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Immigrants and Gender Roles: Assimilation vs. Culture

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Immigrants and Gender Roles: Assimilation vs. Culture

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ABSTRACT

Immigrants and Gender Roles: Assimilation vs. Culture*

This paper examines evidence on the role of assimilation versus source country culture in influencing immigrant women's behavior in the United States – looking both over time with immigrants' residence in the United States and across immigrant generations. It focuses particularly on labor supply but, for the second generation, also examines fertility and education. We find considerable evidence that immigrant source country gender roles influence immigrant and second generation women's behavior in the United States. This conclusion is robust to various efforts to rule out the effect of other unobservables and to distinguish the effect of culture from that of social capital. These results support a growing literature that suggests that culture matters for economic behavior. At the same time, the results suggest considerable evidence of assimilation of immigrants. Immigrant women narrow the labor supply gap with native-born women with time in the United States, and, while our results suggest an important role for intergenerational transmission, they also indicate considerable convergence of immigrants to native levels of schooling, fertility, and labor supply across generations.

JEL Classification: J13, J16, J22, J24, J61

Keywords: gender, immigration, labor supply, wages, social capital, culture, human capital

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1 Introduction

In this paper I examine the relationship between gender roles in immigrant source countries and immigrant and second generation behavior in the United States. I particularly highlight the role of assimilation, which results in immigrants becoming closer to their native counterparts over time and across generations versus the role of culture, which is associated with the persistence of immigrant-native differences. My consideration of these issues is based on my recent work on this topic with Lawrence Kahn, Albert Liu, and Kerry Papps (i.e., Blau, Kahn, and Papps 2011; Blau, Kahn, Liu, and Papps 2013; and Blau and Kahn forthcoming). I am greatly indebted to my coauthors, most especially Lawrence Kahn, with whom I developed this research agenda.

Our work builds on earlier research for the United States suggesting a role of culture—measured by source country characteristics—on the gender roles (i.e., fertility and labor supply) of immigrants and their children. Blau (1992) found a positive effect of source country fertility rates on immigrant women's fertility and Antecol (2000) found that source country female labor force participation rates were positively correlated with US labor force participation of immigrant women. With respect to their descendants, Antecol (2000) also reported a positive, though weaker, correlation between US and source country participation for "second and higher generation" immigrants, defined by their answer to the 1990 Census question on ancestry. Similarly, Fernández and Fogli (2009) found the labor supply and fertility behavior of US-born daughters of immigrants (the second generation) to be positively associated with both female participation and fertility rates in their parents' countries of origin. Fernández and

Fogli's work, in particular, is important in rigorously testing the importance of culture in the context of the second generation.

The major contribution of the line of research that I summarize here is to empirically analyze and rigorously probe the evidence on the role of source country gender roles in influencing the behavior and outcomes of immigrant women the United States. Further this work sheds new light on the assimilation process, both over time in the United States and across generations, by analyzing it in the context of the impact of source country culture. Prior work showing positive correlations between source country gender roles on the relevant behavior of immigrant women in the United States is highly suggestive of a role of culture. Our work on immigrants (Blau, Kahn, and Papps 2011; Blau and Kahn forthcoming) aims to move this research forward by its detailed and more rigorous analyses of the cultural link, comparable to previous work on the second generation. Our findings help not only to establish a role for culture on immigrant women's behavior but also, in our view, provide reassurance that immigrants can constitute a reasonable group among which to examine the possible impact of culture on behavior in the face of concerns that immigrants are a selected group and that the immigration process itself can impact behavior, e.g., through disruption (Fernández and Fogli 2009).

Our richer tests of the role of culture in impacting immigrant women's behavior described below include the following. First, in Blau and Kahn (2011) we show that differences in U.S. labor supply behavior between immigrant women from high versus low female labor force participation source countries *persist* with time spend in the United States. While there are alternative possible interpretations of the source of this association, it is indeed suggestive

of a role of culture. In addition, in contrast to most earlier work,[1] we control for a variety of other source country characteristics which may affect immigrants' labor supply behavior in the United States, thus increasing the likelihood that our models estimate the true effect of source country female labor supply rather than the impact of omitted factors that are correlated with this variable. Second, in all the research described below for both first- and second-generation immigrants, we employ a "falsification test" by examining male behavior. For immigrants, we examine the relationship between source country *female* labor supply and *male* immigrants' US behavior and outcomes. The lack of an association for males strengthens our confidence that we are indeed identifying the effect of gender roles in the source country on female behavior rather than the impact of a source country factor like unmeasured productivity or work orientation that affects men and women similarly. To the best of our knowledge we were the first to employ this approach for immigrants and, indeed, in the published literature, for research on the second generation as well.[2] Third, in Blau and Kahn (2011), unlike previous work on immigrants, we explore a number of specifications which distinguish the impact of husbands' and wives' source country variables similar to Fernández and Fogli's (2009) study of the role of culture in second-generation women's behavior. For example, for husbands and wives from different source countries, we distinguished between the effects of a woman's *own* source country female labor supply from that of her husband's. Consistent with a role for culture, we find *both* matter, though, as one might expect intuitively, women were more

[1] Blau (1992) is an exception.

[2] After we had completed Blau, Kahn and Papps (2011), we learned that Fernández and Fogli (2005), the NBER Working Paper version of Fernández and Fogli (2009), employs such a falsification test, which was apparently cut from the published version of the paper.

responsive to their own source country's culture than their husbands'. In addition, we investigated the impact of source country female participation of immigrant men on the labor supply behavior of their *native-born* wives and do find such an effect, a result highly suggestive of a role for husbands' source country culture.

Finally in Blau and Kahn (forthcoming), we use the New Immigrant Survey to provide evidence that further bolsters the claim that the impact of source country female labor force participation represents in large part the effect of culture. We first show that the impact of source country female labor supply on the US labor supply behavior and wages of immigrant women overwhelmingly remains even when we control for the women's own pre-migration work experience. This demonstrates that the finding of the impact of source country female labor supply likely reflects the effect of a community level characteristic like culture rather than the fact that women from high labor supply source countries are more likely to have worked themselves before migrating. As explained in more detail below, this is conceptually similar to an approach employed in Fernández and Fogli's (2006) examination of the impact of culture on second generation women's fertility. Second, by distinguishing between the impact of source country female labor supply on the labor supply versus the wages of immigrant women in the United States, we are able to provide evidence that suggest that the major portion of the impact of source country female labor supply is due to its effect on culture rather than its effect of social capital.[3] Third, we also give detailed attention in this paper to the possibility that our

[3] Fernández and Fogli (2009) also suggest that the distinction between the impact of source country variables on labor supply vs. wages may shed light on the role of culture as opposed to social capital.

results are driven by immigrant selection, concluding that selection does not provide a plausible alternative to culture in explaining the pattern of our results.

