An examination of cross-country differences in the gender gap in labor force participation rates

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Accepted 14 February 2000

Abstract

Using evidence on variation in the gender gap in labor force participation rates (LFPR) across home country groups in the United States, this paper analyzes cross-country differences in these gaps. The empirical evidence reveals that for first generation immigrants, over half of the overall variation in the gender gap in LFPR is attributable to home country LFPR. This suggests that there exists a permanent, portable factor, i.e., culture, that is not captured by observed human capital measures, that affects outcomes. The smaller role of home country LFPR for second-and-higher generation immigrants, provides evidence of cultural assimilation as well. © 2000 Elsevier Science B.V. All rights reserved.

JEL classification: J16; J22; J61
Keywords: Gender; Labor force participation rates; Culture

1. Introduction

While a large majority of adult men work for pay in all countries, the same is not true of women. In fact, there is considerable variation in the gender gap in labor force participation rates (LFPR) across countries. For example, Column 1 of
Table 1
Gender gaps in labor force participation rates

<table>
<thead>
<tr>
<th>Home country</th>
<th>First generation immigrants</th>
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<th>Home country LFPR controls</th>
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Table 1 demonstrates that the gender gap in LFPR, which is the male LFPR minus the female LFPR, ranges from 89.4 percentage points for Afghanistan, 50.6 percentage points for Greece, to 2.2 percentage points for Sweden. Perhaps surprisingly, there is little work among economists that attempts to explain
cross-country variation in female labor force participation rates.\textsuperscript{1,2} Therefore, the question remains: What can account for these large differences? Possible explanations include differences in human capital and labor market institutions across countries. Everyday conversations and casual empiricism, however, often invoke “cultural” factors, such as differences in preferences regarding family structure and women’s roles in market versus home work.

Economists have become increasingly aware of the importance of studying cultural factors or “tastes” in explaining why there exist differences across home country groups in labor market outcome variables.\textsuperscript{3} In particular, Reimers (1985) examines variation in married women’s LFPR across several home country (ethnic) groups in the United States, including first generation (foreign-born) and second-and-higher generation (U.S.-born) immigrants, relative to U.S.-born non-Hispanic whites. She argues that cultural factors may indirectly affect married women’s LFPR by acting through other factors, such as women’s education, experience, and fertility choices, while cultural factors play a direct role if differences in married women’s LFPR across home country (ethnic) groups within the United States persist despite controls for observable characteristics. Reimers finds that for foreign-born Asians, Hispanics, and whites, indirect cultural factors may play a role, but any direct cultural effect appears to be small. Interestingly, while she finds little indication of a direct “cultural” effect in the foreign-born ethnic groups, a large positive direct cultural effect is found for the U.S.-born Asian and black women. Moreover, relative to the U.S.-born Asian women, she does not relate this unexplained difference with the corresponding home-country differences.

Notes to Table 1:
(1) Home country LFPR data are from the ILO Yearbook of Labour Statistics, Various Years (For exceptions see footnote 10 in the text). (2) The home country LFPR are based on 1990 data for individuals between the ages 25 and 54 (For exceptions see footnote 11 in the text). (3) LFPR is defined as (employment + unemployment)/population ratios. The gender gap in LFPR is measured as the male LFPR minus the female LFPR. (4) Host country data is from the 1990 U.S. Census. The number of observations is 408,868. Sampling weights were used. For sample criteria see Section 2. (5) The predicted gender gaps in LFPR in the host country are based on LFPR regressions, which are pooled for men and women. The variables included in the LFPR regressions are: Column 2 — a male dummy variable, 71 home country dummy variables, and cross terms between gender and the home country dummies. Column 3 — includes Column 2 plus exogenous personal characteristics, which include a quartic in age, an urban/rural dummy variable, nine region dummy variables, eight year of arrival dummy variables, both in levels and interactions. Column 4 — includes Column 3 plus potentially endogenous personal characteristics, which include education, marital status, number of children, and English fluency, both in levels and interactions (with the exception of number of children which is included only in levels). Column 5 — a male dummy, home country male and female LFPR, and cross terms between gender and home country male and female LFPR. Column 6 — includes Column 5 plus exogenous personal characteristics, both in levels and interactions. Column 7 — includes Column 6 plus potentially endogenous personal characteristics, both in levels and interactions.
More recent research on cultural factors explicitly investigates the role of home country variables. For example, Blau (1992) examines the determinants of fertility among first generation immigrant women from different home country groups in the United States. In particular, Blau compares the fertility rates of immigrant groups in the United States to a number of home country variables, such as the total fertility rate (TFR), average per capita GNP, and annual number of deaths of infants under 1 year per 1000 live births (MORT). Blau finds a positive and significant effect of TFR (when GNP and MORT are also controlled for) on the predicted fertility rates, which she argues provides evidence of a “pure taste effect”, i.e., cultural factors using my terminology.

