

MacroecoHomeics

How Household Satellite Accounts Can Put the “Home” Back into Economics

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Abstract

Critics routinely fault traditional measures of economic development for being out of touch with reality. Nowhere is this disparity more apparent than in the Gross Domestic Product (GDP), which doesn't count any work done by mothers and fathers in the home as "productive." However, since the UN's Fourth World Conference on Women in 1995 there have been greater efforts to correct this shortcoming by including unpaid household work in the System of National Accounts (SNA) (used to calculate the GDP). One approach to addressing this issue is the use of household satellite accounts (HNSA), which economists and policymakers would use in tandem with the GDP. Even so, two problems hamper its use: lack of universal awareness and lack of universal methodology. This paper reviews recent HNSA studies, results, and methodologies in order to increase awareness about them and call for a universally accepted methodology. In this paper, I make the case for a two-tiered methodology. 1. Primary use of the output method due to its methodological consistency with the SNA, while it also places a realistic value on unpaid work. 2. At the same time, a standardised input method should be available to fit the needs of developing countries who may not have the resources to employ the output method. In the end, with unpaid work estimated by the UN Development Programme at a sum equal to 70% of the world GDP, the importance and urgency of valuing it and the women and men who perform it cannot be overstated.

Introduction

Ebenezer Scrooge, the miserly protagonist of the Dickensian classic *A Christmas Carol*, is well known for his absolute disregard for compassion, humanity, and the family. Less well known, however, is the fact that Dickens was not just teaching a moral lesson, but revealing a bias that he, and many of the public both then and today hold. He created Scrooge, with his penchant for money and distaste for the poor, as an effigy for a prominent political economist of the time, Thomas Malthus.¹ In caricaturing Malthus, Dickens pointed out the widely-held view that economics is often dehumanising and degrading, especially toward the family. Indeed, despite the fact that the word “economics” comes from the Greek words *oiko* (meaning “house”) and *nomos* (meaning “manager”),² it currently undervalues the “house” and overvalues the “manager.” Macroeconomic indicators such as the Gross Domestic Product (GDP) only count “market activities” and closely related activities as “productive.” As such, the invaluable contributions of women and men in the home are not counted as “productive.” Noted historian and economist Karl Marx, in his own critique of the capitalist system, went so far as to say that capitalist economics would cause “the disintegration of all formerly existing social and family relations.”³ But are those doomsday pronouncements founded? Is economics an inherent Scrooge that will continue undervaluing the contributions of parents in the home?

A brief example validates some of these concerns, though in less dire terms. Located on the west coast of central Africa, Equatorial Guinea is adjacent to rich off-shore oil fields, which multinational corporations started to develop in 1996. Within a decade, it became the third largest oil-producing nation in Sub-Saharan Africa.⁴ At the beginning of major oil extraction, Equatorial Guinea had explosive GDP growth of over 150% year-on-year and continues to have annual GDP growth of nearly 20%.⁵ This has led to a GDP per capita of over \$50,000,⁶ which is the second highest in the world (after Luxembourg).⁷ By the numbers, Equatorial Guinea appears to be the poster child of economic development, enviable by all. These rosy macroeconomic indicators, however, belie the hard reality of life for most Equatorial Guineans. The UN Human Development Index (HDI), which calculates development based on life expectancy, education (formal education and literacy), and GDP per capita,⁸ ranked Equatorial Guinea as 122nd out of the 178 nations in the index. Furthermore, as Appendix 1 indicates, when I removed GDP per capita from the HDI formula, Equatorial Guinea dropped a further 21 ranks vis-à-vis other nations in the bottom third of the HDI ranking (the bottom 60). The difference is shocking. If GDP per capita is the only indicator of development, Equatorial Guinea is 2nd; as health and education are combined with GDP, it is 122nd; when GDP leaves the equation, it is 143rd out of 178 nations. With respect to percentile, it drops from 99th to 31st then to 20th. These numbers meant that in economic terms, Equatorial Guinea has been developing, but after more than a decade, its families have gained neither health nor education as a result.

1 Frank W. Elwell, “Reclaiming Malthus,” available from <http://www.faculty.rsu.edu/~felwell/Theorists/Malthus/Index.htm>; Internet; accessed 6 June 2007.

2 *Oxford English Dictionary*, 2nd ed., s.v. “economics.”

3 Karl Marx, “Of the Consequences of using Machinery under Capitalism,” *Marx-Engels Collected Works, Volume 21*, (New York: International Publishers, 1986), 382.

4 Justin Blum, “US Oil Firms Entwined in Equatorial Guinea Deals,” *Washington Post* 7 September 2004, sec. E, p. 1.

5 CIA, “Equatorial Guinea” *The World Factbook*, 2007.

6 US dollars, purchasing power parity

7 CIA, *World Factbook*, 2007.

8 See Appendix 2 for methodology

If this misrepresentation applied only to Equatorial Guinea or even a small group of nations, there would be little reason to challenge such a popular indicator; however, upon further examination of the other 59 countries in the bottom third of the HDI, there are numerous cases where the GDP was, indeed, out of touch with reality. When I removed the GDP index from the HDI, a full one-fifth of the countries change rank by at least 5%, some by nearly 20%.⁹ This means that one in five countries are either seen as much better or much worse off than they actually are.