In our work on the second generation (Blau, Kahn, Liu, and Papps), we examine the process by which source country culture gets transmitted to future generations in the host country by looking explicitly at intergenerational transmission from immigrants to their children born in the United States. This stands in contrast to earlier work on the second generation (Fernández and Fogli 2009), which focused on the impact of *source country characteristics* on the behavior of second generation immigrants. One of the purposes of our paper is to shed light on the rate of assimilation across generations and we provide explicit estimates of intergenerational transmission rates. Our preferred, parsimonious specification includes simply the parental generation characteristics and controls for the individuals' age, family type (immigrant father and native mother; immigrant mother and native father, with the omitted category being both parents immigrants), and survey year. We exclude potentially endogenous individual characteristics like education, location and marital status. We thereby allow parental generation characteristics to influence respondent's outcomes both directly and indirectly through their effects on respondent's education, location, and marital status. I focus on these results below. However, I note that when we expand our basic specification to include controls for these other individual characteristics (i.e., education, location and marital status) as in Antecol (2000) and Fernández and Fogli (2009), the results are similar providing suggestive evidence that parental generation characteristics do affect individuals' preferences. In addition, we also examine the impact of source country characteristics on second generation behavior finding similar results to earlier studies (Antecol 2000 and Fernández and Fogli 2009).

This more directly tests the hypothesis that source country characteristics influence the behavior of second generation immigrants in the United States. Finally, as in the case of our studies of immigrants, we estimate our basic models for second-generation men. Of particular interest is that for immigrant generation education, a plausibly gender neutral variable, we find strikingly similar results for second-generation men and women. For immigrant women's labor supply, a potentially gender-linked variable, we find evidence of a stronger effect on labor supply for second-generation women than for second-generation men; and for immigrant men's labor supply we find evidence of an effect on second-generation men's labor supply but no evidence of such an effect for second-generation women.

Our work on the second-generation advances the literature in a number of other ways. First, our data source, the Current Population Survey (CPS) has information on the country-of-birth of *both* parents, permitting us to gauge the relative importance of the characteristics of immigrant mothers versus immigrant women from the fathers' source country, as well as the strength of intergenerational transmission for individuals with two foreign-born parents compared to those with only one. Previous studies like Fernández and Fogli (2009) are only able to match second-generation individuals with their fathers, due to the incomplete Census data on the birthplace of foreign-born mothers. If gender role transmission from mother to daughter is especially strong, this omission could be particularly important for a study of the transmission of gender roles. In fact, we find that second-generation women's education, fertility and labor supply are significantly positively affected by the immigrant generation's levels of these variables, but that the effect of mother's source country fertility and labor supply is generally larger than that of women from the father's source country and the effect of

the education of men from the father's source country is larger than that of women from the mother's source country.

Second, our data on the second generation from the 1995–2011 CPS provides an updated consideration of the issues of gender and culture compared to the 1970 Census data employed by Fernández and Fogli (2009). (The 1970 Census was the last Census to collect data on foreign parentage.) Since 1970, there have been considerable changes in the composition of immigrant parents by source country, as well as in aggregate female labor force participation and fertility rates in the United States that might affect the findings. US gender roles in the 1990s and 2000s were considerably different from what they were in 1970, with far higher levels of female labor force participation, as well as lower fertility rates (Blau, Ferber and Winkler 2014). And, immigration to the United States has shifted from being a largely North American and European phenomenon to a largely Asian and Latin American one. Further, there is a growing gap between the labor supply of US-born and immigrant women today than in earlier years (see below). Thus, the process of assimilation of second generation women into the US labor market may very well have changed since 1970.

Before delving into the specifics of our research, it is useful to consider the context and motivation for the work. This comes from two sources: first, the increasing importance of immigrants and their children in the population of the economically advanced nations, including the United States which is my focus here, and second, the increasing interest of economists in the influence of culture on economic behavior and outcomes.

Turning first to the growth of immigration, as in much of the economically advanced nations, immigrants are comprising an increasing share of the population in the United States.

The share of the foreign-born in the population has increased from 4.8% in 1970 to 12.9% in 2012 (US Bureau of the Census web site: http://www.census.gov). Further highlighting the growing quantitative importance of immigrants is the growing share of US children who were either immigrants themselves or who had at least one immigrant parent, increasing from 13 percent in 1990 to 23 percent in 2008 (Fortuny 2010).

Not only has the immigrant population increased in size, also of importance is that there has been a substantial shift in the source countries of immigrants: in 1970, 70.4% of the foreign-born population came from Europe or North America, while, by 2012, 81.6% were from Asia or Latin America (US Bureau of the Census web site: http://www.census.gov). As the share of the US population born abroad increases and as immigrant source countries shift towards regions with different cultures and traditions from the predominantly European origins of earlier arrivals, the extent of assimilation and the role of culture move increasingly to the forefront. This has particular salience for gender roles, since immigrants increasingly come from countries that have a more traditional division of labor by gender than the United States in that they have, on average, lower female labor force participation rates and higher fertility rates than the United States (Blau, Kahn and Papps 2011). Mirroring this, there has been a growing gap between the US labor supply of native and immigrant women since 1980. This raises a number of questions that I will address in this paper. Are immigrant-native differences in labor supply related to source country characteristics? What happens to the time pattern of this gap—do immigrant women assimilate to native patterns over time? Do persistent immigrant-native gaps plausibly reflect the role of culture or are alternative explanations likely?

And, do immigrant generation-native differences in labor supply and other traits carry over to the second generation or do second generation women fully assimilate to native patterns?

Heightening the interest in examining immigrants and their descendants through the lens of culture, is a growing attention among economists to the role that culture may play in economic life. "Culture" may be defined as the impact of preferences, beliefs, or values developed in a different time or space (either geographic or social) on economic behavior (e.g., Fernández 2008). While tastes and preferences play an important role in economic models, it is seldom possible to observe the determinants of preference formation. Relating the behavior of first and second generation immigrants in the United States to source country characteristics provides a mechanism for studying the role of culture and thus getting inside the "black box" of taste formation.

Correlations between source country characteristics and immigrant behavior may, however, be due to a variety of factors. Hence such correlations need to be probed to ascertain their likely source in cultural differences and I summarize our efforts to do so below. One particularly intuitive alternative explanation for such correlations is that, rather than reflecting the impact of culture, they are due to the impact of "social capital." Social capital denotes social interactions or community-level characteristics that enhance skills or productivity and hence wages. Social capital can, for instance, take the form of role models, expectations, behavioral norms, and interpersonal networks (see, e.g., Dasgupta 2008; Borjas 1992; Coleman 1988; and Wilson 1987). While the mechanisms of *transmission* of culture and social capital may overlap, the crucial distinction between the two is that culture operates mainly through *preferences* and *beliefs* whereas social capital is expected to impact *productivity*

and *wages*. As I describe in more detail below, this distinction forms the basis of Kahn and my effort to distinguish between the two empirically (Blau and Kahn forthcoming). In particular, following Fernández and Fogli (2009), we assume that social capital is correlated with an impact on wages but culture is not. In our context, this means that we test the role of culture vs. social capital by examining the extent to which the impact of source country female supply on immigrant women's US labor force participation is due to its effect on wages (i.e., a movement along the supply curve) and the extent to which it cannot be accounted for by wages (i.e., is due to a shift in the supply curve). We acknowledge this distinction between culture and social capital is not watertight. For example, a preference for market work could also have the consequence of increasing productivity through its effect on increasing the amount of work experience accumulated. And, conversely, higher wages may induce greater work experience, which might itself affect one's attitudes toward and preferences for market work. Nonetheless, examining the role of wages in explaining the source country labor supply effect is likely to be instructive.

