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IMMIGRATION, HOUSEHOLD PRODUCTION, AND NATIVE WOMEN'S LABOR MARKET OUTCOMES: A SURVEY OF A GLOBAL PHENOMENON

Patricia Cortés

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ABSTRACT

Most of the literature on how immigration affects the labor market focuses on the outcomes of natives in direct competition with immigrants. This paper reviews a growing literature on an alternative channel. Immigrants, particularly low-skilled women, are disproportionately represented in the household services sector, a global phenomenon that is seen to some extent in most regions. A simple time-use model suggests that by lowering the price of market-provided household services, immigrant workers allow high-skilled native women to reduce their unpaid household production and increase their participation in the labor market. I review existing evidence that the presence of foreign domestic workers has increased the labor supply of high-skilled native women, has helped narrow the gender earnings gap in high-paying powered occupations, and that these advances have not come at the cost of native women investing less time in their children or having lower birth rates. I discuss the policy implications of these results, as well as some ethical considerations.

Patricia Cortés
Questrom School of Business
Boston University
595 Commonwealth Avenue
Boston, MA 02215
and NBER
pcortes@bu.edu

1 Introduction

There are more than 12 million foreign domestic workers in the world today; most of them are women. They represent 7.7% of all migrant workers and 17.2% of all female migrant workers.[1] These women work in households, where they clean, cook, and provide childcare and eldercare. In some countries, a large share of households have a live-in foreign domestic worker (FDW). For example, there is a FDW in one out of five Singaporean households, and in Hong Kong households with a college educated mother, around 60% live with a FDW. But even in global regions and countries where it is uncommon to have full-time live-in help at home, female international migrants are heavily over-represented in the household services sector. Based on US Census Data for 2019, 50% of workers in the household services sectors were born abroad. This share has more than doubled in the last 30 years, a much more rapid pace than the growth of immigrants in the population as a whole.

There are a few reasons why the migration of domestic workers has different implications than overall migration trends, and thus deserves a separate analysis. First, given the gender division of household work, FDW mostly substitute for unpaid female labor in the household. Highly educated native women can then reallocate their time-use towards market work, the output of which is now taxable, potentially having fiscal implications. Second, particularly in the case of live-in FDW, their migration implies a separation from their families. Furthermore, because their workplace is a private space, they are more vulnerable to abuse.

In this paper, I survey the economics literature on migrant domestic workers, focusing mostly on how they impact the labor market outcomes of highly-educated native women.[2] In the post-war era, particularly in the last several decades, women have made great advances in terms of reversing the gender gap in education, labor market attachment, and representation in professional spheres (Goldin (2014)). However, gender gaps in earnings remain remarkably persistent, particularly among the highly skilled (Blau and Kahn (2017)). Studying the interaction between foreign domestic workers and women's time-use decisions sheds light on the some of the factors behind the advances women have made, as well as on the remaining challenges they still face.

The plan of the paper is as follows. I start by describing in more detail the magnitude of the migration flows, and their geographic coverage (Section 2). In Section 3, I develop a simple model of female time-use to illustrate the mechanisms and conditions by which the availability of foreign domestic workers affects the labor supply decisions of native women, as well as to investigate which subgroups of the female native population are most likely impacted. With the model's predictions on hand, Section 4 reviews the empirical evidence on several relevant outcomes. First, I discuss the evidence for the most direct outcome: how low-skilled immigration affects the prices of services that

[1] ILO (2015)

[2] Highly-educated refers to having at least a 4-year college degree. I use the terms high-skilled and highly-educated interchangeably.

are close substitutes for household production. Second, I review evidence across several countries and based on different empirical strategies regarding the positive effects that immigrant domestic workers have on the labor supply of college-educated native women. I discuss evidence on the extensive and the intensive margins of labor supply, as well as the heterogeneity of effects by household configuration. Then I examine the evidence on how the availability of foreign domestic workers has contributed to the narrowing of the gender pay gap in certain occupations. Finally, I discuss evidence on other related outcomes, such as childbearing and time investments in children. Section 5 focuses on policy implications and ethical considerations. Section 6 concludes.

2 The Phenomenon

A report from the International Labor Organization (ILO) estimated that there were 8.5 million female migrant domestic workers in the world in 2013 (ILO, 2015).[3] Overall, they account for 15% of female domestic workers, whereas migrant women represent just 3% of the female population. Migrant domestic workers are unevenly distributed across the world. Table 1 show that the most common destination for migrant domestic workers is East Asia and the Pacific (35.7%), followed by Europe (22.8%), and the Arab states (19%). This distribution is very different from the overall migrant distribution, where only 12.2% and 4% of female workers live in East Asia and the Pacific, and the Arab States, respectively. More than 60% of migrant women in the Arab States are employed as domestic workers, and more than one out of three in East Asia. This high concentration of migrant workers in an occupation is explained by destination countries' migration systems, which are heavily regulated, and, especially for the low-skilled, offer almost no labor market flexibility. In many East Asian and Arab countries, there is a special visa program for domestic workers and specific rules about their employment and wages. For example, in Hong Kong, FDWs have to work and reside in the employer's residence, cannot change employers, and receive a minimum wage (there is no minimum wage for natives in Hong Kong). The length of the visa is for two years and can be renewed, but even after staying for decades, FDWs have no right to Hong Kong citizenship or permanent residence.

Just as the concentration of migrant domestic workers is confined to certain host countries, there is also concentration of sending countries. Migrant domestic workers in the Arab Middle East and rich East Asian countries come mostly from the Philippines, Indonesia, and Sri Lanka. The Philippines, in particular, has developed an infrastructure to promote international migration, and around 10% of their labor force work overseas. Among Filipino migrant women, 70% migrate as domestic workers (Ireland, 2018). The concentration of domestic workers among female migrants is even higher in Indonesia (88%) and Sri Lanka (80%).

Even if the number of migrant domestic workers as a share of the labor force, or as a share

[3] I restrict the discussion of migrant domestic workers to women. The ILO reports 3.07 million men, but the majority of them work as drivers in Arab countries.

