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HOME PRODUCTION, WOMEN'S MARKET WORK, AND STRUCTURAL TRANSFORMATION

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Abstract

This paper reviews the literature on how linkages between women's home and market work change through the structural transformation. We relate historical shifts in female time between home production and market work in developed economies to more recent changes in developing countries. We highlight forces that contribute to shifting women's time into the market in developed countries, and barriers that may get in the way of this movement of time. We review available and required data that could be used to uncover frictions retarding the movement of women's time into the market in developing countries. Several areas for future research addressing these frictions are proposed. To inform policies that address macroeconomic misallocation of female labour resources and persistent gender gaps in labour market outcomes in developing countries, we need (i) more time use data to understand how women spend their time in home production and in the market; more research on (ii) how infrastructure affects home labour productivity; (iii) how child-care services and part-time or flexible work arrangements facilitate market work; and (iv) whether social norms against women's market work are malleable.

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1 Introduction

Economic growth is often measured as growth in output per market hour. But for many countries, time spent in home production is almost as large as the amount of time spent on market production. For the world as a whole, using national time use surveys from sixty-four countries for the 2000s, the International Labour Organization reports that there are about seven hours of home work for every ten hours of market work ([Addati et al., 2018](#)). Three quarters of these unpaid home production hours fall on women.

Home production is defined as time spent on the production of goods and services for one’s own use. For advanced economies, common home production activities are cleaning, cooking, and childcare. In early stages of economic development, however, people also grow their own crops, keep small farm animals, make clothes, and preserve food. These activities are gradually taken over by the market as the economy develops and markets improve. This process of marketisation is linked to the process of structural transformation in the market economy: the fall in agriculture, hump-shaped manufacturing, and rising services; a process observed both historically for advanced economies and across a large panel of developed and developing countries.

The evolution of home production during the structural transformation has important implications for the economic role of women. Traditionally women are the main source of labour for home production and this tradition seems to persist into the 21st century, where women’s home production hours are triple that of men’s. These demands of home production are the main self-reported barriers to women entering the labour market (see [Addati et al. \(2018\)](#)).¹ Cultural and social norms regarding women’s role at home are important too, but they seem to be shifting in some places: a 2016 ILO-Gallup survey finds that 70% of women would prefer to work in the market, and 66% of men agree with this preference.²

A central question is: “How can women increase their market hours – should they want to – without diminishing the required output of home production, e.g. a clean home, meals, well looked-after children?” The affordability and acceptability of marketised goods and services

¹The home production hours are based on 64 national time use surveys and the main reasons for staying out of labour force are based on 84 national labour force surveys in 2000s. In contrast to women, the main reason that men report being out of the labour force is because they are “in education, sick or disabled”.

²The 2016 ILO-Gallup survey is based on 142 countries with 149,000 respondents ages 15 and older.

that allow women to outsource home production time while allowing families to still enjoy the output seems to be the key. The development of corresponding market sectors that substitute for home production also creates jobs for women because these sectors are usually intensive in female labour. Thus, potentially two paid jobs for women can be created by outsourcing home production: one for the woman who provides the home produced service in the market, and one for the woman who chooses to leave home production and shift time towards market work. This was the historical experience of many advanced economies.

When women face barriers to transitioning from home to market, or barriers to transitioning across sectors during the structural transformation, the misallocation of time and talent that results reduces aggregate output (Hsieh et al., 2019; Lee, 2020a). Addressing the barriers in the way of shifting women's time out of home production and into the market is therefore a first order problem for many developing countries today.

Eliminating frictions that slow down the marketisation of home production or impact the acceptability of women's market work could lead to substantial gains in output in a post-COVID world. Unfortunately, the centrality of marketised home production activities in supporting the movement of women into the labour market is particularly salient in 2020. The COVID-19 pandemic has unleashed strong forces of demarketisation: the shutting down of many market services such as schools, restaurants, cleaning services etc. Data from advanced economies show that women took on the bulk of these demarketised home hours and there is growing worry about the reversal of women's role back to the home in all countries, e.g. (Alon et al., 2020; Georgieva et al., 2020).

In this paper, we review existing theory and evidence from advanced countries on the role of home production in the structural transformation. We address the following questions: does it look like developing countries are following the historical path of advanced economies in home and market work allocations and in gender gap outcomes in the labour market? Which factors that were influential in the historical path of advanced economies are at play in developing countries? Which new factors should be considered now? Are advanced country policies that support the marketisation of home production relevant for developing countries? What types of new data are needed to answer these questions? Our goal is to set out a research agenda that will build evidence on opportunities for and constraints to marketisation of home production

sectors and the acceptability of women’s market work in developing countries.

2 Home Production and Development

What is home production? The book *Economics of Household Production* by Reid (1934) explains:

It consists of those unpaid activities which are carried on, by and for the members, which activities might be replaced by market goods, or paid services, if circumstances such as income, market conditions, and personal inclinations permit the service being delegated to someone outside the household group. (Reid 1934: 11)

Home production is defined as time spent on the production of goods and services for own use.³ Typical modern day examples are cooking, cleaning, and child care around the globe; and wood and water fetching in developing countries. There are two important features of home production that distinguish it from leisure. First, one derives utility from the output of home production but generally not from the time that she spends on performing this work.⁴ Second, as Reid (1934) observed, time spent on home production can potentially be outsourced to the market while household members can still enjoy the output. This happens via a process of *marketisation* of home production (Lebergott, 1993; Freeman and Schettkat., 2005). This marketisation process depends on the development of sectors that produce close substitutes to home production, such as those among service sectors, which is closely linked to the process of structural transformation: the reallocation of labour across agricultural, manufacturing, and services along economic development path (Kuznets, 1966; Maddison, 1980).

³In early development stages, both home production and working on the family farm or in the family business are important, and both are unpaid work. It is the emphasis on “own use” that differentiates home production from the latter which is referred as “market-oriented” establishment and is included as part of formal labour supply by the International Labour Organization (ILO). Although this distinction is conceptually clear, it is often difficult to measure in practice, since home businesses may produce goods and services for own use as well as for market.

⁴Positive utility from some aspects of home production are clearly possible but it is unlikely that all time in home production is enjoyed. For example when the people were asked to rank the enjoyability of all different activities during the day in the UK’s 2014-2015 time use survey, most home production activities were placed at the lowest end of the enjoyability spectrum. Childcare ranked below playing with one’s own child. See <https://ourworldindata.org/time-use-living-conditions> for more details.

2.1 Measurement of Home Production

The current standard for measuring input into home production is to use a time use survey. Survey respondents are asked to enter activities in specific time increments (e.g. 15 minutes) for each of the 24 hours in a day. In some surveys, respondents are asked flag whether an activity completed in a given window was the primary, or secondary activity, while in others, only the primary activity information is collected.⁵ Time diaries may be completed contemporaneously, or recorded using the recall method for time use in the previous day. Often, one or two individuals in each household are randomly selected to participate in these surveys. Participants tend to be 15 years or older in developed country surveys, and 10 years or older in developing countries.⁶

In describing aggregate patterns in time use, and how these patterns shift from home to market work, macro-economists typically aggregate information from time spent on a given day to time spent in a representative week by a representative person. Typically, this is done by calculating how much time is spent on a given activity during an average weekday, as well as during an average weekend day, and then adding up over days of the week to produce a total weekly hours of work variable. To produce national averages, this aggregation occurs over everyone: both those who spend any time on a given activity and those who spend zero time in the activity.

Historical time use surveys from specific populations in developed countries reveal an important transformation of home activities as countries modernise. Based on 60 families in Pennsylvania, [Leeds \(1917\)](#) documented most families at the turn of the century spent time on keeping small farm animals, making clothes, and preserving food for their own use. Two decades later, [Reid \(1934\)](#) wrote about the disappearance of these activities. Using various time use surveys collected by US Bureau of Home Economics, [Vanek \(1973\)](#) documented the transformation of home activities from 1924 to 1968, revealing the convergence to modern day home activities in developed countries.

⁵For example, someone could be cooking dinner as the primary activity and watching kids as the secondary activity.

⁶This difference raises an issue of whether children work in home production and/or in the market. The issue of how children shift from being workers to being in school is beyond the scope of this paper: see [Edmonds \(2005\)](#) and [Edmonds et al. \(2009\)](#) for examples of how child time allocation and work shifts in the process of trade-induced economic growth.

While these early time use surveys were often based on small convenience samples, in recent decades many countries have started conducting surveys with a more representative sample of the whole country. The first nationally representative time use survey became available for the US in 1965 and the American Time Use Survey began in 2000. Effort has been made to harmonise time use surveys across countries such as those of the Harmonised European Time Use Survey (HETUS) which includes 23 European countries and the Multinational Time Use Survey (MTUS) which includes 24 countries across continents.

A second common way to calculate time use on home production activities is to ask questions about how much total time per week is spent on specific activities, such as hours spent on household management activities like water collection, or firewood collection. Such questions are common in household surveys conducted in developing countries. While they may be subject to more recall error in terms of actual time spent in the activity, they may more accurately measure extensive margin participation in such activities by asking everyone in the household (rather than two randomly selected individuals) about an activity that may not occur every day of the week.

A central motivation for collecting time use data is to measure time spent on unpaid work, particularly unpaid work in home production. Valuing this unpaid work and incorporating this value into the national accounts is sometimes referred to as the extended GDP.⁷ For the US, using wages of domestic workers and gross return on household durables to value unpaid home production work, [Bridgman \(2016\)](#) finds that in 1929, the extended GDP is 42% higher than measured GDP. Over time, this ratio declines due to a shift of unpaid home hours into the market sector, but extended GDP is still 27% higher than measured GDP in 2010. In a similar calculation that only values the labour time spent in home production using national minimum wages, the ILO calculates that the value of the time spent on home production across 53 countries for the 2000s is equivalent to 9% of global GDP [Addati et al. \(2018\)](#). This is undoubtedly an underestimate of the importance of home production, since it does not include the value of household durables.

⁷There are two general approaches to measuring the value of home production, based on output or input evaluation. The output evaluation approach focuses on the market value of a home output such as how much the market will pay for a clean home or a cooked meal. The input evaluation approach instead puts value on the home hours based on wages, where it could be the wage of the person performing the home work, the average wage in the economy, the minimum wage, or the wage needed to hire someone to perform the work.

2.2 Women’s role in home production across time and space

What is the role of women in home production? What does home production look like in today’s developing countries and how does it compare to home production in developed countries in the past? Does the pattern of home production of today’s developing countries follow those of developed countries?

To begin, we compare the time spent in different home production activities among individuals who might be referred to as housewives. In Table 1, we show the average weekly hours spent on cooking/food preparation, cleaning/care of household and gardens, laundry and repair of clothing, child and adult care, and general household management (purchasing food, travel related to home production, etc). We do this using time use recorded among farmer housewives in the US in the 1920s, American housewives in 1965, and women who could be called housewives in America (2010), South Africa (2010), and Ghana (2009).⁸ The 1920s and 1965 US data are from [Ramey \(2009\)](#); the other data are from national time use surveys.