2 The immigrant generation

In this section, I draw on Blau, Kahn, and Papps (2011) and Blau and Kahn (forthcoming) to examine the relationship between source country female labor supply and immigrant women's labor supply behavior in the United States. We focus on adult immigrants since they are most likely to be affected by source country patterns and on married women for whom gender roles are expected to have a greater effect. (Our results were similar, however, when

we included all women.) Outcomes are conceptualized as reflecting the combined effect of the assimilation process and the persistent impact of source country culture.

Drawing on Blau, Kahn and Papps (2011), I first consider the relationship between the assimilation of immigrant women's labor supply and gender roles in the source country, using the 1980-2000 US Censuses. The assimilation profiles that we estimate show the relationship between immigrant women's time in the United States or years since migration (YSM) and their labor supply behavior. The assimilation profile is of interest in that it sheds light on what happens to immigrant women's labor supply behavior as they are exposed to US labor market conditions and social norms. We find a strong and persistent effect of source country female relative labor supply on immigrant women's US labor supply behavior. I present a number of results from Blau, Kahn and Papps (2011) that suggest these findings do indeed reflect the impact of a community-level characteristic like culture. I provide further evidence of in support of this interpretation from Blau and Kahn (forthcoming), which uses data from the New Immigrant Survey (NIS) to more finely control for immigrant women's behavior prior to migrating, as well as to separately identify the effect of culture vs. social capital.

2.1 A Role for culture? Source country female labor supply and immigrant assimilation

A focus on assimilation of immigrant women's labor supply raises the question of the shape of labor supply profile with time in the United States and how (or if) it may differ between women from source countries with more and less traditional gender roles. The standard expectation might be that the assimilation profile would be upward sloping for both husbands and wives, where immigrants would start at a disadvantage relative to otherwise similar individuals due to the disruptions of immigration that could lead to difficulty in finding a

job or to temporarily working positive, but less than desired, hours. The impact of such disruptions is expected to decrease over time and immigrant labor supply is expected to approach that of natives. A period of disruption may be even more likely for married women than married men to the extent women are "tied movers" (Mincer 1978)—i.e., if the move is determined primarily based on the husband's labor market prospects rather than the wife's. In addition, some types of visas obtained by husbands (generally the primary earner) may not permit their spouse to work.[4]

An intriguing alternative possibility is raised by the family migration model proposed by Baker and Benjamin (1997) that predicts immigrant women will initially take dead-end jobs to finance their husbands' human capital investments and eventually drop out of the labor market or reduce their labor supply as their husbands' labor market outcomes improve. Rather than convergence toward native labor supply levels, this model predicts a negatively-sloped labor supply profile for immigrant women relative to natives, a finding that has been observed for Canada (Baker and Benjamin 1997), but not for the United States (Blau, Kahn, Moriarty and Souza 2003). The logic of the family migration model suggests that source country gender roles within the family might be a factor in influencing the shape of women's assimilation profiles, with the family migration model perhaps holding for families coming from countries with a more traditional division of labor by gender. Our empirical specification, described below,

[4] We do not have data on visa type in Blau, Kahn, and Papps (2011) where we focus on assimilation. However visa type may be correlated with country of origin characteristics and, in one of our specifications in Blau, Kahn, and Papps (2011), we control for source country fixed effects, which may absorb some of the effect of visa requirements. Results are similar in this specification. Moreover, we are able to control for visa type in our further probing of the impact of source country characteristics in Blau and Kahn (forthcoming) described below. The estimated effect of source country characteristics on immigrant women's labor supply behavior are robust to the inclusion of controls for visa type.

permits us to investigate the possibility. However, in fact, we find upward sloping profiles for all groups.

Before turning to more detailed estimates, I first consider whether simple tabulations suggest a relationship between gender roles in immigrant source countries and immigrant women's labor supply behavior in the United States. Figure 1 shows the average labor supply behavior of (adult) immigrant women and their native counterparts in 1980 and 2000; Figure 2 present similar information for men. Recall that, over this time, there has been a shift in immigrant source countries potentially affecting the mix of gender roles in the countries of origin and the labor supply behavior of immigrant women in the United States.

Figure 1 indicates that, in both years, immigrant women have lower labor supply (measured by average annual work hours, including those with zero hours) and, moreover, that the immigrant-native labor supply gap increased considerably between 1980 and 2000: in 1980, natives worked 66 hours (8%) more than immigrants; by 2000, the gap was 319 hours (32%).[5] This reflects increasing labor supply for both groups of women, but a sharper increase for native women. Figure 2 shows that immigrant men also worked fewer hours than their native counterparts on average, but in this case the immigrant-native gap increased only slightly, from immigrants working 8% fewer hours than native men in 1980 to working 11% less by 2000. Thus the immigrant-native gap in labor supply increased much more for women than for men. This suggests a gender role dimension to the trend and that impression is reinforced by the results in Figure 3.

[5] Results are similar for participation probabilities.

Figure 3 shows, for 1980 and 2000, the average across immigrant women of the female activity rate ratio (F/M) in their source country (measured at the time of immigrant arrival to the United States) and the corresponding means for the United States, similarly weighted by the number of immigrants in each arrival period cell. Activity rates are obtained from United Nations data and the sample includes 106 source countries. The activity rate is analogous to the labor force participation rate including both the employed and the unemployed. We focus on the male-female ratio because we are interested in the gender division of labor and also because expressing the participation rate as a gender ratio implicitly adjusts for issues in measuring participation in the source country, at least to the extent that they affect men and women similarly. (I do not show a corresponding figure for men because the source countries of immigrant men and women tend to be quite similar and hence the male figure would be virtually identical.)

Figure 3 indicates that, in both 1980 and 2000, the average immigrant woman came from a country which, at the time of her arrival in the United States, had lower relative female labor force participation than the United States had at the same time. And, although average home country relative female labor supply at the time of arrival increased between 1980 and 2000, the corresponding US value increased by considerably more. This resulted in a growing gap between US and source country relative female labor force participation—mirroring what we found for immigrant-native differences in labor supply in the United States.

In Blau, Kahn, and Papps (2011), we probe the relationship between female relative labor supply in immigrant source countries and the labor supply behavior of immigrant women in the United States in greater detail based on a pooled sample of three US Census years (1980,

1990, and 2000). This enables us to follow immigrant cohorts over time and estimate assimilation effects as in Borjas (1985). We also merge in a cross-country, time series data set of source country characteristic, which we assembled. We control for individual and source country characteristics that might influence labor supply behavior, apart from source country female labor supply. As noted earlier, we focus on adult immigrants and married women. Our source country variables (measured at time of immigrant arrival) include: relative female labor activity rate, completed fertility, GDP per capita, refugee percentage, whether it is an English-speaking or English-official country, gender-specific primary and secondary school enrollment rates, and distance to the United States. Individual controls include (for women and their spouses): age, age squared, dummies for education and race/Hispanic origin, and interactions of the education dummies and the individual's years since migration. We also control for census region dummies and state dummies for the largest immigrant receiving states (California, New York, Florida, Illinois, New Jersey, and Texas). Source country effects are estimated by interactions between years since migration dummies and source country characteristics, including relative female participation.

We find that the source country relative activity rate has a positive, significant effect on the annual hours of immigrant women in each YSM category. Thus, source country female labor supply is strongly positively associated with immigrant women's labor supply behavior in the United States. Moreover, the effect is roughly stable across YSM categories, suggesting a *persistent* effect of source country culture on US labor supply behavior that neither erodes or increases with time in the United States.