Table 1. Geographic Distribution of Migrants and Foreign Domestic Workers (2013)

	Share of the world's migrant workers	Share of the world's FDW	FDW share of domestic workers	FDW share of migrants
East Asia	5.26	35.7	12.5	35.5
West Europe	26.6	22.1	65.8	10.6
Arab States	4	19	73.1	60.8
Latin America	2.9	8.1	4.4	35.3
North America	26.3	6.9	71	3.3
Sub-Saharan Africa	4.9	3.6	4.9	9.4
Central and West Asia	6	2.1	33.4	4.5
South Asia	5.5	1.2	2.5	2.8
East Europe	11.4	0.7	23.6	0.8
Northern Africa	0.3	0.6	9.8	23

Source: Ilo (2015) and author's calculations.

of the migrant population, is not nearly as high in other parts of the world, there is a significant over-representation of migrants in the household services sector. As the table shows, more than two out of three domestic workers in North America and Western Europe are foreign-born, and this share has increased significantly over time. Figure 1 presents descriptive trends for migrant domestic workers in the United States from 1970 through the present, constructed using Census Bureau data. A few facts stand out. First, migrant women have always been about two to five times, depending on the decade, more likely to work in the household sector compared to native women. Second, the share of migrants in the household sector's labor force has increased from 10% to 50% over the last 50 years. Two main causes are likely behind this trend: (1) fewer natives are choosing the occupation, and (2) the 1965 Immigration and Nationality Act changed the composition of migrants to the United States in favor of migrants from lower-income, non-English speaking countries. The picture provides suggestive evidence that absent immigration, the household services sector in the United States would be much smaller today. East and Velásquez (2021) provide causal evidence that low-skilled immigrant flows increase the relative size of the household services sector.

Finally, it is worth pointing out that migrant domestic workers flows are not solely between low-income and high-income countries. It is common for women from struggling countries to migrate to better-off nearby countries to work as domestic workers. ILO statistics suggest that 20% of migrant domestic workers live in developing countries. Some examples of these South-to-South flows are Haitians working in the Dominican Republic, Peruvians in Chile, Bolivians in Argentina, and domestic workers from Lesotho, Malawi, Mozambique, and Zimbabwe working in South Africa. Most of the economic literature, however, has focused on developed host countries.

3 Theoretical Background

This section presents a simple time-use model that illustrates the interactions between wage levels, the decision to purchase household services, the market price of household services, and labor

supply choices. The model, borrowed from Cortés and Tessada (2011), informs us about (1) which groups of the population are more likely to change their time-use decisions as the prices for services that substitute for unpaid household production decrease, and (2) if women with higher household responsibilities (mothers of young children, for example) display a differential sensitivity to these. Finally, the section ends by introducing how the presence of foreign domestic workers might affect the gender earnings gap.

3.1 Set-up

An agent allocates her time between household production (h), leisure (l), and market work (n).[4] She has unearned income M (i.e., her husband's earnings), and receives a wage w per unit of time devoted to the market. For this initial setup, the wage rate does not change with hours worked.

The agent consumes one good and a set of services: a good that can only be purchased in the market (y) and services that are required for the household to function. For simplicity, I assume households need a fixed number of units of the household services (R), which can be produced at home or bought in the market at price p per unit. The number of the units of the market-produced household good that the agent purchases is denoted by x

The agent's utility is given by

$$u(y) + \psi(l) \tag{1}$$

where both $u(y)$ and $\psi(l)$ are concave, and the marginal utilities approach infinity as consumption goes to zero.

The household good production function $f(h)$ satisfies the inada conditions (i.e. $f' > 0$, $f'' < 0$, and $f'(h) \to \infty$ as $h \to 0$), guaranteeing that the agent will never outsource all of her household work. Thus, she is faced with deciding how much of her time to spend pursuing paid work in the labor market and performing unpaid work at home.

The agent maximizes her utility, satisfying the household good level requirement and her time and budget constraints. Depending on her unearned income and the wage she can earn in the labor market, an individual agent falls into one of four categories. Each case is a characterized by labor supply decisions and the consumption of market-provided household goods/services.

In the first one, the agent's market wage and unearned income are both low. This means that although the returns to working outside the home are not high, she needs to earn some income in the labor market in order to buy the market good ($n^* > 0$). The agent produces the household good/service all by herself ($x^* = 0$).

In the second case, the agent's wage is low and her unearned income high, but not too high. She

[4]The assumption here is that household production is the woman's responsibility. This is, of course, a simplification. A more realistic framework will model both partners' time-use decisions, and the distribution of household work will depend on their relative wages, relative productivities at home, the functional form of the household good production function, and gender norms. Note that in such a model if the man and woman are perfect substitutes in household production and the man's wage is higher, he will not supply any household work.

can afford to stay out of the labor force (n^*=0), but she is not affluent enough to outsource part of her household production ($x^* = 0$). This is the case of the full-time homemaker, traditionally the stay-at-home wife and mother.[5]

The third case is when the agent's wage is again low, but she enjoys a very high unearned income that allows her to stay out of the labor force ($n^* = 0$), while at the same time outsource part of the production of the household good/service ($x^* > 0$). This case permits her to consume a high amount of leisure time. Contemporary examples of this case are many women living in Arab countries where strict female roles are the norm, their opportunities in the labor market are very limited and thus their labor force participation is very low. For instance, one out of eight households in Saudi Arabia has a live-in foreign domestic worker.[6]

The last case, which is the most relevant one for this paper, is when the agent incurs a substantial opportunity cost of devoting time to household work because she can earn a very high wage. She will work in the labor market until the marginal productivity of the extra unit of time in household production is equal to spending that time working in the market and using her labor income to buy the household good in the market ($f'(h^*) = \frac{w}{p}$). Her consumption of the market-produced household good (x) is thus increasing in her wage (w) and decreasing in the price (p).

In short, based on the theoretical model of time-use allocation, we would expect to observe that those women with high wages and/or very high wealth hire other individuals to provide at least some household services. This has been a common practice for centuries among very wealthy families. What is relatively new, largely since World War II, is that women, particularly those with at least a college education, now have career options not open to previous generations of women. This is the parallel development that has arisen and created the demand that has been filled by an influx of immigrants working as foreign domestic workers in many countries. Their presence has enabled some of the time-use trade offs described in this section. The effects of this inflow, as predicted in the theoretical time-use model, are discussed in the following subsection.

3.2 The effects on an inflow of foreign domestic workers

An increase in the supply of workers producing the market-provided household services will lead to a decrease in the price of these services ($\downarrow p$).[7] Such a price change will affect the extensive and intensive margins of the outsourcing of household production, and lead to a decline in the time that native women choose to devote to household work.

[5] Though to be fair, gender norms are slowly changing and some men fulfill the role of the "house spouse."

[6] Appealing to a literary example from 200 years ago, the main plot of Pride and Prejudice (Austen, 1813) is that all the Bennet sisters need to marry to ensure their economic survival in the early nineteenth century. The two oldest sisters marry wealthy men, and their circumstances are quite similar to this contemporary example. There is no economic need to work outside the home or to perform most of the household tasks within the home.

