Cheap Maids and Nannies: How Low-skilled immigration is changing the labor supply of high-skilled American women*

Patricia Cortes
University of Chicago - GSB

Jose Tessada
MIT

This draft: May, 2008
Comments Welcome

Abstract

Low-skilled immigrants represent a significant fraction of the labor employed in service sectors that are close substitutes of household work like housekeeping, gardening, and babysitting services. This paper studies whether the increased supply of low skilled immigrants has led high-skilled women, who have the highest opportunity cost of their time, to change their time use decisions.

We find evidence that low-skilled immigration has increased hours worked by women with a professional degree or a Ph.D. The estimated magnitudes suggest that the low-skilled immigration flow of the period 1980-2000 increased between 50 and 70 minutes a week the average time of market work of women with a professional degree or a Ph.D. Consistently, we find a decrease in the time highly skilled women spend in household work and an increase in their reported expenditures on housekeeping services. We also find that the fraction of women in this group working more than 50 (and 60) hours a week increases with low-skilled immigration, and that the labor supply effects are significantly larger for those with young children. Except for smaller but significant effects on the probability of women with a college education or masters degree working long hours, there is no evidence of similar effects for any other education group of the female population.

*Email: patricia.cortes@chicagogsb.edu, tessada@mit.edu. We thank George-Marios Angeletos, Josh Angrist, David Autor, Marianne Bertrand, Olivier Blanchard, and Jeanne Lafortune for their excellent comments and suggestions. We also aknowledge participants in MIT's Development and Labor lunches, NBER Labour Studies Meeting, CEA and PUC-Chile seminars for helpful comments. Tessada thanks financial support from the Chilean Scholarship Program (MIDEPLAN).

1 Introduction

Low-skilled immigrants work disproportionately in service sectors that are close substitutes for household production. For example, whereas low-skilled immigrant women represent 1.9 percent of the labor force, they represent more than 25 percent of the workers in private household occupations and 12 percent of the workers in laundry and dry cleaning services. Low-skilled immigrant men account for 29 percent of all gardeners in America's largest cities although they represent only 3.3 percent of the labor force.

The importance of low-skilled immigrants in certain economic activities has been raised as part of the recent discussion on immigration policies. For example, in a recent article about immigration reform in the U.S., The Economist, argues that:

> ... in the smarter neighborhoods of Los Angeles, white toddlers occasionally shout at each other in Spanish. They learn their first words from Mexican nannies who are often working illegally, just like the maids who scrub Angelenos' floors and the gardeners who cut their lawns. ...Californians... depend on immigrants for even such intimate tasks as bringing up their children. (*The Economist*, "Debate meets reality", May 17th, 2007.)

If the recent waves of low-skilled immigration have led to lower prices of services that are substitutes for household production, we should expect natives to substitute their own time invested in the production of household goods with the purchase of the now cheaper services available in the market. Recent evidence suggests that in fact low-skilled immigration has reduced the price of these services; for example, Cortes (2008) finds that recent low-skilled immigration has reduced the prices of non-tradable goods and services, including those we are interested in here. The link between immigration and changes in the prices of household services indicates that even without effects on wages, low-skilled immigration has the potential to generate effects on natives' decisions related to time use.[1] Furthermore, these price changes should affect differently the various skill groups of the population; in particular, given that high skilled women have the highest opportunity cost of working at home production, a decrease in the price of housekeeping services is likely to have the largest impact on the labor supply decisions of this group.

Overview. This paper uses cross-city variation in low-skilled immigrant concentration to study how low-skilled immigration has changed the labor supply of American women, particularly of the most skilled. It also explores related outcomes such as time devoted to household work and reported expenditures on housekeeping services. To identify a causal effect we instrument for low-skilled immigrant concentration using the historical distribution of immigrants of a country to project the location choices of recent immigrant flows.

[1] Most of the studies that use cross-city variation in immigrant concentration have failed to find economic and statistically significant negative effects of low-skilled immigrants on the wage of the average native high school dropout. Note however, that this is not inconsistent with immigration lowering prices of services that are close substitutes of household production, if, as argued by Cortes (2008), lower prices are a consequence of lower wages but mostly for low-skilled immigrants, not natives.

Our results suggest that very high-skilled women (those with a professional degree or Ph.D.) have significantly increased their supply of market work as a consequence of low-skilled immigration. The magnitudes of our estimates suggest that as a result of the low-skilled immigration wave of the period 1980-2000, women from this group increased their time working in the market between 50 and 70 minutes a week. We do not find similar effects for any other education group.

Lawyers, physicians, and managers are the main categories represented in the group of women with professional degrees.[2] To have a successful career in one of these fields, workers have to work long hours.[3] We find that low-skilled immigration has helped professional women increase their probability of working more than 50 and 60 hours a week.

Concerned by the possibility that very educated women who want to work longer hours decide to move to cities where services are cheaper, we estimate the labor supply effects restricting the sample to those who reported not having moved in the last 5 years. The estimated effects are generally smaller for non-movers compared to the baseline regressions suggesting that endogenous migration might play a role, although the differences between the two are almost never statistically significant. Our estimates are also robust to the inclusion of several sets of time-varying city level controls, to changes in the definition of skill groups, and to the exclusion of the top immigrant cities.

Within the group of highly educated women, we find important differences according to the demographics of the household. The estimated effects on labor supply are close to twice as large for women with children age 5 or younger. In particular, low-skilled immigration increases the likelihood that a mother of a young child participates in the labor market, but has no effect on the participation decision of other educated women.

Labor supply effects for professional men go in the same direction than those for professional women, but are significantly smaller in magnitude. Interestingly, and in contrast to the results for women, having a young child reduces the magnitude of the effects.

Our findings with respect to highly skilled women have important implications. On one hand, the results suggest that the availability of flexible housekeeping and child care services at low prices might help female physicians and lawyers, and highly educated women in general, to advance in their careers. Conflicting demands of the profession and of the household have been linked to the relative lack of women in positions of leadership (such as partners in law firms) and in prestigious medical specializations, such as surgery.[4] On the other hand, it provides some evidence against recent theories that highly skilled women are opting out of demanding

[2] We excluded primary and secondary school teachers, nurses, and social workers from the group of women with a professional degree. We included them in the group of women with a master's degree. On the other hand, we include women with an MBA (which we infer from educational attainment and occupation) on the professional sample. Results are robust to a classification based solely on education (See Section 4.3.1).

[3] For example, whereas the cross-occupation average of usual hours worked per week for males is 35.5, and the share working more than 50 hours is 7.4 percent and more than 60 hours is 2.6 percent, the same numbers for physicians are 47 hours, 44 percent, and 28 percent, and for lawyers 42 hours, 31 percent, and 10 percent.

[4] "While many women with children negotiate a part-time schedule for family care... they are still less likely to be promoted to partner than women who stay in firms but do not use part time options"... "The expectation that an attorney needs to be available practically 24/7 is huge impediment to a balanced work/family life" (Harrington and Hsi, 2007).

careers because they value more staying home with their children.[5] Overall, it suggests that not only differences in preferences have stopped highly educated women from a more active involvement in the labor market.

More hours of market work resulting from lower prices of household services should be reflected in less time devoted to household production. Using data from the recently released 2003-05 American Time Use Survey conducted by the Bureau of Labor Statistics and from the 1980 Panel Study of Income Dynamics (PSID), we find that the immigration wave of the 1980s and 1990s reduced by a city-average of 138 minutes the time very skilled American women spend weekly on household chores.

Finally, we use data from the Consumer Expenditure Survey (CEX) to test if highly educated women have changed their consumption levels of market-provided household services as a consequence of low-skilled immigration. Given that expenditures, not units of consumption, are reported in the CEX, the interpretation of the sign and magnitude of our estimates will depend on the price elasticity of these services. However, from Cortes (2008) we know that prices of household services have gone down because of low-skilled immigration; therefore, if we find a positive effect on expenditures (as we do), we can unambiguously conclude that consumption must have gone up. We also study in separate regressions if the immigration waves have made highly educated households more likely to report any positive expenditure on these services. We find supporting (but statistically weak) evidence in this respect.

Related Literature. Our paper provides a new perspective on the literature of the labor market effects of low-skilled immigration. We move away from the past focus on the effects on the groups of natives competing directly with immigrants (Altonji and Card (1991), **?**, Borjas (2003), Card (1990), Card (2001), Ottaviano and Peri (2006)) and explore a potentially important dimension in which low-skilled immigrants affect the average level of native welfare and its distribution: the time use effects of a decrease in prices of services that are close substitutes for household production.[6]

Ours is not the first paper to study the employment effects of low-skilled immigration; previous papers whose main focus is on wage levels also include regressions of employment levels. There is a great deal of dispersion in the findings reported by the various studies. As expected, studies that find no effect on wages also find no effect on employment or labor force participation. In his Mariel Boatlift paper, Card (1990) concludes that the 1980 influx of Cubans to Miami had no effects on the employment and unemployment rates of unskilled workers, even for earlier cohorts of Cubans. A similar result is obtained by Altonji and Card (1991), who find no significant effect of low-skilled immigrants on the labor force participation and hours worked of low-skilled native groups. On the other hand, Card (2001) calculates

[5] The headline for the October 26 2003 edition of the *New York Times Magazine* was "Why don't more women get to the top? They choose not to."

