

Estimation of the Market Value of the Unpaid Work in Turkey and a Comparison to the EU Economies

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Abstract: Since the United Nations recommendation in 1993 to introduce domestic production into systems of national accounts, the market value of the unpaid care economy has been estimated for a wide range of countries around the world. These studies recognize the economic contribution of unpaid household work, while also making visible the immense magnitude of gender imbalances in its distribution. This study provides the first estimate of the total market value of unpaid work in Turkey using nationally representative data from the 2006 Time-Use Survey (TUS). Taking advantage of a similar study for EU countries also based on 2006 European TUS, we are able to assess the Turkish results from a cross-country perspective. Our results show that unpaid domestic work hours constitute as much as 52 percent of total work hours in Turkey, and 86 percent is performed by women. Considering the total annual (paid + unpaid) work hours in Turkey, we find that women perform more than half (55 percent) of total work. We estimate the market value of unpaid work in domestic goods and services production at a minimum of 21 percent of official GDP in 2006 and a maximum of 29 percent, depending on the method of estimation. Comparison of our results to parallel estimations for EU countries shows that the market value of household production in Turkey is slightly lower than the EU average expressed as share of GDP. What distinguishes the Turkish case from the EU is the immense gender imbalance in the distribution of market versus non-market work hours and also the very low market replacement wage rate reflecting inherent gender biases in the labor market. The findings have important policy implications for Turkey with respect to the urgent need for interventions towards redistribution of unpaid domestic work between the market and non-market spheres, as well as between women and men within the household; and the potential therein for boosting growth and employment in Turkey.

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Türkiye’de Ücretsiz Emeğin Piyasa Değerinin Tahmini ve AB Ekonomileri ile bir Karşılaştırma

Öz: Birleşmiş Milletler’in 1993’te aldığı bir tavsiye kararı ile hane içi üretim faaliyetlerinin ulusal hesaplar sistemine dahil edilmesi öngörülmüştür. Bunu takiben pek çok ülkede ücretsiz ev içi emeğin toplam piyasa değerini ve GSYH’ya katkısını tahmin eden çalışmalar yapılmıştır. Bu araştırmalar hem bakım emeğinin önemli bir ekonomik olgu olarak tanınması, hem de bu emeğin dağılımındaki toplumsal cinsiyet eşitsizliklerine dikkat çekilmesi açısından önem taşımaktadır. Bu çalışma, Türkiye’nin resmi Zaman Kullanımı Anketi (ZKA) verilerini kullanarak Türkiye’de ev içerisindeki ücretsiz mal ve hizmet üretiminin – diğer adıyla bakım ekonomisinin – piyasa değerini tahmin etmektedir. 2006 yılı Avrupa ZKA verilerini kullanarak yapılan başka bir çalışmadan yola çıkarak, Türkiye sonuçlarını AB ülkeleriyle de karşılaştırmaktadır. Türkiye’de ev içi üretim saatleri toplam çalışma saatlerinin %52’sini teşkil ederken, ücretsiz çalışma saatlerinde kadınların payı (%86) ağırlıklıdır. Yıllık toplam çalışma saatlerinin (ücretli işgücü piyasası ve ücretsiz ev içi çalışma saatlerinin toplamının) yarısından fazlası (%55’i) kadınlara aittir. Ev içi üretimin piyasa değeri kullanılan yöntemle göre GSYH’nın %21’i ile %29’u arasında değişmektedir. AB-24 ile yapılan karşılaştırmada, ev içi üretimin tahmin edilen piyasa değeri açısından, Türkiye AB-24 ortalamasının kısmen altında, 19. sırada yer almaktadır. Ev içi çalışma saatlerinde ise Türkiye erkeklerde en düşük değere sahipken, kadınlarda en yüksek üç ülke arasında yer almaktadır. Zaman kullanımındaki cinsiyet uçurumu Türkiye’yi AB ülkelerinden belirgin bir şekilde ayırmaktadır. Bu bulgular, Türkiye’de hane içi ücretsiz emeğin daha eşitlikçi dağılımına yönelik politika müdahalelerine olan gereksinimi işaret etmektedir.

Anahtar kelimeler: Ücretsiz emek, toplumsal cinsiyet eşitsizlikleri, hanahalkı uydu gayrisafı yurt içi hasıla hesapları, Türkiye

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Introduction

Non-market production including household activities in family caretaking as well as subsistence agriculture continues to form a substantial component of the goods and services consumed by people, particularly in developing economies. Numerous research studies as well as international processes have pointed out to the

importance of household production not only in contributing to material wellbeing but also providing a more realistic view of total production and consumption patterns. The 1993 United Nations recommendation to introduce household production into systems of national accounts constitutes the origin of the flourishing work on household satellite accounts. The U.N. Beijing Conference on Women in 1995 followed with the following recommendation to improve data collection on unpaid work, and also development of methods for valuing such work for presentation in satellite accounts:

“(Develop) methods, in the appropriate forums, for assessing the value, in quantitative terms, of unremunerated work that is outside national accounts, such as caring for dependents and preparing food, for possible reflection in satellite or other official accounts that may be produced separately from but are consistent with core national accounts, with a view to recognizing the economic contribution of women and making visible the unequal distribution of remunerated and unremunerated work between women and men.” (p.87, paragraph 206.f; United Nations, 1996).

The International Conference on the Measurement and Valuation of Household Work in Canada in 1994 started the debate on the various methods of constructing household satellite accounts. More recently, the Stiglitz-Sen-Fitoussi Commission (2009) on The Measurement of Economic Performance and Social Progress called for a broadening of income measures to include non-market activities, when measuring economic wellbeing. More specifically, the Commission makes the following assessment:

“There have been changes in how households and society function. For example, many of the services people received from other family members in the past are now purchased on the market. This shift translates into a rise in income as measured in the national accounts and may give a false impression of a change in living standards, while it merely reflects a shift from non-market to market provision of services. Many services that households produce for themselves are not recognized in official income and production measures, yet they constitute an important aspect of economic activity. While their exclusion from official measures reflects uncertainty about data more than it does conceptual dissent, more and more systematic work in this area should be undertaken. This should start with information on how people spend their time that is comparable both over the years and across countries. Comprehensive and periodic accounts of household activity as satellites to the core national accounts should complement the picture.”

An OECD working paper estimates that unpaid work – largely dominated by cooking, cleaning and caring –constitutes one-third and half of all valuable economic activity in OECD countries, yet points out that it is not accounted for in

the traditional measures of well-being, such as GDP per capita Miranda (2011). The paper emphasizes that unpaid work contributes not only to current household consumption (e.g. cooking) but also to future well-being (e.g. parental investments in raising children) and to community well-being (e.g. voluntary work). The paper also underlines that since unpaid work is primarily performed by women, its valuation also ensures a better understanding of a society for policymakers concerned with efficiency and equity of social policies. The paper concludes by calling for consideration of unpaid work for relative inequality and for inequality.

