LIGHTS AND SHADOWS OF HOUSEHOLD SATELLITE ACCOUNTS: THE CASE OF CATALONIA, SPAIN

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ABSTRACT
The construction of Household Satellite Accounts (HSAs) to value household production is not a new object of study. However, as their use has widened, research efforts have focused on resolving technical aspects of valuation assessment and far less attention has been paid to the underlying conceptual aspects. The purpose of this study is to contribute to improving the HSA as an analytical tool. Two approaches are proposed, drawing on existing data from Catalonia, Spain. The first approach involves incorporating the analysis of time as a key component of HSAs, making it possible to explore aspects of unpaid housework without the influence of monetary valuation. The second develops a new methodology that captures information on both housework and market work, overcoming some of the limitations of current databases used in the calculation of HSAs and allowing an analysis of the various interrelationships that exist between the two types of work.

KEYWORDS
Household production, satellite accounts, time use

JEL Codes: B54, D13

INTRODUCTION
The construction of Household Satellite Accounts (HSAs) is not a new object of study within feminist economics. In fact, the debate over measuring and valuing household production has its roots in the nineteenth century. Much later, in the 1970s, the second wave of feminism gave a strong impetus to the subject and reestablished it in some academic and political sectors as a fundamental issue for reflection and discussion. In the 1990s, with the recommendation by the United Nations (1993) to use HSAs in order to introduce household production into systems of national accounts and the contributions toward methods of constructing HSAs by the International Conference on the Measurement and Valuation of Unpaid Work (Canada 1994) and the United Nations Fourth World Conference on Women (Beijing 1995), statistics institutes in
many countries began to include the official, across-the-board valuation of household production on their agendas.\textsuperscript{1}

Once the debate shifted to implementation questions it underwent considerable change, focusing increasingly on the technical aspects of valuation rather than on its political or conceptual foundations. Beyond the matter of compiling HSAs, the conceptual debate on time use and the measurement of housework has remained open.\textsuperscript{2} New ideas and contributions have emerged, but they have not always been incorporated into the construction of HSAs.

The construction of HSAs requires the establishment of shared conventions that allow researchers to move forward in the same direction and carry out comparative studies (INSTRAW 1995, 1996; United Nations 2000a, 2000b; Eurostat 2003). However, the acceptance of such “guidelines” has, to some extent, worked against attempts to realize the potential of the HSAs. Originally, satellite accounts were conceived to fulfill two roles: first, as a statistical tool and, second, as an analytical tool (United Nations 1993: paragraph 21.5). The HSAs were designed to make household production visible and measurable and also to serve as a basis for analysis of the relationships between the market and household spheres within the broader economy – for introducing input–output analysis, for instance. But the methodologies currently in use do not allow HSAs to operate as analytical tools, because they analyze independently household and market production. The current combination of possibilities and limitations led us to our title for this study: “Lights and Shadows of HSAs.”

The aim of this contribution is to bring together all the conceptual richness of the ongoing debate over time use and measurement of housework, so as to introduce improvements into the methodology HSAs use and to underline the importance of their conceptual foundations, thereby avoiding the danger that they might become mere exercises in bookkeeping. With this purpose in mind we analyze the case of Catalonia, Spain, as a numerical example; but this methodology could be applied in any other region or country.\textsuperscript{3}

To further this aim, this study offers two proposals intended to improve HSAs as analytical tools. The first is to introduce the analysis of time use as one of the key components of HSAs, making it possible to analyze aspects of unpaid housework without the influence of monetary valuation.\textsuperscript{4} The second proposal is a new methodology to capture information on both housework and market work, overcoming some of the limitations found in current databases used to calculate HSAs and, additionally, allowing an analysis of the interrelationships between these two types of work. Unfortunately, resources are not available to fully implement the latter proposal. Finally, this study, demonstrates how time use, labor force, expenditure, and input–output data from separate existing sources can be used to enrich HSAs using the example of Catalonia in 2001. However, the
results of our study on Catalonia, based on the former single surveys of time use, are less powerful and subject to greater weaknesses in their analysis of time and work than would be the case using the new methodology we propose.

MEASURING TIME: ADVANTAGES AND LIMITATIONS

Since the 1970s, but particularly over the two last decades, various authors have held that housework devoted to the care of other household members occurs in a social and emotional context that differs from paid work. As a result, it cannot simply be substituted by market production (Jens Bonke 1995; Alisa Del Re 1995; Nancy Folbre 1995, 2001; Susan Himmelweit 1995, 2002; Amaia Pe´rez 2006). It is this specific dimension of care work that poses the greatest difficulties in establishing the limits of activities considered as household production and in measuring the time devoted to this activity.5

Advantages of using time for measurement

First, the study of inequalities between women and men in the performance of unpaid domestic and care work does not need this work to be expressed in monetary values. In fact, the disparity is more transparent in terms of work measured by time. Information on time use makes it possible to conduct life-cycle analyses that reveal the differing situations of women and men over the course of their lives, and it serves to construct indicators to analyze the impact demographic shifts or changes in household behavior have on housework (Martha MacDonald 1995; Nancy Folbre and Michael Bittman 2004).

