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What is unpaid female labour worth?
Evidence from the Time Use Studies of Iran in 2008 and 2009

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Table of Contents

Abstract

This paper uses the Time Use Survey of Iran of 2008 and 2009 to estimate the monetary value of unpaid domestic work of urban housewives. The surveys recorded domestic work activities such as cooking and cleaning and general care of household members as well as care of children and their education. Using the market-based approach to estimate the monetary value of unpaid domestic work we collected data on the cost of buying in services for domestic work and for education of children from 'nursing agencies' and private education colleges in main cities of Iran in the summer of 2011 that were adjusted to obtain the 2008 and 2009 prices.

The market value of domestic work of urban housewives was estimated to be US$25 billion in 2008 and US$29 billion in 2009. These were about 8.6 per cent of non-oil GDP in the same years. Our estimates complement other findings from around the world that confirm substantial contribution of housewives to the economy. These contributions have gone unrecorded and not compensated in most countries. At a minimum, housewives can be insured against basic contingencies of life such has health problems, poverty and disabilities and supported in old age. Our work and other studies do provide the economic and social arguments for costing and putting into practice the long overdue support for housewives; they have earned it!

Keywords

Economic evaluation, time-use, domestic unpaid work, care economy, social insurance, Iran, feminism and gender studies, production and reproduction, generations and regeneration.

What is unpaid female labour worth?[1]
Evidence from the Time Use Studies of Iran in 2008 and 2009

1 Introduction

This study is about the monetary and economic valuation of the unpaid work of married women who were involved in home making ('domestic'), care and other activities in the urban areas of Iran in 2008 and 2009. We have used the Time-Use Study of Iran (TUSI) that was conducted in 2008 and 2009 to determine the main unpaid domestic and other activities of urban-based married housewives. Three main areas of unpaid activities have been identified that take up nearly 90 per cent of the total home unpaid work – domestic work, care (of children and adult) and education of children. By distinguishing between the general domestic work and care, on the one hand and specialist work of education of children, on the other, we have been able to use their respective market rates to estimate the monetary value of the unpaid work of urban household in the TUSI survey. Combining these estimates with the census data on total urban population of married housewives we were able to estimate the total monetary value of the unpaid work of married housewives in urban areas of Iran.

The research has been guided and informed by the economic and feminist theoretical and empirical literature on domestic work, reproduction and generational/re-generational issues. The paper begins with a short section on the theoretical and policy imperatives for evaluating unpaid household work. The theoretical section notes the importance of household work for production and re-production of labour at macro level and goes on to argue that there has been a deep gender bias in ignoring household work that has affected welfare of women as well as men. On the path to reduce and hopefully eliminate such gender biases one needs, *inter alia*, to provide as detailed an account of unpaid household work as possible and estimate its monetary value.

It is in this spirit that this paper continues with sections on the TUSI in Iran providing a detailed account of the methodology of using market wages as well as the procedures to estimate the monetary value of unpaid work of married housewives in urban areas in Iran. The concluding section is devoted to a discussion of the policy implications of this paper and suggestions for further research.

At the outset it ought to be noted that studies of this kind are still in their early stages in developing countries and much of the research time has to be devoted to detailed empirical work to provide a solid and credible base for more rigorous analytical works in the future.

2 Why it matters to evaluate unpaid work: some theoretical and policy issues

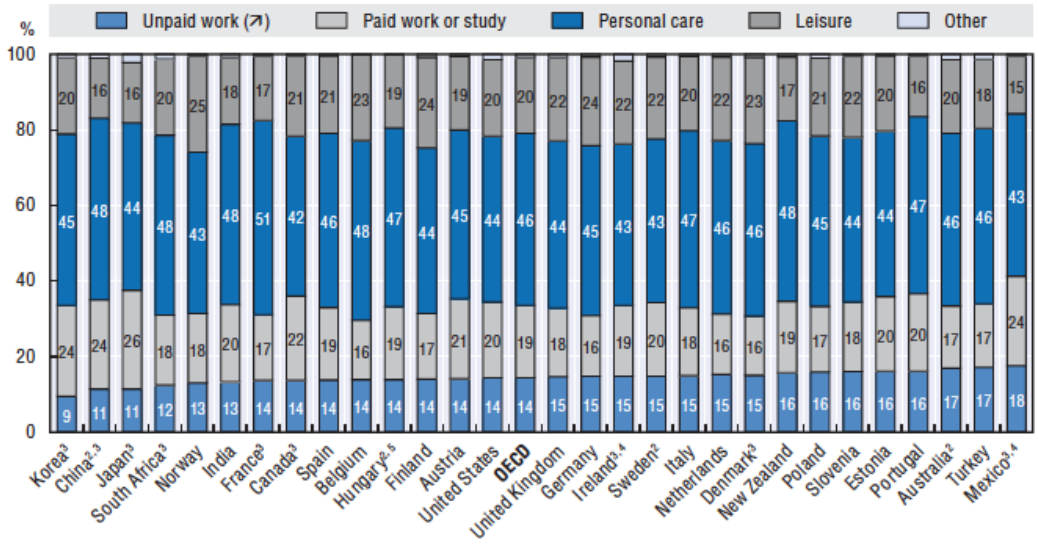
In order to find the market value of unpaid work we need to distinguish between unpaid work and leisure. Unpaid work is an activity that can be hired out. It is different from leisure, even when an activity is seen as a hobby and pleasurable like gardening. The difference between the two is based on the 'third person' principle. If the benefit of an activity like reading a book or watching a movie is accrued only to the person – the 'third person' – who carries out that activity, then it is defined as leisure. Gardening and child

[1] Thanks are due to the Faculty of Social Sciences of the University of Tehran for their financial support (project number: 3105012/1/01).

care can be hired out, whilst both may well give the person who carries them certain enjoyment they should not be seen as leisure activity according to the above distinction. (OECD, 2011)

According one major work based on different Time Use Studies of OECD and a selection of developing countries, unpaid work as a proportion of total time spent on daily activities (including 'paid work and study,' 'personal care,' 'leisure' and other) ranges from nine to 18 per cent of total time use of the population of 15-64 years of age. (see figure one).

FIGURE 1
Time use by main activity in percentage of total time use for the population 15-64 of age in OECD and selected developing countries (1998-2009)



1. Australia: 2006; Austria: 2008-09; Belgium: 2005; Canada: 2005; China: 2008; Denmark: 2001; Estonia: 1999-2000; Finland: 1999-2000; France: 1998-99; Germany: 2001-02; Hungary: 1999-2000; India: 1999; Italy: 2002-03; Ireland: 2005; Japan: 2006; Korea: 2009; Mexico: 2009; the Netherlands: 2006; New Zealand: 1998-99; Norway: 2000-01; Poland: 2003-04; Portugal: 1999; Slovenia: 2000-01; South Africa: 2000; Spain: 2002-03; Sweden: 2000-01; Turkey: 2006; the United Kingdom: 2000-01; the United States: 2008.
2. For a number of countries it was not possible to restrict the sample to the population aged 15-64. The age limits are Australia: 15+; China: 15-74; Hungary: 15-74; Sweden: 20-64. A different upper age limit is unlikely to affect time use significantly. A lower age limit will diminish the importance of unpaid work.
3. Surveys for Canada, China, Denmark, France, Ireland, Japan, Korea, Mexico and South Africa do not cover a complete calendar year and thus, to varying degrees, under-represent holidays. As people do more unpaid work on weekends, excluding holidays overestimates paid work and underestimates unpaid work and leisure.
4. Ireland and Mexico use a simplified time-use diary. Mexicans are also asked about their time use during the seven days prior to the interview. Hence, estimates for Ireland and Mexico are less precise.
5. For Hungary, only pre-prepared tables on time use are available and the categories are not always entirely comparable with the aggregations used for the other countries. The comparison of Hungary with other countries should thus be interpreted with caution.

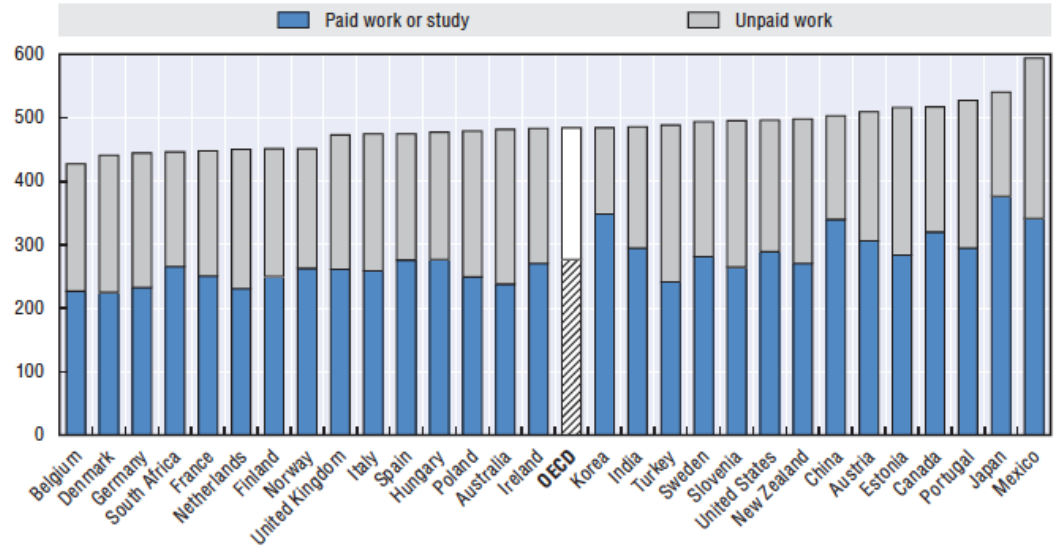
Source: OECD's Secretariat estimates based on national time-use surveys (see Miranda, 2011, for more details).

StatLink http://dx.doi.org/10.1787/888932381437

Source: OECD (2011), figure 1.1, p. 12.