In this paper, I attempt to assess the effect of cultural factors on gender gaps in LFPR using evidence on variation in the gender gap in LFPR across home country groups within the United States. I argue that these gaps are informative about culture for a number of reasons. First, in contrast to international differences, differences between home country groups in one country — the United States — cannot easily be attributed to institutional factors, since all United States residents operate under roughly the same overall labor market regime. Second, compared to cross-country studies, within-country studies offer better controls for human capital, labor market institutions, and other variables.

1 A number of articles document cross-country differences, but are largely descriptive in nature. For example, Pfau-Effinger (1994) compares part-time participation rates of women in Finland and Germany. Pott-Buter (1993) compares LFPR of women in the Netherlands to Belgium, Denmark, France, Germany, Sweden, and the United Kingdom. Meulders et al. (1993) examine the LFPR of women in the European community. David and Starzec (1992) compare part-time participation rates of women in France and Great Britain. Wolchik (1992) examines the LFPR of women in Central and Eastern Europe. Haavio-Mannila and Kauppinen (1992) examine female LFPR in the Nordic Countries. The OECD (1988) examines the LFPR of women in OECD countries. Finally, using empirical analysis, Drex and Shaw (1986) compare the work patterns of British and American women after childbirth in an attempt to assess the effect of equal opportunity policies.

2 There is, however, a large stream of literature examining the trends in female labor force participation rates within a single country (for example, see Ben-Porath and Gronau, 1985; Colombino and De Stavola, 1985; Franz, 1985; Gregory et al., 1985; Gustafsson and Jacobsson, 1985; Hartog and Theeuwes, 1985; Iglesias and Riboud, 1985; Joshi et al., 1985; Michael, 1985; Mincer, 1985; Ofer and Vinokur, 1985; O’Neill, 1985; Riboud, 1985; Shimada and Higuchi, 1985; Smith and Ward, 1985.).

3 The role of culture has been examined in other contexts. For example, Caroll et al. (1994) examine the role cultural factors plays in explaining cross country variation in saving rates.

4 The role of home country variables, in different contexts, has been examined in several studies. For example, Borjas (1987) examines whether home country variables explain native/immigrant wage differentials, all else being equal; and Fairlie and Meyer (1996) examine whether home country variables explain the residual variation in male self-employment rates across home country groups within the United States. Antecol (2000) examines the role home country variables play in explaining variation in the gender wage gap across home country groups within the United States.

5 Although there has been a large stream of literature examining differences in LFPR across home country groups among married female immigrants within a single country (e.g., Long, 1980; Reimers, 1985; Duleep and Saunders, 1993; Baker and Benjamin, 1997), to my knowledge, there has been no research on differences in gender gaps in LFPR across home country groups within a single country.
capital factors, such as education. Finally, one can determine whether the variation across immigrant groups within the United States is due to home country variables, i.e., home country male and female LFPR. If these home country variables are a contributing factor, it seems more likely that ‘‘culture’’ or ‘‘tastes’’ play a role in explaining cross-country variation in gender gaps in LFPR.6

I begin in Section 2 by describing the data used in the study. I then assess the role of two factors, human capital and culture, in explaining differences in the gender gap in LFPR across first generation immigrant groups in the United States, in Section 3. In order to determine whether cultural factors have a greater effect on first generation than on second-and-higher generation immigrants, in Section 4, I examine the determinants of the gender gap in LFPR for second-and-higher generation immigrants.7 Section 5 concludes.

2. Data

The data set employed for the ‘‘host’’ country analysis is the 1990 U.S. Census 5% public use Microdata file. This data set is ideal because it includes detailed variables on labor market outcomes (e.g., employment status, wages, weeks worked), home country groups (e.g., ancestry, place of birth, race), and demographics (e.g., age, region, year of arrival, education, marital status) and the large sample size allows one to obtain reasonably precise results for a large number of different home country groups.