[7] The extent to which prices go down might depend on labor market institutions. Edo and Rapoport (2019) find that the impact of immigration on the wages and employment of native workers is more negative in US states with low minimum wages.

Let's start with the extensive margin. The price decline might move some agents to the third and fourth cases, where they start opting to purchase at least some of the market provided household services that they require. If the agent's w is low, the agent's freed-up time will be consumed as leisure. If her w is high, she would increase her labor supply. With the higher supply and lower price of market-provided household services enabled by an influx of foreign domestic workers, the women who were already outsourcing some household production will devote even less of their time to household tasks (intensive margin). How they decide to use the extra time gained depends on a couple of factors. First, if leisure is an inferior good, labor supply will go up unambiguously. In the more likely case that leisure is a normal good, labor supply will go up if the time devoted to leisure pursuits is not very sensitive to income changes. Finally, among those agents earning wages high enough to have already enabled them to be consuming household services before the rise in immigrant domestic workers, the effect will be largest among those with lower wages (their marginal productivity of household work is lower).

3.2.1 Differential effect by household composition

So far, the theoretical discussion has just concentrated on how agents might choose to allocate their time between participation in the labor market and time devoted to unpaid household production. But the families who make up households often have children, and children can range in age from newborns to young adults. A natural question is if the flow of foreign domestic workers has a larger effect on the labor market decisions of highly educated native mothers with young children, who face larger household demands.[8] We can model households with small children as having a larger R. Assuming the same production function, the implication is that, keeping w constant, women with children are more likely to outsource part of their household production, and conditional on purchasing the market-provided household services, purchase more units. Labor supply decisions, on the other hand, are less straightforward. An increase in R might imply lower labor supply if the woman's wage is not that high and if she provides all of the household services herself. However, if the woman's wage is very high, she might work more hours outside the home in order to purchase more market-provided household services, thus reducing her leisure time.

While the theoretical model delivers clear predictions about different levels of time-use and spending on household services by household composition, predictions about differences in sensitivity to prices are less clear. Consider, for example, the case of a woman with a sufficiently high wage such that she outsources part of the work necessary to run her household, $x^* > 0$, and also supplies labor in the market, $n^* > 0$. As already set forth, the labor supply response to a change in the price of household services, p, depends on the magnitude and sign of the income effect on leisure. If leisure is a normal good, and given that mothers spend a larger fraction of their total income purchasing market-provided household services, the income effect of a reduction in p will

[8] The discussion presented here also applies to women with elderly care responsibilities.

be larger. Consequently, mothers would increase their leisure (and thus decrease their labor supply) relatively more than non-mothers. An opposite effect will be observed if leisure is an inferior good, or if the extensive margin's effect on labor supply is larger for mothers than non-mothers. In short, answering the extent to which the price sensitivity of labor supply is determined by parental responsibilities is an empirical question.

3.2.2 Implications for the wage gap

So far, the simple time-use theoretical model assumes that wage rates are not affected by migration flows. The most straightforward way in which immigration flows might impact wages is by increasing the supply of low-skilled workers, potentially leading to a decrease in the wages of low-skilled natives who compete for the same jobs. Additionally, if there is imperfect substitution between low-skilled male and female workers, then we might observe a widening of the gender gap in the lower end of the wage distribution.[9] Furthermore, if the wages of low-skilled native women go down, we might observe fewer of them in the labor market, or if they are participating in the labor market, working fewer hours.

The general equilibrium effects on the wages of high-skilled native women are less obvious. An increase in the labor supply of high-skilled women may reduce their relative wages in comparison to high-skilled men if men and women are not perfect substitutes. But men and women workers are thought to be much closer substitutes in high-skilled compared to low-skilled occupations. Another channel is that the rise in immigrants working in the household services sector allows high-skilled native women to outsource some home-based production. These women can work longer hours in the market, and may switch to better career paths, where wages are higher. This is more likely to happen in certain high-powered occupations, where the returns to working long hours are very high—some examples are careers in the corporate sector, in law firms, and in academia (Goldin, 2014). The simple time-use model predicts that the availability of immigrant domestic workers has the potential to help reduce gender wage gaps between men and women employed in highly skilled occupations.

3.3 Channels beyond prices

I have modeled an immigration inflow as a reduction in the price of the market-produced household good, implicitly assuming close substitution between native and foreign domestic workers. However, there are several dimensions in which immigrants and natives offer different household services. First, the labor supply by migrant domestic workers is much more flexible and can accommodate long hours. Using 2014 Census data on the labor supply of household services workers Cortés

[9] Using data from France and a structural model, Edo and Toubal (2017) find evidence of imperfect substitutability between men and women workers with the same education level and labor market experience. Their econometric analysis suggests that female migration flows have contributed to the widening of the gender wage gap.

and Pan (2019) find that compared to their native counterparts, foreign childcare workers work on average nine hours more per week, are close to twice as likely to work 45 hours a week or more, 50 percent more likely to work 50 hours or more, and 25 percent more likely to report leaving their house for work before or at 7 am. Even more extreme differences are observed in Hong Kong, where all foreign household workers are live-in, and the supply of native domestic workers is close to non-existent. Relatedly, even in places where some native domestic workers also live with their employers, foreign domestic workers are perceived as more docile given their lower bargaining power (Lan (2003)).

In addition to the supply of hours, foreign and native household workers also differ in skills – language, for example. Filipinas are better paid than Indonesians in Hong Kong primarily because of their English skills (Oishi (2005)), which Chinese-speaking families highly value. On the other hand, a large share of migrant household workers in the US does not speak English well, preventing employers from delegating some key household activities to them, such as reading to children (Amuedo-Dorantes and Sevilla (2014)).[10]

Whether because they lower the prices of household services (Cortés (2008), East and Velásquez (2021)) or expand service variety, foreign domestic workers increase the outsourcing of household production by native households.

4 Review of the Evidence

In this section of the paper, I review the empirical evidence from various countries to test the time-use model's basic implications. I also expand the set of outcomes to include fertility rates and time investment in children.

4.1 Evidence on Prices

As discussed in the section 3, migrant domestic workers may impact native's women labor supply as long as these immigrants reduce the price of outsourcing household production. In a previous study, I directly examined this question for the case of prices in the United States (Cortés, 2008). My empirical strategy used cross-city variation in low-skilled immigrant concentration, instrumented with the historical distribution of immigrants. Given my source of variation, I focused on prices of non-traded intensive services provided by low-skilled immigrant labor. In particular, I looked at the effect on city-level price indexes for babysitting/childcare, housekeeping, gardening, laundry services, and shoe repair, all market-based services that happen to be close substitutes for household production. The magnitude of the effect suggests that the immigration wave between 1980 through 2000 in the United States lowered the prices of immigrant-intensive services by at least a city

[10] Using the 2019 ACS data I calculate that close to 40% of foreign-born household workers in the US do not speak English well.

average of 9–11 percent.