The variation in unpaid work across countries is explained by the time spent on paid work, notwithstanding differences in the season and coverage of Time Use Studies. In general people in countries with high share of paid work in total daily activity spend less time in unpaid work, for the simple reason that as hours in paid work goes down people have more time for unpaid work (see figures 2 and 3).

FIGURE 2
Total working time in OECD and selected developing countries: total minutes worked, paid and unpaid, per day (1998-2009)



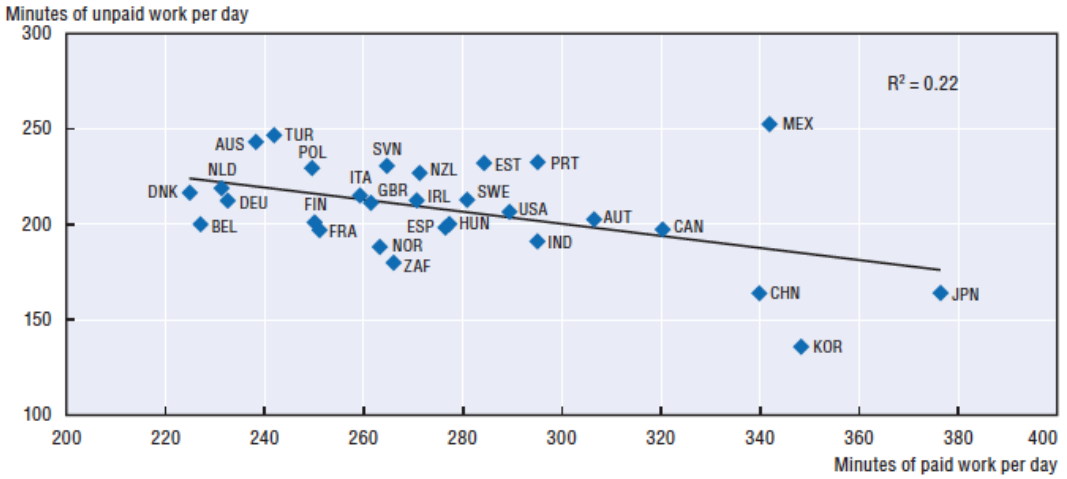
Note: Travelling time related to paid and unpaid work is included in the respective categories. See Figure 1.1 for country-specific notes.

Source: OECD's Secretariat estimates based on national time-use surveys (see Miranda, 2011).

StatLink http://dx.doi.org/10.1787/888932381456

Source: OECD (2011), figure 1.2, p. 13.

FIGURE 3
Trade-off between paid and unpaid work in OECD and selected developing countries (1998-2009)



Note: Travelling time related to paid and unpaid work is included in the respective categories. See Figure 1.1 for country-specific notes.

Source: OECD's Secretariat estimates based on national time-use surveys (see Miranda, 2011).

StatLink http://dx.doi.org/10.1787/888932381475

Source: OECD (2011), figure 1.3, p. 14.

The trade-off between paid and unpaid work has an important gender dimension: in all countries in the OECD (2011) study women do more unpaid work than men, that on average amounts to 2.5 hours per day. The difference increases in developing countries as in Mexico and India, or in countries with well-defined gender roles and household responsibilities as in the Southern Europe, South Korea and Japan. There are notable

exceptions. For example in China both men and women spend less time in unpaid work relative to other countries, or in Australia both men and women spend most time in unpaid work. Further evidence in Australia has revealed that family is of a male-bread winner type in which men are mostly in full-time paid work and women in part-time work, and there are differences in unpaid work that men and women do. Women unpaid work is dominated by child care (Craig and Mullan, 2011).

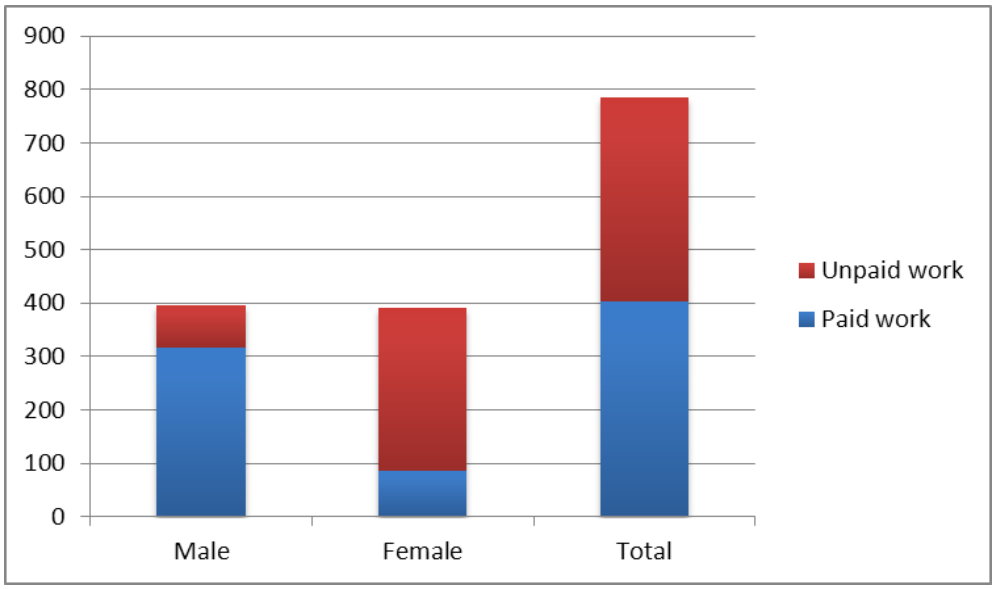
Iran is no exception and fits well into this international pattern as table one and figure four indicate. The total amount of time devoted to paid and unpaid work is the same for both sexes but men do more paid work and women more unpaid work.

TABLE 1
Paid and unpaid work by gender in urban areas.
Time Use Study of Iran 2008-2009 (Minutes per day)

Gender	Paid work	Unpaid work	Total
Male	317	78	395
Female	86	304	390
Total	403	382	785

Note: figures are for males and females of all ages.
Source: Our calculations based on TUSI, 2008 and 2009.

FIGURE 4
Paid and unpaid work by gender in urban areas.
Iran 2008-2009 (Minutes per day)

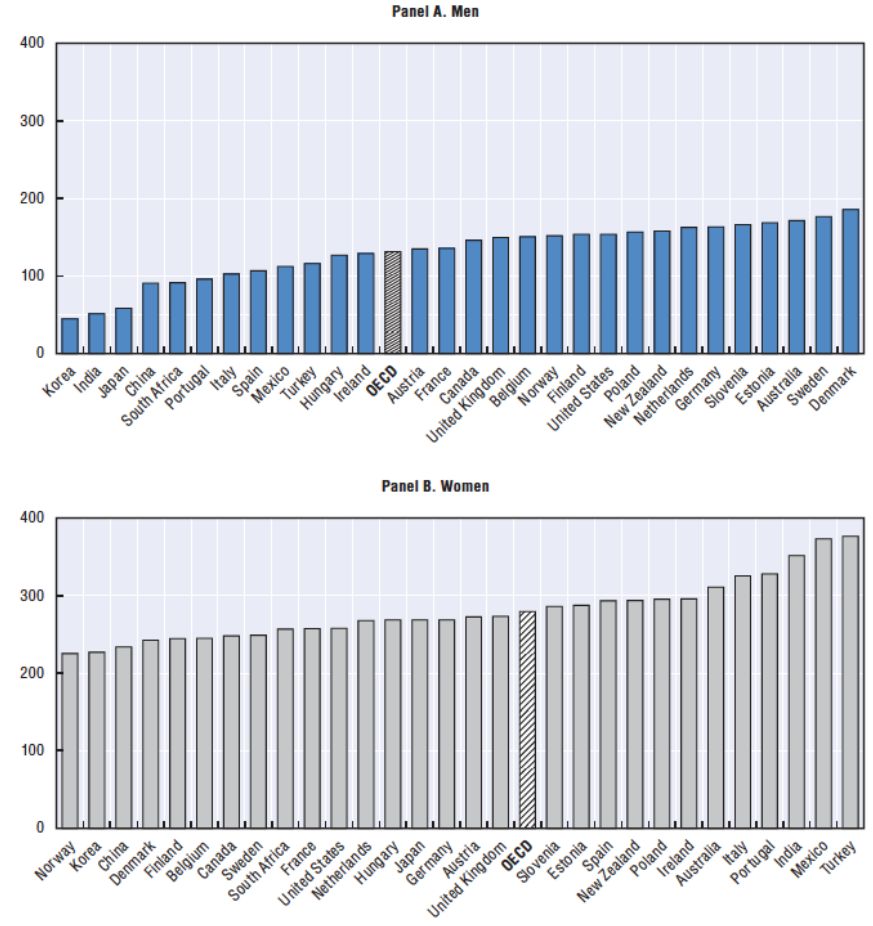


Source: Table 1.

