Session Number: Parallel Session 2A
Time: Monday, August 23, PM

Paper Prepared for the 31st General Conference of
The International Association for Research in Income and Wealth

St. Gallen, Switzerland, August 22-28, 2010

What is the value of a home? Distinguishing owners from renters and landlords in the national accounts

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(draft April 2010)

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Abstract
National accounts impute a value of production to people living in their own dwellings. The question of which method to choose for compilation is difficult and was recently dealt with in a thorough manner in the Journal of Housing Economics [Capozza, Dennis R., Nakamura, Alice O., 2009]. This paper raises the fundamental yet simple question looming behind why the imputation is made in the first place. Its investigation yields three findings. First, the logic of the imputation is only poorly examined and explained in the System of National Accounts itself (SNA93), although the imputation represents the major exception to accounting principles. Second, the imputation was incorporated into the national accounts for historical reasons, mainly as a legacy of tax laws and theories prevailing at the advent of national accounts. Third, the imputation not only causes a serious bias in the measurement of national product, but an even worse distortion in the determination of operating capital and of labor productivity.
The paper is a plea for opening a discussion on the issue, and a search for an alternative way of recording the housing economy. It offers a possible method which works in greater conformity with SNA principles, while also being more faithful in reflecting the structure of institutions and markets governing the national housing economy.

JEL classification: C80, D12, E31, R21

Keywords : National accounts, owner occupied housing, rental housing, fixed capital

1. Introduction

"My home is my castle". If that assertion of the old English liberals still applies in today's global capitalism, what is then the value of such a home? Is the value of your castle what you pay for it (no, say Heston and Nakamura 2009)? If yes, then in what terms? In terms of personal income tax, of national product, of economic or possibly of social and political well-being? Questions like these have come to occupy the profession of economic statistics anew since the collapse of the US housing market and the ensuing global financial-economic crisis, which have made thousands of people homeless and cost many more their jobs.

A recent issue of the Journal of Housing Economics dedicated to the treatment of owner occupied housing in national accounts and inflation measures pays witness to the re-awakened effort and the new and sophisticated thinking the crisis has created within the profession. Yet, in spite of the formidable research and the broad coverage of the papers collected in the volume, the editors remain modest in their conclusion: "We are not recommending or endorsing any specifics of these articles. Rather, our hope is that these materials will motivate researchers to actively consider

whether the time has come to reform the official statistics treatment of owner occupied housing services." (Capozza and Nakamura, 2009, p.154) It is in this spirit that the following research is being conducted.

The editors of the volume identify four themes of analysis. There is, first, the search for an adequate concept of valuing the own-account use of a dwelling, to which, second, the search for a proper empirical methodology forms the natural complement. The result of these investigations is somewhat disturbing. There is not one proper method; there are at least four, each of which has its advantages, and none of which is clearly superior. Worse still, each method conveys a slightly different meaning of what one measures, so that even the conceptual level is affected. A third topic is thus introduced dealing with the broader consequences of alternative ways of imputing occupation values on such issues as income distribution, economic well-being, or investment. Difficulties of interpretation in these areas lead back to a fourth topic where the special properties of housing markets are considered. Altogether, the volume collects a set of excellent and thorough studies on what to do when valuing home ownership. There is not much left to add.

This paper, therefore, moves to more hazardous ground. It inquires into the fundamental assumption underlying these studies as a pre-determined choice of problem formulation and as a dogma that has been accepted and held almost unanimously in the tradition of national accounts, withstanding the trials of four international revisions, and in all probability, of a fifth as well. The dogma is called into question not with the aim of shaking the accounts – which is in any case now impossible – but in order gain a fresh perspective from which to survey the imminent problem. The rationale for such an attempt is simple and drawn from everyday experience. When repeated attempts are made to pursue a goal without arriving at the desired end, it is normal after a while to ask oneself whether the goal is rational or whether, despite having discovered many interesting features in the area, you have not been following a blind alley. If the problem of owner occupied housing really poses such "significant challenges for national accountants and price statisticians" (Capozza and Nakamura 2009, p.153) such that after a special issue of a professional journal it is still not solved, this may be a signal to turn around, take a step back from the starting point, and select a new point of departure to see whether a more convenient road may open up from there. It is clear that this cannot be more than a theoretical exercise at this point, ignoring all questions of statistical feasibility. But it is also true that such theoretical exercises open up better roads to statistical feasibility than one had before, sometimes.

The assumption worth questioning is bluntly stated in the SNA93, chapter VI: "Heads of households who own the dwellings which the households occupy are formally treated as owners of unincorporated enterprises that produce housing services consumed by those same households." (SNA93 para. 6.89) In its cool brevity, the sentence appears to be so self-evident and natural that it requires no intellectual refinement. Indeed, comments explaining the decision are not abundant throughout the SNA93 volume, as will be shown later. At this stage, one word catches the eye of the critical reader. What is meant by adding the qualification "formally"? If the owners are only formally treated as unincorporated enterprises, does that not imply that in reality they are not? If so, then a second statement is missing, namely the rationale for doing something in the accounts other than that which reality suggests. The statement is incomplete in this respect.

Questioning a fundamental hypothesis invariably raises the objection of what to offer instead. This paper takes up this challenge. After uncovering the reasons and

causes that led to the SNA93 definition, an alternative concept for dealing with home owners within, or more probably besides, the national accounts will be proposed. It turns out that scrutinizing definition 6.89 leads into a larger complex of issues that were somehow solved in the SNA93, but could have been solved better. Demonstrating this alternative option – the opportunity cost of the effective treatment, so to speak – may help find a direction into which the system may be developed. This could be a satellite system or, less extensively, a system of sub-accounts for real estate activity. In any case, a project of the kind seems to be the order of the day given the contemporary world economic situation. In this understanding, I join with Capozza and Nakamura in the hope that such study will add to the motivation of researchers to actively consider whether the time has come to reform the official statistics treatment of home owners.

2. SNA93 statements on home ownership

2.1 Double exception to system rules

When an owner occupier moves out of his home, GDP falls. This effect represents an interesting though asymmetric complement to the famous Pigou example of a man marrying his housekeeper. While the imputation of housework, an activity engaging little capital and mostly labor, to GDP has been excluded from the accounts – if only after an ardent debate with the housekeeping community – the imputation of value added to employing a capital with practically no labor applied to it has always been readily accepted. Except for housework, which would have been larger in value if included, owner-occupying forms the largest single imputation of a flow outside actual transactions which figures in the national accounts, and it demands a double exception to the standard rules. It is first an exception to the rule that transactions between economic units are recorded in national accounts, rather than within economic units, and second, an exception – and the only one for that matter – to the refining rule that if you record own account production, it should be restricted to goods only, not services.