Our basic findings are summarized in Figure 4, which shows simulated assimilation profiles for adult immigrant women relative to natives, controlling for individual characteristics. Specifically we simulate the profile for adult immigrant women married to adult immigrant men who came to the United States from the same country (or a country with the same relative female activity rate) and at the same time. This is a reasonable way to summarize the findings in that, pooling all Census years, 90.3% of immigrant women married to immigrant men came from the same source country as their husband.[6] The figure assumes the couple migrates from a country with (i) a high female relative activity rate, at the 75th percentile of our sample, or (ii) a low female activity rate, at the 25th percentile. This calculation uses individual immigrants, not individual source countries, as the unit of analysis, thereby giving countries sending larger numbers of immigrants more weight in computing the percentiles. The 75th percentile figure is 0.636 and roughly corresponds to the Austrian value for the relative female activity rate for 1996, while the 25th percentile is 0.368 and roughly equals the level for Pakistan in 1994. We assume the sample averages for the cohort arrival dummies and the source country characteristics apart from the female relative activity rate.

As may be seen in the figure, there is a substantial and persistent gap between the annual hours of women from high and low activity rate countries: an unweighted average of 136 hours across YSM categories. This corresponds to 14% of immigrant women's mean hours of 939. Both groups of women work less than comparable natives upon arrival: 279 hours less

[6] In 1980 (but not 1990 or 2000) we have information on individuals' age at first marriage and the number of times they have been married. We find that, among immigrant women who were married to immigrant men and were in their first marriage, between 62.9 and 78.4% were married before arriving in the United States to a spouse who arrived at the same time. (This range occurs because the arrival year is coded in intervals.) For both estimates, 89% of the women identified as married at arrival were from the same source country as their husband.

for women coming from a high female activity rate country and 403 hours less for those migrating from a low female activity rate country. These are sizable deficits of 26% and 37% relative to the sample average work hours (including natives) of 1093. Work hours for women from both types of countries assimilate dramatically over time relative to comparable natives. Women from high female labor supply countries work roughly the same number of hours as natives after 6-10 years and work at or above the native levels thereafter. Women from low female labor supply countries continue to work less than natives throughout their time in the United States, but after 6-10 years their deficit is only 11-12%. These upward sloping assimilation profiles for women from both high and low female labor supply source countries are not consistent with the family migration model.

The strong and persistent effect of relative female labor supply in immigrant women's source countries on their labor supply behavior in the United States strongly suggests a role of culture in determining immigrant women's US labor supply behavior, although, as we have just seen, assimilation is also important. In the following section we push harder on these results to provide stronger evidence that they do indeed reflect the role of culture.

2.2 Additional evidence on culture using Census data

It is possible that the findings reported above could reflect the impact of unmeasured source country factors associated with labor supply, rather than culture or some community-level variable associated with gender roles. To rule out this possibility, in Blau, Kahn, and Papps (2011), we pursued a number of additional analyses designed to further examine the consistency of our findings with a role for culture.

First, we replicated our analysis for married immigrant women on married men. If indeed our findings for women merely reflected unmeasured source country factors affecting men and women equally, we would expect the results for men to be similar to those for women. Thus, the male analysis might be considered as a falsification test. We found that, in contrast to our findings for women, the activity rate ratio interactions were not significant in the regressions for men. As may be seen in Figure 5, the profiles for men born in high and low female labor supply countries are virtually identical. This strongly suggests that the impact of source country female relative labor supply is indeed capturing an impact of a community-level characteristic in the source country that specifically affects women.

Second, we investigated the impact of source country female participation of immigrant men on the labor supply behavior of their native-born wives. A positive correlation between immigrant husband's source country female participation and the labor supply of native-born wives may be due to immigrant men selecting marital partners with similar preferences to theirs or to a direct impact of the husbands on the labor supply behavior of their wives, e.g., by husbands being more or less helpful with family chores or supporting or opposing their labor force entry or career commitment. In either case, an effect of husbands' source characteristics on these wives is suggestive of an effect of source country culture on US behavior.[7]

Finally, we distinguished between the effects of a woman's *own* source country female labor supply from that of her husband's source country female labor supply in the cases where the couple migrated from different source countries. This sheds light on the *relative*

[7] This is similar to Fernández, Fogli, and Olivetti's (2004) finding of a positive effect on wife's labor supply of a husband coming from a family in which his mother worked, a result which they interpret as evidence of an impact of culture.

importance of wives' versus husbands' source country characteristics in influencing wives' labor supply, when both spouses are foreign born. Our results suggest that women are more sensitive (responsive) to the own source country characteristics than to that of their husband. Specifically, when we looked *within* couples where both spouses were immigrants, but in which he members of the couple migrated from *different* countries, we found that women tended to be more responsive to their *own* source country's culture (as indexed by source country characteristics), but also that their husbands' source country also generally affected the women's labor supply in the expected direction. We view this as consistent with the culture interpretation in that own exposure could be viewed as representing a more intense "treatment" than living with a spouse from a particular cultural background. Similarly, we found that the impact of a wife's own source country female supply on the labor supply of an immigrant woman married to a native men was larger than the impact of a husband's source country female supply on the labor supply of a native woman married to an immigrant man. This again suggests that a women's own exposure has a greater effect on her than her husband's cultural background.

2.3 Additional evidence on culture from the NIS: individual vs. community-level characteristics and culture vs. social capital

In Blau and Kahn (forthcoming) we use a rich new data set, the New Immigrant Survey (NIS), to explore two further issues raised in interpreting findings like those discussed above as indicating a role of culture. The first issue is a relatively straightforward one: if a women comes from a high female participation country, it is likely that she has more prior work experience (in the source country) than a women from a low female participation country. It is also true that women with prior work experience abroad (regardless of the overall female participation rate)

are more likely to also work in the United States. Thus, results like those detailed above could merely reflect the impact of the individual's *own* prior experience, rather than the impact of a community-level characteristic, like culture. The NIS is relatively unique in providing information on pre-migration work experience, permitting us to address this question. Second, as I discussed at the outset, even if one is fairly confident that a community-level characteristic is involved it is still not clear that it represents that effect of culture, rather than social capital. By examining the effect of source country female labor supply on US immigrant women's labor supply and wages, we are able to address this question.

The NIS, is a nationally-representative survey of adult immigrants who received admission to permanent legal residence in the United States in 2003 (Jasso, Massey, Rosenzweig and Smith forthcoming); respondents were interviewed during 2003 or 2004. While some had just arrived in the United States, others were already here, either under temporary visas or illegally. Thus, the NIS is not representative of all immigrants, but it does represent a random sample of those obtaining permanent legal status in a given year.[8]

In examining the role of pre-migration work experience vs. source country overall female participation, we employ a research design that is conceptually similar to Fernández and Fogli (2006) to examine the impact of culture on the fertility of US-born women from different (self-reported) ethnic backgrounds. Using General Social Survey data from 1977-1987, they control for both the fertility of the respondent's own parents (i.e., her number of siblings) and

[8] In Blau and Kahn (forthcoming), we compare the NIS data to samples of recent immigrants from the Census and the American Community Survey (ACS); the Census and ACS samples are more representative of recent immigrants (including both permanent and temporary, as well as both legal and unauthorized, immigrants). While there are some differences, importantly, the gender gaps in work behavior and wages are very similar in the NIS compared to the Census and ACS.

the 1950 fertility rate in her country of ancestry. They find that both variables positively affected current fertility and, since the impact of the source country fertility level was still positive, even controlling for the number of siblings, the authors conclude that the results indicate an impact of culture beyond the behavior of one's own family.