In explaining these gender differences in paid and unpaid work, besides the cultural differences in gender role, the most important factors are gender differences in labour force participation rate, employment status and shorter working time of women. As figure six reveals high female employment rate is correlated with low female unpaid work time, and high male unpaid work. On closer scrutiny it is also revealed that

female unpaid work is also related to the working time of women, the shorter the working time (e.g. part time employment) the longer the time spent on unpaid work. This is the case in countries like Australia, Germany, Japan, the Netherlands, and the United Kingdom, where the casualization of the labour market and feminization of this causal labour market has resulted in more than 40% of women to work on a part-time basis (OECD, 2011). In the Southern European countries where demand for casual or part time work is lower, women have little option but to continue with their domestic unpaid work, so long as the male bread- winner model provides a reasonable income and standard of living for the family. Otherwise women have to combine the paid and unpaid work that results in higher total workload for women, unless there is an increase in male unpaid work (i.e. male support at home and sharing of domestic work). This is indeed the case as figure 5 reveals. Whilst there is a general downward trend in the relationship between female employment rate and male-female gender gap in unpaid work, a large number of countries (e.g. Portugal, Italy, South Africa, Mexico and China) lie above the straight line (which shows that there is no gender gap in male-female unpaid work) indicating that paid work-unpaid work trade-off is weak as far as women are concerned

FIGURE 5
Male and female unpaid work, minutes per day
in OECD and selected developing countries (1998-2009)

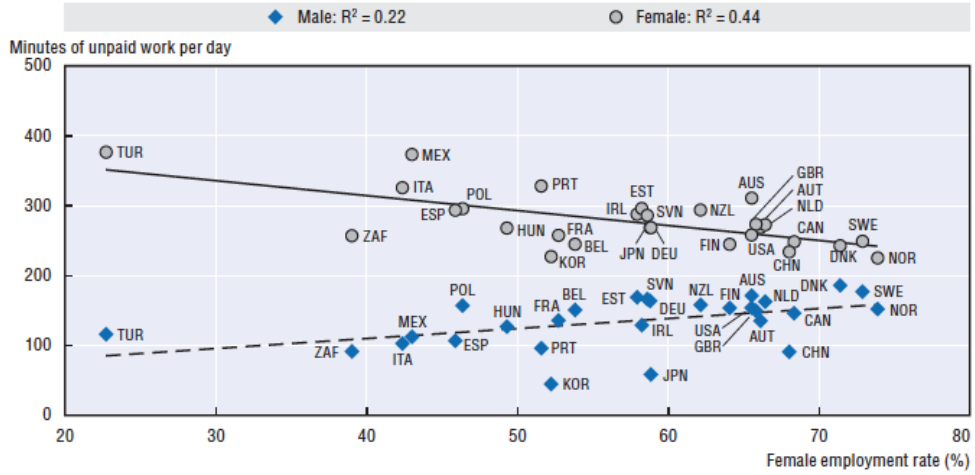


Note: See Figure 1.1 for country-specific notes.
Source: OECD's Secretariat estimates based on national time-use surveys (see Miranda, 2011).
StatLink http://dx.doi.org/10.1787/888932381513

Source: OECD (2011), figure 1.5, p. 15.

and that the workload of women increases with their labour force participation. (See figures 6 and 7) Whereas the paid work component of her total workload enters the System of National Account (SNA), her unpaid work goes un-recorded and neglected.

FIGURE 6
The relationship between female employment rate and unpaid work of men and women in OECD and selected developing countries (1998-2009)



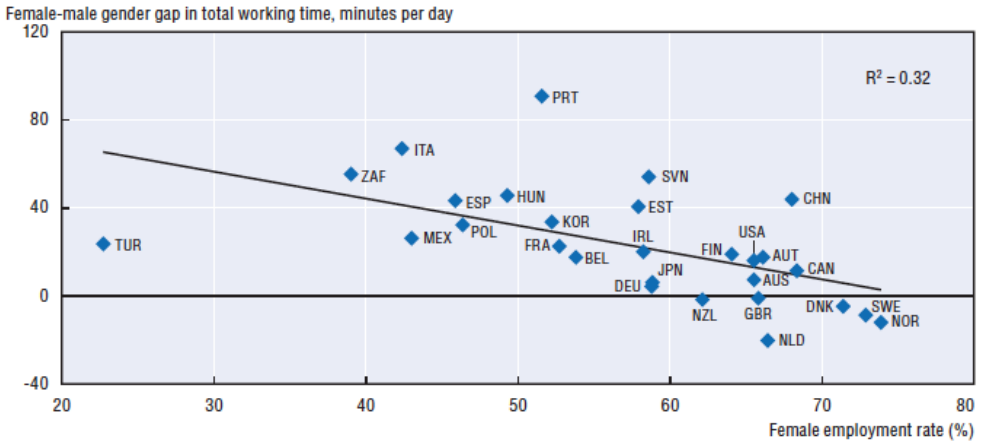
Note: The female employment rates are for the population aged 15-64 years and correspond to the year during which the time-use survey was undertaken. See Figure 1.1 for country-specific notes.

Source: OECD's Secretariat estimates based on national time-use surveys (see Miranda, 2011) and OECD Labour Force Surveys for female employment rates.

StatLink http://dx.doi.org/10.1787/888932381532

Source: OECD (2011), figure 1.6, p. 16.

FIGURE 7
The relationship between female employment rate and female-male gender gap in OECD and selected developing countries. (1998-2009)



Note: The female employment rates are for the population aged 15-64 years and correspond to the year during which the time-use survey was undertaken. See Figure 1.1 for country-specific notes.

Source: OECD's Secretariat estimates based on national time-use surveys (see Miranda, 2011) and OECD Labour Force Surveys for female employment rates.

StatLink http://dx.doi.org/10.1787/888932381551

Source: OECD (2011), figure 1.7, p. 16.

Since the 1970s the contribution of unpaid female labour to the economy has come under close scrutiny from different theoretical perspectives. The household economics and its variants (Becker, 1976) put the division of labour between men and women at the heart of the home based, often non-monetised and unpaid work of women and market based and monetised work of men. A division of labour that in their view is based on biological as well as education/skill differences that would also explain differences in career path and pay.

Others view the unpaid female labour as an important producer of use value in the economy that contributes to the generation of surplus value by indirectly reducing the reproduction cost of labour through its food preparation and care activities. (See, e.g., Elson, 1994 and 1996.) Such activities go unaccounted for in the national accounts around the world as well as in other economic data because they take place outside the monetised market sphere. Labour statistics also ignore unpaid household labour of women who are counted as 'inactive' in terms of their labour market participation.

The unpaid work of women have been put under generic and rather vague title of 'care' that includes, among others, physical care of infants and children, food buying and preparation, education of children, care of sick, disabled and the elderly. These activities, except perhaps some physical care of infants (e.g. suckling), are not sex specific but all do have a market value (including suckling through the hiring of wet nurses!), and more important, most of them require certain level of skills and would have varying market values. How to evaluate such a wide range of services by trying to put monetary value on them is not an easy task.

The internationally accepted System of National Accounts which is the foundation of calculating gross domestic product distinguishes between 'productive' and 'non-productive' activities on the basis of whether they can be traded in the market or not. Whilst subsistence agriculture and collection of wood and water are categorised as productive, provisions of personal care to one's family are not, despite the fact that most personal care can be traded in the market.

This is all the more surprising when one considers the contribution that the personal care makes to the production of labour through, for example, child bearing and child care, and reproduction of labour through food production at home and care of the sick, as well as the social reproduction through transfer of social norms, cultures and mores of society. (Cole and Durham, 2007) As Elson (1994) observed: "The ability of money to mobilise labour power for 'productive work' [paid by the market] depends on the operation of some non-monetary set of social relations to mobilise labour power for reproductive work." (p. 40). Unpaid female labour at home then becomes the backdrop to the paid work in the market that acknowledges the unpaid female labour albeit indirectly through the notion of a 'family wage.'

By estimating the market or monetary value of the unpaid work some important policy areas would be opened up for improving welfare of women and men.[2] For example it would provide the empirical foundation for gender sensitive policies in support of housework, child care, health and social welfare (including pensions). Besides

[2] 'In 2006, when announcing the partial implementation of Article 88 of the new constitution recognising care work as productive – a breakthrough worldwide – the late president Chávez of Venezuela said: "[Women] work so hard raising their children, ironing, washing, preparing food … giving [their children] an orientation … This was never recognised as work yet it is such hard work! ... Now the revolution puts you first, you too are workers, you housewives, workers in the home' (The Guardian, 9 March 2012).

welfare related issues it would also provide the empirical and theoretical justifications for gender sensitive employment policies in order to raise female labour force participation.

3 The methodology of evaluating unpaid care work

There are two main approaches to evaluating unpaid work within the household on the basis of whether it measures: (a) output of the unpaid work or (b) input (mainly time) needed to carry out the work and produce the goods for consumption by household members.

According to the former which is used in the in the SNA, all unpaid activities such as food preparation, washing, cleaning, etc. would be classified and broken down into different types of work based on their availability in the market. For example, preparing a hamburger is evaluated differently than a rare regional dish, or window cleaning would be treated differently than general cleaning. All activities would then be priced at the market rate. Despite its methodological value this approach is not adopted in most studies that evaluate unpaid work of women, mainly because of the detailed information needed on different activities carried out and products produced at the level of households as well as markets.

In the latter approach, the input-based method uses the time spent on unpaid activities as the starting point of putting monetary value on the unpaid work. This method provides an indirect and reasonably accurate measure of the value of the unpaid work. It is simple and straightforward because of its data requirements that can be gathered by a time-use survey, which is easier and cheaper to conduct than documenting and finding the market value of numerous goods and services produced by the unpaid labour at home.

Once a time-use survey of women's activity at home has been carried out, the next step is to put a monetary value on these activities by either the opportunity cost approach – the income/wage foregone as a result of doing the unpaid work; or by market rate approach or replacement cost approach – the market cost of buying the goods and services that are provided by the unpaid labour within the household.

The opportunity cost approach begins with the assumption that the person doing the work at home would have had a foregone income in the labour market. For example the unpaid care work has an opportunity cost in terms of foregone income of the carer (Riewpaiboon, et al., 2009). The market rate/wage approach assumes that the care work undertaken could be hired in and therefore could be evaluated at market rate. Similarly, food or other goods produced at home could be bought from the market and could be evaluated at market prices.

The market rate/wage approach can further be broken down into evaluating unpaid labour at the wage rate of a 'generalist' worker who would do everything from cleaning and cooking to helping children with their homework and nursing the sick and the elderly; that essentially shadows the work that housewives do at home. A more refined approach treats different activities (e.g. cooking and childcare) as specialist and distinctly different works with each having their own specialist market wage.

Any of the above approaches have their methodological and empirical problems and shortcomings that would introduce certain degree of bias into the estimation of the monetary value of unpaid work. For example, in the case of a female medical doctor the opportunity cost of her unpaid family work would be grossly overvalued given the market rate for her expertise.