A second advantage of using time for measurement is that the approach does not rest on the attribution of market values to an activity that is not performed under market conditions. This aspect avoids the biases arising from wage discrimination in the marketplace. A third advantage is that time is the basic measure shared in common by market and household production. Building input–output tables on time use and analyzing time use in the HSAs should together make it possible to link housework with market work in the national accounts and to analyze the two kinds of work as interconnected flows (Carsten Stahmer 2000). For example, accounting for unpaid time devoted to care within households and paid time devoted to care offered by the market or by public institutions would make it possible over time to monitor changes in the way that caregiving is organized in a society.

A final advantage, related to the preceding one, is that calculating work time provides real rather than inferred measurements. As a result, the measurements are directly subject to change from other variables such as technology, but not from monetary variables. When the analysis is performed in monetary terms, factors such as inflationary processes can
obscure the actual relationship between time devoted to housework on the one hand and time corresponding to market work on the other.

Limitations of time as a quantitative measure

In spite of these advantages, the various dimensions of time also present a number of drawbacks. In addition to its more objective dimension, which can be measured and quantified and in capitalist societies has taken the form of money, time also has a more subjective dimension that is difficult to measure or quantify. It incorporates intangible aspects that arise from the subjectivity of the individual involved and that take their form in lived experience (Cristina Borderías and Cristina Carrasco 1994; Barbara Adam 1999; Soledad Murillo 2001). This kind of time, which several authors have called “reproduction time,” is not so much time measured and paid as time lived, given, and generated, with a component that is difficult to translate into money (Karen Davies 1990; Carmen Leccardi 1996; Linda Hartrais and Marie-Thérèse Letablier 1997; Adam 1999).

Ignoring the distinct senses of time and considering only the dimension that can be objectively measured is a further example of the inequality between how women’s and men’s work is measured. Time is much more complex than a simple timetable suggests, but the use of timetables has won out as the measure equating time labor and wages (Teresa Torns 2004). The logic of the male organization of production dismisses the more qualitative dimensions of time, which are more closely connected to the life cycle and care of individuals and in fact are more typical of women’s experience. This problem pertains directly to the difficulty of integrating care work into the definition of household production.

As a consequence, to capture the distinct dimensions of time devoted to housework and care work and to enrich the analysis, there is a clear need to supplement the quantitative studies compiled using time-use diaries with more qualitative methodologies (such as in-depth interviews and life histories), which draw fundamentally on the fields of sociology and historiography.

The use of time-use or activity diaries

Time-use diaries have been a substantial step forward in the study of the various activities people perform throughout the day, especially unpaid domestic and care work. However, their methodology and their application need some refinement if we are to craft a tool that also responds to the more intangible aspects of care work.

First, time-use diaries describe how a given population allocates time across different activities. Although this allocation of time may be the result of freely taken decisions, it generally responds to the existence of prior
social conditioning. Women and men are not only conditioned differently, but also unequally. For example, the decisions of women with respect to their participation in the labor market – while not free of personal tensions – will also be severely limited by a variety of social forces (for example, the patriarchal tradition, the family environment, and the supply of public care services), which have a much lesser effect on men and on their decision-making processes. This inequality of decision-making processes between men and women is not reflected in the statistics on time.

Second, the diaries only capture the most quantitative dimension of labor time (market work and housework). This has several implications for housework (Michelle Budig and Nancy Folbre 2004; Folbre and Bittman 2004; Cristina Carrasco 2006). One is that the diaries fail to capture all aspects of household management, organization, or responsibility, because no specific time is generally allocated to the completion of these activities within the household. The inclusion of some specific questions would serve to gather information on these aspects, as the methodology we propose will show.

A second corollary is that the term “care” does not correspond exactly to the performance of a specific set of activities. Care is also, and especially, a state of mind involving responsibilities, organization, and constant availability. Nancy Folbre, Jayyoung Yoon, Kade Finnoff, and Allison Sidle Fuligni (2005) call this state of mind passive care and characterize it as time spent being attentive, available, or watchful, which is difficult to specify in measured time; an example of passive care is looking after a child at night. In order to capture these diffuse aspects of caregiving, time-use surveys in Canada and the United States include a question on whether the respondent was looking after children or had responsibility for children (Folbre 2006). However, the questions on surveys have not addressed the care of the elderly or the ill (Michael Bittman, Janet Fast, Kimberly Fisher, and Cathy Thomson 2004; Cristina Carrasco, Mârius Domínguez, andMontserrat Simó 2005), despite the gradual aging of the population in many European countries and the consequences that this process may have in the near future. Nor do time-use diaries capture time spent caring for adults (that is, healthy adults), because the notion has not even been conceptualized (Eva Feder Kittay 1999; Martha Albertson Fineman 2004, 2006).

Third, the diaries fail to reflect the conflicts and tension involved in the organization of life and work times, particularly for women. Studies conducted by Folbre and Bittman (2004) and Martha MacDonald, Shelley Phipps, and Lynn Lethbridge (2005) have shown that the important change in women’s labor market behavior has not resulted in an increase in total time devoted to total work, but rather its impact can be seen in the tensions caused by combining housework and market work. The methodology we propose in this study partly addresses this
“double presence” (Laura Balbo 1994), or “double presence/absence” (María Jesús Izquierdo 1998).