The problem with the GDP, therefore, is that it merely accounts for the amount of market production going on in a country. What it doesn't show is how much or hard people are working, what value is placed on their work, or what activities they actually engage in. If government leaders and policymakers want a more realistic, holistic understanding of their economy and the well-being of their people, GDP must be extended and improved to answer the questions that matter to families, such as whether parents spend time educating and caring for their children.

A study conducted in the US in 2002 found that the only statistically significant factor in determining whether or not high school students would become National Merit Scholars¹⁰ was whether or not they regularly ate dinner with their families.¹¹ Given the multiplier effect that education has on future well-being and human capital, economically speaking, childcare is invaluable to the family and the economic development of a nation. Sadly, economic indicators have yet to value childcare and other unpaid work done by mothers and fathers. Sadder still, policymakers guided by such myopic economic indicators are unlikely to create and enact the best policies for families.

Despite this bleak prognosis from the ghost of economics present, as with Scrooge, a change of heart is possible for economics. In 1995, the United Nations held the Fourth World Conference on Women in Beijing. From that came the Beijing Declaration and Platform for Action, which offered this change of heart by encouraging nations to create household satellite accounts (HESA). The HESA is the aggregate value of unpaid work in an economy, which, in combination with the GDP, forms an indicator of the “extended economy.” It offers a unique bridge between the workplace and the home by extending the definition of “production” to include unpaid work, most of which is done in the home by mothers and fathers.

This idea is not new. In fact, Norway included unpaid housework in its GDP until 1950 when the UN's first effort to standardise national accounting practices asked that unpaid work be excluded in favour of a universal methodology.¹² But a veritable revolution in the true sense of the word did not gain momentum until the Beijing Platform. Since then, studies done by national governments (e.g. UK, Finland, Australia) have added on to those already done by international organisations (e.g. Eurostat, International Labour Organization) and academics (e.g. Duncan Ironmonger, Heinrich Lützel, Lehka Chakraborty).

Despite these recent advances, two problems continue to hamper the valuation of unpaid work: lack of universal awareness and lack of universal methodology. To solve these two problems, this paper reports and analyses the studies already done and advocates the universal use of a two-tiered methodology, primarily employing the output method, while allowing for the input method if necessary.

Solving these problems is crucial to evaluating the nature of economies and the well-being of

9 See Appendix 1

10 Earned by scoring in the 96th percentile on the Practice Standardized Achievement Test (college entrance exam)

11 Bill Harley, “Tables for All,” *All Things Considered*, 9 Sept. 2002.

12 Iulie Aslaksen and Charlotte Koren, “Unpaid household work and the distribution of extended income,” *Feminist Economics* 2, no. 3, 1996: 65-80.

the families they include as we push for greater economic development. Nobel laureate in economics Dr. Gary Becker highlighted this connexion between unpaid work and the economy in stating, “The mother at home raising her children makes a greater contribution to the economy than the father in the workplace.”¹³ But until there is widespread use of a statistically sound tool to quantify unpaid work, economists and policymakers will continue disagreeing with Dr. Becker in their calculations and policies.

It is time for the fundamental unit of society to become the fundamental unit of the economy. We cannot afford to achieve development and lose our families; the price is too great. But by valuing unpaid work in the HESA we will see the whole economy and keep the focus on the family while achieving economic development.

Problem #1: Lack of Universal Awareness

Though hundreds of studies have been published, few have penetrated academia or government far beyond the circle of economists and statisticians who publish them. This disciplinary localisation of academic literature is not unique to the topic of HESA, but given the scope and nature of the valuation of unpaid work, such localisation renders the valuation entirely ineffectual. The purpose of creating an HESA is not only for academia to understand the value of unpaid work, but also for governmental officials and policymakers to use the information to improve the responsiveness of governmental policy to the parents and families of each nation. Furthermore, the public use of this data will prove valuable to improve the social standing of parents and families.

Because people respond to incentives, merely making HESA studies available or even widespread is not enough. There must be clear benefits to valuing unpaid work. Part of this burden falls on academia to bridge the gap and persuade policymakers and the public that there is significant real world benefit to considering unpaid work in public policy. Though there is much literature on unpaid work, little of it has been focused on effecting a change in government policy. Employing the HESA could improve governmental policies ranging from tax deduction for volunteer work to welfare benefits for having a job, even if that job is an unpaid job in the home. Moreover, as leaders and experts place greater value on unpaid work, women, who do more than two-thirds of the unpaid work,¹⁴ will be given more value and respect in society. There will be more attention paid to the fact that in most countries women do more total work than men,¹⁵ and that women or men who choose to stay at home and raise their children are making valuable contributions to society. While policymakers have yet to implement widespread change based on incorporation of HESA data, there have already been improvements in policy, specifically in pension law due to the valuation of unpaid work.

Recent changes in the pension policies of several countries form case studies for the problems addressed when policymakers consider the value of unpaid work. By 2003 in Denmark and the Netherlands, policymakers had responded to the valuation of unpaid work in HESA by starting to give pension compensation for people who spend time caring for children or the elderly.¹⁶ Japan followed

13 Gary S. Becker, *UN Conference on the Family*, 1998.

14 UNDP, *Human Development Report*, 1995.

15 Ian Macredie and Dale Sewell, *Statistics Canada's Measurement and Valuation of Unpaid Work*, (Ontario: Statistics Canada, 1999).

