

TALK

# VALUING HOMEMAKERS

by **Professor Euston Quah**



MONDAY  
**JAN 08**

PENANG  
INSTITUTE

# Valuing Homemakers

Invited Talk

Penang Institute, 8 January 2023

4.00pm – 5.30pm

by Professor Euston Quah

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Additional contributions by Tsiat Siong Tan and Jun Rui Tan



# What is the value of a wife?

by Euston Quah

Singapore Business, February 1986

**A** RECENT British survey asserts that the value of a wife is £227 a week. The Chase-Manhattan Bank in the US claims that a wife is worth US\$753.97 a week. Two Canadian studies, by the Ontario Status of Women Council and Proulx, using the same method of valuation, argue that a wife is



32 | INSIGHT

The Straits Times, Friday, March 14, 2007

FRIDAY MATTERS

## The quagmire of calculating the value of housework

By EUSTON QUAH & CHIA WAI MIEN

IN THE recent parliamentary debate, many MPs spoke up for housewives, arguing that they should share part of the nation's surplus sharing or wealth transfer programmes.

It was argued that caregiving should be considered work, and that stay-at-home caregivers should be given Welfare.

Economists have insisted for years with the persistence of valuing the economic value of housework on, alternatively, the economic value of a husband or a caregiver.

How much is housework worth? If the value can be measured with sufficient precision, why should pay for housework? In principle, most economists recognise that the services provided by caregivers and housewives must be valued in the same way as work in the market.

Two dominant methods are used: the opportunity cost method and the market replacement cost method.

The opportunity cost method looks at how much the housewife would get if she were to enter the labour market. This amount would vary depending on her education and skills level, among other things.

The market replacement cost method, on the other hand, values

good job at home, husbands would have less psychological burden and are able to concentrate better at work. As a result, the productivity of the husband is higher and employers indirectly benefit from such higher productivity.

But then, the contrary to this view is that employers pay according to productivity of workers, so men "be expected to lose out more."

Or should it be argued that men pay for housework and caregiving?

At present, housework is work. These services provided by caregivers or housewives are not free-riding, even though they are not included in estimating the GDP.

Additionally, if the time and effort spent by caregivers or housewives on children improves the discipline of the children, then it yields positive social externality (positive spillover) to the society.

For example, a caring mother who spends valuable time educating her children may improve the skills and future work activities of her children. A stable home environment equips for a more secure society and children from such homes are less likely to commit crime. So should society pay housewives and caregivers for their role in maintaining a livable society?

If society is to "pay" for house and caregivers' work, how might such compensation be devised? One solution is for the state to pay allowances for children, the elderly and the disabled to subsidise their care. With these allowances, the housewife or caregiver can enjoy some societal pay, even as they benefit in the same way as any other employed person.

This would be on top of the stimulus and/or non-monetary benefits from the other working spouse they enjoy.

What society has to study, estimate and then compensate is the contribution of housewives and caregivers over and above what they already receive indirectly from household members. Such compensation would be economically correct and fair in theory, but could be paid by the govern-

## REVIEW

THE STRAITS TIMES SATURDAY MAY 20, 2006



S10

## Time to take stock of housewives' economic worth

Study shows value of home production last year was 8.4% of S'pore's GDP

By EUSTON QUAH  
FOR THE STRAITS TIMES

MUCH of what goes on within households is unrecorded. One obvious example is household work and child rearing.

The amount and value of such unpaid work is not recorded in the national accounts. This is because the day-to-day services of cooking, cleaning, grocery shopping, child rearing and the myriad other chores that need to be done in any household are rarely not marketised. It is like a society took stock and recorded the work-time contributions of housewives.

A study I did more than 10 years ago found that the value of home production was some 5.4 per cent of Singapore's gross domestic product (GDP) in 1996. A subsequent study by me and my co-authors at the National University of Singapore, Ng Eng Guan, showed that home production last year had risen to 8.4 per cent.



have all allowed the more complete data to be collected.

The need for the measurement and valuation of housework has not only to do with the national accounts, but also in providing a better basis for growth, educational and international comparisons of national income.

This, in fact, was shown by another study of mine, Mr Lim See How, now an associate professor with IBS, that over the past three decades, Singapore's growth rate was cushioned by household production activities as periods of reduced growth.

High GDP growth rates tend to be associated with a diminishing household economy. This is because the labour force participation rate of women has been increasing over time, and with increasing income (valuation of housework activities) it is possible that the total production of goods and services over time may not have changed that much.

Similarly, as people of income rise, the rate of falling growth rates may not be indicative of the total production of goods and services because women may have returned to

# Introduction

- Wesley Mitchell's first formal study on valuation of household work for the US back in 1921
- *"... a woman who makes her own clothes, or a man who digs his own garden or repairs his own house, is earning income just as would the dressmaker, gardener, or carpenter who might be hired to do the work."*

Marshall 1890, Principles of Economics

- *"... the services rendered by women enter into the dividend when they are rendered in exchange for wages, whether in factory or in the home, but do not enter into it when they are rendered by mothers and wives gratuitously to their own families. Thus, if a man marries his housekeeper or his cook, the national dividend is diminished."*

Pigou 1946, The Economics of Welfare

- *"... many of the services people received from other family members in the past are now purchased on the market. This shift translates into a rise in income as measured in the national accounts and give a false impression of a change in living standards, while it merely reflects a shift from non-market to market provision of services..."*

Stiglitz, Sen, Fitoussi 2010, Mis-measuring our lives

# Introduction

- Women tend to specialise in housework and men in market work to their increased common benefit i.e. significant economies of scale in household production to maximise total income as:
  - Women's market productivity as measured strictly by market wages is generally lower than that of men
  - Women's home productivity as measured strictly by the services or output that can be produced at home per unit time is generally higher than that of men
- But what is the rationale for and against household production estimates to be included in the national income accounts?
  - The demands for measurement
  - The resistance to measure

# Definition of household production

- Households “combine time and market goods to produce more basic commodities that directly enter their utility functions” (Becker, 1965)
- “... purposeful activities performed in individual households to create the goods and services that make it possible for a family to function as a family” (Walker and Woods, 1976)
- “Those economic services produced in the household and outside the market, but which could be produced by a third-person hired on the market without changing their utility to the members of the household”. (Hawrylyshyn, 1978)
- “An intuitive distinction between work at home (i.e., home production time) and leisure (i.e., home consumption time) is that work at home (like work in the market) is something one would rather have somebody else do for one (if the cost were low enough), while it would be almost impossible to enjoy leisure through a surrogate. Thus, one regards work at home as a time use that generates services which have a close substitute in the market, while leisure has only poor market substitutes” (Gronau, 1997)
- Value of household production = Market replaceable household production (MHP) + Near-market replaceable household production (NMHP) + Non-replaceable household production (NHP) (Euston Quah)

# Demands for Measurement

- Household production is a large component of economic growth
- Not much different from goods and services provided by the market
- Inconsistent of national income accounting rules to include some non-market goods but exclude others
  - Some national income accounting include own-house rental imputations and farmers' self-produced food consumption, which are non-marketed and have to be imputed.
- Improved data availability and collection
  - E.g. housework has become increasing commercialized.
- Theoretical advance in microeconomics
  - “New Home Economics”
  - Valuation of household production time instead of valuation of household output

# Demands for Measurement

- Useful social welfare indicator, better estimate/supplement of the total economic production, better basis for inter-temporal growth calculations, for international comparisons of national income
  - E.g. High growth rates reflected in GNP may be misleading as this may come from a diminishing household economy
  - E.g. How much of the difference in GNP per capita between developed and developing economies can be attributed to nonmarket work?
- Useful guidelines for policy-makers to influence the labour force participation rate of men and women. Better understanding of labour supply and underground economy
  - E.g. Married women working outside the home react negatively to higher levels of taxation by reducing paid market hours and increasing times devoted to home production
  - E.g. To what extent childcare and family-friendly policies with flexible work arrangements should be provided according to the trade-offs to the economy (household + market) between paid employment and unpaid domestic labour



# Demands for Measurement

- Recognize the economic contribution of women in households and in society
  - Policies otherwise neglect the importance of women to the economy (e.g. investment in appropriate infrastructure and public services which can improve productivity of household chores for developing countries)
  - Using a legal minimum wage as replacement cost and aggregated for 72 countries, the monetary value of women's unpaid care work globally is at least **\$10.8 trillion** annually (Oxfam International, 2020)
  - ILO estimates that unpaid care and domestic work by country is valued to be 10-39% of GDP; approximately 15% of GDP on average across available OECD countries
- Important applications in tort litigations or the settlement of legal disputes over the amount of compensation required for the wrongful injury or death of a homemaker
- Useful for Cost Benefit Analysis, which takes into consideration opportunity costs

# Demands for Measurement

- Applications in family law and gender equality
  - Improving the consequences from unequal division of labour
    - Distribution of matrimonial property assets, often based on respective spousal contribution to the care of the household
    - Legal recognition of household production activities as capital accumulation
  - Promote less gender-biased attitudes towards the division of labour i.e. the husband knowing that he contributes less to the household than his wife (sum of paid and unpaid work) may be more inclined to share some of the domestic labour burden or engage in more paid work to equalise his contribution to the household
    - Aligned with the United Nations Sustainable Development Goal Indicator 5.4.1 in reducing the proportion of total time that women spend on unpaid domestic and care work

# Demands for Measurement

- Better measure of income and economic welfare distribution for policy purposes
  - Research has shown that adding a constant average value of household production to money income would see a larger percentage increase in overall income for lower-income households, thus reducing (extended) income inequality (Frazis and Stewart, 2009; Folbre 2011)
  - Just like income, time is a scarce resource that impacts well-being, particularly those of females who do the bulk of unpaid work within the home (van der Meulen Rodgers, 2022)

# Demands for Measurement

“Why a housewife's contributions can be worth millions in Singapore”, *The Straits Times*, 3 October 2021