"It is easy to understand", Capozza and Nakamura write when introducing their volume, "why the cost of (OOH) services belongs in measures of consumer expenditure, national output and inflation" (Capozza and Nakamura, 2009, p.151). If this were really so, one would expect that it is not too difficult to determine a value to include in the national accounts. Instead, the imputation poses "significant challenges for national accountants", and this can be explained by reference to the basic axiom constituting the accounts, to consider transactions between institutional units as the appropriate set of data for their purpose. Such transactions solve the valuation problem in a natural way, all by themselves. Transaction values are quantified and observable, independent of any value theory that you may suppose. Going beyond the transaction realm is justified here by arguing that "most people … live in homes they own, their homes constitute most of their wealth, and home values have been subject to large swings." (Capozza and Nakamura, 2009, p.151). But the argument is not quite pertinent. It may support inclusion of home owners in the system of national accounts in general, but the specific decision to include it in consumer expenditure or national output does not follow. There are other options, as will be shown later. The next argument is also not convincing, namely that "Errors made in assessing the evolution over time, or levels, of prices for OOH services could distort key measures of national economic performance including the

consumer price index." It was for this very reason that the value of occupier housework (which most people also perform and which constitutes a major part of their home activity) has not been included in the national accounts. As pointed out previously, while occupier labor is ignored in the accounts, occupier capital is respected in spite of comparably severe valuation problems.[1]

The SNA is not very diligent in explaining the owner occupier imputation. Although the index includes 31 paragraphs where a reference is made, most of them simply restate the imputation without further comment; the apparent need to repeat it so many times stresses the character as an exception, rather than explaining the rationale. The paragraphs which contribute to the latter will briefly be reviewed.

The central paragraph 6.89, already quoted, continues: "As well-organized markets for rented housing exist in most countries, the output of own-account housing services can be valued using the prices of the same kinds of services sold on the market in line with the general valuation rules adopted for goods or services produced on own account. In other words, the output of the housing services produced by owner occupiers is valued at the estimated rental that a tenant would pay for the same accommodation, taking into account factors such as location, neighbourhood amenities, etc. as well as the size and quality of the dwelling itself. The same figure is recorded under household final consumption expenditures".

The recommendation of market rents is repeated in para. 9.58 without adding anything new. A refinement is found in para. 9.59, where it is stated that "decoration, maintenance and repair of the dwelling should not be treated as household final consumption expenditure but as intermediate expenditure incurred in the production of housing services," in contrast to expenditures on major improvements, which belong under fixed capital formation. This is almost self-explanatory in that it follows the logic of the system. Paragraphs 4.149, 6.18, 9.45 and 9.52 mention owner occupation within their specific contexts, referring to its explanation elsewhere. A touch of reality is added to the picture when in para. 10.70 it is pointed out that all dwellings, "including houseboats, barges, mobile homes and caravans used as principal residences of households and any associated structures such as garages" are fixed assets, and not consumer durables. This is essentially what the SNA93 says regarding the method of valuation applied to home ownership.

Concerning the reason or rationale for the imputation, there is not a great deal of effort to be noticed, either. The main argument is again found in chapter VI: "The production of housing services for their own final consumption by owner-occupiers has always been included within the production boundary in national accounts, although it constitutes an exception to the general exclusion of own account service production. The ratio of owner-occupied to rented dwellings can vary significantly between countries and even over short periods of time within a single country, so that both international and inter-temporal comparisons of the production and

[1] The fuzziness of the distinction between owner occupiers and owner workers is revealed in a quotation from the annex describing the relationship of the SNA93 to the SNA68: "The 1993 SNA explains that in the central framework no values are recorded for unpaid domestic or personal services produced within households because the production of such services within households is a self-contained activity with limited repercussions on the rest of the economy, there are typically no prices that can be satisfactorily used to value such services, and the estimated values would not be equivalent to monetary values for analytic or policy purposes." (Annex 1, para. 35) The argument is addressed to "domestic and personal services produced within households", which is, however, what characterizes the service an owner of a dwelling provides to himself as well. It is domestic and personal in the ordinary sense of these words, and only excluded by definition. It is also self-contained, and prices are difficult to determine. And whether the repercussions on the economy of a change in occupation between housework and employment are less significant than of a change in a dwelling's use between renting out and self-occupation may be doubted.

consumption of housing services should be distorted if no imputation were made for the value of own-account housing services. The imputed value of income generated by such production is taxed in some countries." (para. 6.29) Making just a preliminary comment on the last sentence, income tax on owner-occupied dwellings was abolished in Germany in 1998, after, that is true, a period of existence spanning almost two centuries. Would this secular modification be considered worth revising the national accounts? The essence of the argument lies in the term "distortion", to which we return in a more systematic context later.

If the problem of valuation of owner occupation is treated lightly – insufficiently, as one may now judge – after the appearance of the Capozza-Nakamura volume, another problem more severe than that of valuation is hardly handled at all, and even this treatment is contradictory. As it has yet to come to light even today, a preparatory introduction is required. The problem concerns a fundamental topic of national accounts, namely the connection between generation of income and production of output in a market economy.

2.2 From product output to factors: the missing labor input

Ordinary income studies, in their general outlay, ignore the source of income. Whether a certain claim to a nation's product has been earned in a forty-hour week, fifty weeks per year, or accrues simply as the result of owning an equivalent property, is considered irrelevant for the welfare targeted in the analysis. Both kinds of income are considered to represent an equal amount of a person's welfare and are added indiscriminately. National accounts, by contrast, focus just on these distinctions. Operating on the assumption that there is only one source of income for the nation as a whole, namely production, national accounts distinguish between income from labor and income from property, and further between primary and secondary income. In this (classical) tradition, and not attempting to measure welfare, they direct their effort to reconstructing the relationship between the value of a product and the economic activity from which it arises. In the national accounts, all income of an economy originates in the value added by current economic activity to the value of earlier products consumed in the activity, and only there. This is why the production account comes first and the income account thereafter in the system.

The conspicuous exception to this rule is the treatment of home ownership. For this particular item, the logic is reversed: Occupying one's own dwelling yields well-being, hence it is income; hence there must be production if the system coherence is to be formally preserved. One might argue the treatment is just an extension of other own-account production (such as agriculture) into the service area. But in those cases there is economic activity. Farmers and their families actually work to gain the extra product they consume. Hardly any owner of a home will, in this quality, consider himself a member of the work force.

It is interesting to study how the SNA takes note of this problem. The first – and most explicit – reference is found in the introduction: "The SNA is a multi-purpose system. It is designed to meet a wide range of analytical and policy needs. A balance has to be struck between the desire for the accounts to be as comprehensive as possible and the need to prevent flows used for the analysis of market behaviour and disequilibria from being swamped by non-monetary values. The System therefore includes all production of goods for own use within its production boundary, as goods can be switched between market and non-market use even after they have been produced, but it excludes all production of services for own final consumption within households (except for the services produced by employing paid domestic staff and the own-account production of housing services by owner

occupiers). ... In this context it may be noted that in labour force statistics economically active persons are defined as those engaged in productive activities as defined in the SNA." (SNA 1993, par. 1.22).The paragraph looks as if it has resolved our concerns. Labor force statistics have adjusted to the SNA; if you are productive in the SNA, you are by definition part of the labor force. Hence there can be no problem of missing labor input.