16 Eila Tuominen and Sini Laitinen-Kuikka, *Pension policy responses to changing division of labour within the family*, (Antwerp: 4th International Research Conference on Social Security, 5-7 May 2003), 13.

suit in April 2007, enacting a law entitling a wife who has stayed at home and engaged in unpaid work part of the pension of her husband who engaged in paid work.¹⁷ Though this was not directly due to HHSA, it was directly due to the increase in valuation of unpaid work.

Pension compensation to unpaid workers improves quality of life in three ways:

First, it provides an added incentive for parents to take care of their children. This improves the life of the children as they generally perform better in school¹⁸ and have more robust physical and psychological wellness¹⁹ when a parent cares for them rather than engaging in paid work. These improvements in education and health both have initial positive effects and secondary multiplier effects shown in countless studies.²⁰ This is the single largest benefit of unpaid work, yet it often doesn't receive adequate attention, even in some valuation methods of HHSA, and especially in other indicators.

Second, pension compensation improves the quality of life of the elderly through giving people incentives to take time off from paid work and care for elderly relatives. Family care increases the happiness of the elderly,²¹ and reduces the economic burden of health care and pensions. Health care and pension programmes already form the largest single spending component of every developed nation, and the burden will only increase as developed nations have increasing life expectancies and median ages.²²

Third, pension compensation will reduce the likelihood and duration of unhealthy or abusive relationships. For instance, increasing numbers of women in Japan suffer from unhealthy relationships termed “retired husband syndrome.” The women have stayed at home engaging in unpaid work while their husbands have been engaging in long hours of paid work throughout their lives. In some cases, the women hardly know their husbands due to the scarcity of time spent together over the years. Once he retires, however, she must now deal with the double stress of adjusting to this increased presence of her husband in her daily life and his assumption that he is sovereign over the home and all who dwell in it. Oftentimes these husbands resort to physical and emotional abuse to control their wives. This stress has led to record numbers of elderly women in Japan that suffer from depression. 60% of Japanese over the age of 60, according to Dr. Nobuo Kurokawa, who discovered the condition ten years ago.²³ Even though many women want to end the unhealthy or abusive relationship, due in part to the lack of a pension, they are unable, which further adds to their depression.

Giving wives a stake in the pensions of husbands would give husbands a greater incentive to treat their wives better, and would give wives the ability to leave unhealthy or abusive relationships. Furthermore, the mere fact that governments and experts would place a value on unpaid work would increase the social status of unpaid workers such as housewives. This improves the quality of life for those people and decreases the negative psychological effects that often accompany unpaid work when a society undervalues it. To put it socio-linguistically, stay-at-home mothers would no longer have to say: “I’m just a mom.”

17 Chris Hogg, “In Japan Alimony Means More Money,” *World Update*. BBC News: 30 Mar. 2007.

18 Toby L. Parcel and Mikaela J. Dufur, “Capital at Home and at School,” *Social Forces* 79, no. 3 (2001): 881.

19 NICHD Early Child Care Research Network, “Child Care and Children's Peer Interaction at 24 and 36 Months,” *Child Development* 72, no. 5 (2001): 1478.

20 Gary S. Becker, *Human Capital*, (Chicago: University of Chicago Press; 3rd ed., 1994), 3, fn 3.

21 Judith Rempel, “Childless Elderly: What Are They Missing?” *Journal of Marriage and the Family* 47, no. 2 (May 1985), 343.

22 Peter G. Peterson, *Gray Dawn*, (California: Three Rivers Press, 2000), 18.

23 Paul Kenyon, “Retired husband syndrome,” *This World*, BBC News: 13 Nov. 2006.

Despite these great benefits, the cases of Denmark, the Netherlands, and Japan are the exception rather than the rule. Few nations have set up HHSA with any degree of frequency (unlike GDP, which is generally calculated on a monthly basis), and fewer still have used the information provided by HHSA to change policy decisions. Though the Beijing Platform called for all nations to set up HHSA, since 1995, only Japan, Australia, New Zealand, and Western European nations have done so, and in those twelve years most of them have only done so once. Awareness of the HHSA and its potential benefits is clearly still lacking.

Problem #2: Lack of Universal Methodology

Though experts have set up HHSA for decades, there is still no consensus on which methodology is best. As such, the differences between the studies make comparisons difficult and hamper efforts to universalise the practice of setting up HHSA. Here I will set up the methodological debate as it currently stands. The two main methods are:

1. the output or direct method²⁴ and
2. the input or indirect method.²⁵

The output method provides two main benefits:

1. It is consistent with the universally accepted methods of the System of National Accounts (SNA). This proves especially important as the results of HHSA are highly sensitive to the methodology used.²⁶ Therefore, the consistency of the output method is its single most important characteristic.
2. Due to its focus on only measuring production outputs, the output method is able to value all productive activity regardless of whether it is engaged in exclusive of or simultaneous to other productive or non-productive activity. If, for instance, a father is both cooking and watching the children, the output of the meal and the childcare are both valued, whereas they are not both valued by many time-use surveys that the input method uses. This also means that time can be spent in both productive and non-productive ways simultaneously. In many time-use surveys, walking the dog is included under “leisure” rather than “productive” activity. If a person were, therefore, to walk the dog to the store and buy groceries, the productive activity of buying groceries may not be counted, nor the transport to and from the store. In the output method, all outputs are valued.