In the 2008 paper, I also study the channels through which the price effects of low-skilled immigration are likely to take place in the host country. Given the nature of these services, the most obvious channel is by reducing wages. However, the empirical literature exploiting cross-regional variation has failed to find that immigration results in large wage effects on competing natives. I provide a solution to the puzzle by using a small economy trade model to show that if low-skilled natives and low-skilled immigrants are imperfect substitutes, a low-skilled immigration shock should affect mostly the wages of other low-skilled immigrants and has a smaller effect on the wages of typical low-skilled native workers. My wage regressions are consistent with this explanation: I found significant negative effects of new flows of low-skilled immigrants on the wages of established female low-skilled migrants and Hispanic native immigrants, but little effects on the wages of the typical low-skilled female native.

To the best of my knowledge, the only other paper that directly tackles the impact of immigration on prices of goods and services through a labor supply channel is Frattini (2008), who used UK regional data for the period from 1995 through 2006. Although he is unable look separately at the prices of services that are close substitutes for household production, he finds that there are significant negative effects on the growth of an aggregate price index for non-tradeable services that use intensively low wage labor (i.e. more than 25% of workers earn a wage below the 10th percentile). Additionally, in his broad sectoral analysis, Frattini finds that immigration has lowered the price growth of food away from home, haircare, and dry cleaning, all services that substitute for household production. [11]

An alternative way of showing that immigration changes the market for services that are close substitutes for household production is to focus on the impact that immigrants have on the number of workers in these industries and on their wages. East and Velásquez (2021) show that a US immigration enforcement policy, which they argue reduced the incentives of undocumented immigrants to work, lowered the total number of low-skilled women working in household services and increased their wages by 2.3%.

4.2 Evidence on Labor Supply

As discussed above, the evidence from the few papers which have studied the question is that immigrants reduce the prices for services that are close substitutes for household production. I build on these findings to explore the main question in this paper: how have these price changes for market-based household services impacted native women's time-use, particularly as it relates

[11] Another paper looking at the effect of immigration on prices is (Lach, 2007), who studies the 1990 arrival in Israel of immigrants from the former Soviet Union immigrants. Similar to the results in Cortés (2008) and Frattini (2008), Lach finds that immigration reduced retail prices, but the mechanisms he proposes are very different. He argues two complementary explanations are behind his results: (1) newly arrived immigrants were more price sensitive than natives, and (2) they also had lower search costs. Both explanations should lead to a stronger incentive for stores to reduce their mark-ups.

to labor market participation. Several papers have looked at this question for different countries and using different empirical strategies. I start by describing papers that exploit cross-regional variation in immigrant concentration and use an instrument based on immigrant networks. I then discuss papers with other estimation strategies.

4.2.1 Papers using an instrument based on migrant networks

The first paper in this vein is Cortés and Tessada (2011), which uses the same empirical strategy as in Cortés (2008) to study the effects of low-skilled immigration to the United States on several margins of native female labor supply. Informed by the simple theoretical time-use model described in Section 3, Cortés and Tessada present separate empirical analyses by women's wage quartiles. Per the model's prediction, a large positive and statistically significant effect on the weekly hours worked is found for women at the top quartile of the female wage distribution. Furthermore, in terms of the intensive margin, low-skilled immigration seems to have allowed high-earning native women to work very long hours: positive and significant effects are found on the probability that a woman at the top of the wage distribution works at least 50 or 60 hours per week. To check for effects on the extensive margin, Cortés and Tessada look at the labor force participation of women in the top quartile of occupations, as ranked by the median male wage, and by women at the top of the educational distribution. No evidence is found that low-skilled immigration has an effect on the extensive margin. Cortes and Tessada confirm significant positive effects on hours worked conditional on working for women in these groups.

Cortés and Tessada find a much smaller, but still statistically significant effect on hours worked by women in the third quartile, but no effects for women below the median. These results are consistent with the time-use model's prediction that some women with higher, but not the highest wages, might start to consume some market-based household services when these prices go down, but that the compositional changes are not large enough to estimate larger time-use effects for this group of women in comparison to those at the top of the female wage distribution. Another explanation for larger effects for those at the very top of the wage scale is that for these women, the ability to work longer hours might allow them to switch to better paid jobs. We will revisit this hypothesis when we discuss the gender pay gap.

This differential impact on labor supply only makes sense if low-skilled immigration did lead native women earning above the median wage to increase their consumption of market-provided household services and to devote less of their own time to household production. Using data from the American Time Use Survey and from the Consumer Expenditure Survey we find that US women in the top quartile of the wage distribution spent less time per week doing house work and spent more on outsourced housekeeping services.

Interestingly, Cortés and Tessada do not find that within any of the four female wage groups, mothers of small children increase their labor supply more compared to other women after an

immigration shock. As discussed in section 3, this result is consistent with leisure being a normal good, and with mothers of small children preferring to enjoy more free time than spending more hours at work.

Overall, the magnitude of the effects suggests that the low-skilled immigration flow to the United States between 1980 and 2000 increased the probability that affected native women at the top quartile of the wage distribution work more than 50 or 60 hours a week by 1.8 and 0.5 percentage points, respectively. Compared to the standard 40-hour work week, these higher hours at the higher end of the earning distribution, suggest that these women had jobs requiring long hours, which is typical of some high-powered occupations.

The effect that immigration may have on the labor market decisions of highly educated native women has been tested empirically using data for other countries. A few of these papers have implemented empirical strategies that are similar to those used in Cortés and Tessada (2011). Farré et al. (2011) study how the low-skilled immigration wave from 1999 to 2008 in Spain changed the labor supply of high-skilled women, particularly those with important responsibilities for others living in the household, defined as ensuring the care of young children or elderly parents. The results in Farré, González, and Ortega are broadly consistent with Cortés and Tessada (2011), since they also find that low-skilled female immigration to Spain had a positive effect on the labor supply of high-skilled native women. But the findings in Farré, González, and Ortega differ in two important ways from the results in Cortés and Tessada (2011). First, the effect in Spain is present only for high-skilled native women who also have heavy family responsibilities (a child under age eight or an elderly dependent). Second, the effect mostly operates on the extensive margin. One potential explanation for the discrepancy between estimates for the two countries is that the labor force participation rate of high-skilled women in Spain was 15 percentage points lower than in the United States for the relevant period. The effects that Farré et al. (2011) estimate are large: they calculate that immigration flows of low-skilled female workers account for one-third of the increase in the employment rate of college-educated women providing child or elder care.