In our case, we find that, as expected, a woman's pre-migration work experience strongly positively affects labor supply in the United States. We also find that, as in previous work by ourselves and others, women who migrate from countries with relatively high levels of female labor supply work more in the United States. Importantly, most of this effect remains when we further control for each woman's own work experience prior to migrating. This may be viewed as consistent with an important role of culture or at least of some community-level characteristic in influencing the relationship between source country female labor force participation and immigrant women's labor supply behavior in the United States.

Also of considerable interest, we find a significantly negative interaction between pre-migration labor supply and source country female labor supply. This means that the impact of source country female labor supply is much stronger for those who did not themselves work before migrating than among those with work experience in their source country, while the impact of pre-migration work experience is larger for those from source countries with low female labor supply than for those from high female labor supply countries. We obtain broadly similar effects analyzing the determinants of hourly earnings among the employed in the United States, although the effects are not always significant. This negative interaction suggests that culture and social capital can substitute for individual job-related experience and human capital in affecting preparedness for work and work orientation in the United States.

While these findings are consistent with a role of source country environment, they could plausibly result either from the effect of culture or social capital. To distinguish between the two, we turn to the distinction discussed earlier that culture represents an impact of source country environment on beliefs or preferences and social capital represents an impact on productivity or wages. To the extent that source country female participation affects immigrant women's productivity and wages due to the effect of social capital, it will affect their U.S. labor supply through movements along a given supply curve. To the extent that source country female participation affects immigrant women's preferences and beliefs due to the effect of culture, it will shift their labor supply function to the right. Based on our estimates, we show that, given plausible values of labor supply elasticities, most (86-95%) of the effect of source country female labor supply on US labor supply operates through a shift in the labor supply function (the rest is due to wages). This suggest that culture rather than social capital is the primary factor accounting for the source country effect.

2.4 The possible role of selective migration

Immigrants represent a group of individuals who have made the decision to relocate to the United States from their country of origin. This raises the possibility that the set of findings reported in this subsection could be due to a pattern of selection of immigration, rather than the impact of culture or social capital. We believe this is doubtful for a number of reasons. In both Blau, Kahn, and Papps (2011) and Blau and Kahn (forthcoming) we examine the behavior of married women separately, either as a main or a supplementary specification and obtain similar results as for the full sample of women. Married women are more likely than single women to be "tied movers," and, to the extent that is true, selection would be less of an issue

for them than otherwise (i.e., their husbands would have made the immigration decision). Second, the models in both papers control for distance from the United States, which as Chiswick's (1978) analysis suggests, may be a proxy for the relative labor market return for immigrants that is not captured by other variables in the model. Third, results in both papers are similar when we control for the source country's average emigration rate from the United States, thus implicitly addressing the issue of selective return migration.

Finally, it is very unlikely that selection could account for the *pattern* of results in Blau and Kahn (forthcoming), specifically the negative interaction between pre-migration work experience and source country female labor supply. First, consider the implication of the negative interaction effect that high source country female labor supply has a smaller effect on US labor supply and wages for women who worked prior to migration than for women who did not work before migrating. This result could be due to selection if women workers from low female labor supply countries are positively selected relative to women workers from high female labor supply countries. Such a possibility is consistent with results from previous studies showing a positive cross-country relationship between the gender pay gap and female labor force participation rates (Blau and Kahn 2003 and Olivetti and Petrongolo 2008), although, as Blau and Kahn (2003) argue, this finding could also be due to high female labor supply lowering women's relative wages through simple supply effects, as long as men and women are imperfect substitutes in production. Nonetheless, if the selection argument is valid, then it may be that the women from traditional (i.e., low female labor supply) source countries who had previous work experience are an especially positively selected group.

However, now consider those women who did *not* work before migrating. The selection argument outlined above implies that nonparticipants from a high female labor supply country would be *more negatively* selected than nonparticipants from a low female labor supply country. So selection could not explain why we find an especially *large positive* effect of source country female labor supply for those who did not work prior to migrating. Thus, while selection could help to explain the negative interaction effect by lowering the source country female labor supply effect for those who worked before migrating, it cannot explain the very large source country female participation effect we obtain for those who did not work prior to migrating. This makes it very unlikely that a reasonable selection story can account for these findings.

In the next section, we consider our evidence on possible cultural impacts on the second generation. This provides additional interesting evidence on the relative role of assimilation versus culture across immigrant generations. However, in considering the selection issue some additional comments are in order. It has sometimes been claimed that the second generation is a more appropriate group in which to study these types of relationships because they are not selected. That is, they represent a group of individuals in the host country who have a similar environment to natives but have been impacted by source country culture. However, second generation outcomes are also impacted by selection, since the second generation consists of children of the possibly self-selected immigrants. That is, their family environments differ from second-generation natives not only due to the impact of immigrant culture but also due to any unmeasured self-selection of their immigrant parents. As we see below, in Blau, Kahn, Liu and Papps (2013), we find considerable evidence of intergenerational transmission of immigrants'

education, labor supply and fertility to their native-born children. This is not to argue that results for the second generation are not of interest, but rather that results for both the first generation of immigrants and their second generation children are relevant and important.

3 The second generation

In this section, I draw on Blau, Kahn, Liu and Papps (2013) to examine the impact of immigrant parental behavior on the second generation (native born individuals with at least one immigrant parent). As I noted above, some interesting previous work has examined the second (or higher) generation with respect to the cultural transmission of gender roles (e.g., Antecol 2000; Fernández and Fogli 2006; and Fernández and Fogli 2009)[9]—in particular looking for associations between the behavior of second generation women and source country characteristics in an analogous fashion to the research on immigrants discussed above. As I noted previously, one of our contributions is to examine the process by which source country culture gets transmitted to future generations in the host country by looking explicitly at intergenerational transmission from immigrants to their children born in the United States, although we also examine the impact of source country characteristics.[10] One of the purposes of our research is to shed light on the rate of assimilation across generations and we provide estimates of intergenerational transmission rates. In the introduction, I have noted a number of other contributions of our work. One I have not yet mentioned is that the CPS information

[9] In a recent paper, Alesina, Giuliano and Nunn (2013) test the hypothesis that traditional agricultural practices, namely the utilization of plough agriculture, influenced the development of this culture across societies. In one application they find evidence of cultural transmission, based on the use of the plough in the source country, for second-generation immigrants in the United States.

[10] Our set up is very similar to Borjas (1993) and Card, DiNardo, and Estes (2000), studies on intergenerational transmission that do not examine gender roles.

on the actual birthplaces of the respondent's parents is also an improvement on the data on self-reported ancestry of US-born respondents used by Antecol (2000) and Fernández and Fogli (2006). Data on self-reported ancestry are less precise in that they include information on second *and* higher order generations. Further, Duncan and Trejo's (2007) study of Mexican-Americans suggests that the more successfully-assimilated native born may be less likely to report a foreign ancestry.

