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McMaster University

DEPARTMENT OF ECONOMICS

**Why is there Inter-Ethnic Variation in the Gender Wage Gap?
The Role of “Cultural” Factors**

Heather Antecol
Department of Economics
McMaster University
Hamilton, Ontario L8S 4M4, Canada
antecoh@mcmaster.ca

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Abstract

This paper seeks to explain why there exists inter-ethnic variation in the gender wage gap among first generation, and among second-and-higher generation immigrants to the US, contrasting the role of human capital factors and cultural factors, i.e., differences in preferences regarding family structure and women's role in market versus home work. While human capital factors do play an important role, especially among second-and-higher generation immigrants, controlling for these factors does not eliminate inter-ethnic variation in the gender wage gap. In fact, for first generation immigrants, I find that even after controlling for all observable characteristics in the United States, a one percentage point increase in the home country gender wage gap is associated with a 0.9 percentage point increase in the gender wage gap across these ethnic origin groups in the United States. I argue that this strong positive correlation suggests the importance of cultural factors. Although I am unable to detect the effect of home country factors for second-and-higher generation immigrants, there appears to be a role for "tastes" regarding work and family, in addition to the more commonly-analyzed human capital and institutional factors, in explaining why some women earn more relative to men than others.

1. Introduction

A number of recent studies (e.g., Gregory, Daly and Ho (1986); Gregory and Daly (1991); Blau and Kahn (1996); and Kidd and Shannon (1996)), have attempted to explain the sizeable variation in the gender wage gap across industrialized countries. A key question addressed by these studies has been the relative role of two factors --human capital versus wage-setting institutions-- in explaining the gender wage gap. Analysts have argued, for example, that the small gender wage gaps seen in many European countries are not due to smaller gender gaps in women's observable qualifications, but simply to institutions which compress the wage structure in general.

Even after accounting for human capital and institutional differences, however, there still remain substantial international differences in the gender wage gap. What explains these differences? Everyday conversations and casual empiricism often invoke "cultural" factors, such as differences in preferences regarding family structure and women's roles in market versus home work, yet economists have been reluctant to invoke such explanations due to difficulties in testing them.¹

In this paper I try to assess the effect of cultural factors on gender wage gaps using evidence on inter-ethnic variation in the gender wage gap within the United States.² I argue that

¹There have been several studies which examine the role of culture in other contexts. For example, Reimers (1985) examines the role culture plays in explaining inter-ethnic variation in female labor force participation rates; Carroll, Rhee and Rhee (1994) examine the role culture plays in explaining cross country variation in the saving rates.

²While a number of authors have studied international differences in the gender wage gap, and immigrant-native or ethnic wage differences for both men and women, perhaps surprisingly, to my knowledge this is the first study to directly study inter-ethnic variation in the gender wage gap within a single country.

these differentials are informative about culture for the following reasons. First, in contrast to international differences, differences between ethnic 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 wage-setting regime. Second, compared to international studies, within-country studies offer better observable controls for human capital factors, like education and experience. Third, gender wage gaps among immigrants and ethnic groups in the United States can be compared with the same gaps in those groups' countries of origin. If these gaps are related, evidence of a third determinant of gender wage gaps exists. This factor is transmitted between countries with different wage setting institutions, as one would expect to be the case for cultural attitudes to family and work.

I begin in Section 2 by describing the data used in the study. I then document the existence of inter-ethnic variation in the unadjusted gender wage gap for first generation, and for second-and-higher generation immigrants, in Section 3. Next, I explore the role differences in personal characteristics across ethnic origin groups play in explaining the inter-ethnic variation in the unadjusted gender wage gap. I examine two types of personal characteristics: those that are likely to affect wages but seem unlikely to be correlated with inter-ethnic cultural differences (such as age, year of arrival, and region) and those that influence wages, but might depend on inter-ethnic cultural differences (such as women's education, experience, and fertility choices). In Section 5, I examine the correlations between the gender wage gap among immigrants and ethnic origin groups in the United States with the same gaps in those groups' countries of origin.³

³The role of home country factors, in different contexts, has been examined in several studies in the past. For example, Borjas (1987) examines whether home country factors explain native/immigrant wage differentials, all else being equal; and Fairlie and Meyer (1996) examine whether home country factors explain the residual

Section 6 concludes.

2. Data

The data set used for the host country analysis is the 1990 United States Census five percent Public Use Microdata sample . The data contains indicators of ethnic origin (ancestry, race and place of birth), a rich set of labor market variables (employment status, hours worked in the previous year, weeks worked in the previous year, wages and salary in the previous year, industry and occupation), and personal characteristics (age, year of arrival (for first generation immigrants), education, marital status, fertility, English fluency, and region).

I restrict the sample to individuals between the ages of 25 and 54 who earned positive wages in 1989. Individuals earning less than \$1 per hour or greater than \$100 per hour are excluded from the sample.⁴ Further, individuals who earned self-employment income in 1989, and those attending school at the time of the survey are excluded from the sample. Additionally, first generation immigrants whose parents were born in the United States are excluded from the sample. Finally, I restrict second-and-higher generation immigrants to a 1 percent sample (as opposed to the full 5 percent sample) in order to obtain a manageable sample size, by randomly choosing 20 percent of the original sample.

Because I want to compare outcomes of immigrants and ethnic groups in the United States with the same outcomes in those groups' countries of origin, I need individuals in the

inter-ethnic variation in self-employment rates.

⁴Hourly wages are calculated as wages and salary in 1989 divided by (weeks worked in 1989 times hours worked in 1989).

United States to be linked as closely as possible with their country of origin or the country of origin of their ancestors. Therefore, two approaches are used to determine an individual's ethnic origin. Place of birth is used to determine the ethnic origin of first generation immigrants, i.e., individuals born outside of the United States. For second-and-higher generation immigrants, who by definition are born in the United States, ancestry is used. To facilitate the estimation of differences between ethnic origin groups, second-and-higher generation immigrants who reported multiple ancestries are excluded from the sample.⁵ Finally, because the population of the United States mainly consists of immigrants or their descendants, second-and-higher generation immigrants who identified themselves as "Americans" in the ancestry question are excluded from the analysis.

Based on the above criteria, I restrict the sample to 21 ethnic origin groups because these are the most detailed groups that I can make comparable across first generation, across second-and-higher generation immigrants, and across home countries, and have large enough sample sizes (See Figure 1 for a list of these countries). This leaves a first generation immigrant sample size of 85,996 males and 65,407 females, and a second-and-higher generation immigrant sample size of 129,415 males and 107,151 females. For the breakdown of sample size by ethnic origin group see Appendix I.

The wage data used for the home country analysis is from the ILO Yearbook of Labour Statistics, various years with the following exceptions: wage data for Austria and Italy is from Blau and Kahn (1996); wage data for Mexico, provided by the Commission for Labor

⁵Note the following exception: individuals who reported multiple United Kingdom ancestries (i.e., British and Scottish) are included in the sample.

Cooperation, is from STPS/INEGI, Encuesta Nacional de Empleo (ENE); and the wage data for Canada is from the 1990 Survey of Consumer Finance (SCF) for the 1989 income year. The home country wage data is based on 1989 hourly wages in the non-agricultural sector.⁶

There is probably substantial measurement error in the home country wage data because, as indicated above, the home country wage data is from a number of different sources. This variation in sources causes the home country wage data to be based on different industries, different units, and different years. For example, countries where the wage data is based on monthly wages implicitly assumes that men and women would have to work the same number of hours per month for the gender wage gap to be the same as it would have been if hourly wage data had been observed.