[6] Khananusapkul (2004) is, to the best of our knowledge, the only other study that relates low-skilled immigration with the labor supply of high skilled women. The author finds that an increase in the proportion of low-skilled female immigrants in a metropolitan area raises the proportion of private household workers and lowers their wages. She does not, however, find a significant effect on the labor supply of college educated women.

that "the inflow of new immigrants in the 1985-90 period reduced the relative employment rates of natives and earlier immigrants in laborer and low-skilled service occupations by up to 1 percentage point, and by up to 3 percentage points in very high-immigrant cities like Los Angeles or Miami." It is unclear from his results, however, if the displaced workers in these occupations moved out of the labor force, or simply shifted to another occupation. The estimates in Borjas (2003) suggest that a 10 percent supply shock (i.e. an immigrant flow that raises the number of workers in an education-experience skill group by 10 percent) reduces by approximately 3.5 percent the fraction of time worked by workers of that skill group. The effect is significantly smaller and not statistically significant when the sample is limited to high school dropouts.

Our paper is also related to the literature on female labor supply and the provision and prices of child care. Gelbach (2002) estimates the effect of public school enrollment for five-year-old children on measures of maternal labor supply using as an instrument for enrollment the quarter of birth of the child. His main results suggest that public pre-school enrollment of a child has a strong effect on the labor supply of the mother, especially on single women whose youngest child is five years old, and on all married women with a five-year-old child. Strong effects of the availability/price of child care on labor supply are also found by Baker et al (2005), who study the introduction of universal, highly subsidized child care in Quebec in the late 1990s. The authors estimate difference-in-differences models comparing the outcomes in Quebec and the rest of Canada around the time of this reform. Using additional information on family and child outcomes they also find that the provision of this subsidy has been associated with worse outcomes for the children. Our paper differs from these papers in the experimental set-up: the magnitude of the variation in prices generated by immigrants is of a different order of magnitude than the ones considered in the two studies mentioned above. We also consider the effect of changes in prices in services other than child care, which might also affect women with no children.

Layout. The rest of the paper is organized as follows. The next section presents the theoretical framework. Section 3 describes the data and the descriptive statistics. Section 4 presents the empirical strategy and discusses the main results, and in Section 5 we present the conclusions.

2 Theoretical Framework

In this section we present a simple time use model to frame our empirical analysis. The model is closely based on that of Kremer and Watt (2006).

2.1 Set-up

An agent allocates her time between leisure, household production, and market work. She receives a wage w per unit of time devoted to market work..

The agent consumes two goods. First, there is a homogeneous consumption aggregate that can only be bought in the market, we normalize its price to 1. Second, the agent's household requires a certain number of units of a household service to function; this service can be produced at home or bought in the market at a price p. The household needs exactly R units of this service; the marginal benefit of units beyond R is 0.

Denote by y the amount of the consumption good, l the hours of leisure, h the hours of household work, n the hours of market work, x the units of the household service purchased on the market, and I non-wage income of the household. Assume that there is only one working agent per household and normalize total time available to the agent to 1.

Assume utility is given by

$$u(y) + \psi(l),$$

where $u(\cdot)$ and $\psi(\cdot)$ are concave and satisfy $u'(y) \to \infty$ as $y \to 0$ and $\psi'(l) \to \infty$ as $l \to 0$.

Household production is described by the function $f(h)$, which we assume to have decreasing marginal returns to time spent at working at home and to satisfy $f'(h) \to \infty$ as $h \to 0$.

2.2 The Optimization Problem

The agent's optimization problem is

$$\begin{array}{rl} \max & u(y) + \psi(l) \\ \text{subject} & \text{to} \\ [\lambda] & x + f(h) = R \\ [\mu] & I + wn = px + y \\ [\phi] & n + h + l = 1 \\ & n > 0, \quad x > 0; \end{array}$$

where λ, μ and ϕ are the lagrange multipliers on the household service, budget and time constraints, respectively. κ_i is the multiplier on the non-negativity constraints on n, and x.[7]

The first order conditions are

$$\begin{aligned} u'(y) - \mu &= 0 \\ \psi'(l) - \phi &= 0 \\ \lambda f'(h) - \phi &= 0 \\ \lambda - \mu p + \kappa_x &= 0 \\ \mu w - \phi + \kappa_n &= 0. \end{aligned}$$

[7] Notice that the assumptions on $u(\cdot)$, $\psi(\cdot)$ and $f(\cdot)$ guarantee we do not need to consider the non-negativity constraints on y, l, and h.

2.3 Solutions

There are four possible solutions determined by the agent's wage and unearned income.

Case 1: Agent works in the market but does not purchase household services $(x^* = 0, n^* > 0)$. Using the first order conditions we can show that this case happens if

$$f'\left(\overline{h}\right) > \frac{w}{p}, \tag{1}$$

where $\overline{h}$ is the solution to $f\left(\overline{h}\right) = R$. In words, the market wage is so low that it is more efficient for the agent to produce all of the household good herself (even in the presence of decreasing marginal returns) than to work in the market and use her wage to purchase the service. Also, her unearned income is low enough that she needs to work in order to be able to consume some units of good y. The optimal level of n can be found from

$$wu'\left(I + wn\right) = \psi'\left(1 - n - \overline{h}\right). \tag{2}$$

From the equation above it is easy to see that for agents in this group changes in the market price of the household services will not affect their time use decisions as long as (2) still holds. Note also that, as in most time use models, higher unearned income is associated with fewer hours worked in the market.

Case 2: Agent does not work in the market and does not purchase household services $(x^* = 0, n^* = 0)$. The wage and unearned income of agents in this group satisfy the following inequality:

$$w < \frac{\psi'\left(1 - \overline{h}\right)}{u'\left(I\right)} < pf'\left(\overline{h}\right). \tag{3}$$

The first inequality implies that the wage is not high enough to compensate for the cost of foregone leisure in terms of the gain in extra units of consumption good. This inequality is likely to hold the lower the wage and the higher the unearned income. However, unearned income cannot be too high, or the second inequality will not hold. The second inequality guarantees that the agent does not buy market services; services are too expensive given the current rate at which time could be traded for goods bought in the market. Note than in this case, as in the previous one, changes in the price of the market household do not affect the labor supply decision and the hours worked in household production as long as (3) still holds.

Case 3: Agent purchases household services but does not work in the market $(x^* > 0, n^* = 0)$. In this case the wage is low enough such that the first inequality in equation (3) holds, but the agent has sufficient unearned income to buy enough of good y and to pay for household services in order to enjoy more leisure (and therefore does not need to work). How much time spent in household production (h) will be given by the following equation:

$$\frac{\psi'\left(1 - h\right)}{f'\left(h\right)} = pu'\left(I - p\left(H - f\left(h\right)\right)\right). \tag{4}$$

As can be observed from (4) h is increasing in p. Using the optimal h we can then obtain y and x, and rewrite the condition for w as

$$w < \frac{\psi'(1-h)}{u'(I - p(H - f(h)))}.$$

Case 4: Agent purchases household services and works in the market ($x^* > 0, n^* > 0$). Agents in this group have high enough wages such that

$$f'\left(\overline{h}\right) < \frac{w}{p},$$

and will choose h^* such that:

$$f'(h^*) = \frac{w}{p}.$$

Household work, is thus increasing in p and decreasing in w. Given its inverse relation with h, the quantity of household goods purchased in the market, x, is decreasing in p and increasing in w. We can then obtain the labor supply, n^*, using

$$u'(I - p(H - f(h^*)) + wn^*)\, w = \psi'(1 - h^* - n^*).$$

Notice that the hours of market work will depend on the price of household services; how exactly will be discussed in the next section. Finally, we obtain the demand for consumption goods using the budget constraint:

$$y^* = I + wn^* - p(H - f(h^*)).$$

2.4 The effects of an inflow of low-skilled immigrants

We model an inflow of low-skilled immigrants as a decrease in p and assume that the inflow has no effect on wage levels.

2.4.1 Effect on h

The analysis of the possible cases shows that changes in p will only affect time worked at home for agents whose wage and unearned income are such that they belong either to case 3 or to case 4. In both cases, a decrease in p generated by an inflow of low-skilled immigrants will reduced the number of hours worked in household production. Generally speaking, agents

that belong to cases 3 or 4 are those who either have very high wages or very high unearned incomes. We should not see any changes in hours spent in household production for women with relatively low wages or low unearned income.

Two points are worth mentioning. First, a change in p might generate that some agents that were previously not buying household services start doing so. For example, after a price drop an agent might switch from case 2 to case 3. Second, under a fairly simple household production function (for example $f(h) = ln(h)$), within high salaried agents belonging to case 4, the ones with lower salaries will decrease their household work by more than those with higher salaries. Therefore, the extensive margin of the price effect is increasing in the wage, but conditional on purchasing household services (intensive margin), the effect is decreasing in the wage. Intuitively, agents with very high wages are already spending very little time working at home. Therefore, compared to an agent with a still high, but not as high wage, her productivity in household production is relatively large and she needs a larger drop in market prices of household services to find it optimal to substitute own time with services.

2.4.2 Effect on labor supply

As with the effect on h, only certain agents' labor supply decisions will be affected by a drop in p (assuming it does not lead an agent to change to a different case). Only agents that are both working in the market and purchasing household services will be affected by a drop of p; these agents are characterized by high wages.

The effect on n will depend on how hours worked in household production and leisure change after a decrease in p. From the previous subsection it is clear that $\frac{\partial h^*}{\partial p} > 0$. Given that changes in p keep the relative price of l vs. y unchanged, the effect on leisure happens through a change in disposable income only. Its direction will depend on whether leisure is a normal or inferior good. If leisure is an inferior good or if it doesn't respond to income changes, then hours worked in the market is going to unambiguously increase when p goes down. If leisure is a normal good (as is in our case because the utility function is separable in y and l) then the direction of the effect will depend on the relative magnitudes of $\frac{\partial h}{\partial p}$ vs. $x\frac{\partial l}{\partial Income}$. Therefore, whether labor supply increases or decreases after a change in p can only be determined empirically.