The output method also, however, presents three main challenges:

1. It has not been as widely studied as the input method. This means that the methodology is not as refined and that there are probably still some unforeseen difficulties to its use.
2. It is difficult to know the quality of the outputs. The outputs of the market vary widely, as they

²⁴ For explanation of output method, see Appendix 3.

²⁵ For explanation of input method, see Appendix 4.

²⁶ See discussion under Solution #1: Reporting and Analysing Results and Appendix 5 for evidence of this statistical sensitivity.

do in houses, but while markets have prices that differentiate levels of quality, households do not.

3. Often market equivalents to household outputs are difficult to find. For instance, there is not a market equivalent to household management

The input method provides two main benefits:

1. It is the easiest method. The data is generally more available than data required to conduct an output method HESA. The statistical models are simpler, and the complications that do exist can be removed by simplifying the methodology. This is especially appealing in light of the difficulty national statistical bureaus have in setting up HESA. (As mentioned before, no statistical bureaus from developing nations have set up an HESA, and most developed nations have only set up one or two).
2. Because it is the easiest method, it is also the most widely used method. This means that the knowledge of and literature on this method is broader and deeper than that on the output method. It is as if we are working on the Beta version of Output while we have the 2.0 version of Input. This does not mean that all the problems are worked out yet, but as the studies have proliferated, the methodology is clearly becoming more and more refined.

The input method also, however, presents three main challenges:

1. There still exists a difficult debate over assignment of wages, which is elaborated on below.
2. Many time-use surveys do not allow for counting more than one activity at a time. This undervalues many jobs done by unpaid workers, especially childcare. Passive childcare occurs even while sleeping, when parents must be on-call for the needs of a child.²⁷ Time-use surveys undervalue or fail to value such simultaneous productive activities.
3. The productivity of unpaid work is also unknown, which means that an hour of cooking from an unpaid worker in the home might not produce as great an output as a paid worker in a restaurant. This could lead to an overvaluation of unpaid work.

Due to the wide use of the input method, there are also several well-defined debates about methodology within the input method. There are two main ways of assigning value to the inputs:

1. Opportunity Cost Method – What wages an unpaid worker could be making if he or she were to do paid work instead
2. Replacement Cost Method – What the wage would be for a paid worker to replace an unpaid worker doing the same work

Though some economists and gender specialists advocate the opportunity cost method as a more correct valuation of unpaid work, the general consensus on this method is that it strays too far from SNA methodology. What is more, the decision on what represents the opportunity cost of unpaid work remains highly controversial. For those people who have regular employment as paid workers,

²⁷ Conchita Poncini, “Statement to the Conference of European Statisticians,” *Conference of European Statisticians*, Geneva, 13 June 2007. For suggestions on HESA methodology, see Appendix 6 for full statement.

assigning a value to unpaid work might be as simple as assuming that each hour of unpaid work was substituted for one hour of paid work. On the other hand, workers on salary or with limitation on paid working time are not choosing between paid and unpaid work, but between unpaid work and leisure. The problems with assignment of value are even worse when considering unpaid workers who do not engage in paid work, of which there are many. Due to these difficulties and methodological impurities, the opportunity cost method is unfit to be used as the primary valuation method of an HHSA. That is not to say that it is useless. On the contrary, as we will see later, Australia used the opportunity cost method in its 1997 HHSA and drew interesting conclusions from the differences between the opportunity cost method and the replacement cost method.

Within the replacement cost method, there are also debates on the assignment of wages to unpaid work. There are four methods of assigning wages to “replace” unpaid work:²⁸

1. Specialist market wages – The data for this kind of wage is widespread, well-disaggregated, and accessible. It is also, however, the least equivalent of the wage assignment methods, as market and home work differs greatly.
2. Specialist home wages – This wage best reflects the lengths of time engaged in various tasks by the unpaid worker and also offers a good equivalent. Nevertheless, data for this wage is sparse, sometimes such jobs don't exist (e.g. paid household manager), and the added convenience of the paid worker going to a person's home inflates wages.
3. Generalist wages – Such generalists are the closest market equivalents to unpaid workers in job function, but there are three problems to using this method: a) Many experts criticise the use of this wage because the pay for such workers is generally far below the prevailing wage among other professions. This undervaluation may, indeed, be because of the lack of valuation of unpaid work, itself. b) Despite the similarity in job description, the quality of care given by a nanny is often lower than the quality of care given by a parent. The biological, psychological, and economic attachments between the parent and child make them better suited for childcare, which causes a disparity in quality, which should be reflected by a difference in wage. c) There are many jobs performed by an unpaid worker (such as certain childcare or household management duties) that a generalist worker does not engage in.
4. Hybrid wages – The question about this method is: What combination of the methods above should be used and how?

After more than three decades, the debate continues. Only by adopting a universal methodology will the debate be shelved in favour of moving forward and universally implementing HHSA.

Solution #1: Reporting and Analysing Results

To continue to raise awareness about the studies already occurring on the valuation of unpaid work, I offer Appendix 5, which contains a summary of nine such studies (seven governmental, one international, one academic). To highlight lessons learned about methodology and the importance of

²⁸ For explanation of wage assignment methods, see Appendix 4.

valuating unpaid work, I offer a short analysis of each of them:

World study by UNDP: This rather basic study was conducted just after the Beijing Platform in 1995. It showed the great potential for valuating unpaid work, estimating it at a massive \$16 trillion. It further disaggregated the data by gender and found that more than two-thirds (\$11 trillion) of the work was done by women.²⁹ The ramifications of this study on how we view families (especially mothers) and development are vast. No longer can we study development without taking into account the nearly equal contributions of those who make development possible, but until now have not shared in as many of its benefits.