The sample includes individuals between the ages 25 and 54. Individuals who were currently enrolled in school, both full-time and part-time, were excluded from the sample. Further, the sample excludes first generation immigrants born abroad of U.S. born parents.

Because I am interested in the role home country variables play in explaining variation in the gender gap in LFPR across home country groups in the United States, I need to ensure that the home country groups in the United States are as closely aligned as possible with the country of origin. Two approaches were used to ensure this alignment. For first generation immigrants — individuals born outside of the United States — an individual’s home country is based on place of birth. For second-and-higher generation immigrants — individuals born inside the United States — primary ancestry is used to determine an individual’s ‘‘home’’

6 A similar methodology is used in my earlier work to examine why cross-country variation in the gender wage gap exists (Antecol, 2000).

7 Blau (1992) argues that, for a number of reasons — such as length of time away from the home country and length of time to adapt to economic conditions and opportunities in the home country — culture should have a greater effect on first generation than second-and-higher generation immigrants.
country. Second-and-higher generation immigrants who reported multiple ancestors (i.e., primary and secondary ancestry) were excluded from the sample. Because the United States consists primarily of immigrants and their descendants, anyone who reported ‘‘American’’ as their primary ancestry was excluded from the sample.

Based on the above criteria, for first generation immigrants, I restrict the sample to 72 home country groups because these are the most detailed groups that I can make comparable across first generation immigrants and home countries, with large enough cell sizes. This leaves a first generation immigrant sample size of 201,447 males and 207,421 females. For a list of the home country groups see Table 1. For second-and-higher generation immigrants, I am only able to identify 34 of the 72 home country groups due to small cell sizes. This is likely a result of the fact that immigration to the United States for many immigrant groups is a very recent phenomenon. This leaves a second-and-higher generation immigrant sample size of 873,184 males and 785,588 females. For a list of the home country groups see Table 3.

Home country data on LFPR are from the ILO Yearbook of Labour Statistics, various years. The home country LFPR, with some exceptions, are based on 1990 data for individuals between the ages 25 and 54.

There are differences across countries in the way home country LFPR are measured. In particular, there is cross-country variation in the definitions used, i.e., for the employed and the unemployed, and in the groups covered, such as the armed forces and members of religious orders. Further, there exist differences in the methods of collection, classification, and tabulation of data across countries.

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8 The exceptions are individuals who reported multiple UK (e.g., Welsh and Scottish) ancestries or multiple USSR ancestries (e.g., Estonian and Lithuanian).

9 For both first generation and second-and-higher generation immigrants, each cell must consist of at least 300 observations.

10 Note the following exceptions: data for Belgium are from OECD Labour Force Statistics 1972–1992; and data for Syria and Lebanon are from UN Arab Women in ESCWA Member States, Economic and Social Commission for Western Asia.

11 Note the following exceptions: data for Afghanistan are from 1979; data for Belize are from 1994; data for Cuba, Grenada, and Poland are from 1988; data for Czechoslovakia, Ethiopia, Greece, Honduras, Jordan, Peru, South Africa, and Syria are from 1991; data for Guatemala, Indonesia, USSR, and Vietnam are from 1989; data for Guyana and Iraq are from 1987; data for India are from 1981; data for Iran and Nigeria are from 1986; data for Lebanon are from 1970; data for Belgium are for individuals aged 15 to 64; data for Brazil, Colombia, Costa Rica, India, Lebanon, Nicaragua, Syria, Thailand, and Uruguay are for individuals aged 25 to 59; data for Cuba and Honduras are for individuals aged 20 to 59; and data for Venezuela are for individuals aged 25 to 64.

12 For example, a referee has pointed out that the gender gap in LFPR in Sweden may be understated because women on maternity leave in Sweden are counted as in the labor force.
for example, how family workers, who work in family enterprises, are counted varies across countries.\textsuperscript{13}

3. The gender gap in LFPR

Column 1 of Table 1 shows the home country gender gap in LFPR.\textsuperscript{14} It is clear that there is substantial variation in the gender gap in LFPR across home countries: the gap ranges from 2.2 for Sweden to 89.4 for Afghanistan. Second, this large variation is not restricted to differences between European countries and non-European countries. For example, gender gaps in LFPR in European countries range from 2.22 for Sweden to 55.2 in Ireland; gender gaps in LFPR in Middle Eastern countries range from 26.7 in Israel to 89.39 in Afghanistan; and gender gaps in LFPR in East and South Asian countries range from 9.0 in Vietnam to 47.2 in Malaysia. Therefore, lumping country-of-origin groups into broad regional categories can be very misleading. This substantial variation is the main stylized “fact” I analyze in this paper.