In our particular case, it is easy to show that:

$$\frac{\partial n^*}{\partial p} = -\frac{\partial h^*}{\partial p} + \frac{wxu''}{w^2u'' + \psi''}. \tag{5}$$

Note that if the income effect is fairly small we have that:

$$\frac{\partial \left| \frac{\partial n^*}{\partial p} \right|}{\partial w} < 0.$$

From equation (5) we can also conclude that all else equal, agents with higher unearned

income (and therefore higher x) will react less to changes in p.

Summarizing, the model predicts that only women with high wages will be affected by the reduction in prices of household services resulting from a low-skilled immigration influx. A decrease in prices reduces the hours spent in household production, and might increase the hours worked in the market if leisure is not very sensitive to income. Within the group of women affected by the change in prices, the ones with lower wages will react more. Finally, higher unearned income is associated with a smaller labor supply response.

2.4.3 Women in careers that demand very long hours

We now introduce a small modification to the model. Its purpose is to capture the dilemma faced by women working in professions such as medicine and law: the only way to advance in their careers is by working very long hours.

Assume that the agent is offered the following contract:

$$\begin{aligned} \text{if } n &> \underline{n} \longrightarrow w^h \\ \text{if } n &< \underline{n} \longrightarrow w^l;\ w^l < w^h, \end{aligned}$$

and that under no constraints and wage equal to w^h, she will choose a $n^* < \underline{n}$.

The agent will choose the n that maximizes her utility; she compares the utility of working short hours at a low wage with the utility of working long hours at a higher wage. The maximization problem under no constraint on hours worked we have already characterized in a previous section. The maximization problem under the constraint that $n > \underline{n}$ implies the following first order condition:

$$\frac{\psi'(l)}{u'(y)} = pf'(h).$$

Therefore, the opportunity cost of an hour of leisure is not the wage, but the money the agent saves by spending the next hour doing household work instead of buying it in the market.

Intuitively, we should that agents for which the unconditional hours worked is not too far from $\underline{n}$ (for example, those with a low unearned income), are more likely to work long hours. What happens when there is an influx of low-skilled immigrants and the price of household services goes down? The utility of working short hours and working long hours will both increase; however, under the assumption that labor supply is increasing in p, the utility of working long hours will increase by more. Intuitively, the optimal unconstrained n is now closer to $\underline{n}$ making working longer hours under a higher wage relatively more attractive. Another way of looking at this is by noting that the utility of working long hours will increase by more because in addition to the increase in utility due to an income effect (the only relevant effect in the low wage case), it will increase via a substitution effect.

We conclude that a drop in p might induce women working in careers that demand long hours to increase their labor supply and receive higher wages. In other words, low-skilled immigration may help eliminate the glass ceiling.

3 Data and Descriptive Statistics

Immigration Data. This paper uses the 1980, 1990, and 2000 Public Use Microdata Samples (PUMS) of the Decennial Census to measure the concentration of low-skilled immigrants among cities and industries. Low-skilled workers are defined as those who have not completed high school. An immigrant is defined as someone who reports being a naturalized citizen or not being a citizen. We restrict the sample to people age 16-64 who report being in the labor force.

Table 1 shows the evolution of the share of low-skilled immigrants in the labor force for the 30 largest cities in the U.S. As observed there is large variation in immigrant concentration both across cities and through time.

Market Work Data. We also use the Census to quantify hours worked and labor force participation. As Table 2 shows, labor force participation and the number of hours worked a week increase systematically with the education level of the woman. Women with a graduate degree, a college degree, and some college present a significant increase in their labor force participation between 1980 and 1990.[8] During the last decade, participation of all education groups has stabilized, and if anything it has gone down. We also observe that the group of women with a graduate degree is the only one that experienced an increase in the probability of being married. The increase in marriage rates is particularly acute for women with professional degrees and Ph.D.'s.

Table 2 also includes the share of women with a professional degree or Ph.D. that reports working at least 50 or 60 hours a week. Close to a third of professional women reported working 50 hours or more a week in 2000, a double-fold increase from 1980, and at least two times as large as the share for women from any other group. Highly educated women are also at least three times as likely, compared to any other educational group, to work 60 hours or more a week.

Household Work Data. We combine information from the 2003-2005 ATUS and the 1980 PSID to measure the effect of low-skilled immigration on time devoted to household work.

Since 2003, the BLS has been running the ATUS, a monthly survey, whose sample is drawn from CPS – two months after households complete their eight CPS interviews. An eligible person from each household is randomly selected to participate, and there are no

[8] Note that the characteristics of the educational groups are likely to change significantly over time because of composition issues. For example, whereas in 1980 only 7 percent of wives in the sample had a college degree, by 2000 this number has increased to 17 percent.

substitutions. The week of the month and the day of the week on which the survey is conducted is randomly assigned; weekends are oversampled, they represent 50 percent of the sample. The overall response rate is 58 percent and the aggregated sample for 2003 and 2004 consists of approximately 38 000 observations.

Until the ATUS, only scattered time use surveys were available for the U.S. –all of them with too few observations to provide reliable information about city-averages of time allocation. Though not a time use survey, the PSID included between 1970 and 1986 a question about average hours a week spent by the wife and head of household on household chores. We construct a similar variable using the ATUS data. Specifically, we aggregate daily time spent on food preparation, food cleanup, cleaning house, clothes care, car repair, plant care, animal care, shopping for food, and shopping for clothes/HH items, multiply this aggregate by 7 and divide it by 60. Any difference in the definition of household work we hope to capture using decade dummies. For both surveys, our sample consists of women ages 21-64 that have completed the survey.

Table 3 presents the descriptive statistics of our time use data. In both years, time spent on household chores decreases as the education of the woman increases, and labor force participation increases with education. The data suggests that time devoted to household work has decreased significantly for all groups of women, and hours worked in the market (conditional on working) have been stable. Although the changes across years might be partially due to differences in the surveys, the fact that hours of household work have not changed much for men (and have actually increased for highly educated men) suggests that a reduction in household work for women has taken place, and that a big part of it might be explained by the increased participation of women in the labor force. Note that PSID's and ATUS's statistics on labor force participation of women and usual hours worked are not very different from the Census.

Consumption Data. We use CEX data to construct two measures of consumption of market supplied household services. First, in order to capture the extensive margin, we consider a dummy variable for positive reported expenditures in household services. Second, we also consider the amount spent on each of these services, a measure we identify as capturing mostly the intensive margin and that allows us to have an estimate of the elasticity of demand.[9] As observed in Table 4, the probability of consuming household services increases significantly with the education level of the wife / female head of the household. Whereas only 3 percent of households where such a female has at most a high school degree reported positive expenditures on this category, that fraction rises to 3, 8, 15 and 22 percent when considering females with respectively at most a high school degree, some college, a college degree, and a graduate degree.[10] Note that this pattern is consistent with the predictions of the model, where only women with high wages or high unearned income will purchase household services. With few exceptions, expenditures on household services tend to increase with the education of the main adult female in the household. The increasing pattern is especially clear for 2000, when

[9] We do not include child-care at home because the variable in the CEX was redefined between 1990 and 2000.

[10] The share of households with a wife/female head with a Ph.D. or professional degree that report positive expenditures in housekeeping services was close to 30 percent in 2000. Unfortunately, this statistic is only available after the BLS changed the education classification in 1996.

households with a wife or female household head with a graduate degree spent between 40 and 60 percent more in housekeeping services than other households.

4 Empirical Analysis

4.1 Identification Strategy

We exploit the intercity variation in the (change of) concentration of low-skilled immigrants to identify their effect on the time use decisions of American women and purchases of household services in American households. There are two concerns with the validity of the strategy. First, immigrants are not randomly distributed across labor markets. If immigrants cluster in cities with thriving economies, there would be a spurious positive correlation between immigration and labor force participation of women, for example. To deal with this potential bias, we instrument for immigrant location using the historical city-distribution of immigrants of a given country. The instrument will be discussed thoroughly in next section.

The second concern is that local labor markets are not closed and therefore natives may respond to the immigrant supply shock by moving their labor or capital to other cities, thereby re-equilibrating the national economy. Most of the papers that have studied this question, however, have found little or no evidence on displacement of low-skilled natives (Card (2005), Card and DiNardo (2000), and Card (2001)).[11] In any case, if factor mobility dissipates the effects of immigration flows to cities, our estimates should provide a lower bound for the total effect of low-skilled immigration on the time use of natives.

4.2 Instrument

The instrument exploits the tendency of immigrants to settle in a city with a large enclave of immigrants from the same country. Immigrant networks are an important consideration in the location choices of prospective immigrants because these networks facilitate the job search process and assimilation to the new culture (Munshi 2003). The instrument uses the 1970 distribution of immigrants from a given country across U.S. cities to allocate the new waves of immigrants from that country. For example, if a third of Mexican immigrants in 1970 were living in Los Angeles, the instrument allocates 33 percent of all Mexicans in the 1990s to Los Angeles.