Indeed, the non-market production and exchange relations do not only have a significant impact on indicators such as living standards, wages and inputs into production for the market, but also they underlie the inequalities in labor compensation by gender as well as by age and education. Turkey is a case in point. The country has one of the lowest labor participation rates in the world. As of 2013, only 48 out of every 100 adults (age 15 and above) participate in the labor force. Underlying this very low level of labor force participation is the limited scope of female engagement in market production. The labor force participation rate for women in 2013 is 30.8% versus 75.1% for men. A majority of the non-participants indicate homemaking as the reason for non-participation, amounting to 12 million adult women engaged in home-based production on a full-time basis.¹ Beyond the gender gap, there are wide disparities amongst women by level of education and marital status; for example the participation rate for university graduate single women is at the highest level at 82% vs. 73% for their married counterparts, while for single primary school graduates, it is much lower at 48%, reaching the lowest level for married primary school graduates at 19% (İlkkaracan, 2013). Statistics on time-use show that the amount of time dedicated to unpaid household work is a mirror reflection of labor market activity rates. While women on the average devote 5 hours and 17 minutes daily to (unpaid) household production, men on the average spend only 51 minutes daily. By contrast women spend on the average 1 hour and 8 minutes daily for paid market work versus 4 hours and 27 minutes by men. Women's unpaid work time increases at lower levels of education peaking for primary school graduates (parallel to their decreasing labor force participation rates by years of education); and it also peaks in the childbearing age group (25-34).

This study uses the first ever nationally representative time-use survey for Turkey conducted in 2006 to provide the first comprehensive estimate of the market value of unpaid work for Turkey.² We calculate the total market value of

¹ Of the labor market participant women, as high as 35% percent are in the category of unpaid family workers, mostly in subsistence agriculture, amounting to approximately two million women (Turkish Statistical Institute, 2013).

² There exists a preliminary study using data from a *pilot* time use survey in 1996 conducted by TSI; as such the data is not nationally representative. The study using pilot survey data employs various market replacement costs for estimation of the market value of domestic

household production of goods and services in Turkey using the various methods available in the literature and compare their magnitudes to official GDP. In order to situate our findings for Turkey in a cross-country comparative perspective, we also use a recent study by Gianelli, Mangiavacchi and Piccoli (2012) (from here onwards GMP 2012), which estimates market value of unpaid work for 24 countries in the European Union using harmonized European time-use (HETUS) and Survey on Income and Living Conditions (SILC) data also for the year 2006. This study estimates the total market value of household production for Europe as whole to range from 17% of EU GDP at a minimum to 31.6% at a maximum; and on a country basis from a low of 10.4% of GDP for Latvia to a high of 39.5% of GDP for Belgium.³ Given the very low rate of female labor force participation rate in Turkey, we expect the number of hours devoted to household production on the by women to be higher than the EU countries where substantially higher share of the female population is engaged in the labor market. Nevertheless, what we find is that beyond the number of female household production hours, male household production hours as well as the wage rate used in estimating the market value being both on the lower end for Turkey, result in a relatively lower estimate of the magnitude of household production as compared to the EU.

The next section describes the data and methodology employed in this study. Section 3 discusses the results of our analysis, namely the trends in time-use data with respect to paid and unpaid work by gender and other demographic variables, the estimated magnitudes of the household satellite accounts that emerge from application of different methods. Section 4 presents a comparison of our findings to those by GMP (2012) for the EU. In Section 5 we point to policy implications of our findings.

Data and Methodology

There are two major approaches to measurement of non-market production in market terms: The input-based approach and the output based approach. The

production. The study reports an estimated value of household production in comparison to total household income in 1996 rather than GDP. Accordingly, using the minimum wage approach, the study finds a value of household production equivalent to 30.7% of total household income; 38.6% using the market cost (domestic worker) approach; and 40.2% using what they call “the polyvalent substitute worker” (specialist) approach. The polyvalent substitute and market cost wage rates are identified using “wages for various occupational categories disaggregated at the 3-digit level” (p.83). (Kasnakoglu and Dayioglu, 2002, “Measuring the Value of Home Production in Turkey” in *New Developments in National Accounts*, T. Bulutay (ed.), Ankara: SIS, 73-97.)

³ The lower bounds are associated with the use of the generalist market replacement cost approach and the upper bounds with what they call the specialist market replacement cost approach.

input-based method uses the market value of inputs into the household production process in order to estimate the monetary value of production. While input-based studies usually consider the market value of the labor input only, some entail the market value of non-labor inputs as well subject to data availability (Goldschmidt-Clermont and Pagnossin-Aligisakis 1999). An important shortcoming of the input-based approach pertains to the valuation of simultaneous activities. In many instances, more than one household production activity (such as looking after a child while cooking; or coordinating a house management chore while driving) can be performed; but time use surveys usually report time allocation by primary activity only.

The output-based method, on the other hand, values household products at the price of equivalent market products. This enables compatibility with national accounts while at the same time avoiding the difficulties inherent in the input-based approach. There is also general consensus that the output-based method is likely to estimate the most accurate market value of household production. However, the implementation of the output approach is subject to a number of practical limitations, such as gathering the proper data, variations between the quality of outputs, and differences of the capital inputs of production processes. Given these limitations, most of the monetary valuations of household production tend to be input based (Dulaney et.al, 1992; SNA 1993; Goldschmidt-Clermont and Pagnossin-Aligisakis 1995; Shivakumar 2000).

Household satellite accounts use primarily two different input-based methods for calculation of the value of non-market production: namely, the opportunity cost method and the market replacement cost method. These represent various possible estimations of the wage rate to be used in determining the market value of domestic labor. The opportunity cost approach is based on the orthodox neoclassical theory of time allocation. Here the time spent in household production is multiplied by the predicted market wage that the domestic worker would earn if s/he were to engage in the labor market instead of in non-market production in the household. As such the value of household production is defined on the basis of the opportunity cost of the labor time of the particular household member performing the productive task at home. The predicted market wages of the various types of household members involved in non-market production are imputed using labor market data and based on various wage determinant individual characteristics such as age, education, gender, rural/urban locations, and the like. The main critique of this approach is that it values the same household production activity differently based on the qualifications of the person performing the task. Nevertheless, it can be thought of as an estimation of the amount of GDP that would potentially be generated if domestic labor time were released for allocation to labor market activity (GMP 2012).

The market replacement cost approach by contrast uses a standard wage rate for valuing domestic work independent of the human capital characteristics of the person performing the production activity. As such it avoids the shortcoming

of the opportunity cost approach for valuing similar activities at different rates according to the characteristic of who is performing the task. The standard wage rate to use in the valuation exercise can be based on various types of observed wage rates in the labor market, usually categorized as a generalist wage or a specialist wage. The generalist wage approach uses a single wage rate for all types of domestic activity, yet its interpretation varies amongst different studies. Most estimations use the observed wage rate for domestic workers or the legal minimum wage (Carrasco and Serrano 2011; Dayioğlu and Kasnakoğlu 2002). The common caveat here is that such valuations may represent an underestimation of the value of household production given the low wages of domestic workers in most labor markets (Shivakumar 2000; Varjonen and Niemi 2000; Carrasco and Serrano 2011). Besides when occupational coding does not include house workers as a category, data limitations prevail (Zacharias 2013). In a recent study on estimation of the value of household production in Catalonia, it is shown that the use of various occupational categories to estimate a generalist market replacement cost (wage rate) can yield widely ranging estimates. For example, using the occupational category titled “activities of private households as employers of domestic staff”, the study finds a value of household production 26% of GDP; while using the wage for the occupational category titled “personal service workers” (including also some organizational and management tasks not included in domestic worker tasks), the estimated value of household production rises to 40% of GDP (Carrasco and Serrano 2011).

The specialist wage approach, on the other hand, uses different observed wage rates for various categories of domestic activities such as child care, elderly care, teaching, cooking, cleaning, household management. There are two problems in implementation of the specialist wage approach. First, some of the unpaid household tasks, such as money management, planning and co-ordinating household management activities, are rarely performed by a so-called specialist, substitute worker. In many cases, there is no market formed for performance of such domestic production activities. Second, in many cases, the labor market surveys do not report wage data at a sufficiently disaggregated level to estimate the wages of domestic workers.