Australia: The Australian Bureau of Statistics (ABS) continues to improve its valuation of unpaid work. It started in 1992 (before the Beijing Platform) by setting up an HHSA. In 1997, it expanded its methodology by including hybrid wage assignment estimates, making it the only national study to include this method. In 2007, ABS is concluding a third HHSA, which is due to come out in November 2007. The greatest strength of the ABS studies is that they incorporate different methodologies while using the same data. This affords researchers the purest methods to compare the different methodologies. From the results summarised in Appendix 5, we see that gross wages led to a 14% increase over net wages (wages after tax), and while the difference between the gross opportunity cost method and the replacement cost methods were great, the difference between the net opportunity cost method and the replacement cost methods were not significant. This suggests that the opportunity cost method might not be as inflated as has been assumed. Furthermore, the use of the hybrid method results in estimates closer to the specialist method than to the generalist method. ABS defined the hybrid method by what Australians usually paid for. They usually hire housekeepers to clean, while hiring specialists to care for children and household maintenance, so ABS calculated the hybrid wage by those criteria. Such results give an increasingly accurate picture of the value of unpaid work in Australia and have already started to be used in government and academia.

Canada: This study shows the marked difference between the opportunity cost and replacement cost methods. Not reflected in the appendix, the study disaggregated work load by gender, and found that not only did women do more than two-thirds of the unpaid work, but women also engaged in more work overall, which has been found to be the case in other countries as well.

Estonia: Conducted with the help of Eurostat, this study is the newest of the group (published in 2006) and uses refined input methods as suggested by the Eurostat task force paper.³⁰ It also used rather basic methods, which enabled a smaller groups of statisticians with fewer resources to set up the HHSA.

Finland: Though Finland employed the generalist replacement input method, the task force wrote in the report: “In the future, we also wish to be able to use output method to determine the value of production.”³¹ They recognised the limitations of the input method, and called for a mixed approach. This was a significant finding of the study.

Japan: This study, sponsored by Japan, India, and the UN involved very conservative estimates and wage assignments. The jobs correlated with tasks performed by unpaid workers were lacking in equivalence (e.g. time spent in childcare was given the wage of a kindergarten teacher), but due to this undervaluation, the study offers a lower-bound to the value of unpaid work. It is interesting to note that

29 UNDP, *Human Development Report*, 1996.

30 Antonio Baigorri and others, *Household Production and Consumption: Proposal for a Methodology of Household Satellite Accounts*, (Luxembourg: Office for Official Publications of the European Communities, 2003), 25.

31 Johanna Varjonen and Kristiina Aalto, *Household Production and Consumption in Finland 2001*, (Helsinki: Statistics Finland, 2006), 73.

if the valuation of paid work were to use the same methodology as this study, the result would be a mere 29-45% of the GDP, which begs the question: if paid work doesn't even amount to half of the GDP, where does the GDP come from? Clearly there are methodological concerns with this study. Testing my hypothesis that these concerns were merely a reflection of division of labour and wage disparity between the sexes, I calculated the HHSA using male wages rather than disaggregated wages (using the specialist replacement method). The results were telling. There would be a 57% increase in total value of unpaid work. 92% of the value of unpaid work would be done by women (up from 87% in the original study), and unpaid work would be worth 31.4% of the GDP. This supported the hypothesis that the bias in the study seems to be merely a reflection of 1.the uneven distribution of unpaid work between the sexes and 2.the wage disparity between the sexes.³²

Nepal: The only study on this list conducted by a scholar rather than a government or organisation, this is also the only study done about a developing country. I included this study in the methodological survey because without many resources, Meena Acharya conducted this simplified input method study. Such a study proves that the governments of developing nations could, without the use of too many resources, start setting up HHSA.

New Zealand: Though this study was not disaggregated by gender and did not include consumption additions to input, nevertheless, it showed that even nations without many resources can set up HHSA. New Zealand is not a poor country by any means, but it has the fewest means of the countries who have independently set up HHSA to date. This simplified form of HHSA would allow more countries to implement it without using too many resources.

United Kingdom: This was a seminal output method study. The report included spreadsheets, graphs, and in-depth discussions of which methodological decisions were made and why. Even more important than the methodology, however, were the results, a shocking value even greater than the UNDP's world estimate. This was an experimental study, but nonetheless, the sheer possibility of estimates of over \$1 trillion are staggering. The HHSA per capita would equal nearly \$18,000, meaning that the unpaid working done by the average Britain was valued as greater than the GDP per capita of 85.7% of the nations on earth, including Spain, New Zealand, and South Korea.

Solution #2: Universal Use of the Output Method

The first step to deciding upon a universal method of valuating unpaid work is to accept imperfection. No statistical method will ever be perfect, especially those measuring macroeconomic indicators. As shown in the introduction, measurement of the GDP is rife with problems, but that does not diminish the fact that the SNA methodology is universal. In this vein, we need not decide on a perfect method before anointing it the universal method for HHSA.

The second step is to revisit the challenges brought up in Problem #2 above.

Arguments against the output method:

1. “It has not been as widely studied as the input method.”

