics and attention to restructuring, extensions and major improvements to the existing dwelling stock.

2. How to present imputed production and income

The SNA production border excludes in general household own-account production of services for own use. However, dwelling services from owner-occupiers are included, because (SNA §6.29):

- The inclusion of dwelling services has a long tradition. One might add that there is widespread agreement about the principles for imputing the services produced.
- The proportion of owner-occupiers can vary significantly between countries and over time, so including the imputed services increases comparability.
- The imputed value of the income generated by such production is taxed in some countries (including Norway).

The income tax argument is not a good argument in favor of imputing income to owner-occupiers to most people. The basic fact about imputed income remains (from SNA 6.21c): "Imputed values have a different significance from monetary values". Most people are well aware that such income cannot be used to pay the tax claims. The tax question should be kept separate from the National Accounts discussion. It should be possible to accept the existence of the imputed income of owner-occupiers also for those who fight against the income tax from it.

In the Norwegian tradition, focus tends to be on the production of goods and services in 'real' terms, as opposed to a focus on streams of payments. Even then it is hard to make people agree that services not explicitly paid for belong to their household consumption *expenditures*. Among those who agree to the idea, some mix up their consumption expenditure with payments of interest and down payments on their dwelling loans.

If people understand that imputed services belong in the consumption estimates, I think they also would accept that owner-occupiers produce such a service. This is because we can point to the case of rented dwellings, where such services are visible and paid for. Those who accept the notion that owner-occupiers actually produce dwelling services, should be convinced by the logic of the National accounting system to accept the imputed income from this production.

Even though many have doubts about the imputed income, I know only few people that find it reasonable to say that a dwelling should be considered as consumed the moment it is delivered, as with other consumer durables. Most people agree that buying a dwelling or building one would be fixed capital formation (indeed, the idea that consumer durables are consumed instantly is hard to accept for many).

The question is, why not also accept similar imputations for other consumer durables? If renting/leasing of cars were more widespread, could this be used as a basis for imputing a production of own account production of car services? Significant variations in household consumption in Norway of, say, cars, have been related to expected changes in taxation etc. In fact, the research department within Statistics Norway calculates and publishes adjusted saving rates for households, treating consumer durables as fixed consumer capital. In many countries former household services are now organized as market services. This causes difficulties when comparing production for different periods and between different countries. There is a case for (satellite?) accounts incorporating a more general production border. Maybe then, imputed income should be recognized as a separate kind of income?

At least the household activities could be classified separately in the production account, as we do in Norway. The net operating surplus from the household activities could then easily be identified and treated in special ways for analytical purposes.

3 What kind of ownership? Which rents are market rents?

A dwelling is an asset of considerable size and importance, and so the ownership rights are usually clearly defined. The classification by institutional sector is not always evident from the type of owner. In particular, dwellings owned by general government may belong to the government sector or to non-financial enterprises sector, depending on the same general principles of classification as for other

government owned activities. Even cheap rents could easily lead to a classification as market producer by the regular SNA criteria.

Another type of ownership where the classification is not evident, is co-operatively owned dwellings. It could be an open question whether such institutions are NPISH or market activities. In Norway, we have developed a special solution, which classifies the members/occupants of the co-operatives as owner-occupiers together with co-proprietors of flats. As the rent collected is supposed to cover the costs of the co-operative, the alternative in Norway would be to classify housing co-operatives as market activities, not as NPISH.

Before the latest revision of the Norwegian National accounts, the National Accounts classified the members of the housing co-operatives as owner-occupiers (and had done so for some time), whereas the consumer price index (CPI) classified them as tenants (and had always done so). During our last revision we had to agree on a common treatment of the housing co-operatives. First we considered some institutional arguments for and against the classification as owner-occupiers. As these arguments were felt to be not entirely conclusive, we arranged in addition a small comparison of prices of used dwellings.