3. The Unadjusted Gender Wage Gap

Figure 1 presents the unadjusted gender wage gap for first generation, and for second- and-higher generation immigrants within the United States. The unadjusted gender wage gap within each ethnic origin group is measured as the difference in the mean log hourly wages of men minus the mean log hourly wages of women.

Figure 1 reveals the following patterns. First, there is considerable variation in the unadjusted gender wage gap across ethnic origin groups for both first generation, and for second-

⁶Note the following exceptions: wage data for Czechoslovakia, Hungary, Japan and the Philippines is based on monthly wages; wage data for Mexico is based on weekly wages; wage data for Austria is based on monthly wages adjusted for hours worked; wage data for Italy is based on annual wages adjusted for hours worked; hourly wage data for Finland, Greece, Ireland, Norway and Sweden is based on the manufacturing industry; the wage data for Mexico and the United Kingdom include agricultural workers; wage data for the Philippines is based on 1993 wages; wage data for Hungary is based on 1992 wages; wage data for Mexico is based on 1991 wages; wage data for Austria is based on 1985-1989 pooled wages; and wage data for Italy is based on 1987 wages.

and-higher generation immigrants, but the variation is greater for first generation immigrants. For example, for first generation immigrants the unadjusted gender wage gap ranges from 12.4 percent for Filipinos to 70.5 percent for the Japanese whereas for second-and-higher generation immigrants it ranges from 17.9 percent for Filipinos to 48.9 percent for Belgians. Second, these differences are not confined to variation between “traditional” (i.e., European) and newer source countries for immigrants. For example, for first generation immigrants the unadjusted gender wage gap ranges from 34.8 percent for Greeks to 59.9 percent for the English, and for second-and-higher generation immigrants the unadjusted gender wage gap ranges from 30.4 percent for the Portugese to 48.9 percent for Belgians.⁷ Finally, inspection of Figure 1 suggests that there is assimilation towards the United States mean gap of 32.9.⁸ In particular, first generation ethnic origin groups with gender wage gaps that are substantially higher than the U.S. mean have gender wage gaps which are much closer to the U.S. mean after one generation away from the home country, while the reverse is true for first generation ethnic origin groups with gender wage gaps that are considerably lower than the U.S. mean. For example, Norwegians have a gender wage gap of 56 percent in the first generation and a gender wage gap of 40 percent in the second-and-higher generation while Mexicans have a gender wage gap of 22 percent in the first generation and a gender wage gap of 27 percent in the second-and-higher generation.

⁷Difference across European ethnic origin groups is not confined to differences in the unadjusted gender wage gaps. For instance, Fairlie and Meyer (1996) find substantial differences in self-employment rates across European ethnic origin groups in the United States.

⁸The overall United States unadjusted gender wage gap is based on the entire 1990 United States Census 5 percent sample for first generation immigrants, and a 1 percent sample for second-and-higher generation immigrants. The sample includes only individuals between the ages 25 and 54 who earned positive wages, were not enrolled in school, earned between \$1 per hour and \$100 per hour, and did not have self-employment income.

4. The Role of Personal Characteristics

Although the results in the preceding section are suggestive, much of the inter-ethnic variation in the unadjusted gender wage gap may simply result from differences in personal characteristics across ethnic origin groups. For example, year of arrival may play a key role in explaining inter-ethnic variation in the gender wage gap among first generation immigrants. There exist large differences in the mean year of arrival across these ethnic origin groups, and year of arrival may proxy for investment in host country specific human capital. In particular, Long (1980) finds that earnings of immigrant women increase with year of arrival, i.e., the more recently immigrant women arrived, the more they earn, and earnings of immigrant men decrease with year of arrival.⁹ Education may also play an important role in explaining inter-ethnic variation in the gender wage gap, as there are substantial differences in the amount women invest in education relative to men across ethnic origin groups.

In this section I focus on two types of personal characteristics: “exogenous” personal characteristics (X) and “potentially endogenous” personal characteristics (Z). An exogenous personal characteristic is any characteristic that influences wages but seems unlikely to be correlated with “cultural” factors--i.e., differences in individuals’ tastes regarding family structure and women’s role in market versus home work. Exogenous personal characteristics include a quartic in age, 9 regional dummy variables, a dummy variable for metropolitan status, and 8 year of arrival dummy variables (for first generation immigrants). Analogously, a potentially

⁹ Long attributes this to the family investment decision in host country specific human capital. Baker and Benjamin (1994) examine the family investment decision model. They find that first generation immigrant women married to first generation immigrant men are more likely to work upon arrival in the host country, i.e., Canada, in jobs which do not require host country specific human capital and have little room for future advancement in order to facilitate the host country specific human capital accumulation of their husbands.

endogenous characteristic is any characteristic that influences wages, but could also depend on cultural factors. Potentially endogenous characteristics include years of education, English fluency, number of children and marital status.

4.1 Regression Results

In order to predict an “unadjusted” gender wage gap, I first estimate the following pooled regression for men and women:

$$w_i = a + cM_i + \sum_{j=1}^{J-1} d_j^1 E_{ij} + \sum_{j=1}^{J-1} d_j^2 (E_{ij} M_i) + e_i \quad (1)$$

where w_i is the log wage of person i , M_i is a “male” dummy variable, E_{ij} are ethnic origin dummy variables, and j indexes the ethnic origin group. The d_j^2 's from this regression reflect whether the unadjusted gender wage gap varies across ethnic origin groups.

Second, assigning the left out ethnic origin dummy a value of zero, I re-normalize the \hat{d}_j^2 's from equation (1) as deviations from the mean as follows:

$$\hat{d}_j^{2*} = \left(\hat{d}_j^2 - \left(\frac{\sum_{j=1}^J \hat{d}_j^2}{J} \right) \right) \quad (2)$$

This re-normalization is employed because it allows for easy comparison and it is used in the calculation of the weighted standard deviation (WSD) measure discussed below.

Now, to see the role of personal characteristics, I re-estimate equation (1) first adding controls for only exogenous personal characteristics, and then adding controls for both exogenous

and potentially endogenous personal characteristics.¹⁰ I will refer to the former specification as the X-adjusted gender wage gap and the latter specification as the X,Z-adjusted gender wage gap. The coefficient estimates of interest from these regressions are also re-normalized according to equation (2).

The estimates of the \hat{d}_j^{2*} 's for the unadjusted, for the X-adjusted, and for the X,Z-adjusted gender wage gaps across ethnic origin groups for first generation, and for second-and-higher generation immigrants are presented in Table 1. The results in Table 1 can be interpreted as follows: a negative coefficient implies that a given ethnic origin group has a gender wage gap that is smaller than the average gender gap of all ethnic origin groups.

Inspection of Table 1 reveals the following patterns. First, for first generation immigrants, the ethnic origin variables frequently have a large and significant impact on the gender wage gap for the unadjusted, for the X-adjusted, and for the X,Z-adjusted gender wage gaps. For example, depending on the specification, Filipinos have a gender wage gap that is between 31 and 34 percentage points lower than the average gender wage gap of all ethnic origin groups while the English have a gender wage gap that is between 12 and 15 percentage points above the average gender wage gap of all ethnic origin groups. Furthermore, the magnitude of the ethnic origin coefficients, in general, remains stable across the three specifications for first generation immigrants.

For second-and-higher generation immigrants the impact of the ethnic origin variables on the gender wage gap are not as large as they are for first generation immigrants across all three

¹⁰All exogenous and potentially endogenous personal characteristics are also interacted with the male dummy variable. Because number of children is only observable for women, it is only included as a direct term.

specifications. For instance, depending on the specification, the gender wage gap of Filipinos is now only between 10 and 19 percentage points lower than the average gender wage gap of all ethnic origin groups while the gender wage gap of the English is now only between 1 and 3 percentage points higher than the average gender wage gap of all ethnic origin groups.