Despite these limitations, there are a number of points that work in favor of the market replacement cost approach. Working conditions of replacement workers are nearly same with those of the original household member; they both perform the same range household production activities in a simultaneous manner, and require similar human capital formation. Hence it is suggested that there is good reason to treat their productivity as similar. Also given that this method is based on imputing the wage of a substitute worker, it can be said to provide a coherent way of valuation of household production. Yet there is a continuing debate as to which variants of replacement cost to use: an average domestic worker wage or a specialist wage.

As each approach has its pluses as well as shortcomings, and can yield substantially different estimates, the common practice in the studies in this field has been to use these various methods to the extent made possible by availability of data, and to provide suitable results for international comparison. In this empirical application with Turkish data, we employ both the opportunity cost and the market replacement cost methods and provide a range of different estimates for the purpose of international comparisons. The details of the empirical implementation of each method are described in the next section.

The two data sources used for estimating the value of household production for Turkey were the Time Use Survey for 2006 (TUS) and the Household Labor Force Survey (HLFS) for 2006. Both surveys are conducted on a national scale by the Turkish Statistical Institute (TISI). While the HLFS has been implemented on a continuous basis since 1988, the 2006 TUS provides the first and only countrywide time use data in Turkey.

The sample of 2006 TUS includes a nationally representative sample of 11,815 people of age 15 and above from a total of 5,070 households. Four different types of question forms are filled to enable the collection of detailed and accurate information: the household question form, the individual question form, the daily diaries and the table of working time. All activities in a day are classified in the following 11 categories:

1. Eating and other personal care
2. Working at a job and/or seeking a job
3. Education
4. Household and house care
5. Voluntary work and meetings
6. Social life and entertainment
7. Sports
8. Hobbies and games
9. Mass media tools
10. Travel and unidentified time usage
11. Sleep

Category 2, 'working at a job' is the only activity that is considered as a (market) production activity from the perspective of official GDP accounting. Yet 'household and house care' has the unique characteristic for being the only activity which household members can relegate to a third person such as a paid employee. This is the so-called "third person criterion"; accordingly category 4 can also be considered as economic productive activity. Hence time-use surveys typically provide further information on 'household and house care' including the following nine sub-categories, namely:

1. Food management
2. House care
3. Washing the clothes, ironing, etc.

4. Gardening and animal care
5. Construction and repair
6. Shopping and services
7. Household management
8. Child care
9. Elderly care

Besides the time spent in these various categories of personal and household production activities, the TUS also includes information of personal and household characteristics such as gender, education level, age group, marital status, labor force participation status, household size, income level, income type and location of residence (rural or urban).

The HLFS 2006, on the other hand, covers 497,137 people of which 51 percent are women. The definition of economic activity here is confined strictly to production activities for the market. These production activities are grouped under nine industries, two of which include services, namely “financial institutions, insurance, real estate and subsidiary business services” and “community, social and individual services.” The latter service industry includes, amongst others, the house and household care activities and as such establishes the reference point for the valuation exercise in the following analysis. In addition to this, the survey enables identification of labor force participation status, work status and the wage earnings disaggregated by gender, age, education, marital status, and rural versus urban location of residence. 144,793 of the total adult population are in employment corresponding to a low employment rate of 41.5%, which has to do with a very low female employment rate of 21% versus 62.9% male employment rate. Of the total employed 58.9% are wage and salary earners, and this is the reference for estimation of the opportunity cost wage in the next section. While female share of total employment is 26%, women make up only 22 % of the total wage and salary earners. More than one third (35.4%) of female employment is in the status of unpaid family workers predominantly in agriculture versus only 5.4% of men in this employment status.

Estimation of the Opportunity Cost Wage and Market Replacement Wages

In estimating the market value of household production, we first need to calculate the total amount of hours devoted to household and house care for each observed (adult) individual in TUS. We use the daily number of domestic labor hours, which are reported separately for weekdays and weekend days in the survey, to calculate the average total weekly and annual domestic labor hours for each observed individual. We also calculate childcare and elderly care hours as a separate sub-category of domestic work to enable estimation of the share that goes into intensive care work; yet we remain aware of the simultaneous activity bias in measuring care work as distinct from other domestic work as discussed in the previous section.

The next step is to estimate the various wage rates by which to value domestic labor hours, namely the opportunity cost wage and the market replacement wage as discussed above. For the *opportunity cost wage*, we first run wage regressions for men and women separately using data from the HLFS 2006, including a correction for the Heckman selection bias. We find a statistically significant selection bias both for men and women, but much higher in the case of women. The coefficients obtained from these wage regressions in HLFS are used to impute net hourly wages for all eligible adult men and women observed in the TUS. Given that the wage data and the time-use data are in separate surveys, the wage estimations are restricted to using only those variables, which are mutual to both surveys. These are namely age, education level, marital status and urban/rural location. Hence important wage determinants (particularly demand side controls) such as occupation, industry, workplace characteristics and geographic region cannot be included. This is one limitation of our empirical application of the opportunity cost approach.

In comparing observed actual wages in the HLFS to those that we have estimated for the wage earners in TUS, we find that there is a close approximation (Appendix Table A3). The estimated female (male) mean wage for wage and salary earners in TUS is 4.19 (4.18) TL/hr versus the actual observed female (male) mean wage of 4.83 (4.65) TL/hr for wage and salary earners in the HLFS. ⁴ Comparison to the opportunity cost wages for the overall adult population in the TUS however, shows that the imputed mean wage is substantially lower than the actual observed wages: imputed female wage of 2.55 TL/hr is 47% lower than the observed female mean wage; and imputed male wage of 3.43 TL/hr is 26% lower than the observed male mean wage. This is to be expected given the substantial selection bias that we have found both for genders, particularly pronounced for women in wage employment.⁵

The application of the *market replacement cost* approach is more straightforward. Here we use two possible measures of substitute worker wages (all converted into gross wages):

⁴ The estimated female (male) median wage for wage and salary earners in TUS is 3.41 (3.35) TL/hr is higher than the actual observed female (male) median wage of 3.09 (3.26) TL/hr for wage and salary earners in the HLFS. This points to the fact that the actual observed HLFS wages have a more skewed distribution with a higher concentration of wages at the lower end of the spectrum.

⁵ The distribution of total employed by education level versus total adult population by education level is an important source of the difference between observed actual versus estimated wages. While about 80% (70%) of the total adult female (male) population have less than high school education in 2006, only about 40% (58%) of total female (male) wage and salary earners have less than high school education (Appendix Table A4).

- the legal minimum wage for 2006;⁶ and
- the mean domestic worker wage for female and male employed wage workers.