As noted in the prior section, time use in different activities is collected with some measurement error. For instance, in the US 2010 survey using for Table 1, except for time spent on childcare, no time spent on secondary activities is collected. This means that some home production time in secondary activities would be uncounted. In the other countries, secondary activities are more likely to be included in these measures. For example, in South Africa, respondents listed up to three activities per half hour and we assign a share (30 minutes, 15 minutes, or 10 minutes) of time to each activity based on the number of activities listed. In Ghana, respondents listed up to five activities per hour along with the time spent on each activity. Where activities were listed as simultaneous, we split the time allotment equally across activities.

Despite these issues of measurement, the table provides a snapshot of how the time in and composition of home production has changed in the US with increasing levels of development. Among housewives in the US, time spent in home production has fallen by about 7 hours, or 15%

⁸The relevant sample for which we compute weekly hours of work in the 2009 and 2010 time use surveys includes women ages 15 to 59 (before they attain pension age), who report spending zero hours in market work and zero hours in education in the prior weekday. We do not restrict to married women, because households may be inter-generational arrangements of families or may contain multiple wives. In recent work on the US, [Lee \(2020a\)](#) documents that home production time jumps up when women transition from single to married status.

between the 1920s and 2010. The composition of home production has also shifted over time: cooking and laundry hours have shrunk dramatically, while time spent in care activities and household management have more than doubled. This shift is consistent with many household activities shifting from the realm of home production into the market.

Table 1: **Differences in Weekly Hours in Home Production by Housewives**

	U.S. 1920s	U.S. 1965	U.S. 2010	South Africa 2010	Ghana 2009
Total weekly hours	51.7	51.8	43.8	48.0	45.8
Cooking	23.5	16.5	8.6	16.4	24.3
Cleaning	9.6	9.5	7.8	11.1	2.6
Laundry	11.3	6.9	3.3	5.3	2.2
Care of children, adults	3.9	8.5	11.3	6.4	9.6
Household management	3.3	10.5	12.8	8.8	7.2
Household size	4.3	4.1	3.2	4.6	5.2
N. households	559	536	1,661	3,491	1,754

Notes: USA 1920s data are from Ramey (2009). We compute all other columns using national time use survey data. Weekly hours are weighted averages calculated for married women: farm housewives in 1920s, all housewives in 1965, all married women with zero minutes in education and zero minutes in work in Ghana (ages 15-64), the USA (ages 18-59), and South Africa (ages 15-59). Variable definitions: Cooking (food preparation, clean up, fetching wood and water in SA and Ghana); cleaning (care of house, gardens); laundry (mending, laundry, making clothes); care (of children and adults in the household); household management (buying food, shopping, home management, travel for home management, other).

Comparing the more recent data from the US to the time use averages in Ghana and South Africa allow us to compare home production across high-income, upper-middle income (South Africa) and lower-middle income (Ghana) countries. Overall, housewives in South Africa and Ghana spend about as much total time in home production each week as American housewives did in the 1920s and 1960s. In Ghana, these total home production hours are even closer to total hours in the US in 2010. However, the composition of home production time in these two countries differs from the composition of time among US housewives in 2010. In South Africa and Ghana, the hours spent cooking and cleaning each week (South Africa: 27.5 hours, Ghana: 26.9 hours) is very close to the 26 hours spent on the same activities by American housewives in the 1960s. Except in the 2010 US survey, cooking makes up the lion's share of time spent

in home production. Cooking and cleaning together make up over half of the total weekly time in home production among housewives. Household management – including shopping and travel for home production – takes up a non-negligible 8-10 hours of work time each week in US households in the 1960s and in South African and Ghanaian households in recent times. Though similar in total time spent on household management, the composition may be quite different: for example, fetching wood and water is an important component for rural South Africans and Ghanaians.

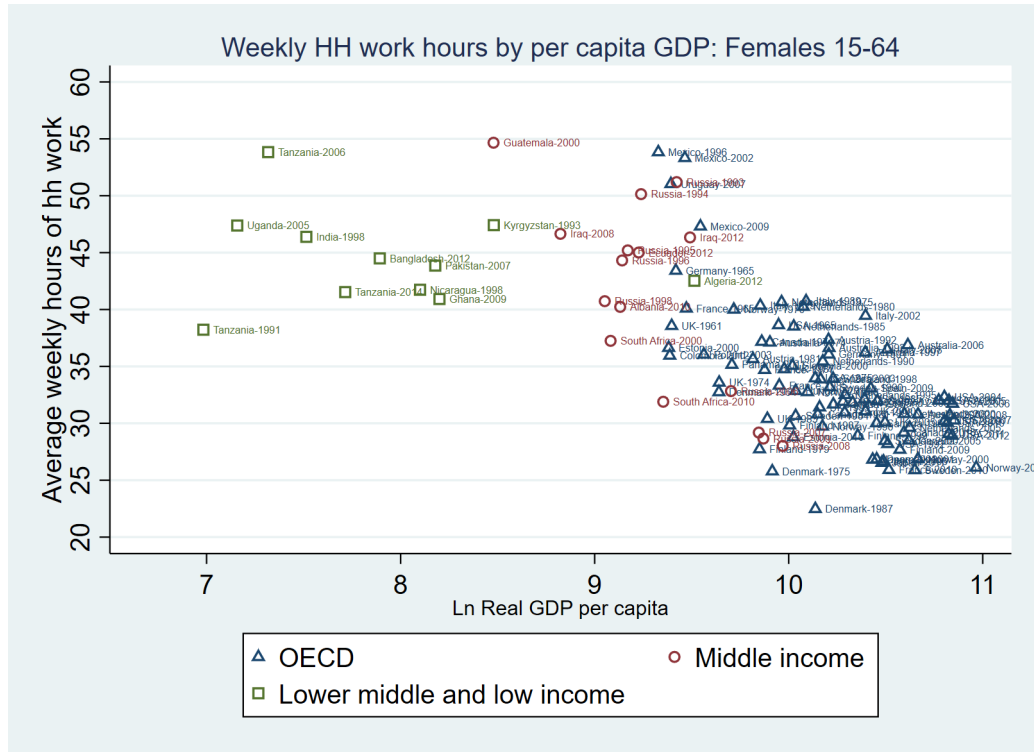
Next, we show how weekly hours of work at home vary with a country’s level of development. Using data collated by [Bridgman et al. \(2018\)](#), we plot data on women’s weekly hours of work in home production activities against real GDP per capita in Figure 1.⁹ Markers of different color and shape denote observations from different country groups: OECD (high-income), middle-income countries, and lower-middle and low-income countries.¹⁰ The focus here is the average time spent in home production each week per working-age person. This measure therefore captures both the intensive margin of hours of work documented in Table 1 as well as the extensive margin of any participation in any home production.

As countries grow richer, female time spent in home production falls, quite dramatically. In Tanzania and Guatemala in the 2000s, the average female time spent in home production was around 55 hours per week. In contrast, women in Norway spent about 25 hours per week in home production in the 2000s. There are two striking facts here. First, as countries grow richer, the work of home production moves from being more than a full-time job at the lower end of GDP per capita, to a part-time job at the highest levels of GDP per capita. Second: in no country do women spend less than 20 hours per week in home production. At minimum, home production is the equivalent of one part-time job.

⁹Weekly hours of home work are computed by [Bridgman et al. \(2018\)](#) using time use surveys. The data cover years from 1960 to 2014 for 43 countries. We do not use any of the interpolated data computed in that paper. We also omit observations from Japan and Taiwan prior to 1990; [Bridgman et al. \(2018\)](#) note that these countries are outliers with very low levels of male home production hours (under 3 hours per week). Data on real GDP per capita are from the Penn World Tables version 9.1 and measured in 2011 International dollars. In all relevant figures, we use the log of real GDP per capita.

¹⁰The lower-middle and low-income countries (LMICs) in the sample include: Algeria, Bangladesh, Ghana, India, Kyrgyzstan, Nicaragua, Pakistan, Tanzania, Uganda. Upper-middle income countries include: Albania, Ecuador, Guatemala, Iraq, Russia, and South Africa. OECD countries include Australia, Austria, Canada, Colombia, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Poland, Slovenia, Spain, UK, USA.

Figure 1: Weekly hours in home production by level of development



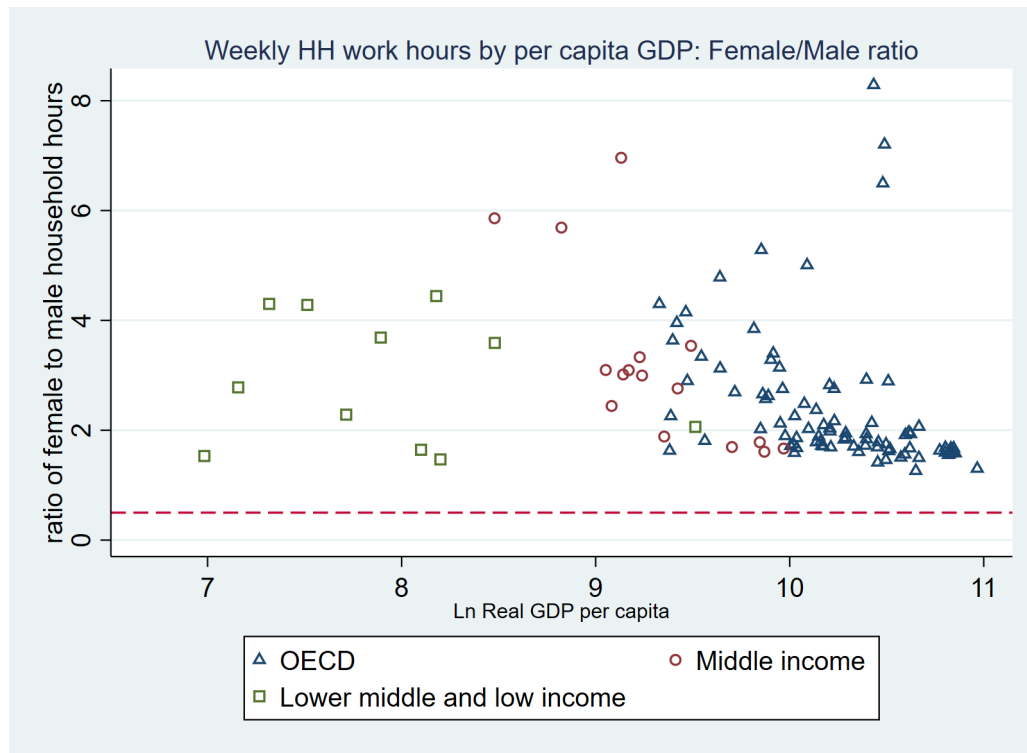
Notes: Weekly hours of work in home production computed for females age 15 and older from Bridgman et al. (2018). Real GDP per capita (2011 international dollars) from Penn World Tables v9.1

Wrapped up in Figure 1 is variation in home production hours across countries and within countries over time. The decline in home production hours with GDP is most pronounced in the OECD and middle-income countries, and especially within country over time. By contrast, in the lower-middle and low-income developing countries, there is less variation in hours of work across vast changes in GDP per capita.