A minor point may be remarked upon concerning the chosen method of rent valuation. It is true that "well-organized markets for rented housing" exist in most countries (para. 6.89). But these turn over only a part of the dwellings existing in an economy. If markets were really "swamped" by all those dwellings that are now safely remaining under occupation by their owners, certainly the same price as before would not prevail. Contrary to other own account production, where the main part of output is intended for the market and only a small portion reserved for own consumption and thus would not disturb the ruling the price if it were really sold (e.g. in agriculture), these proportions differ and are even reversed in the dwelling case.

A key note about labor input is supplied in para. 4.150 of chapter IV about institutional units and sectors. Explaining the functioning of households as producers, it says about owner-occupiers: "The production of these services does not generate mixed income. There is no labour input into the production of the services of owner-occupied dwellings so that any surplus arising is operating surplus." We are back at our initial distress. If there is no labor input in production, how can it be production? Is owning and occupying a property enough to define production? Part of the question is answered in chapter XVII on population and labor inputs. With reference to the discussion in chapter VII, it is reaffirmed by means of a summarizing diagram that if someone's production is entirely for own consumption or capital formation of his or her own family, he has a self-employment job, and "a job is like a transaction, while an employed person is not." "Employment does not enter into the system, but jobs do" (para. 17.7). The distinction may explain why we have identity of definitions between SNA and labor force statistics as quoted above on the one hand, and no labor input, also as quoted above, in some "production" on the other. But is living in one's own home ("including houseboats, barges, mobile homes and caravans used as principal residences of households and any associated structures such as garages") really a job?

The final answer to the problem of labor input into home ownership is not found in the SNA, where it is more or less of theoretical relevance only, but in the statistics that actually count employment. All economic activities are registered in one coherent classification, which is ISIC on the international level. For class 6810 – Real estate activities with own or leased property, it reads: "This class includes – buying, selling, renting and operating of self-owned or leased real estate, such as apartment buildings and dwellings, non-residential buildings, including exhibition halls, self-storage facilities, machine centres, land, - provision of homes and furnished or unfurnished flats or apartments for more permanent use, typically on a monthly or annual basis. This class also includes development of building projects for own operation, i.e. for renting of space in, subdividing real estates into lots, without land improvement, operation of residential mobile home sites." It conveys the impression that any activity that earns money by means of real estate is included, but pure owner occupation is clearly not. To be sure, operating a self-owned dwelling is not the same as occupying it; it means that you use it in an enterprise employing labor in a regular business way. This is not what you do when simply living in your dwelling. As a consequence, we may infer that whatever the SNA

assumes, the labor force counted in labor statistics on which national accounts projects its numbers does not include owner occupiers. Such "production" is then production without employment, without labor. Thus we may add a second paradox to the Pigouvian house-keeper case. The higher the share of owner occupation in a nation's dwellings, the higher is its labor productivity. This unwarranted effect is the main – and in our view insurmountable – handicap of the owner occupier imputation to GDP. Labor productivity in this activity segment tends to infinity.

Incidentally, here, the SNA93 does no more than follow a tradition. In its predecessor, the same contradiction appears in a slightly different form, almost unnoticed, as a cursory remark and footnote: "The ownership and own-account occupancy of dwellings is considered to be a kind of economic activity in the national accounts, but not in the ISIC" (SNA 1968, para. 5.84). And if the ISIC treatment is not sufficient in showing the exclusion of homeownership as an economic activity, time use studies add to the evidence. Occupying one's own dwelling is not a category considered or asked for in such surveys. But if no time is spent on such "activity", it can hardly be one.

Last but not least, the SNA93 itself contains a wording that may be read as a critique in this sense. It is worth quoting at length: "The main problem for defining the range of activities recorded in the production accounts of the System is to decide upon the treatment of activities that produce goods or services that could have been supplied to others on the market but are actually retained by their producers for their own use. These cover a very wide range of productive activities, in particular:

(a) The production of agricultural goods by household enterprises for own final consumption;

(b) The production of other goods for own final use by households: the construction of dwellings, the production of foodstuffs and clothing, etc.;

(c) The production of housing services for own final consumption by owner occupiers;

(d) The production of domestic and personal services for consumption within the same household: the preparation of meals, care and training of children, cleaning, repairs, etc."

"All of these activities are productive in an economic sense. However, inclusion in the System is not simply a matter of estimating monetary values for the outputs of these activities. If values are assigned to the outputs, values have also to be assigned to the incomes generated by their production and to the consumption of the output. It is clear that the economic significance of these flows is very different from that of monetary flows. For example, the incomes generated are automatically tied to the consumption of the goods and services produced; they have little relevance for the analysis of inflation or deflation or other disequilibria within the economy. The inclusion of large non-monetary flows of this kind in the accounts together with monetary flows can obscure what is happening on markets and reduce the analytic usefulness of the data." (SNA93,par. 1.21)

Here, the SNA93 acknowledges the fact (in contrast to the view of Capozza and Nakamura, 2009 quoted earlier) that owner occupation of a dwelling is very different from renting it in its economic significance, that it has little relevance for the analysis of inflation, and that its inclusion with actual transactions can obscure what is happening on the rent market and reduce the analytic usefulness of the accounts. And in all these aspects, the imputation for homeownership is no way different from an imputation for domestic and personal services for consumption within the same households. It is because of this statement that we feel it is a legitimate project to develop the system in a direction capable of coping with this

problem. The rule that occupying your dwelling yourself is production, while working in it for yourself is not, cannot be the last word on the issue.

If theoretical backing of the owner occupier imputation in the SNA93 is weak, let it nevertheless be said in order to put things into perspective that theoretical coherence is an important, but not the supreme goal of such a document. Given its purpose of providing a foundation for unifying all the different systems of accounts which nations have installed around the world, and, in particular, of having these nations agree on one single common system, harmonization and compromise must prevail; and it is only on accepting these compromises that further refinements – developed along a coherent theory, when possible – may fruitfully be implemented. The major force behind incorporating the owner occupier imputation may not have been any theoretical vision at all, but perhaps the simple fact that "the production of housing services for their own final consumption by owner-occupiers has always been included within the production boundary in national accounts, although it constitutes an exception to the general exclusion of own account service production." (SNA93, para. 6.29) The reason for making the imputation is, so we may conclude, historical (no harmonization required), rather than theoretical in nature, which for the practical purpose at hand is of course equally valid.

3. Theories of the owner occupier imputation

A further reason for the SNA93 to abstain from theoretical elaborations about owner occupation of dwellings may have been – besides the absence of a need to harmonize, because harmony was already present – that a coherent theory of how this case ought to be handled in the national accounts was also missing. There were different arguments being discussed, based on differing points of view, but it is unlikely that these views would have been brought to coincide in the course of the ongoing revision. However, for the purpose of the present paper, it may be revealing to review those arguments in order to clear the ground for the construction of possible alternatives. They are grouped under four headings: convention, comparability, consumption, and income.