3.1 A Norwegian alternative: classifying members of housing co-operatives as owner-occupiers

Institutional arrangements are often somewhat difficult to describe and compare across nations. Here are the facts about Norwegian housing co-operatives that were considered relevant when discussing the classification of members/occupiers of such cooperatives:

In favor of classification as owner-occupiers are the following

- The 'tenants' can sell the dwelling when they want, at market prices. There is a well-functioning market for such dwellings. The sale price is paid directly to the 'tenant', not to the co-operative.
- The co-operatives in Norway are small units that are owned and managed by its members (the occupants). Major decisions about financing, non-interior maintenance, etc are decided at general assemblies by majority voting among the members, and the board of management of the co-operative is elected from its members (occupants).
- The co-operative is not an economic unit in the taxation assessment data. The value of the assets and imputed taxable income are allocated to the individual members in a way comparable to the tax assessments for regular owner-occupiers. Notification of these values is sent to the members of the co-operative and to the tax authorities every year.
- Occupiers of co-operative dwellings are themselves responsible for indoor maintenance and the maintenance of the immediate surroundings of the dwelling, while other maintenance is organized by the co-operative. So the occupiers have significant maintenance expenditures, though smaller than other owner-occupiers. Maintenance expenditures of regular tenants are small in comparison.
- Recently, there are arrangements allowing each individual member to pay their individual share of the debts taken up by the co-operative on behalf of its members. Their rents are then reduced accordingly.

The members/occupiers of the housing co-operatives have the economic advantages of using or selling the dwellings. However, there are some restrictions to their actions:

- The co-operative is the formal owner of the dwelling. The member of the co-operative cannot take up a mortgage secured by the dwelling. However: the member owns a part of the co-operative and a right to rent the dwelling they occupies, and this right can be used to secure other types of loans.
- In most cases, the tenants cannot decide to liquidate the co-operative and share the assets and debts between them. There are often restrictions on the choice of supplier of some selected

business services such as collecting rents, bookkeeping etc. Such services are often the privilege of the 'parent' house *building* co-operative that once organized the building of the dwellings and subsequently established the housing cooperative managed by the occupiers.

- A member of the co-operative can sublet the dwelling, but usually only for short periods (1 to 2 years according to local rules) and subject to the approval of the management of the co-operative.
- Even though the 'tenant' can sell the dwelling and keep the proceeds, other members of the co-operative usually have the right to take over the sales contract according to rules of seniority etc, at the agreed market price.
- An individual 'tenant' has to participate in / pay for the maintenance activities that the board / the general assembly (the majority of the members) chooses to undertake. The occupants have to obey some rules of good conduct etc. These rules are, however, decided by the majority of the occupants.
- The 'tenant' is paying a regular amount of rent to the co-operative. Usually this rent covers interests and down payments of loans taken up on behalf of the members, and often some extra expenditure to cover common maintenance, heating, garbage fees etc. This 'rent' does however not correspond well to market rent in the sense of the COICOP.

In Norway, the conclusion from these kind of institutional arguments was determined to be somewhat inconclusive. In many ways, members of Norwegian dwelling co-operatives have rights to using the dwelling and benefiting from its sale that approach those of an owner-occupier. They do not, however, have full ownership rights. How important is the difference? We decided to have a small project comparing prices of used dwellings with full ownership rights to prices obtained for dwellings in co-operatives. If prices were comparable, we would conclude that occupants of dwellings in housing co-operatives could be classified as owner-occupiers in the statistics.

The problems encountered in such a comparison, illustrate some general problems also relevant to the imputation of dwelling services:

- The structure of the dwelling stock is radically different between full ownership dwellings and dwellings in co-operatives. The Norwegian statistics on prices of used dwellings is strong for prices of detached single houses, a type of houses that are almost non-existent in the housing co-operatives. Blocks of flats exist also in the data for full ownership dwellings, but observations are few. The sales statistics of the co-operatives is dominated by sales of flats in apartment houses.
- All co-proprietor flats are sold and registered when new, in order to establish the individual ownership rights to the dwelling. The flats covered by the statistics on co-operative housing are all used dwellings. So, the owner flats may on average be newer than flats in housing co-operatives. Indeed, some of the most expensive dwellings in Norway at the time belonged to this category of co-proprietor flats.

Looking at the best comparable dwellings in our small survey, dwellings in housing co-operatives prices are 10-20% lower per square meter than of other owner-occupied dwellings. Price differentials are twice as large in the case of dwellings in blocks of flats. It was felt, however, that the privately owned apartments in blocks of flats could be newer and have better quality than the average flat in housing co-operatives. This quality difference could explain much of the price differentials.