- How distribution of matrimonial assets is determined in divorce proceedings by Singapore’s highest court of law:
  - Calculate each spouse's contributions in a family
    1. Compare each spouse's monetary contribution
    2. Compare the effort that each spouse spends on the children and family
    3. Add up both scoring ratios for each spouse
    4. Conditional on length of marriage, size of matrimonial assets and what they constitute, nature of indirect contributions
    5. Constraint of minimising impact on children’s welfare

# Demands for Measurement

- Madras High Court (India) said that a woman who is a homemaker is entitled to an equal share in property regardless of whether it was purchased under her husband's name
  - Contribution to the family's welfare through labour: *“A woman homemaker performs multiple tasks like a manager with managerial skills-planning, organising, budgeting, running errands, etc. She also prepares food, designs menus and manages kitchen inventory like a chef with culinary skills. She also takes care of the health of the family members and acts like a home doctor by taking precautions and giving home-made medicine. She is also a home economist. With these skills, a wife makes a home like a comfortable environment. It's a 24-hour job without holidays, which cannot be less than the job of an earning husband who only works for eight hours.”*
  - Contribution that allows the other spouse to enhance his education or career (Silbaugh, 1996)
- “How India calculates the value of women's housework”, *BBC News*, 24 January 2021
  - Primarily by the opportunity cost approach for women who have died in road accidents and awarded compensation to their dependants, considering the deceased's educational qualifications (matched to minimum wages for skilled or unskilled workers), age (older assumed to do less childcare work as children grew up) and number of children

# Demands for Measurement

## Recent judicial outcomes that were influenced by the value of household production

Country	Description of case
Spain	In 2023, a man was ordered by the court to pay US\$215,000 for 25 years' worth of housework to his ex-wife, calculated based on the annual minimum wage throughout their marriage, when otherwise she would only have been compensated with half of their owned property rights under a prenuptial agreement.
China	In 2022, a man from Guangdong was awarded US\$4,400 in compensation for raising his two children alone for the last 8 years after he separated from his wife.
	In 2020, a man in Beijing was ordered by the court to pay US\$7,700 to his ex-wife for doing 5 years' worth of housework alone.
India	In 2023, a housewife from Tamil Nadu was entitled to equal shares in her deceased husband property as the court determined that her unpaid homemaking duties had contributed indirectly to earning the money that enabled the purchase of the assets by substituting for paid services and that her work allowed the husband to be gainfully employed.
	In 2020, a motor accident claims tribunal ordered a transport operator to pay around USD 23,263 to the husband and two minor children of a 33-year-old housewife who was killed in a road biking accident involving a bus, noting the loss of utility from important homemaking services to her family members.

# What Malaysian politicians said about valuing homemakers

- *“This in turn will make them, who these days prefer to be called homemakers, more respectable. Thus, recognizing the economic value of housewives will certainly promote gender equality.”* ~ Chong Eng, Penang state executive councillor (2016)
- *“So to my brothers, apart from gardening, please clean your house. Maybe tomorrow you can take a damp cloth and wipe. Not the wife, but the husband ... Husband and wife are a team.”* ~ Datuk Seri Anwar Ibrahim, PKR President (2020)
- *“All around the world, women are laden with a ‘double burden’, that is, women participate equally in paid employment but spend a bigger proportion of their time on unpaid care work compared with men.”* ~ Deputy Prime Minister Datuk Seri Dr Wan Azizah Wan Ismail (2019)

# Malaysia's Housewives' Social Security Scheme (SKSSR)

Pros	Cons
<p>More affordable alternative to purchasing an ordinary insurance policy for housewives who are self-employed or with no regular income</p> <ul style="list-style-type: none"> <li>As of 2023, RM20 million has been allocated by the government for the SSKR. In Budget 2024, the government has allocated some RM50 million for the SKSSR, which will benefit about 400,000 new contributors</li> </ul>	<p>Undervaluation of household chores at RM600 monthly:</p> <ul style="list-style-type: none"> <li>Lower than the minimum wage of RM1,500 for market equivalent activities and likely many times lower than if the time spent on all household production activities were taken into account</li> <li>Financing constraints: voluntary monetary contribution to the insurance scheme to match the minimum wage would be too high for low-income households (RM10 -&gt; RM34.90 monthly)</li> </ul>
<p>Ensures that housewives are entitled to medical benefits, permanent disability benefits, regular attendance allowance, survivor's pension and funeral benefits</p> <ul style="list-style-type: none"> <li>Binding even upon divorce, death of husband, or husband's inability to pay the contribution due to monetary issues such as loss of income until the expiry of the contribution period</li> <li>In 2021, it was recorded that 4.95 million (68.3%) of Malaysia's female population were not in the labour force, meaning that they are missing out on social protection while performing household chores</li> <li>Since its inception in 2022, a total of 476 cases had been processed involving domestic problems, disability, and death with a total benefit payment of RM621,953</li> </ul>	<p>Only women below 55 years old are eligible for social security coverage:</p> <ul style="list-style-type: none"> <li>Detrimental to senior women who are still carrying out their housewife responsibilities, albeit lesser when children are grown up</li> </ul> <p>Husbands who are homemakers are excluded from the benefits of the insurance scheme</p> <p>Significant under-reporting of accidents as homemakers engage in the same household work as domestic workers</p> <ul style="list-style-type: none"> <li>In 2022, more than 7,300 accidents were reported by domestic workers when carrying out household chores compared to only 26 reported domestic injury cases involving homemakers, and only 115 recorded deaths of registered homemakers whereby their families received benefits from the SKSSR including funeral benefits and survivors' pension</li> </ul>
<p>Recognises housewives' and homemakers' involvement in the "care economy" and managing family institutions</p>	

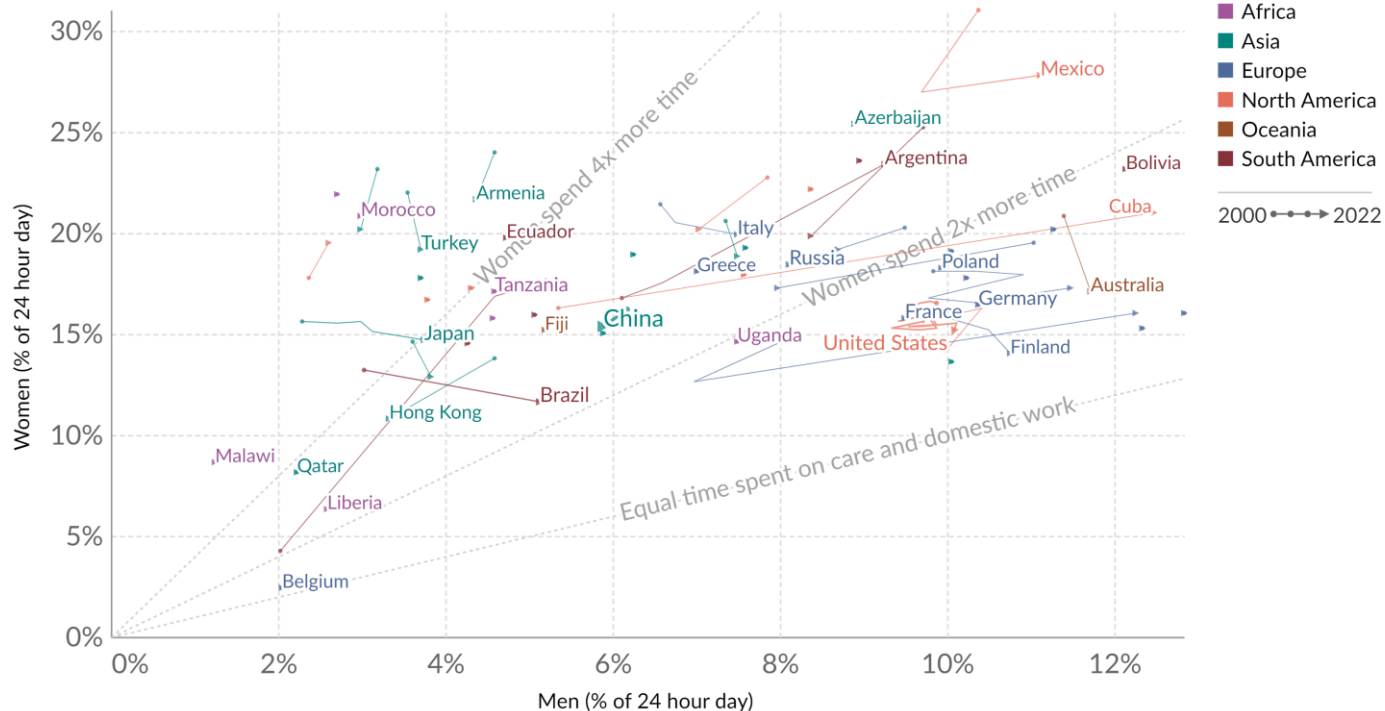


# Some Statistics Relevant to Household Production

## Time spent on unpaid care and domestic work, women vs. men, 2000 to 2022

The average share of each day that women and men aged 15 and older spend on unpaid care and domestic work.