A fourth issue is the problem of “simultaneities,” which was studied for the first time by María Sagrario Floro (1995), and how the manner of gathering information in the diaries leads to underreporting of activities that focus on the care of children. Among the activities that can be – and usually are – performed simultaneously with another household task, care work is one of the most frequently mentioned. However, the manner in which people prioritize activities introduces a potential for considerable subjectivity, which is filtered through a patriarchal culture that has traditionally taken care work, in particular, to be an activity for women (Budig and Folbre 2004; Carrasco 2006). As a result, time-use diaries show a tendency not to classify caregiving as a primary activity. Quite often, caregiving is not even noted as a secondary activity. This problem could be minimized by introducing a question into diaries exploring the notion of “looking after other people.”

The subject of simultaneities presents further problems as well. The diaries typically ask respondents whether they were alone or with someone they knew while performing an activity. This question introduces ambiguity or confusion around the issue of care work because it makes it easier to mistake being present for giving care. Another example of simultaneity is when a father and mother are both looking after a child at the same time. Each will note the time spent caregiving without making explicit the fact that it has been performed jointly (Folbre et al. 2005). This method of counting distorts the total childcare time. The problem could be avoided by introducing a change in the way diaries are analyzed or by requesting that explicit mention be made if the caregiving was performed jointly.

A final mechanism that may conceal the true extent of caregiving activities is that the age limit at which point children are no longer considered to be in need of specific care is arbitrarily set at 10 years. This decision is highly debatable because children of all ages, including adolescents, require care of many different kinds (Timothy Smeeding and Joseph Marchand 2004).

A METHODOLOGICAL PROPOSAL: THE NON-ANDROCENTRIC LABOR FORCE SURVEY (NA-LFS)

One of the main problems encountered in the study of work in general and the HSAs in particular is the lack of a methodological tool able to account for the different kinds of work in an integrated manner, particularly housework and market work. Labor force surveys gather information exclusively on paid work, classifying unpaid activity in the household as nonwork. On the other hand, time-use surveys offer information on the time spent on each activity through the use of activity diaries, but the
questionnaires do not log detailed information on activities performed in the household. They also tend to offer only very limited information on employment. Therefore, although time-use surveys represent a major step forward in making visible unpaid domestic and care work, it remains difficult to perform integrated analyses of the two kinds of work, which would make it possible to study and recognize the strategies pursued by women and men in response to the demands of time and work in daily life.

For this reason, we propose an alternative methodology involving a periodic survey that replaces labor force surveys and collects information on overall activity and its distinct components: paid work, housework, study, and volunteer work. With this methodology, the analysis and calculations of current HSAs could be expanded. The survey, which we devised and call the Non-Androcentric Labor Force Survey (NA-LFS), includes a household questionnaire, individual questionnaires, and time-use diaries for all members of the household. The survey is aimed at individuals 10 years of age and older, with the exception of a questionnaire on market labor, which is for individuals who are 16 or older (the minimum legal working age in Spain). The NA-LFS has to date been used only once, in a pilot study conducted in Barcelona (Cristina Carrasco, Maribel Mayordomo, Màrius Domínguez, and Anna Alabart 2004).

The household questionnaire of the NA-LFS gathers information on certain household variables such as household structure, total income, and specific care needs. The individual questionnaires basically record data on individuals’ activity, education and skills, and other personal characteristics. All kinds of work are considered activity, so this last aspect introduces a fundamental shift in perspective: anyone who performs any type of paid or unpaid work is considered a working person. This last point is the main difference between the NA-LFS and older proposals made by many gender-aware statisticians on collecting labor force and time-use data from the same set of households. The NA-LFS approach substantially increases the number of activities that constitute work and also broadens the scales used to identify individual activity. So, situations are not considered merely as activity or inactivity but are treated as multiple and diverse (that is, market activity/inactivity, unpaid domestic activity/inactivity, and so on). This approach also permits combinations between the categories.

The individual questionnaire then continues with two main sections referring to market work and housework. In the case of employment, the questionnaire broadly reproduces the format used in labor force surveys organized by the International Labour Organization. However, the section on housework includes questions on responsibilities, organization, and tensions in work time as well as on a number of more qualitative aspects of caregiving activities, the reasons given by women and men for performing them, their experience and skill at these tasks, and the difficulties in
combining and reconciling household activity with paid work. Lastly, the time-use diary, which supplements the information from the questionnaires, incorporates the suggestions raised by various authors, as previously mentioned.

The NA-LFS presents some advantages. First, the individual questionnaire on housework provides information on aspects that are impossible to capture with a time-use diary, such as the responsibility for household management and organization, the difficulties in reconciling the different kinds of work when the household contains dependents, and the desires or preferences of women and men in relation to work and their use of time. Second, by considering the two kinds of work together, the NA-LFS makes it possible to study the work requirements of social reproduction. This process has two dimensions. The first concerns the amount of work a family must perform in order to live in its current conditions, and the second consists of analyzing family strategies for subsistence and reproduction. In the second case, the NA-LFS allows an analysis according to family type of the overall work (household and market work) performed by household members for their subsistence and the overall work, paid or unpaid, aimed at satisfying the direct needs of individuals.