There is also the problem of underestimation in the case of unskilled housewives. The market value of their work could be based on wage of unskilled female cleaning workers who in general and in most countries are paid less than their male counterparts. Moreover, how do we deal with the methodological problem of using the current market wage for women if we assume that all housewives have joined the labour market that in turn would put a downward pressure on female wage rate? However, such methodological problems also exist in national income accounting such as imputing rents of owner occupied homes on the basis of the current rents in the rental market. The use of the current rents would overestimate the imputed rent of owner occupied homes because it does not account for the downward pressure on rents if the owner occupied home were to be offered for rent on the rental market.

Despite the methodological shortcomings of the market rate approach, it should be clear that it offers monetary estimates of unpaid work which are less biased than those offered by the opportunity cost approach. However, in applying the market rate approach one should search for wage rates and service charges that reflect different types of works carried out in unpaid care provision at home. The main reason is that with the development of markets to provide a service and undertake an activity, a division of labour would follow to take advantage of specialisation by reducing costs and increasing productivity of labour and profits.

In this research the market rate approach is used because it leads to less biased results. We have also distinguished between general housework and home education support provided by mothers. This is in part due to the nature of labour market in domestic work and education in Iran. Our approach combines the 'generalist' and 'specialist' approaches that have commonly been used in other works in to evaluate domestic unpaid work (See, e.g., Budlender, 2008 and Esquivel, 2008).

4 Time Use Studies in Iran

The history of household Time Use Studies goes back to large-scale surveys in Canada and UK in the 1960s that were followed by other countries (Norway, Bulgaria, Japan, Finland and Austria) in the 1970s and 1980s. The conceptual and methodological frameworks followed were not the same in these countries. In 1995 at the UN International Women's Conference in Beijing agreement was reached on moving towards a common framework for time use surveys as well as, *inter alia*, expanding the coverage of activities carried out at home in order to improve the recording of different unpaid works done by men and women.

Early time use studies in Iran date back to pre-1979 revolution. These studies were concerned mainly with leisure-time activities and were not carried out according to a set and uniform procedure. They were concerned with specific interests of government offices and ministries, such as ministry of education in relation to summer and vacation leisure-time of teenagers and youth. (SCI, 2004) The Statistical Centre of Iran also included leisure-time study in its 'Pilot Survey of Social and Economic Characteristics of Households' (*'Tarh-e Amaar-giri Khosoosiat Ejtemaai-Eghtesaadi Khaanevaar'*) in which questions were included on leisure-time of household members above the age of 10. Leisure-time is not the only non-market (i.e. unpaid or non-remunerated) activity of individuals and large-scale time-use studies were needed to fill the gap in information on the unpaid activities of members of households. In the meantime, some authors have attempted to estimate the monetary value of unpaid work of Iranian women.

Jazani (2004) has carried out one of the first studies of evaluating unpaid work of women in Iran using a time-use study methodology. She conducted two surveys of housewives in the city of Tehran. The surveys asked questions about the frequency of home making activities during a typical week without specifying the amount of time spent on each activity. The researcher then assigned certain number of hours to such activities, which were then evaluated at hourly market rates for different house-works. Using regression analysis she estimated the monetary value of the unpaid work of women at home that was put at US$100 (106 540 Iranian tomans) per month at 2004 prices. This was estimated to be about 12 per cent of GDP of the city of Tehran. (Jazani, 2004, pp. 218-222.) In 2011 a similar survey but with a more detailed questionnaire was conducted by Bagheri (2011) in Tehran and reported a monthly figure of US$600 (640 000 tomans). In real terms these two independent estimates are remarkably close.[3]

Useful and pioneering as the above studies are they are limited to one city and cannot be generalised to a country the size and diversity of Iran. The gap in information on the unpaid activities of women can only be filled by a national survey that should be conducted according to an internationally agreed framework and classification of time use at household level in order to make comparison with other countries possible. The International Classification of Activities for Time-Use Statistics or ICATUS uses several activities to categorise how a person spends his or her time in 24 hours. Following the SNA, some activities are viewed as 'work' in return for a wage or shared income (such as that earned through a family run business or farm). The others are a combination of unpaid activities ranging from housekeeping and care within the household, to community work, recreation and education. Below is a consolidated or 'major' list of these activities:

'*SNA work and related activities*

1. Unpaid domestic services for own final use within household
2. Unpaid caregiving services to household members
3. Community services and help to other households
4. Learning
5. Socializing, community participation and religious practice
6. Leisure and sports
7. Self-care and maintenance' (UN, 2012, p. 28).

In this paper we are interested in the unpaid work of urban married women in the household, that fall under the above categories '1' – 'unpaid domestic services for own final use within household – and '2' – 'unpaid caregiving services to household members' (For a detailed list of these activities see appendix I at the end of the paper).

5 The methodology of evaluating unpaid female labour in Iran

The Time-Use Survey of Iran was conducted in the autumn and winter of 2008 and spring and summer of 2009. In each season it covered a sample of between 8390 and 8498 people above the age of 15 in 12,000 household in urban areas. In total 33,737 people were surveyed, but our study is only concerned with 9,328 of them as married housewives who lived with their husbands (84 per cent of married women in the survey).

[3] We projected Jazani's 2004 figure and arrived at an estimate of 512 690 for 2011 – allowing for 16.5 per cent annual inflation rate, based on a geometric average of annual official Iranian government reported inflation rate over the 2004-11 period.

For these 9,328 women information on the broad categories of household activities – housekeeping, care for children, care for older members, education of children (help with homework, etc.) –have been extracted from the results of the TUSI. The choice of these categories was due to the fact that they comprised the main activities of housewives and that they could be valued at market prices. The data on these activities and amount of time spent on them in different provinces are presented in table two.

TABLE 2
Average daily time allocated to main unpaid household activities by married housewives in urban areas in 2008, 2009 by province (Hours: Minutes)

		Activity				
No.	**Province**	**Domestic**	**Child care**	**Adult care**	**Children education**	**Total**
0	Markazi	05:20	00:24	00:34	00:09	06:27
1	Guilan	05:57	00:35	00:29	00:12	07:13
2	Mazandaran	06:36	00:36	00:02	00:08	07:22
3	Azarbayejan(East)	06:01	00:24	00:02	00:05	06:32
4	Azarbayejan(West)	05:55	00:46	00:01	00:07	06:49
5	Kermanshah	05:59	00:40	00:01	00:06	06:47
6	Khuzestan	05:54	00:28	00:02	00:04	06:29
7	Fars	05:46	00:38	00:02	00:07	06:33
8	Kerman	06:08	00:33	00:14	00:06	07:01
9	Khurasan(Razavi)	05:39	00:37	00:03	00:05	06:24
10	Esfahan	05:42	00:40	00:02	00:08	06:31
11	Sistan-Baluchestan	05:52	00:25	00:00	00:04	06:22
12	Kurdestan	06:06	00:45	00:01	00:01	06:53
13	Hamedan	06:15	00:36	00:03	00:04	06:58
14	Charmahal-Bakhtiari	05:42	00:46	00:02	00:05	06:34
15	Lorestan	05:36	00:42	00:04	00:06	06:29
16	Ilam	06:30	00:39	00:02	00:05	07:16
17	Kuhguiluyeh	05:32	00:20	00:07	00:06	06:05
18	Bushehr	05:08	00:10	00:04	00:08	05:30
19	Zanjan	06:03	00:34	00:04	00:06	06:47
20	Semnan	05:42	01:18	00:02	00:11	07:13
21	Yazd	04:26	00:31	00:08	00:04	05:09
22	Hormozgan	05:26	00:36	00:02	00:09	06:12
23	Tehran	05:47	00:32	00:02	00:06	06:26
24	Ardebil	06:31	00:59	00:00	00:04	07:33
25	Ghom	05:30	00:30	00:01	00:05	06:06
26	Ghazvin	06:20	00:37	00:00	00:08	07:04
27	Golestan	05:49	00:50	00:01	00:04	06:44
28	Khurasan(North)	05:42	00:45	00:07	00:01	06:35
29	Khurasan(South)	06:15	00:44	00:01	00:06	07:05
Total	**Iran**	05:50	00:36	00:04	00:06	06:36

Source: Our calculations based on TUSI, 2008 and 2009.

As noted earlier the TUSI was conducted in four different seasons in 2008 and 2009. In each season the unpaid work of housewives at home varies according to seasonal variation in demand for their unpaid labour. For example, in winter-time and before the

Iranian new year on the first day of spring in the northern hemisphere (March 21st) cleaning and housekeeping would take up a major share of housewives' unpaid time at home. On the other hand during the summer school holidays there would be little demand on housewives to help with homework of children. To minimise the bias in estimating the time that housewives would spend on unpaid household work the reported figures in table one are arithmetic average of time spent on various activities in 2008 and 2009 **(**See table 2).

On average housewives spent six hours and 30 minutes every day on their main unpaid daily household activities, most of which – 88 per cent – was spent on 'domestic' work. There is some variation across provinces with Yazd having the lowest figure at five hours and 9 minutes and Ardebil the highest at seven hours and 33 minutes. Despite these large variations, the distributions of components of unpaid housework ('domestic', 'child care', 'adult care' and 'children education') are reasonably symmetric (judging by the closeness of their respective means and medians). It should be noted that 'adult' (Bozorg-salaan in the Farsi questionnaire) refers to household members who were generally older than the respondents in the survey. That would include older members of the household such as grandparents. 'Adult' in this case does not include older children living at home with their parents.

Further work and information is needed to explain the variation of different activities across provinces. Factors to consider would be household composition, availability of paid work (such as making handicrafts and carpets) at home for women, contributions that other female (e.g. unmarried daughters, daughter-in-laws) or male members make to housework. Availability of household appliances at home and level of education of housewives might also be a factor. Variation in understanding of the questions and responses to them should not also be ignored.