Our World  
in Data

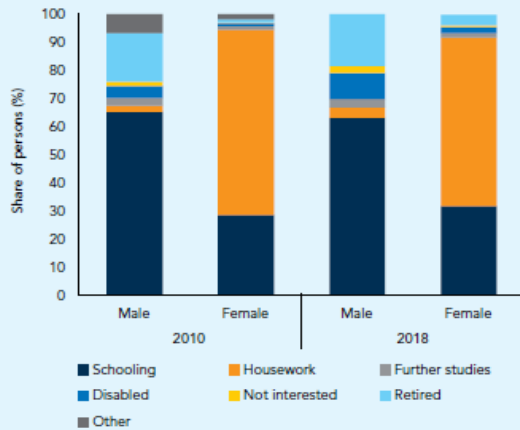


UN Statistics Division and UN WOMEN

- Females from majority of countries in Asia and Africa do disproportionately more unpaid care and domestic work compared to men
- In Morocco (Africa) and Armenia (West Asia), women shoulder the greatest burden of homemaking duties relative to men, while both women and men in Belgium (Europe) spend the least time on homemaking duties

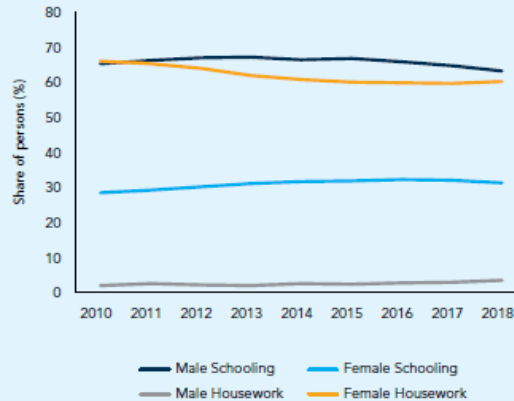
# Some Statistics Relevant to Household Production (Malaysia)

**FIGURE III.13.** Share of persons out of the labor force by reasons for not seeking work, 2010 and 2018



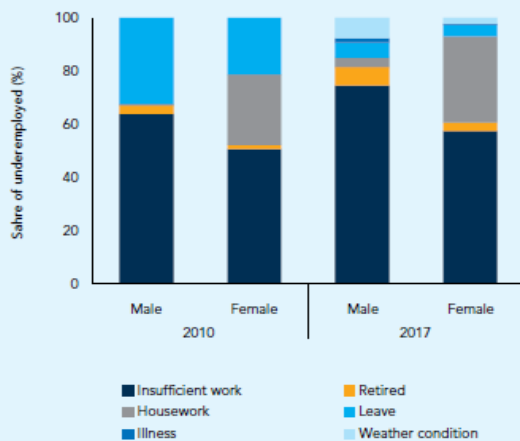
Source: Authors' calculations based on micro data from Malaysian Labour Force Survey (Department of Statistics Malaysia).

**FIGURE III.14.** Share of persons out of the labor force by selected reasons for not seeking work, 2010–2018



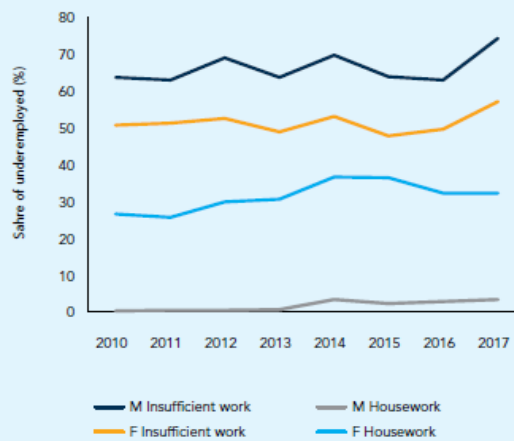
Source: Authors' calculations based on micro data from Malaysian Labour Force Survey (Department of Statistics Malaysia). Note: Reasons other than housework and schooling omitted.

**FIGURE IV.7.** Share of underemployed workers by reasons for underemployment, 2010 and 2017



Source: Authors' calculations based on micro data from Malaysian Labour Force Survey (Department of Statistics Malaysia).

**FIGURE IV.8.** Share of underemployment by selected reasons for underemployment, 2010–2017



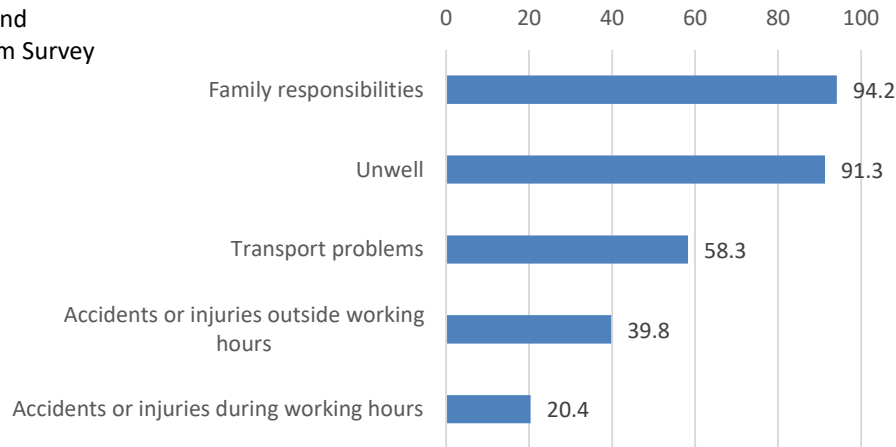
Source: Authors' calculations based on micro data from Malaysian Labour Force Survey (Department of Statistics Malaysia).

- Household production, including child and elderly care is the main reason that Malaysian women do not participate in the labour force
- Share of women citing housework as the reason for not working has gradually declined while schooling as the reason increased, and vice versa for men
  - Indication of a gradual shift of gender norms
- A significant and increasing share of underemployed Malaysian women cite housework as the main reason they work fewer than 30 hours a week
  - Women continue to struggle to combine family care and housework with a career

# Some Statistics Relevant to Household Production (Malaysia)

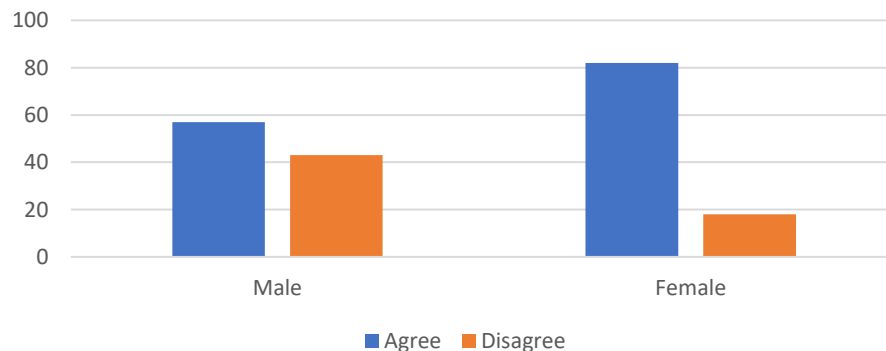
Malaysian Employers Federation Man-Days Lost And Absenteeism Survey 2019

Reasons given by Malaysian employees for work absenteeism (%)

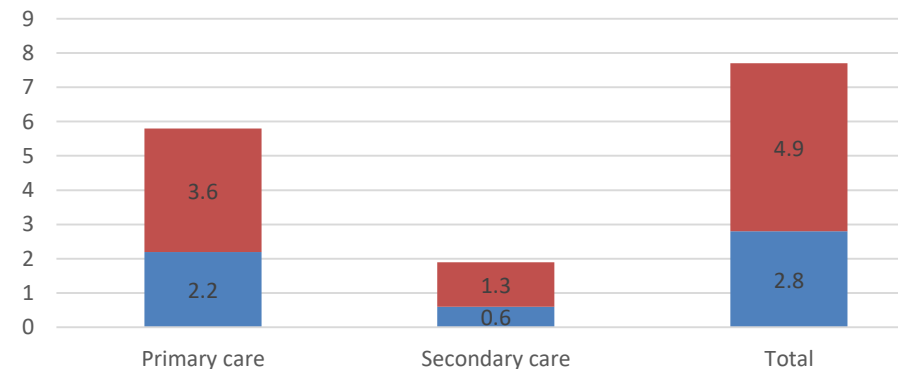


- "Family responsibilities" was the most common reason given by employees for work absenteeism
- 82% of female respondents feel they should be paid for work done at home, compared to only 57% of male respondents
- Women spend more time on unpaid care work than men both as a primary and secondary activity

Should Malaysians be paid for work done at home? (%)



Average time spent on unpaid care work in a day, by gender (hours)



The Star (2019)

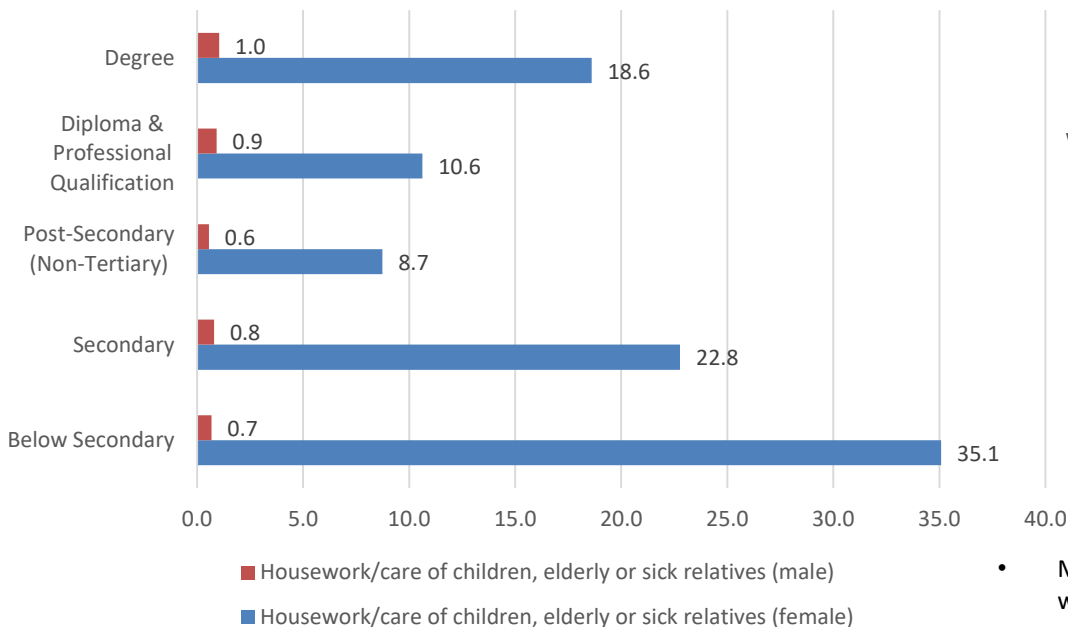
KRI (2019)