The results that Barone and Mocetti (2011) find using data from Italy dovetails both with Cortés and Tessada (2011) and Farré et al. (2011). As Cortés and Tessada (2011) found for the United States, Barone and Moretti find that the labor supply effects for highly-skilled women comes mostly from the intensive margin (hours worked). Like the results in Farré, González, and Ortega, the effects are larger for highly-educated women with children under three years old or permanently disabled persons at home. Peri and Rossi (2015) also study Italy, but focus on a different margin that drives female labor supply decisions: the consideration whether to retire early to care for their elderly parents. They find that a 1 percentage point increase in the share of immigrants[12] is associated with an increase in the planned retirement age gap between women and men with a living parent over 80, by 0.45 years.

[12]The authors do not distinguish between high-skilled and low-skilled immigration

Forlani et al. (2015) supply evidence by combining data from five industrialized countries —Australia, Germany, Switzerland, the United Kingdom, and the United States— to study how low-skilled immigrants working in the service sector impact native female labor supply. Their empirical model estimates a single coefficient for the five countries, but controls for country, regional, and year fixed effects. The results in Forlani, Lodigiani, and Mendolicchio suggest that low-skilled immigrants increased the hours worked that high-skilled women spent in the labor force but had no effect on their labor force participation. Interestingly, they find that low-skilled immigrants taking jobs in the service sector increase the probability that native low-skilled women work.

Evidence on the impact of low-skilled immigrants on host developing countries is very sparse. A recent paper by Hiller and Rodríguez Chatruc (2020) finds that female immigration from Haiti to the Dominican Republic has different effects on the intensive margin, depending on the skill level of the native women. Highly educated women with dependent family members increased their work hours, while low-educated women decreased the amount of time they spend in the labor force.

4.2.2 Papers using other empirical strategies

Most existing papers exploit geographic variation in immigrant inflows to identify the effects on the host population. But a recent paper by East and Velásquez (2021) uses the variation arising from the staggered US roll-out of an immigration enforcement policy enacted in 2008. The Secure Communities program increased the information shared between local and state law enforcement and the federal government's Immigration and Customs Enforcement (ICE), part of the Department of Homeland Security. The policy mandated that the fingerprints of all men and women arrested by the local or state police be sent to ICE to screen for their immigration status. If an individual's presence in the United States was not documented, he was at a high risk of being deported. Given that men comprised the vast majority of the 450,000 people deported during the 2005–2014 period studied by East and Velasquez, the authors argue that the main mechanism for the policy's effect on the size of the market-based service sector that replaced in-home household production was not deportations, but a chilling effect of added surveillance and racial profiling. Their primary finding is that this deterrence, which essentially lowered the supply for workers in this sector, reduced the number of native college-educated women with children aged 0 to 4 seeking paid work outside the home. East and Velasquez estimate that because of this policy, the probability that this group of US women would participate in the labor market decreased by 0.85% and reduced the number of hours they worked by 1.3% relative to the mean. Additionally, these authors find that the negative effects on mothers in cities having Secure Communities in place around the time of the child's birth persisted for years after the birth.

Cortés and Pan (2013) is another paper that relies on a different empirical strategy. This paper, studies a visa program in Hong Kong for foreign domestic workers. The program stipulates that the FDW must work and reside in the employer's residence and cannot change jobs or occupation.

[13] Analyzing this much more restrictive program provides additional insights when seeking to understand the barriers that high-skilled women face. These stringent visa restrictions imply that in some cases, there is close to a total outsourcing of household production: FDWs may well fulfill the majority of a household's basic childcare and housekeeping responsibilities. This study offers an additional window into the effects of guest worker programs, an issue that is at the center of discussions about immigration reform in the United States.

The empirical strategy in Cortés and Pan (2013) is based on two complementary approaches. The first one exploits differences in the availability and relative cost of hiring a FDW in Hong Kong and Taiwan over time and the within-country variation in the demand for childcare services.[14] Taiwan is a good control group given the close proximity as well as the economic and cultural similarity of the two countries. Importantly, the magnitude and scope of the FDW program in Taiwan is far smaller than that of Hong Kong's. The other approach uses cross-sectional variation at the household level in the cost of hiring an FDW to calibrate a structural model of labor supply among highly-educated native women and the decision to hire a domestic helper.[15] Cortes and Pan find that FDWs had a very large effect on the labor supply of mothers with preschool children in Hong Kong: their LFP increased (relative to mothers of older, meaning school-age children) by 10–14 percentage points and generated a monthly consumer surplus for them of US$130–US$200.

The baseline labor force participation rate for this demographic group of college-educated women in Hong Kong is comparable to the same rate in advanced Western countries, so the study's results provide a reasonable benchmark for other countries considering such a visa program.

To summarize, studies across various countries using different empirical methodologies consistently find that migrant domestic workers have allowed highly- educated native women to increase their labor supply. In section 5, I discuss the implications of these findings, and consider some ethical considerations.

4.3 Evidence on the Gender Pay Gap

If there are increasing returns to working long hours in some high-skilled occupations, low-skilled immigration—by allowing highly-educated native women to work longer hours— might contribute to the narrowing of the gender pay gap. In Cortés and Pan (2019) this possibility is explored for the United States. A triple-difference strategy is used to compare changes in the gender wage gap over time in occupations that vary in terms of their returns to working long hours, across cities where women face different costs associated with outsourcing household production because of ge-

[13] Section 5 discusses how imposing such strict conditions might lead to the abuse of domestic workers.

[14] More specifically, we compare how the gap in labor force participation between mothers whose youngest child is aged 0–5 vs. 6–17 evolved differently over time in Hong Kong, compared to Taiwan. We cover the period from 1978 through 2006.