The price comparison was also somewhat inconclusive, but we choose to stress the fact that the price differentials could be a result of unobserved quality aspects, as the differentials were smaller in those segments that were most comparable. It was concluded that dwellings of co-operatives were sufficiently close to full ownership dwellings, so that members/ occupants of co-operatives should be classified as owner-occupiers in the National Accounts as well as in the CPI. There is not a complete

harmonization of dwelling services in the National Accounts and the CPI, however. For instance, there is still the traditional difference in the classification of regular repair and maintenance.

4 Methods of estimating dwelling services

The ESA, which is the European version of SNA93, suggests two methods for estimating dwelling services. The preferred method (the stratification method) is to observe actual market rents paid for dwellings with similar characteristics. This method is described in great detail (Commission Decision 95/309), aiming at harmonization within the EU member states.

The alternative user-cost method is meant to be an alternative when the renting market is non-existent or too small to derive plausible market observations for the stratification process. This method starts with a direct estimate of operating surplus. Filling in other items from the production account, production itself is derived as a residual. Details of the specific version of the user-cost method to be used in the EU have been worked out only recently (Eurostat 2002).

4.1 Norwegian experiences with stratification and user-cost methods

In the first National Accounts compilations for Norway, in the early 1950's, the stratification method was used. Rent data were collected from the Census of 1946 (and for some missing data also in a census from 1950). Collecting rent data from a Census seems to be the ultimate source of information. However, nowadays it is not easy to place questions like this in the Census.

With the implementation of the SNA68, Statistics Norway switched to the user-cost method. The user-cost method was used until the SNA93 revision in the mid 90's. In the SNA93/ESA95 main revision, we started out with the intention of keeping our user-cost method but revising the figures. Confronted with the problems of the user-cost method, we finally implemented the stratification method.

In our experience, the problems with the user-cost method are:

- It seems almost impossible to choose and justify a specific rate of operating surplus.
- Real rates of interest and similar financial indicators fluctuate over time, and can even be negative some years. A change of ½ percentage point in interest rates is not unusual and can be a considerable percentage change in the level of the rate. Applied to the value of the total dwelling stock, there could be large fluctuations in the imputed dwelling services.
 - *If the user-cost method is used, the rate of operating surplus should not change from year to year, but be kept relatively stable.*

For our SNA93/ESA95 revision, our research department worked out two alternative estimates of the rate of operative surplus to use for our user-cost method:

1. The first scenario considered an entrepreneur choosing between investments in dwellings for renting and financial investments.
2. The alternative scenario looked at the opportunity costs of a person considering buying a dwelling of his own or making financial investments.

In Norway, even though dwellings are subject of property tax and there is an income tax on imputed income from owner-occupied dwellings, the person in scenario 2 would gain considerable tax benefits if he invests in an owner-occupied dwelling as compared to his financial investment. Because of the tax benefits, he should be prepared to accept a smaller return to his financial capital as equivalent to a given flow of housing services than the entrepreneur in the first scenario. In this sense the owner-occupier has a smaller opportunity cost of capital. The difference would be very large in terms of

imputed dwelling services, according to our estimates. So, it proved impossible to make the choice of one above the other.

Another point to be considered is the basis for revision of the estimated rate of net operating surplus. In Norway, a five-year average real rate of return to Government bonds around 1990 was 6.5 per cent, while the corresponding average around 2000 was 3.6 per cent, corresponding to a decrease by 55 per cent. Should we revise our estimates for this reason? In order to give a reasonable answer, I think we have to look at the development in rents. A quick glance at the CPI for rents show, however, that rents increased about as much as other prices in the period.

In our stratification method, the dwelling stock is stratified in 30 groups: by region (the capital region, the surrounding county, medium-sized cities, small cities and other municipalities), number of rooms (1-2 rooms, 3-4 rooms 5+ rooms) and by type of house (detached one family houses/other houses). Within each stratum, we calculate average rents per square meter from our rent survey, and then gross up with total dwelling stock per stratum. We correct the observed rents for heating and public fees that sometimes are included in the paid rents.