3.1 Convention

The first position one finds in defending the owner occupier imputation may be called the agnostic position. It simply states the rule that an imputed rent of owner-occupied dwellings is included in gross output, "by convention." (SNA 1968, para. 6.22, ESA 1995 para. 1.13) Alfred Franz calls it "production ex definitione" (Franz 1994, p. 105). Such a statement may mean one of two things: either no further reason is needed (because the stated rule is evident), or no convincing reason can be supplied (in spite of its not being evident).

At this stage, it is useful to specify the distinction between a convention and a principle of national accounts. Both are rules established for constructing the system, but their relationship to theory is different. A convention is a rule that has no bearing on the results of the accounting process. The decision, for example, to put resources on the right side, and their uses on the left side of T- accounts is a convention in this sense. It cannot be justified theoretically, because one might have equally well have adopted the reverse, and it needs not be justified, because it has no bearing on the results of the accounts. A principle of the accounts, in contrast, defines their very meaning, such as the transactor-transaction principle, or the principle of placing the

income account below the production account. A principle must be supported by an underlying theory. And if there is an exception, this must then also be justified in light of that theory. The mere specification of the owner occupier imputation as a convention does not accomplish this.

3.2 Comparability

We don't have to look far to find more substantial reasoning: "comparability". The ratio of owner-occupied to rented dwellings "can vary significantly between countries and even over short periods of time within a single country, so that both international and inter-temporal comparisons of the production and consumption of housing services should be distorted if no imputation were made for the value of own-account housing services." (SNA93 para. 6.29) Comparability is often evoked in order to justify a certain rule of accounting. But comparability as such is a purely formal concept. It aims at harmonization of procedures and conventions, but it remains empty as long as it does not specify the concept according to which one harmonizes. The criterion along which comparability is desired must be clear in order to render the comparison meaningful. If we want to count the number of dwellings, their total area, or other physical quantities, there is no doubt that their ownership is irrelevant. But national accounts do not collect physical data. They are constructed in terms of value and distinguish between production and consumption. It is in these terms that the owner occupier imputation must be justified.

The alluded to fact alone of a varying rate of owner occupied dwellings begs the question. Other rates also vary significantly, e.g. those between students and employees, and yet students' work is not included in the national accounts[2]. The argument of varying rates is dependent on the existence of some common quality which must be decided upon before one can call for comparability within it.[3]

3.3 Consumption

If the criterion according to which inclusion of owner occupiers as producers has been left out of the SNA93, it is nevertheless ubiquitous in the surrounding literature: "Imputations are also made for the services of owner-occupied housing. There has been a consensus that omission of the services of owner-occupied housing would seriously understate household consumption." (Ruggles and Ruggles 1999, p. 134) The quote answers two questions. It names the criterion of comparison, namely consumption, and it explains indirectly why so little is found about it in the SNA. If there is consensus, there is no need for discussion. And indeed, the inclusion of owner-occupiers as producers has never been challenged during the fourth or any previous revision of the SNA. It has been there from the beginning (Schimmler 1987, p.229).

A fact of consensus is not a proof of truth (as long, at least, as national accounting is still a field of scientific enterprise). The paradox of production without employment is not eliminated by it. But one may interpret the discrepancy by saying that a correct measure of consumption has been given prevalence over a correct

[2] Kendrick (1972), pp. 129ff.

[3] The valid rationale for the variation argument is of practical provenance. If of two items, both of which belong to the same class according to a given criterion, one is missing in data, then it may be ignored if the ratio between the two does not vary and only growth rates are important, and it may not be ignored if the ratio does vary.

measure of production. By making consumption comparable, we have implicitly sacrificed comparability of production. For even if ratios of consumption per capita are enhanced, ratios such as GDP per capita are difficult to interpret if they include production without "economic activity".

Digging into the issue more deeply makes it more complex. Is the measurement of consumption really correct? A dwelling is an asset. If the use of one's own dwelling is deemed production because it is consumption, why not the use of other consumer durables? "The treatment of consumer durables as current expenditures also does some violence to the facts. The purchase of automobiles, for instance, is even more important in our economy than the purchase of houses, and automobiles represent a stock of durable goods which provides a flow of services over a significant period of years...Such consumer durables as dishwashers, refrigerators, stoves and air conditioners are often included in the purchase price of the house to which they are attached, and they are often financed by the mortgage on the house. It does not seem reasonable to subtract from the value of the house the cost of the durable goods which are built into it, or to exclude them from capital formation on the ground that they have been purchased separately...If this form of capital accumulation is not taken into consideration an important set of information relating to economic activity and behavior will be omitted." (Ruggles and Ruggles 1999, p. 65).

The argument follows a typical thread. Owner-occupiers represent an exception to what is normally considered a producer. An exception sets a precedent. If you make it for one item, why not make it for all others of similar nature? The rationale for an exception must always contain two reasons, one for making the exception, and the other for restricting it. If we have found a rationale for the first (comparability of consumption), we lack one for the second, restriction of the imputation to dwellings. Theoretically, it is not clear why the treatment of the consumer durable dwelling should not be extended to other consumer durables.

3.4 Income

It is the last of the threads spun in the SNA that may be substantiated by economic theory. National accounts, in their beginnings, were often constructed following the income approach, tax records supplying a primary source of data for the purpose. If taxable income included an imputed income to citizens living in their own premises, this concept of income had a natural impact on the national accounts and the forming of their concepts. Also, in practice, it may have been difficult – if not impossible – to separate the imputed income from the transacted income, once it had been incorporated in the collected and aggregated tax data, even if one had wanted to. So if the treatment of owner occupied housing was not controversial at the advent of national accounting, it is likely this debate took place earlier than the construction of national accounts. And, indeed, the concept of income was discussed and formed in the elder discipline of public finance. Here, the controversies about what is meant by income have been debated extensively. Goode (1960) formulates a distinct point of view, which is presented here because it sets a cornerstone still serving as a point of orientation for income theory today.

Beginning with the observation that imputed rent has never been included in the base of federal income tax in the United States, while it is taxable income in the United Kingdom and many other states, Goode writes his paper as a plea for the United States to follow these other countries. Quoting the British Royal Commission, he names two arguments supporting that view: (1) the owner could

rent his house if he wished, and his failure to do so indicates that the value of the occupancy to him must be at least equal to the rent foregone; and (2) an owner-occupant is better off than a tenant with the same money income, to which Goode adds a third argument himself: the homeowner has the alternative of investing his capital in other assets, and the choice of a house shows that he considers the return from it superior to the yield of other income-producing investments (Goode 1960, p. 504). In order to find out whether Goode's argument is ad hoc, only addressing a specific case, or compliant with the system of national accounts, it must stand the test of generalization. Do we include all items for which the argument holds in the accounts? If yes, the test is positive and the rule fits into the system; if not, the argument is not valid.