[15] Cortes and Pan's source of variation is the number of rooms in a house. Many Hong Kong residents do not have much choice over the number of rooms in their home if they live in subsidized housing. The relative cost of hiring a FDW is so low in Hong Kong that many middle class families can afford one.

ographical variation in the concentration of low-skilled immigrants. The returns to working long hours is measured by the elasticity of annual earnings to usual hours worked per week, conditional on working at least 35 hours per week. An elasticity greater than one—such as the elasticities observed for skilled occupations in business, finance, and law—, implies that the occupation-level relationship between hours and earnings is convex, and thus, workers working very long hours earn disproportionally more than those working fewer hours. The results suggest that low-skilled immigration narrowed the gender earnings gap in occupations in the top tercile of the distribution of returns to long hours. Further analysis shows that for high-skilled native women working in occupations with high returns to long hours, an increase in low-skilled immigration in a city reduces the probability that their wages are in the bottom quartile of the male wage distribution. Rather, low-skilled immigration "moves" these women up to a range between the 25th and the 90th percentile of the male wage distribution, with the largest effects concentrated in the 75th to 90th percentile. Since it seems unlikely that such large shifts would occur if women remained in the same jobs and increased their hours of work, Cortes and Pan view these findings as suggestive evidence that the availability of affordable household services enabled these highly-skilled women to take a different, high-paying job—one with higher returns to working long hours—within the same occupation. However, the fact that low-skilled immigration does not impact the share of skilled women earning wages at the top decile of the male wage distribution suggests that other barriers are responsible for the lack of women at the very top.

Finally, Cortés and Pan (2019) show that the effects of low-skilled immigration on highly-educated native women also extends to the occupational choice margin. Cortes and Pan find that US cities with larger increases in low-skilled immigration inflows experience larger increases in the employment share of young college-educated women in occupations that have higher returns to working long hours relative to occupations with lower returns. Assuming that some of these occupations are finance and law, it is possible that the gender pay gap for these younger women will narrow as they move up the career ladder.

4.4 Evidence on Non-Labor Market Outcomes

If high-skilled native women increase their hours worked in the labor market, an important question is what household production activities are being substituted for by immigrants, particularly time spent caring for children. Using time-use data from the United States and an empirical strategy similar to Cortés and Tessada (2011), Amuedo-Dorantes and Sevilla (2014) find that increases in low-skilled immigration to the United States lowered the time native college-educated mothers allocated to basic childcare activities for kids aged 0 to 5 years, (as well as to household work) by approximately half an hour per week. However, the increase in supply of low-skilled immigrants did not reduce the time these women devoted to other childcare activities involving English proficiency or a certain level of human capital, such as reading to their children; if anything, the estimates

Amuedo-Dorantes and Sevilla (2014) suggest that the presence of immigrants has positive and marginally significant effects on the educational and recreational time that highly-educated women who work outside of the home spend with children.

Two papers have looked at the effect of immigration on fertility. Furtado (2016) studies whether lower childcare costs induced by the low-skilled immigration flows to the United States changed the childbearing decisions of highly-educated native women. As Furtado notes, the theoretical impact of lower child-rearing costs on childbearing is unclear given that women may respond to these lower costs by increasing labor supply instead of having children or having more children. Using the probability that a college-educated woman gave birth in the past year as dependent variable, Furtado finds that low-skilled immigration flows increased the probability of giving birth, particularly for married women with a graduate degree. The effect is also larger and stronger for women in their late thirties, which Furtado interprets as evidence that the effect is not just on the timing of births, but on completed fertility. Romiti (2018) studies the question of immigration and fertility rates using UK panel data. She finds that immigration increases labor supply without affecting fertility rates, suggesting that immigrants ease the trade-off between working and child rearing.

Taken together, these three papers show that the increase in the labor supply of highly-educated women did not come at the cost of lower time investment in the human capital of children or lower fertility rates. Indeed, the finding that even in the United States, where women are unlikely to outsource most of their household production, low-skilled immigration increased the probability that high-skilled women working in the labor force would choose to bear children has important implications for East Asian countries, characterized by very low fertility rates and where foreign domestic workers do most of the household production.

5 Policy Implications and Ethical Considerations

I have reviewed a large literature showing that low-skilled immigrants positively impact the labor supply of highly-educated native women. At least two important questions arise when thinking about the policy implications of this phenomenon. The first is the wider impacts that low-skilled immigration has on the host country. Low-skilled immigration might crowd out other types of policies or institutions designed to support native mothers' labor force participation. There also are potentially negative effects of low-skilled immigration on the labor market outcomes of low-skilled natives. The second question focuses on the ethical considerations and potential abuse of FDWs, particularly in those countries where they live with their employers. In cases where the domestic worker cannot bring her family with her, there also are questions about the impact on the family left behind, particularly on her children.

Barone and Mocetti (2011) explore if female immigration substitutes for welfare policies in the host country. Exploiting cross-municipality variation in publicly provided care services[16], measured by the number of local workers employed by social assistance institutions (child care centers, etc) and by local public spending for welfare services, they find that the effect of low-skilled immigrants on native women's labor outcomes is smaller (though still positive) in places with stronger welfare services, suggesting some substitution between the two. Forlani et al. (2015) conduct a similar exercise in their multi-country study, where they divide countries into those with highly effective family policies (Australia and the United Kingdom) and those countries with weak family policies (Germany, Switzerland, and the United States), and separately estimate the effect of low-skilled immigration on labor outcomes of female natives by skill level. Their results suggest that there is no difference between the two sets of countries on the labor market outcomes for high-skilled women: in both cases, low-skilled immigrants have a large and positive effect on the log of the number of hours they work. The findings for the effect on the labor force participation of low-skilled natives are conflicting. There are no statistically significant differences in the strength of family policies for the sample that includes all workers. However, for workers not employed in the service sector, the authors find a much larger positive effect on labor force participation of low-skilled natives in countries with weak family policies. The authors argue that a potential reason for finding that there are differential effects for low-skilled women, but not for high-skill women, is that high-skilled women's time-use decisions are less sensitive to family policies.

Most of the papers in this literature focus on how low-skilled immigration's affects high-skilled native women, who, as shown in the model, are the most likely to change their time-use decisions because of immigrant-induced changes in the prices of household production services. There is, of course, a very large literature on the effects of immigration on the labor market outcomes of competing natives (see Pekkala Kerr and Kerr (2011) for a survey of the literature). However, that literature focuses almost exclusively on wages, and not on time-use decisions, and in some instances restricts the sample to men.[17] Therefore, it is still valuable to discuss what papers examining migrant domestic workers find regarding the effects of migrants on the employment outcomes of low-skilled natives. Cortés and Tessada (2011) find that low-skilled immigration negatively impacted the extensive margin of labor supply for women with at most a high school degree, but had no effect on the intensive margin, conditional on working. The magnitude of the coefficient suggests that the US immigration flow from 1980 through 2000 reduced the labor supply of low-educated female natives by close to 1.5 percentage points. Consistent with these results, Amuedo-Dorantes and Sevilla (2014) find that low-skilled immigration increased the time mothers with less than a

[16]In Italy a fair share of welfare policies are determined at the municipal level.