A third advantage of the NA-LFS is that it acknowledges the importance of considering the entirety of the information on market work and housework in order to explain how the two kinds of work interact and mutually affect one another. The need for an analysis of this kind has become urgent in recent years because of the major changes occurring in the organization of production and the new, more extensive forms of flexible employment, which complicate the ways in which individuals (particularly women) organize their daily lives. Since the NA-LFS provides information on market work (length of workday, type of schedule, shifts, type of contract, etc.), the time and distribution of activities each family member performs throughout the day, and family structure and number of dependents, it makes it possible to analyze the repercussions of new social circumstances on the lives of individuals. Thanks to the features described, the information gathered through the NA-LFS allows the construction of a set of indices and indicators that integrates both kinds of work at the same time and more realistically reflects the issue of total work performed by women and men.

SATELLITE ACCOUNT FOR CATALONIA

While we cannot fully implement all of the methodological changes we have outlined at this time, as mentioned previously, we can illustrate some of our points using existing data for Catalonia. To do so, we structure the HSA for Catalonia in three parts: physical measurement in units of time, valuation only of housework according to the net method, and valuation of
household production according to the input method. The last two parts are typically included in an HSA; however, given our interest here in highlighting the measurement of work time, we believe that it is important to introduce the first part as one of the principal and essential parts of the HSAs. By doing so we hope to respond to, and overcome, some of the limitations arising from the monetary valuation of housework.

Our calculation of Catalonia’s HSA draws on basic information sources such as the Time-Use Survey 2002–2003 (Spanish National Statistics Institute 2004a), the Wage Structure Survey 2002 (Spanish National Statistics Institute 2004b), and the Input–Output Table for Catalonia 2001 (Catalan Statistics Institute 2005). Given that time use changes at a very slow rate and that the Input–Output Table for Catalonia corresponds to 2001, we decided to deflate wages and calculate the HSA for households in Catalonia for the year 2001.8

Analysis of time dedicated to household production

Daily work time

Table 1 presents the data on time dedicated to the different types of work.9 The most striking feature is the continuing difference between women and men: while the time women devote to market work is 55 percent of the time men spend on it, the relationship is reversed with regard to housework, in which case men spend 41 percent of the time women do. In other words, women in Catalonia work one hour longer per day overall than men. The second observation to make is that, when comparing time devoted by the population as a whole to each type of work in Catalonia, on average, people spend 21 minutes more on housework than on market work. This finding challenges the notion that housework is a marginal activity of no importance: market work is in effect supported by housework.

However, if the time-use data are corrected to better reflect caregiving time by adjusting the diaries as we describe, and to capture time spent on household management and organization as we propose in the NA-LFS, the differences between men’s and women’s work time become notably wider,

|                     | Men      | Women    | Average |
|---------------------|----------|----------|---------|
| **Market work**     | 3: 52 (66.6) | 2: 07 (31.2) | 2: 58   |
| **Housework**       | 1: 56 (33.3) | 4: 40 (68.8) | 3: 19   |
| **Total**           | 5: 48    | 6: 47    |         |

Note: Time measured as social average per day in hours: minutes. Percentages are in parentheses. Source: Authors’ calculations using Spanish National Statistics Institute (2004a).
with women devoting notably longer hours to work. Also, the amount of
time devoted to housework increases.

**Life-cycle perspective**

The ability to take a life-cycle perspective would provide an interesting
opportunity for the analysis of working time. Individuals pass through
different periods in their lives with respect to their time availability and
distribution, due to the demands for care work from other individuals in
the household. This situation is strikingly different for women than for
men; it highlights the importance of analyzing the stages that create the
greatest conflicts in the organization of work because the overall workload
is not just a question of hours spent, but, perhaps more importantly, of how
time is organized as well. A life-cycle approach could incorporate variables
such as age, marital status, and household type. Here, however, we must
limit our comments to the last of these because it is the variable that offers
the most important information. The analysis takes into consideration the
most common types of household for Catalonia (Table 2).

As Table 2 indicates, women of any age living in single-person households
dedicate more time to housework than men living in the same type of
household. An interesting example is the case of individuals over 65 years
of age, who are no longer employed outside the home. The difference in

| Type of household                                     | Fpp | Mpp | Total |
|-----------------------------------------------------|-----|-----|-------|
| Single male under 65 years without children         | 2: 20| 2: 20|       |
| Single male over 65 years without children          | 3: 13| 3: 13|       |
| Single female under 65 years without children      | 3: 45| 3: 45|       |
| Single female over 65 years without children       | 4: 49| 4: 49|       |
| Male–female couple under 65 years without children | 4: 11| 2: 10| 6: 21 |
| Male–female couple over 65 years without children  | 5: 35| 2: 31| 8: 06 |
| Male–female couple with at least one child under 18 years | 6: 16| 2: 24| 8: 40 |
| Male–female couple with at least one child over 18 years | 5: 50| 2: 11| 8: 01 |
| Single male parent with at least one child under 18 years | 1: 29d | 1: 29d |       |
| Single male parent with at least one child over 18 years | 1: 35 | 1: 35 |       |
| Single female parent with at least one child under 18 years | 4: 03 | 4: 03 |       |
| Single female parent with at least one child over 18 years | 4: 58 | 4: 58 |       |