Additionally, for second-and-higher generation immigrants the ethnic origin coefficients, in general, decline in magnitude as more control variables are added. For example, the gender wage gap of Belgians range from 12 percentage points higher than the average for the unadjusted gender wage gap, 7 percentage points higher than the average for the X-adjusted gender wage gap, and 3 percentage points higher than the average for the X,Z-adjusted gender wage gap. Finally, the F-test shows that the ethnic origin variables are jointly significant for both first generation, and for second-and-higher generation immigrants for the unadjusted, for the X-adjusted, and for the X,Z-adjusted gender wage gaps.

4.2 Weighted Standard Deviation Measure

As a simple summary measure of the importance of differences in personal characteristics across ethnic origin groups, I calculate a measure of total inter-ethnic variation in the gender wage gap, called the weighted standard deviation (WSD).¹¹ The WSD is measured as follows:¹²

¹¹This measure can be attributed to Krueger and Summers (1988), who used this technique to explain industry wage differentials. Their original measure however is sensitive to which industry is used as the left out category. Haisken-DeNew and Schmidt (1997) correct this problem. Thus, I use the Haisken-DeNew and Schmidt measure.

¹²The underlying weights in the WSD measure I employ are equal weights for each ethnic origin group because the unit of observation I am interested in is the group not the individual. Equal weights for each ethnic origin group are implicitly assumed in the calculation of equation (2).

$$SD(d^{2*}) = \sqrt{\frac{1}{J} \sum_{j=1}^J (\hat{d}_j^{2*})^2 - \frac{1}{J} tr(V^*)} \quad (3)$$

where \hat{d}_j^{2*} is mean difference in the \hat{d}_j^2 's from equation (1) and $tr(V^*)$ is the trace of V^* , which is the variance/covariance matrix of \hat{d}_j^{2*} .¹³ The first term of $SD(d^{2*})$ represents the sample variance and the second term represents a term which corrects for the least squares sampling errors.¹⁴ Therefore, $SD(d^{2*})$ is a summary statistic of the total inter-ethnic variation in the unadjusted gender wage gap. I calculate the WSD for the X-adjusted, and the X,Z-adjusted gender wage gaps analogously. While inter-ethnic variation in the gender wage gap can be attributed to personal characteristics if the WSD for the adjusted gaps are substantially smaller than the WSD for the unadjusted gap, most of the inter-ethnic variation in the gender wage gap remains unexplained if the WSDs remain similar in magnitude.

The weighted standard deviations (WSDs) of the unadjusted, the X-adjusted, and the X,Z-adjusted gender wage gaps are presented in the bottom line of Table 1. The WSD for the unadjusted gender wage gap for first generation immigrants is 11.25 log points whereas for second-and-higher generation immigrants it is 5.80 log points. For both first generation, and for second-and-higher generation immigrants I partition the “unadjusted” WSD’s into three components: explained by X, explained by adding Z, and unexplained.

For first generation immigrants the three components of the unadjusted WSD, which is

¹³For details on how the variance-covariance matrix is calculated see Haisken-DeNew and Schmidt (1997).

¹⁴See Krueger and Summers (1988) and Haisken-DeNew and Schmidt (1997) for a more detailed discussion of the correction term.

11.25 log points, are: -0.86 log points, 0.75 log points, and 11.36 log points, respectively.¹⁵ For second-and-higher generation immigrants the three components of the unadjusted WSD, which is 5.80 log points, are: 2.75 log points, 0.63 log points, and 3.38 log points, respectively.¹⁶ These results illustrate that even after controlling for both exogenous and potentially endogenous personal characteristics there remain substantial differences across ethnic origin groups for both first generation, and for second-and-higher generation immigrants.¹⁷ In fact for first generation immigrants the unexplained component is larger than the original unadjusted WSD. It is not surprising that the unexplained component is much larger for first generation immigrants since this is the group of individuals where one would expect cultural differences to be greater. Further, potentially endogenous characteristics play a limited role in explaining the inter-ethnic variation in the gender wage gap for first generation immigrants while for second-and-higher generation immigrants these characteristics play an important role. Finally, although potentially endogenous characteristics are important for second-and-higher generation immigrants, exogenous personal characteristics also play an important role in explaining inter-ethnic variation in the gender wage

¹⁵For first generation immigrants, as well as for second-and-higher generation immigrants, the variables that cause these changes in the WSD measures are highly jointly significant (i.e., a p-value of 0.0000).

¹⁶The fact that X explains a large portion of the unadjusted WSD for second-and-higher generation immigrants may be explained by the fact that the age distribution of this group is very dispersed. For instance, second-and-higher generation immigrants from European countries tend to be much older and have higher gender wage gaps on average than second-and-higher generation immigrants from Asian countries. Antecol and Kuhn (1998) find that the gender wage gap is smaller among young individuals than old individuals. Thus, once age is controlled for the gender wage gap among European countries and Asian countries move closer together, which causes the overall dispersion to be reduced.

¹⁷It may be argued that occupation and industry choices should be included in potentially endogenous personal characteristics. The inclusion of these additional variables, however, does not change the overall findings. In particular, inter-ethnic variation persists despite controls for potentially endogenous personal characteristics, including occupation and industry choices, for both first generation, and for second-and-higher generation immigrants, and the unexplained component remains substantially larger for first generation immigrants.

gap for this group.¹⁸

5. The Role of Home Country Factors

The previous section illustrated that, despite controls for personal characteristics, there continues to exist inter-ethnic variation in the gender wage gap. In this section I compare the gender wage gaps among first generation, and among second-and-higher generation immigrants in the United States with the gender wage gaps in those groups' countries of origin. If these gaps are related, evidence of a determinant, other than human capital factors and wage setting institutions, of the gender wage gap exists. This factor is transmitted between countries with different wage setting institutions, as one would expect cultural attitudes to family and work to be transmitted via socialization.

5.1 Descriptive Statistics

Table 2 presents the unadjusted gender wage gap for the home country. For comparison, it also reproduces the unadjusted, the X-adjusted, and the X,Z-adjusted gender wage gaps for the host country from previous sections.¹⁹ There are several key points to note. First, there is large

¹⁸Although I am more concerned with the unexplained component of the inter-ethnic variation in the gender wage gap, 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 wage gap 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 0.44 log points is now explained by Z and -0.55 is now explained by adding the X's. For second-and-higher generation immigrants I find that 2.16 is now explained by Z and 1.22 is now explained by adding X's.

¹⁹In general, the unadjusted gender wage gap within a home country is measured as $\ln(\text{average male wage}) - \ln(\text{average female wage})$. It should be noted that while the home country data is based on logs of means, with the exception of Canada, Austria, and Italy, whose gender wage gaps are based on means of logs, the host country data is based on means of logs.

variation in the gender wage gap across home countries. The gender wage gap ranges from 9.6 percent for the Philippines to 68.6 percent for Japan. Second, as for inter-ethnic gaps within the U.S., there is large variation in the gender wage gap across European countries. For instance, the gender wage gap in Sweden is 11.1 percent while the gender wage gap in Switzerland is 38.9. Finally, the gender wage gap in the home country is, in general, smaller than the gender wage gap in the United States for both first generation, and for second-and-higher generation immigrants. This pattern might result from cross country differences in wage setting institutions. In particular, Blau and Kahn (1996) find that the gender wage gap in the United States is higher than other developed countries because the United States has highly decentralized wage setting institutions compared to other developed countries.²⁰ Therefore, it is not surprising that the gender wage gaps in the home country are smaller than the gender wage gaps in the host country because the host country in this analysis is the United States and many of the home countries are the same as those in Blau and Kahn (1996).