While the legal minimum wage is normally adjusted by the Minimum Wage Committee every six months, for 2006 there was only one announcement for the entire year corresponding to a monthly gross salary, of 531 Turkish Liras/month. Adjusting this for the mean weekly work hours observed for minimum wage and salary workers in the 2006 HLFS (55hrs per week), we find an approximate hourly minimum wage rate of 2.25 TL/hr.⁷

To be able to derive the mean domestic worker wage, we need the HLFS micro data to provide occupations in three-digit detail by the International Standard Classification of Occupations (ISCO) to identify individuals who are employed as “domestic, hotel and office cleaners and helpers” (ISCO-88 code 911). Yet unfortunately, HLFS data provides only one-digit occupational coding (ISCO-88 code 9) which covers a broad category of all ‘elementary workers’. Given the limited occupational coding available in the HLFS, we use a number of categories to identify a group of workers as close to domestic laborer as possible. We choose the cross section of all wage employees in the economic activity sector of ‘community, social and personal services’ and the occupation of ‘elementary and service’ workers and find the mean wage for this job category. This mean domestic worker wage (2.61 TL/hr for women and 2.33 TL/hr for men) allows us to compare our results to that estimated for the EU in the study by GMP (2012) who use a similar but more accurate identification of domestic workers in the EU SILC data for 2006.⁸

An alternative estimation for the domestic worker wage for 2006 is available from another study by Zacharias, Masterson and Memiş (2014). This study uses a two-digit occupation and industry classification provided by TSI for Household Budget Survey 2006 micro data upon special request. They choose all individuals employed in the industry “other social, community and personal services (industry code 41); engaged in the occupation of sales and services elementary occupations (occupation code 91); exclude all workers who are in the status of self-employed or unpaid family workers; also all wage and salary workers who are male such that; the remaining individuals are male and female casual workers and female regular wage and salary workers. The authors claim “this is a group of workers that (are) likely to have hours of employment and wages that would roughly approximate those of

⁶ While the legal minimum wage is normally adjusted by the Minimum Wage Committee every six months, for 2006 there was only one announcement for the entire year corresponding to a monthly gross salary, of 531 Turkish Liras/month.

⁷ Weekly work hours are converted into monthly work hours using 30 days per month/7 days per week = 4.286 weeks per month times 55 hours per week.

⁸ GMP (2012) also use ISCO occupational code 91 to compute a country median (gross) wage of what they call “a generalist domestic worker” (p. 2116).

domestic workers” (p.41). They then use observed weekly work hours for this group of workers to adjust their reported monthly earnings to find an hourly net wage rate of 3.48 TL/hr (gross wage = 4.86 TL/hr). This is substantially higher than the domestic worker wage rate we find using HILFS data and as it will be shown below yields widely ranging estimates of the market value of household production.

Both the imputed opportunity cost wages as well as the market replacement wage are net wages. Blades (2000) suggests that given the SNA rules, labour inputs are to be valued as compensation of employees, i.e., they are gross of income tax and other charges and include employers’ contributions to social security schemes. In a similar vein, Kasnakoglu and Dayioglu (2002) in their pilot study for Turkey, use gross wage to compare the value of household production with the GDP because they point out that the calculation method of GDP contains all taxes and social security contributions. GMP (2012) also use gross wages. Hence we transform these net wages into gross wages by calculating personal tax rates and social security payments.

The imputed gross hourly opportunity cost wage of each observed individual are then multiplied by her/his total annual domestic labor hours to estimate the market value of unpaid household work specific to that individual. A summation across all observations yields the total market value of household production. Similarly, the market replacement wage rates are multiplied – as in the opportunity cost approach - by the number of annual hours allocated by each adult in the time-use survey for “household and house care” and then summed over all observations to find the value of total domestic work performed by all adults in Turkey in 2006. These are then compared to the official Turkish GDP of 2006 in order to show the relative magnitude value of domestic unpaid production activities in as a share of GDP.

3. Magnitude and Distribution of Unpaid Work in Turkey and its Market Value

The Gendered Division of Labor and Variations in Time Allocation Through the Life Cycle

An overview of the time-use data in terms of allocation of working time between household non-market production activities and market production activities shows that the former is a substantial portion of women’s total working hours (*Table 1*). While women of prime working age (25-64) in Turkey spend on the average 5 hours and 46 minutes daily for ‘house and household care work’, men spend only 1 hour and 16 minutes. On the other hand, the average daily minutes spent ‘working at a job and/or seeking a job’ are 5 hours 8 minutes for prime working age men versus only 1 hour 16 minutes for women. The relative average

daily hours spent by women in household production versus the labor market is testimony to the dominance of the traditional gender based social division of labor in Turkey, and that is no surprise. Male breadwinner, female full-time homemaker is overwhelmingly the family structure (Ilkkaracan and Degirmenci, 2014). Yet what is striking is the fact that comparing men and women's total work time (household production work time plus labor market work time), prime working age women on the average have longer working hours (7 h 2 m) than men (6 h). This, ironically, goes counter to the general statement of "women not working" although on the average total daily work hours of prime working age women are 17% more than men's (22% more than men's for the 15+ adult population).

It is also striking that even when women participate in the labor market, they continue to perform a substantial amount of unpaid household work. Labor market participant urban women of prime working age, for example, spend 3 hours and 10 minutes in household production, in addition to 4 hours and 46 minutes of market work. Rural female labor market participants score the highest number of combined total working hours (8 h 41 m) and their total work hours are 42% higher than their male counterparts. Non-participant women perform even longer hours of household work (even though their total work hours somewhat shorter than labor market participant women). Yet when men do not participate in the labor market, they have altogether very short total working hours (for instance, only 1 hour and 22 minutes for urban non-participant men of prime working age). Finally married women's total unpaid work time (8 h 10 m) is almost double that of single women (4 h 39 m), hence point to the increasing burden of household care work that comes along with marriage. Single men (35 m) along with urban labor market participant men (42 m) have the lowest average unpaid domestic work hours of all groups.

Table 1: Average time spent daily on various activities by gender and employment status

	Market work	Non-market household care work (including direct care work)	Total work	Female-male ratio of total work time
Women (Men) 15 and above adult population	1 h 08 m (4 h 27 m)	5 h 17 m (51 m)	6 h 25 m (5 h 18 m)	1.22
Women (Men) of prime working age 25-64	1 h 16 m (5 h 08 m)	5 h 46m (52 m)	7 h 02 m (6 h 0 m)	1.17
Urban Labor Market Participants*^Ψ - Women (Men)	4h 41 m (6 h 29 m)	3 h 32 m (42 m)	8 h 13 m (7 h 11 m)	1.14
Rural Labor Market Participants*^Ψ - Women (Men)	4 h 04 m (5 h 24 m)	4 h 45 m (50m)	8 hours 46 (6 h 14 m)	1.41
Urban Non-participant Women (Men)*	3 m (22 m)	6 h 18 m (1 h 19 m)	6 h 21 m (1 h 41 m)	3.77
Rural Non-participant Women (Men)*	14 m (36 m)	6 h 31 m (1 h 44 m)	6 h 45 m (2 h 20 m)	2.89
Single Women (Men) age 15-24	1 h 28 m (3 h 03 m)	3 h 11 m (35 m)	4 h 39 m (3 h 38 m)	1.28
Married Women (Men) of prime working age 25-34	1 h 06 m (6 h 24 m)	7 h 04 m (51 m)	8 h 10 m (7 h 15 m)	1.13

Source: Calculated from TUS Turkey, 2006

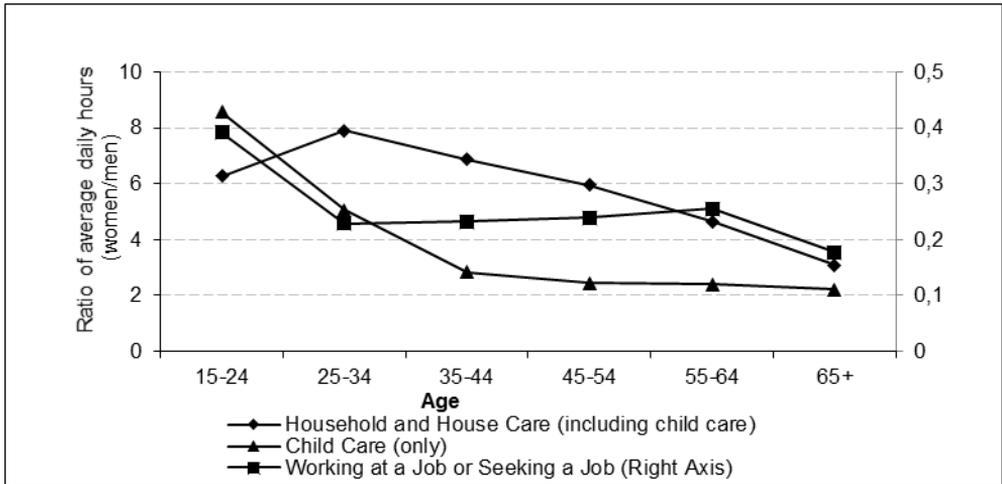
* Of prime working age 25-64.