First argument: The owner could rent his house if he wished. Generalization means: If an owner could rent his property if he wished, a fictitious rent should be imputed to him and be included in the national accounts. Property consists not only of houses, but also of consumer durables. Hence these should be treated similarly, as previously mentioned. Land is also part of property. If it is not rented to some user, although it could be, should a rent be imputed for not doing so? And, more generally, if you take into account one alternative option, why not all others, too? You may not only rent your property, but sell it and invest the price in any other asset. Which asset price would you then choose as the relevant option against which to compare the owner occupation? Generalization does not stop at households. Business, government, and non-profit organizations also have the option of renting their premises and installations instead of occupying them themselves. Ought we to consider those options in the accounts as well? The argument of the renting option is incomplete in that it fails to reason why only assets in the form of dwellings owned by occupier households are included, and only the option of renting is considered.[45]

Goode's second argument says that an owner occupant is better off than a tenant with the same money income because he does not bear the cost of a rent. This argument fails the test of generality, because that would have to be said for the owner of any property who decides not to rent it, including enterprises. Besides, the argument is purely speculative. It is not based on empirical research about why owners decide for one option or the other, but rather on the theoretical assumption of perfect substitutes, which is perhaps a convenient assumption for modeling, but must not be confounded with facts of socio-economic behavior. In fact, when there is an empirical investigation, it comes out rather unfavorably for the substitution hypothesis (Heston and Nakamura 2009, Garner and Verbrugge 2009).

Goode does note the empirical obstacle to his theory: "Home owners are often puzzled by economists' assertions that they derive an income for their houses; these owners look on the houses as a source of expense rather than income. They are right in insisting that homeownership entails expenses, but they neglect that part of their shelter costs are covered (sic! UPR) by the imputed return on their equity. A homeowner is an investor who takes his return in the form of services. If he wishes to do so, he can convert his imputed return to a cash return by moving and letting his house." (Goode 1964, p. 64). Assuming that homeowners know what they are doing, it is surprising how easily the theoretician puts them into the wrong, simply because he has a certain model in mind. The reason for the homeowners' perception is quite

[4] To avoid a misunderstanding, calling a rationale not valid does not mean the rule for which it is meant is wrong, but only that the rationale does not support it.

[5] A good example is own product consumption of agriculture. The fitting rationale for its inclusion in the production accounts is not the option of selling it, but that in the process of production the self-consumed product cannot be distinguished from product to be sold. It represents the same factor value.

economic. In the corporate sector of production, interest on a credit is paid out of the revenue earned through the activity which is financed by the credit. The revenue earned and the interest paid necessitate one another. Home owners, by contrast, must mobilize other resources for finding the means to comply with their financial obligation. A home owner who relied only on the income attributed to him by way of the pure ownership could hardly "cover" the cost of mortgage. There could not be a house market crisis if that sort of coverage were effective.

Goode's third argument, that the choice of a house "shows" the owner considers the return from it superior to the yield of other income-providing investments, not only lacks empirical foundation, but demonstrates that Goode is equating two concepts which are distinct – not only in national accounts, but also in economic theory. The return on investment is a business variable, and in a theoretical equilibrium model it would be treated within the theory of producers where profit is maximized and can be statistically quantified. The purchase of a house for the purpose of making it a home is a matter of consumption and governed by utility functions which are non-monetary in nature, individually different, and statistically inaccessible. Surely, given the size of such a transaction, a purchaser will not ignore the future sales value of his dwelling. But if that were the prevalent motive, he would figure as a producer, and not as a consumer in the economic circuit.

Goode's point of view is not the only one which exists in public finance, although it is prevalent today. Other authors are less insisting on individual choice than on collective responsibility. To them, the income concept is a means of designing a just and equal tax system. "Social product is that part of yearly output that reaches markets. Hence it excludes consumption of own products. In contrast, the fiscal concept of income is to represent individual ability to pay." (Neumark 1947, p.24, translated by the author) And this ability may vary between countries, indeed, but in a different way than the standard argument assumes. In countries where people live primarily in rented homes, taxing own homes may meet with little resistance. For other countries, where the majority of people live in their own houses, such a tax rule is inappropriate. In fact, it was abolished 1946 in Turkey for this reason (ibid.). Stretching the argument to its extreme, if the rich live in expensive palaces they own in Beverly Hills, and the poor are crowded in rented rooms downtown, it may be just and equal to tax an income imputed to homeowners. If, however, the rich prefer paying astronomic rents in downtown New York, while the poor inhabit own shacks in the surrounding countryside, the same rule of tax may not be equitable. In summary, "the fiscal concept of income is of a political nature, because its purpose is to serve as a base for determining a citizen's financial participation in the process of political willing." (Hessler, 1976, p.76, translated by the author) What national accounts consider a question of economic factor allocation is then actually a question of social welfare distribution within the theory from which the accounts inherited their income concept. No wonder it does not fit.

4. Constructing an alternative

4.1 Composition, ownership and use of fixed assets

Having criticized the contradictory logic of the treatment of the housing economy in the national accounts, a natural direction for continuing the analysis follows: Assume the point of view of pure theory, and treat home ownership not as

an exception the system's principles, but in a way that corresponds to them, and do so disregarding any political consequences this alternative treatment might entail[6]. Thus, given the system of accounts in its full comprehensiveness as of 1993, how would one enter homeownership into the system if it had come to mind only now, a priori of any tradition or economic assumption?[7]

The task is much easier to accomplish today than it was in the early days of national accounting. For, in its fourth revision, the United Nations System of National Accounts (SNA93) has made a major step forward into an area hitherto scarcely charted. Providing for a full set of balance sheets for every sector of the system, the fundamental institutions of a capitalist economy – private and public property – may now be comprehensively described and monitored in coherent way. The development of national accounts has thus followed, more or less unconsciously, the general history of economic globalization, where income from property has grown in importance as compared to, and perhaps even as a result of, insecurity of other sources of income (labor, social insurance). The inequality in personal and household income accompanying the process and documented in numerous income studies may now be traced back to the specific income sources in an economic analysis where the circular metabolism between property and its earnings plays an important explanatory roll.

Realistic recognition of, and accounting for, national property is also of use for the national accounts themselves. The traditional flow accounts are complete in describing the circuit between production, output and income, but the concept of property enters here more or less on an ad-hoc basis. It is not spelled out in a way allowing, or even needing, checks for consistency and comprehensiveness. Now, with the full set of balance sheets, not only the analysis of stocks itself finds a fruitful field of exploration, but its links to the circuit of flow values may finally be studied within a fully coherent framework.

A prime example is the concept of income itself. It is now possible to reconcile the concept of income of national accounts, which relates income mainly to production and ("abstract") labor (more precisely "economic activity of institutional units"), which are concepts of flows of value, to the Hicksian concept of income as change in net wealth, i.e. in stocks of value that characterize the economic theory of income and capital ("to be equally well off"). The innovation has already proven advantageous in accommodating environmental degradation, depletion of resources, and capital gains and losses in the national accounts, the misrepresentation of which had previously marked a severe point of critique.