Men Women

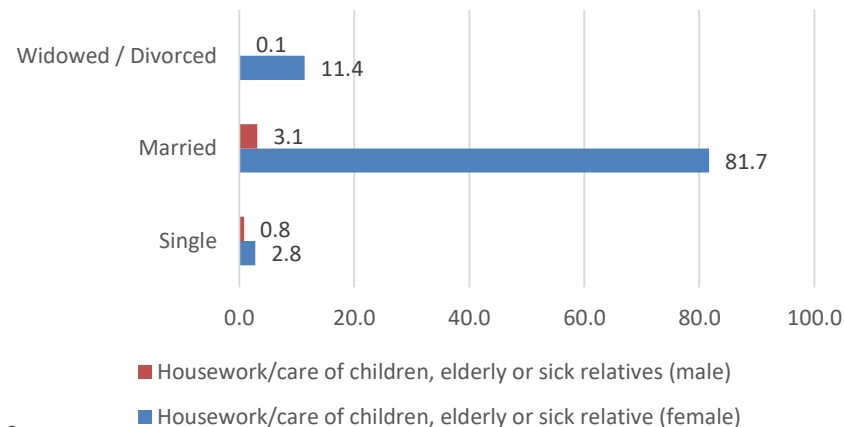
# Some Statistics Relevant to Household Production (Singapore)

Homemaking reasons for not working in Singapore, by educational qualification and gender (%)

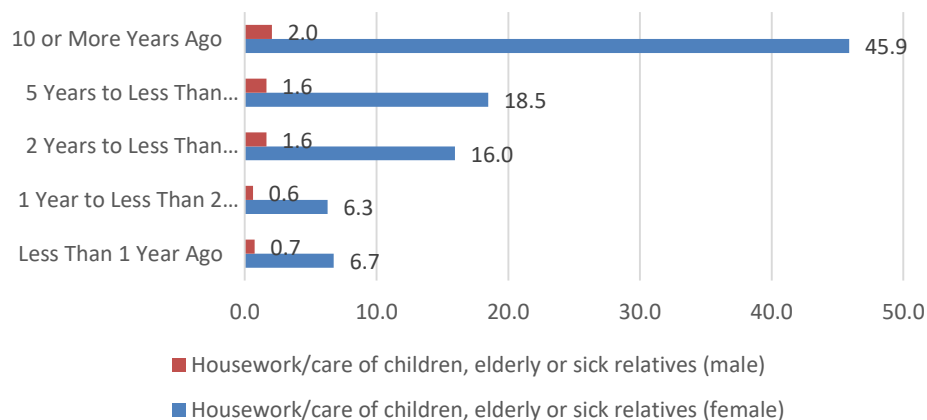
Source: Labour Force in Singapore 2022



Homemaking reasons for not working in Singapore, by marital status and gender (%)



Homemaking reasons for not working in Singapore, by work experience when left last job and gender (%)



- More females cite housework and caregiving duties as reasons for not working compared to men, regardless of educational qualification, marital status and work experience
- The lower a woman's educational level, the more likely she cites homemaking reasons for not working, possibly due to poorer market opportunities. However, the trend reverses for higher tertiary educated women, which suggests that their decision to not work in favour of being a full-time homemaker may not necessarily be influenced by tangible costs and benefits alone i.e. potential market earnings or financial ability to purchase hired help compared to lower-educated women
- The longer a woman has been outside of the labour force, the more likely she cites homemaking reasons for not working, which suggests that market depreciation of skills notwithstanding, gender-related familial norms and/or perceived greater housekeeping productivity of women relative to men could also be significant motivators
- Married women are most likely to cite homemaking reasons for not working compared to singles and those who are widowed/divorced, which suggests that they have greater caregiving responsibilities from starting a family

# Some Statistics Relevant to Household Production (Singapore)

## UNPAID WORK

A study on the behaviours and attitudes towards household and domestic caring responsibilities in Singapore

A representative sample of 500 Singapore Citizens and Permanent Residents (married with no children or with children where the youngest child is < 19 years old) were surveyed

A collaborative study by Ipsos and United Women Singapore



GAME CHANGERS



# Some Statistics Relevant to Household Production (Singapore)

- Almost 3 in 10 women feel that they are doing more than their fair share, especially those with children
- Close to 9 in 10 agree that household chores can be equally shared by husband and wife. However, a significant proportion agree that roles are gender specific
- Almost 1 in 2 moms say the responsibility of childcaring and academic education lies mainly with them
- More women take on the daily household responsibilities of cleaning and laundry, while men take on lower frequency tasks such as household repairs and management of tech devices
- Fewer women (52%) have enough personal time to look after their wellbeing compared to men (68%), and the disparity is greater for parents
- Close to 2 in 3 moms agree that their career/job is limited due to child caring responsibilities
- 22% of respondents feel that there is insufficient recognition accorded to caregivers for the value they bring to society

# Covid and Household Production

- In 2020, during the Covid-19 circuit breaker period in Singapore, 49% of workers overall and more than 74.5% of employed residents in the services and education industries were forced to work from home
- Time devoted to household production increases involuntarily because of reduced options in alternative uses of time including market-work time and outdoor leisure:
  - Value of time per hour would likely be valued less compared with pre-circuit breaker days
  - If traditionally forgone market wages were used as a proxy measure for the value of household production, this value would be less than the full wage rates
- A study based on the American Time Use Survey found a substantial time allocation from paid work to home production for less-educated married women with children in the U.S. during the peak of Covid-19
  - Based on the RCSF approach, it was found that the fall in GDP during that period was partially offset by the increased value of monthly home production (9.1%)

# Covid and Household Production

- Indian politicians pledged to pay housewives a monthly wage (1,000 to 2,000 rupees a month) to win crucial state elections in recognition of the overwhelming domestic duties and lowest female labour participation globally exacerbated by the pandemic
- Would this involuntary increase in time spent in the household during Covid-19 exacerbate or alleviate gender inequality?
  - More equitable allocation of housework and childcare among both spouses accompanied by less biased gender attitudes towards household member roles in Japan (Hara and Kawaguchi, 2021)
  - Despite the flexibility of working arrangements, with the convergence of employment and household responsibilities, it became harder for employed women in India to draw the line between paid and unpaid work, as well as leisure (Chaupan, 2021)



# Covid and Household Production

10/12/2021

KEMENTERIAN PEMBANGUNAN WANITA, KELUARGA DAN MASYARAKAT

Jabatan Pembangunan Wanita

**Kebahagiaan rumah tangga dibina bersama**  
Bagaimana untuk elakkan pergaduhan suami isteri di rumah

Jika melihat pasangan melakukan sesuatu yang bercanggah dengan kehendak kita, elakkan dari berleter - gunakan perkataan "humorous" seperti 'cara sidai baju macam ni lah sayangku' (tiru nada Doraemon dan diikuti dengan gelak manja!

#WanitaCegahCOVID19

<https://www.kpwkm.gov.my/> f KPWKM @KPWKM KPWKM

*"Household Happiness" or Stereotyping and Ignorance?*

Malaysia's Women and Family Development Ministry (2020)

*"If your spouse does something that you do not like, don't nag him. Use humour and tell him 'this is the way you hang the clothes, my darling' (using Doraemon's tone and giggling)."*

# Resistance to Measure

- Scarcity of data
  - No records kept on how much is produced, nor the time devoted to providing such services
  - Non-market activity with no observable prices
- Definitional issue: What constitutes household work?
  - E.g. Taking a child for a walk in the park. Childcare or leisure?
- Problem of aggregation
  - Activities can be performed simultaneously and/or by more than one household member
- Diminishing returns to labour
  - Additional unit of time spent on household production may not yield the same output produced as initial hours
- Differences in time sensitivity of household chores between men and women
  - Tasks such as household repairs and management of tech devices are of lower frequency and more easily postponed compared to tasks such as cooking, laundry and caregiving
- Improvements in household technology over time distort the time inputs of household production activities
  - E.g. Time spent on washing clothes is lesser today due to washing machines compared to the past, but does not mean that less clean clothes are produced by households today

# Resistance to Measure

- Method of valuation
  - Output-related evaluation approaches vs input-related evaluation approaches
  - Which method produces the most meaningful and consistent set of estimates of the economic value of household work that is also consistent with the way income accountants measure market goods and services?
- Unless there is general consensus among national income accountants, there would be no uniformity in data gathering

# **VALUATION METHODOLOGIES**

# Output Valuation Method

- The amount that is produced and the economic value attributable to the time necessary to produce it
- What is the appropriate method of valuation?
- Method 1: Expenditure/output-based method ([Goldschmidt-Clermont, Stafford and Sanik, Chaput-Auquier](#))
  - Price of close market substitutes, often subtracting the cost of raw materials in producing that household commodity at home to obtain net value added
- Problems
  - Lack of close market substitutes
  - High data requirements in physical quantities of household production
  - Errors in gauging appropriate market price reference (e.g. using prices of food at hawker centre versus café for home-cooked meals; market prices include a profit component not received by households)

# Replacement Cost Methods

- Method 2: Replacement cost/input-based method
  - Value time spent in household production on the basis of the wage-rate paid to a hired market replacement
  - 2a. Replacement cost by housekeeper method (RCHK)
    - Takes the value to be equal to the wage payment that would be necessary to hire a person to spend a like number of hours performing all household tasks
  - 2b. Replacement cost by specialized function (RCSF)
    - Applies an appropriate wage rate for comparable services offered in the market to the average amount of time that is devoted to different types of activities

# Replacement Cost Methods

- Problems
  - Overestimate if household is less efficient as the market hired worker (and vice versa)
  - Method is appropriate for social accounting purposes only. Emphasis is on the housework performed and not the implicit value of the act of working
  - Wages charged by a market replacement may be too high relative to the household's own perception of the value of these services
    - If required to pay the going wage rate, household production will be greatly reduced

# Efficiency-Adjusted Replacement Cost Method

- 2c. Hybrid Model; Efficiency-adjusted replacement cost ([Euston Quah](#))
- Recall (for social accounting purposes): Value of household production = Market replaceable household production (MHP) + Near-market replaceable household production (NMHP)
- Uses both variations of the replacement cost method
- Housework associated with MHP have easy identifiable market equivalents and can be performed by hiring a single domestic help rather than an “army” of specialized hired help
- Housework associated with NMHP not normally included in hired services of a single domestic help i.e. home management (wages of a manager of a very small firm) and home education (wages of pre-primary and primary school teachers)
- Need an efficiency-adjusted replacement wage rate
  - A relative efficiency coefficient (**k**) is introduced which accounts for differences in efficiency performance in household between the hired-help and that of family members