Notes:  
*a* Principal male and female persons are the men and/or women considered responsible for the
household. For instance, in a household with a heterosexual adult couple and their children, the
male and female principal person would be the father and the mother, respectively.  
*b* Fpp = Female principal person.  
*c* Mpp = Male principal person.  
*d* The sample frequency is under 0.5 percent and therefore it is not representative of the population. Time measured as average per day in hours: minutes.  
Source: Authors’ calculations using Spanish National Statistics Institute (2004a).
the time women and men spend on housework is approximately 1.5 hours per day. If single-person households are compared with single-parent households, we also find differences in the amounts of time women and men devote to housework that cannot be explained by the requirements or characteristics of the household. In single-parent male households, the time that men dedicate to work is less than half that spent by women in single-parent female households. This gap can be explained by the potentially greater collaboration of children or other women from the “extended family” and also particularly by discrimination in the labor market, which reinforces gender bias in the household and leads to wage gaps in favor of men, enabling them to purchase goods and services in the market and thus perform less housework.

In the case of partnered women and men living together, gaps also appear between women and men when comparing single-person households and heterosexual couples without children, both under 65 years of age. Although it is not a diachronic analysis – that is, it is not based on the amount of time women and men in these households spend on housework over a period of time, but on the amount measured at a predetermined moment – we think that the comparison holds some validity. We find that women transitioning from living alone to living in a heterosexual couple experience an increase of 26 minutes in housework, while men going through the same process dedicate 10 minutes less. It would seem logical to expect that economies of scale would reduce both persons’ working time, but in fact women work longer, suggesting that they assume a portion of the men’s housework.

In addition, a comparison of households with heterosexual couples under 65 years of age without children and households with heterosexual couples under 65 years of age living with a child younger than 18 shows that women dedicate 2 hours 5 minutes to the new demands of caregiving. However, men in the same situation only spend an additional 14 minutes on caregiving.

Another interesting analysis of the data addresses employment in the labor market. In Table 3, the most striking finding is that unemployed men dedicate less time to housework than working women (1 hour 23 minutes).

|                  | Employed | Unemployed |
|------------------|----------|------------|
| Women            | 3: 46    | 6: 13      |
| Men              | 1: 46    | 2: 23      |

Notes: The population is between 16 and 65 years of age. Time measured as social average per day in hours: minutes.

Source: Authors’ calculations using Spanish National Statistics Institute (2004a).
Another striking gender-related difference can be found in the time employed and unemployed people spent on housework: in both cases, women spent more than double the time men spent on housework. We draw the conclusion that the time that men dedicate to housework appears unaffected by life-cycle events.

The invisibility of time spent on care work

We performed an initial approximation of time spent on care work by observing the time dedicated to housework in households with infants (Table 4).

While showing that women in all situations dedicate more than twice as much time as men, the data also reflect an important aspect of the invisibility of care work: women living in households with children under 3 years of age spend 2 hours 17 minutes longer on housework than the set of women as a whole. In the case of men, the presence of children of this age also increases the time spent on housework, but only by 1 hour 7 minutes. In any event, the difference between genders in time devoted to housework caused by the presence of infants is probably greater than this because children under 3 years of age require constant adult supervision. This truism about childrearing supports the notion that the time-use diaries present problems in capturing time devoted to caregiving, because they do not reflect the care adults provide while they are simultaneously engaged in other tasks. The problem would be lessened by the addition of the question, “Were you taking responsibility for anyone?” as noted earlier.

To capture more specific information on care needs, our analysis compares households with and without “dependents,” that is, children under 10 years of age and individuals of 75 years of age or older. In our analysis we also consider all time devoted to caregiving, whether identified as the primary activity or a secondary activity (Table 5).

Table 4 Time spent on housework in households with children, 2002–2003

| Households with children | Role | Average time |
|--------------------------|------|--------------|
| Under 3 years            | Mpp<sup>a</sup> | 3: 03 |
|                          | Fpp<sup>b</sup> | 6: 57 |
| From 3 to 10 years       | Mpp   | 2: 02 |
|                          | Fpp   | 5: 27 |
| From 11 to 18 years      | Mpp   | 1: 39 |
|                          | Fpp   | 5: 20 |

Notes: <sup>a</sup>Mpp = Male principal person. <sup>b</sup>Fpp = Female principal person. Time measured as social average per day in hours: minutes.

Source: Authors’ calculations using Spanish National Statistics Institute (2004a).
The results once again show that care work tends to “disappear” in the absence of specific activities: the total time for caregiving is relatively low and barely changes when we include time for caregiving as a secondary activity. Indeed, the frequency of references to caregiving as a secondary activity is very limited.