5.2 Estimation Approach

In order to estimate the importance of “portable” cultural factors, I estimate equations of the following form:

$$\hat{d}_j^{2*}(X) = \beta_1 h_j + \varepsilon_j \quad (4)$$

²⁰Centralized wage setting institutions are characterized by greater wage equality and smaller gender wage gaps than are decentralized wage setting institutions because wages in centralized wage setting institutions--particularly at the bottom of the distribution--are kept up due to minimum wages and unions and women are more likely to be at the bottom of the wage distribution. For more detailed information on the role of wage setting institutions see Blau and Kahn (1996) and Kidd and Shannon (1996).

$$\hat{d}_j^{2*}(X, Z) = \beta_2 h_j + \varepsilon_j \quad (5)$$

where $\hat{d}_j^{2*}(X)$ and $\hat{d}_j^{2*}(X, Z)$ are the normalized regression coefficients of the X-adjusted and X,Z-adjusted gender wage gaps from the previous section, respectively, h_j are the mean differences in the home country gender wage gaps, and j indexes the ethnic origin group.²¹ β_1 and β_2 are the parameters of interest. If $\beta_1 > 0$, then a 1 percentage point increase in the home country gender wage gap is associated with a β_1 percentage point increase in the host country X-adjusted gender wage gap. I argue that this reflects portable cultural factors, including personal characteristics that may themselves be affected by culture, such as the presence of children, marriage and education. Further, if after controlling for potentially endogenous personal characteristics (i.e., Z) $0 < \beta_2 < \beta_1$, then a 1 percentage point increase in the home country gender wage gap is still associated with a β_2 percentage point increase in the host country X,Z-adjusted gender wage gap. I argue that this must reflect portable cultural factors that are not captured by measures of childbearing, education, and marriage. Alternatively, it can be argued that the above correlations reflect unobserved differences in human capital factors across ethnic origin groups. This could be, but the main reason unobserved human capital factors differ across ethnic origin groups could itself be driven by cultural factors.²²

I estimate equations (4) and (5) by ordinary least squares (OLS) and generalized least squares (GLS). I employ GLS to take into account the fact that the dependent variable is

²¹The two stage estimation approach for the linear random effects model was proposed by Amemiya (1978), and was adapted by Borjas and Sueyoshi (1994) for probit models with structural group effects. Fairlie and Meyer (1996) use the Borjas and Sueyoshi approach to determine the role home country factors play in explaining inter-ethnic variation in self-employment rates.

²²It should also be noted that unobserved human capital factors must differ for men and women. This need for differences across men and women strengthens the cultural argument.

estimated (Borjas and Sueyoshi, 1994). For illustration purposes, I focus on equation (4) although an analogous argument can be made for equation (5). The underlying model of equation (4) is:

$$d_j^{2*}(X) = \beta_1 h_j + u_j \quad \text{and} \quad \hat{d}_j^{2*}(X) = d_j^{2*}(X) + v_j \quad (6)$$

Therefore, equation (4) can be rewritten as:

$$\hat{d}_j^{2*}(X) = \beta_1 h_j + u_j + v_j \quad (7)$$

Assuming u_j and v_j are independent, the weighting matrix for the GLS estimation is equal to:

$$\Omega = \text{Var}(u) + \text{Var}(v) = \sigma_u^2 I + \hat{V}^{2*} \quad (8)$$

where $\sigma_u^2 I$ is a scalar variance-covariance matrix assumed for u , and \hat{V}^{2*} is the estimated variance-covariance matrix of the coefficient estimates of the mean difference in the gender wage gap across ethnic origin groups.^{23, 24}

5.3 Results

Panels 1 and 3 of Table 3 present the regression results for equations (4) and (5) for first generation, and for second-and-higher generation immigrants, respectively. The following results are noteworthy. First, in general the OLS and GLS estimates are similar. Therefore, the remaining discussion focusses on the GLS estimates only. Second, for first generation immigrants the coefficient estimates on the home country gender wage gaps are positive. In particular, a 1

²³See Appendix II for details on how the matrix Ω is estimated.

²⁴Alternatively, I could have weighted equation (4) by ethnic origin group size; however, this either implies that the $\text{Var}(u)$ is zero, or that the $\text{Var}(u)$ is also related to ethnic origin group size in the same way (proportionally) the $\text{Var}(v)$ is.

percentage point increase in the home country gender wage gap is associated with a 0.69 percentage point increase in the X-adjusted host country gender wage gap, while controlling for potentially endogenous personal characteristics (Z) still implies a 1 percentage point increase in the home country gap is associated with a 0.63 percentage point increase in the X,Z-adjusted host country gender wage gap. Third, the coefficient estimates on the home country gender wage gap are significant at less than the one percent level. This significant relationship persists despite the large measurement error associated with the home country wage data. Therefore, for first generation immigrants, portable cultural factors play a key role in explaining inter-ethnic variation in the gender wage gap, with unobservable portable cultural factors being of the utmost importance.

Fourth, for second-and-higher generation immigrants portable cultural factors do not appear to play a role in explaining inter-ethnic variation in the gender wage gap. In fact, the coefficient estimate for the X-adjusted gender wage gap does not go in the expected direction. One of the reasons home country factors play a role for first generation immigrants but not for second-and-higher generation immigrants has to do with the labor market outcomes of Japanese immigrants. In particular, Table 2 illustrates that first generation Japanese immigrants have high gender wage gaps, ranging from 70.5 to 75.9 percent depending on the specification, which is consistent with the gender wage gap of 68.6 percent in Japan. However, after one generation away from the home country, the gender wage gap of Japanese immigrants, which ranges from 27.0 to 31.1 percent, is much smaller than the gender wage gap in Japan. Furthermore, after one generation away from the home country the role of the Japanese woman in home versus market work changed dramatically. Japanese second-and-higher generation women are less likely to be

married, have smaller families and invest heavily in human capital factors (i.e., education). These results provide preliminary evidence that there appears to be a complete reversal in the cultural attitudes towards and of Japanese women after one generation away from the home country. Further investigation is needed to add to our understanding of how cultural factors affect the labor market outcomes of Japanese women.

Finally, for both first generation, and for second-and-higher generation immigrants, there remains an unexplained component of the inter-ethnic variation in the gender wage gap. This is based on the fact that the estimates of the R-squared presented in Panels 1 and 3 of Table 3 range from 0.02 to 0.35. Therefore, portable cultural factors explain as little as 2 percent and as much as 35 percent of the variation in the gender wage gap across ethnic origin groups. I propose that some of the remaining unexplained component may be attributed to labor market discrimination—i.e., equally qualified individuals are being paid differently based solely on ethnic background. It should be noted however, that, as for unobserved human capital factors, in order for labor market discrimination to explain some of the remaining inter-ethnic variation in the gender wage gap, discrimination would have to affect men and women of a given ethnic origin group differently.

5.4 Robustness Checks

One limitation of the above analysis is that the home country gender wage gaps are based on 1989 wage data while the year of arrival of immigrants into the United States date as far back as pre-1950s. This may be important, because, as Figure 2 illustrates, the gender wage gap in the home country has changed dramatically over the 1946 to 1989 period. In all countries, with the exception of Japan and France, the gender wage gap has declined over time. Furthermore, in

general, the gender wage gaps in all home countries stabilized in the mid-1970's. One way to overcome this measurement error bias is to re-estimate equation (4) and (5) with home country data from the mid-1970's. However, home country data dating as far back as the mid-1970's is only available for a subset of the home countries.²⁵ Therefore, I choose to re-estimate equation (4) and (5) for first generation immigrants who immigrated to the United States after 1975 using home country data from 1989. Because, for those countries for which we have historical data home country gender wage gaps tend to be stable after the mid-1970's, this approach is an alternative method to overcome the aforementioned measurement error bias.