^Ψ Labor market participants include employed plus unemployed (i.e. those seeking a job).

Figures 1 and 2 show that there is substantial variation in the contribution to unpaid household production beyond gender, labor market and marital status also by age and education. The range of women's to men's ratio of time spent on household and house care varies from 3.08 at the minimum (65+) to 7.90 (25-34) at the maximum (*Figure 1*). Similarly, the female-to-male ratios of time spent on childcare vary between 2.22 and 8.57. The prime working age category 25-34, characterized by women's entry into marriage, pregnancy and childbearing, marks a peak of the gender gap in domestic labor time allocation. From than onwards,

there is a steady decline in the gender gap. Yet even in the oldest age category of 65+, women on the average continue to perform three times more daily hours of work on household and house care than men.

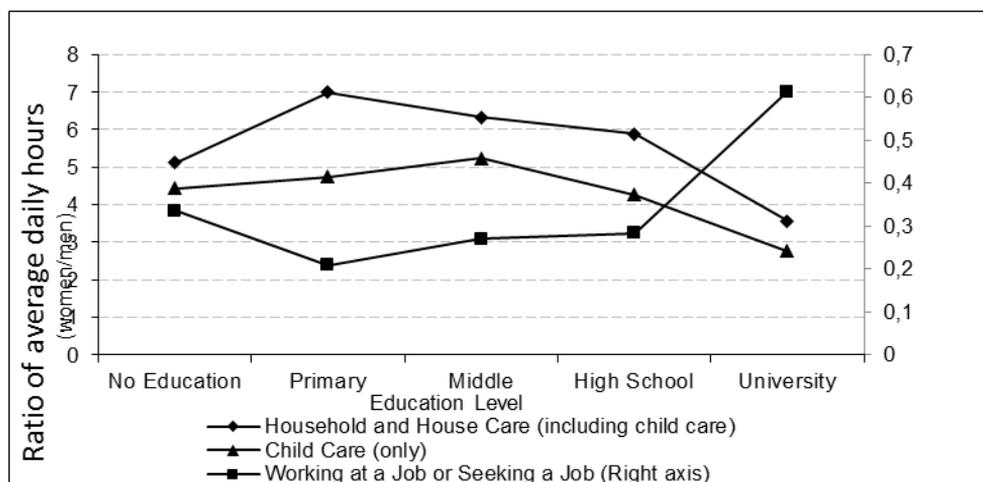
Figure 1: Gender ratio of time spent in household production by age group



Source: Calculated from TUS Turkey, 2006

Figure 2 depicts the variation in the gendered division of labor by education group. The largest gender gap for overall house and household care and in paid market work occurs at the primary education level, while for childcare it is observed in the middle school group.⁹ Primary school graduate women spend 7 times more daily domestic work hours than men; and perform only 21% of men’s market work hours. Overall, the gender gap is on a declining trend with increasing education level. This is not surprising in view of the fact that university graduate women’s labor force participation rates are much higher at around 70%, as compared to labor force participation rates of fewer than 30% for women in the lower education groups. The relative closing of the gender gap is reflective more of the shift of household production to the market sphere rather than men’s improved participation. Women’s higher rates of labor market activity are further supported with higher earnings in this education group enabling the hiring of domestic and care workers. Yet even then, university graduate women are observed to perform three times as much time in household production than their male counterparts and perform 61% of men’s market hours. Given the limited transferability of the work involved in childcare to the market, the burden falls on women independent of purchasing power.

⁹ This could possibly be a manifestation of the relatively higher income of the middle school education group enabling stay-at-home mothers.

Figure 2: Gender ratio of time spent in household production by education level


Source: Calculated from TUS Turkey, 2006

The above exploration shows how allocation of total labor time between paid market work and unpaid domestic work is shaped by gender primarily, but beyond gender also by various demographic characteristics, such as education, age, labor market status, rural-urban residence and their interactions.

Table 2: Total annual work time in Turkey by gender in 2006 (in billions of hours)

Location/Type of Work (share of type of work in total work hours)	Women	Men	Total work	Women's share in Total Hours
Market work (48%)	10.5	39.3	49.8	21%
Household and caring work (52%)	46.4	7.0	53.4	86%
Total work	56.9	46.3	103.2	55%

Source: Calculated from TUS micro data.

Converting these figures to annual work hours, Table 2 shows that the daily differences are even further magnified in terms of annual work hours. Women supply 21% of the total annual market hours, 86% of the total non-market household and caring work hours, and more than half of the total work hours altogether.

Estimation of the Market Value of Household Production by Different Methods

Table 3 summarizes our estimates of the various wage rates as well as the corresponding market value (value added) of total household production in Turkey, using the various methods detailed above. The estimated value added of household production in 2006 ranges from a minimum of 20.88 percent of GDP in 2006 using the minimum wage method to 22.36% based on the approximation of domestic wage derived from HLFSS and 24.73% using the opportunity cost wages estimated with HLFSS data. It is striking that while the household production hours (53.4 billion hrs in Table 2 above) represent 51.7% of total work hours, when the unpaid production hours are converted into an imputed market value, it represents only one quarter of total GDP. While these estimations of the value of household production amount to substantial magnitudes, at about one quarter of GDP, they are likely to represent underestimations for a number of reasons.

We note that an important source of an underestimation bias is the very low levels of estimated opportunity cost wages; even lower than the domestic worker wage for women. Hence the opportunity cost wage estimation yields only a slightly higher value of household production than the minimum wage or the market replacement wage estimations. We have already discussed some of the reasons behind low opportunity cost wages in the previous section: The substantial selection bias in wage employment, particularly for women, and the differences between the educational composition of employed women versus non-participant women. Interacting with these observations is a pervasive inherent gender bias in the labor market as reflected in a substantial gender wage gap even for self-selected women in employment. The gender wage gap ranges from as much as 35% for primary school and 28% for secondary school graduates, to 17% for high school and 9% for university graduates.

Studies on the gender wage gap find that even when education, age, industry and occupation are held constant, women's wages still remain below men's. Women's interrupted careers due to childbearing and the resulting lower years of experience and job tenure, lower returns on human capital and workplace characteristics are found to be the main sources of this gender wage gap (Ilkcaracan and Selim, 2007). Given that women's contribution to total household production is found to be as high as 86% of total unpaid labor hours (Table 2), the valuation of household production depended primarily on observed female wages in the labor market. As a result of this bias, opportunity cost approach might be argued to have resulted with lower values than the actual level. This inherent gender bias has also repercussions for the market replacement wage approach, since the gender bias is inevitably reflected in the relatively low wage rates for domestic laborers, given that this is an occupation with a strong gender association as women's work.