# Efficiency-Adjusted Replacement Cost Method

Same family size, number of children, education and occupation of wives and income group

Time saved with hired help =



Time spent by household on all chores without hired help



Time spent only by household members on chores in a household that has **hired help**

$$k = \frac{\text{Time saved with hired help}}{\text{Time spent in household production by hired help}}$$

# Opportunity Cost Method

- Method 3: Opportunity cost method; input-based method ([Nordhaus and Tobin](#), [Martin Murphy](#) and [Moni Mukherjee](#))
  - Ascribe the time spent in household production to the opportunity cost in terms of the money income that was given up
    - Opportunity cost before taxes (OCBT)
      - Takes gross market wage rate as income forgone
    - Opportunity cost net of taxes (OCNT)
      - Takes net market wage rate after deduction of income taxes as income forgone
    - Opportunity cost net of compensation (OCNC)
      - Takes net market wage rate after deduction of work-related expenses as income forgone

# Opportunity Cost Method

- Problems
  - Applies only to homemakers who also engage in paid market employment
    - May still be that the amount of foregone money income has no correlation to the quality of household production. A highly educated person should therefore not be awarded greater compensation.
  - For full-time homemakers who undertake home production over a long period of time, significant depreciation of market skills sets it. It becomes not clear as to what the appropriate market wage rate is and has been foregone in pursuing home production.
  - Since full-time homemakers have chosen not to be employed, then they and their family must have valued implicitly their home production time much higher than the other households
  - Institutional constraints dictating the length of work weeks, introducing an element of “lumpiness” into options facing individuals.
  - People who are involuntarily employed would have an opportunity cost of zero with regards to trading off paid work for homemaking

# Opportunity Cost Method

- Mitigating the problems (Dong, 2014)
  - If objective is to account for the unemployed population which does not have actual earnings:
    - Use predicted wages computed using the estimates of a gender-specific wage regression which controls for educational attainment and working experience
  - If objective is to minimise the discrepancy of valuing household production between individuals of different market productivities:
    - Use the average wage for the whole working population (of a particular gender) in the economy instead of the actual or predicted wage of the person who performed the unpaid domestic work

# Contingent Valuation Method

- Method 4: Contingent Valuation Method ([Euston Quah](#))
  - Technique to estimate compensating variation
  - Elicit people's willingness to pay for household production
  - Posing alternative contingencies to household in terms of whether they would rather pay specific amounts to reduce the time given over to household tasks or to keep the money and do the work themselves
  - Auction bidding procedure to elicit the households' maximum willingness to pay for the different contingencies posed, then trace their marginal benefit and economic value of the time and effort devoted to household production
  - Theoretical presumption that one would not expect households to be willing to pay more than their own marginal opportunity cost of household production nor more than what they expect to gain from having additional hours to home production
  - This gain (total willingness to pay less total opportunity cost) measures the amount of welfare the household receives from household production

# Contingent Valuation Method

- Problems
  - Importance of contingent bidding methods, care in the design and conduct of the survey to avoid biases
    - Requires the use of trial tests in which problems relating to ambiguities in some questions and misinterpretations were detected and corrected before the final survey
    - Interviewer bias to be kept at a minimum with a strict questioning format; cross checks between interviewers
    - Hypothetical situations to be as realistic as possible

# LITERATURE REVIEW

# Older Literature

Author (year of publication)	Country	Methodology	Average annual value per household USD	Value of household production as a percentage of GNP %
Wesley Mitchell (1921)	United States	RCHK	900	~28
Simon Kuznets (1941)	United States	RCHK	833	25
William Nordhaus and James Tobin (1972)	United States	OCBT	4870	~45
Martin Murphy (1978)	United States	RCSF, OCNT	-	~37



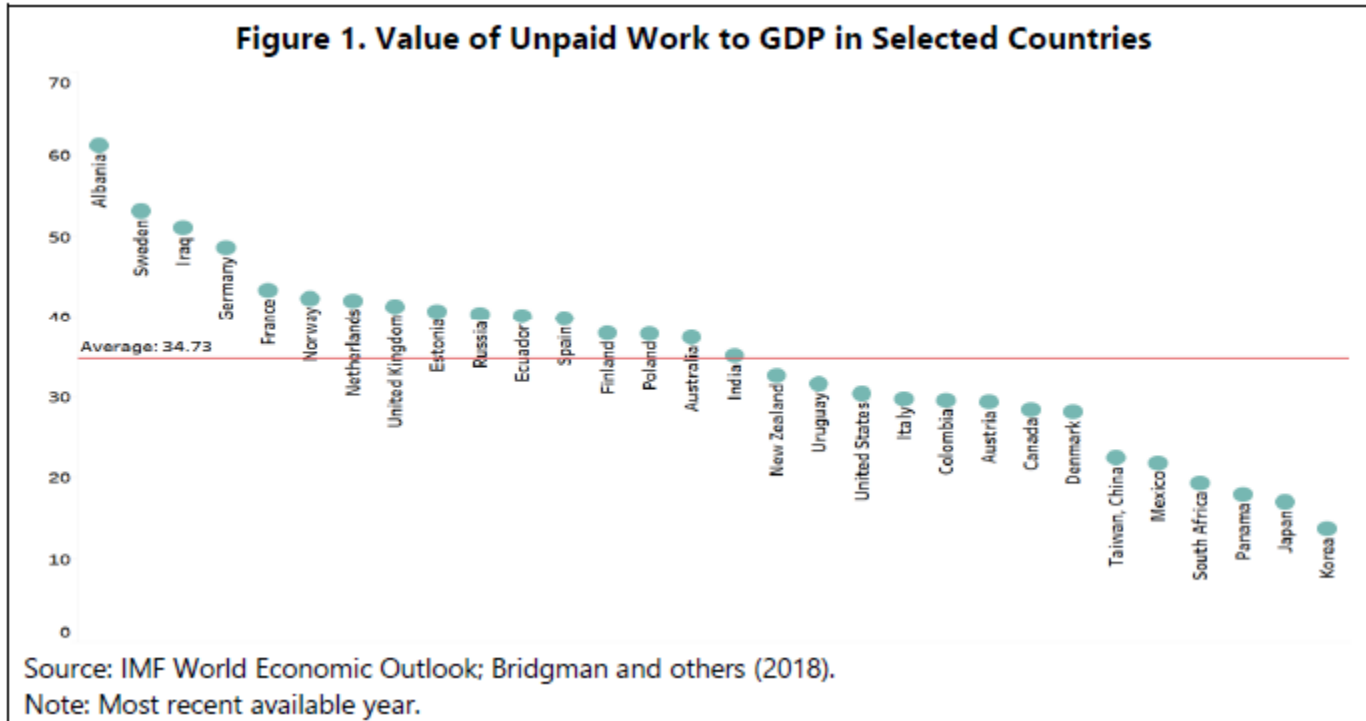
Author (year of publication)	Country	Methodology	Average annual value per household	Value of household production as a percentage of GNP %
National Economic Development Authority (1983)	Philippines	RCHK, OCBT	-	10 to 30
Economic Council of Japan (1973)	Japan	OCBT	-	~9
Moni Mukherjee (1983)	India	OCBT	-	49
Euston Quah (1993)	Singapore	RCHK, RCSF	S\$ 3755.33	5

# Recent Literature

Country	Source	Method	Value of household production annually (USD)	Value of total household production (% of GDP)
India	Evangelical Social Action Forum (ESAF) and HealthBridge (2009)	RCHK	1,800 per female	61
Vietnam	CARE (2021)	RCHK	1,263 per female	19
			842 per male	
		OCBT	1,065 per female	23
			1,465 per male	
Japan	Japan Cabinet Office (2021)	RCHK	24,144 per female	27
			7,205 per male	
		RCSF	27,288 per female	22
			8,208 per male	
		OCBT	32,063 per female	27
			11,921 per male	
South Korea	Suh (2019)	RCHK	11,512 - 28,368 per female	22 - 59
			3,365 - 10,779 per male	
		RCSF	16,304 per female	34
			6,152 per male	
Austria	Jokubauskaitė and Schneebaum (2020)	RCHK	23,977 per female	23
			11,062 per male	
The Netherlands	Verbooy et al. (2018)	CVM	27,114 per female	27
			17,020 per male	

Country	Source	Method	Value of household production annually (USD)	Value of total household production (% of GDP)
Singapore	Lim et al. (2014)	Efficiency-adjusted RCHK	5,821 per household	3
		Efficiency-adjusted RCSF		
	Chia et al. (2018)	RCHK	8,274 per household	3
		RCSF	69,000 per household	24
		OCBT	104,759 per household	40
		CVM	54,187 per household	19
Malaysia	KRI (2019)	RCHK	9,823 per woman	48
			5,613 per man	
		RCSF	9,971 per woman	49
			5,698 per man	
China	Dong (2014)	RCHK	2,745 – 3,488 per household	25 - 32
		OCBT	3,217 – 3,525 per household	29 - 32
United Kingdom	UK Office for National Statistics (2016)	Output	25,657 per person	63
		RCHK		
		RCSF		
Canada	Statistics Canada (2022)	RCSF	20,729 per female	25
			14,405 per male	
		OCBT	29,740 per female	37
			22,204 per male	
		OCNT	26,565 per female	33
			19,032 per male	