Part of this difference reflects a lack of data. For many of the OECD countries and even some of the middle-income countries in Figure 1, time use surveys exist for multiple decades, so it is possible to trace out changes within countries over time. In the data we use, Tanzania is the only country in the lower-middle and low-income group that has collected multiple time use surveys.¹¹ For the other countries, any changes in home production hours at different levels of GDP (in different years) are not yet observable.

¹¹Moreover, Tanzania’s data in the earliest period covers only one region of the country.

Figure 2: Gender gaps in weekly hours in home production by level of development



Notes: Weekly hours of work computed for individuals age 15 and older from [Bridgman et al. \(2018\)](#). Real GDP per capita (2011 international dollars) from Penn World Tables v9.1. The red horizontal line represents parity in home production hours.

Keeping this data gap in mind, the pattern in Figure 1 might suggest that we need to see substantial increases in real per capita GDP in most developing countries before there are meaningful declines in home production hours among women in these countries. This would be in line with the historical trend for the US reported in ([Ramey, 2009](#)) that home production hours of women ages 18-64 hardly changed during 1900-1965, fell by only 5 hours from 47 hours per week, and then fell by 12 hours over the next 20 years.

It is also instructive to examine gender gaps in home production hours. We plot the ratio of female/male hours in home production by real GDP per capita in Figure 2, again color coding markers to visualise differences between high-, middle-, and lower-income countries. The red dashed horizontal line is at 1, denoting gender parity in the time spent in home production. The figure shows a wide dispersion of gender gaps in the allocation of home production time at

different levels of GDP per capita. For example, at the low range of GDP per capita, Tanzanian and Ugandan women in the 2000s spent more than twice as much time in home production than men did. These gaps widen for some countries at higher levels of income: several middle-income countries (Guatemala, Iraq, Albania) see women doing more than four times as much home production as men. In other countries, at even higher levels of GDP, the gaps shrink once more. By the 2000s, in Sweden and Norway, the female/male ratio of home hours falls below 2. At no point in time does the ratio of home production hours reach gender parity in any country.

2.3 Data needs: Time use surveys

A number of developed and developing countries have time use survey data representative at national level. Many of them are harmonised and available at <https://ipums.org/projects/ipums-time-use>. To really understand whether and how time used in home production has shifted into the market over time, one needs repeated time use surveys on the same country over time. We have found that repeated national time use surveys exist for only seven middle- and lower-income developing countries: Benin (1998, 2015), Mexico (1996, 1998, 2002, 2009), Mongolia (2007, 2011), South Africa (2000, 2010), Tanzania (2006 and 2014), Turkey (2006, 2014/15), and the Occupied Palestinian Territory (1999/2000, 2012/13).

In the absence of time use data over time for given countries, it could be informative to look at how the share of adults involved in key home production activities changes with the level of GDP per capita. For example, one could use standard Living Standards and Measurement Surveys (LSMS) surveys from the World Bank to examine participation in/time spent in specific home production activities like collecting wood and water. These surveys exist for many more countries, and are often collected in multiple years (e.g. see [Bick et al. \(2018\)](#) for use of these types of data).

3 Women’s work and structural transformation

The evolution of home production during the structural transformation has important implications for the economic role of women.¹² Traditionally women are the main source of labour for home production and this tradition persists into the 21st century, where women still spend three times as many hours on home production as men across the globe. Demands of home production are the main self-reported barriers for women to enter the labour market despite most women reporting that they would prefer to be in paid employment.¹³ These demands affect the intensive margin of women’s work – how many hours they work in the market each week – as well as the extensive margin of participation in the market at all. And, if women do work for the market, the demands of home production may also affect the type of work they choose: contributing family work without pay, self-employment, or paid work in the informal or formal sectors?

Available data from around the world, both historically and in present days, show that when women work in the market, they are much more likely than men to work as unpaid family workers, or in the informal sector, or as part-time workers. One likely reason for this is that these employment opportunities, relative to full-time jobs in the formal sector, are likely to be more compatible with demands from home production.

3.1 Female labour force participation, job type, and market hours

How does women’s involvement in market work change along the development path? A U-shaped relationship between women’s labour force participation and economic development has been documented both historically for the US and other developed economies and over large cross-sections of countries, see (Sinha, 1965; Boserup, 1970; Durand, 1975; Goldin, 1995; Mammen and Paxson, 2000; Olivetti, 2014). Durand (1975) is the first comprehensive study, which reports on a world-wide study of labour force characteristics conducted at the Population Studies Center at the University of Pennsylvania. This study puts together Census data from 100 countries during 1946-66, covering 72% of the world’s population. Later studies in demography

¹²See Mincer (1962)’s pioneering work on the role home production for understanding female labour supply.

¹³See Addati et al. (2018) and footnote 1 and 2 in introduction for data source.

and economics extend this work with both historical data and more recent data.

The labour force participation (LFP) rate is the labour force relative to working age population, where labour force includes both employed and unemployed. The concept of the labour force (or the economically active population) aims to include individuals who supply labour for production of economic goods and services which contribute to national accounts income. This definition excludes home production from the labour force, as the output of this activity is for own use. Specifically, the International Labour Organization (ILO) data on labour force is based on the 1993 International Classification of Status in Employment and it includes five main categories of jobs: paid employment jobs (employees) and self-employment jobs (employers, own-account workers, contributing family workers, and members of producers' cooperatives).

Figure 3 plots the female LFP rate against the level of development for all countries using OECD and ILO data on labour force participation of women and Penn World Tables data (version 9.1) for GDP per capita.¹⁴ To summarise the average relationship between GDP and female LFPR, we estimate regressions of FLFPR on a quadratic in the log of real GDP per capita, with (dashed blue line) and without (solid blue line) country fixed effects and plot resulting predictions in the figure.

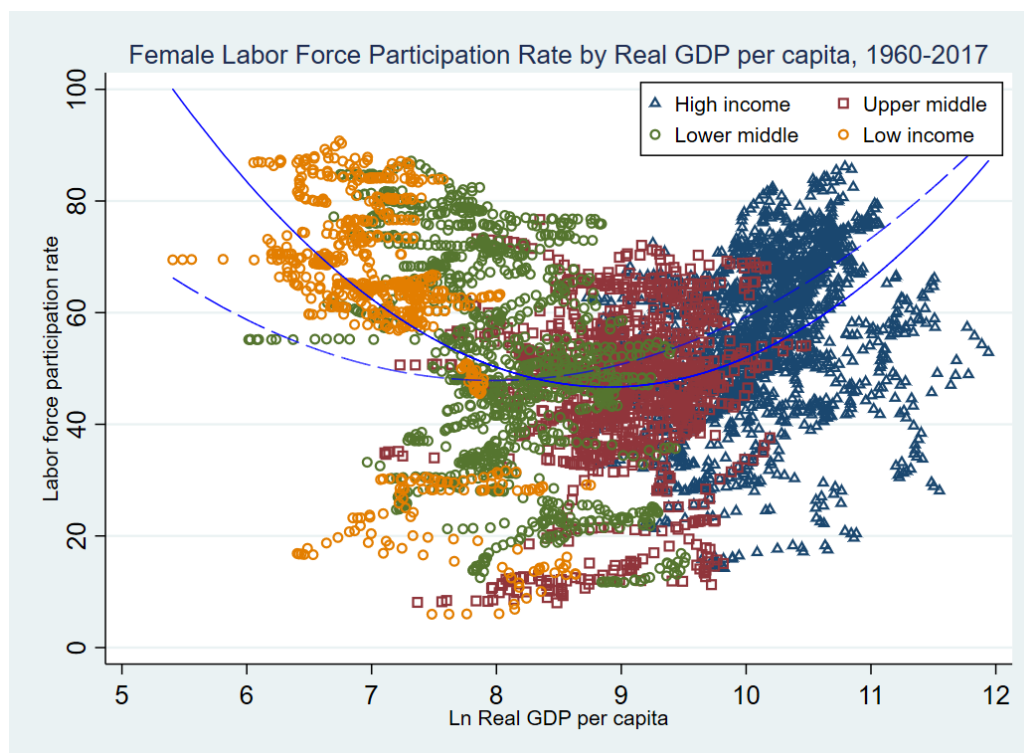
The intuition behind the U-shape (Sinha, 1965; Boserup, 1970; Durand, 1975) traced out by the solid blue line (and to a lesser extent, the dashed line) is that as the economy grows, the farm sector and family-based production on family farms shrinks and households get richer. Instead of moving into “dirty” factory work (which social norms suggest are not appropriate for women), families buy back women’s time from market work into the home. As the economy continues to grow, and as more “pleasant” (and culturally acceptable) service sector jobs expand and women attain education, the opportunity cost of staying at home rises and women increase their participation in the market.¹⁵

While others have documented a clear picture of the U-shaped female LFP rate using his-

¹⁴Labour force participation includes both employed and unemployed individuals. The ILO data are from their modelled estimates series for 1990-2017, and we supplement this with data on OECD countries from 1960-1990.

¹⁵Given Figure 3 is for age 15 and above, increases in education leading to women spending more time in school could also contribute to the downward portion of the U-shape. However, as reported in Durand (1975) Table 6.5, the U-shape of female LFP is also present among older age groups, indicating that there are other factors at play in driving up female market work as GDP per capita rises.

Figure 3: **Female labour force participation and development, all countries**



Notes: Female LFP is computed for individuals age 15 and older. OECD country data for 1960-2017 taken from OECD statistics. For all non-OECD countries, ILO data on LFP are for 1990-2017. Real GDP per capita (2011 international dollars) from Penn World Tables v9.1. Country income groups are from World Bank 2020 classifications. Blue lines show predicted values of female LFP from regressions of FLFPR on a quadratic in $\ln(\text{Real GDP per capita})$ first excluding (solid blue line) and then controlling for controlling (dashed blue line) for country fixed effects.

torical data for the OECD countries, both across and within countries (e.g. Olivetti (2014)), the orange and green markers in Figure 3 reveal that the picture for developing countries is still incomplete. Many of today’s developing countries are on the declining part of the U-shape, a phase which was completed in developed countries a few decades ago. One important question for future research is whether developing countries will move onto the increasing part of the U-shape as they develop.¹⁶ Yet another line of research would be in examining changes in the relationship between home and market work for women in East Asian and Asian economies that have experienced recent, rapid growth and structural transformation (e.g. Korea, China, Viet-

¹⁶The lowest female LFP in Figure 3 are mostly Middle Eastern/North African (MENA) countries where LFP was mostly flat during this period.

nam). A deep-dive into any of these economies may tell us more about whether the patterns of female work through the structural transformation observed in the West were replicated during these more modern transitions, or not.