Formally, the instrument for the number of low-skilled immigrants in city i and decade t can be written as

$$\sum_j \frac{Immigrants_{ji1970}}{Immigrants_{j1970}} * LSImmigrants_{jt}, \tag{6}$$

where j are all countries of origin included in the 1970 Census, $\frac{Immigrants_{ji1970}}{Immigrants_{j1970}}$ represents the

[11] The exceptions are **?** and Borjas (2006).

percentage of all immigrants from country j included in the 1970 Census who were living in city i, and $LSImmigrants_{jt}$ stands for the *total* number low-skilled emigrants from country j to the U.S. in decade t.

As can be seen in Table 5, the instrument is a good predictor of low-skilled workers and immigrant shares. The magnitudes of the coefficients suggest that, at current U.S. immigration levels, an increase of 10 percent in the predicted number of low-skilled immigrants increases the share of low-skilled workers between 2 percent and 3 percent.

Most of the econometric specifications in the paper include city and region*decade fixed effects. Therefore, the instrument will help in identifying the causal effect of immigration concentration on prices as long as the following conditions hold:

1. The unobserved factors determining that more immigrants decided to locate in city i vs. city $i\prime$ (both cities in the same region) in 1970, are not correlated with changes in the relative economic opportunities offered by the two cities during the 1980s and 1990s. The identification assumption is not violated, for example, by Sunbelt cities growing faster than cities in other regions (for several decades) and at the same time being important immigrant cities.

2. The total (national) flow of low-skilled immigrants in a given decade (second term in the interaction) is exogenous to differential shocks to cities within a given region.

An additional concern is the violation of the exclusion restriction, i.e., that low-skilled immigrant concentration might affect the time use of American women through other channels besides changing the prices of household related services, in particular, through lowering the wages of competing natives. However, our focus on very highly educated women reduces the likelihood that our main results are driven by wage effects. It would be difficult to argue that low-skilled immigrants are particularly complementary in production to lawyers and doctors, but not to women with just a college degree or a master's degree.

We should emphasize that even if the exclusion restriction is violated, our estimates still capture the causal effect of low-skilled immigration on the time use of American households. Hence, even in this case our results still show different effects for different groups of the population, reinforcing the idea that not all groups are equally affected by immigration. However, a violation of the exclusion restriction invalidates the use of our framework as a test for time use models and our estimates as measures of the services' price elasticities of labor supply. We believe that if this were the case our estimates still document causal relations and stylized facts that have not been previously explored in the literature.

4.3 Econometric Specifications and Results

Our theoretical framework suggests that price indexes (in particular, the price index of household services in a city) should be the explanatory variable in our analysis of time use and consumption. Unfortunately however, the price data used in Cortes (2008) is available only for 30 cities in the U.S. In order to expand the sample we estimate reduced-form specifications

using as explanatory variable the log of the share of low-skilled workers in the labor force (henceforth denoted by $\mathcal{L}_{it}$), a simplified version of Cortes (2008)'s price equations' main explanatory variable. For the main specifications, and to test the robustness of our results, we also present results using the share of low-skilled immigrants in the labor force, an immigration concentration measure commonly used in the literature.

4.3.1 Labor Supply.

The size of the Census sample allows us to run a separate regression by education group for the study of labor supply. The dependent variables of interest are usual hours a week worked, a dummy for labor force participation, usual hours a week worked conditional on working, and the probability of working at least 50 or 60 hours a week. We use the following specification:

$$LS^e_{nit} = \delta^e * \mathcal{L}_{it} + X'_{nit}\Lambda^e + \phi^e_i + \psi^e_{jt} + \varepsilon^e_{nit} \tag{7}$$

where e is education group. Vector X_{nit} are individual level characteristics, namely age, age squared, race, marital status and the presence of children in several age brackets. Henceforth, ϕ_i and ψ_{jt} represent city and region*decade fixed effects, respectively. Finally, $\mathcal{L}_{it}$ is given by the $ln(\frac{LSWorkers}{LaborForce})_{it}$.

Based on our model, our hypothesis is that $\delta^e \neq 0$ for women with very high salaries, which we equate to women with high educational attainment. The direction of the effect is theoretically ambiguous; if the income effect of leisure is not very large, then we should expect to find a negative effect of prices on labor supply and therefore a positive effect of low-skilled immigration. For women with medium level wages we expect an effect close to zero given that the large majority of them do not consume household services. For women with low levels of education, the effect of immigration is going to come mostly from lower wages due to increased competition in the labor market and not through changes in prices.

Demographic characteristics of the household are likely to influence the sensitivity of a woman's labor supply to changes in the prices of services that are close substitutes to household production. For example, we expect women with small children to react the most to the availability of cheaper and more flexible services, and women with high unearned income to react less. To test for heterogeneous responses to low-skilled immigration we estimate the following model:

$$LS^e_{nit} = \delta^e * \mathcal{L}_{it} + \pi^e * \mathcal{L}_{it} * D(Child < 6)_{nit} + X'_{nit}\Lambda^e + \phi^e_i + \varsigma^e_i * D(Child < 6)_{nit} + \psi^e_{jt} + \varepsilon^e_{nit} \tag{8}$$

Where $D(Child < 6)_{nit}$ is a dummy variable that takes a value of 1 if the woman has a child aged 5 or younger. $D(Child < 6)_{nit}$ is included in the vector X'_{nit} and we are allowing for city fixed effects to be different for mothers of small children.

A similar specification is used to test for differential effects on women with high unearned incomes. As proxy for this variable, we use (1) the income percentile of the husband and (2) a dummy that takes a value of 1 if the income percentile of the husband is above the

80th percentile. Naturally, we have to restrict the sample to married women. We expect the interaction term to be negative.

Results Table 6 presents the estimation of equation (7). Each number in the table comes from a different regression, where the explanatory variables of interest are the log of the share of low-skilled workers in the labor force (Columns 1 and 2) and the share of low-skilled immigrants in the labor force. The sample is restricted to women with a professional degree or Ph.D.

We present both OLS and IV estimates. It is not clear a priori if the OLS estimates will be biased upwards or downwards. Immigrants will choose to locate in cities with thriving economies, which will have higher prices (including household related services) and higher wages that will attract more women to the labor force. Our results suggest that the bias is negative; IV estimates are 3 to 4 times larger than the OLS estimates.

IV estimates show that low-skilled immigrants have significantly increased the labor supply of highly educated women, particularly at the intensive margin. The magnitudes of the coefficients in Column 2 imply that the low-skilled immigration shock of the period 1980-2000 increased between 50 and 70 minutes a week the time women in this group devoted to market work.[12] Similar results are obtained when the explanatory variable of interest is the share of low-skilled immigrants in the labor force and, although the effects are larger, they are of the same order of magnitude. The effect is a combination of labor supply changes for two types of women: (1) women already working that started purchasing household services as a result of the change in price and (2) women that were already consuming the market provided household good. Assuming the first group is not very large (as we will find in a later section), and given that the 2000 CEX suggests that close to 30 percent of women with a professional degree or a Ph.D. consume this type of service, the effect is close to 3 hours per affected woman.

Lawyers, physicians, MBAs and women with Ph.D.'s are the main categories represented in the group of women with professional degrees. In these fields, having a successful career requires the workers to have long hours of work. Doing so is specially challenging for women, who are usually responsible for household work and the care of children. Being able to buy from the market housekeeping services and, specially, child care services at unusual hours allows women with a professional degree or Ph.D. to compete with their male counterparts. Table 6 shows how low-skilled immigration has helped professional women increase their probability of working more than 50 and 60 hours. The magnitude of the effect is economically significant:

[12] Given that what we are ultimately interested in the magnitude of the effect of immigration flows on consumption and time use, we use the chain rule for its estimation:

$$\frac{dy}{d\left(\ln\ LSImmigrants\right)} = \frac{dy}{d\mathcal{L}} * \frac{d\mathcal{L}}{d(\ln\ LSImmigrants\ )} = \theta * \left(\frac{LS\ Immigrants}{LS\ Immigrants\ +\ LS\ Natives}\right),$$

where $\left(\frac{LS\ Immigrants}{LS\ Immigrants\ +\ LS\ Natives}\right)$ is the share of immigrants in the low-skilled labor supply and θ is the coefficient that measures the impact of $\mathcal{L}$ on outcome LS.

The last equality is based on the assumption that $\frac{d(\ln L)}{d(\ln I)} = 0$, i.e. there are no displacement effects. Note that the share of immigrants in the low-skilled labor supply varies significantly by city. We use its value for each city from the 1990 Census to calculate the city-specific immigration effect on consumption and time use of the low-skilled immigration flow of the 1990s. We report the weighted average across cities of these effects unless explicitly noted.

the low-skilled immigration flow of the 1980s and 1990s increased by 3.1 percentage points (a 15 percent increase) the probability that a working woman in these groups of the population reported working more than 50 hours a week, and by 1.7 percentage points the probability of working at least 60 hours, a 20 percent increase.

On the other hand, we find no evidence that low-skilled immigrants have increased the labor force participation of highly educated women. The coefficient for the labor force participation is negative under both specifications. However, it is far from statistically significant in Column 2 and only marginally significant in Column 4.

Professional women with small children should be particularly sensitive to changes in prices of housekeeping and child care services. The first two panels in Table 7 present the estimation of equation (7) expanded to include the interaction of the immigration variable with a dummy for having a child 5 or younger and a set of city fixed effects for women with children. The coefficients of the interactions all go in the expected direction and are large in magnitude. The estimates imply that effects on mothers of young kids are close to twice as large as the effects for others. Interestingly, in contrast to the results of the previous table, we estimate a significant positive effect on the probability of participating in the labor market. Note, however, that the magnitude is very small. We see a much larger effect on the probability of working at least 50 or 60 hours, suggesting that what professional mothers value the most of immigrant provided services is their flexibility.