Table 3: Total Value added in household production by different approaches

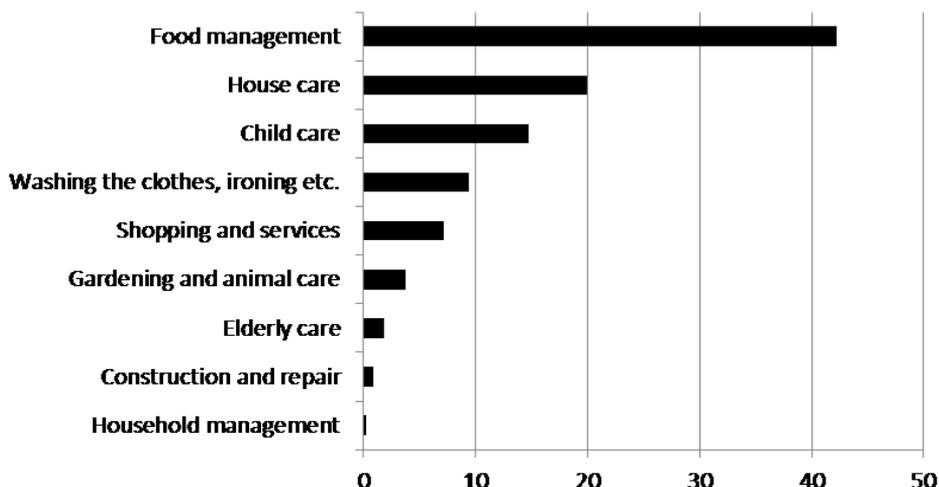
	Wage Rate (gross wages in TL/hour)		Estimated Market Value of Household Production (in TL)	Share of GDP (%)
	<i>(female)</i>	<i>(male)</i>		
Opportunity Cost Method <i>(imputed median opportunity cost wage)</i>	2.74	2.98	167 billion TL	28.95
Minimum Wage	(531 TL/month) 2.25		120 billion TL	20.88
Market Replacement Wage I <i>(median domestic worker wage from HLFS 2006)</i>	2.44	2.21	129 billion TL	22.36

In addition, we also need to point to a general underreporting problem for incomes and wages in both the HLFS and the HBS. 18% of the wages reported in the HLFS for instance are below the minimum wage, and 9% are at the minimum wage. If we were to use the higher domestic wage reported by Zacharias, Masterson and Memiş (2014) at 4.86 TL/hr (derived from a more detailed occupational coding of the HBS 2006), the value of household production is estimated at 259 billion TL corresponding to 45.02% of GDP. Hence the value of household production yields widely ranging scales depending on the domestic worker wage rate used in the estimation. We note that an accurate estimation hinges on availability of wage data provided by more detailed occupational categories at 3-digit ISCO coding.¹⁰

Figure 3 presents the relative shares of different activities falling under household and house care in the total value of household production reported above. This is analyzed for the nine categories in ‘household and house care’ as reported in the TUS. 42% of total value added produced in household and house care consists of food management. This is followed by house care (20%) and childcare (15%). Total value of the childcare services corresponds to 3.3 percent of the GDP.

¹⁰ *Dayıoğlu and Kasnakoğlu (2002)* in their estimation using the pilot time use survey from 1996 reported the value of household production at 48% of GDP using the opportunity cost approach and 34% using the minimum wage approach. Yet the number of daily domestic work hours in their pilot survey is considerably higher at 6 h 54 m for women and 2 h 7 m for men.

Figure 3: Shares of various household and house care activities in total value of household production (%)



Source: TUS and own calculations

Comparing Turkish Results to the EU Countries

The findings on time allocation and market value of household production reported for the 24 EU countries by GMP (2012) are replicated in Tables 4 and 5, and Figure 4 and our results for Turkey are integrated in a comparable manner. First of all, Table 4 shows that Turkish women have the fifth highest unpaid household and childcare work time daily at 314 minutes (after Italy, Slovenia, Estonia and Poland), and Turkish men have the lowest at 51 minutes.¹¹ These countries also typically report some of the lowest domestic work time for men; but still substantially higher than Turkey. The country with the second lowest male

¹¹ The average time allocations reported in Table 4 by GMP (2012) are imputed values from EU HETUS to EU SILC data. A comparison of these imputed values to HETUS statistics shows that GMP slightly overestimates household and childcare time. Turkish women's unpaid labor time is one of the highest despite such an overestimation bias for the other countries. As for comparison of male unpaid work times, there is such a high differential between Turkish male average and the next lowest country, that the rankings are unlikely to be affected. In any case, comparisons of Turkish values to HETUS and time use data in other sources also show that Turkish male average household and childcare time is lower by a wide margin (for a comparison to EU countries see p. 5, Table 1.2 in Zaman Kullanımı İstatistikleri TÜİK 2008; for a comparison to OECD countries see İlkcaracan, İ. (2010) p. 50-51, Table 6a and 6b.)

domestic work hours is Estonia at 114 minutes, which is 2.24 times the average for Turkish men. Given this substantial divergence of Turkish male values from the 24 EU countries reported here, the average (men and women mixed) unpaid household production hours is lowest in Turkey at 190 minutes, about 15% lower than the EU average despite female values ranking at the top.

Hence Turkey in the EU context stands out as having a striking disparity of unpaid work time allocation between men and women. GMP (2012) report that for the 20-74 age group,^{12,13} women's average domestic work time (including childcare) is 290 minutes per day, 8.3% lower than the Turkish female average. Yet European's men's average daily domestic work time is 154 minutes, three times that of Turkish men. Average daily market work time is 170 minutes for European women and 270 minutes for men. This amounts to 8% higher total work time for European women than European men (460 minutes (7h40m) versus 424 minutes (7h04) respectively). This stands in contrast to the Turkish case where as we have shown above in Table 1 that women's total work time is 22% higher than men's for the 15+ adult population and 17% higher than men's for the prime working age (25-64) population.

¹² Unfortunately we cannot select the same age group for Turkish TUS because the age variable is given as a categorical variable; the 15-24 age group and 65+ are given as categories. So the closest approximation that we can have to 20-74 (EU working age group) is 25-64, which we define as prime working age group for Turkey.

¹³ GMP (2012) p.2119, Table 4

Table 4: Average minutes per day spent on unpaid domestic work and childcare work

Country	Unpaid Domestic Work			Unpaid Childcare Work			Total Unpaid Household Work		
	Male	Female	All	Male	Female	All	Male	Female	All
EU-24	141	257	202	13	33	23	154	290	225
AT	177	192	185	20	24	22	197	216	207
BE	149	245	197	13	32	22	162	277	219
CY	164	181	173	23	27	25	187	208	198
CZ	175	195	185	19	23	21	194	218	206
DE	161	254	208	14	32	23	175	286	231
DK	180	192	187	20	24	22	200	216	209
EE	162	272	217	12	37	24	174	309	241
EL	170	194	182	18	22	20	188	216	202
ES	96	275	186	18	41	29	114	316	215
FI	143	219	181	15	31	23	158	250	204
FR	139	246	193	14	37	25	153	283	218
HU	184	199	192	21	24	23	205	223	215
IE	168	186	178	24	33	29	192	219	207
IT	100	307	204	17	38	27	117	345	231
LT	144	270	207	11	30	21	155	300	228
LU	170	191	181	22	27	24	192	218	205
LV	127	238	183	9	34	22	136	272	205
NL	182	200	191	22	28	25	204	228	216
PL	153	266	210	21	49	35	174	315	245
PT	178	190	184	23	25	24	201	215	208
SE	157	209	184	22	36	29	179	245	213
SI	164	282	224	14	35	24	178	317	248
SK	176	193	185	23	24	23	199	217	208
TR	41	273	164	10	44	27	51	317	190
UK	148	244	196	18	43	30	166	287	226

Source: GMP (2012) for 24 EU countries (p.2118, Table 2 and p.2119, Table 3); and for Turkey calculated by the authors from TUS 2006.