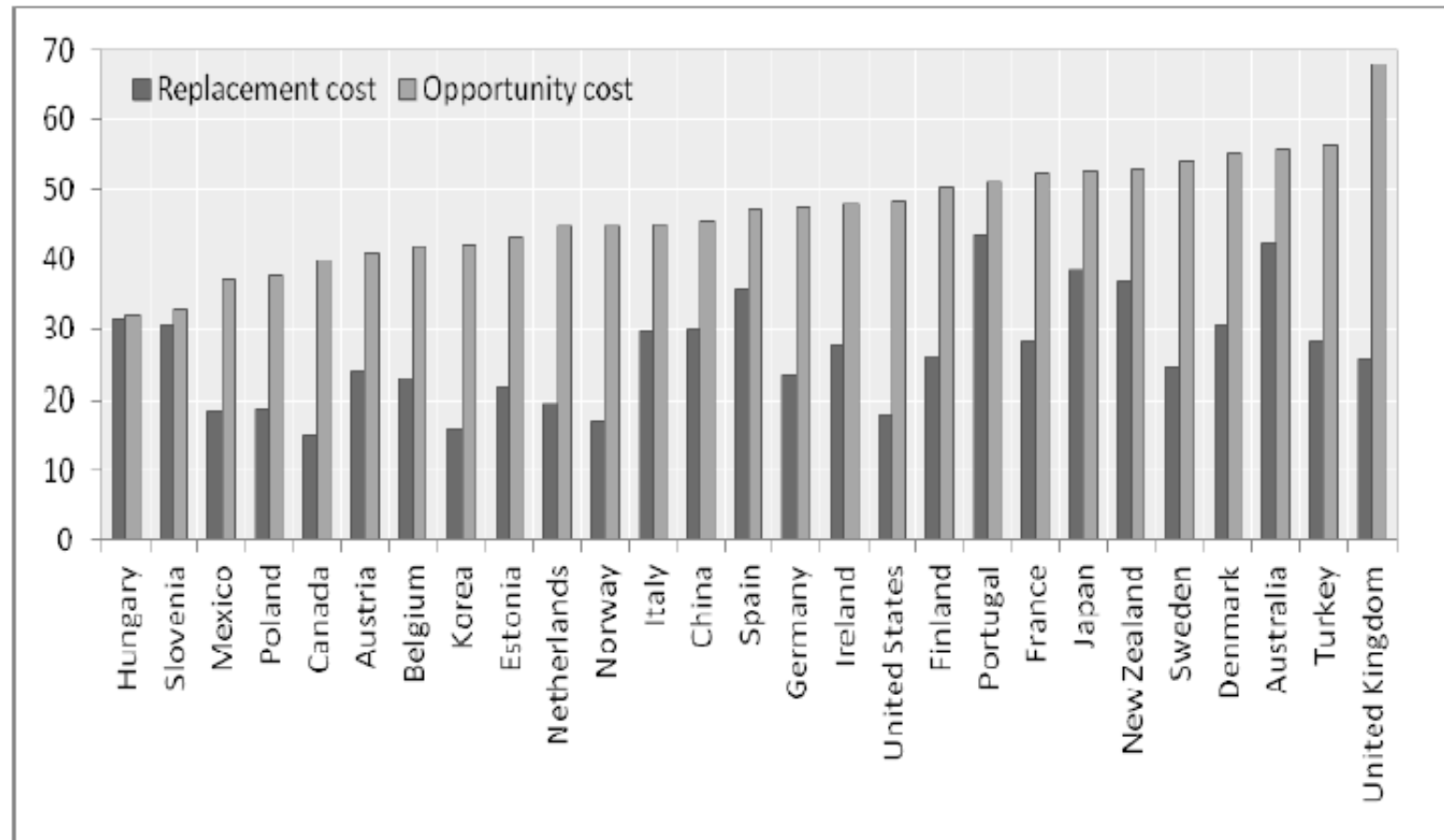
# Recent Literature



- Using time use surveys and a replacement cost approach, Bridgman et al. (2018) found that unpaid work accounts for roughly 35% of GDP on average in their sample, but it varies widely, ranging from 10% of GDP in Korea to 60% of GDP in Albania

# Recent Literature

Figure 3: Value of labour costs in household production of non-market services, % of GDP, 2008

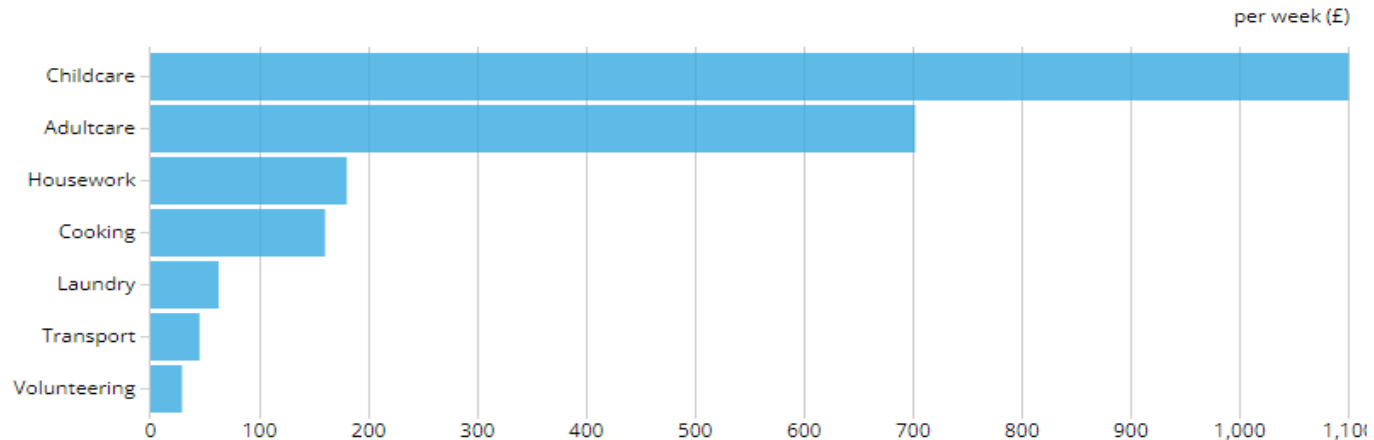
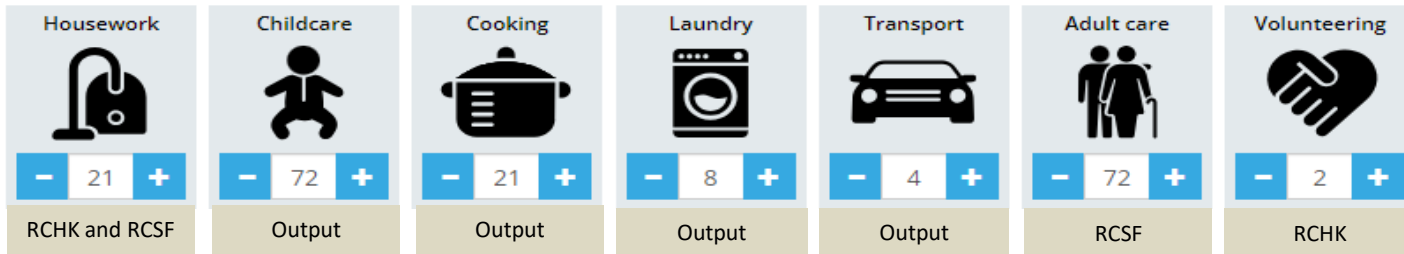


- In studies involving developed countries, the value of non-market labour obtained by OC is typically higher than that of RCHK
  - OC considers the average wage of all occupations, but RCHK considers only the average wage of domestic workers whose pay is typically low (Dong, 2014)

OECD (2011)

# Time use value for housework (U.K.)

Find the value of your unpaid work by entering the hours you spend on each task per week:



Total per week:  
**£2,278.95**

Total per year:  
**£118,505.40**

Share the value of your unpaid work



# Time use value for housework (U.K., U.S., Australia, Canada)

My professional work		Average cost of outsourcing	
I work	40 h per week	Meal preparation	11.41 \$/h
I know my...	<a href="#">hourly wage</a> ▼	Cleaning	11.43 \$/h
Hourly wage	23.33 \$/h	Laundry	11.16 \$/h
My unpaid work		Child care	11.17 \$/h
Meal preparation	5 h/wk ▼	Schoolwork	15.89 \$/h
Cleaning	5 h/wk ▼	Adult care	11.55 \$/h
Laundry	5 h/wk ▼	Pet care	11.51 \$/h
Child care	40 h/wk ▼	Transport	12.49 \$/h
Schoolwork	12 h/wk ▼	Repairs	13.87 \$/h
Adult care	30 h/wk ▼	Gardening	13.94 \$/h
Pet care	0 h/wk ▼	My opportunities	
Transport	5 h/wk ▼	I want to outsource	50 h/wk ▼
Repairs	3 h/wk ▼	My family will share	57 h/wk ▼
Gardening	2 h/wk ▼	Hypothetical scenario: you outsource 50 hours of housework per week to external paid services and ask family members to take over an additional 57 hours per week.	
Replacement cost of unpaid work		This scenario allows you to reduce the workload at home, but at a financial cost. You will earn 107 hours of free time which you can use to relax, exercise, or learn new skills!	
Time spent	107 h/wk ▼	You will need to pay an additional \$601 a week to cover the costs of external services to cover your unpaid work.	
Value of unpaid work	1,286 \$/wk ▼		
If I worked, I'd make	2,496.3 \$/wk		
The value of your unpaid work is <b>less than the amount you'd earn at your job</b> over the same period of time.			