Unfortunately, complicating the study of future changes in the female LFP rate in the developing world is a recent change in how the ILO officially measures labour force participation. [Gaddis et al. \(2020\)](#) note that in 2013, the ILO adopted a resolution that changed the way in which individuals qualify to be counted as working. The change, which adjusts a prior definition that has been stable since the early 1980s, essentially narrows the definition of work to include only work done for pay or profit, or in the case of farming, based on the self-declared main intended use of the farm output. To assess the impact of this change in measurement, [Gaddis et al. \(2020\)](#) implement the new definition for a couple of sub-Saharan African countries with the right labour force survey data. They show that the new measure substantially understates employment in rural areas, and especially so for women. This is because women in rural areas are more likely to be farming for own-use: such activity will be captured in a different category called “one-use production”. It is not yet clear whether the ILO will continue to produce the old measures of employment or female LFP rates to maintain continuity of these series over time. While it should be possible to reconstruct comparable measures of female LFP rates from original labour force survey data and possibly from some Census data, this change in measurement raises the costs of conducting research in this space.

3.1.1 Unpaid family work

Although the concept of LFP is well-established, in practice and as we have just noted, measurement can vary and impair the comparability of LFP rates over time and across countries. This is especially the case for female LFP (see [Durand \(1975\)](#) for an early discussion on all sources of discrepancies). One of the key difficulties of measuring who is doing market work is how to treat female household members who live on family farms but who do not report a non-farm gainful occupation. Some censuses consider them all to be employed in agriculture, while others count them all as housewives and not in the labour force. Similar discrepancies also apply to women who are involved in other non-farm family businesses.

As difficult as it is to measure (see [Goldin \(1995\)](#)), unpaid family work on family farms

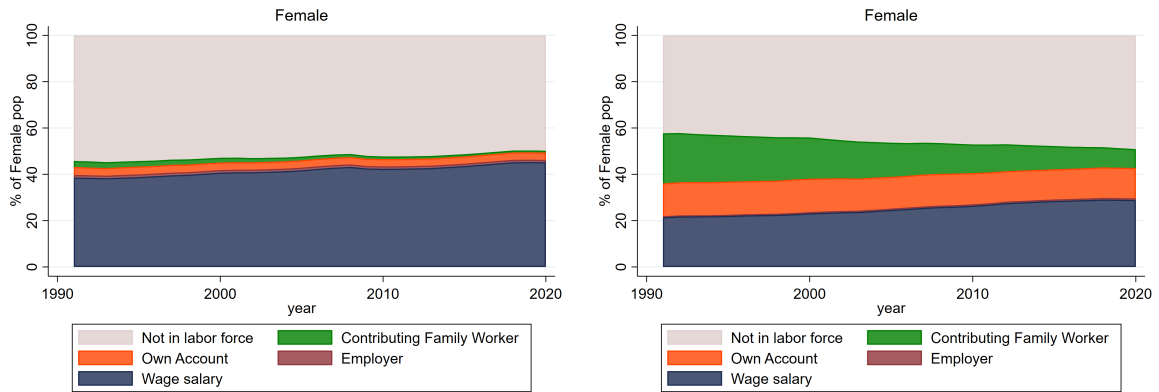
and businesses was an important source of employment for women historically. According to [Ruggles \(2015\)](#), half of American women aged 18 to 64 participated in unpaid family work in the 19th century. Such work continues to be important for women in developing countries.

Figure 4 reports the percentage of female population by employment status (including out of the labour force) and by country income group for the years 1990-2015. Types of employment (shown as different colors in the figure) include wage work, contributing family workers (e.g. family farm workers and family business workers), own-account workers, and employers. The ILO defines contributing family workers as those workers who hold “self-employment jobs” as own-account workers in a market-oriented establishment operated by a related person living in the same household.

It is clear from these figures that while unpaid family work (contributing family worker, the yellow area in each figure) is no longer a major source of female employment in high-income countries, this type of work still makes up a substantial share of women’s market employment in developing countries. Figure 4(b) shows that unpaid family work has been falling in middle-income countries over the last 15 years. But the share of female work in lower-middle and low-income countries has not shrunk to the same extent (Figures 4(c) and (d)). We also note that the decline of the share of contributing family workers in the upper-middle income countries contributes to an overall decline in the female LFPR and an increase in women being out of the labour force. This same pattern is reported in [Ruggles \(2015\)](#) for the US during the early part of the 20th century.

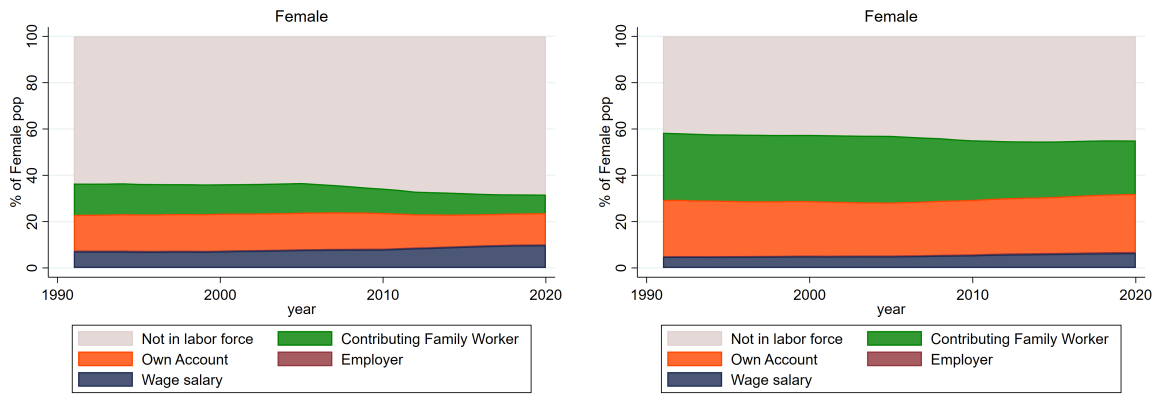
Measuring unpaid family work is relevant to documenting female labour force participation during the process of the structural transformation. Using historical data from seventeen OECD countries during 1840-2005, [Ngai et al. \(2020\)](#) provide evidence that the declining part of the U-shape of FLFP is related to falling employment shares in agriculture, and specifically the decline of family farms. The increasing part of the U-shape is related to the rising employment share of services in the economy, an important force through which marketisation of home production occurs.

Figure 4: **Composition of female work by level of development**



(a) High-income countries

(b) Upper-middle income countries



(c) Lower-middle income countries

(d) Low income countries

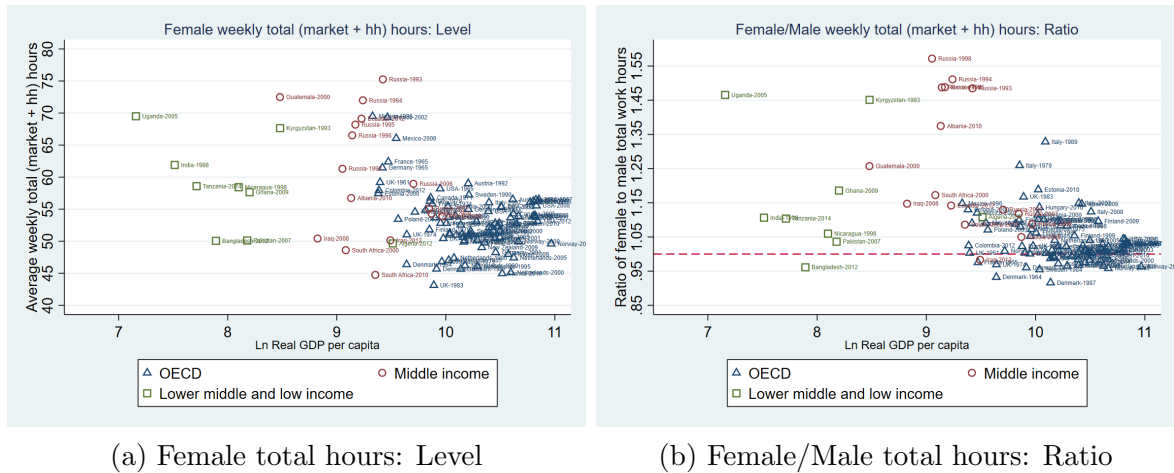
Notes: Data are from World Development Indicators: data series for wage work (SL.EMP.WORK.FE.ZS), employer (SL.EMP.MPYR.FE.ZS), own-account workers (SL.EMP.OWAC.FE.ZS), family workers (SL.FAM.WORK.FE.ZS), and self-employed (SL.EMP.SELF.FE.ZS).

3.1.2 Women’s work in the market and home

Looking at female LFP gives us a broad picture of women’s involvement in the labour market but it misses some key elements in understanding the full picture. Does high female LFP necessarily mean women devotes a lot of time to market work? Does a low female LFP reflect that women are enjoying more leisure time? To address these issues we need time use data on market hours and home production hours so as to get a sense of total working hours.

Using time use surveys for a set of OECD countries, [Burda et al. \(2013\)](#) document that to-

Figure 5: Weekly total hours of work (market + home) by gender and level of development



Notes: Weekly total hours include market and home production work time for women and men aged 15-64.

tal work hours (market hours plus home production hours) are similar across men and women, especially in non-Catholic countries. They call this the “iso-work phenomenon”. This observation suggests that in high-income countries it is the *distribution* of work time across home and market that lowers market work hours for women.

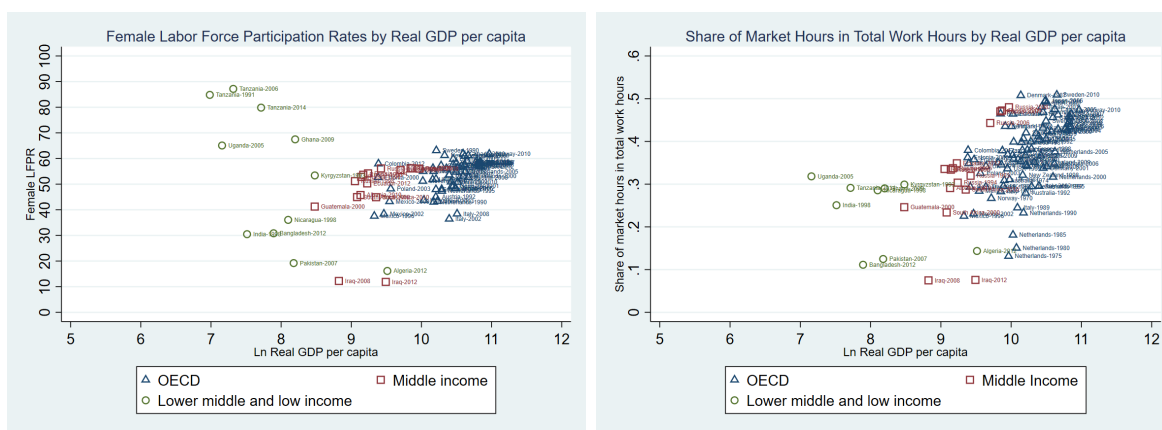
In lower-income countries, though, as we show in Figure 5, women work *more* total hours than men, in some cases many more hours. At a range of different income levels, women report working more than 40 hours per week across both home and market activities. The ratio of female to male total hours of home and market work shown in Figure 5(b) is only around 1, or below 1, for a minority of countries. Combining these figures with the patterns in Figure 1, it is clear that women’s time in market work is substantially lower than men’s but their time spent in home production more than exceeds the balance of time men spend in the market and in home work. This leads to substantially more inequality in weekly total work hours relative to developed countries.