6 Market rates for comparable work of housewives at home in Iran

Depending on the type of work that women undertake at home it would be possible to search for market rates for them. The 'domestic' work which is the main activity of housewives is comparable to what domestic workers do, who are increasingly hired through employment agencies which act as intermediaries between employers and employees. These employment agencies are present in most provinces and it has been decided by the research team to contact at least two agencies in each province to find out about the wage rate for domestic work. In the poorest provinces (such as Sistan and Baluchestan, Ilam and Lorestan) we did not find any such employment agencies. We assume that domestic work in these provinces are generally organised through personal and family contacts.

There are no nationally set rates for wage of domestic workers in Iran. The market or agreed wage rates between employers and employees varies across provinces depending on the standard of living and economic conditions in those provinces. The lower the level of economic development of a province the lower the wage rate. We found a direct relationship between the poverty line and wage rate within provinces that helped us to establish the base line for the wage of domestic workers.

The other important point to bear in mind is that daily wage rates vary according to the length of the contract – the shorter the contract the higher the wage rate. For example in the city of Tehran the daily rate of a female domestic helper on annual contract was half as much as a six monthly contract for the same person. This may well be explained by the security of employment and possible 'perks' of regular work (such as

eating with the family) and negotiating for travel expenses and employers paying for the social insurance of employees.

It was also found that in general the wage rate for taking care of an elderly person was very similar to that for children. Where specialist nursing cares were required, such as taking care of a seriously ill person, rates were substantially higher. But in this study only the general care services were considered since these were the regular and common activities of married housewives who in general would not have specialist training.

The researchers contacted two agencies in the capital cities of provinces with employment agencies to find out about the wage rate of a domestic worker for a six-month contract. In case of two different rates for the same province they have been averaged and reported in this research. We recorded data on wage rate in 14 out of 30 provinces of Iran.

In 16 provinces where no information on wage rates were readily available poverty lines based on the work of Kiani, et al. (2010) were used to estimate a base line figure for them. To do this we assumed that wage rates would be in direct proportion to poverty lines across different provinces in Iran. Domestic service workers are in general among the lowest paid workers in Iran and it is not unreasonable to compare their wages with the poverty line, or consider them as part of the working poor. Kiani, et al. (2010) used data from Central Bureau of Statistics of Iran on household income and expenditure of (2009) to estimate the poverty line in Iran. They estimated two poverty lines using two different scenarios for each province in Iran. We used the average of these two figures to calculate the ratio of wage rate (in provinces that we had access to employment agencies) to poverty line. We obtained wage to poverty line ratios ranging from 30 per cent for Ghom province to 44 per cent for Tehran. These results are presented in Appendix Table I.

We took the average of these ratios for the 14 provinces with data on wage rate and applied the average to the other 16 provinces without data on wage rate to obtain estimates of the latter provinces wage rate.

Another piece of jigsaw was related to the fact that data on wage rates are for 2011 but TUSI was conducted in 2008 and 2009. In order to make the wage rate figures compatible with the TUSI we used the urban inflation rates over 2009-2011 (see Appendix Table II) to adjust downward the 2011 wage rate figures. The final adjusted figures are presented in table three below.

Bearing in mind that there is little difference in the wage rate for general housework, and child and adult care we use the hourly data from table three to calculate the value of 'Domestic', 'Child Care' and 'Adult Care' of table two.

As far as the 'Education of Children' is concerned the TUSI does not make clear the precise nature of housewives support in this area, in other words educational activity at home is not defined, in particular with regard to the age of children and different levels of education. However, we used certain proxies such as the key words (on type of educational activity at home – 'dictation', 'correcting homework' or 'attending to homework', etc.) used in TUSI and educational level of housewives to establish the general type of educational support at home, that in turn would help us to look for equivalent market rates for them.

In response to the TUSI question on 'what educational support housewives provided at home', about 35 per cent of educational support were concerned with simple 'dictation' and 'attending to homework'. Besides, the majority of housewives in the TUSI did not have any education beyond the early years of high school (*Doreh Raah-namaai*). About 20 per cent of housewives in the TUSI were illiterate, and 50 per cent were

educated only up to the early years of secondary school. The combination of type of educational support and the educational attainment of housewives led us to believe that educational activities of housewives at home did not go beyond the primary and probably early years of secondary school.

TABLE 3
Monthly (8-hour a day) and daily wage rates for domestic services by province 2008 and 2009 (tomans).

No.	Province	Monthly wage rate 2009	Hourly rate 2009	Monthly wage rate 2008	Hourly rate 2008
0	Markazi	208,483	1,002	186,384	896
1	Guilan	212,572	1,022	186,000	894
2	Mazandaran	190,473	916	166,092	799
3	Azarbayejan (East)	194,354	934	170,837	821
4	Azarbayejan (West)	207,904	1,000	182,124	876
5	Kermanshah	192,164	924	172,371	829
6	Khuzestan	215,550	1,036	198,521	954
7	Fars	213,776	1,028	196,247	943
8	Kerman	192,506	926	172,870	831
9	Khurasan (Razavi)	189,378	910	165,138	794
10	Esfahan	235,395	1,132	209,972	1,009
11	Sistan-Baluchestan	197,522	950	176,387	848
12	Kurdestan	180,073	866	162,066	779
13	Hamedan	184,627	888	166,165	799
14	Charmahal-Bakhtiari	181,402	872	161,448	776
15	Lorestan	211,751	1,018	190,999	918
16	Ilam	219,862	1,057	199,195	958
17	Kuhguiluyeh	178,344	857	163,898	788
18	Bushehr	220,002	1,058	203,502	978
19	Zanjan	202,313	973	185,723	893
20	Semnan	235,887	1,134	209,468	1,007
21	Yazd	195,808	941	172,507	829
22	Hormozgan	208,277	1,001	188,907	908
23	Tehran	322,979	1,553	287,451	1,382
24	Ardebil	185,279	891	163,972	788
25	Ghom	189,200	910	162,712	782
26	Ghazvin	205,152	986	188,740	907
27	Golestan	188,148	905	163,500	786
28	Khurasan (North)	201,138	967	183,036	880
29	Khurasan (South)	198,849	956	178,964	860
Total	**Iran**	205,306	987	183,840	884

Source: Our calculations based on Appendix Tables I and II (To convert to US dollar use the average 2008-09 exchange rate of 1000 tomans per US dollar).

We then tried to look for the market rate for these levels of education in order to establish how much families had to pay if they were to buy the services of private teachers. In the extra-curricular and private education market in Iran there is a clear demarcation between primary, secondary and pre-university levels, each having different hourly rate of teaching. Another important variable in the market for private education in Iran is the official status of the teacher. In general teachers with teacher training qualifications who have been working in the state run or private schools in Iran command higher rates than university students and graduates who take up part-time teaching as a secondary occupation or stop-gap activity.

In 2011 We carried out a telephone survey of two private educational institutions in the capital cities of each province in Iran, that asked a question on the hourly rate of a female teacher (with no qualification to teach in official school system in Iran) for a six or 12 months private tuition contract, which is a typical contract that families enter in order to provide extra tuition for their children.

Our survey revealed that (a) there exists a difference in pay between trained teachers and others across different provinces and (b) that there is very little difference in pay across provinces. The latter can be explained by the national pay structure of the teaching profession in Iran that sets the baseline for private tuition rates, as well as directives by Ministry of Education on hourly rates regarding private tuition in the city of Tehran. (Bagheri, 2011.)

TABLE 4
Hourly wage of private tutors in Iran by province
2008 and 2009 (US$)

No.	Province	2008	2009
0	Markazi	4.09	4.42
1	Guilan	4.17	4.61
2	Mazandaran	3.99	4.42
3	Azarbayejan(East)	3.83	4.21
4	Azarbayejan(West)	3.81	4.21
5	Kermanshah	4.00	4.31
6	Khuzestan	4.42	4.64
7	Fars	4.40	4.63
8	Kerman	3.97	4.27
9	Khurasan(Razavi)	3.78	4.19
10	Esfahan	4.04	4.37
11	Sistan-Baluchestan	3.81	4.12
12	Kurdestan	3.97	4.26
13	Hamedan	4.06	4.36
14	Charmahal-Bakhtiari	4.02	4.37
15	Lorestan	4.26	4.56
16	Ilam	4.02	4.29
17	Kuhguiluyeh	4.41	4.64
18	Bushehr	4.41	4.61
19	Zanjan	4.12	4.34
20	Semnan	4.09	4.42
21	Yazd	4.17	4.61
22	Hormozgan	3.99	4.42
23	Tehran	3.83	4.21
24	Ardebil	3.81	4.21
25	Ghom	4.00	4.31
26	Ghazvin	4.42	4.64
27	Golestan	4.40	4.63
28	Khurasan(North)	3.97	4.27
29	Khurasan(South)	3.78	4.19
Total	**Iran**	4.07	4.39

Source: Our survey of private sector tutorship wage in 2011 and inflation rate figures of **Appendix table II.**

N.B. The 2011 figures have been projected backward to obtain figures for 2008 and 2009 using the inflation rate between 2009 and 2011 (**see Appendix Table II).** Note that there is not much variation in the hourly wage rate for private tuition across because of the national pay structure of the teaching profession in Iran that sets the baseline for private tuition rates.

Since the figures that we had collected were for 2011 they had to be projected backward to yield figures for 2008 and 2009. We used inflation rates of Appendix table II to adjust the 2011 figures. Following these adjustments we obtained an hourly rate of 3930 tomans for 2008 and 4390 tomans for 2009 that will be used to calculate the market value of unpaid educational support of married housewives in Iran (See table four).