Panel (2) of Table 3 presents the results for first generation immigrants who arrived in the United States after 1975. It can be seen that once again, portable cultural factors play a key role in explaining inter-ethnic variation in the gender wage gap, with unobservable portable cultural factors being of the utmost importance. Furthermore, the magnitude of the coefficients are larger than for the full sample first generation estimates. In particular, a 1 percentage point increase in the home country gender wage gap is associated with a 0.93 percentage point increase in the X-adjusted host country gender wage gap, while controlling for potentially endogenous personal characteristics (Z) still implies a 1 percentage point increase in the home country gap is associated with a 0.89 percentage point increase in the X,Z-adjusted host country gender wage gap.

Therefore, it can be argued that if the use of 1989 home country numbers are biasing the full

²⁵Because the home country data is available for only a sub-set of home countries (Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Japan, Netherlands, Norway, Sweden, Switzerland, and the United Kingdom), the precision with which equation (4) and (5) can be estimated is greatly reduced. For example, I re-estimated equation (4) by OLS for the full sample first generation immigrants using home country data from 1975 for these 13 home countries. Although the coefficient on the home country gender wage gap has the expected positive sign, it is not significant at conventional levels. Further, the magnitude of the coefficient is also greatly reduced (i.e., the coefficient estimate is now 0.3445).

sample results, they are biasing them downwards.²⁶

An additional concern with these results is sample selection bias: of necessity my wage regressions only include individuals who earn positive wages. This is not so much a problem for men because their probability of employment is similar across ethnic origin groups, but it might be problematic for women. For example, Reimers (1985) illustrates that female labor force participation rates vary substantially across ethnic origin groups within the United States. Typically, the selection problem that researchers are most concerned about is that only the most “able” women participate in the labor market. As a result, women who participate in ethnic origin groups with low participation rates are disproportionately highly able women who receive high wages relative to men’s wages in that group.

In order to control for this type of sample selection bias I use an estimation procedure proposed by Card and Payne (1997). Once again I focus on equation (4) for illustration purposes, although an analogous approach can be applied to equation (5). Thus, I re-estimate equation (4) by GLS as before, except this time I add a regressor which controls for the fraction of women who worked across ethnic origin groups. Following Card and Payne (1997), I use two functional forms for this new regressor: the inverse mills ratio and a log functional form.²⁷ If the sample selection correction coefficient is positive and significant, then a sample selection problem of the usual type described above exists: in ethnic groups with low participation rates, only the most able women participate. Table 4 presents the estimation results when a sample selection correction

²⁶It should be noted that because I control for the length of time an individual has been in the United States, the higher coefficients in Panel 2 of Table 3 are not driven by the fact that individuals have not been in the United States as long as individuals in Panel 1 of Table 3.

²⁷The inverse mills ratio is calculated as $\phi(\Phi^{-1}(\pi))/\pi$ where π is the fraction of women employed. This is a decreasing function in π .

term is included in the analysis. There are several key points to note. First, and most importantly, controlling for sample selection does not alter the main results—i.e., the home country gender wage gap coefficients are roughly the same in terms of magnitude and significance as without the selection correction term. Second, the sign and significance of the selection coefficient is not sensitive to functional form.²⁸ Finally, I find no evidence of selection bias of the expected type for either first generation or second-and-higher generation immigrants because the coefficient estimate on the selection correction term is never significant. In fact, for both first generation, and for second-and-higher generation immigrants the coefficient estimate on the selection term is negative. Interestingly, this suggests that there are unobservable differences across ethnic origin groups such that certain ethnic origin groups have a high fraction of women employed and high female relative wages (i.e., small gender wage gaps). This pattern is more consistent with unobserved cultural factors than with selection.

6. Conclusions

On average women earn less than men in virtually all developed countries, but the gender wage gap varies in size from country to country. Recent studies for why the gender wage gap varies across countries have traditionally focussed on two factors: human capital and wage setting institutions. Even after controlling for these two factors, however, there still is significant cross country variation in the gender wage gap. According to everyday conversations and casual empiricism, this variation may be explained by “cultural” factors, such as differences in “tastes”

²⁸The selection correction coefficient reported for the inverse mills ratio functional form is multiplied by minus 1 in order for it to have the same interpretation as the log functional form, i.e., an increasing function in the fraction of women employed.

regarding family structure and women's roles in home and market work.

In this paper I attempt to examine the effect of cultural factors on the gender wage gap using evidence on inter-ethnic variation in the gender wage gap among first generation, and among second-and-higher generation immigrants to the United States, in the 1990 Census. I show that there is sizable variation in the gender wage gaps across different ethnic origin groups in the United States. Although human capital factors, especially for second-and-higher generation immigrants, are important determinants of inter-ethnic variation in the gender wage gap, controlling for these factors does not eliminate inter-ethnic variation in the gender wage gap. In fact, for first generation immigrants, I find that even after controlling for all observable characteristics in the United States, a one percentage point increase in the home country gender wage gap is associated with a 0.9 percentage point increase in the gender wage gap across ethnic origin groups in the United States. This positive correlation exists despite the huge measurement error associated with the home country gender wage gap. I argue that this strong positive correlation suggests the importance of cultural factors. Interestingly, I am unable to detect an effect of home country factors among second-and-higher generation immigrants, a finding suggestive of the presence of cultural assimilation as well.

Although it is unclear how large of a role culture plays after one generation away from the home country, there appears to be a role for "tastes" regarding work and family, in addition to the more commonly-analyzed human capital and institutional factors, in explaining why some groups of women earn more relative to men than others.

References

- Amemiya, Takeshi. "A Note on a Random Coefficients Model." *International Economic Review*, Vol. 19 (October 1978): 793-796.
- Antecol, H. and P. Kuhn. "Gender as an Impediment to Labor Market Success: Why do Young Women Feel More Harmed?," mimeo, McMaster University, 1998.
- Baker, Michael and Dwayne Benjamin. "The Role of The Family in Immigrants' Labor Market Activity: An Evaluation of Alternative Explanations." *American Economic Review*, Vol. 87, No. 4 (September 1997): 705-727.
- Blau, Francine and Lawrence M. Kahn. "Wage Structure and Gender Earnings Differentials; and International Comparison." *Economica*, Vol. 63 (May 1996): S29-S62.
- Borjas, George J. "Self-Selection and the Earnings of Immigrants." *American Economic Review*, Vol. 77 (September 1987): 531-553.
- Borjas, George J. and Glenn T. Sueyoshi. "A Two-Stage Estimator for Probit Models with Structural Group effects." *Journal of Econometrics*, Vol. 64 (1994): 165-182.
- Card, David and A. Abigail Payne. "School Finance Reform, the Distribution of School Spending, and the Distribution of SAT Scores." Working Paper #387, Industrial Relations Section Princeton University (July 1997).
- Caroll, Christopher D., Byung-Kun Rhee, and Changyong Rhee. "Are there Cultural Effects on Saving? Some Cross-Sectional Evidence." *Quarterly Journal of Economics*, Vol. (CIX) (August 1994): 685-699.
- Fairlie, Robert W. and Bruce D. Meyer. "Ethnic and Racial Self-Employment Differences and Possible Explanations." *Journal of Human Resources*, Vol. 31 (Fall 1996): 757-793.
- Gregory, R.G. and A.E. Daly. "Can Economic Theory Explain Why Australian Women are so Well Paid Relative to their United States Counterparts?" *International Review of Comparative Public Policy*, Vol. 3 (1991): 81-125.
- Gregory, R.G., A. Daly and V. Ho. "A Tale of Two Countries: Equal Pay for Women in Australia and Britain" *Centre for Economic Policy Research*, Discussion Paper No. 147 (August 1986), Australian National University.
- Haisken-DeNew, John P. and Christoph M. Schmidt. "Interindustry and Interregion Differentials: Mechanics and Interpretation" *The Review of Economics and Statistics*, Vol. 79, No. 3 (August 1997): 516-521.