We begin our endeavor of constructing an alternative description of home ownership in the national accounts in the Hicksian tradition by examining the capital structure of an economy. Table 1 gives an account for the United Kingdom in year 2007, as an example[8]. Total tangible assets of the economy amount to a value of 6,752.2 billion pounds. The major part, namely a value of 4,313.6 billion pounds – equal to 64 percent of the total – is fixed in residential buildings. Residential buildings, by definition, are buildings used outside the production process. If they were used in production, they would be classified as "Commercial, industrial and other buildings." Residential buildings are "consumer durables" in this sense, part of final use, and not an input in production. While the investment in a dwelling may be

[6] Such as a change in GDP, for example.
[7] The economic formula, in particular, that any use of a durable object is a service provided by the object to the person using it.
[8] The United Kingdom has been chosen because it prepares an easily accessible full set of accounts, in connection with detailed input-output tables.

done with the purpose of earning an income, such investment does not enhance the productive capacity of an economy or the productivity of labor. It is not part of operating capital.[9]

The second observation concerns ownership. A value of 4,077.3 billion pounds – corresponding to 95 percent – is in ownership of the sector of households, including non-profit organizations serving households. The table does not distinguish between owner occupied and rented dwellings. If one assumes the same proportion as in the corresponding rents (36,192 million pounds for actual rents, 86,363 for imputed rents, table 6.4 national accounts 2009), we have a house value of 3039.8 billion pounds owned by occupiers, and a value of 1037.5 owned by landlords renting out. In brief, the major part (more than two thirds) of dwellings is occupied and managed by their owners. The producing sectors, corporate and public, manage a negligible portion, only 2 percent. It is therefore worth questioning whether their business structure and behavior form the appropriate model for monitoring residential assets in the national accounts. The corporate sector maximizes profit, economizes on resources, and keeps record for this purpose. The public sector functions under similar economic rules. Households, however, maximize individual utility with no obligation to increase or even sustain their assets. Consumption of fixed capital assumes a different meaning when applied to households. It is not paid for out of a revenue generated by applying the asset to some production, but must be financed from some other income source, or not even be financed at all if the household so pleases, preferring to let the dwelling deteriorate. As a dwelling is a consumer's and not a producer's durable, it does not generate a revenue from which its use can be supported. For the nation as a whole, wealth decreases, of course, if dwellings are not kept up well, but its productive capacity remains unaffected. Dwellings are not a capital employed in production, and an investment in a dwelling has a demand effect well known, but no capacity effect. Owning is not producing, and neither is occupying. Hence an owner occupier is not a producer[10].

[9] The term "operating capital" is introduced here in analogy to an operating lease.

[10] "He provides a service to himself", is the standard formula, but any activity a person is undertaking provides a service to himself, even working for pay (raising utility or welfare as against the unemployment status). "Providing a service to oneself" is thus just an economist's way of asserting that someone is doing something he likes doing.

Table 1
Tangible assets of the United Kingdom at end year 2007 (billion pounds)

Asset type	Nation	Corporate sector	Public sector	Household sector
Residential buildings	4,131.6	114.3	122.0	4,077.3
Agricultural assets	54.5	4.1	3.0	47.4
Commercial, industrial and other buildings	698.9	392.3	251.0	55.6
Civil engineering works	795.4	300.6	492.8	2.0
Plant and machinery	452.3	395.5	28.4	28.4
Vehicles, including ships, aircraft, etc.	185.6	95.4	8.8	81.4
Stocks and work in progress	229.8	207.7	5.4	16.7
Spectrum	21.9	-	21.9	-
Total tangible assets	6,752.2.	1,509.9	933.3	4,308.8

Source: United Kingdom National Accounts 2009, tables 10.2, 10.10, 10.11

4.2 Disentangling real estate activity in the national accounts

On the production account, and in input-output tables in particular, all real estate activities are collected in division 70 of the International Standard Classification of All Economic Activities (ISIC). The capital structure of the division (table 1) reveals great heterogeneity in the institutional set up of real estate activity. It is a household activity, primarily, either as home owners or as renting owners, with the institutional sectors contributing only marginally. The first step, therefore, to a proper analysis of the activity consists in disaggregating the division into its different institutional components. This has been attempted in table 2. The table presents the sequence of accounts in an abbreviated form. Five types of institutional organization are distinguished: housing corporations (profit), housing associations (non-profit), landlords, renters, and home owners. The table does not pretend to describe an actual statistical observation since it has been assembled by means of crude estimation based on published national accounts and input-output data only. Its purpose is not statistical verification, but theoretical demonstration of a possible scheme. Details of the compilation are found in the appendix.

Table 2
Housing economy of the United Kingdom, year 2007
National accounts treatment (million pounds)

		Housing corpo-rations	Housing associa-tions	Landlords	Renters	Home owners
		I. Production				
Resources						
P1	Output at basic prices	3,248	3,466	29,478		86,363
P11	Market	3,248	3,466	29,478		
P12	Own use					86,363
Uses						
P2	Intermediate con-sumption	751	802	6817		19,973
K.1	Consumption. of fixed capital	441	471	4005		11,735
B.1n	Net value added	2,056	2,193	18,656		54,655[1)]
		II.1.1 Generation of income				
Resources						
B.1n	Net value added	2,056	2,193	18,656		54,655
Uses						
D.1	Compensation of employees	1,240	1,324			
D.29/30	Taxes less subsidies	-1,429				
B.2	Net operating surplus	2,669	1,324	18,656		54,655
		II.1.2 Allocation of primary income				
Resources						
B.2	Net operating surplus	2,669	1,324	18,656		54,655
D.41	Interest received					
D.45	Rent received					
Uses						
D.41	Interest paid	1,339	1,429	12,155		35,610
D.45	Rent paid					
		II.4 Use of income				
Resources						
B.6	Disposable income					
Uses						
P.4	Final consumption				36,192	86,363
B.8n	Saving, net					

III.1 Capital

Resources					
B.8n	Saving, net				
D.9	Capital transfers				
Uses					
P.51	Gross fixed capital formation	1,767	1,885	16,033	46,974
K.1	Consumption of fixed capital	441	471	4,005	11,735
K.2	Land				
B.9	Net lending/borrowing				

III.2 Finance

Net incurrence of liabilities					
F.4	Loans	2,842	3,033	25,796	75,579
B.9	Net lending/borrowing				
Net acquisition of financial assets					

III.3.1 Unbalanced ("other") changes in volume of assets

Changes in liabilities and net worth					
K.12	Changes in structure				
Changes in assets					
K.12	Changes in structure				

III.3.2 Revaluation

Changes in liabilities and net worth					
K.11	Nominal holding losses				
Changes in assets					
K.11	Nominal holding gains	2,100	2,200	18,800	55,000

1) This is probably a lower limit. It yields a gross operating surplus of 66,390, while gross operating surplus for sectors S.14+S.15 households & NPOSH together amounts to 77,874 million pounds, which may be an upper limit but comes closer to the homeownership share retained in it (see NA2009 table 1.7.3 line B.2g).

The production account in table 2 has been prepared by splitting the production account of division 70 into institutional classes in proportion to their share in residential buildings. Compensation of employees, however, has been attributed to the formal institutions only, because it is only there that employment is recognized and registered. Taxes less subsidies have been allocated to the profit sector, which may be wrong, but that must be investigated[11]. Net operating surplus is thus even more concentrated on the home owners than output, with an income of 54 billion pounds being imputed to them. Interest paid has again been allocated in proportion to output, which may be very wrong, while final consumption expenditure on dwellings is divided between renters (the minority), and owners (the majority) of users, as usual. Accumulation accounts for capital and finance and the revaluation accounts are produced using the same proportions.The latter have been calculated by applying the price index implied in the published volume index.