**Valuation of housework and household production**

Given that one of the objectives of an HSA is to introduce household production compatibly and consistently within the logic of the national accounts system being used, we performed the valuation in the context of market conditions under which the production hypothetically would have taken place. This is the justification for the use of monetary valuations in HSAs (Oli Hawrylyshyn 1976, 1977; Reuben Gronau 1980; Ann Chadeau and Annie Fouquet 1981; Marianne Ferber 1982; Martin Murphy 1982; Lourdes Benería 1982, 1992, 2003; Luisella Goldschmidt-Clermont 1983), although valuing a nonmarket activity according to market prices raises serious difficulties. Indeed, the most serious problem concerns the valuation of housework, which is the main component of household production.

The most common valuation of housework uses a wage rate, although this kind of valuation raises a series of disadvantages. First, as this form of work is socially undervalued, it tends to be assigned wages equivalent to those in the lowest wage levels in the marketplace (those of maids and housecleaners) in the commonly used replacement cost method. As a result, the importance given to housework falls sharply with respect to market work measured in work time. Any monetary valuation of housework using a market wage also hampers the analysis of any inequalities between women and men because it is still influenced by the wage discrimination between the sexes present in the labor market. A third problem with using a wage rate to provide a valuation of housework is the wide range of values obtained for household production as a consequence of using different

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**Table 5** Time devoted to caregiving according to the presence of dependent people in the household, 2002–2003

| Social time Main activity | Total social time | Time per participant Main activity | Total time per participant |
|--------------------------|-------------------|-----------------------------------|---------------------------|
| **Men**                  |                   |                                   |                           |
| 0: 40                    | 0: 45             | 1: 36                             | 1: 45                     |
| **Women**                |                   |                                   |                           |
| 1: 18                    | 1: 27             | 2: 29                             | 2: 45                     |

Notes: “Dependent people” are children under 10 years of age and individuals of 75 years of age or more. Time measured as time per day in hours: minutes.
Source: Authors’ calculations using Spanish National Statistics Institute (2004a).
wage rates (Statistics Canada 2003; Schäfer 2004, cited in Statistics Finland 2006). This aspect poses problems for any comparative study. However, using a single market wage to value all of the time spent on housework creates yet another limitation. This method of valuation fails to account for the “qualifications” or the “seniority” of the person performing the housework,\(^{13}\) although both of these aspects would give rise to higher wages in the marketplace. The failure to account for important differences by sex and age in the performance of housework means that the work of adult women is undervalued compared to that of the rest of the population.

Last, a number of theoretical problems also arise that are not addressed conclusively in this study but which point to the conflicts underlying wage valuations. In any economy, prices and wages are determined jointly and a change in one factor rarely leaves the other unchanged. Introducing the sector of housework into the monetary economy would give a more precise idea of the sector’s weight in the economy and of the existing interactions (Wassily Leontief 1951). However, it would also lead to an adjustment in the prices of goods and services in other sectors, which would in turn alter the original price and wages in the newly introduced sector.

Valuation of housework according to the net method

The first requirement in valuing housework in Catalonia is to uncover the total annual amount of time dedicated to it for the entire population of Catalonia. To achieve this, we multiplied the figures for average daily time from Table 1 by 365 days for the female and male population of 10 years of age or older. The results appear in Table 6.

We obtained the valuation by using the “generalist replacement cost method” with the wage for category 51 “personal services workers” from the Clasificación Nacional de Ocupaciones de 1994 (CNO-94), which is recommended by Eurostat (2003) for European Union member states.\(^{14}\)

| Table 6 Total time of total work in Catalonia in 2001 |
|-------------------------------|-----------------|-----------------|--------|
|                               | **Men**         | **Women**       | **Total** |
| **Market work**               | **3,963,800 (63.5)** | **2,282,000 (36.5)** | **6,245,900 (47.1)** |
|                               | **(66.7)**      | **(31.2)**      |        |
| **Housework**                 | **1,981,900 (28.3)** | **5,031,200 (71.7)** | **7,013,100 (52.9)** |
|                               | **(33.3)**      | **(68.8)**      |        |
| **Total work**                | **5,945,700 (44.8)** | **7,313,200 (55.2)** | **13,259,000** |

*Note:* Time measured as thousands of hours per year and percentages are in parentheses.  
*Source:* Authors’ calculations.
The advantage of using this wage over the other possible categories that cover activities performed in the household is that category 51 includes some organization and management tasks not included in the other categories but that are nonetheless an important part of the work done in households.

We obtained two alternative valuations in order to observe the differences arising from valuing housework according to differing wages. The first valuation follows the generalist replacement cost method, applying the wage rate corresponding to division 95 of Clasificación Nacional de Actividades Económicas de 1993 (CNAE-93, Rev. 1), labeled *activities of private households as employers of domestic staff*, obtained from the Spanish national accounts (María Luisa Moltó and Ezequiel Uriel 2002).\(^{15}\) By applying one of the lowest wages in the marketplace, this wage rate undervalues housework.