We focus on the intergenerational transmission of women's labor supply, fertility and education. While the latter is not necessarily gender linked-as we shall see, precisely because it is not, it can help to sharpen our interpretation of the role of culture. As noted above, we obtain data on the second generation from 1995-2011 March CPS, which began collecting information on parental birthplace in the mid-1990s. Respondents are age 25-49. We do not have actual data on matched parents and children, rather we look at the impact on the second generation of the average behavior of the parental generation of immigrants from their source country. The 1970-2000 Censuses were used to locate likely parents of the CPS second generation women, matching on parents' country(ies) of birth and age of CPS respondent. (Census data are matched for when the respondent was 10 years old, interpolating across censuses as necessary.) We employ a very parsimonious specification, controlling only for respondent's age, family type (immigrant father and native mother; immigrant mother and native father, with the omitted category being both parents immigrants), and survey year, since many variables like marital status, education, and state of residence may be regarded as endogenous in this context. Our results are robust to these controls, however. We generally do not control for race and ethnicity since it may be difficult to disentangle the effect of source

country when controlling for race and ethnicity due to the strong correlation between the two. However, again, our results are robust to such controls. As in our studies of immigrants, discussed earlier, we include additional tests of intergenerational transmission that that may shed light on the potential role of the intergenerational transmission of gender roles compared to other unobservables.

3.1 Evidence on Intergenerational Transmission from the CPS

Some of our main findings may be illustrated in Table 1, which examines the impact of parents' behavior on second generation women. (Average characteristics of immigrants in the parents' generation are age-adjusted.) Immigrant fertility and labor supply measure the effects both of the home environment and cultural gender role attitudes. For this reason we focus on *female* behavior and include the fertility and labor supply of immigrant *women* from both the source country of the respondent's mother *and* the source country of the respondent's father. Labor supply of women, in particular, is perhaps the key indicator of gender roles. In contrast male labor supply is less variable across groups and expected to be less informative about gender roles. We include education of *women* from the mother's source country and of *men* from the father's source country as proxies for the home environment and the socio-economic status of the respondent's family. These six parental characteristics variables are designed to capture the most important and relevant characteristics of the parental immigrant generation.[11] We control for all these variables at the same time in order to more sharply

[11] The very high correlation between the education of women and men from the mother's (father's) source country make it difficult to include additional parental education variables and obtain meaningful results. Moreover, as expected, we did not find parental generation male labor supply informative for female labor supply and fertility.

identify the impact of each in a *ceteris paribus* context. The previous literature has focused only on the father's source country and the matching variable—e.g., source country female labor supply in a female labor supply regression (see, Antecol 2000; Fernández and Fogli 2009).[12]

The results in Table 1 provide strong evidence of intergenerational transmission for each of these outcomes. In the case of fertility and labor supply, it shows the effect of mother's source country fertility and labor supply to be generally larger than that of women from the father's source country—perhaps reflecting a gender roles effect. Conversely, the effect of the education of men from the father's source country is larger than that of women from the mother's source country—perhaps because it is the father who primarily determines the socio-economic status of the family. Interestingly, second-generation women's schooling levels are negatively affected by immigrant mother's fertility, suggesting a quality-quantity tradeoff for immigrant families.

3.2 Additional evidence on culture

As in the case of immigrants, while these findings are consistent with an effect of culture, they could also reflect the effect of other unobservables. However, we examined a number of pieces of evidence that suggest our findings for second generation women's fertility and labor supply are due at least in part to intergenerational transmission of gender roles, rather than other unobservables.

First, for education and labor supply, we compared our female results to analogous results for men. (We are not able to meaningfully examine fertility for men in our data sets

[12] We report results for a matching specification in the paper; they are broadly similar to those reported in Table 1.

because it is measured by number of children present, and women generally retain custody of children when a marriage breaks up or children are born out of wedlock.) For immigrant generation education, a plausibly gender neutral variable, we find strikingly similar results for second-generation men and women, including a larger impact of men from the father's source country than of women from the mother's source country, as well as evidence of a quality-quantity trade off. In contrast, for immigrant women's labor supply, a potentially gender-linked variable, we find evidence of a stronger effect on labor supply for second-generation women than for second-generation men. And, for immigrant men's labor supply we find evidence of an effect on second-generation men's labor supply but no evidence of such an effect for second-generation women. This evidence of gender-linked effects is suggestive of a role for culture.

Second, we expand our basic specification, which controls only for parental generation characteristics and respondent's age, family type, and CPS survey year, to include controls for other individual respondent's characteristics like education, location and marital status. We continue to find strong, statistically significant evidence for the parental characteristics variables, suggestive evidence that these variables have an impact through their effect on individual preferences, rather than solely through an effect on these intermediary variables.

Finally, as may be seen in Table 2, we examine the impact of source country characteristics (rather than the characteristics of parental generation immigrants) on second generation behavior. This more directly tests the hypothesis that source country characteristics influence the behavior of second generation immigrants in the United States. Table 2 reports results for the fertility rate and the labor force participation rate ratio (women's labor force participation rate divided by men's labor force participation rate) in the parental countries of

origin. The regressions also control for source country GDP per capita and female primary and secondary enrollment rates. As in the case of our analysis of parental characteristics, respondents are matched to source country characteristics at the time they were 10 years old. For number of children, when the labor force participation rate ratio is not included, we find a statistically significant positive effect of fertility rates in the mother's source country on second generation women's fertility; the sum of the coefficients on fertility in the mother's and father's source country is also positive and significant. When the labor force participation rate ratio, which has a significantly negative effect on fertility, is included, however, the coefficient on mother's source country fertility is reduced and is no longer significant, nor is the sum of coefficients on the mother's and father's source country fertility rate. For annual hours, the coefficient on the labor force participation rate ratio from the mother's source country is positive and significant in both specifications, as is the sum of the coefficients on mother's and father's source country participation ratios. This is suggestive evidence that source country characteristics do indeed influence the behavior of second generation immigrants. We note too, that there is stronger evidence of source country effects for both variables for mother's than for father's source country, although the differences are not significant.

3.3. What about assimilation?

While our results suggest an important role for intergenerational transmission, they also indicate considerable convergence of immigrants to native levels of schooling, fertility, and labor supply across generations. For example, when we control for all parental characteristics simultaneously, we find intergenerational transmission rates for those with both parents foreign born of 0.30 for education, 0.40 for fertility, and 0.47 for work hours. At these

transmission rates, half or more of any difference in the immigrant generation has been eliminated by the second generation.

4 Conclusion

This paper draws on results from my research program with Lawrence Kahn to examine the role of assimilation versus source country culture in influencing immigrant women's behavior in the United States—looking both over time with immigrants' residence in the United States and across immigrant generations. It focuses particularly on labor supply but, for the second generation, also examines fertility and education. We find considerable evidence that immigrant source country gender roles influence immigrant and second generation women's behavior in the United States. This conclusion is robust to various efforts to rule out the effect of other unobservables and to distinguish the effect of culture from that of social capital. These results support a growing literature that suggests that culture matters for economic behavior. At the same time, our results suggest considerable evidence of assimilation of immigrants. Immigrant women narrow the labor supply gap with native-born women with time in the US, and, while our results suggest an important role for intergenerational transmission, they also indicate considerable convergence of immigrants to native levels of schooling, fertility, and labor supply across generations.