As GDP per capita rises, though, total time worked by women does fall (Figure 5(a)), suggesting that leisure is increasing with GDP per capita. In addition, growth in national income is also accompanied by declining gender inequality in total hours of market plus home work.

The experience of developed countries therefore suggests that as home production “marketises” through the structural transformation, inequality in work time across women and men may be reduced.

In figure 6, we restrict our focus to countries that have both time use survey data from [Bridgman et al. \(2018\)](#) and FLFP data from the ILO. We plot the FLFP rate and share of market hours out of all work hours for women, highlighting different country income groups in different colors. A key takeaway from this figure is that in the set of developing countries in this sample, many women participate a little bit in the labour market each week. For example, extensive margin labour market participation is high (over 80%) for women in Tanzania and Uganda, but the share of total work hours spent in the market is only around 30%. This low intensive margin activity is probably revealing some frictions that lead to women needing to combine market work with home work. In some of the poorest countries, it may be more important to address factors that constrain intensive margin increases in market work time.

Figure 6: **Female LFP and distribution of hours in home and market sectors**



(a) Female LFP

(b) Female market hours/total hours

Notes: Countries included are those with female LFP data from the ILO and time use survey data from [Bridgman et al. \(2018\)](#).

3.2 Women’s market work and the service economy

As Reid (1934) observed and Lebergott (1993) documented with consumption expenditure data, historically many home activities have been transferred to the market through the process of marketisation.¹⁷

“As time went on, one form of production after another, spinning, weaving, sewing, tailoring, baking, butchering, soap-making, candle-making, brewing, pre-serving, laundering, dyeing, gardening, care of poultry, and other tasks have wholly or in part been transferred to commercial production. In addition, child care, education, and the care of the sick are now to a large extent carried on by paid workers.” (Reid 1934: 47)

This marketisation process is closely linked to the process of structural transformation, namely the decline in agriculture, hump-shaped manufacturing, and rising services along the development path. The process of structural transformation is often measured using value-added shares or employment shares in each sector and is well documented both historically for developed countries and over large cross-sections of advanced countries (Kuznets, 1966; Maddison, 1980; Herrendorf et al., 2013).

One way to see the process of marketisation and structural transformation in developing countries is to look at employment shares by broad sector of work. We zoom in on sub-Saharan Africa for this exercise, and use a panel data set on sectoral employment shares collected for 11 African countries over forty years in the Gronigen Growth and Development Centre (GDCC) dataset (Timmer et al., 2015).¹⁸

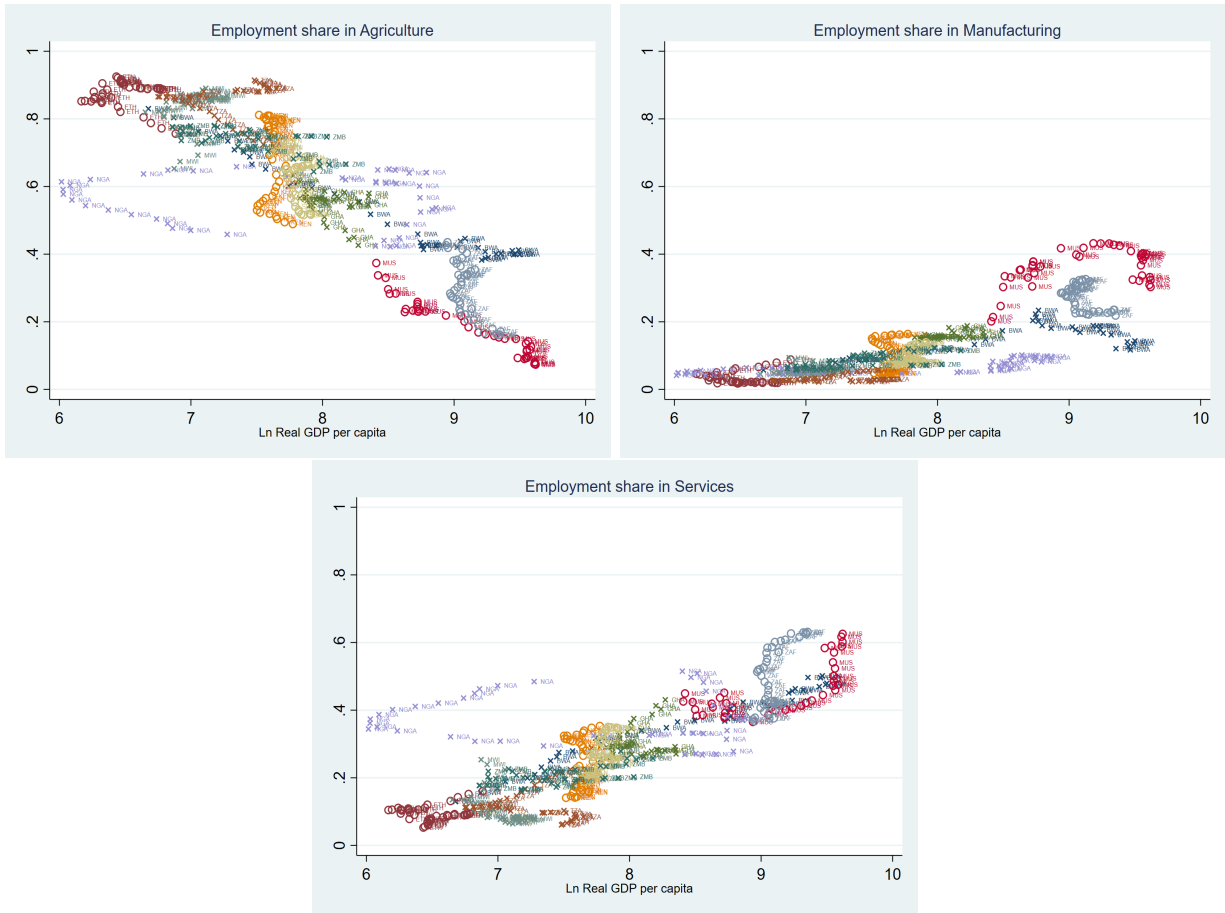
Figure 7 shows that as countries get richer, employment shifts strongly out of agriculture, into manufacturing and services.¹⁹ Rodrik (2015) observes today’s developing countries see their manufacturing sector shrink at lower levels of GDP per capita than happened in developed

¹⁷See Lebergott (1993) Chapter 8 on the transition from home to market using time use data and household expenditure data. He wrote *But by 1990 they increasingly bought the goods and services they had produced in 1900. ‘Consumerism’ appeared when housewives began to buy goods they had once produced.*

¹⁸The specific countries include Botswana, Ethiopia, Ghana, Kenya, Malawi, Mauritius, Nigeria, Senegal, South Africa, Tanzania, and Zambia. Details on data construction are in (Timmer et al., 2015).

¹⁹Nigeria’s pattern is a bit of an outlier; this may be related to the fact that it is an oil exporter. Also note that developing countries may experience decline in GDP.

Figure 7: **Employment shares by level of development: SSA countries 1970-2010**



Notes: Employment share data by sector for 11 countries in sub-Saharan Africa from the GDCC 10-sector database (Timmer et al., 2015). Real GDP per capita (2011 international dollars) from Penn World Tables v9.1.

countries historically, a feature termed premature de-industrialisation. This observation implies an earlier movement from agriculture into services and may indicate a faster marketisation of home production activities in currently developing countries. What does the shift into services mean for home production? These typical figures of the structural transformation in a subset of African countries show a reallocation of labour across sectors as economies get richer but do not connect back to home production very clearly. Bridgman et al. (2018) draw out the link between the growth of the service sector and changes in home production over time using a panel based on 136 time-use surveys from 43 countries over the period 1960–2014. They show that the growth in market services is associated with a decline in home production hours,

especially for women, during a period where most home production activities are services. Yet as mentioned before, very few of the lower-income countries in their sample have time use data over time, making it harder to study marketisation and the shift towards services within the lowest income countries over time.

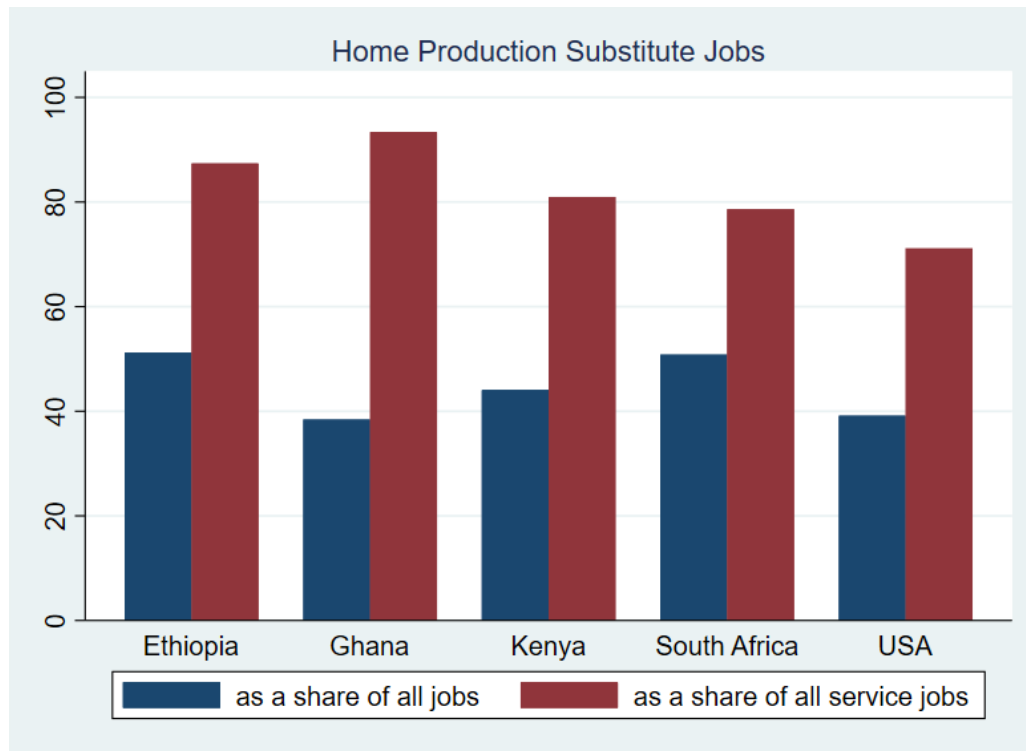
The literature has also measured the marketisation of home production by looking at the share of jobs in the market that are doing home-substitutable activities. For example, childcare facilities, health workers, cleaners, restaurants, hotels, all substitute for home produced services. As economies grow, more and more jobs tend to be in these sectors, providing market substitutes for what families used to spend time producing. The evidence on the growth of employment in these home production substitute sectors (as a subset of the service sector) has mainly come from developed countries, see for example [Addati et al. \(2018\)](#), but this is something that could be an area of research in developing countries too.