Can this cross-country variation in the gender gap in LFPR be attributed to differences in personal characteristics across these home country groups? To answer this question, I examine differences in the gender gap in LFPR across first generation immigrant groups in the United States. In particular, I first predict an unadjusted gender gap in LFPR using estimates from the following linear probability regression pooled for men and women:\textsuperscript{15}

\begin{equation}
L_i = a + bM_i + \sum_{j=1}^{J-1} c_j^1H_{ij} + \sum_{j=1}^{J-1} c_j^2H_{ij}M_i + \epsilon_{ij}
\end{equation}

where $L_i$ is the LFPR of person $i$, $M_i$ is a “male” dummy variable, $H_{ij}$ are home country dummy variables, and $j$ indexes the home country. This specification is referred to as the “full dummy controls” specification.

I then predict $X$-adjusted and $X,Z$-adjusted gender gaps in LFPR by re-estimating Eq. (1), first adding controls (both in levels and interactions) for exogenous

\textsuperscript{13} For more information on the differences in measurement across home countries see the ILO Yearbook of Labour Statistics, various years.

\textsuperscript{14} The conventional definition is employed for the LFPR, i.e., (employment + unemployment)/population ratios. The home country gender gap in LFPR is calculated as the male LFPR minus the female LFPR.

\textsuperscript{15} Alternatively, I could have estimated a probit or logit model. Although the probit results are slightly different from the linear probability results, particularly once controls for personal characteristics are added, I find that the overall conclusions do not change. Therefore, for convenience the linear model is used because it allows for easier calculation of the weighted standard deviation measure discussed below. The probit results are available from the author upon request.
(X) personal characteristics, and then adding controls (both in levels and interactions) for exogenous (X) and potentially endogenous (Z) personal characteristics. The former are characteristics that influence LFPR but seem unlikely to be correlated with culture. They include a quartic in age, eight year-of-arrival dummy variables, nine regional dummy variables, and a dummy variable for metropolitan status. The latter are characteristics that influence LFPR and are likely to depend on culture. They include years of education, a dummy variable for English fluency, three marital status dummy variables, and number of children.\footnote{Number of children is only included as a direct term because it is only observable for women.}

Finally, I calculate the weighted standard deviation (WSD), which is a summary statistic of the total variation in the gender gap in LFPR, for the unadjusted, X-adjusted, and X,Z-adjusted gender gaps in LFPR across home country groups within the United States.\footnote{The WSD is the standard deviation of the gender gap in LFPR across home country groups which corrects for least squares sampling errors. For a detailed discussion of how the WSD is calculated see Krueger and Summers (1988) and Haisken-DeNew and Schmidt (1997).} While variation in the gender gap in LFPR across home country groups can be attributed to personal characteristics if the WSDs for the adjusted gaps are substantially smaller than the WSD for the unadjusted gap, most of the variation in the gender gap in LFPR across home country groups remains unexplained if the WSDs remain similar in magnitude.

Columns 2 through 4 of Table 1 present the predicted unadjusted, X-adjusted, and X,Z-adjusted gender gaps in LFPR for first generation immigrants, respectively. There are several key points to note. First, as was the case with the cross-country data, there exist large differences in the unadjusted gender gap in LFPR across home country groups. The unadjusted gap ranges from 3.37 for Jamaica to 49.82 for Jordan. Second, it is once again apparent that lumping home country groups into broad categories can be very misleading: the large variation in the predicted unadjusted gap is not restricted to differences between “traditional” source countries (i.e., Europe) and newer source countries. For example, the gap across European countries ranges from 19.50 for Portugal to 33.01 for Greece; the gap for Middle Eastern and Western Asia countries range from 31.71 for Iran to 49.82 for Jordan; the gap for Easter and Southeast Asian countries range from 9.56 for the Philippines to 46.84 for Japan. Finally, despite controls for personal characteristics, there continue to exist large differences in the predicted gender gap across home country groups. For example, the X-adjusted gap ranges from 2.78 for Jamaica to 49.25 for Jordan and the X,Z-adjusted gap ranges from 1.82 for Jamaica to 39.66 for Japan. Although I explore these relationships further in the WSD analysis below, I draw two main conclusions from the patterns here. First, home country effects matter since there exists variation in the unadjusted gender gap in LFPR across first generation immigrant groups in the United States. Second, the differences in the gender gap in LFPR across first generation
immigrant groups are unlikely to be an artifact of differences in personal characteristics across these immigrant groups.