The second alternative does not directly assign a wage rate from CNO-94 or from CNAE-93, but its estimation of the wage rate for housework follows the same methodology businesses sometimes use to value new jobs (Josep Maria Comajuncosa, Francisco Lobos, and Ignacio Serrano 2001). This valuation reflects a set of characteristics that are important to businesses and that are in fact implicit in housework, such as experience, responsibility, and complexity of work. The use of this method restores key aspects of housework not included in other types of wages. However, the novelty of this approach means that it is difficult to make international comparisons or comparisons over time.

Table 7 shows the differences obtained in valuing housework at each chosen wage rate as a percentage of GDP. A matter of particular interest is the enormous disparity in comparing market and nonmarket work in terms of time and monetary value. As can be calculated from Table 6, housework measured in working time represents 112 percent of the time dedicated to market work in Catalonia. In Table 7, by contrast, the conventional method

| Method used in the HSA of Catalonia | Monetary value (thousand euro) | Housework/GDP (%) |
|--------------------------------------|-------------------------------|-------------------|
| Replacement cost method using wage rate of category 51 of CNO-94 | 54,243,000 | 40.0 |

| Alternative methods | Monetary value (thousand euro) | Housework/GDP (%) |
|---------------------|-------------------------------|-------------------|
| 1. Replacement cost method using wage rate of sector 95 of CNAE-93 | 35,638,300 | 26.3 |
| 2. Business estimation of wage rate for housework | 81,981,500 | 60.4 |

*Source: Authors’ calculations.*

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recommended by Eurostat (2003) suggests that housework represents 40 percent of GDP in Catalonia.\textsuperscript{16} The gap points to the social undervaluation of housework reflected in the assignation of low wages. In any event, the size of the differences suggests that the two results (measurement of total work time/monetary valuation) should always be presented together; providing monetary valuations alone provides an incomplete picture.

*Valuation of household production according to the input method*

According to the input method, a household is a unit of production that combines work, intermediate goods, and capital goods to produce household goods and services. Hence, valuing household production involves estimating the monetary value of housework as calculated above, the monetary values of households’ intermediate consumption, and their consumption of fixed capital. Intermediate consumption is the value of goods and services acquired by households and used as inputs in the process of household production. However, the systems of national accounts now in use record all household spending as final consumption, making it necessary to identify and reclassify all expenditure considered intermediate consumption in the HSA. For some goods and services, it would appear reasonable to assume that the entire expenditure should be classified as either intermediate or final consumption; but for others, the classification is not so simple. When the good or service could be used equally either in household production or in activities viewed as final consumption, the expenditure should be allocated to intermediate consumption according the time-proportionality criterion.\textsuperscript{17}

On the other hand, the consumption of fixed capital is determined by the depreciation of a household’s fixed capital goods used in the household production process in a given year. A household’s fixed capital is one of the most critical factors when examining shifts in productivity in the case of housework. Washing machines, dishwashers, and microwave ovens are examples of household appliances that have led to a reduction in housework time, while the production value of some household activities has remained steady or even risen (Duncan Ironmonger 2000). Fixed capital consumption should be estimated based on the stocks of fixed assets and the likely average economic life of the different categories of these goods. However, because of the lack of direct information on this type of household goods, the recommended method and the one most used in HSAs is the Perpetual Inventory Method (PIM; Johanna Varjonen 1998; Organisation for Economic Co-operation and Development [OECD] 2001; Sue Holloway, Sandra Short, and Sarah Tamplin 2002; Basque Statistics Institute 2004; Galician Statistics Institute 2006; and Johanna Varjonen and Kristiina Aalto 2006).
Last, we obtain the value of household production in Catalonia in 2001 by adding together the values for housework, intermediate consumption, and fixed capital (Table 8).

One of the principal conclusions drawn from the findings is that, despite the constant introduction of appliances and other labor-saving devices, household production continues to be a labor-intensive activity in which capital plays only a residual role. Nearly three-quarters of the total value of household production comes from housework. The consumption of intermediate goods accounts for the other quarter, while the percentage relating to the consumption of fixed capital has almost no relevance. The proportions show the importance and influence of housework, intermediate goods, and capital consumption as part of the final valuation of household production.

CONCLUSION

This study proposed two approaches in order to improve HSAs or, in other words, overcome their lights and shadows. The first addresses the need to incorporate time devoted to housework in HSAs in order to study inequalities without the influence of wage discrimination. The second proposal involves the use of a survey that can gather information on both housework and market work. The latter approach allows analyses that would be impossible with the standard employment or time-use surveys. The proposed survey incorporates an integrated analysis of both kinds of work into HSAs in order to provide a more complete and realistic view of the lives of women and men – particularly, in the case of women, the phenomenon known as “double presence,” which refers to the tensions caused by combining housework and market work. We have used data from the HSAs for Catalonia as examples in support of these proposals.