We illustrate how one could study the extent of marketisation in developing countries by comparing data on employment in home substitutable sectors in the US with similar measures from South Africa, Kenya, Ghana, and Ethiopia. Using officially published statistics on market work by sector in each country for the year 2015, we graph the share of all jobs and the share of all service sector jobs (for both men and women) that are in home substitute activities in Figure 8. We define home-substitutable sectors to include jobs in education, health and social work, arts/entertainment, domestic work for private households, and all other services (e.g. personal services including food and accommodation, and miscellaneous repairs) that are not transportation, financial or real estate, professional services, defence, and public or private administration.²⁰ All service jobs include all home production substitute jobs and all other service sector jobs not already counted. Public administration and defence are excluded from both categories.

What we see is that in 2015, Ethiopia, Ghana, and South Africa, a larger share of all jobs (for men and women) are in home substitute work relative to the US. In all countries, home substitute jobs represent over 50% of all jobs, and make up the majority of service sector work. A natural extension of this would be to consider how the share of marketised home production

²⁰We included jobs in wholesale and retail trade as part of the home substitutable jobs because more aggregate categories meant we could not separate out these jobs from repair jobs in a few of the countries.

Figure 8: **Extent of Marketisation of Home Production**



Note: Share of employment (total, or in services) that can be classified as home production substitutes. See text for definition. Data are from official statistics based on national household or labour force surveys.

substitute jobs has changed over time within a set of developing countries for which there are data.

3.3 Data needs: Measuring marketised home services

In order to document the shift into services in developing countries, and to describe the level and process of marketisation of home production in developing countries, we need more graphs like the ones above, for more countries, for more years. We need similar data on employment shares by narrow sector of work for all lower- and middle-income countries to really see how far marketisation has proceeded in non-OECD countries.

The GDCC data are excellent for the 11 SSA countries included, and an update and extension to the dataset to be released in early 2021 will expand the time range and set of African

countries included in the sample.²¹ Ideally, one could build GDCC-like datasets for as many low- and middle-income countries as possible. Doing this in developing countries would shed some light on the extent to which a market even exists for the necessary demands of running a home.

National statistics offices may provide another way to measure employment numbers by sector in many countries over longer periods of time. Other data sources like Census data could provide employment by sector information over long periods of time, with information from labour force surveys filling in the time gaps in more recent decades. World Bank LSMS surveys may also be useful here.

There are two important challenges in measuring the level of marketisation in developing countries. One is that many people are employed in the informal sector, and their jobs may not be captured in official national statistics. The other is that many people may have multiple jobs, in multiple sectors. Therefore describing the nature of “most” jobs requires a way of characterising these multiple roles (e.g. choosing a primary job, or using time use data to allocate time across market activities that are and are not home substitutes). It is reasonable to think that ignoring these issues is likely to underestimate the extent of marketisation in developing countries. Note that the GDCC database is built on population census data and supplemented by nationally representative labour force surveys, making it more likely that the informal sector work is captured to a better extent than in national statistical office reports on formal (wage) work.

4 Marketisation and barriers to marketisation

If marketisation of home production provides opportunities for households to buy in home production services rather than use female labour in the home, and if marketisation provides job opportunities for women in the market, it is important to understand the forces that trigger this marketisation. In this section, we discuss factors relevant for marketisation in a frictionless world, set out some of the barriers that have slowed down the transition of female time from

²¹Relatedly, the UN has released a dataset called the Expanded Africa Sector Database which contains data for African 18 countries from 1960 to 2015.

home to market in developed economies, and discuss the macroeconomic implications and costs of these barriers.

4.1 Forces that shape Marketisation

What forces are responsible for marketisation of home production? Both technological progress at home and in the market play a role in altering the relative costs of producing home services in the household versus in the market.²²

When service sectors produce close substitutes to home production (for example, restaurants that provide alternatives to cooking at home), faster productivity growth in these market services triggers the process of marketisation: production will be outsourced to the market (Rogerson, 2008; Ngai and Pissarides, 2008). This marketisation process creates labour demand for women as these sectors have higher female intensity and at the same time allows those released from home production to work in sectors that have higher female intensity. As home production is outsourced, two jobs are created. This process contributes to a rise in female market work (Ngai and Petrongolo, 2017; Rendall, 2018; Buera et al., 2019).

The development of market services is linked to the process of the structural transformation. Broadly, market services expand during the process of structural transformation due to price and income effects (Herrendorf et al., 2013). Price effects are based on the assumption that services are complements to other consumption goods: a rise in the relative price of services, due to its slower productivity growth, implies higher expenditure shares on services – the Baumol effect. Income effects, in contrast, are due to preferences that imply that people have higher income elasticities for services: higher income implies higher expenditure shares on services – the Engel curve.²³

Certain triggers for structural transformation may be more or less likely to set in motion income and price effects that lead to marketised home production. For example: improvements such as occurred in the Georgian agricultural revolution paved the way for the industrial rev-

²²See Gronau (1997) for a survey on the theory of home production.

²³As noted by Kongsamut et al. (2001) income effects for services can also be related to the presence of home production. Specifically, if home produced output is a good substitute for market services, then higher income is associated with a higher degree of marketisation, i.e. more home production is outsourced to the service sectors (Moro et al., 2017; Ngai and Petrongolo, 2017).

olution in 18th century England; or in India in the 1960s, the Green revolution led to large increases in agricultural productivity. This type of productivity growth is sometimes referred as the “push” mechanism that releases workers out of agriculture, and works to expand market services through both the Baumol effect and the Engel Curve, once subsistence consumption in agriculture is satisfied. ²⁴.

International trade is another important trigger for structural transformation in developing countries, affecting employment through productivity growth and/or through income growth. If opening to trade grows the economy, this can lead to a higher demand for services (income effect). If opening to trade generates productivity growth outside of the home sector, this can also marketise home production (price effect). Trade is potentially a force for shifting time out of the home and into the market at lower levels of GDP than happened in developed countries.

Another technological channel for marketising home production time is the falling relative price of household durables, induced by faster productivity growth in sectors that produced these durables. [Greenwood et al. \(2005\)](#) refer to this as “engines of liberation” releasing female time from home production to market. [Cavalcanti and Tavares \(2008\)](#) provide some support for this view by documenting a negative relationship between the relative price of household appliances and female labour force participation, using a panel of ten OECD countries during the period 1975-1999. An alternative view based on historical data for the US is that the availability of household durables may create more work for women – with clothes being washed more often and better meals being served ([Mokyr, 2000](#); [Vanek, 1973](#)).²⁵

4.2 Frictions slowing women’s transition from home to market

Around the world, developing countries continue to experience technological progress in agriculture, opening borders to trade, and improved home production technologies, all of which could set in motion structural shifts in the labour market. Against this backdrop, various frictions may get in the way of women transitioning smoothly from home to market.

²⁴Rapidly increasing agricultural productivity played an important role in driving the decline in family farms, and hence to the declining part of the U-shape female labour force participation ([Mukhopadhyay, 1994](#); [Ngai et al., 2020](#))

²⁵See also [Buera and Kaboski \(2012\)](#) for the argument that more affordable household durables may lead to service activities being brought back into home production, for example the shift from using the laundromat to the washing machine at home.

We have seen in previous sections that home production easily represents at least a part-time job, and at most more than a full-time job, in different countries. The requirements of childcare and elder-care place formidable obstacles in the way of women’s work, in developing and developed countries alike. As long as women are primarily responsible for child- and elder-care – because there is no market for care work, or because these market services are too expensive, or because there is a cultural norm against outsourcing this work to the market – they will only be able to work on an intermittent basis, in activities that can be stopped and started. For care work to get done, women need flexible, part-time work; or households and families need to restructure; or there needs to be an infrastructure for childcare/elder-care outside of the home (a marketised care sector).

As we noted in Figure 4, a large share of women’s work is in unpaid family work. Historically, this was also the case in the US. However, as family farms and businesses disappeared in developed countries, it became more difficult for women to combine home and market work. The shrinking of work on family farms coincided with a return of women to the home in the US. In developing countries, women may continue to need to work in family businesses, or as self-employed workers in the informal sector, to cope with a schedule that facilitates childcare.

In addition, one of the major barriers to women moving their time into the market is the social norm regarding women’s role in home production, especially for married women (Goldin, 2014; Erosa et al., 2020; Lee, 2020a). A traditional gendered view of time use in the family is that women are mainly responsible for taking care of the household while men are the main bread-winners in the market.²⁶ Globally, men and women in several parts of the world continue to hold strong beliefs about whether women can work outside of the home, and in what industries women can work (Addati et al., 2018). One strand of work compares immigrants from different origins (e.g. Fernandez and Fogli (2009); Alesina et al. (2013)) to show that culture from their country of origin persists and has a large influence on female decision to work in the market. Alesina et al. (2013) argue that these norms have deep roots linked to gender-specific comparative advantage in agriculture production, providing empirical evidence for Boserup’s thesis that male advantage in the labour market stems from male advantage in driving the plough in plough-based cultivation (Boserup, 1970).

²⁶See Fernandez (2009) for a review on the effect of culture on female labour supply.