Column 1 of Table 2 presents the WSD for the unadjusted, the X-adjusted, and the X,Z-adjusted gender gap in LFPR for first generation immigrants. I partition the unadjusted WSD into three components: explained by X, explained by adding Z, and unexplained. The unadjusted WSD is 8.98 of which −0.14 percentage points are explained by X, 0.90 percentage points are explained by adding Z, and 8.22 percentage points are unexplained. These results illustrate that personal characteristics, both exogenous and potentially endogenous, play a limited role in explaining why there exists variation in the gender gap in LFPR across home country groups, i.e., the "adjusted" WSDs remain similar in magnitude to the "unadjusted" WSD.

I conclude from Column 1 of Table 2 that personal characteristics do not account for the variation in the gender gap in LFPR across home country groups. Therefore, I examine an alternative explanation for this variation: differences in cultural factors across home country groups, such as tastes regarding family structure and women’s roles in market versus home work. To examine this hypothesis, I first re-estimate Eq. (1), unadjusted and adjusted for personal characteristics, first dropping the home country dummy variables both in levels and interactions, and then replacing them by home country LFPR of men and women (both in levels and interactions). Unlike the full dummy controls specifica-

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Table 2
Weighted standard deviation measures, various specifications

<table>
<thead>
<tr>
<th>First generation immigrants</th>
<th>Full-dummy controls (1)</th>
<th>Home country LFPR controls (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unadjusted</td>
<td>8.98</td>
<td>5.67</td>
</tr>
<tr>
<td>X-adjusted</td>
<td>9.12</td>
<td>5.44</td>
</tr>
<tr>
<td>X,Z-adjusted</td>
<td>8.22</td>
<td>4.20</td>
</tr>
</tbody>
</table>

(1) Host country data is from the 1990 U.S.Census. The number of observations is 408,868. Sampling weights were used. For sample criteria see Section 2. (2) For a discussion of the interpretation of the WSDs see Section 3 in the text.

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18 The variables that cause these changes in the WSD measures are highly jointly significant (i.e., a p-value of 0.0000).
19 Although I am more concerned with the unexplained component of the inter-ethnic variation in the gender gap in LFPR, the order in which I introduce X and Z into the regression will of course influence how much of the inter-ethnic variation in the gender gap in LFPR can be attributed to X and Z. To see the effects of this I re-estimate the model adding Z first and then adding X. I find for first generation immigrants that 1.03 percentage points is now explained by Z and −0.27 is now explained by adding the X’s.
tion, which does not impose any restrictions on the home country effects, this specification, referred to as the “home country LFPR controls” specification, imposes the requirement that the home country effects are linear in the home country LFPR. I then use the results from the home country controls specification to predict unadjusted, X-adjusted, and X,Z-adjusted gender gaps in LFPR. Finally, I calculate the unadjusted, X-adjusted, and X,Z-adjusted WSDs from the home country LFPR controls specification. The closer in magnitude the WSDs from the home country LFPR controls specification are to the WSDs from the full dummy controls specification, the more home country effects are explained by culture or “tastes”.

Does coming from a country with high female LFPR lead to high LFPR of women in the United States? In order to answer this question I examine the coefficients, both in levels and interactions, on the home country female LFPR from the unadjusted home country LFPR controls specification. I find that women who come from countries with high LFPR are likely to have smaller gender gaps in LFPR in the United States (i.e., the coefficient on the male/home country female LFPR interaction term is −0.26 with a t-statistic of 38.87). Further, the home country female LFPR has the effect of decreasing the gender gap in LFPR in the United States by increasing female LFPR in the United States (i.e., the coefficient on the home country female LFPR is 0.22 with a t-statistic of 38.60) more than it decreases the male LFPR in the United States (i.e., the sum of the coefficients on home country female LFPR and male/home country female LFPR interaction term is −0.04 with a t-statistic of 10.60). These results suggest that there must be a permanent, portable factor, i.e., culture, that affects outcomes.