## Unpaid Work Calculator

Created by [Bogna Szyk](#) and [Tomasz Jedynak](#), PhD

Reviewed by [Dominik Czernia](#), PhD and [Jack Bowater](#)

Based on research by [Employee Earnings and Hours](#); Australian Bureau of Statistics; May 2018

[Wage Report](#); Government of Canada; November 2019  
[Earnings and hours worked](#); Office for National Statistics; 2019

[National Occupational Employment and Wage Estimates](#); U.S. Bureau of Labor Statistics; May 2018

Last updated: Jun 05, 2023

- RCSF to estimate value of household production based on hours worked for each housework activity
- OCBT to estimate how much one would earn if, instead of doing household chores, they devoted this time to professional work based on their current hourly wage, their average salary for the occupation they expect to do if they are currently unemployed, or simply using the median hourly wage in the U.S. in 2019
- Also estimates the costs of outsourcing a stipulated amount of housework hours to hired help

# Selected Recent Literature

<b>Authors (Year)</b>	Ragnarsdóttir, Kostecki and Gornick (2023)
<b>Title</b>	Accounting for the Value of Unpaid Domestic Work: A Cross-National Study of Variation across Household Types
<b>Topics</b>	Extended household income inequality; household composition
<b>Method</b>	RCHK (country-specific hourly minimum wage of Finland, France, Germany, Italy, Spain, U.K. and U.S.)
<b>Result</b>	<p>Extended income (market income plus the imputed value of unpaid work) reduces inequality among both women and men, but more so among women. On all outcomes, household composition shapes women's outcomes more than men's and, overall, parenting status plays a larger role than partnership status.</p> <p>Adding the value of women's unpaid domestic work to their earnings has the effect of increasing the estimate of their contribution to the household by more than half and more than double for Germany and Italy.</p> <p>Adding the value of unpaid domestic work to market income has the strongest effect on: (1) total income for cohabiting mothers, followed by (2) single mothers, (3) cohabiting childless women, (4) single childless women and lastly (5) single fathers and (6) single childless men (negligible difference in effect for men regardless of partnership or children status). These findings are consistent with the amount of time each household composition type spends on unpaid domestic work.</p>



# Selected Recent Literature

<b>Authors (Year)</b>	Jokubauskaitė and Schneebaum (2021)
<b>Title</b>	Assessing the value of household work based on wages demanded on online platforms for substitutes
<b>Topics</b>	Valuation of household work
<b>Method</b>	RCSF (using actual local wage rates as requested for these services)
<b>Result</b>	Value of housework and childcare in Austria amounts to about 22% of 2018 GDP (primary activities) / 23.4% (primary + secondary activities), close to the value created by the industry sector

- Using the wages demanded for housework and childcare on actual online platforms rather than the annual average gross market wage rates of specialised workers as reported in official labour force surveys circumvents some criticisms associated with the traditional RCSF method
  - More accurate use of wage data as:
    - Reported per hour rather than annually, the latter which involves other additional computational variables such as weeks worked per year and hours worked per week
    - Avoids underestimation by applying a minimum wage to a job that may actually receive higher remuneration
    - Real-time wage data free from time lag associated with publishing official labour force statistics
  - More useful for valuing household production for household welfare purposes beyond social accounting by taking the worker's valuation of her own service into account

<b>Authors (Year)</b>	Khazanah Research Institute (2019)
<b>Title</b>	Time to Care: Gender Inequality, Unpaid Care Work and Time Use Survey - Kuala Lumpur, Malaysia
<b>Topics</b>	Household production, poverty and inequality
<b>Method</b>	RCHK, RCSF, life-cycle analysis, Gini Coefficient, Theil Index
<b>Result</b>	<p>Value of household production is about 2,960 RM per capita (primary activities, RCHK/RCSF); 3,268 (RCHK) – 3,314 RM (RCSF) per capita (primary + secondary activities). Household production assumes an important role as a buffer against income inequality.</p> <p>Women are shouldering more unpaid care work than men despite working almost equal—albeit marginally fewer—hours than men in paid employment. Unpaid care work has a time distribution that is more unequal than paid work hours and income distribution. These are exacerbated by women’s constrained mobility to unpaid care work (more likely to take public rather than private transport), their tendency to combine work and non-work trips compared to men and care work being often carried out as simultaneous activities.</p> <p>Men allocate a significant amount of their time to direct care work (specific care for family or household members) —though still less than women in absolute hours—but spend a lot less time on domestic work i.e. (cleaning and maintaining of dwelling, food preparations and laundry) compared to women. Women are also dedicating more time to less pleasant tasks that are generally more inflexible, mundane and frequent.</p> <p>For both men and women, an additional hour of unpaid care work is associated with fewer hours of market work and less income. Mothers may be earning more but have less time on their hands, while fathers are more productive at work because household responsibilities are reduced with wives’ help and are better paid without having to spend extra time at work. Time poverty is exacerbated when the youngest child in the household is below the age of 7 (unpaid care hours for women are the highest in this stage of their life).</p> <p>Lower-income households undertake more household production instead of procuring goods and services from the market. Conversely, higher-income households substitute goods and services produced at home with market purchases as the opportunity cost of household production increases. Middle-income class households may find it too costly to procure direct care from the market but not economical enough to fully undertake direct care work as household production, with women bearing disproportionately more of the burden.</p>

- How time poverty is determined:
  - Time deficit after subtracting time required for personal maintenance such as sleeping and eating, minimum time required for unpaid care work and actual time spent on employment and related activities
- How to incorporate time poverty into income poverty:
  - Impute a monetary value to the time deficits by valuing them with minimum wage i.e. RM1,100 per month as of 2019
  - Income poverty is defined using relative poverty of 60% below the median income
  - Add value of time deficits to relative poverty line to get new poverty line

- Khazanah Research Institute (2019)

Figure 2.42: Income poverty rate before and after adjusting for unpaid care work

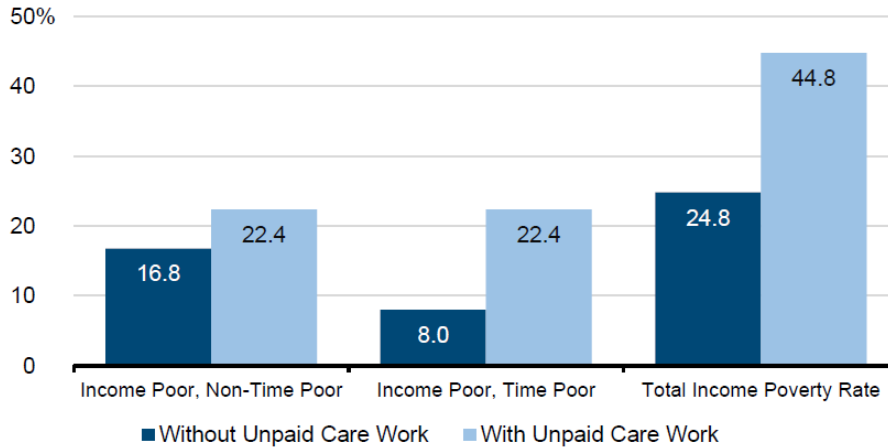


Figure 2.45: Income poverty rate, by gender and income

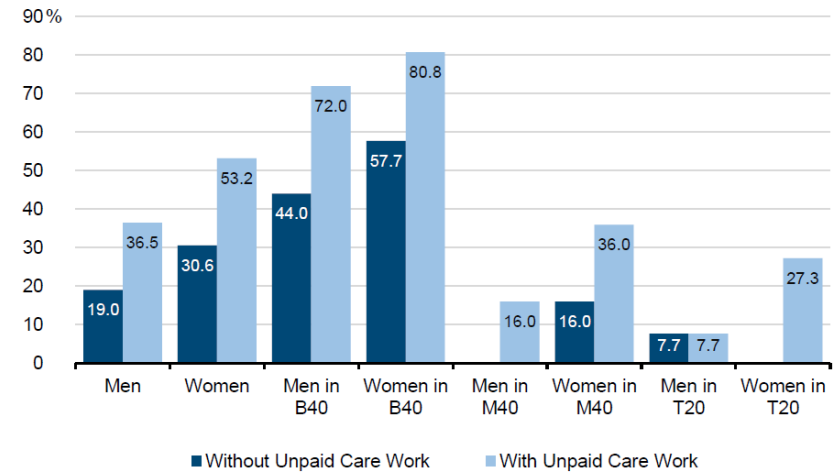
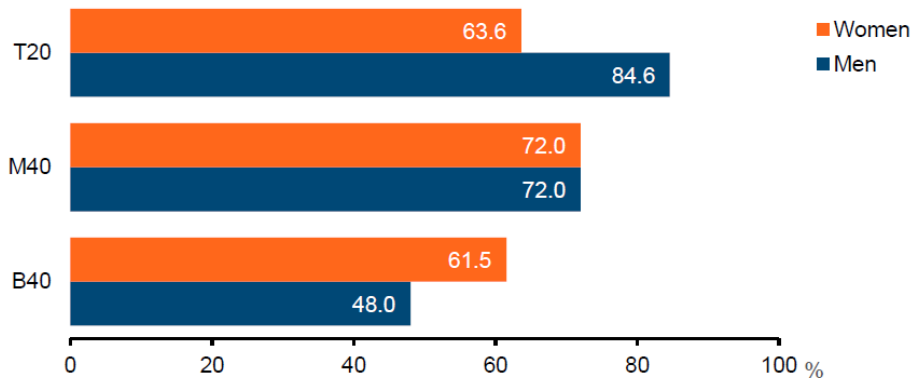


Figure 2.43: Time poverty rate, by gender and income



- Income poverty increases for those who are both income poor and time poor (more significant) and those who are income poor but non-time poor after incorporating unpaid care work
- Generally, women have a higher poverty rate than men across all income classes (for top 20% income class, only when unpaid care work is included)
- Men who are in top 20% income class have the highest time poverty due to longer paid working hours but not necessarily longer hours of care work, while women in the bottom 40% income class have a higher time poverty rate than men in the same class. Poverty rate for individuals in the middle 40% income class equally high for both men and women

# Who should pay?

- Considerations for designing a compensation scheme for homemakers:
  - Husbands have already been “paying” for housework in the form of monetary allowances and vacation trips i.e. cost of maintaining a housewife
  - Indirect increased productivity of husbands as a result of housewife’s unpaid labour is already reflected in wages paid by employer
  - Positive spillovers to society e.g. stable home environment implies better home-educated children and being less likely to commit crimes
  - Quality of homemaking between skilled and unskilled homemakers, and variance in the amount of homemaking duties provided by different household members

# How to pay and how can the value of household production promote efficiency of household responsibilities?

And how should we decide on the pay of “homemakers”?

Based on the size of the house she has to keep? The number of children in the family? Should we void this allowance if the family engages a domestic helper? Should we also prorate the amount for each child in childcare, school or has moved out? Can more than one homemaker claim this allowance in a house? Say, two generations of homemakers living in the same house? Would the homemaker still be liable to claim this allowance if they went on a holiday and this were not required to execute their payable duties? Or if they fell ill to the same consequence?

Boy, this rabbit hole goes deep...