[17]A recent exception is Borjas and Edo (2022), who, using French data, study both the wage and labor force participation effects of immigrants on natives, separately by gender. Interestingly, Borjas and Edo find that immigrants lower the labor force participation of native women, but not of native men, and that the near-zero correlation between immigration and female wages is explained by changes in worker composition (i.e., it is the lowest wage women who drop out of the labor market).

high school degree devote to childcare and household production. Evidence from Spain points to the same pattern. Farré et al. (2011) find that immigration has negative effects on labor force participation when women of all education levels are grouped together, but much smaller effects when the sample is restricted to women with a high school degree or more, suggesting a strong negative effect on immigration for those women with very little formal education. As in Cortés and Tessada (2011) they find little evidence of effects on the intensive margin. Looking at the Italian case, Barone and Mocetti (2011) find no evidence that low-skilled immigrants working in the household sector have negative effects on the labor outcomes of native workers with at most a compulsory education. The coefficients, in fact, are not that different from the ones estimated for the high-skilled sample. However, the standard errors are much larger.

In contrast with the papers mentioned above, Forlani et al. (2015) find that low-skilled immigrants have positive effects on the labor force participation of low-educated female natives in countries with weak family policies. This study's discrepancy with the results in other papers might come from considering everyone without a college degree as low-skilled. Cortés and Tessada (2011) finds some positive effects on those with at least some college, but no evidence that low-skilled immigration has any benefits for those natives with, at most, a high school degree.

Overall, in this literature most papers suggest that there is a cost incurred from relying on low-skilled immigration to increase the labor supply of high-skilled female natives. The finding that those workers who are already better off also are the ones benefiting the most suggests that although low-skilled immigration on net is likely to increase the welfare of natives, it comes at the cost of increased inequality. This should be considered when evaluating alternatives to support native women's participation in the labor market. A potential solution to avoid the negative effects of overall low-skilled migration on the labor outcomes of low-skilled women is to design a visa program specifically for domestic workers. These types of visa programs are not restricted to East Asian and Arab countries; Canada has a live-in caregiver program as does Denmark. These programs, however, present other type of risks that I outline below.

This increasing global phenomenon of low-skilled immigrants providing household services raises two main ethical concerns, both mostly relevant for live-in foreign domestic workers. The first is the potential for abuse on the part of employers. Because live-in foreign domestic workers spend most of their time in their employer's home, any exploitation they face likely occurs behind doors. The added fact that, in many countries, they are not allowed to change employers and have few or no local family members to rely on, means that they are entirely at the mercy of their employers. These conditions have led to abuse and exploitation being much more common among domestic workers than in other occupations.[18] Salazar Parreñas (2017) discusses the characteristics of sev-

[18] An example of extreme abuse (sadly not the only one) is the brutal killing and rape of Filipina domestic worker Jeanelyn Villavende by her Kuwaiti employers in 2019. As a consequence, the government of the Philippines imposed a total ban on the deployment of workers to Kuwait. See https://gulfnews.com/world/asia/philippines/philippines-announces-total-ban-on-workers-to-kuwait-1.69044825

eral visa programs for domestic workers in terms of offering them flexibility to change employers, residency caps, labor protections, and pathway to permanent residency. Mantouvalou (2015) provides evidence that in the United Kingdom, lower labor protection standards for migrant domestic workers led to a significant increase in cases of physical abuse and exploitation.

The second ethical concern relates to the potential negative consequences of migration on the family left behind, especially children, in cases when the domestic worker is not allowed to bring her family with her to the host country. A negative effect is not obvious, as parental migration usually results in an inflow of remittances to the family living in the home country, funds which can be spent on children's education and health.[19] In Cortés (2015) I look at this question in the context of the migration of Filipinas as domestic workers to nearby countries. I exploit demand shocks as a random source of variation that affects the probability that the mother, instead of the father, decides to work abroad. There are two main findings. First, the children with migrant mothers are more likely to lag in school when compared to the children of migrant fathers. Second, this negative effect cannot be explained by differences in remittance behavior. Other studies have also found that parental migration has a negative effect on children's educational outcomes: Antman (2013) and McKenzie and Rapoport (2011) for Mexico, and Rubio (2020) for El Salvador.

6 Conclusion

Most of the literature on the effect that immigration has on the outcomes of natives has focused on the potential negative impact on natives that compete directly with immigrants in the labor market. This paper provides an overview of the evidence on another important mechanism through which immigration impacts the labor outcomes of natives: low-skilled immigrants provide services that are close substitutes for household production and enable high-skilled native women to participate more actively in the labor market. Overall, the existing research suggests that migrant domestic workers have large positive effects on the labor supply of highly educated women's labor supply and on the gender pay gap for high-powered occupations. These migrants have contributed to the narrowing of persistent gender inequalities in the labor market, particularly for the highly-skilled native women in many countries around the world. The mechanism studied in this paper should be considered when analyzing the benefits and costs of immigration policies.

Finally, the study of this phenomenon of low-skilled immigrant women providing household services in host countries also sheds light on the drivers of the persistence of gender gaps in the labor market, particularly for the highly-skilled. Evidence that a decrease in the cost of outsourcing household production results in large labor supply responses for highly-educated working mothers suggests that at least part of the differences in the labor market outcomes of men and women can

[19]Several studies find positive effect of remittances to households (not necessarily sent by parents abroad) on educational investments. See, for example, Yang (2008) for evidence from the Philippines, Cox-Edwards and Ureta (2003) from El Salvador, and Adams (2005) from Guatemala.

be attributed to the constraints that women face in juggling their dual roles in the household and the labor market. Although low-skilled women help alleviate the challenges women face, they might help perpetuate traditional gender norms where household work is the women's responsibility.

There are a few promising areas of research to broaden our understanding of the multiple channels through which the migration of domestic workers impacts host countries. The first is to extend the study of the effect of this type of migration on other members of native households, children in particular. How does being cared for by, or sometimes even living with, a foreign domestic worker impact children's development and notions of race and inequality? Also, how does it affect the evolution of gender norms and household power dynamics? The second is to expand the geography of studies to the Middle East, where historically, foreign domestic workers had had little effect on the female labor supply. However, now that other barriers are weakening, the ability to outsource household work might help catapult the labor market integration of women and the region's economic growth.

References

Adams, R. H. J. (2005). Remittances, household expenditure and investment in Guatemala. In Adams, R. H. J., editor, *International Migration, Remittances, and the Brain Drain*. World Bank.

Amuedo-Dorantes, C. and Sevilla, A. (2014). Low-skilled immigration and parenting investments of college-educated mothers in the United States. Evidence from time-use data. *Journal of Human Resources*, 49(3):509–539.