Given the recent studies done by the UK and Finland, output methodology is rapidly improving.

³² See Appendix 5 for a full comparison.

The clarity and precision of the methods used in those studies surpass almost all other studies conducted to date. As more countries and scholars conduct output method studies, this challenge will disappear.

2. “It is difficult to know the quality of the outputs.”

The UK study used an innovative approach. Rather than assigning an average quality to all household outputs, the task force applied the same distribution of quality found in the market to the household. For example, if 10% of market meals were fast food that cost \$5, then 10% of household meals would be assigned the value of \$5. With enough data, there ought to be a similar distribution between the market and the household. Moreover, this method allows for variance while preventing the bias that methods of averaging may bring.

3. “Often market equivalents to household outputs are difficult to find.”

There is no easy solution to this problem, but approximate equivalents are currently being used, and the bias they introduce is probably not significant, especially given how little time is spent in non-correlative activities. Furthermore, this problem is not unique to the output method, but occurs in all methods.

Challenges with the input method:

1. “There still exists a difficult debate over assignment of wages.”

As shown in Appendix 5, there is great sensitivity to the wages used. There have been improvements of assignment of wage. For instance, the hybrid wage used by Australia is promising, but determining prevailing wage still introduces bias and subjectivity. As such, this remains one of the weak points of the input method.

2. “Many time-use surveys do not allow for counting more than one activity at a time.”

Several time-use surveys already correct this by allowing people to code more than one activity for a given period of time. Level of involvement in that activity may still be questioned, but this challenge is of less concern.

3. “The productivity of unpaid work is also unknown.”

The best way to solve this problem is to employ the output method. With knowledge of both time spent on a task and output produced from that task, only then can productivity be ascertained. Indeed, this challenge makes a case for the use of the output method.

If one method were chosen to be the universal methodology, due to its statistical consistency with the SNA and the potential solutions to its main challenges, the output method is the strongest choice. But the output method remains more resource-intensive. Part of the reason for this is that the methodology is not as refined as that for the input method, but beyond that, methodologically speaking, the process of setting up an output-based HNSA is still more involved. The main concern, therefore, is for developing nations, those nations who need the most help achieving development without losing their families. This brings us to a compromise, a two-tiered system.

The third step is to allow for the possibility of two universal methods, a two-tiered system. Until the output method is sufficiently easy in terms of logistical and financial resources required, countries with fewer resources can use a standardised input method (probably based on Eurostat's

recommendations and Australia's hybrid wage method). Meanwhile countries with more resources can pave the way by improving the output methodology and streamlining it so that data collection and analysis will become easier. Employing this system, all nations will be able to set up HHSA immediately.

Conclusion

Throughout the world, many women and men increasingly cut back on the time they spend with their children to earn a larger salary. They hire a nanny, a maid, a tutor, or others to take care of the house and children. In terms of the GDP this is a win-win situation. The parents are earning more money and being more productive, while the nannies and maids are getting a job taking care of the children and the home. But this growth is empty. The extra salary earned by the parents is spent on the activities that they used to do with their children. Indeed, when it comes to absolute advantage in child care, parents have it. No training course can teach the caregiver to nurture like a mother or love like a father. And once we see the true value of unpaid work, we see that the opportunity cost of paid work is much more than merely the earnings of other paid work, but it is the opportunity cost of a healthy, well-educated, loved child.

It is by unpaid work that most humans are brought up. It is by unpaid work that families continue to provide society with its foundation. It is by unpaid work that societies, economies, and nations remain cohesive.

The ubiquity and importance of economics to our modern society require that we understand it and use it as it would best suit humanity. Though there are shortcomings in current mainstream economic theories and indicators that have at times been at odds with the interests of families, it need not be so.

HHSA provides a bridge between economics and the families that drive economies. HHSA adds value and respect to the great services they provide each other and future generations.

Despite setbacks along the way, great improvements in the valuation of unpaid work have been made, especially since the Beijing Platform in 1995. These improvements will multiply as we take it upon ourselves to universalise awareness both of the HHSA studies and their benefits as well as work to universalise methodology. Using the output method will ensure the best valuation of unpaid work, but allowing each nation to choose a method that lies within its means and will spread the benefits of HHSA to all nations rather than merely the rich few.

By the HHSA, economics can return to care about how the home is managed. By the HHSA, we can develop families as we develop economies. And by the HHSA, the Malthus of economics past can become the Becker of economics future.

Appendix 1

Country	Original Rank	GDP per capita ³³	HDI ³⁴	Adjusted HDI ³⁵	Adjusted Rank	Rank Change	Percentage Change ³⁶
Equatorial Guinea	122	\$30,000	0.655	0.507	143	↓ 21	- 11.8%
Tajikistan	123	\$1,501	0.652	0.752	92	↑ 31	+ 17.4%
Sao Tome and Principe	127	\$1,200	0.604	0.699	111	↑ 16	+ 8.99%
Botswana	132	\$16,190	0.565	0.423	163	↓ 31	- 17.42%
Bhutan	135	\$4,471	0.537	0.488	148	↓ 13	- 7.3%
Republic of Congo	144	\$1,457	0.512	0.544	135	↑ 9	+ 5.06%
Madagascar	147	\$989	0.499	0.557	133	↑ 14	+ 7.87%
Swaziland	148	\$5,244	0.498	0.417	164	↓ 16	- 8.99%
Yemen	152	\$759	0.489	0.564	132	↑ 20	+ 11.24%
Kenya	155	\$1,341	0.474	0.494	145	↑ 10	+ 5.62%
Eritrea	162	\$1,001	0.444	0.474	151	↑ 11	+ 6.18%
Tanzania	165	\$801	0.418	0.453	156	↑ 9	+ 5.06%