ILO. *Yearbook of Labour Statistics*, various years.

Kidd, Michael P. and Michael Shannon. "The Gender Wage Gap: A Comparison of Australia and Canada" *Industrial and Labor Relations Review*, Vol. 49, No. 4 (July 1996): 729-746.

Krueger, Alan B. and Lawrence H. Summers. "Efficiency Wages and the Inter-Industry Wage Structure" *Econometrica*, Vol. 56, No. 2 (March 1988): 259-293.

Long, John. "The Effect of Americanization on Earnings: Some Evidence for Women." *Journal of Political Economy*, Vol. 88, No. 3 (1980): 620-29.

Reimers, Cordelia W. "Cultural Differences in Labor Force Participation Among Married Women." *American Economic Association Papers and Proceedings* (May 1985): 251-255.

Appendix I
Sample Size by Ethnic Origin

	1st Generation	2nd+ Generation
Austria	816	547
Belgium	411	385
Canada	10034	4271
Czechoslovakia	804	1901
Denmark	442	1379
Finland	279	864
France	1785	7431
Germany	10838	76239
Greece	2628	1155
Hungary	1242	1444
Ireland	2208	40744
Italy	6773	21097
Japan	4084	1537
Mexico	72343	13761
Netherlands	1414	4515
Norway	367	4530
Philippines	19860	449
Portugal	4072	1191
Sweden	625	4419
Switzerland	519	629
United Kingdom	9859	48078
Total	151403	236566

Source: 1990 U.S. Census.

Appendix II

The second stage GLS estimation requires an estimate of the weighting matrix, Ω . In order to estimate Ω , estimates of $\hat{\sigma}_u^2$ and \hat{V}^{2*} are needed. As previously stated, \hat{V}^{2*} is the variance of the coefficient estimates of the mean difference in the gender wage gap across ethnic origin groups and can be estimated consistently from the first stage log wage equation. $\hat{\sigma}_u^2$ is obtained by equating the trace of $\hat{\Omega}$ to the sum of the squared OLS residuals from the second stage regression (equation (4)).²⁹ Specifically,

$$e = \hat{d}^{2*} - z\hat{\gamma}_{ols} \quad (\text{A2.1})$$

and

$$\text{tr}(\hat{\Omega}) = e^T e \quad (\text{A2.2})$$

which gives

$$n\hat{\sigma}_u^2 + \text{tr}(\hat{V}^{2*}) = e^T e \quad (\text{A2.3})$$

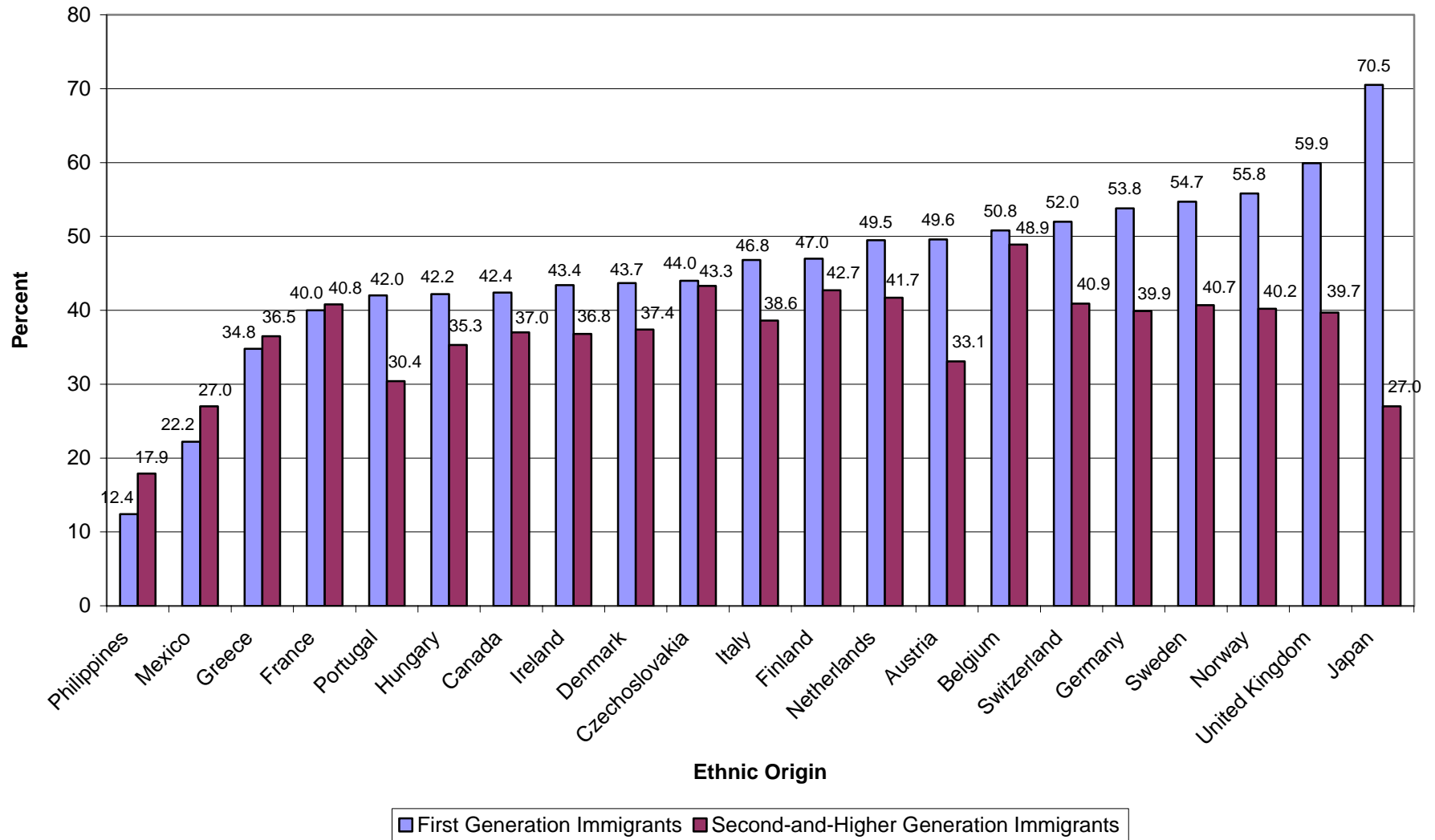
where n is the number of observations in the second stage regression. Equation (A2.3) can be rewritten as:

$$\hat{\sigma}_u^2 = \{e^T e - \text{tr}(\hat{V}^{2*})\} / n \quad (\text{A2.4})$$

The weighting matrix, $\hat{\Omega}$ can now be formed and GLS can be performed.