Table 5 show the estimated market value of household production in the 24 EU countries reported in GMP (2014) and in Turkey using the market replacement cost approach where the reference wage rate is the average domestic worker wage based on the HLFS data.¹⁴ The estimated market value of unpaid direct childcare work (3.3% of Turkish GDP) is similar to the EU-24 average (3.4% of EU GDP), the value of unpaid domestic work excluding direct childcare work, however, is lower than the EU average (19.9% of Turkish GDP vs. 26.2% of EU-24 GDP). Hence the estimated market value of total unpaid household production in Turkey at 22.4% of GDP is somewhat lower than the EU-24 average, which is at 29.6% of GDP. As such the magnitude of unpaid household production as a share of GDP ranks 16th amongst the 25 countries included in Table 5.

¹⁴ Obviously the comparison of Turkey to the EU countries will hinge on which market replacement wage we use, the HFLS or the HBS. For comparison to EU countries, we use HLFS based wage rate since the HFLS data was also our reference point for estimation of the opportunity cost wage.

Table 5: Estimated Market Value of Domestic and Childcare Work in EU vs. Turkey (*in billions of Euros*)

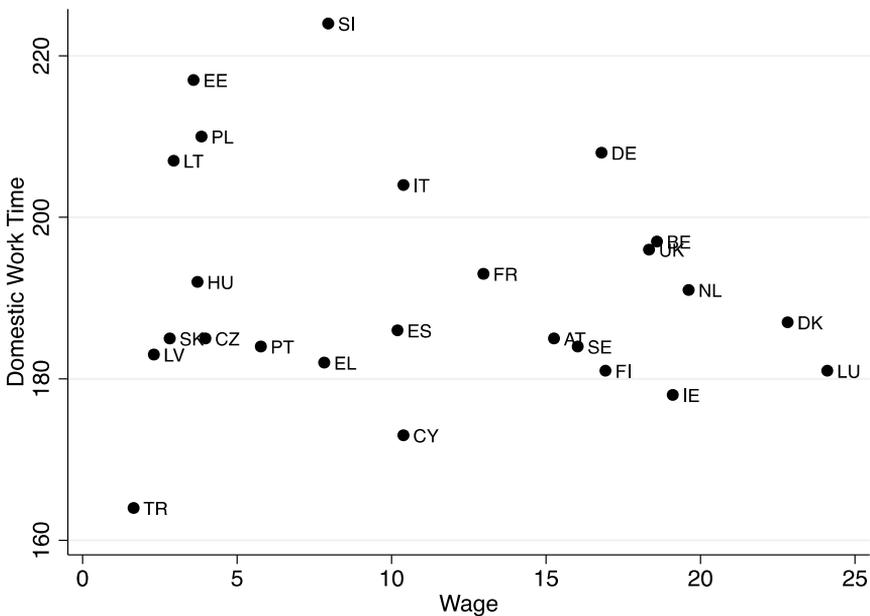
Country	GDP	Value of Domestic Work				Value of Childcare Work				Total	
		Male	Fem.	Tot.	%	M	F	T	%	Value	%
EU-24	11543	--	--	3021	26.2	--	--	390	3.4	3411	29.6
AT	257.3	30.2	33.7	64	24.9	5.6	6.9	12.5	4.9	76.6	29.8
BE	318.2	41.1	68.5	109.6	34.4	4.9	11.4	16.2	5.1	125.8	39.5
CY	14.7	1.2	1.4	2.6	17.7	0.4	0.5	0.9	6.4	3.5	24
CZ	113.4	7.5	8.8	16.3	14.4	1.3	1.6	2.9	2.6	19.3	17
DE	2321.5	256.6	453.9	710.5	30.6	46.3	104.7	151	6.5	861.6	37.1
DK	218.3	37.3	40	77.3	35.4	4.8	5.8	10.5	4.8	87.9	40.3
EE	13.1	0.6	1.2	1.7	13.3	0.1	0.2	0.3	2.4	2.1	15.8
EL*	213.2	18.9	22.3	41.3	19.4	3.9	4.7	8.6	4	49.9	23.4
ES	982.3	60.1	172.9	232.9	23.7	18	35.8	53.9	5.5	286.8	29.2
FI	167	17.4	26.7	44.1	26.4	2.4	4.9	7.3	4.4	51.6	30.9
FR	1807.5	156.9	292.8	449.7	24.9	22.9	56.9	79.8	4.4	529.5	29.3
HU	90	6.9	8.3	15.2	16.9	1.3	1.6	2.9	3.2	18.1	20.2
IE	177.2	14	15.9	30	16.9	4	5.5	9.5	5.3	39.5	22.3
IT*	1480	95.3	299.7	395	26.7	26.3	52.4	78.7	5.3	473.7	32
LT	24	1.1	2.5	3.6	15	0.2	0.5	0.7	2.8	4.3	18
LU	33.9	1.7	1.9	3.5	10.4	0.4	0.5	1	2.9	4.5	13.4
LV*	16.1	0.4	0.9	1.3	8.4	0.1	0.2	0.3	1.9	1.7	10.4
NL	539.9	76.4	83.9	160.2	29.7	13.6	16.7	30.3	5.6	190.7	35.3
PL	272.1	21.7	39.7	61.4	22.6	6.8	14	20.8	7.6	82.2	30.2
PT*	155.5	12.6	14.2	26.8	17.2	3.2	3.7	6.9	4.4	33.8	21.7
SE	313.5	30.8	42.1	73	23.3	5.5	9	14.5	4.6	87.4	27.9
SI	31	3.3	5.7	9	29.2	0.5	1.2	1.7	5.5	10.8	34.9
SK	44.6	2.9	3.6	6.5	14.5	0.5	0.6	1.1	2.6	7.6	17.1
TR	320.0	6.8	54.0	60.8	19.1	1.7	8.8	10.6	3.3	71.4	22.4
UK	1939	179.4	305.6	485	25	33.4	77.2	110.6	5.7	595.6	30.7

Source: GMP (2012) for 24 EU countries (p.2120, Table 5 and p.2121, Table 6); and for Turkey calculated by the authors from TUS 2006; see Table 2 above.

* Values of household production for these countries are computed on net wages.

The countries, which had similarly high female domestic work time to Turkey, namely Italy, Spain and Poland, have higher estimated market values of household production at around 30% due to both higher average domestic work time (that is higher male domestic work time) and higher wage rates used in the estimation of market value. Figure 4 entails a scatter diagram of the average daily domestic work time versus the average domestic worker wage rate (the market replacement wage) for the 24 EU countries in the GMP (2012) study plus Turkey. Turkey is in the lower left-hand side group of countries with average or below average domestic work time and low wage rate. Specifically, Turkey with 164 minutes of daily average domestic work time (Table 4) ranks 25th at the bottom; and with a gross wage rate of 2.60 euros/hr, ranks second lowest after Latvia along with Slovakia.¹⁵ As a result the estimated market value of unpaid household production work as a share of GDP for Turkey is below the average (at 22.4% of GDP) ranking 16th amongst the 25 countries.

Figure 4: Average domestic work time and wage by country (Total)



¹⁵ The average observed wage rate of 4.69 TL/hr in the HLFS 2006 is converted into Euros at the annual average exchange rate 1.80 TL/Euro. (see [http://evds.tcmb.gov.tr/cgi-bin/famecgi?cgi=\\$ozetweb&DIL.=TR&ARAVRIGRUP=bic_dkdovizgn.db](http://evds.tcmb.gov.tr/cgi-bin/famecgi?cgi=$ozetweb&DIL.=TR&ARAVRIGRUP=bic_dkdovizgn.db) for exchange rates.)