33 IMF (in US dollars, purchasing power parity)

34 UNDP, 2006 *UN Human Development Index Report* (see Appendix 2 for methodology)

35 HDI as the average of the Life Expectancy Index and the Education Index (GDP Index removed)

36 Difference between rank and adjusted rank as a percentage of 178

Appendix 2

The Human Development Index is an average of the following three indices:³⁷

- Life Expectancy Index = $\frac{LE - 25}{85 - 25}$ Max: 85 years
Min: 28 years

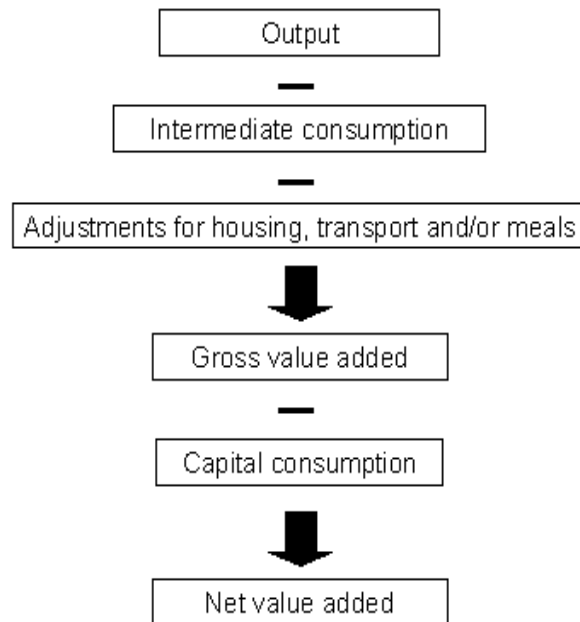
- Education Index = $\frac{2}{3} \times ALI + \frac{1}{3} \times GER$

- Adult Literacy Index (ALI) = $\frac{ALR - 0}{100 - 0}$ Max: 100%
Min: 0%

- Gross Enrollment Ratio (GER) = $\frac{CGER - 0}{100 - 0}$ Max: 100%
Min: 0%

- GDP Index = $\frac{\log(GDPpc) - \log(100)}{\log(40000) - \log(100)}$ Max: \$40,000
Min: \$100

37 UNDP, 2006 *UN Human Development Index Report*, 259.

Appendix 3³⁸

Output: goods and services produced by the household (Housing, Transport, Nutrition, Clothing & Laundry, Childcare, Adult Care, Voluntary Activity)

Intermediate Consumption: the value of those goods and services purchased to enable production output (e.g. ingredients bought to enable nutrition output)

Adjustments: some of the housing, transport, etc. output value is included in the price of other outputs (e.g. electricity used for cooking is included in the output of nutrition, so it should be subtracted from housing output as to avoid double counting)

Capital Consumption: the value of capital inputs (e.g. the household capital for housing output or vehicle capital for transport output)

38 Sue Holloway and others, *Household Satellite Account (Experimental) Methodology*, (London: United Kingdom Office for National Statistics, 2002), 3-5.

Appendix 4³⁹

1. Opportunity cost – What wages an unpaid worker could be making if he or she were to do paid work rather instead.

2. Replacement cost – What the wage would be for a paid worker to replace the unpaid worker doing the same work.

Simply put: **TIME x WAGE = VALUE** (often intermediate consumption and capital consumption are added as inputs to the net value added)

There are three ways of determining which wage to apply:

a. Specialised market wages – Prevailing wage among specialist labour in the market (e.g. wage for janitor in a business building, wage for nurse in day care centre)

b. Specialised home wages – Prevailing wage among specialist labour in the home (e.g. wage for household cleaner, wage for nanny)

c. Generalised wages – Prevailing wage among generalist labour in the home (e.g. wage for a housekeeper or nanny)

d. Hybrid wages – A combination of two or more of the above three wage assignment methods (e.g. use of specialised home wages whenever the unpaid worker engages in work outside the purview of a generalist worker)

³⁹ Baigorri, *Household Production*, 25.

Appendix 5

Country	Year	GDP ⁴⁰	HHS	% of GDP	Method ⁴¹	Author
World ⁴²	1995	\$23,000	\$16,000	69.6%	RC-S	UN Development Programme
Australia ⁴³	1997	\$423.6	\$203.4	48%	RC-S	Australian Bureau of Statistics
			\$184	43.4%	RC-G	
			\$201	47.5%	RC-Hybrid	
			\$264.1	62.3%	OC-Gross	
			\$204.1	48.2%	OC-Net	
Canada ⁴⁴	1996	\$700.5	\$214.4	30.6%	RC-S	Statistics Canada
			\$290	41.4%	OC	
Estonia ⁴⁵	1999	\$7.9	\$3.0	38%	RC-S	Statistics Estonia
			\$2.13	27%	RC-G	
			\$4.58	58%	OC	
Finland ⁴⁶	2001	\$133.5	\$61.81	46.3%	RC-G	Statistics Finland
Japan ⁴⁷	1996	\$2,850	\$570	20%	RC-S	Dept. of National Accounts (Japan)
			\$433.2	15.2%	RC-G	
			\$661.2	23.2%	OC	
			\$894.9	31.4%	RC-S	Carl Brinton
Nepal ⁴⁸	1991	\$3.0	\$1.398	46.6%	RC-G	Meena Acharya
New Zealand ⁴⁹	1999	\$54.92	\$21.42	39%	RC-G	Statistics New Zealand
UK ⁵⁰	2000	\$1,360	\$1,057	77.7%	Output	Office of National Statistics (UK)