7 Estimating the value of unpaid work of married housewives in Urban areas of Iran

In order to work out the value of the unpaid work we follow the UN (2003, p. 86) practice of using the following formula:

$$V = \sum_{i}^{n} Ti * Wi * P\,i$$

Where *V* is value of unpaid work in Iran, *T* is the time spent on an activity, *W* is the wage rate and *P* is the target population of women, *i* is subscript for a geographic unit, *n* is the number of geographic units (equal to 30 provinces in Iran). The previous sections provide us with data on *T* and *W* but we need to work out the target population of women - the urban married housewives of Iran in 2008 and 2009.

We use the 1986 [1375][4] and 2006 [1385] censa of Iran to find out the share of married housewives in urban population of Iran that would then be applied to the population data of Iran in 2008 and 2009 to arrive at an estimate of urban married housewives in the same period.

According to the 1986 census of Iran married housewives comprised 23 per cent of the urban population. Provincial figures were very close to the national average, and ranged from 20 to 24 per cent. A similar uniformity emerges from the 2006 census but the national average declined to 20 per cent and the range of provincial figures changes to 17 to 21 per cent. The above rates were applied to 2008 and 2009 urban population of Iran and the results are presented in table five.

Having the last piece of the jigsaw for estimating the monetary value of the unpaid household work of urban married Iranian housewives we can now use the relevant data from tables two – five to work out the value of the above equation. The results are presented in tables six and seven for 2008 and 2009 respectively.

[4] Figures in square bracket are corresponding years in the Iranian solar (*shamsi*) calendar.

TABLE 5
An estimate of the urban population of married housewives in Iran by province in 2008 and 2009

		2008		2009	
No.	**Province**	**Urban female population**	**Urban housewives**	**Urban female population**	**Urban housewives**
0	Markazi	985,839	202,380	1,013,936	208,147
1	Guilan	1,348,921	268,414	1,377,201	274,041
2	Mazandaran	1,636,438	339,352	1,679,611	348,305
3	Azarbayejan(East)	2,485,711	516,481	2,530,446	525,776
4	Azarbayejan(West)	1,819,368	368,752	1,868,822	378,775
5	Kermanshah	1,285,916	255,476	1,302,865	258,843
6	Khuzestan	2,987,671	541,581	3,048,485	552,605
7	Fars	2,758,171	511,284	2,814,255	521,680
8	Kerman	1,677,691	279,445	1,742,283	290,204
9	Khurasan(Razavi)	4,027,395	777,837	4,140,105	799,605
10	Esfahan	4,001,105	828,418	4,107,243	850,393
11	Sistan-Baluchestan	1,296,672	204,562	1,349,948	212,967
12	Kurdestan	887,640	181,575	904,671	185,059
13	Hamedan	1,016,736	204,740	1,036,002	208,620
14	Charmahal-Bakhtiari	464,826	82,424	476,667	84,523
15	Lorestan	1,055,758	196,804	1,074,899	200,372
16	Ilam	347,265	57,492	355,714	58,890
17	Kuhguiluyeh	324,069	52,075	335,399	53,896
18	Bushehr	623,956	109,823	647,947	114,046
19	Zanjan	589,194	110,380	604,849	113,313
20	Semnan	462,737	92,095	474,400	94,416
21	Yazd	836,747	155,607	861,247	160,163
22	Hormozgan	717,360	123,246	746,231	128,206
23	Tehran	13,066,627	2,677,802	13,485,642	2,763,673
24	Ardebil	748,129	143,992	765,329	147,303
25	Ghom	1,028,708	211,773	1,052,798	216,733
26	Ghazvin	833,252	171,971	861,899	177,884
27	Golestan	843,924	161,406	869,356	166,270
28	Khurasan(North)	415,662	73,234	427,775	75,368
29	Khurasan(South)	354,456	58,683	368,758	61,051
Total	**Iran**	50,927,943	9,959,104	52,324,783	10,231,127

Sources: 1. Urban population in 2008 and 2009: Central Statistical Office estimates of Iran.
2. Number of housewives: Our estimates based on the proportion of married housewives among urban female population as reported in the census of 2006.

TABLE 6
The estimated annual monetary value of the main unpaid household activities of married housewives in urban areas by province, 2008 (Million US$)

		Activity				
No.	**Province**	**Domestic**	**Child care**	**Adult care**	**Teaching**	**Total**
0	Markazi	365	28	39.0	48	479
1	Guilan	540	54	43.4	82	718
2	Mazandaran	676	61	4.0	66	808
3	Azarbayejan (East)	966	64	5.9	55	1,090
4	Azarbayejan (West)	722	94	1.5	59	876
5	Kermanshah	479	54	1.1	38	572
6	Khuzestan	1,153	91	8.1	60	1,312
7	Fars	1,051	115	7.2	95	1,268
8	Kerman	538	48	20.6	40	648
9	Khurasan (Razavi)	1,320	143	10.4	98	1,571
10	Esfahan	1,804	209	8.2	157	2,178
11	Sistan-Baluchestan	384	28	0.4	20	432
12	Kurdestan	326	40	0.8	6	373
13	Hamedan	387	37	3.0	20	446
14	Charmahal-Bakhtiari	138	19	0.7	9	166
15	Lorestan	382	48	5.0	33	468
16	Ilam	135	13	0.8	7	156
17	Kuhguiluyeh	86	5	1.7	9	101
18	Bushehr	208	7	2.9	22	240
19	Zanjan	225	21	2.6	17	266
20	Semnan	200	46	1.1	25	272
21	Yazd	216	25	6.3	15	263
22	Hormozgan	230	25	1.2	27	283
23	Tehran	8,085	743	38.7	398	9,265
24	Ardebil	280	42	0.0	12	334
25	Ghom	344	31	1.3	26	402
26	Ghazvin	373	36	0.2	34	443
27	Golestan	279	40	0.5	17	336
28	Khurasan (North)	139	18	2.7	2	161
29	Khurasan (South)	119	14	0.3	7	141
Total	**Iran**	22,150	2,198	220	1,501	26,069

Source: **Our estimates based on tables 2-5 using the 2008 exchange rate of 996 tomans per US dollar.**

TABLE 7
The estimated annual monetary value of the main unpaid household activities of married housewives in urban areas by province, 2009 (Million US$)

		Activity				
No.	**Province**	**Domestic**	**Child care**	**Adult care**	**Teaching**	**Total**
0	Markazi	406	31	43.3	53	532
1	Guilan	608	60	48.9	92	810
2	Mazandaran	769	69	4.6	75	918
3	Azarbayejan(East)	1,080	71	6.6	61	1,220
4	Azarbayejan(West)	818	106	1.6	66	992
5	Kermanshah	523	59	1.2	41	624
6	Khuzestan	1,234	97	8.7	64	1,404
7	Fars	1,128	124	7.7	102	1,361
8	Kerman	601	54	23.1	45	723
9	Khurasan(Razavi)	1,503	163	11.8	111	1,789
10	Esfahan	2,005	232	9.2	175	2,421
11	Sistan-Baluchestan	433	31	0.4	22	487
12	Kurdestan	357	44	0.9	7	408
13	Hamedan	423	40	3.3	22	488
14	Charmahal-Bakhtiari	153	21	0.7	10	185
15	Lorestan	417	52	5.5	36	510
16	Ilam	148	15	0.9	7	171
17	Kuhguiluyeh	93	6	1.9	10	110
18	Bushehr	226	7	3.1	24	261
19	Zanjan	243	23	2.8	19	287
20	Semnan	223	51	1.2	28	303
21	Yazd	244	29	7.1	17	297
22	Hormozgan	255	28	1.3	30	313
23	Tehran	9,057	832	43.4	446	10,378
24	Ardebil	312	47	0.0	14	373
25	Ghom	395	36	1.5	29	462
26	Ghazvin	406	39	0.3	36	481
27	Golestan	319	45	0.5	19	385
28	Khurasan(North)	152	20	2.9	2	176
29	Khurasan(South)	133	16	0.4	8	157
Total	**Iran**	24,664	2,448	245	1,672	29,029

Source: **Our estimates based on tables 2-5 using the 2008 exchange rate of 996 tomans per US dollar.**

If we take the 2008 figures, unpaid work of urban married housewives contributed the equivalent of US$26 billion to the economy that in 2009 went up to US$29 billion. These were about 8.6 per cent of non-oil GDP in Iran (see tables eight and nine for breakdown of this figure by province). This percentage goes down to 7.6 per cent if we include oil in the GDP. These percentages are close to comparable figures for other countries.

It is also worth noting that our figures are clearly an underestimate of the total value of women's contribution to the economy, as they exclude the housework of women in

rural areas and the unpaid work of other female members of the household. It would be no exaggeration to claim that the monetary value of the unpaid female work of women at home would be at least 15 per cent if we include the contribution of other female members of urban households and the rural female population, with the latter comprising about a third of the total female population of Iran in 2008/9.