6 yrs Like Reply More

*Yes, there are indeed too many confounding variables to consider for individual-level compensation as derived from the value of household production.*

*If society wants to recognise the importance of this contribution, then perhaps an appreciation sum not amounting to the full contribution might be worth considering periodically. Studies have shown that providing a small monthly childcare allowance can stimulate women’s LFPR and in turn GDP growth. Taking a weighted average of the taxable incomes of domestic workers and market-equivalent specialists in various home production activities, adjusted for inflation, may also be a good reference point for determining say, the hypothetical amount of homemakers’ entitlement to social security payouts.*

Trying to stir conflict between husbands and wives?



2

6 yrs Like Reply More

*Perhaps, but alternatively, if the husband is sensible, knowing the value of housework helps household members come to optimal decisions on the allocation of time between work in the market and work at home.*

*Once members of a family understand the economic value of their contribution to housework, this value can be used to decide whether these contributions are comparable, less than or exceed wages they could have earned or are earning in the market. This provides a more meaningful estimate of how much women and men are willing to trade off market work and leisure time for time spent on household production activities.*

*Home labour is work and the home is essentially considered a workplace. Loosely speaking, one may argue that just like housework, wage labour is also generally performed out of love, duty and responsibility for the family’s well-being. Thus, the only difference between paid work and unpaid housework is that the former is monetarily valued and acknowledged in income-related policies while the latter is not, which is subtly detrimental to a household that sees one spouse doing the majority of the housework.*

# Some Concluding Comments

- There is no one definition of household production for all uses. Appropriate definition of household production and methodology adopted depends on the specific objective of measurement of household production.
- For social accounting (GDP accounting)
  - Based on market valuation, marginal valuation
  - Defining household production in terms of those home activities which are market-replaceable
  - Consistent with valuation of market-based activities
- For matrimonial property settlements, compensation in tort, inequality or for own-welfare considerations
  - Based on welfare considerations, total net valuation
  - Has to be more inclusive, includes replacement cost (e.g. from loss of household production after injury from accident) or opportunity cost (e.g. in a divorce, what housewife could have earned in the market if she had not been involved in housework; after accident, some household services will now be performed by other household members with higher marginal opportunity costs)



# Some Concluding Comments

- Disparity in measures of value of household production across different studies
- Must take into account
  - Definition of household production, which in turn depends on what is it that one is attempting to measure for.
  - Quantification of household production: whether household production is measured in terms of time or physical units
  - Treatment of joint production. Important for quantification purposes when there is a need for aggregation of time spent in household production.
  - Method of valuation of household production. Again depends on objective of valuation.

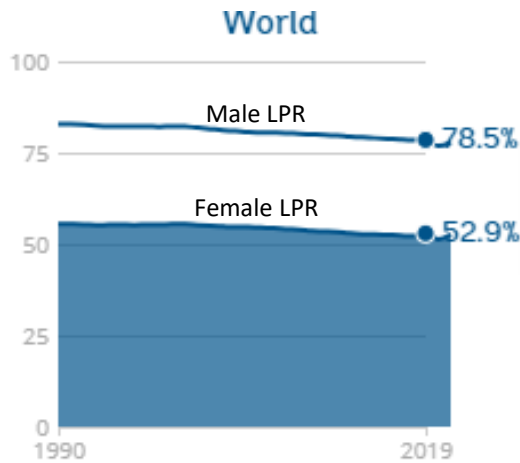
# Some Concluding Comments

- While the value of household production is indeed useful for a number of purposes, its usefulness by no means require that it be incorporated into the GNP
- A meaningful procedure may be to have a separate reporting of both GNP and household production estimates
- Need to regularly survey the time used for household work, detailing as much as possible the various activities which occur in the home
- Monetary estimates of value of housework should be compiled periodically and weighed against the economic growth statistics provided by national income accounts and made available to judicial institutions

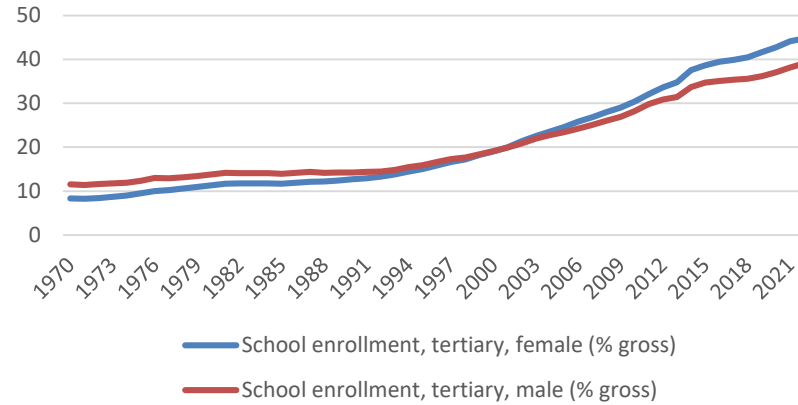
# Further Research

- Determine exactly how household production estimates can be incorporated into the GNP
- Removing limitations of calculating and incorporating household production
- To decompose: How much of the fall in income inequality, or how much of the growth in GDP, can be attributed to movement out of the underground economy
- Adjusting and refining inter-temporal growth calculations, labour force participation trend forecasting.
- Implications on public policies, e.g. incentivizing women to work and increasing labour force participation rate; imputing the value of household work for supplementing social security designs, understanding poverty issues and for general happiness studies

# Further Research

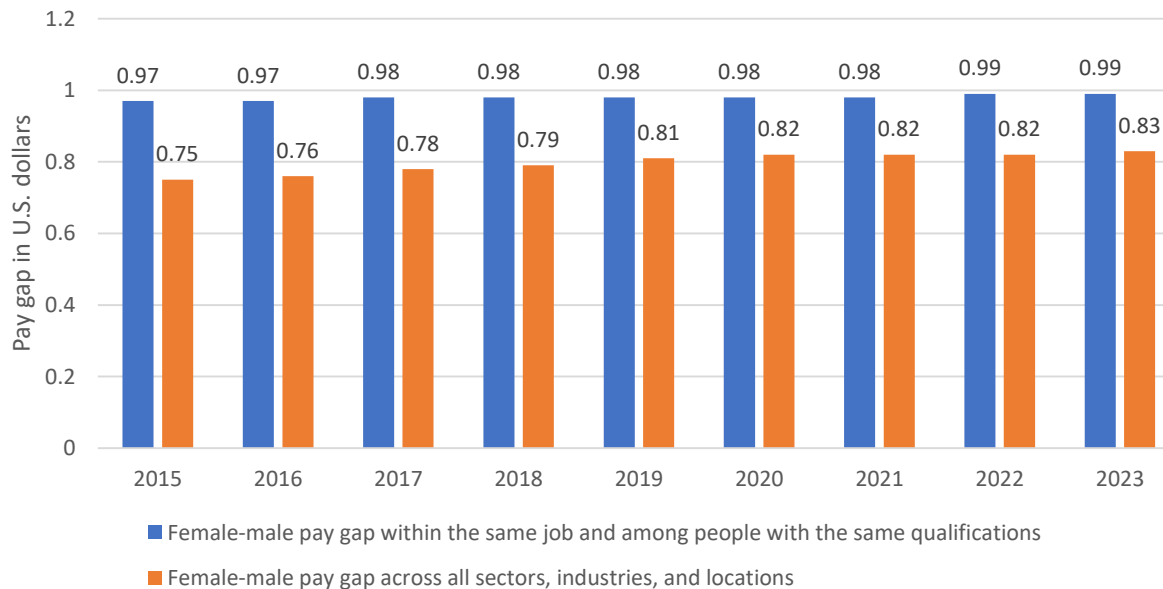


Tertiary school enrolment by gender (worldwide)



- As education is a major determinant of wage, the worldwide trend of more tertiary educational qualifications for females compared to males should theoretically increase women's opportunity costs of allocating time away from paid employment to household production

Global gender pay gap from 2015 to 2023



- However, perpetual higher LFPR and wages of males compared to females. Could gender-related familial or occupation segregation norms be the reason?

# Further Research

- Could the same amount of unpaid output or services that some women would have produced at home be more valuable to their family members than what they could have produced in paid jobs to society that are of the same nature of work e.g. childcare centre teachers or cleaners?
- For household welfare purposes, regarding households that can afford hired help but choose not to do so, does it mean that:
  - Households value these services less than the market value (overestimation of replacement cost)?
  - The act of performing the household service yields utility to the household member (underestimation of replacement cost)?
- Would easier accessibility to childcare centres (associated with higher quality of specialised childcare) improve mothers' LFPR?

# Further Research

- How the value of household production affects tax treatment
  - Some researchers have argued for a tax on housework and unpaid care work (Palmer, 1995; Silbaugh, 1996):
    - Achieve legal recognition of its productive nature to the household in a marital agreement
    - Improve comparability to paid employment (taxable) income to allow for more equitable and less arbitrary standing to social security entitlements, matrimonial property and wealth division, and tort claims between spouses
    - Problem: regressive nature of tax harmful for low-income homemakers
  - Some have also argued that parents should not be taxed at the same rate as working adults without children in acknowledgement of the former's human capital investment for the future economy (Wolf, 2004)

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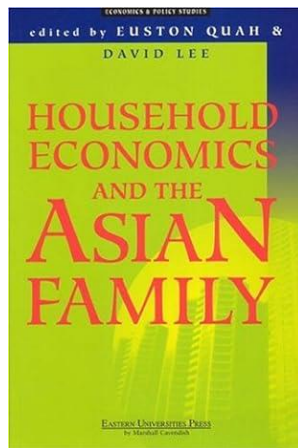
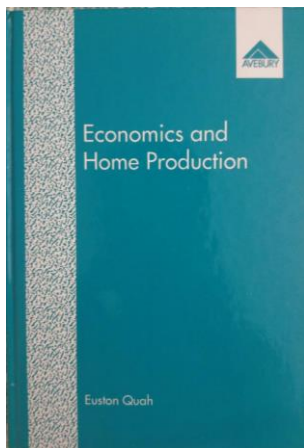
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