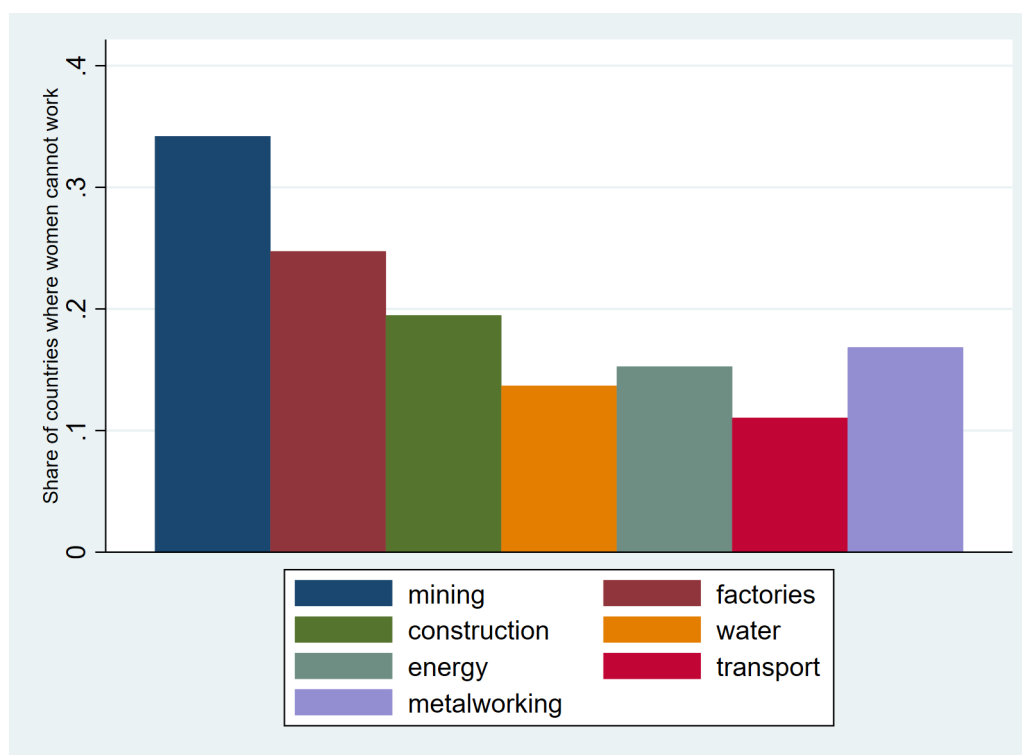
In addition to norms and culture, legal constraints on the types of market work women can do have been important in developed countries (e.g. marriage bars in rich countries in the past). Today, legal restrictions constrain women’s work in certain sectors of developing countries: [Hyland et al. \(2020\)](#) show that in the average country, women have three quarters the rights of men in the workplace. Many of these restrictions are similar in flavor to restrictions on women in the 19th century in rich countries: protection of weaker workers, especially around childbirth time. Yet some restrictions are broad, covering all non-pregnant, non-nursing women and many sectors of the economy. Figure 9 shows for a range of industries, the share of developing countries in which women cannot work to the same extent as men. These data are taken from the World Bank’s database on *Women’s Work and Law*. Gender-based restrictions on work are most prevalent, although perhaps least binding, in the mining sector, where female employment is typically low even in unconstrained settings. More surprisingly, 25% of developing countries restrict women’s work in factories and around 20% do in construction.

4.3 Implications of women’s choices

When women face barriers to transition from home to market, or barriers to transitioning across sectors during the structural transformation, there are macroeconomic consequences from this misallocation of time and talent. Barriers to women’s transition from home to market generates misallocation of talent, not just across home and market but also within occupations in the market. Using data for the US, [Hsieh et al. \(2019\)](#) show that the decline in these barriers between 1960 and 2010 has contributed to an improvement in the allocation of talent and contributed significantly to economic growth in terms of market output and increasing total output.

When social norms constrain women’s choices, requiring women to be the primary housekeepers and unpaid caregivers, this imposes a constraint on women’s time allocation, and may induce women to choose occupations with more flexible or shorter working hours and more generous parental leave instead of following their comparative advantage. Preferences for these types of job amenities have been shown to be important for women’s choice of which firms to work in, using employer-employee matched data from Finland [Xiao \(2020\)](#) and Brazil [Morchio and Moser \(2020\)](#). This home production constraint, affecting women’s choice in occupation

Figure 9: **Share of developing countries where women face employment restrictions**



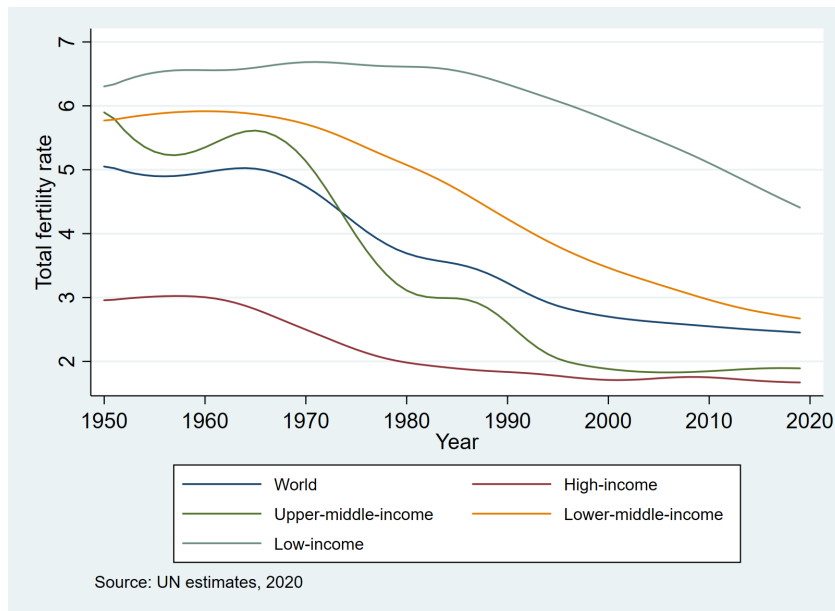
Note: Graph shows for each sector of employment, the share of countries in which non-pregnant, non-nursing women cannot work in the same way as men can. Data are from the World Bank’s Women’s Work and the Law database. Means for developing countries are shown.

and firms, is also reflected in the gender pay gap (Goldin, 2014; Erosa et al., 2020; Xiao, 2020; Morchio and Moser, 2020).

The importance of this form of barrier is also reflected in the fact that women tend to work on family farms during the early development stage as this allows women to combine home production and market production more easily. But as shown by (Lee, 2020b), using a sample of 66 countries, this form of misallocation of female talent across sectors contributed significantly to the relatively low agricultural productivity in developing countries. With the process of structural transformation and the modernisation of agricultural sector, women’s work on family farms is declining over time. The choice of working in the market now means leaving home, making it incompatible to combine home production and work.

As shown in national time surveys across the globe, and discussed previously, a key com-

Figure 10: Total fertility rate by region and year



ponent associated with the home production time constraint on women is getting married and having children. As women’s education increases around the globe and the improvement in awareness in gender equality in terms of work at home, market, and pay, it is not surprising to see fewer women choosing to get married, have children, or have as many children. Figure 10 shows the ongoing decline in the number of live births per women, using data from the United Nations. According to the UN forecast, world population growth will be zero by 2100. This will have important implications for the future of economic growth. As shown by Jones (2020), humans are needed for knowledge production, since this is the driver of technological progress and an engine of growth. Negative population growth implies a gradual disappearance of the human race and the end of economic growth.

The challenge ahead is therefore to provide an environment, perhaps by removing some of the existing barriers to combining childcare and market work, so that women can allocate their talents according to their comparative advantage with a solution for the home production requirement. The development of the service economy can facilitate the process of marketisation of home production, and social norms regarding women’s role in home production also have the potential to change in response to a changing economic environment.

5 Policies tackling barriers to women’s market work: Evidence and knowledge gaps

In developing countries, there are many frictions we do not fully understand that keep women’s market work low on either the extensive (participation) or intensive (hours) margins, and contribute to keeping women’s overall time spent in home and market work higher than that of men. These barriers likely contribute to misallocation in the labour market, and to large gender gaps in labour market outcomes like hours of work, labour market participation, and wages.

How can developing countries address these frictions to promote growth and gender equality? How can these countries position themselves well to facilitate a shift in women’s time towards their highest productivity sector – whether that is home or market – once technology or trade-induced structural transformation occurs? In this last section, we outline some broad areas for future research on these questions. We cover policy areas that address frictions on the home production side (public infrastructure, provision for child- and elder-care), and on the market production side (addressing gender-based social norms and laws, and supporting productivity improvements in part-time work and informal sector employment).

5.1 Labour productivity in the home sector: Public infrastructure

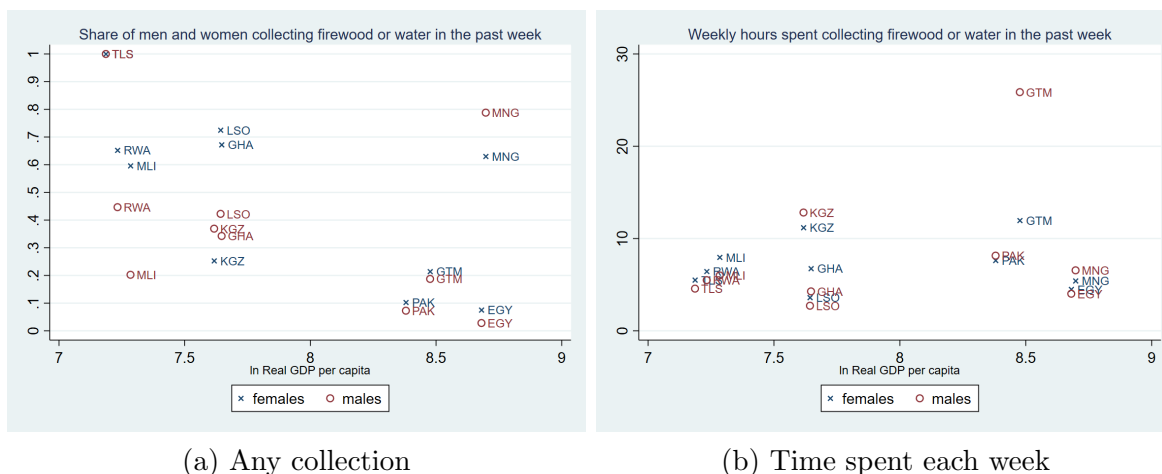
Infrastructure seems particularly important for developing countries. Reid (1934) made the point forcefully about how broad economic changes happened when industrialisation began, and where market productivity took off relative to home productivity:

After 1800 economic conditions changed rapidly. Roads improved steadily. Trade increased. Modern inventions made the most efficient tools too expensive for small-scale household use. Steam power possible only for centralised industries brought about the withdrawal of much manufacturing from the home. Reid (1934, p. 45)

While developing countries may experience global trade (for example) as a force that accelerates the shift to the market, the lack of industrial structure (roads, energy, water and sewage systems) slows it down. The lack of public infrastructure is likely to create a brake on marketisation. We show in Figure 11 that in many developing countries, large fractions of men

and women spend a considerable amount of time each week just fetching wood and/or water for their homes.²⁷

Figure 11: **Collection of wood and water by GDP per capita**



Note: Data are from [Bick et al. \(2018\)](#)

What do we know about whether new access to basic utilities at the household-level releases female time from home production or whether it translates into more market work for women? Some direct evidence from randomised trials in urban Morocco ([Devoto et al., 2012](#)) and rural Kenya ([Kremer et al., 2011](#)) shows that having better access to clean water reduced the time spent in home work. But none of the released time translated into more market work. In Kyrgyzstan, however, [Meeks \(2017\)](#) shows that new water infrastructure substantially reduces time spent in home production, and that some of this time does move into the market, with the rest taken as leisure. [Dinkelman \(2011\)](#) shows that grid electrification in South Africa changed the nature of home production in rural areas. Newly electrified homes relied more on electrical appliances for lighting, cooking, and heating, and new access to electrification also increased net female employment. In that paper, evidence pointed towards a net increase in labour supply driving increased female market work. Yet electricity could also change the demand for female labour. In the historical US [Vidart \(2020\)](#) shows that electrification in the late 1800s and early

²⁷The data for this figure are from [Bick et al. \(2018\)](#). Information on wood and water collection is assembled from various labour force surveys.