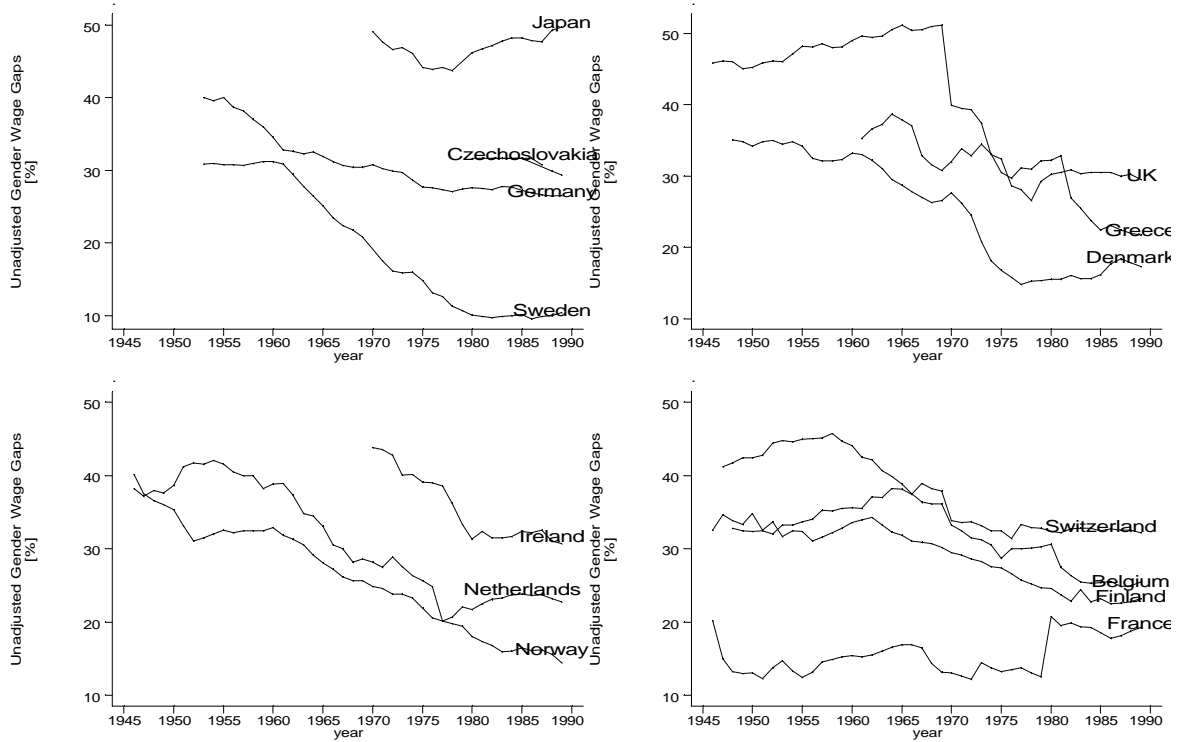
²⁹See Borjas and Sueyoshi (1994) for a similar approach and an alternative estimation approach of $\hat{\sigma}_u^2$.

**Figure 1:
Unadjusted Gender Wage Gaps**



Source: 1990 U.S. Census.

Figure 2
Home Country Unadjusted Gender Wage Gaps
(1946-1989)



Source: ILO Yearbook of Labour Statistics, Various Years.

Notes:

All wage data is based on non-agricultural hourly earnings with the following exceptions: wage data for Finland, Greece, Ireland, Norway, and Sweden is based on the manufacturing industry; wage data for Belgium is based on daily earnings up until 1969, after which the wage data is based on hourly earnings; wage data for the U.K. is based on weekly earnings up until 1969, after which the wage data is based on hourly earnings; wage data for the Netherlands is based on the manufacturing industry up until 1972, after which the wage data is based on non-agricultural industries; wage data for Czechoslovakia and Japan is based on monthly earnings.

Table 1
Estimates of the Mean Differences in the Gender Wage Gap Across Ethnic Origin Groups

	Unadjusted Gap		X-Adjusted Gap		X,Z-Adjusted Gap	
	1st Gen (1)	2nd+ Gen (2)	1st Gen (3)	2nd+ Gen (4)	1st Gen (5)	2nd+ Gen (6)
Austria	.0404	-.0389	.0096	-.0414	.0170	.0130
Belgium	.0515	.1193 **	.0609	.0650	.0614	.0286
Canada	-.0322 **	.0001	-.0288 *	.0288	-.0100	.0124
Czechoslovakia	-.0162	.0636 **	-.0624	.0336	-.0515	.0390
Denmark	-.0188	.0050	-.0055	-.0138	-.0015	-.0437
Finland	.0140	.0579	-.0098	.0400	.0451	-.0018
France	-.0558	.0383 **	-.0262	.0522 ***	-.0182	.0281 *
Germany	.0822	.0296 ***	.0351 **	.0125	.0383 ***	.0074
Greece	-.1080 ***	-.0042	-.1310 ***	.0224	-.1453 ***	.0550
Hungary	-.0336 ***	-.0168	-.0913 **	-.0422	-.0688 *	-.0152
Ireland	-.0215	-.0011	.0002	.0023	.0141	.0061
Italy	.0116	.0169	-.0020	.0297 ***	-.0309 *	.0280 ***
Japan	.2489 ***	-.0995 ***	.3070 ***	-.0806 ***	.2871 ***	-.0084
Mexico	-.2336 ***	-.1001 ***	-.1857 ***	-.0607 ***	-.1962 ***	-.0985 ***
Netherlands	.0393	.0476 **	.0022	.0340 *	.0193	.0097
Norway	.1022	.0327 *	.1179 *	.0164	.1018	.0061
Philippines	-.3317 ***	-.1901 ***	-.3435 ***	-.1098 **	-.3119 ***	-.0956 *
Portugal	-.0361	-.0656 **	-.0305	-.0297	-.0571 ***	-.0312
Sweden	.0908 *	.0371 *	.1194 **	.0293	.1145 **	.0228
Switzerland	.0638	.0400	.0965	.0034	.0704	.0267
United Kingdom	.1427 ***	.0279 ***	.1478 ***	.0088	.1222 ***	.0106
F-Test	106.11 ***	8.74 ***	75.42 ***	3.74 ***	70.53 ***	5.58 ***
N	151,392	236,555	151,392	236,555	151,392	236,555
WSDs	11.25	5.80	12.11	3.05	11.36	2.42

Notes:

(1) Data is from the 1990 U.S. Census. The sample includes individuals between the ages 25 and 54 who earned positive hourly wages and were not currently enrolled in school. Sample excludes the following groups: first generation immigrants born abroad of U.S. born parents, second-and-higher generation immigrants with multiple ancestries (except multiple U.K. ancestries), individuals earning less than \$1/hour and greater than \$100/hour, and individuals earning self-employment income. Sampling weights were used. (2) Other explanatory variables are: Specification 1--a male dummy variable, and 20 ethnic origin dummy variables. Specification 2 includes Specification 1 plus a quartic in age, an urban/rural dummy variable, 9 region dummy variables, and 8 year of arrival dummy variables for first generation immigrants and cross terms between gender and all additional variables. Specification 3 includes Specification 2 plus education, marital status, number of children and English Fluency and cross terms between gender and all additional variables (with the exception of number of children). (3) *** significant at less than 1%, ** significant at less than 5%, * significant at less than 10%. (4) The F-test shows that the ethnic origin variables are jointly significant for both first generation, and for second-and-higher generation immigrants for the unadjusted, for the X-adjusted, and for the X,Z-adjusted gender wage gaps.