40 Billion US\$ (purchasing power parity) evaluated at price index of the year the study was conducted

41 RC=Replacement Cost, S=Specialist, G=Generalist, OC=Opportunity Cost

42 UNDP, *Human Development Report*, 1996.

43 Dennis Trewin, *Unpaid Work and the Australian Economy 1997*, (Canberra: Australian Bureau of Statistics, 2000), 4.

44 Macredie, *Statistics Canada's Measurement*, 1999.

45 Statistics Estonia, *Valuation of Unpaid Work by Women and Men in Estonia*, (Geneva: Economic Commission for Europe, 2006), 7.

46 Varjonen and Aalto, *Household Production and Consumption in Finland 2001*, 30.

47 Masahito Fukami, *Monetary Valuation of Unpaid Work in 1996*, (Tokyo: Economic Planning Agency, 1999), 6.

48 Meena Acharya, "Time-Budget Studies for Measurement of Human Welfare," *Integrating Paid and Unpaid Work into National Policies: Selected Papers*, (New York: United Nations Development Programme, 1999), 11.

49 Statistics New Zealand, "Measuring Unpaid Work in New Zealand 1999." *Key Statistics* (June 2001): 9.

50 Holloway, *Household*, 2002.

Appendix 6

**Statement to the Conference of European Statisticians
by Conchita Poncini
International Federation of University Women
13 June 2007**

Thank you Madame Chairperson,

I speak as Convener of the Working Group on Women’s Employment and Economic Development of the NGO Committee on the Status of Women. We are conducting a study on unpaid work, starting with a review of methodologies employed by European countries. The importance of unpaid work cannot be understated. Already in 1995, UNDP estimated the contribution of unpaid work throughout the world at 16 trillion dollars, or 70% of the world GDP, and this number has increased considerably according to later studies by UNIFEM. We provide the following 9 recommendations to increase the gender sensitivity of methodologies used for valuing unpaid work.

1. Parents, notably mothers, engage in multiple household tasks simultaneous to childcare. Hence, time-use surveys should include all simultaneous activities, not just one activity at a time.
2. Present measurements of unpaid work neglect on-call time. For instance, when mothers are sleeping, they must be on-call in case a child wakes up. Parents would have to pay extra for a nanny to render this service, but that extra value is not reflected in time-use data that codes sleeping as “unproductive.” This could prove to be a major undervaluation of unpaid work.
3. Many studies have shown that education by a mother or father has a greater impact on a child than formal schooling. As investment in human capital is seen to have a multiplier effect, unpaid work, therefore, has a greater indirect effect on the economy through the education of children than the direct effect it has through production of other goods and services.
4. Though childcare and household duties are not included in the SNA, there is a direct connection to SNA activities because unpaid work makes paid work possible. This was reflected by Nobel laureate in economics Dr. Gary Becker when he said, “The mother at home raising her children makes a greater contribution to the economy than the father in the workplace.” One way to measure this is by looking at the income that the unpaid work supports rather than merely the income that the unpaid work might generate. The opportunity cost of the unpaid work would, therefore, be the worth of the paid work it enables.
5. As suggested by the 2003 Eurostat paper paid working time should be used rather than actual working time in valuation of non-SNA production because paid working time is used to calculate market wages. A study in Germany noted a 25% increase in the value of unpaid work if paid working time was used rather than actual working time.

6. Due to necessity of gender sensitivity in household satellite methodology, there should be equal gender representation and sufficient gender expertise on statistical task forces. The task force that completed the Eurostat study conducted in 2003 had good gender balance, and the UK study in 2002 was led by women. Continuing these practices will ensure sensitivity to institutional and *de facto* gender inequalities that persist.

7. Several studies (e.g. Australia and UK) disaggregated their statistics by gender. Other studies (e.g. New Zealand and Canada) did not. But as the UN Commission on the Status of Women has called for a systemic disaggregation of all national statistics by sex; therefore, statisticians and gender specialists alike have a duty to implement this call for action, which will form benchmarks and indicators of the move toward gender equality. This is, at present, sadly lacking in many European countries.

8. Oftentimes governments say that they do not have the resources to set up a household satellite account (HNSA), but the question of HNSA is better stated three-fold: 1. What are governmental resources being used on? 2. How many resources would an HNSA require? and 3. What benefit will an HNSA be to the government, economy, and people of that country? Answers to these questions will make the use and accessibility of HNSA clearer.

9. We strongly urge that the topic of unpaid work be a main agenda item in this conference next year. Only through statistics will government leaders and policymakers fully understand the importance of unremunerated work to enable and support breadwinners, families, and children, providing them with a sustainable future.

We would like to be a part of this discussion and this move toward counting the work of all, not just those whom the SNA recognises. Thank you.

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