The second panel of Table 7 shows the estimated coefficient of the interaction of the immigration variable with the income percentile of the husband and a dummy for the husband's income being in the 80th percentile. We interpret these variables as proxies for the non-labor income of the woman, and the estimation of the model should give us some sense about the magnitude and importance of income effects. As observed, although the interactions go in the right direction, they are not statistically significant.

Until now our focus has been on female workers given that women are usually the ones in charged of household production. However, as shown in Table 3, highly educated men have been the only group in the population to have increased the hours worked at home production, and spend more time in household chores compared to their less educated counterparts (see also Gershuny 2000). It is interesting to explore then, if changes in the prices of close substitutes to household production have also affected the labor supply of highly educated men. Note however, that we expect smaller effects for men, and therefore, estimating the labor supply equations for men also serves as a test that we are actually capturing effects of low-skilled immigrants on labor supply, and not of some other related phenomenon. Table 8 presents the estimates of equations (7) and (8). As observed, the coefficients go in the expected direction for both men and women, but the women's effects are always larger and, in most cases, significantly so. Interestingly, however, the coefficients of the interaction with the dummy of having a young child go in opposite directions for men and women, although the interaction coefficient for men is only significant for the probability of working more than 50 hours a week.

In order to check that we are correctly estimating and interpreting the effects of immigration on highly skilled women, in Table 9 we present the estimation of (7) for all other education groups. As discussed in section 4.2, we expect to find smaller labor supply effects of

changes in the prices of services that are close substitutes of household production for groups of women with lower education level. Given that we are presenting reduced form regressions, the interpretation of the coefficients as price effects is going to be particularly problematic for the groups with the lowest education levels. We expect that for women with at most a high school degree the main effect of immigration is going to be through competition in the labor market, and not through changes in the prices of services.

Three observations from Table 9 are worth mentioning. First, low-skilled immigration increases the labor supply of women with a college degree or a master's degree but only at the intensive margin. The effects on hours worked conditional on working and on the probability of working at least 50/60 hours are positive and statistically significant, but as predicted by the theory, considerably smaller in magnitude than the effects for women with a professional degree or Ph.D. Second, Table 9 shows that for the labor force participation equation, the relevant coefficients for these two groups are negative and statistically significant. This result is not predicted by our theory, and will be further confirmed by the household work regressions. Third, for the groups with the lowest education levels, there is also a negative effect of labor force participation and no significant effect on the intensive margin. As mentioned above, negative effects are expected for groups that directly compete with immigrants in the labor market.

Robustness Checks We provide several robustness checks to our main results. We address concerns about endogenous internal migration of highly skilled women, the choice of education groups, the importance of outliers, and low-skilled immigration proxying for other city-level time varying characteristics.

Highly educated women who want to work for longer hours might decide to migrate to cities where flexible and affordable housekeeping and child care services are available. To check that our estimates are not driven by endogenous migration, in Columns 2 and 3 of Table 10 we restrict the sample to (1) women that reported that 5 years ago they were living in the same house or have moved only within the county, and to (2) women who at the time of the Census were living in their state of birth. The estimated effects of low-skilled immigration on the labor supply of highly educated women are generally smaller for non-movers compared to the baseline regressions, but have the expected sign and in most cases are statistically significant. The smaller coefficients might suggest that endogenous migration plays a role; note, however, that the coefficients are never statistically different from the baseline.

Given that our selection criterion for the group of women with a professional degree or Ph.D. is based, at least partially, on reported occupation, and women not participating in the labor market usually do not report theirs, we present estimates where highly educated women are defined based solely on reported education.[13] As observed in Column 4 of Table 10, results are very robust to this change in definition. To show that our results are not driven by outliers, the last column of the table excludes from the sample women living in Los Angeles, New York, and Miami. Again, the results change very little.

[13] In particular, we classify as highly educated women those who in the 1990 and 2000 Census reported having a professional degree or a PhD, or reported having at least 3 years of graduate education in the 1980 Census.

Finally, in Table 11 we include in the econometric specifications sets of demographic and economic controls that vary at the city-time level. Our purpose is to show that our immigration variable is robust to their introduction, and thus, is not just acting as a proxy for other phenomena taking place in the city. Column 2 controls for changes in the gender and race composition of the city, Column 3 for changes in the education composition of the labor force and Column 4 for changes in the industrial composition of the city. Our estimates are generally robust to the inclusion of these controls; the estimates when the industrial composition of the city is included are somehow smaller (but still statistically significant) than in the baseline case. The last column controls for city specific time trends. The standard errors increased substantially as expected, but the magnitudes and signs of the coefficients are remarkably similar to those of the baseline regression.

4.3.2 Time devoted to household work.

Our model suggests that low-skilled immigration should affect the time devoted to household work only for women who purchase household services in the market. Generally speaking, women with high salaries and high unearned income are the most likely to consume this service.

Because of the reduced number of observations, we cannot run a separate regression for each education group. Therefore, we estimate one regression and restrict the coefficients on individual characteristics and the city and decade*region fixed effects to be equal for all education groups. We do allow for the effect of low-skilled immigration to differ by the education level of the woman. We use the following specification:

$$HW_{nit} = \sum_{e} \pi^{e} * \mathcal{L}_{it} * dummy\_educ_{nit} + X'_{nit}\Lambda + \theta_e + \phi_i + \psi_{jt} + \varepsilon_{ijt} \tag{9}$$

where HW_{nit} represents the average hours a week woman n spends doing household work in city i and year t and θ_e education level fixed effects.

If the price of a market substitute goes down, women likely to consume household services will reduce their time spent doing household work. Therefore, we expect $\pi^{\text{grad}\,uate} < 0$.

In Table 12 we present the estimations of equation (9). Confirming our previous results, the estimates show important variation by educational group. For highly educated women we find a negative effect of the log of the share of low-skilled workers in the labor force, a result in accordance with our original conjectures and with our previous finding that low-skilled immigration has increased hours worked by working women with a graduate degree. Its magnitude suggests that the low-skilled immigration flow of the period 1980-2000 reduced by 138 minutes a week the time devoted to household work by women with a graduate degree. Note that with the ATUS and PSID we cannot further disaggregate this highly educated group into women with a master's degree and women with a professional degree or Ph.D., so the magnitude could be even larger for the latter group. Given that the magnitude of the decline in household work of women with a graduate degree is larger than that of the increase in hours worked in the market, it is likely that leisure time for this group of women also increased. Unfortunately, we cannot test this hypothesis with our data.

For all other education groups, women experienced a positive but not statistically significant effect of immigration on household work, the sole exception being women with at most a high school degree for which the effect is statistically larger than 0. The results of the present section are consistent with the labor supply effects estimated in Table 9.[14]

4.3.3 Consumption of Housekeeping Services.

To test for the effects of low-skilled immigration on the consumption of household services, we use a similar, but more restricted specification than the one above:

$$y_{nit} = \kappa * \mathcal{L}_{it} + \nu * \mathcal{L}_{it} * Grad_{nit} + X'_{nit}\Lambda + \phi_i + \psi_{jt} + \varepsilon_{ijt} \tag{10}$$

where n represents a household, i city, j region, and t year. y is an outcome taken from the expenditure data; it can be either a dummy variable for positive reported expenditures in housekeeping services, or the amount spent, in dollars, on them. $Grad_{nit}$ is a dummy variable for whether the wife or female head of the household has a graduate degree. The vector X_n are household level characteristics, namely age, sex, and education of the wife or female head of the household (includes a dummy for graduate degree), and household size and demographic composition. As we mentioned earlier, ϕ_i and ψ_{jt} represent city and region*decade fixed effects, respectively.

We expect $\kappa, \nu > 0$, i.e. an immigrant induced increase in the share of low-skilled workers in the labor force, by reducing the prices of housekeeping services, increases the probability a household purchases housekeeping services, more so for the highest skilled households who are most likely to be close to the threshold. If the elasticity of demand for housekeeping services is greater than one, κ and $(\kappa + \nu)$ should also be positive in the regression where the dependent variable is the level of expenditures in housekeeping services.

Using CEX data from 1980, 1990, and 2000, we estimate equation (10) and summarize the results in Table 13. The left panel reports the estimation when the dependent variable is a dummy for positive expenditures in housekeeping services, and the right panel when the variable of interest is the level of expenditures in dollars. Several points are worth mentioning. First, all of the main effects of the share of low-skilled workers in the labor force are negative, though none is statistically significant. On the other hand, the interaction with the dummy for wife or female head with a graduate degree is positive, large in magnitude, and, for the level of expenditures' equation, statistically significant at the 10 percent level. The magnitude of the coefficients suggests that the low-skilled immigration flow of the 1980s and 1990s increased by a city-average of about 54 dollars per quarter the amount spent on housekeeping services by households whose wife/female head has a graduate degree.Given that women with a graduate degree reduced their time doing household work by 27 hours a quarter, 54 dollars seems a little low. There are two reasons why this number is not necessarily low: first, given

[14] We also study the effects on household work using the 2003 and 2004 ATUS (American Time Use Survey), and the Fall 92-Summer 94 National Human Activity Pattern Survey (NHAPS). The results obtained are consistent with the evidence we find with our preferred database in the household work dimension. However, the small sample size of the NHAPS survey and some compatibility concerns about the labor supply statistics lead us to present the results with the ATUS and PSID sample only.

that expenditures on housekeeping services do not include expenditures on services such as gardening, laundry, child-care (that are likely to be the first ones acquired from the market or provided by hired service), the estimated effect on expenditures is probably underestimating the real total effect on service acquisition on the market. Second, the estimations come from different datasets and hence are not necessarily comparable in magnitudes with the previous one. Therefore, we consider the number to be in a reasonable range, and see it as a confirmation that highly educated (skilled) women are indeed substituting household production with market services.