Table 2
Gender Wage Gaps

	Host Country						Home Country
	Unadjusted Gap		X-Adjusted Gap		X,Z-Adjusted Gap		Unadjusted Gap
	1st Gen	2nd+ Gen	1st Gen	2nd+ Gen	1st Gen	2nd+ Gen	
Austria	49.6	33.1	46.1	33.0	43.9	33.2	31.0
Belgium	50.8	48.9	51.3	43.7	48.3	34.8	29.4
Canada	42.4	37.0	42.3	40.1	41.2	33.1	31.9
Czechoslovakia	44.0	43.3	38.9	40.5	37.1	35.8	34.9
Denmark	43.7	37.4	44.6	35.8	42.1	27.5	19.0
Finland	47.0	42.7	42.6	42.4	40.4	31.8	26.4
France	40.0	40.8	44.2	41.2	46.7	34.7	21.4
Germany	53.8	39.9	48.7	38.4	46.0	32.6	30.8
Greece	34.8	36.5	32.1	39.4	27.7	37.4	24.5
Hungary	42.2	35.3	36.1	33.0	35.3	30.4	21.3
Ireland	43.4	36.8	45.2	37.4	43.6	32.5	36.6
Italy	46.8	38.6	45.0	40.2	39.1	34.7	32.5
Japan	70.5	27.0	75.9	29.1	70.9	31.1	68.6
Mexico	22.2	27.0	26.6	31.1	22.6	22.0	24.9
Netherlands	49.5	41.7	47.4	40.6	44.1	32.9	25.9
Norway	55.8	40.2	57.0	38.8	52.4	32.5	15.7
Philippines	12.4	17.9	10.8	26.2	11.0	22.3	9.6
Portugal	42.0	30.4	42.1	34.2	36.5	28.8	36.2
Sweden	54.7	40.7	57.1	40.1	53.7	34.2	11.1
Switzerland	52.0	40.9	54.8	37.5	49.3	34.6	38.9
United Kingdom	59.9	39.7	60.0	38.1	54.4	33.0	35.0

Notes:

(1) Host Country data is from the 1990 U.S. Census. The sample includes individuals between the ages 25 and 54 who earned positive hourly wages and were not currently enrolled in school. Sample excludes the following groups: first generation immigrants born abroad of U.S. parents, second-and-higher generation immigrants with multiple ancestries (except multiple U.K. ancestries), individuals earning less than \$1/hour and greater than \$100/hour, and individuals earning self-employment income. Sampling weights were used. (2) The predicted gender wage gaps in the host country are based on log wage regressions, which are pooled for men and women. The variables included in the log wage regressions are the same as those listed in Table 1. (3) Home country wage data is from the ILO Yearbook of Labour Statistics, Various Years with the following exceptions: wage data for Austria and Italy is from Blau and Kahn (1996); wage data for Mexico, provided by the Commission for Labor Cooperation, is from STPS/INEGI, Encuesta Nacional de Empleo (ENE) for 1991; and wage data for Canada is from the 1990 Survey of Consumer Finance (SCF) for the 1989 income year. (4) All home country wage data is based on 1989 hourly earnings in the non-agricultural sector with the following exceptions: wage data for Czechoslovakia, Hungary, Japan, and the Philippines is based on monthly wages; wage data for Finland, Greece, Ireland, Norway, and Sweden is based on the manufacturing industry; wage data for Mexico is based on weekly earnings; wage data for the Philippines is based on 1993 earnings; wage data for Hungary is based on 1992 earnings; wage data for Mexico is based on 1991 earnings; wage data for Mexico and the U.K. include agricultural workers; wage data for Austria is based on monthly wages adjusted for hours worked; wage data for Italy is based on annual wages adjusted for hours worked; wage data for Austria is based on 1985-1989 pooled wages; and the wage data for Italy is based on 1987 wages. (5) In general, the home country gender wage gap is measured as $\ln(\text{average male wages})$ minus $\ln(\text{average female wages})$.

Table 3
Second Stage Regression Results Explaining the Estimated Coefficients of the Mean Differences
in the Gender Wage Gap Across Ethnic Origin Groups from the First Stage Regression

Panel 1: Full Sample First Generation Immigrants				
	X-adjusted Gap		X,Z-adjusted Gap	
	OLS	GLS	OLS	GLS
Home Country Gender Wage Gap in 1989	.6182 *** (.1994)	.6943 *** (.1843)	.5566 *** (.1910)	.6276 *** (.1769)
R-squared	.3360	.3494	.3088	.3201
Panel 2: First Generation Immigrants who Immigrated between 1975-1990				
	X-adjusted Gap		X,Z-adjusted Gap	
	OLS	GLS	OLS	GLS
Home Country Gender Wage Gap in 1989	.7925 *** (.2139)	.9343 *** (.1686)	.7624 *** (.2090)	.8910 *** (.1677)
R-squared	.4195	.4346	.4118	.4317
Panel 3: Full Sample Second-and-Higher Generation Immigrants				
	X-adjusted Gap		X,Z-adjusted Gap	
	OLS	GLS	OLS	GLS
Home Country Gender Wage Gap in 1989	-.0518 (.0840)	-.0948 (.0750)	.0684 (.0716)	.0335 (.0623)
R-squared	.0196	.0245	.0457	.0423

Notes:

(1) Host Country data is from the 1990 U.S. Census. The first stage sample includes individuals between the ages 25 and 54 who earned positive hourly wages and were not currently enrolled in school. Sample excludes the following groups: first generation immigrants born abroad of U.S. parents, second-and-higher generation immigrants with multiple ancestries (except multiple U.K. ancestries), individuals earning less than \$1/hour and greater than \$100/hour, and individuals earning self-employment income. Sampling weights were used. (2) The variables included in the log wage equation are the same as those listed in Table 1. (3) Home country wage data is from the ILO Yearbook of Labour Statistics, Various Years with the following exceptions: wage data for Austria and Italy is from Blau and Kahn (1996); wage data for Mexico, provided by the Commission for Labor Cooperation, is from STPS/ INEGI, Encuesta Nacional de Empleo (ENE) for 1991; and wage data for Canada is from the 1990 Survey of Consumer Finance (SCF) for the 1989 income year. (4) All home country wage data is based on 1989 hourly earnings in the non-agricultural sector with the following exceptions: wage data for Czechoslovakia, Hungary, Japan, and the Philippines is based on monthly wages; wage data for Finland, Greece, Ireland, Norway, and Sweden is based on the manufacturing industry; wage data for Mexico is based on weekly earnings; wage data for the Philippines is based on 1993 earnings; wage data for Hungary is based on 1992 earnings; wage data for Mexico is based on 1991 earnings; wage data for Mexico and the United Kingdom include agricultural workers; wage data for Austria is based on monthly wages adjusted for hours worked; wage data for Italy is based on annual wages adjusted for hours worked; wage data for Austria is based on 1985-1989 pooled wages; and wage data for Italy is based on 1987 wages. (5) The independent variable is the mean differences in the gender wage gaps across home countries. (6) Sample size in the second stage regression is 21. (7) Standard errors in parentheses. (8) *** significant at less than 1%, ** significant at less than 5%, * significant at less than 10%.

Table 4:
 Second Stage Regression Explaining the Estimated Coefficients of the Mean Differences in the Gender Wage
 Gap Across Ethnic Origin Groups from the First Stage Regression Controlling for Sample Selection Bias

First Generation Immigrants		
	Inverse Mills Ratio	Log Functional Form
Home Country Gender Wage Gap in 1989	.5580 *** (.1932)	.5682 *** (.1991)
Selection Correction	-.3087 (.1923)	-.2607 (.1906)
R-Squared	.4502	.4295
Second-and-Higher Generation Immigrants		
	Inverse Mills Ratio	Log Functional Form
Home Country Gender Wage Gap in 1989	-.0879 (.0661)	-.0899 (.0674)
Selection Correction	-.0736 (.1468)	-.0656 (.1681)
R-Squared	.1963	.1833

Notes: (1) See Table 3 for the sample criteria. (2) Results are based on the X-adjusted gap estimated by GLS. (2) The coefficient on the selection term for the inverse mills ratio functional form is multiplied by minus 1 in order for it to have the same interpretation as the log functional form, i.e., An increasing function in the fraction of women employed. (3) *** significant at less than 1%, ** significant at less than 5%, * significant at less than 10%.

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