4.3 Accounting for the housing economy: homeownership

After the traditional national accounting method of registering the housing economy has been outlined in table 2, an assay for an alternative scheme more in line with the institutional heterogeneity of the housing economy, as well as the principles of national accounts, is made in table 3. In order to explain, it seems useful to recall two essential principles relied on in constructing national accounts. Best known is the transactor/transaction principle, which says that the elementary data set forming the statistical material of the accounts is given by the value transactions performed in an economy. A value is transacted when a pair of claim and liability is created between two institutional units. Another accounting principle is given by the definition of economic activity, or production. It says (in brief) that production is all activity in an enterprise carried out regularly and for pay[12].

As two thirds of dwellings are occupied by owners themselves, it is this activity which ought to determine the form of the accounts and with which, therefore, we begin in constructing an alternative. As has been said before, owning one's premises is not an economic activity, so there is no output and no value added to the value of any intermediate consumption. The whole production account is void, as are the income accounts following thereafter. This recording represents the fact that the interest which is paid on account II.1.2 Allocation of primary income must be covered by activities other than living in one's own residence. The imputed income in national accounts – and in tax laws, for that matter – is of no use in this respect.

Final consumption follows the transactions principle. It consists of the expenditure incurred in connection with the dwelling, registered under intermediate consumption in the national accounts (19,973 mill. pounds). Consumption of fixed capital is not entered here because there is no income against which it is balanced and from which the appropriate re-investment can be financed, and it is altogether uncertain whether the owner himself cares about keeping track of the use of the dwelling in this way.

Gross fixed capital formation includes the purchase of dwellings as it does in the national accounts (46,974 mill. pounds). But it is appropriate to introduce a

[11] It makes the profit of non-profit organizations (= net operating surplus - interest paid) come out at nearly naught, - a theoretically nice result.

[12] These are not the literal SNA93 definitions, of course, which are more involved, but in their simplicity they are useful for guiding its theory. (For detailed explanation see Reich 2001)

refinement of classification here. Gross fixed capital formation is measured by the total value of a producer's acquisitions, less disposals, of fixed assets during the accounting period (United Nations 2004, p.103). Fixed assets are tangible or intangible assets produced as outputs from processes of production that are themselves used repeatedly or continuously in other processes of production for more than one year. (United Nations 2004, p. 100) Dwellings are buildings that are used entirely or primarily as residences. (United Nations 2004, p.96) It follows that dwellings are not used repeatedly or continuously in other processes of production, hence they are not part of fixed capital. They are part of the owner's wealth, similar to other unproductive valuables, except that they are not "acquired and held as stores of value" (United Nations 2004, p. 96). As previously stated, dwellings are held by their occupiers primarily for use as a residence. They are fixed consumer durables rather than an operative capital and belong to a third category which may be placed between the two traditional categories of fixed capital formation and valuables on the capital account.

The finance account remains untouched with 75,579 million pounds in new loans, as does the revaluation account, where the nominal holding gain of 55,000 million pounds almost equals the increase in loans. The loss of wealth due to deterioration of dwellings is entered as an unbalanced ("other") volume change (11,735 mill. pounds) in the revaluation account[13].

[13] The official terminology of "other" volume changes is not very meaningful. The expression "unbalanced" may indicate that these figures enter only on one side in contrast to the regular balanced flows that always appear in pairs somewhere on the two sides of the system.

Table 3
Housing economy of the United Kingdom, year 2007
Housing accounts treatment (million pounds)

		Housing corpo-rations	Housing associa-tions	Landlords	Renters	Home owners
		I. Production				
Resources						
P1	Output at basic prices	3,248	3,466			
P11	Market	3,248	3,466			
P12	Own use					
Uses						
P2	Intermediate con-sumption	751	802			
K.1	Consumption of fixed capital	441	471			
B.1n	Net value added	2,056	2,193			
		II.1.1 Generation of income				
Resources						
B.1n	Net value added	2,056	2,193			
Uses						
D.1	Compensation of employees	1,240	1,342			
D.29/30	Taxes less subsidies	-1,429				
B.2	Net operating surplus	2,669	1,342			
		II.1.2 Allocation of primary income				
Resources						
B.2	Net operating surplus	2,669	1,342			
D.41	Interest received					
D.45	Rent received			36,192		
Uses						
D.41	Interest paid	1,339	1,429	12,153		35,610
D.45	Rent paid				36,192	
		II.4 Use of income				
Resources						
B.6	Disposable income					
Uses						
P.4	Final consumption			6,817		19,973
B.8n	Saving, net					

III.1 Capital

Resources					
B.8n	Saving, net				
D.9	Capital transfers				
Uses					
P.51	Gross fixed capital	1,767	1,885		
K.1	formation				
K.2	Consumption of fixed capital	441	471		
	Acquisition less disposals of dwellings			16,033	46,974
B.9	Net lending/ borrowing				

III.2 Finance

	Net incurrence of liabilities				
F.4	Loans	2,842	3,033	25,796	75,579
B.9	Net lending/bor-rowing				
Net acquisition of financial assets					

III.3.1 Unbalanced ("other") changes in volume of assets

Changes in liabilities and net worth					
Changes in assets					
AN.1	Produced assets				
AN.11	Fixed assets				
AN.12	Inventories				
AN.13	Valuables				
AN.14	Dwellings			4,005	11,735

III.3.2 Revaluation

Changes in liabilities and net worth					
K.11	Nominal holding losses				
Changes in assets					
K.11	Nominal holding gains	2,100	2,200	18,800	55,000

4.4 Housing accounts for renters and landlords

The imputation of a value for production to households owning their home is conspicuous in contradicting the normal rules of the system of national accounts because it violates the transactor/transaction principle. The rent flowing when there are two parties, and owner and occupier are separated, represents a transaction in the sense of the system. Yet the national accounts treatment cannot pass without scrutiny. Rents of dwellings are considered as measuring an output of production. This stands in contrast to the treatment of transactions of similar nature, interest. Interest is treated as property income, as is the rent on land; it is only the rent of building structures that is not treated as property income. We ignore the argument that these rents are payments for a service, because that does not discriminate them from the other property transactions. The pertinent difference is that interest and rent

on land are paid on non-produced assets, while buildings are output of production. The distinction is clarified in the SNA by naming rents on buildings "rentals". A distinction in naming is not an argument for making it, of course. One must search more deeply.