Columns 5 through 7 of Table 1 present the predicted unadjusted, X-adjusted, and X,Z-adjusted gender gaps in LFPR for first generation immigrants from the home country LFPR controls specification, respectively. The following results are noteworthy. First, there continue to exist differences in the predicted unadjusted gender gap in LFPR across home country groups within the United States for the home country LFPR controls specification; however, they are not as large as those found for the full dummy controls specification. For example, the gender gap in LFPR in the home country LFPR controls specification ranges from 14.02 for Czechoslovakia to 36.32 for Iran. Second, as was the case for the full dummy controls specification, despite controls for personal characteristics, there continue to exist differences in the predicted gender gaps across home country groups. For example, the X-adjusted gap for the home country LFPR controls specification ranges from 13.62 for Czechoslovakia to 38.80 for Belgium and the X,Z-adjusted gap from the home country LFPR controls specification ranges from 7.68 for 20 The results for the adjusted home country LFPR controls specification are similar. The full set of regression results from the home country LFPR controls specification, both unadjusted and adjusted, are available from the author upon request.
Barbados to 29.41 for Mexico. These results suggest that part of the home country effect can be attributed to cultural factors or "tastes".

Column 2 of Table 2 presents the unadjusted WSD (Row 1), the $X$-adjusted WSD (Row 2), and the $X,Z$-adjusted WSD (Row 3) for first generation immigrants for the home country LFPR controls specification. There are two key points to note. First, the unadjusted WSD for the home country LFPR controls specification is 5.67 of which 0.23 percentage points are explained by $X$, 1.24 percentage points are explained by adding $Z$, and 4.20 percentage points remain unexplained. Therefore, it is still the case that the amount of variation across home country groups within the United States is not much affected by the presence of personal characteristics. Second, a comparison of the WSDs from the home country LFPR controls specification to the WSDs from the full dummy controls specification illustrates that tastes explain over half of the home country effect, i.e., $5.67/8.98$, $5.44/9.12$ and $4.20/8.22$ are a bit over half. Although there exist differences in the measurement of LFPR across home countries, this comparison suggests that cultural factors or tastes play a large role in explaining variation in the gender gap in LFPR across home country groups in the United States.

Is the home country LFPR controls specification preferred to the full dummy controls specification? To answer this question, I test the unadjusted home country LFPR controls specification, which has 138 fewer parameters, against the unadjusted full dummy controls specification which yields a LR test statistic of 8092.1 with a $p$-value of 0.00. Thus, the full dummy controls specification is preferred to

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21 The variables that cause these changes in the WSD measures are highly jointly significant (i.e., a $p$-value of 0.0000).

22 Education systems vary across countries, with some being more similar to the education system in the United States than others. In order to control for this variation I re-estimate the models outlined above, however, I restrict the sample to first generation immigrants who emigrated before age 6. This sample restriction, which ensures that immigrants received their education in the United States, does not change the relative importance of personal characteristics, including education, and tastes in explaining the amount of variation in the gender gap in LFPR across home country groups within the United States. Results are available from the author upon request.

23 One limitation of the above analysis is that home country LFPR are based on 1990 data while the year of arrival of immigrants into the United States date as far back as pre-1950s. This may be important since female LFPR have changed dramatically over time. In an attempt to overcome this limitation, I predict the unadjusted gender gap in LFPR for the home country LFPR controls specification using home country LFPR data from the mean year of immigration, 1970 or the closest year available. Although the effect of tastes is slightly smaller, they continue to explain over half of the total home country effect, i.e., $(4.75/8.98) = 0.53$.