Figure 5: Average domestic work time and wage by country (Male)

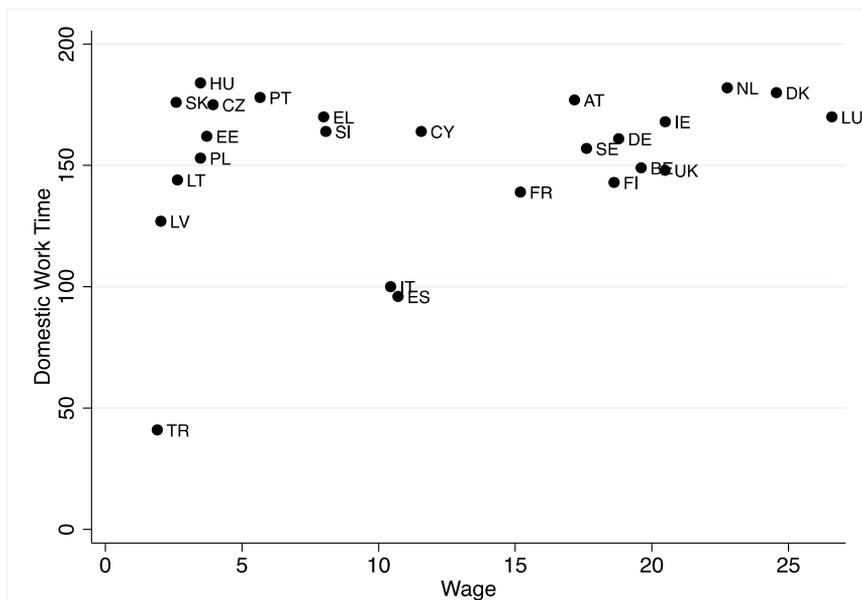
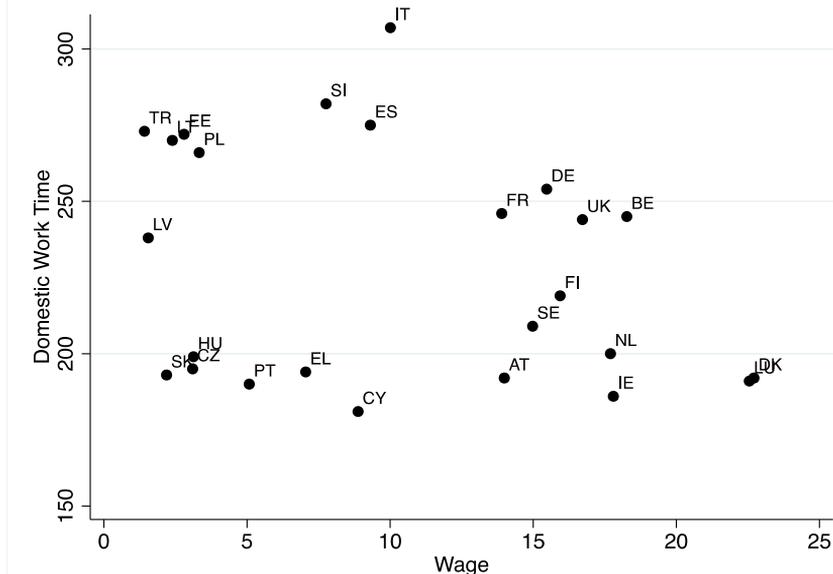


Figure 6: Average domestic work time and wage by country (Female)



Source: GMP (2012) for 24 EU countries (p.2123, Figure 2); and for Turkey calculated by the authors from TUS 2006; see Table 2 and 4 above.

Conclusion

The above analysis, based on the national time use survey of Turkey shows that there is a substantial amount of unpaid household production activity in the Turkish economy, which is undertaken particularly by women's unpaid labor. We have shown that the allocation of total time between market work time and non-market work time is tilted very much to the disadvantage of women. Women provide not only the overwhelming majority (87%) of non-market work hours but also more than half (55%) of total work hours. Hence despite the very low levels of female labor market engagement in Turkey, women's work time exceeds that of men's. We have also shown that the gender gap in time allocation is shaped by a variety of factors, primarily marital and labor market status, education level and age. There are vast differences in the amount of unpaid household production performed by married versus single women; higher educated women vs. lower educated women; labor market participant women vs. non-participant women; women in their prime childbearing years vs. non-childbearing years. Yet even for non-childbearing years, single, highly educated women the amount of non-market production does not fall under several hours a day. In addition for men, no matter what the marital status, education level and age, the amount of non-market household work remains very low around an hour or less a day.

In comparing our results on time allocation to the EU countries, we found that in terms of female domestic work hours, Turkey ranks the fifth highest following closely after Italy, Slovenia, Estonia and Poland. Yet in terms of male domestic work hours, Turkey ranks the lowest by a wide margin, and hence remains an outlier. As a result, Turkey's average domestic production hours is lower than the EU average and in fact lower than any of the 24 EU countries reported in the GMP (2012) study. What distinguished Turkey from these other countries is the striking gender gap in terms of its allocation between men and women. Not only is excess of women's total work hours in Turkey over men's more than the EU average, but also the gender imbalance between the allocation of time between to unpaid work is striking.

While different methods of estimating the market value of household production yield varying magnitudes, we find that the unpaid production of goods and services in the household in Turkey amounts to approximately a quarter of her GDP (with estimations ranging from 21 percent at a minimum to 29 percent at a maximum). This is testimony to the invisible contribution of unpaid work of primarily women to household wellbeing. While a quarter of GDP is a substantial magnitude, there are a number of reasons to suggest that our estimates still represent a lower bound for Turkey, and hence an underestimation. The inherent gender bias in the valuing of women's work generally, and care work in particular, results in a low market replacement wage rate. While one would expect this inherent bias to be somewhat weaker in the opportunity cost estimation, we still

find a very low imputed female wage rate. We have ascribed this to the limitations of data and hence underspecified wage regressions used in imputing opportunity cost wages.

Comparing our estimations of the market value of household production as a share of GDP to those found by GMP (2012) for 24 EU countries, we found that our estimation using the market replacement wage (22.4% of GDP) ranks 16th highest, below the EU average. While in terms of overall domestic work hours, Turkey ranks at the bottom of this set of countries (at 164 minutes daily), given the very low wage rate (2nd lowest amongst this set of countries), a market valuation of household production yields a relatively lower magnitude.

Studies on estimation of the market value of unpaid domestic work provide crucial insights into the nature of interactions between the market and non-market production spheres of an economy and its implications for the labor market. In the case of Turkey, women's substantial engagement in production in the home is mirrored in the acutely gendered characteristic of the labor market in Turkey, which is predominantly male. The immense gender gap in the allocation of time between market and non-market time is striking particularly in comparison to EU countries, and provides clues into the reasons for Turkey ranking at the bottom in terms of the female employment rate. Presumption of the full-time homemaker role for millions of women forms a justification for their exclusion from the labor market and confinement of their primary economic activity to the household. This is closely integrated with state policies towards the economics of care, where women's unpaid domestic labor provides the main mechanism for resolving the issue of the burden of child, elderly, disabled and sick care. Hence our findings point at two directions for public policy. First of all, there is a need for policies that shift some of the household production work from the non-market (unpaid) to the market (paid) sphere. Widespread public provisioning of high-quality social care services would be a major mechanism for this. Secondly, there is a need for policies that redistribute the unpaid household workload between women and men. Labor market reforms for paternity and other care leave encouraging primarily male workers to balance work and family, as well as shortening of workplace hours would be amongst the fundamental measures towards such a redistribution.

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