Antman, F. M. (2013). The impact of migration on family left behind. In Constant, A. and Zimmerman, K. F., editors, *International Handbook on the Economics of Migration*. Edward Elgar Publishing.

Austen, J. (1813). *Pride and prejudice*. Whitehall, London.

Barone, G. and Mocetti, S. (2011). With a little help from abroad: the effect of low-skilled immigration on the female labour supply. *Labour Economics*, 18:664–675.

Blau, F. D. and Kahn, L. M. (2017). The gender wage gap: Extent, trends, and explanations. *Journal of Economic Literature*, 55(3):789–865.

Borjas, G. and Edo, A. (2022). Gender, selection into employment, and the wage impact of immigration. *NBER Working Paper Series*, 28682.

Cortés, P. (2008). The effect of low-skilled immigration on US prices: Evidence from CPI data. *Journal of Political Economy*, 116(3):381–422.

Cortés, P. (2015). The feminization of international migration and its effects on the children left behind: Evidence from the Philippines. *World Development*, 65:62–78.

Cortés, P. and Pan, J. (2013). Outsourcing household production: Foreign domestic workers and native labor supply in Hong Kong. *Journal of Labor Economics*, 31(2):327–371.

Cortés, P. and Pan, J. (2019). When time binds: Substitutes for household production, returns to working long hours, and the skilled gender wage gap. *Journal of Labor Economics*, 37(2):351–398.

Cortés, P. and Tessada, J. (2011). Low-skilled immigration and the labor supply of highly skilled women. *American Economic Journal: Applied Economics*, 3(3):88–123.

Cox-Edwards, A. and Ureta, M. (2003). International migration, remittances, and schooling: Evidence from El Salvador. *Journal of Development Economics*, 72(2):429–461.

East, C. N. and Velásquez, A. (2021). Unintended consequences of immigration enforcement: Household services and high-educated mothers' work. *Journal of Human Resources*.

Edo, A. and Rapoport, H. (2019). Minimum wages and the labor market effects of immigration. *Labour Economics*, 61(101753).

Edo, A. and Toubal, F. (2017). Immigration and the gender wage gap. *European Economic Review*, 92(C):196–214.

Farré, L., González, L., and Ortega, F. (2011). Immigration, family responsibilities and the labor supply of skilled native women. *The BE Journal of Economic Analysis & Policy*, 11(1).

Forlani, E., Lodigiani, E., and Mendolicchio, C. (2015). Impact of low-skilled immigration on female labour supply. *The Scandinavian Journal of Economics*, 117(2):452–492.

Frattini, T. (2008). Immigration and prices in the UK. *University College London, mimeo.*

Furtado, D. (2016). Fertility responses of high-skilled native women to immigrant inflows. *Demography*, 53:27–53.

Goldin, C. (2014). A grand gender convergence: Its last chapter. *American Economic Review*, 104(4):1091–1119.

Hiller, T. and Rodríguez Chatruc, M. (2020). South-south migration and female labor supply in the Dominican Republic. *IDB Working Paper Series.*

ILO (2015). Global estimates of migrant workers and migrant domestic workers: Results and methodology. Technical report, ILO.

Ireland, P. R. (2018). The limits of sending-state power: The Philippines, Sri Lanka, and female migrant domestic workers. *International Political Science Review*, 39(3):322–337.

Lach, S. (2007). Immigration and prices. *Journal of Political Economy*, 115:548–587.

Lan, P.-C. (2003). Negotiating social boundaries and private zones: The micropolitics of employing migrant domestic workers. *Social Problems*, 50(4):525–549.

Mantouvalou, V. (2015). 'Am i free now?' Overseas domestic workers in slavery. *Journal of Law and Society*, 42(3):329–357.

McKenzie, D. and Rapoport, H. (2011). Can migration reduce educational attainment? Evidence from Mexico. *Journal of Population Economics*, 24(4):1331–1358.

Oishi, N. (2005). *Women in Motion.* Stanford University Press, Stanford.

Pekkala Kerr, S. and Kerr, W. R. (2011). Economic impacts of immigration: A survey.

Peri, Giovanni, A. R. and Rossi, M. (2015). Immigrants, domestic labor and women's retirement decisions. *Labour Economics*, 36:18–34.

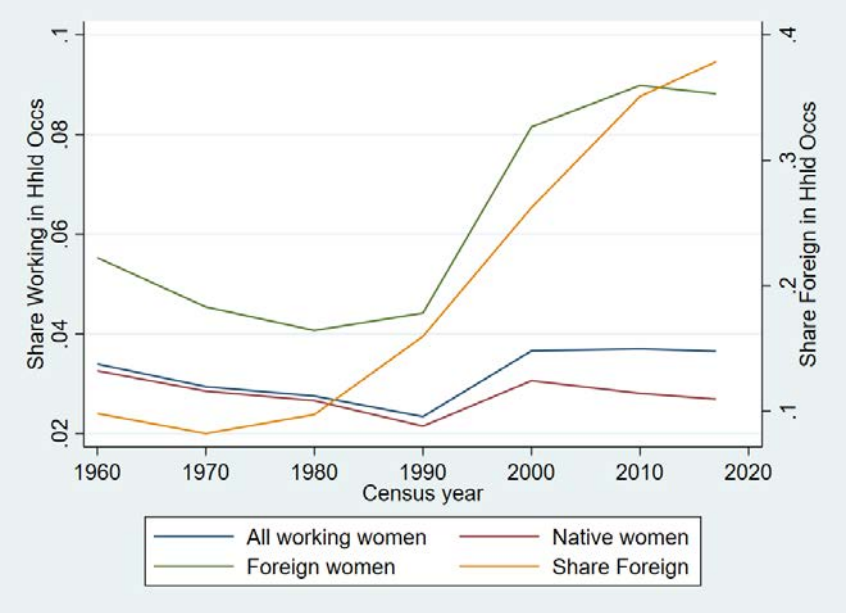
Romiti, A. (2018). The effect of immigration on household services, labour supply, and fertility. *Oxford Bulletin of Economics and Statistics*, 80(4):843–869.

Rubio, M. (2020). Parent migration and education outcomes of children left behind in El Salvador. *IDB Discussion Paper Series*.

Salazar Parreñas, R. (2017). The indenture of migrant domestic workers. *Women's Studies Quarterly*, 45(1):113–127.

Yang, D. (2008). International migration, remittances, and household investment: Evidence from Philippine migrants' exchange rate shocks. *Economic Journal*, 118(528):591–630.

Figure 1: Trends in Household Services Occupations in the United States



Data Source: US Censuses and American Community Surveys.