There are some problems with our stratification method. In our experience, these are:

- It is not easy to find rent observations on rents for large, detached one-family houses. This is certainly a weak part of our imputations, as most owner-occupiers live in such houses. From the Census, it even seems that some few of those tenants that report living in detached, one-family houses, actually are renting a separate dwelling in the basement.
- There is still a systematic difference of quality between dwellings of owner-occupiers and rented dwellings also within the strata.
 - The size of the rented dwellings tends to be smaller for owner-occupied dwellings in all the strata.
 - There are quality differences of houses (or in their plot of land?) in different parts of the cities, etc. which we do not handle in our stratification. Increasing the number of strata is difficult because the limited size of our rent survey, and in some cases we see that more homogenous strata tend to be homogenous also with respect to tenancy.
 - Our hedonic regressions have so far not succeeded in meeting Eurostat's quality criteria.

It was a great relief to us when our final stratification estimate in the SNA93 revision proved to be around the average of our two user-cost alternatives, and seemed acceptable to all parties in our discussion. The user-cost method no longer seems to be an alternative.

4.2 Some comments to the user-cost method as applied to the new members of the EU.

In order to help the latest candidate countries prepare for membership in the EU, a range of National Accounts projects was organized. I have been engaged in two of the rounds of projects related to dwelling questions. The conclusion from the first set of projects was that it would not be possible to implement the stratification method for most of the countries. The trouble is that many of these countries simply do not have a regular market for renting of dwellings. It was necessary to open the possibility of the user-cost method for the new candidate countries. According to the consensus of Eurostat (2002):

"In case of rented dwellings constituting less than 10% of the total dwelling stock by number and where there is a large disparity between private and other paid rents (say by a factor of three), as an alternative objective assessment, the user-cost method may be applied."

The criterion was fulfilled in all the former applicant/accession countries, at least on the interpretation that 'rented dwellings' mean 'dwellings rented at regular market prices'. In fact all the new EU countries, except Cyprus, have tried out this user-cost method.

The difficulties of deciding the level of the rate of return to dwelling capital were also evident for the latest members of the EU. The agreed EU method for user-cost estimates uses a rate of 2,5% of net operating surplus to total (net) capital of dwellings and associated land. This level was agreed upon because it was found to be comparable to the implicit level or return in EU member states using the stratification method. Implementing the user-cost method aimed at producing estimates of dwelling services that were more comparable to those of the other member states. This was achieved in that the percentage of GDP for most of the countries changed towards the EU average.

The agreed rate of net operating surplus is to be revised at intervals of five years. But how? Our Norwegian experiences suggest that this will be as difficult as fixing the rate in the first place.

The user-cost method demands estimates of the capital stock. The standard method for estimating capital stocks would be the perpetual inventory method (PIM). Few of the latest EU members were able to use this method. In the Norwegian user-cost tests, the value of the owner-occupied dwelling stock was estimated separately, not using the standard PIM estimates in our regular national accounts. The problems with the PIM estimates are:

- You need long time series of investments.
- To build up capital stock of the present owner-occupiers, the time series should include the dwellings that now are owner-occupied, but previously had different kinds of ownership. The changes in ownership structure are a practical problem.

Most of the new EU members chose to base their estimate of dwelling capital stock on direct physical stock data from the Census, combined with assessments of the value of the dwelling. The countries had a range of different approaches this:

- Using observed market (sales) values of the dwellings, splitting out values of the land, gives an estimate of the net capital stock. In most cases, the value of land was estimated directly, so the value of the dwelling was a residual. In one case, the sales value was combined with direct assessment of building cost for the dwelling, resulting in the value of land as a residual.
- In some cases the starting point was an estimate of the cost of building new dwellings corresponding to the categories in the census. In these cases there is an additional question of assessing the net value of the capital stock.

In the second case, starting out with estimates of the gross capital stock, there is a particular point that can be illustrated considering the oldest dwellings in the census. If they are inhabited, we know that they produce dwelling services. So they have a positive net value. But is it reasonable to say that this value is a remaining part of the original investment? I think that many old houses are inhabited today only because they have been subject to rehabilitation and modernizations. If so, the original investment may be consumed, but the investments related to subsequent rehabilitations still have a net value. These investments could be much closer in time than the original year of construction according to the Census. There is a need to handle data for rehabilitation and major improvements. Such data are estimated, but is difficult to relate to the physical data given in the census.