4.4 High-Skilled Women and Time Use

The empirical evidence we present in the previous subsections describes an interesting profile of response by highly-skilled women. We observe that while for women with a professional degree or Ph.D. there is, if anything, a small negative effect on labor force participation, they experience a large effect on hours worked conditional on working, a result that implies that the women who work, work longer hours on average. This effect may come in a variety of ways: women at the top may start working more or all working women may work more hours per week than women who worked before the waves of low-skilled immigration. The evidence in Table 6 suggests that part of this effect comes from an increased fraction of women working more than 50 and 60 hours per week. This effect is compatible with the fact that among the women with professional degrees we observe many occupations that require long hours of work (e.g. lawyers, managers) or that have irregular schedules (e.g. physicians), making them more likely to rely on flexible services as replacement for household work.

Further evidence can be observed in the upper and middle panels of Table 7. One main reason why households may need more household work is related to the presence of children, as looking after them and keeping them company are likely to be time consuming. In Table 7 we show that the response to immigration is larger when there is a child present at home, the estimated coefficient is positive and in most specifications significantly different from 0. The magnitude of the coefficient suggests that the increase in the probability of working more than 50 and 60 hours per week is approximately twice as large than the increase for a woman without a child at home. In section 2 we mentioned that the valuation effect of the lower prices on non-labor income could play a role; weak evidence supporting this is presented in Table 7 also, where we see that the effect of low-skilled immigration is attenuated for women whose spouse's income is high.

Overall, the picture observed in our empirical results suggests that reduced prices for services is a reasonable channel for these responses to low-skilled immigration. The differential effects according to skill level (or educational attainment) are likely to be linked to an increase in the demand for these services; also women with more education are less likely to suffer a direct effect on their wages. The significant effect of household characteristics, in particular the effect of children, also points in the same direction.

5 Concluding Remarks

This paper shows that low-skilled immigration into the U.S. can generate effects on the labor supply of natives that go beyond the standard analysis of the impact that immigrants have on natives of similar skill. Using a simple model of time use, we argue that by lowering the prices of services that are close substitutes of home production, low-skilled immigrants might increase the labor supply of highly skilled native women, a group that is unlikely to be affected through other channels usually mentioned in the literature: wages and employment (displacement) effects. It is particularly interesting that for the other groups of the population, we find no consistent evidence suggesting a channel through market services and time use considerations (household production and labor supply).

Using Census data we estimate that the low-skilled immigration wave of the 1980s and 1990s increased between 50-70 minutes a week, the time women with a professional degree or Ph.D. spend working in the market. The effect is larger for highly educated women that have small children. The average increase hides important changes in the distribution of hours. Many women with professional degrees, especially lawyers, physicians, and women with Ph.D.'s, work in fields where long hours are required to succeed. Motivated by this fact we explore whether women in those groups effectively choose to work longer hours a week when the prices of services go down. We find that low-skilled immigration has helped professional women increase significantly their probability of working more than 50 and 60 hours. We also find that the effects of low-skilled immigration on these outcomes are stronger for women in households where there are children present, with estimates that imply an increase in the impact of close to 100% of that on a woman without children at home.

As supporting evidence for our result on the effects of low-skilled immigration on the labor supply of highly skilled women, we find that low-skilled immigration has also decreased the amount of time women with a graduate degree devote to household work and has increased the amount of services purchased in the market; a result that is implicit in their reported dollar expenditures in housekeeping services.

Our findings suggest that only women at the very top of the skill distribution are being positively affected by the reduction in the prices of services that are substitutes for household production. Therefore we provide additional support for the hypothesis that the effects of low-skilled immigration on the welfare of the native population can be heterogeneously distributed, benefitting some groups more than others. In our particular case we find that very highly educated women seem to be able to choose labor supply profiles that they could not afford before. The question remains open as to whether this allocation is indeed desirable if the quality of some of the goods, like child care, is not the same when provided by the market instead of by the parents (Baker et al (2005)).

Additionally, the fact that highly-educated women change their labor supply decisions in response to the immigration-induced price changes also suggests that at least part of the differences between women and men in certain jobs reflect barriers that should not be fully attributed to differences in preferences; according to our results, part of these differences are coming from restrictions on affordable household help. Women might indeed value family life

more than men, but the lack of more affordable services seems to be playing a role on the decision.

Finally, while on a broader perspective the estimated effects are not likely to be the main channel through which immigration affects natives, they do provide a newer point of view on the same question about the effects of immigration on native workers. Highlighting a plausible and new channel emphasizes the importance of a thorough understanding of the effects of immigration across all groups and not just for those that seem at first sight to be most affected by it. The high level of heterogeneity in the responses implies that the benefits are extremely concentrated at the top of the educational attainment distribution.

References

Altonji, Joseph G., and Card, David. (1991). "The Effects of Immigration on the Labor Market Outcomes of Less-Skilled Natives." In *Immigration, Trade and Labor*, edited by John M. Abowd and Richard B. Freeman. Chicago: University of Chicago Press, 1991.

Baker, Michael, Jonathan Gruber, and Kevin Milligan (2005). "Universal Childcare, Maternal Labor Supply and Family Well-Being." NBER Working Paper 11832, December.

Becker, G. (1965). "A Theory of the Allocation of Time." *Economic Journal*, 75, September, p. 493-517.

Blau, D. (2003). "Childcare Subsidy Programs" in Robert Moffitt (ed.) *Means-Tested Transfer Programs in the U.S.*. Chicago: University of Chicago Press.

Borjas, George, J. (2006). "Native Internal Migration and the Labor Market Impact of Immigration", *Journal of Human Resources* 41 (Spring): 221-258.

Borjas, George, J. (1994) "The Economics of Immigration." *Journal of Economic Literature* 32: December 1994, p. 1667-1717.

Borjas, George, J. (1995) "The Economic Benefits from Immigration." *Journal of Economic Perspectives* 9(2): Spring 1995, p. 3-22.

Borjas, George, J. (2003). "The Labor Demand Curve Is Downward Sloping: Reexamining the Impact of Immigration on the Labor Market." *Quartely Journal of Economics* November 2003, pp. 1335-1374

Card, David. (1990) "The Impact of the of the Mariel Boatlift on the Miami Labor Market." *Industrial and Labor Relations Review* 43: January 1990, p.245-57.

Card, David, "Immigrant Inflows, Native Outflows, and the Local Labor Market Impacts of Higher Immigration." *Journal of Labor Economics* 19: January 2001, pp. 22-64.

Card, David (2005) "Is the New Immigration Really so Bad?", NBER Working Paper No. 11547, August 2005.

Card, David and Ethan G. Lewis (2005) "The Diffusion of Mexican Immigrants During the 1990s: Explanations and Impacts", NBER working paper No. 11552, August 2005.

Card, David and John E. DiNardo.(2000) "Do Immigrant Inflows Lead to Native Outflows?" *American Economic Review* 90: May 2000, p.360-367.

Cortes, Patricia (2008) "The Effect of Low-Skilled Immigration on U.S. Prices: Evidence from CPI Data", mimeo, University of Chicago, GSB, forthcoming *Journal of Political Economy.*

Federman, May N., Harrington, David E. and Kathy J. Krynski (2005) "Vietnamese Manicurists: Displacing Natives or Finding New Nails to Polish?" *Industrial and Labor Relations Review,* forthcoming.

Gelbach, Jonah B. (2002) "Public Schooling for Young Children and Maternal Labor Supply" *American Economic Review* 92(1): 307-22.

Gronau, Reuben (1977) "Leisure, Home Production, and Work– the Theory of Allocation of Time Revisited" *Journal of Political Economy* 85(6): 1099-1123.

Harrington, Mona and Helen Hsi (2007) "Women Lawyers and Obstacles to Leadership: A Report of MIT Workplace Center Surveys on Comparative Career Decisions and Attrition Rates of Women and Men in Massachusetts Law Firms," mimeo, MIT Workplace Center, Spring, online.

Khananusapkul, Phanwadee 2004. "Do Low-Skilled Female Immigrants Increase the Labor Supply of Skilled Native Women?". Ph.D. Dissertation. Harvard University, Cambridge, MA.

Kremer, Michael and Stanley Watts (2006) "The Globalization of Household Production," mimeo, Harvard University.

Kooreman, Peter and Arie Kapteyn (1987) "A Disaggregated Analysis of the Allocation of Time within the Household" *Journal of Political Economy* 95(2): 223-49.

Lewis, Ethan G. (2005) "Immigration, Skill Mix, and the Choice of Technique". Federal Reserve Bank of Philadelphia. Unpublished Working Papers (May 2005).

Munshi, Kaivan (2003). "Networks in the Modern Economy: Mexican Migrants in the U.S. Labor Market," *The Quarterly Journal of Economics*, 118(2), p. 549-599.

Ottaviano, Gianmarco, and Giovanni Peri (2006). "Rethinking the Effects of Immigration on Wages." NBER Working Paper No. 12497.

Saez, Emmanuel (2002). "Optimal Income Transfer Programs: Intensive versus Extensive Labor Supply Responses," *The Quarterly Journal of Economics*, 117(3), p. 1039-1073.

Saiz, Albert (2003). "Room in the Kitchen for the Melting Pot." *The Review of Economics and Statistics*, 85(3): 502-521.