1900s affected female LFP by raising the return to hiring skilled workers into new types of jobs, drawing women out of the home. In turn, these new jobs raised the return to education, leading women to invest in more education over eight decades. This link between infrastructure and investment in human capital, and then to employment in higher-skilled sectors – part of the structural transformation – is an under-explored area in developing countries.

Some researchers have found small to no impacts of access to basic utilities on time spent in market work (e.g. [Lee et al. \(2020\)](#)). One possibility is that there are complementary constraints faced by women involved in home production. To release female time into the market, a number of home production constraints may need to be lifted at the same time: for example, access to efficient cookstoves may not reduce female time in home production if someone still needs to take care of children. This point naturally leads to a consideration of another key constraint on how women can use their time: the need for safe, quality child-care (or elder-care).

5.2 Supporting home-substitute market sectors: Care work

What types of policies might developing countries look to support the market provision of child- and elder-care? [Olivetti and Petrongolo \(2017\)](#) provide a overview of the effects of family policies put in place in many high-income countries.²⁸ These policies target gender equity, higher fertility, and child development. Their main findings are that the range of family-friendly policies put in place in these countries have small to no effect on gender gaps in employment and wages, but large positive effects on children. They note: *“The one policy that across the board improves gender outcomes (wage gaps, employment gaps, labour force participation, and fertility) is spending on early childhood care and education”*.

As we show in figure 10, fertility rates are falling everywhere, and also in developing countries. Declining fertility could release some of the frictions on women’s market work that are related to the demands of having more children, although not the time demands for increasing quality of investments in children. Even if labour market participation is more feasible for women having fewer children, the presence of especially young children affects intensive margin participation and may distort the type of work that women choose or are constrained to choose. Working when children are young requires such work to be compatible with interruptions, have

²⁸See for examples, [Cascio \(2009\)](#); [Baker et al. \(2008\)](#); [Duval-Hernandez and Ngai \(2018\)](#); [Guner et al. \(2020\)](#).

extreme flexibility, and be easy to access from a home base. Ironically, outside of subsistence agriculture, these job characteristics almost perfectly describe self-employment in home-based businesses in the informal sector. The majority of women working in developing countries are already in these types of jobs (see section Figure 4).

Is the prevalence of self-employment among women in developing countries partly related to dealing with young kids? A nice paper by [Heath \(2017\)](#) suggests some nuance in this relationship. Using an urban Ghanaian household panel survey from 2004-2013, she shows that some women drop out of market work when they have children while others increase their market work time, working more in self-employment. Those who drop out have no other family members who can help with child-care; those who remain and work more rely on older female relatives or elder children for child care support. This paper suggests that household formation is an important margin of adjustment and support system for working mothers. It also implies that childcare constraints affect the market work of three generations of women – mothers, grandmothers, and older daughters.

Can childcare subsidies work to promote women’s market work in developing countries? Possibly. In urban Kenya, [Clark et al. \(2019\)](#) use a randomised controlled trial to show that subsidised access to private childcare raises female employment by 8.5 percentage points. The subsidy worked to raise the LFP of married women, and shift the type of work of unmarried mothers to more regular/inflexible hour jobs. In this study, there was already a booming private sector market for childcare. More evidence similar to these two cases, from other settings, would be extremely useful in shedding light on how households cope with the arrival of young children and which women are most constrained by the requirements of childcare.

In general, much more research is needed into whether marketising childcare (or eldercare) could be an important avenue for generating female jobs and releasing female time to look for market work in other sectors.

5.3 Shifting social norms and reducing legal barriers

Norms against women’s market work that operate on both the demand and supply side of the labour market may be difficult to shift, but there is some evidence this is possible. Where social norms against women working are particularly strong, for example in some Middle Eastern,

North African, and South East Asian countries, policy interventions may help.

[Bernhardt et al. \(2018\)](#) use an experiment in rural India to show that the perceived social cost of women's work falls on men and that husbands' opposition to female labour is associated with their wives' lower take-up of employment. Addressing these perceived costs can cause norms to shift in a very short period of time. [Bursztyn et al. \(2018\)](#) show that in Saudi Arabia, a divergence between privately held opinions and publicly accepted norms about women working outside the home may generate a friction that keeps women trapped at home. In their setting, only one in five women above 15 years is working at all, and an even smaller share is working outside of the home. In two experiments, they randomly correct both male and female beliefs about what others believe about the place of women outside of the home. They find that this increases married men's willingness to help their wives search for jobs, as measured by their costly sign-up for a job-matching service for their wives. And they also show that this information intervention increases the chances that women switch from an at-home temporary enumerator job to a higher-paying, outside-the-home version of the job. More broadly, exposure to other ways of life through cable television or through direct information provision may also reduce the norm-based barriers to women's work (e.g. [Jensen \(2012\)](#); [Jensen and Oster \(2009\)](#)).

Aside from operating directly on preferences, policy may be targeted at specific technical solutions that can improve outcomes even in the presence of strongly persistent social norms. For example, work by [Kondylis et al. \(2020\)](#) in Brazil and ongoing studies by some of the same research team in Pakistan and in Saudi Arabia investigate the potential that providing safe transportation – female-only bus transit to work – could have for addressing norm-based constraints on women's mobility outside of the home. Results from Brazil suggest that women value these safe methods of getting to work. These studies will tell us more about whether such transportation interventions could enable some women to shift work into the market in the short-run, potentially feeding back into changing social norms about women working.

On the demand-side of the labour market, it is relevant to consider legal barriers to women participating fully in the labour market, and legal protections specific to female-intensive industries. A handful of papers consider how minimum wage legislation can affect conditions of women's work in female-intensive market sectors (e.g. see ([Dinkelman and Ranchhod, 2012](#)) for the case of domestic workers in South Africa [McKenzie et al. \(2014\)](#) for migrant workers from

the Philippines). Whether legal barriers to women working in certain industries, or a lack of job protections in female-intensive sectors leads to misallocation at the macro-level is an open area for research.

5.4 Creating jobs with home production in mind

Randomised controlled trials in labour markets of developing countries are a relatively new and active area of research. Many randomised controlled trials have identified important frictions in the informal and formal sectors of developing countries that inhibit job creation, and job matching. Some of these frictions include: lack of access to training, to capital and assets, to cash for job search, lack of access to credit, lack of information about relevant skills and jobs, or a lack of information about worker characteristics. A variety of treatments have been able to overcome these frictions and promote employment, matching, and small business performance; but many of them have not been successful.

Direct access to new jobs matters for women’s market work in the short-run. For example: [Blattman and Dercon \(2018\)](#) show that providing access to factory jobs improves employment in the short-run, especially among women – but these effects die out one year, partly because of the health-risks associated with these jobs (relative to self-employment/entrepreneurship). [Groh et al. \(2016\)](#) show that providing wage subsidies to job applicants improves female employment rates in Jordan, with large employment gains in the short run but no impacts on employment in the longer-run once the subsidy ends.

Asset transfers and capital infusions for entrepreneurs have mixed results for employment. [Bandiera et al. \(2017\)](#) show that large asset transfers and training programmes in village economies in Bangladesh improve female labour market outcomes among for the poorest women over time. On the other hand, capital infusions into small businesses in Sri Lanka ([de Mel et al., 2009](#)) did not improve business outcomes for female entrepreneurs. Recent research in Sri Lanka and Ghana suggests that this may be because capital provided for female businesses gets diverted into higher productivity male businesses within the same household ([Bernhardt et al., 2019](#)).

The role of information in inhibiting job creation and job matches seems to be important. [Carranza et al. \(2020\)](#) randomly provide information to job seekers about their skills and to

firms about job seekers in South Africa; they find that two-sided frictions matter and reducing these frictions improves job matches.²⁹ Cash is also important for finding work: [Franklin \(2018\)](#) shows that providing transport subsidies in Ethiopia allows unemployed youth to wait longer to find better jobs, making more productive matches.

Many of these papers focus on women, or examine differential effects for men and women, sometimes (although not always) finding large gender differences. Yet none of them explicitly links the effects on women’s market work back to home production, or considers whether the demands of home production are the reason for gender heterogeneity in treatment effects.

There are at least two ways in which these types of experiments could be used to shed more light on the gendered nature of employment through the structural transformation. First, they could be used to show that solving a specific job market friction for women (e.g. providing access to capital) actually increases output at the aggregate level rather than only improving welfare for the targeted individual. This would be evidence of misallocation of workers.³⁰ Second, researchers could design interventions that combine access to market work for women with interventions that affect the time constraints on home production at the household-level. This could work either by changing household productivity directly (e.g. investments that save female time in home production directly) or by stimulating the marketisation of home production services. Time use survey data would be particularly relevant here for designing the specific times of interventions on the household production side, for measuring the impact of marketised home production services on time allocations, and for evaluating the impacts of the various labour market interventions.

6 Conclusion

This paper reviews the literature and evidence on how linkages between women’s home and market work change through the structural transformation. We relate historical shifts in female time between home production and market work in developed economies to more recent changes

²⁹In related work, [Wheeler et al. \(2020\)](#) show that training work seekers to use job search platforms also improves employment outcomes in the short-run.

³⁰[Bandiera et al. \(2017\)](#) get at this somewhat by showing that the asset transfers did not hurt the employment prospects of non-treated individuals in the same villages.

in developing countries, showing that the picture for developing countries is far from complete. We highlighted the forces that contribute to shifting women's time into the market in developed countries, and the barriers that get in the way of this movement of time.

Women in developing countries face many frictions to participating in the labour market that we do not yet fully understand. We reviewed available and required data that could be used to uncover some of the frictions retarding the movement of women's time into the market in developing countries. The relevance of these frictions is important not just at the individual level, but at the macroeconomic level. Misallocation of workers to sectors in which they do not have comparative advantage leads to economic losses which could be substantial. Labour market frictions that are gender-specific also contribute to continued gender inequality in economic outcomes.

We propose several areas for future policy-relevant research addressing these frictions are proposed. On the data side, we need more time use data for more developing countries over more years to understand how women spend their time in home production and in the market. We also need more research on how access to infrastructure affects home labour productivity; how child-care services and part-time or flexible work arrangements facilitate market work; and whether social norms against women's market work are malleable.

Although [Reid \(1934\)](#) talked about how work-time flexibility and availability of part-time work were the main concerns facing US households in the 1930s, recent news articles reveal that these concerns are still present: women are still struggling with balancing home production and employment, in most countries. This balancing act has been made more apparent through the experiences of the COVID crisis in 2020. The challenge ahead is to provide an environment, perhaps by removing some existing barriers, so that women can allocate their talent according to their comparative advantage with a technological or market-based solution for the home production requirement. The development of the service economy can facilitate the process of marketisation of home production, while social norms regarding women's role of home production may also change in response to a changing environment.

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