TABLE 8
The estimated annual monetary value of the main unpaid household activities of married housewives in urban areas, as a <u>percentage</u> of urban non-oil GDP by province, 2008

		Activity				
No.	**Province**	**Domestic**	**Child care**	**Adult care**	**Teaching**	**Total**
0	Markazi	5.37	0.41	0.57	0.70	7.05
1	Guilan	6.38	0.63	0.51	0.97	8.49
2	Mazandaran	5.09	0.46	0.03	0.50	6.08
3	Azarbayejan (East)	7.68	0.51	0.05	0.43	8.67
4	Azarbayejan (West)	10.22	1.33	0.02	0.83	12.39
5	Kermanshah	8.73	0.98	0.02	0.69	10.42
6	Khuzestan	6.50	0.51	0.05	0.34	7.40
7	Fars	7.31	0.80	0.05	0.66	8.82
8	Kerman	5.96	0.53	0.23	0.45	7.17
9	Khurasan (Razavi)	7.33	0.80	0.06	0.54	8.72
10	Esfahan	8.02	0.93	0.04	0.70	9.68
11	Sistan-Baluchestan	10.68	0.77	0.01	0.55	12.01
12	Kurdestan	9.40	1.15	0.02	0.18	10.75
13	Hamedan	7.71	0.73	0.06	0.40	8.90
14	Charmahal-Bakhtiari	5.70	0.77	0.03	0.38	6.88
15	Lorestan	9.40	1.17	0.12	0.81	11.51
16	Ilam	9.15	0.91	0.06	0.45	10.57
17	Kuhguiluyeh	5.51	0.33	0.11	0.56	6.52
18	Bushehr	3.59	0.11	0.05	0.38	4.14
19	Zanjan	7.07	0.66	0.08	0.54	8.36
20	Semnan	6.59	1.50	0.03	0.82	8.96
21	Yazd	4.37	0.51	0.13	0.30	5.31
22	Hormozgan	3.66	0.40	0.02	0.43	4.51
23	Tehran	7.99	0.73	0.04	0.39	9.16
24	Ardebil	7.70	1.16	0.00	0.33	9.19
25	Ghom	10.01	0.91	0.04	0.74	11.70
26	Ghazvin	6.85	0.66	0.00	0.62	8.13
27	Golestan	6.06	0.86	0.01	0.37	7.30
28	Khurasan (North)	5.93	0.79	0.11	0.07	6.90
29	Khurasan(South)	6.09	0.72	0.02	0.38	7.21
Total	**Iran**	7.32	0.73	0.07	0.50	8.61

Source: Our calculations based on table 6 and **Appendix Table III.**

TABLE 9
The estimated annual monetary value of the main unpaid household activities of married housewives in urban areas, as a <u>percentage</u> of urban non-oil GDP by province, 2009.

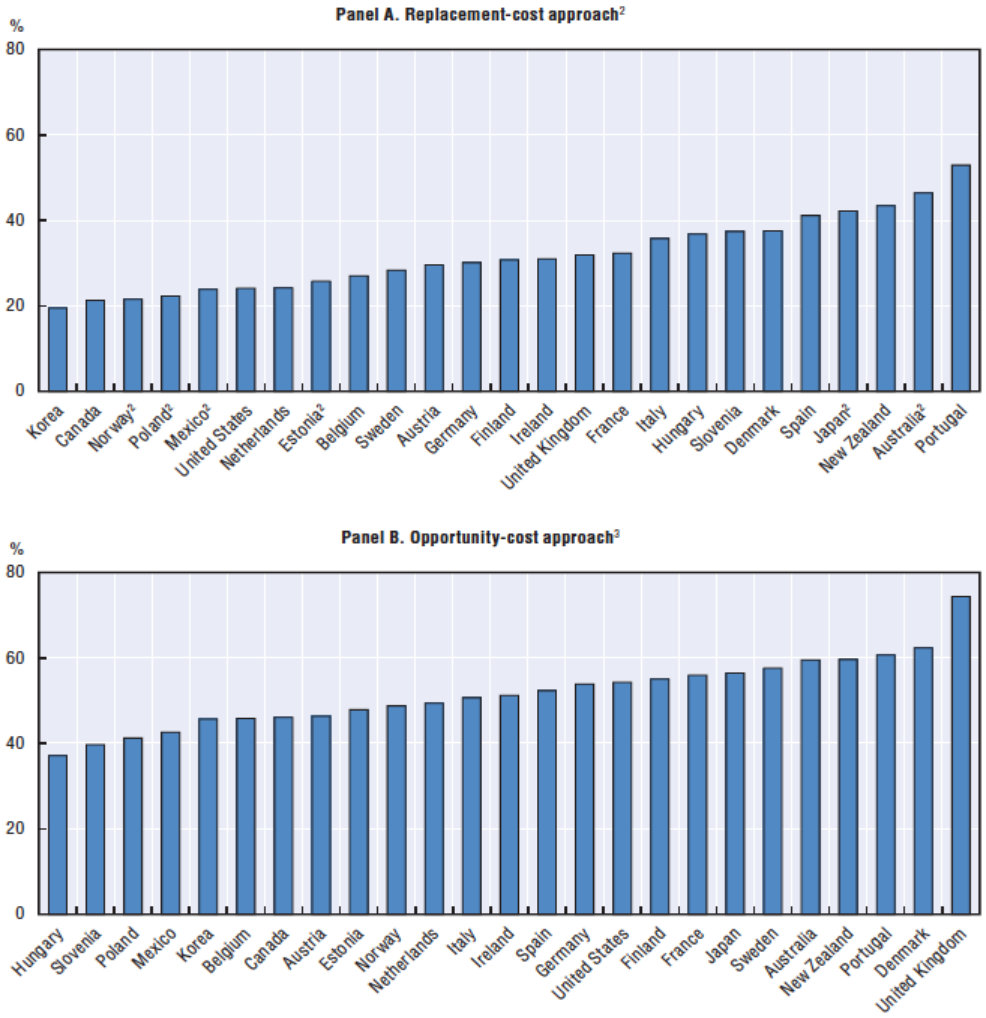
		Activity				
No.	**Province**	**Domestic**	**Child care**	**Adult Care**	**Teaching**	**Total**
0	Markazi	5.55	0.42	0.59	0.72	7.29
1	Guilan	6.66	0.66	0.54	1.01	8.87
2	Mazandaran	5.41	0.49	0.03	0.53	6.46
3	Azarbayejan (East)	7.96	0.53	0.05	0.45	8.99
4	Azarbayejan (West)	9.62	1.25	0.02	0.78	11.67
5	Kermanshah	8.22	0.93	0.02	0.65	9.82
6	Khuzestan	6.97	0.55	0.05	0.36	7.94
7	Fars	7.15	0.79	0.05	0.65	8.63
8	Kerman	5.88	0.53	0.23	0.44	7.07
9	Khurasan (Razavi)	7.34	0.80	0.06	0.54	8.74
10	Esfahan	8.74	1.01	0.04	0.76	10.56
11	Sistan-Baluchestan	10.64	0.77	0.01	0.55	11.96
12	Kurdestan	8.95	1.10	0.02	0.17	10.24
13	Hamedan	7.25	0.69	0.06	0.37	8.37
14	Charmahal-Bakhtiari	5.63	0.76	0.03	0.37	6.80
15	Lorestan	9.13	1.14	0.12	0.79	11.18
16	Ilam	8.71	0.87	0.05	0.43	10.06
17	Kuhguiluyeh	5.37	0.32	0.11	0.55	6.35
18	Bushehr	3.09	0.10	0.04	0.33	3.56
19	Zanjan	6.90	0.64	0.08	0.53	8.15
20	Semnan	6.66	1.52	0.04	0.83	9.05
21	Yazd	4.46	0.52	0.13	0.31	5.42
22	Hormozgan	4.20	0.46	0.02	0.49	5.16
23	Tehran	7.99	0.73	0.04	0.39	9.15
24	Ardebil	7.76	1.17	0.00	0.34	9.27
25	Ghom	10.51	0.95	0.04	0.78	12.28
26	Ghazvin	6.86	0.66	0.00	0.62	8.14
27	Golestan	6.18	0.88	0.01	0.37	7.44
28	Khurasan (North)	5.66	0.75	0.11	0.07	6.58
29	Khurasan (South)	4.95	0.58	0.01	0.31	5.86
Total	Iran	7.38	0.73	0.07	0.50	8.69

Source: Our calculations based on table 7 and **Appendix Table III.**

Notwithstanding the fact that our estimates also exclude the unpaid work of men and non-married women in Iran, they would be broadly in line with OECD (2011) estimates of total (male and female) unpaid work in OECD countries, according to which unpaid work evaluated at replacement cost (using some measure of average wage in different countries) accounts for 20 per cent (S. Korea) to 55 per cent (Portugal) (See figures 8, panel a). It should also be noted that the OECD (2011) replacement cost estimates are based on average hourly wage cost for unregistered (informal) activities. Moreover, as explained earlier the opportunity cost approach results in higher estimates of the monetary value of the unpaid work, that in the case of OECD countries is

presented in figures 8, panel b. By averaging these two estimates the OECD study suggests that between a third to half of the economic activities of member countries are not accounted for by GDP.

FIGURE 8
The estimated value of the unpaid work (male and female, 15-64 years of age) as a percentage of GDP in OECD countries (1998-2009)



1. Time-use estimates for the population aged 15-64 over the period 1998-2009 are used and only primary activities are taken into account. See Figure 1.1 for country notes.
2. A country's average hourly wage cost for unregistered (informal) activities is used to value unpaid household work. For several countries, this information was not available. Instead, the following wage costs are used: wages costs for registered activities adjusted for tax and social security contributions (Australia and Japan); 50% of the average net wage for the total economy (Estonia and Mexico and Poland); the average hourly wage of a childcare worker adjusted for tax and social contributions (Norway).
3. The country's average hourly wage is used to value unpaid household work.

Source: OECD's Secretariat estimates based on national time-use surveys (see Ahmad and Koh, 2011).

StatLink http://dx.doi.org/10.1787/888932381665

Note: for evaluation procedure see the above notes.
Source: OECD (2013), figure 1.13, p. 25.

8 Conclusion

The fact that the contribution of unpaid work to the national output is not monetised should not undermine its true value to the economy that according to our estimate stands at about 15 per cent of GDP in Iran at a minimum, since it is only an estimate of the monetary value of the unpaid work of housewives and excludes the unpaid work of men and unmarried women.

Economic and social policy implications of monetary valuation of unpaid work are far reaching. The institutional gender discrimination of the market-based approach of SNA has to be corrected by incorporating the unpaid work of women, and for that matter any unpaid work. This makes the work and economic contribution of women more visible and legitimises gender sensitive policies. However, it could also lend support, in a perverse way, to the established Islamic gender discrimination against women – strict gendered roles of women in an Islamic society, in law and in practice, would now have a monetary value and therefore could be compensated. There already is a precedent in *sharia* (Islamic jurisprudence) in which husbands are required to pay for domestic duties of their wives using the concept of 'wage for similar activities' ('OJRAT-OL MESL' in Arabic). Our valuation goes well beyond this, because it provides justification for the *right* of women to share the income and wealth of the family, and not be treated as second or third class citizens when it comes to, for example, to inheritance laws, that in Islam are highly discriminatory against women.