Saiz, Albert (2006). "Immigration and Housing Rents in American Cities." IZA Discussion Paper No. 2189.

United States Department of Citizenship and Immigration Services (2003). "Estimates of the Unauthorized Immigrant Population Residing in the United States: 1990 to 2000." Unpublished Paper Dated January 2003.

Table 1. Share of Low-skilled Immigrants in the Labor Force (%)

City	1980	1990	2000
Atlanta	0.38	0.84	3.23
Baltimore	0.76	0.44	0.67
Boston	3.53	2.71	2.62
Buffalo	1.48	0.72	0.47
Chicago	4.99	5.09	5.86
Cincinnati	0.44	0.23	0.34
Cleveland	1.82	0.89	0.65
Columbus	0.43	0.25	0.81
Dallas-Fort Worth	2.13	5.17	8.63
Denver-Boulder	1.18	1.42	4.13
Detroit	1.76	0.93	1.35
Honolulu	4.71	3.66	3.18
Houston	3.96	7.03	9.21
Kansas City	0.58	0.47	1.44
Los Angeles	11.64	15.90	15.09
Miami	15.13	14.44	11.36
Milwaukee	1.07	0.84	1.54
Minneapolis	0.49	0.37	1.43
New Orleans	1.20	1.13	1.08
New York	8.91	7.82	8.15
Philadelphia	1.39	0.91	1.06
Phoenix	2.19	3.30	6.41
Pittsburgh	0.57	0.27	0.21
Portland	1.03	1.53	3.27
St. Louis	0.49	0.24	0.53
San Diego	4.59	5.92	6.34
San Francisco	4.40	6.73	6.19
Seattle	1.22	1.00	1.94
Tampa	1.50	1.69	2.15
Washington DC	1.61	2.52	3.76
Weighted Average 116 cities	3.36	3.80	4.31

Source: US Census. Note: Low-skilled workers are defined as those without a high school degree

Table 2. Descriptive Statistics - Census Data on Women's Labor Supply

	High School Dropout			*High School Graduate*			*Some College*		
	1980	1990	2000	1980	1990	2000	1980	1990	2000
Share of Year sample	0.24	0.12	0.08	0.44	0.37	0.32	0.17	0.28	0.32
Labor Force Partipation	0.45	0.45	0.46	0.50	0.67	0.66	0.68	0.78	0.77
Usual Hrs. per week |H>0	35.23	35.49	36.37	35.38	36.24	37.18	35.66	37.22	37.96
% work at least 50 hrs.	0.02	0.03	0.04	0.02	0.04	0.06	0.03	0.07	0.09
% work at least 60 hrs.	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.02	0.03
Hourly Wage | Working	6.68	8.76	12.58	6.64	10.08	14.68	7.24	11.75	17.04
Married	0.62	0.52	0.46	0.71	0.64	0.60	0.68	0.63	0.60
Child younger than 5	0.11	0.12	0.12	0.17	0.16	0.13	0.20	0.19	0.16
Child younger than 17	0.38	0.33	0.34	0.48	0.41	0.39	0.48	0.44	0.43
	College Grad +			*Profess. Degree or Ph.D.*					
	1980	1990	2000	1980	1990	2000			
Share of Year sample	0.15	0.20	0.25	0.01	0.02	0.03			
Labor Force Partipation	0.74	0.83	0.81	0.87	0.91	0.89			
Usual Hrs. per week |H>0	35.74	37.89	38.94	40.81	42.61	44.03			
% work at least 50 hrs.	0.05	0.11	0.15	0.18	0.27	0.34			
% work at least 60 hrs.	0.01	0.03	0.04	0.07	0.10	0.13			
Hourly Wage | Working	9.01	15.72	23.50	10.76	20.90	33.98			
Married	0.66	0.62	0.64	0.52	0.59	0.61			
Child younger than 5	0.18	0.19	0.18	0.11	0.18	0.16			
Child younger than 17	0.40	0.38	0.40	0.29	0.34	0.37			

Table 3. Descriptive Statistics - Time-use of Women from 1980 PSID and 2003-2005 ATUS

	High School Drop		*High School Grad*		*Some College*		*College Grad*		*More than College*	
	1980	2000s	1980	2000s	1980	2000s	1980	2000s	1980	2000s
Sample Share	0.22	0.12	0.31	0.29	0.32	0.29	0.11	0.21	0.04	0.11
Hrs/week on HHld. Chores	25.05	17.96	24.52	15.09	22.19	13.82	20.40	13.38	16.85	11.66
	(17.12)	(17.12)	(16.13)	(15.80)	(15.96)	(15.36)	(14.83)	(13.66)	(13.57)	(12.69)
Hrs/week on HHld. Chores	7.97	5.50	7.73	6.54	7.61	6.51	7.92	6.88	6.67	7.40
(by men of same ed level)	(9.06)	(10.27)	(7.73)	(6.54)	(6.94)	(10.93)	(6.53)	(10.76)	(6.23)	(11.16)
Hrs/week Mkt. Work	36.87	35.35	36.65	37.14	36.98	36.85	36.95	37.50	35.24	40.03
	(10.81)	(10.62)	(8.35)	(9.88)	(8.77)	(10.64)	(8.82)	(12.00)	(10.92)	(11.67)
Labor Force Partipation	0.50	0.49	0.60	0.72	0.71	0.75	0.72	0.78	0.89	0.83
	(0.50)	(0.50)	(0.49)	(0.45)	(0.46)	(0.43)	(0.45)	(0.42)	(0.31)	(0.38)
Married	0.53	0.47	0.75	0.55	0.67	0.51	0.75	0.63	0.79	0.63
	(0.50)	(0.50)	(0.44)	(0.50)	(0.47)	(0.50)	(0.44)	(0.48)	(0.41)	(0.48)
Child less than 6 years	0.31	0.27	0.40	0.21	0.33	0.20	0.32	0.26	0.25	0.25
	(0.46)	(0.45)	(0.49)	(0.41)	(0.47)	(0.40)	(0.47)	(0.44)	(0.44)	(0.43)
Children	0.65	0.52	0.71	0.48	0.59	0.50	0.46	0.52	0.43	0.50
	(0.48)	(0.50)	(0.46)	(0.50)	(0.49)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)

Table 4. Descriptive Statistics - Consumer Expenditure Survey

	High School Drop			*High School Grad*			*Some College*		
	1980	1990	2000	1980	1990	2000	1980	1990	2000
Sample Share	0.19	0.13	0.08	0.40	0.35	0.30	0.24	0.27	0.32
Dummy for Positive Exp. in Housekeeping	0.03 (0.162)	0.03 (0.157)	0.02 (0.152)	0.04 (0.205)	0.03 (0.181)	0.03 (0.176)	0.08 (0.266)	0.09 (0.288)	0.07
Housekeeping Exp.| E>0 (current dollars)	35.06 (50.09)	116.58 (68.39)	185.82 (161.89)	102.68 (139.98)	288.92 (559.87)	239.10 (373.76)	145.00 (150.93)	203.89 (226.01)	231.83 (223.25)
Housekeeping Exp.| E>0 (1990 dollars)	57.50 (82.15)	116.58 (68.39)	139.36 (121.41)	168.39 (229.56)	288.92 (559.87)	179.32 (280.32)	237.80 (247.52)	203.89 (226.01)	173.87 (167.46)

	College Grad			*More than College*		
	1980	1990	2000	1980	1990	2000
Sample Share	0.10	0.14	0.20	0.08	0.10	0.10
Dummy for Positive Exp. in Housekeeping	0.15 (0.353)	0.13 (0.340)	0.14 (0.346)	0.20 (0.398)	0.22 (0.417)	0.22 (0.418)
Housekeeping Exp.| E>0 (current dollars)	323.82 (399.46)	266.87 (305.62)	331.22 (345.53)	205.51 (418.99)	279.55 (342.74)	523.63 (1112.12)
Housekeeping Exp.| E>0 (1990 dollars)	531.07 (655.11)	266.87 (305.62)	248.42 (259.15)	337.03 (687.15)	279.55 (342.74)	392.72 (834.09)

Table 5. First Stage

	Log (LS Imm + LS Nat. /Labor Force)				
	(1)	(2)	(3)	(4)	(5)
$\text{Log}(\sum_j \text{share}_{i,j,1970} * \text{LS Imm}_{jt})$	0.199	0.136	0.293	0.239	0.231
	(0.026)***	(0.024)***	(0.053)***	(0.070)***	(0.074)***
Region*Decade FE	No	Yes	No	Yes	Yes
Includes California	Yes	Yes	Yes	Yes	No
R-squared	0.964	0.972	0.973	0.975	0.978
No. cities	116	116	30	30	27

Note: OLS estimates. City and decade fixed effects are included in all the regressions. Robust Std. Errors are reported in parenthesis. Significance levels: *=10%. **=5% , ***=1%

Table 6. Low-skilled Immigration and the labor supply of women with Prof. Degrees or PhDs
(Census Data 1980, 1990, 2000)

	Key Explanatory Variable			
	L(LS Imm + LS Nat./LF)		LS Imm/LF	
Dependent Variable:	OLS	IV	OLS	IV
Usual Hrs. Work	1.907	5.836	17.538	84.005
	(0.916)	(1.504)	(7.157)	(38.582)
Labor Force Participation	0.005	-0.015	-0.105	-0.104
	(0.012)	(0.026)	(0.127)	(0.479)
Usual Hrs. Work | Working	3.048	7.815	24.518	80.945
	(0.916)	(1.43)	(7.030)	(44.339)
Prob(H>=50)	0.073	0.207	0.815	1.292
	(0.028)	(0.043)	(0.203)	(1.384)
Prob(H>=60)	0.046	0.115	0.474	1.965
	(0.019)	(0.030)	(0.124)	(0.787)

Each number comes from a different regression. All estimations include city, decade*region fixed effects and demographic controls. Errors are clustered at the city*decade level. Number of Obs. is 92027.