Looking towards the future, it is likely that immigrant source countries will become more similar to the United States, thus reducing the effect of source country gender roles on immigrant and second generation women still further. This has already begun to happen with respect to fertility. In Blau, Kahn, and Papps (2011), we find that, due to world-wide fertility declines, the fertility of immigrant women has been rapidly falling relative to natives in the

most recent immigrant cohorts. And, even though immigrant women's labor supply has decreased relative to natives, since 1995, US female labor force participation rates have plateaued, allowing greater opportunities for female participation rates in immigrant women's source countries to catch up to US rates in the future.

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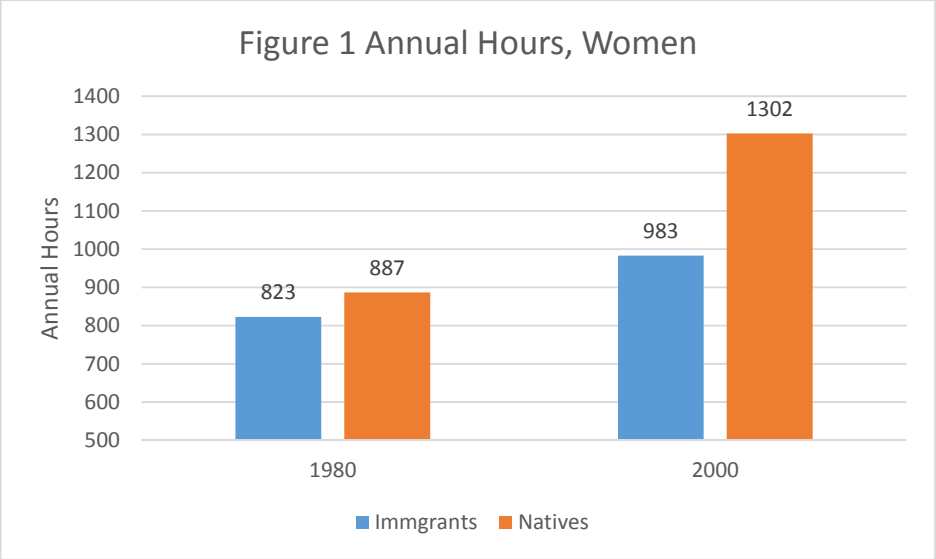

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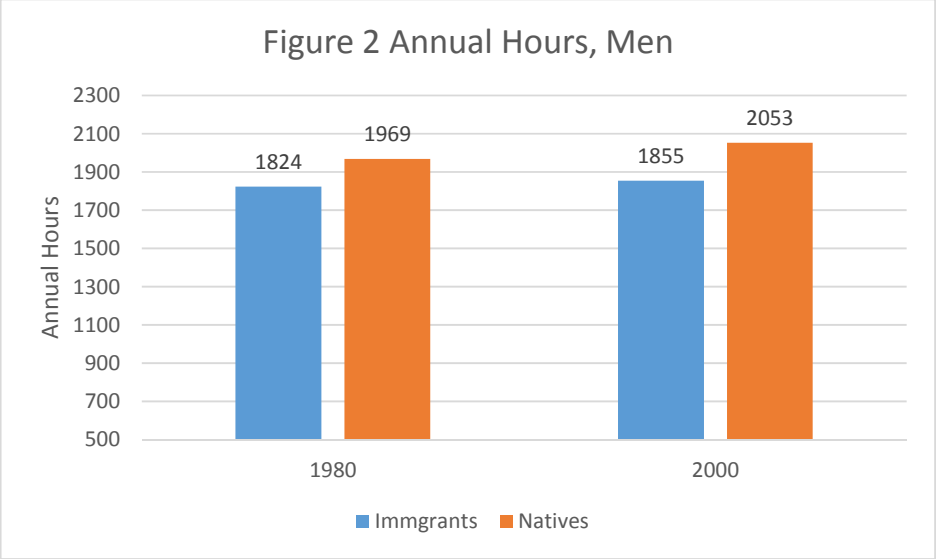

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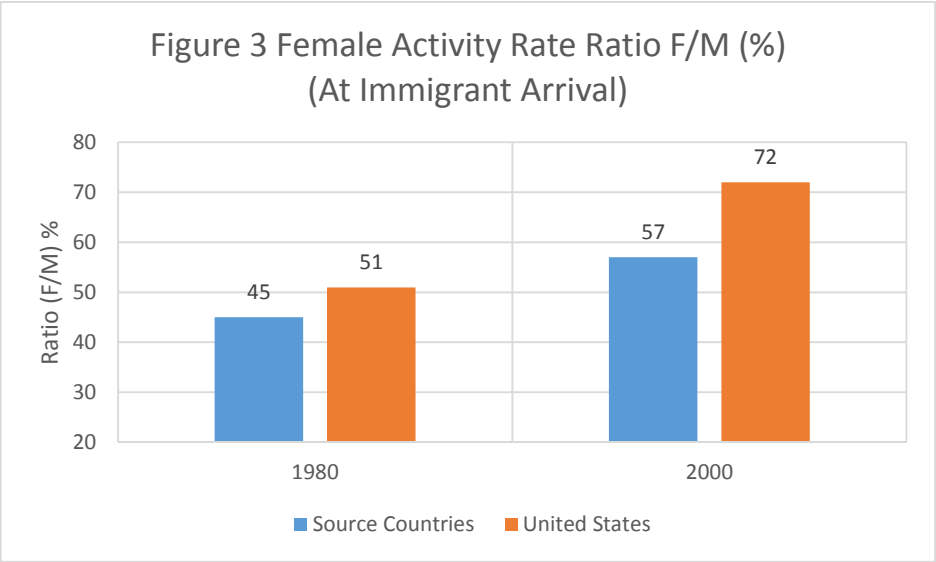

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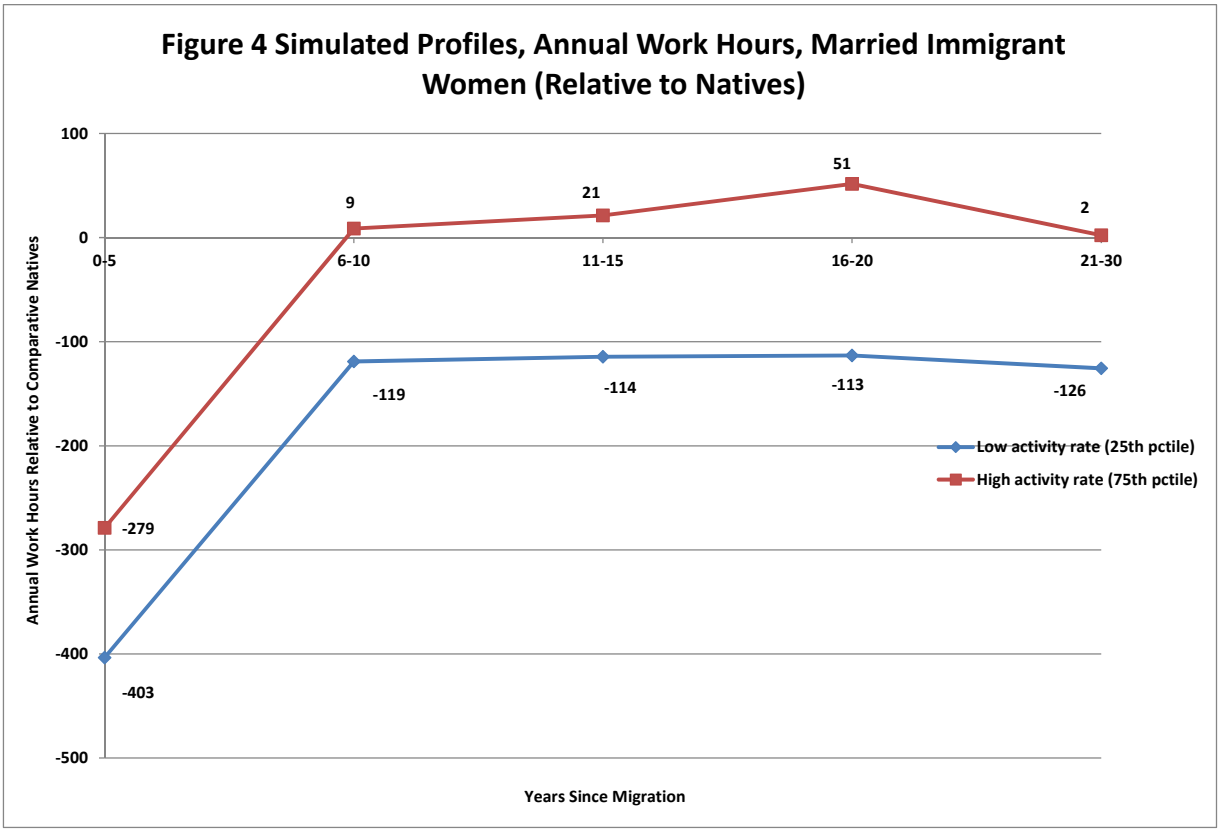