Under the premise that any letting of dwellings is production, independent of the institutional conditions under which it is performed, this activity is registered among 109 other activities in the input-output table. Production being the result of applying labor and capital to a transformation process, both values are shown there. Table 4 gives a selection made in respect to the ratio of operating surplus to compensation of employees. The median of this ratio is .555 for all 109 industries. Operating surplus is thus normally roughly half of compensation of employees, with half of the industries having lower values. For industry "Letting of dwellings", the ratio comes out at 40.0, which is 80 times the median. The next highest ratios are found for industries "Oil and gas extraction" with 12.1, "Fishing" with 5.5, "Water supply" with 3.9, "Electricity" with 3.4 and "Tobacco products" with 2.5. Any econometric study would consider the data of industry "Letting of dwelling" as an outlier, not in conformity with the hypothesis underlying the rest of the data observed. And even if "Letting of dwellings" is a capital-intensive industry like the others, its ratio is still an outlier compared to them. There cannot be production in the SNA93 sense where labor input is 1/80 of operating surplus and value added. Something is foul here in the state of the accounts.

Table 4
Labor and capital rewards in selected industries of the United Kingdom, year 2007 (million pounds)

Industry	Compensation of employees	Operating surplus	Ratio
Tobacco products	273	673	2.5
Electricity supply	2,938	10,020	3.4
Water supply	714	2790	3.9
Fishing	75	412	5.5
Oil and gas extraction	2219	26746	12.1
Letting of dwellings	2,569	87,113	40.0
Median of all 109 industries			0.555

The table supports our previous decision to disclaim home owning as an activity of production. The imputed operating surplus is incorporated in the figure of 87,113 million pounds in table 2. But for actual rent, the picture still looks bleak. Without imputation, rentals received amount to 36,192 million pounds; their ratio to the observed compensation of employees stands still at a factor of 14. It is likely, though, that a significant part of the employment compensation does not belong to individual landlords, but to enterprises of the corporate and public sectors. If only half of it belongs there, the capital-labor income ratio of landlords rises to 28. The decision seems inevitable: Individual landlords earn property income, just like individual money savers earn interest: without being considered a producer.[14] Of course, the operating surplus assigned to landlords could in reality be mixed income; this cannot be determined from the data and should be investigated. Given that for homeowners, the SNA39 explicitly excludes this possibility, it is unlikely that

[14] A further argument may be that, with increasing age, the value of a building is increasingly determined by the value of the land beneath.

landlords pay more attention to their rented dwellings than owner occupiers to their homes.

The expenses of the landlord, booked as intermediate consumption in the national accounts, are final consumption, just as other expenses are treated that arise in connection with interest receivable or maintaining other valuables. They are not intermediate consumption, because their consumption does not generate revenue from which its cost can be paid. As a consequence, there is no final consumption for the renter, but the rent diminishes his "disposable" income, which does not seem to be completely besides the actual financial situation of these households. A residential purchase is treated in the same way as has been done for owner occupiers. It does not figure as operating capital, but as a tangible asset of wealth that depreciates over time (a fixed valuable). There is no rule or empirical verification of landlords keeping up their property in a way that retains the initial value. On the contrary, the open neglect of private property in dwellings is a phenomenon often deplored in public. Against this actual non-economic behavior,[15] the national accounts' figure of consumption of dwellings represents the national or macroeconomic point of view, a perspective not necessarily shared and acted upon by the individual private owner.

With the alternative accounting suggested here, we also avoid "the necessity to create a notional enterprise for the landowner if the landowner is not already engaged in some other kind of productive activity" (SNA93,para. 7.31). Taxes on property can now be directly paid by the landlord.

The institutional sectors (profit and non-profit organizations) hardly play a role in the housing economy, if one trusts the distribution of the corresponding assets (table 1). The national accounts treatment of housing is a fitting representation of their economic behavior, because they really manage dwellings as an institutionalized, regular activity with at least one person employed in the enterprise. The figures in table 3, therefore, repeat those of table 2.

5. Conclusion

The results of the previous analysis may be summarized as follows:

a) The imputation of a production value to homeownership appears as the major exception to the principles of national accounts.
b) The justification of the imputation contained in the SNA93 is insufficient.
c) The theory on which the imputation is based follows a model of substitution between renting and buying a home which is counterfactual.
d) Its concept of income has been largely inherited from tax theories of public finance, rather than having been developed within the national accounts themselves.
e) Individual owners of dwellings (self-occupiers and landlords) do not earn "mixed income." Hence there is no labor, and no production (output or value added) associated with whatever they may earn, or gain, by holding their assets.
f) An alternative method of compilation exists which complies with national accounting principles and more faithfully reflects the functioning of markets and capital in the housing economy.

[15] Not non-economic in the sense that the landlord would not maximize his utility, but he does not maximize profit.

The question is left now what to do with this analysis in practice. A revision of the national accounts at the level of GDP, even if theoretically desirable, is hardly a realistic option. GDP, or GNI, for that matter, have been built in many an administrative agreement, nationally and internationally, so that a major modification – which unfortunately it is – would cause political turmoil and is out of the question. But on some lower level of branch economics, for example, within a system of sub-accounts extended to a satellite system, perhaps, an adequate statistical description of a nation's housing economy – which, after all, comprises two thirds of a nation's fixed wealth (in the UK) – may prove useful in the fashion outlined above.

Appendix
Details and sources of the compilation

Figure	Source
3248	(= 36192 + 86363) = 12255 Total consumption, NA2009 table 6.4 * 114.3 : 4313.6
3466	= 12255 Total consumption, NA2009 table 6.4 * 122.0 : 4313.6
29478	= 12255 Total consumption, NA2009 table 6.4 – 3248 – 3466 - 86363
86363	Imputed rentals for housing, NA 2009 table 6.4, line 04.2
19973	= 26549 intermediate consumption "letting of dwellings", Supply and Use Tables, 2004-2007, 2007 table 2, cell (129,CM) : 114797 Total output at basic prices of industry "letting of dwellings". Supply and Use Tables, 2004-2007, 2007 table 2, cell (134,CM) * 86363
6817; 802; 751	= 26549 intermediate consumption "letting of dwellings", Supply and Use Tables, 2004-2007, 2007 table 2, cell (129,CM) : 114797 Total output at basic prices of industry "letting of dwellings". Supply and Use Tables, 2004-2007, 2007 table 2, cell (134,CM) *29478; 3466; 3248
11735 4005; 471; 441	= 86363; 29478; 3466; 3248 * 54629 Consumption of fixed capital of sector households, NA2009 table 1.7C Uses : 402029 Output at basic prices of sector households, NA2009 table 1.7 Resources
1240; 1324	= 2564 Compensation of employees, Supply and Use Tables, 2004-2007, 2007 table 2, cell (131,CM) : 6714 (=3248 + 3466) * 3248; 3466
1429	Taxes on production less subsidies, Supply and Use Tables, 2004-2007, 2007 table 2, cell (130,CM) : 6714 (=3248 + 3466) * 3248; 3466
35610: 12155;1429; 1339	= (86363; 29478; 3466; 3248) : 122555* 50533 property income paid by Households and NPISH, NA2009 table 1.7A D.4
46974; 16033; 1885; 1767	= 66659 gross fixed capital formation of households and NPISH * (86363; 29478; 3466; 3248) : 122555
2842; 3033; 25796; 75579	= (120886 – 13636) Net changes in liabilities of households and NPISH F.4 loans table 1.7C : 4313.6 * (114.3; 122.0; 1037.5; 3039.8)

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