Table 7. LS Immigration and the Labor Supply of High Skilled Women - Effects of Children and High Income Husbands
(Census Data, Sample: Women with a professional degree or Ph.D.; IV estimations)

	Usual Hrs. Work	Lab Force Part.	Hrs. Work | H>0	Prob(H>=50)	Prob(H>=60)
I. Effects of having a child < 6					
L(LS Imm + LS Nat./LF)	5.337	-0.020	7.611	0.186	0.106
	(1.590)	(0.026)	(1.440)	(0.043)	(0.030)
Interacted with :					
Dummy for Child age <6	4.663	0.049	1.533	0.147	0.071
	(1.724)	(0.022)	(1.060)	(0.020)	(0.012)
II. Effect of a high income husband					
a.					
L(LS Imm + LS Nat./LF)	9.545	0.050	9.210	0.283	0.190
	(4.718)	(0.091)	(3.223)	(0.127)	(0.077)
Interacted with :					
Percentile of husband's total income	-7.550	-0.079	-3.738	-0.211	-0.168
	(6.477)	(0.114)	(4.185)	(0.171)	(0.099)
b.					
L(LS Imm + LS Nat./LF)	6.337	-0.019	8.438	0.246	0.137
	(1.655)	(0.030)	(1.509)	(0.049)	(0.034)
Interacted with :					
Dummy for husband in top 80 perc.	-1.501	0.011	-1.868	-0.112	-0.062
	(2.064)	(0.037)	(1.672)	(0.079)	(0.040)

All estimations include city, decade*region fixed effects and demographic controls. Panel I and II's regressions also include city*dummy for child < 6 fixed effects Errors are clustered at the city*decade level.

Table 8. Low-skilled Immigration and the labor supply of Professional Degrees or PhDs : Women vs. Men
(Census Data 1980, 1990, 2000; IV estimations)

	I. Effect of LS Immigration		*II. Differential Effect of Having a Child 5 or younger*			
	Women	Men	Women		Men	
	L(LS Work/LF)	L(LS Work/LF)	L(LS Work/LF)	Interact. child5	L(LS Work/LF)	Interact. child5
Dependent Variable:						
Usual Hrs. Work	5.836	3.659	5.337	4.663	3.752	-0.284
	(1.504)	(1.087)	(1.590)	(1.724)	(1.097)	(0.493)
Labor Force Participation	-0.015	-0.012	-0.020	0.049	-0.011	-0.002
	(0.026)	(0.010)	(0.026)	(0.022)	(0.010)	(0.007)
Usual Hrs. Work | Working	7.815	4.150	7.611	1.533	4.188	-0.235
	(1.43)	(1.007)	(1.440)	(1.060)	(1.033)	(0.466)
Prob(H>=50)	0.207	0.153	0.186	0.147	0.167	-0.063
	(0.043)	(0.036)	(0.043)	(0.020)	(0.037)	(0.018)
Prob(H>=60)	0.115	0.098	0.106	0.071	0.101	-0.019
	(0.030)	(0.028)	(0.030)	(0.012)	(0.029)	(0.017)

Each number comes from a different regression. All estimations include city, decade*region fixed effects and demographic controls.
Errors are clustered at the city*decade level. Number of Obs. is 92027 for women and 230087 for men.

Table 9. The Effect of Low-skilled Immigration on Women's Labor Supply by Education Group

	Explanatory Variable:L(LS Imm + LS Nat./LF)				
	Usual Hrs. Work	Lab Force Part.	Hrs. Work | H>0	Prob(H>=50)	Prob(H>=60)
Education Level of Woman					
Professional Degree or PhD	5.836	-0.015	7.815	0.207	0.115
	(1.504)	(0.026)	(1.43)	(0.043)	(0.030)
College Graduate +	-0.520	-0.096	2.371	0.108	0.051
	(0.578)	(0.022)	(0.517)	(0.018)	(0.009)
Some College	-3.527	-0.103	-0.213	0.015	0.007
	(1.003)	(0.029)	(0.403)	(0.008)	(0.003)
High School Grad	-6.750	-0.176	-0.287	-0.003	0.003
	(1.353)	(0.037)	(0.342)	(0.005)	(0.003)
High School Dropout	-5.023	-0.081	-0.273	-0.008	0.002
	(1.482)	(0.034)	(0.743)	(0.006)	(0.004)

All regressions include city and region*decade fixed effects and demographic controls (age, age squared, marital status, race, children).

Standard Errors are clustered at the city*decade level.

Table 10. Low-skilled Immigration, prices, and the labor supply of women with Professional Degrees or PhDs : Alternative Samples
(Census Data 1980, 1990, 2000)

	Key Explanatory Variable: L(LS Imm + LS Nat./LF)				
	Sample				
	Baseline	Non-movers Def.1	Non-movers Def.2	Selected on Education only	Excludes LA, NY, and Miami
Dependent Variable:	(1)	(2)	(3)	(4)	(5)
Usual Hrs. Work	5.836	4.355	4.030	4.328	5.351
	(1.504)	(2.020)	(2.056)	(1.667)	(1.838)
Labor Force Participation	-0.015	0.016	0.023	-0.037	0.005
	(0.026)	(0.042)	(0.405)	(0.023)	(0.034)
Usual Hrs. Work | Working	7.815	5.411	8.450	8.163	7.142
	(1.43)	(1.820)	(1.714)	(1.499)	(1.650)
Prob(H>=50)	0.207	0.157	0.221	0.204	0.186
	(0.043)	(0.0475)	(0.052)	(0.046)	(0.052)
Prob(H>=60)	0.115	0.038	0.096	0.082	0.085
	(0.030)	(0.034)	(0.038)	(0.028)	(0.033)
N. Observations	92027	41951	38027	81957	79092

Each number comes from a different regression. All estimations include city, decade*region fixed effects and demographic controls.

Non-mover Def 1: individuals that reported that 5 years ago they were living in the same house or have moved within the county.

Non-mover Def 2: Individuals living in their state of birth.

Selected on Education Only: women with a professional or PhD degree (1990 and 2000 Census), or with at least 3 years of graduate education (1980 Census).

Table 11. Low-skilled Immigration, prices, and the labor supply of women with Professional Degrees or PhDs : Additional Controls
(Census Data 1980, 1990, 2000)

	Key Explanatory Variable: L(LS Imm + LS Nat./LF)				
		Additional controls at the city level			
	Baseline	Race/Gender comp.	Education Comp.	Industrial Comp.	City Trends
Dependent Variable:	IV	IV	IV	IV	IV
Usual Hrs. Work	5.836	4.358	5.427	3.594	4.890
	(1.504)	(2.003)	(1.557)	(2.288)	(5.886)
Labor Force Participation	-0.015	-0.032	-0.007	0.017	-0.150
	(0.026)	(0.039)	(0.034)	(0.046)	(0.108)
Usual Hrs. Work | Working	7.815	6.018	7.249	5.171	6.480
	(1.43)	(1.829)	(1.430)	(1.879)	(4.142)
Prob(H>=50)	0.207	0.185	0.191	0.116	0.268
	(0.043)	(0.058)	(0.045)	(0.062)	(0.142)
Prob(H>=60)	0.115	0.097	0.096	0.100	0.005
	(0.030)	(0.038)	(0.030)	(0.049)	(0.093)

Each number comes from a different regression. All estimations include city, decade*region fixed effects and demographic controls. Errors are clustered at the city*decade level.

Race and gender composition: fraction of natives that are white, black and female

Education composition: fraction of natives that are hsdrops, hsgrads, some college, and college grads

Industrial composition: fraction of natives that work in agriculture/mining, construction, transportation/communication, manufacturing, retail, business ss, personal ss, finance, professional ss, entertainment ss and public administration.

Table 12. The Effect of Low-skilled Immigration on Women's Household Work
(PSID and ATUS Data)

	Dependent Variable: Hours per week spent doing HHld chores			
	(1) OLS	(2) IV	(3) IV	(4) IV
L((LS Imm. +LS Nat.) /LF)	0.365	-1.159		1.600
	(1.092)	(4.504)		(4.415)
L((LS Imm. +LS Nat.) /LF) interacted with a dummy for:				
More than College			-15.383	-17.004
			(7.150)	(7.107)
College			0.343	
			(5.953)	
Some College			-4.578	
			(5.090)	
High School Grad			7.476	
			(8.553)	

Each column represents a separate regression. All estimations include city, decade*region fixed effects and demographic controls. Errors are clustered at the city*decade level.

Table 13. Low-skilled Immigration and the Consumption of Housekeeping Services
(CEX data 1980-2000)

	Dependent Variable					
	Dummy for Expenditures>0			Level of Expenditures		
	OLS	IV	IV	OLS	IV	IV
L((LS Imm. +LS Nat.) /LF)	-0.032	0.036	0.046	-29.58	-5.89	4.60
	(0.030)	(0.050)	(0.055)	(14.55)	(29.46)	(34.48)
Ln ((LS Imm.+LS Nat.)/ LF)*more than college			0.342			361.03
			(0.319)			(268.97)

Number of observations : 13319

Each column represents a separate regression. All estimations include city, decade*region fixed effects and demographic controls.
Errors are clustered at the city*decade level.