24 A possible explanation for why tastes, i.e., home country LFPR, do not completely explain the total home country effect is the selection of immigrants. Immigrants who emigrate to the United States may not be a random sample of individuals from the home country. For example, women who migrate may have higher labor force attachments than women who remain in the home country. Therefore, home country variables may not be totally accurate descriptions of immigrants. I view this as a useful topic for future research.
the restricted specification which restricts the home country effects to be linear in the home country LFPRs. This is not all that surprising given the analysis of the WSDs which showed that cultural factors only explain part of the home country effect. This can be further illustrated by re-estimating Eq. (1) excluding the home country dummy controls (both in levels and interactions). I then compare the $R$-squared from this regression, which is 0.1048, to the $R$-squared from the full dummy controls and home country LFPR controls specifications, which are 0.1408 and 0.1236, respectively. This comparison shows the following: while home country effects increase the explanatory power, i.e., $(0.1408 - 0.1048) = 0.036$, cultural factors or ‘‘tastes’’ account for more than half of this additional explanatory power, i.e., $(0.1236 - 0.1048)/(0.1408 - 0.1048) = 0.52$.

4. Second-and-higher generation immigrants

Blau (1992) argues that culture should have a greater impact on first generation than second-and-higher generation immigrants for a number of reasons, including length of time away from the home country, length of time to adapt to economic conditions and opportunities in the host country, and length of time exposed to the tastes of the host country. Using the same methodology outlined above, in this section, I examine the role culture or tastes play in explaining variation in the gender gap in LFPR across home country groups within the United States for second-and-higher generation immigrants.

Portable cultural factors appear to play less of a role for second-and-higher generation immigrants than for first generation immigrants. The magnitude of the effect of the home country female LFPR, both in levels and interactions, from the unadjusted home country LFPR controls specification is substantially smaller for second-and-higher generation immigrants than for first generation immigrants. In particular, for second-and-higher generation immigrants, the coefficient on the male/home country female LFPR interaction term is $-0.02$ with a $t$-statistic of 6.06, the coefficient on the home country female LFPR is $0.08$ with a $t$-statistic of 24.48 and the sum of the coefficients on home country female LFPR and male/home country female LFPR interaction term is $-0.06$ with a $t$-statistic of 30.11. 25

Table 3 presents the unadjusted, the $X$-adjusted, and the $X.Z$-adjusted gender gaps in LFPR for second-and-higher generation immigrants, for both the full

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25 Although the results for the $X$-adjusted home country LFPR controls specification are similar, the $X.Z$-adjusted results suggest that high female LFPR in the home country do not lead to high female LFPR in the United States, i.e., the coefficient on the home country female LFPR is $-0.005$ with a $t$-statistic of 1.59. This result further suggests the decreasing importance of cultural factors for second-and-higher generation immigrants. The full set of regression results from the home country LFPR controls specification, both unadjusted and adjusted, are available from the author upon request.
Table 3
Gender gaps in labor force participation rates

<table>
<thead>
<tr>
<th>Second-and-higher generation immigrants</th>
<th>Full-dummy controls</th>
<th></th>
<th></th>
<th>Home country LFPR controls</th>
<th></th>
<th></th>
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</thead>
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<tr>
<td></td>
<td>unadjusted</td>
<td>X- adjusted</td>
<td>X.Z- adjusted</td>
<td>unadjusted</td>
<td>X- adjusted</td>
<td>X.Z- adjusted</td>
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<td>Austria</td>
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<td>18.53</td>
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<td>11.04</td>
</tr>
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<td>16.00</td>
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<td>7.19</td>
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</tr>
<tr>
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<td>−0.31</td>
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<td>8.17</td>
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<td>17.34</td>
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</tr>
</tbody>
</table>

(1) Data is from the 1990 U.S. Census. The number of observations is 1,658,772. Sampling weights were used. For sample criteria see Section 2. (2) See Table 1 for a list of the variables included in the LFPR regressions.
Table 4  
Weighted standard deviation measures, various specifications

<table>
<thead>
<tr>
<th></th>
<th>Second-and-higher generation immigrants</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full-dummy controls (1)</td>
<td>Home country LFPR controls (2)</td>
</tr>
<tr>
<td>Unadjusted</td>
<td>4.97</td>
<td>1.49</td>
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<tr>
<td>X-adjusted</td>
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<tr>
<td>X,Z-adjusted</td>
<td>4.28</td>
<td>1.07</td>
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</tbody>
</table>

(1) Host country data is from the 1990 U.S. Census. The number of observations is 1,658,772. Sampling weights were used. For sample criteria see Section 2. (2) For a discussion of the interpretation of the WSDs see Section 3.

gender gap in LFPR for second-and-higher generation immigrants for the full dummy controls specification, however, it is substantially smaller than that found for first generation immigrants. Second, as was the case for first generation immigrants, despite controls for personal characteristics, there continue to exist differences in the predicted gender gaps across home country groups. Finally, as was the case for first generation immigrants, there continue to exist differences in the predicted gaps for the home country LFPR controls specification, however, they are not as large as those found for the full dummy controls specification.