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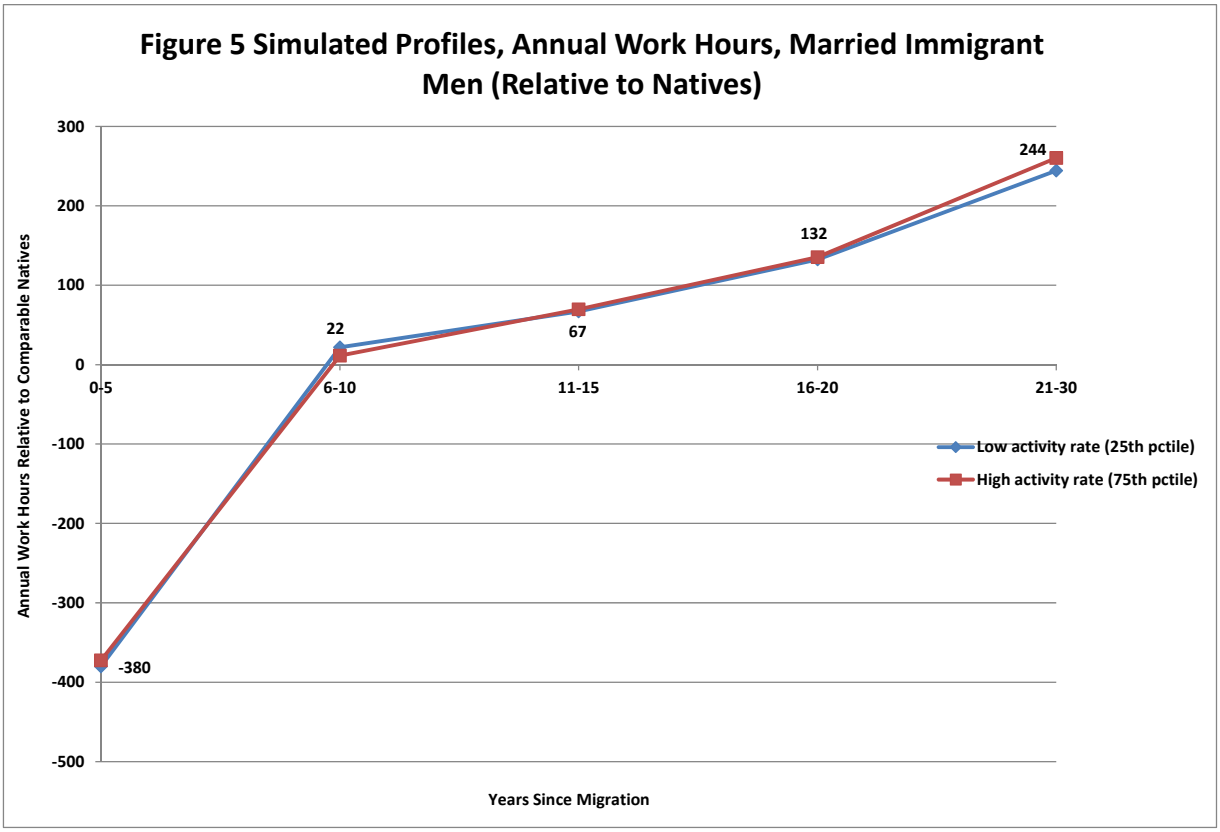

Source: Blau, Kahn, and Papps (2011).

Table 1 Results for the Effect of Immigrant Parent Characteristics on Second Generation Outcomes (Women)

	Education	Fertility	Annual Hours
Mother's Source Country:			
Female Number of Children	-0.908***	0.324**	-27.652
	(0.251)	(0.132)	(81.023)
Female Years of Schooling	0.031	0.013	-9.163
	(0.035)	(0.016)	(9.657)
Female Annual Work Hours	0.050*	-0.035***	0.314***
	(0.030)	(0.013)	(0.077)
Father's Source Country:			
Female Number of Children	-0.258	0.079	88.788
	(0.350)	(0.130)	(67.338)
Male Years of Schooling	0.265***	-0.041***	22.582***
	(0.033)	(0.014)	(7.690)
Female Annual Work Hours	-0.016	0.005	0.157**
	(0.038)	(0.014)	(0.063)
r squared	0.128	0.093	0.008
N	34,141	34,141	34,141

Source: Blau, Kahn, Liu, and Papps (2013).

Notes: * p<.10, ** p<.05, *** p<.01. Standard errors are clustered by parent's source country (mother then father) crossed with which census(es) provided the data. Regressions are weighted using CPS sampling weights adjusted so that each year receives equal weight. Regressions include controls for age (quadratic), family type (immigrant father and native mother; immigrant mother and native father, with the omitted category being both parents immigrants), and year fixed effects.

Table 2 Results for the Effect of Immigrant Source Country Characteristics on Second Generation Women's Fertility and Annual Hours

	Number of Children		Annual Hours	
	(1)	(2)	(3)	(4)
Mother's Source Country:				
Fertility	0.046*	0.016		8.474
	(0.024)	(0.021)		(14.392)
Labor Force Participation Rate Ratio		-0.597***	223.791**	249.033**
		(0.169)	(105.795)	(111.500)
Father's Source Country:				
Fertility	0.009	0.003		17.857*
	(0.021)	(0.020)		(10.042)
Labor Force Participation Rate Ratio		-0.112	40.763	87.191
		(0.168)	(84.811)	(86.863)
r squared	0.082	0.084	0.005	0.005
N	34,141	34,141	34,141	34,141

Source: Blau, Kahn, Liu, and Papps (2013).

Notes: * p<.10, ** p<.05, *** p<.01. Standard errors are clustered by parent's source country (mother then father) crossed with which census(es) provided the data. Regressions are weighted using CPS sampling weights adjusted so that each year receives equal weight. Regressions control for age (quadratic), family type, and year fixed effects, and source country GDP per capita and primary and secondary female enrollment rates.