In recent years, feminist economics – particularly in studies concerning extended macroeconomics perspectives, gender-sensitive budgets, and capability approaches – has analyzed the importance of domestic and

| Table 8 Household production costs in 2001 |
|------------------------------------------|
|                                         |
| **Value of household production**        |
| **(Thousand euro)**                      |
| **(%)**                                  |
| **Housework**                            | 54,243,000 | 73.5 |
| **Consumption of intermediate goods and services** | 19,377,700 | 26.2 |
| **Consumption of gross fixed capital formation** | 229,700   | 0.3 |
| **Total**                                | 73,850,400 | 100 |

*Source: Authors’ calculations.*
care work as a fundamental dimension of well-being and standard of living for populations. However, in the arena of care work, there is great inequality between women and men. Women give more care than they receive and, conversely, men receive more care than they give. This is the situation reflected in our results. In summary, the implementation of the proposals presented in this study would allow HSAs to regain one of the initial purposes for which they were designed: to serve not only as statistical tools, but also as analytical tools for studying the work done by women and the relationships between the market and household spheres, and the effects such work and relationships have on the well-being of women and men.

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NOTES
1 Notable examples of estimations made by statistics offices at a national level include Australia (Australian Bureau of Statistics 2000), Canada (Statistics Canada 2003), the United States (Bureau of Economic Analysis 2005), Finland (Statistics Finland 2006), New Zealand (Statistics New Zealand 2001), the Netherlands (Statistics Netherlands 2004), and Spain (Spanish National Statistics Institute 2008).
2 Housework includes unpaid domestic work (such as ironing, washing and cleaning, and cooking) and also unpaid care work provided by members of the household.
3 Spain, with 45,828,172 inhabitants, is divided into seventeen regions known as autonomous communities as well as the cities of Ceuta and Melilla on the African continent. Catalonia, located in the northeast of Spain, is the second largest autonomous community by population (7,290,292), and it accounts for the greatest percentage of GDP, at nearly 19 percent (data refer to January 2009; Spanish National Statistics Institute 2009).
4 A limited number of HSAs have integrated an analysis of time use: the ones prepared by the Australian Bureau of Statistics (2000), Statistics New Zealand (2001), and particularly Statistics Netherlands (2004).
5 The definition of household production that is typically used in preparing HSAs is the “third party criterion” put forward by Margaret Reid (1934). Today this definition is under fire as too restrictive, because it does not allow the inclusion of subjective and relational aspects as well as the management of a household (see, for example, Nancy Folbre and Michael Bittman [2004]; Nancy Folbre [2006]).
6 Curiously, jobs exist in many societies in which part of the work time that is socially recognized and remunerated involves “being on call” (for example, firefighters).
The labor force survey is an employment survey that has been coordinated across International Labor Organization (ILO) member nations.

Catalonia constructed its HSA according to European regulations (Eurostat 2003). For more information on the methodological aspects of the HSA for Catalonia, see Cristina Carrasco and Mónica Serrano (2007). The Time Use Survey 2002–2003 (Spanish National Statistics Institute 2004a) was the first survey of its kind to be conducted in Spain. It was carried out between September 2002 and October 2003; interviews were administered to all household members over the age of 10. The activity diary, broken into 10-minute intervals, covered 24 hours, from 6:00 a.m. of the designated day until 6:00 a.m. of the following day; the diary captured information on primary and secondary activities. In Catalonia a total of 3,362 private households were interviewed.

The concept of “social average time” used in some of the tables refers to the average for the entire reference population, whether or not they take part in the activity. By contrast, the concept of “average time per participant” refers to the average only of that portion of the population actually participating in the activity.

The low frequency of time devoted to caregiving as a secondary activity in the time-use surveys limits the variable to being considered only as indicative.

See also Marilyn Waring (1988, 2005); Nancy Folbre (1991, 1994); Nancy Folbre and Barnet Wagman (1993); UN-INSTRAW (1995); Himmelweit (1995, 2002); Nancy Folbre and Michele Pujol (1996); Sue Holloway, Sandra Short, and Sarah Tamplin (2002); Andrew Harvey and Arun Mukhopadhyay (2005).

In addition to the problems related to the wage rate, the literature also poses other problems of a technical nature (Johanna Varjonen, Eeva Hamunen, Taru Sandström, Iiris Niemi, and Hannu Pääkkönen 1999; Eurostat 2003), which, although requiring discussion, are not relevant to the aim of this paper.

For example, a 40-year-old mother will likely cook a better meal than her 18-year-old son or daughter, although the time spent is valued at the same wage rate. The NA-LFS does not entirely solve this problem, but it incorporates improved elements such as the following, more specific questions: “How long have you performed the activity?” and “How would you rate your skill at this activity on a scale of 1 to 10?” Advances in methodology will be necessary to overcome this limitation more fully.

Clasificación Nacional de Ocupaciones de 1994 (CNO-94) corresponds to the International Standard Classification of Occupations (ISCO-88).

In Spain, Clasificación Nacional de Actividades Económicas de 1993 (CNAE-93, Rev. 1) corresponds to the International Standard Industrial Classification of all Economic Activities (ISIC Rev. 3.1.) of the UN Statistics Division.

The figure is similar to data for other countries: Norway 1990 (38 percent); Australia 1997 (43 percent); New Zealand 1999 (39 percent); the UK 1999 (44 percent); and Finland 2001 (41 percent; Carrasco and Serrano [2007]).

This method was first proposed and applied by Duncan Ironmonger and Evelyn Sonius (1989); Iulie Aslaksen, Trude Fagerli, and Hanne A. Gravningsmyhr (1995); and Marjut Viivainen (1995).

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