Columns 1 and 2 of Table 4 present the unadjusted WSD (Row 1), the X-adjusted WSD (Row 2), and the X,Z-adjusted WSD (Row 3) for second-and-higher generation immigrants for the full dummy controls specification and the home country LFPR controls specification, respectively. There are three key points to note. First, the unadjusted WSD for the full dummy controls specification is considerably smaller for second-and-higher generation immigrants than for first generation immigrants (see Row 1, Column 1 in Tables 2 and 4). This suggests that home country effects are more important for first generation immigrants than second-and-higher generation immigrants. Second, despite controls for personal characteristics, there continue to exist differences in the predicted gender gaps across home country groups within the United States is not much affected by the presence of personal characteristics because the adjusted WSDs are similar in magnitude to the unadjusted WSDs from both the full dummy controls and home country LFPR controls specifications. Finally, cultural factors or tastes explain less than one-third of the home country effect, i.e., 1.49/4.97, 1.48/5.03 and 1.07/4.28 are less than one-third. These results are consistent with Blau’s (1992) argument that cultural factors should be more apparent among first generation immigrants.

\[\text{This is even true if I restrict the sample of first generation immigrants to the 34 home country groups I can identify for second-and-higher generation immigrants, i.e., the unadjusted WSD is 8.29 for the restricted sample of first generation immigrants for the full dummy controls specification.}\]

\[\text{The variables that cause these changes in the WSD measures, for both the full dummy controls and home country LFPR controls specifications, are highly jointly significant (i.e., a } p\text{-value of 0.0000).}\]
immigrants, because second-and-higher generation immigrants have had time to adapt to the prevailing tastes and economic conditions of the host country.

5. Conclusions

Evidence on variation in the gender gap in LFPR across home country groups in the United States is employed to determine the role of two factors, human capital and culture, in explaining cross-country differences in the gender gap in LFPR. I argue that these gaps are informative for a number of reasons. First, in contrast to international differences, differences across home country groups within one country — the United States — cannot be easily attributed to differences in institutional factors, since all United States residents operate under roughly the same labor market regime. Second, compared to cross-country studies, within-country studies offer better controls for human capital factors, such as education. Finally, one can determine whether the variation across immigrant groups within the United States is due to home country variables, i.e., home country male and female LFPRs. If these home country variables are a contributing factor, there must be a permanent, portable factor that is not captured by observed human capital measures and not related to labor market institutions, that affects outcomes. A plausible candidate is “culture”, or group specific “tastes” toward family and work.

I find evidence of variation in the unadjusted gender gap in labor force participation across home country groups in the United States. This variation cannot be attributed to human capital factors, as controlling for these factors does not eliminate the variation in the gender gap in LFPR across home country groups. For first generation immigrants, I find that over half of the overall variation in the gender gap across home country groups within the United States can be attributed to home country LFPRs. This finding suggests the importance of cultural factors, such as tastes regarding family structure and women’s role in market versus home work. As the overall variation in the unadjusted gender gap in LFPR and the role of home country LFPR are smaller for second-and-higher generation immigrants, there exists evidence of cultural assimilation as well.

It is clear that cultural factors play a role in explaining why some groups of women work more relative to men than others. However, there are many questions which still remain unresolved. Future research, for instance, should consider what the components of culture, such as tastes regarding work and family, actually are and how to quantify these components in an empirically meaningful manner. Further, the effect of cultural factors on interrelated choices, such as education and occupation, should be examined.28 This analysis may allow us to understand more

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28 The effect of tastes on fertility, another important interrelated choice, has been examined by Blau (1992).
completely the relationship among labor force participation (LFP) and these choices. Finally, alternative data sets should be employed to distinguish second generation immigrants from higher generation immigrants in order to explore the role cultural factors play for them. This may have important implications not only for the LFP choice, but for all interrelated choices.

Acknowledgements

I thank the Canadian International Labour Network (CILN) for financial support. CILN receives major funding from the Social Sciences and Humanities Research Council of Canada and McMaster University. Peter Kuhn, Lonnie Magee, Dan Rich, and anonymous referees provided helpful comments.

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