This is related to the estimates of service life that are used in calculating net stocks of capital. To a non-expert to the field, it seems difficult to handle simple capital consumption models if the data available gives no data for rehabilitation. Setting life length at something like the OECD average, the risk is to underestimate the contribution to the net stock of dwellings from the oldest part of the dwelling stock. Increasing life length so that all dwellings present contributes to net stock, the risk is that life length is excessively long, so that capital consumption from newer dwellings is undervalued.

There are two issues from these projects that need to be followed up, at least in my country Norway. The first issue is related to the value of the associated land. The second issue is the need for more focus on major improvements, restructuring, extensions etc.

5 Assessing dwelling capital / dwelling wealth

The value of a household's dwelling wealth could be seen as the value of the construction as such and the value of the associated land. The value of the dwelling stock, as part of the stock of fixed capital in the National Accounts, does not include the land value. The split between produced capital and land value is needed in order to calculate consumption of fixed (produced) capital.

5.1 The need to assess land values

Many National accounts are not so well developed with respect to estimates of the value of land, though there is a place in the asset classification for it. In Norway, no estimate of the value of land is done. There are however statistics covering sales of used dwellings, where the prices reported include the value of land. Having estimated dwelling wealth from such data, we still need to split it into the produced capital and the land part.

We also have, in Norway, some statistics for transactions in land without buildings. It is possible to identify transactions in land subject to restrictions in use (for instance: land for agricultural use could be excluded). Still, there could be some doubt whether the land for which the transactions are observed is comparable to the land associated to the dwellings that are sold.

Another possibility is to look at the part of the costs of new dwellings that are made up of raw land. Such statistics could possibly be collected in statistics on building costs, but sometimes they are rather crude expert estimates. It seems that such a percentage could be known for most new building projects. Some expert estimates are rather crude, however, often only an average for the county is given.

From real estate agents I have learned that the exact localization means a lot to the sales prices of dwellings. Characteristics of a dwelling/plot such as the quality of the view from the living-room windows, type of neighborhood, distance to public transportation, etc could best(?) be seen as aspects of the land associated to the dwelling rather than as characteristics of the dwelling itself. For instance, in our Norwegian data, older dwellings often tend to be more expensive than somewhat newer dwellings, presumably for reasons related to the land. In consequence, most(?) of the variation in sales prices of dwellings could really be variations in the value of the associated land. In this perspective, the data available to assess the value of land seems to be too weak to give reliable estimates of the land value, at least in Norway.

5.2 The need for more focus on major improvements, restructuring and rehabilitation of dwellings

The importance of additions to and restructuring of dwellings can be seen when combining data from several censuses. Consider for instance the group of five-room dwellings constructed in the period 1961-70. In Norway, following this group of dwellings from the census of 1990 to the 2001 census, we find that their number increased from 48 thousands to 63 thousands. The newer five-room dwellings constructed in the period 1971 to 1980 increased in number from 64 to 89 thousands between the censuses. The dwellings increased in average size, too. The number of smaller dwellings (3 and 4 rooms) decreased. The increasing average size is partly explained by shifting definitions of size measurement. The development in the number of dwellings must be related to the restructuring/rehabilitation activities.

Our statistics has not been sufficiently well developed to account for such changes in the existing dwelling stock. For instance, 'small' projects in Norway, extending a house by less than 30 m², do not require statistical reports.

In Norway, we had a new question on this topic in the latest Census. The census asked whether the dwelling had undergone rehabilitation or major improvements before 1970, in the period 1971 - 1980

or after 1980. These data remains to be analyzed, however. These data can be used as a quality indicator for the dwellings, and maybe it could be used together with data for original year of construction to give direct estimates of the net value of the dwelling as well.

Our estimate of investments from rehabilitation and major improvements to existing dwellings is used for our PIM estimates of the value of the dwelling stock. It is, however, hard to integrate these data with the physical data on changes in the dwelling stock. To make better use of the data on the physical dwelling stock for capital estimation in the National Accounts, we need to increase focus on data for rehabilitation / extensions/ major improvements.

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