Acknowledging the economic contribution of women would also justify and legitimise state financed and supported social policies in the area of child care and pre-school education, that might well increase labour force participation of women leading to their increased social and economic visibility. However, it has to be cautioned that labour force participation of women does not necessarily lead to a decrease in their unpaid work at home, as studies of unpaid work and time use studies have revealed. To change the gendered roles in domestic work like child care, cooking and cleaning need a cultural shift in attitude among men as well as women.

In order to argue for some of above social policies on solid financial grounds we need to combine the findings of this study with economic and social data on state finances, especially in relation to government expenditure on social affairs including education and health.

There is a need for further research in this area by tapping into the wealth of information provided by the TUSI. Evaluation of the unpaid work of women other than housewives would complete the economic contribution of unpaid work of women, that should be complemented by evaluating the unpaid work of men.

Further research could also look into the impact of different characteristics such as age and education on the type and amount of unpaid work and how this would change in the future. Finally, given the rapidly ageing population of Iran, adult care is going to dominate the domestic care and a deeper understanding of gendered nature of adult care that in turn should help with the design of social policies to manage an ageing population.

Finally, there is definitely a case to be made about the importance and value of the unpaid domestic work of Iranian women, and use such studies to provide support for women in their own rights in areas of health, social security, pension, etc.

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Appendices

Appendix I - ICATUS detailed classification of unpaid services within the household

'1 SNA work and related activities

11 Work for corporations/quasi corporations, non-profit institutions and government

12 Work in household unincorporated enterprises engaged in primary production activities

13 Work in household unincorporated enterprises engaged in non-primary production activities excluding construction activities

14 Work in household unincorporated enterprises engaged in construction activities

15 Work for household providing services for income

17 Looking for work/setting up business

18 Travel related to work

1x Other activities related to work not elsewhere classified (n.e.c)

2 Unpaid domestic services for own final use within household

21 Food management

22 Cleaning and upkeep of dwelling and surroundings

23 Do-it-yourself decoration, maintenance and small repairs

24 Care of textiles and footwear

25 Household management

26 Pet care

27 Shopping

28 Travel related to unpaid domestic services for own final use within household

2x Other activities related to unpaid domestic services for own final use within household (n.e.c)

3 Unpaid caregiving services to household members

31 Childcare

32 Care to dependent adults[5]

33 Help to non-dependent adults

38 Travel related to unpaid caregiving services to household members

3x Other activities related to unpaid caregiving services to household members (n.e.c)

[5] For people who suffer any physical or mental illness or any disability or impairment.

4 Community services and help to other households

41 Unpaid help to other households

42 Community-organized services

43 Organized unpaid volunteer services

44 Attendance in meetings for community and volunteer services

48 Travel related to community services and help to other households

4x Other activities related to community services and help to other households (n.e.c)'

Source: UN (2012), p. 28

Appendix Table I. Monthly poverty line and wage rates for domestic services by province, 2009. (Tomans, US$1=1000 tomans)

No.	Province	ine 1Poverty L	Poverty Line 2	Average Poverty Line	Monthly Wage Rate	The Ratio of Wage Rate to Poverty Line
0	Markazi	632,336	525,903	579,119	...-	...---
1	Guilan	586,041	485,291	535,666	212,572	40
2	Mazandaran	619,122	519,683	569,403	190,473	33
3	Azarbayejan(East)	622,735	547,457	585,096	194,354	33
4	Azarbayejan(West)	627,967	527,053	577,510	...---	--...
5	Kermanshah	607,669	459,911	533,790	...----	...----
6	Khuzestan	648,480	549,019	598,749	...----	...----
7	Fars	640,636	526,716	583,676	213,776	37
8	Kerman	583,011	486,465	534,738	...----	-...---
9	Khurasan(Razavi)	580,092	472,007	526,050	...----	-...---
10	Esfahan	617,467	502,206	559,836	235,395	42
11	Sistan-Baluchestan	585,770	511,572	548,671	...----	-...---
12	Kurdestan	623,224	529,743	576,483	180,073	31
13	Hamedan	559,973	465,735	512,854	-...---	...----
14	Charmahal-Bakhtiari	623,158	511,702	567,430	181,402	32
15	Lorestan	643,731	532,660	588,196	-...---	--...--
16	Ilam	665,526	555,932	610,729	--...--	...----
17	Kuhguiluyeh	645,878	537,307	591,593	178,344	30
18	Bushehr	660,382	561,853	611,118	--...--	---...-
19	Zanjan	613,421	510,540	561,981	-...---	---...-
20	Semnan	605,402	501,786	553,594	235,887	43
21	Yazd	535,281	428,171	481,726	195,808	41
22	Hormozgan	636,112	520,984	578,548	...----	...----
23	Tehran	813,054	662,029	737,541	322,979	44
24	Ardebil	631,126	535,683	583,405	185,279	32
25	Ghom	523,340	459,089	491,214	189,200	39
26	Ghazvin	650,840	529,280	590,060	205,152	35
27	Golestan	569,804	475,460	522,632	...----	--...--
28	Khurasan(North)	613,978	503,457	558,718	...----	---...-
29	Khurasan(South)	599,250	505,465	552,358	...----	--...--

Notes: … means data not available.
Source: Data on poverty from Kiani, et al., 2010. Data on wage rate from our own survey in 2011.

Appendix Table II – Inflation rate in urban Iran, for selected years.

Province	2009	2010	2011
Markazi	10.6	13.3	21.6
Guilan	12.5	12.3	19.2
Mazandaran	12.8	13.7	21.2
Azarbayejan(East)	12.1	14.7	24.1
Azarbayejan(West)	12.4	14.2	24.6
Kermanshah	10.3	13.5	23.4
Khuzestan	7.9	11.6	19.3
Fars	8.2	10.9	20.0
Kerman	10.2	14.4	23.2
Khurasan(Razavi)	12.8	13.8	25.3
Esfahan	10.8	14.3	21.5
Sistan-Baluchestan	10.7	15.9	24.6
Kurdestan	10.0	14.6	23.3
Hamedan	10.0	12.9	23.0
Charmahal-Bakhtiari	11.0	14.0	21.9
Lorestan	9.8	11.6	20.6
Ilam	9.4	13.0	24.1
Kuhguiluyeh	8.1	11.4	19.5
Bushehr	7.5	11.7	19.7
Zanjan	8.2	12.3	23.9
Semnan	11.2	12.4	23.1
Yazd	11.9	15.6	22.7
Hormozgan	9.3	12.8	23.8
Tehran	11.0	10.4	19.9
Ardebil	11.5	14.7	22.4
Ghom	14.0	15.3	20.2
Ghazvin	8.0	11.8	22.5
Golestan	13.1	15.7	21.2
Khurasan(North)	9.0	13.5	25.5
Khurasan(South)	10.0	15.8	28.0

Source: Central Bank of Iran - http://www.cbi.ir/simplelist

Appendix Table III. The GDP of urban areas of Iran by province, 2008 and 2009. (Current US dollar, millions.)

No.		2008			2009		
	Province	GDP	GDP (non oil)	Population	GDP	GDP (non oil)	Population
0	Markazi	7,141	6,793	1,371,183	7,637	7,308	1,392
1	Guilan	8,461	8,458	2,427,941	9,135	9,132	2,453
2	Mazandaran	13,305	13,290	2,978,495	14,246	14,227	3,037
3	Azarbayejan(East)	13,130	12,577	3,645,555	14,100	13,572	3,691
4	Azarbayejan(West)	7,070	7,067	2,943,567	8,504	8,501	3,016
5	Kermanshah	5,539	5,488	1,891,612	6,411	6,359	1,906
6	Khuzestan	53,836	17,728	4,371,252	46,207	17,692	4,471
7	Fars	14,914	14,378	4,430,672	16,223	15,780	4,529
8	Kerman	9,142	9,029	2,798,955	10,343	10,236	2,947
9	Khurasan(Razavi)	18,052	18,016	5,764,490	20,503	20,464	5,941
10	Esfahan	24,403	22,501	4,679,806	24,756	22,935	4,804
11	Sistan-Baluchestan	3,597	3,597	2,568,741	4,068	4,068	2,733
12	Kurdestan	3,470	3,470	1,453,135	3,987	3,987	1,468
13	Hamedan	5,015	5,014	1,700,493	5,836	5,834	1,700
14	Charmahal-Bakhtiari	2,417	2,414	875,004	2,725	2,721	893
15	Lorestan	4,100	4,067	1,736,515	4,598	4,566	1,758
16	Ilam	4,299	1,479	555,799	3,892	1,697	566
17	Kuhguiluyeh	9,818	1,558	651,435	8,134	1,740	669
18	Bushehr	8,777	5,808	914,519	9,681	7,322	944
19	Zanjan	3,201	3,183	973,493	3,542	3,525	983
20	Semnan	3,058	3,032	606,852	3,371	3,346	624
21	Yazd	4,957	4,954	1,027,948	5,484	5,480	1,066
22	Hormozgan	6,770	6,275	1,480,786	6,532	6,071	1,559
23	Tehran	102,066	101,140	14,103,853	114,304	113,387	14,795
24	Ardebil	3,635	3,633	1,234,913	4,024	4,022	1,243
25	Ghom	3,450	3,436	1,086,798	3,778	3,764	1,128
26	Ghazvin	5,464	5,453	1,177,331	5,925	5,915	1,212
27	Golestan	4,608	4,604	1,651,329	5,179	5,174	1,687
28	Khurasan(North)	2,341	2,341	824,782	2,680	2,680	839
29	Khurasan(South)	1,955	1,955	656,332	2,686	2,686	677
Total	Iran	357,989	302,735	72,583,586	378,489	334,191	74,733

Source: Statistical Centre of Iran, 2011. http://www.amar.org.ir/Default.aspx?tabid=197