Why Do Hours Worked Differ Across Countries? Evidence from U.S. Immigrants

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Abstract

Hours worked differ substantially across countries. Two types of explanations have been proposed: Either local institutions offer different *incentives* for work, or countries differ in their *social norms* or "industriousness" (Leamer 1999). This paper offers evidence that sheds light on the relative importance of these explanations. If social norms are important, then hours worked by U.S. immigrants should be correlated with hours worked in the source countries. The data show that this is the case for women, but not for men. Hours worked by female immigrants are significantly correlated with hours worked and with the religious composition of the source countries. On the other hand, if hours worked are determined by local incentives, then U.S. immigrants should work roughly the same hours as do U.S. natives. To a first approximation, this is the case for male immigrants. One interpretation is that social and, in particular, religious norms exclude women, but not men, from the labor market in some countries.

Key words: Hours worked, labor force participation, immigrants, social norms.
JEL: J21, J61, Z13.

1 Introduction

The average number of hours worked per person differs greatly across countries. Japanese men work on average 45 hours per week, compared with only 27 hours for Spaniards.[1] What gives rise to these differences? The explanations proposed in the literature may be divided into two categories, which I label the incentives view and the social norms view.

According to the *incentives view*, cross-country differences in hours worked are due to taxes or labor market institutions that shape the incentives for market work as opposed to home work or leisure. For example, Prescott (2002) argues that hours differ across European countries due to tax wedges. Jones et al. (2003) highlight a changing gender wage gap as a reason for rising female labor force participation in the U.S. after World War II.

The *social norms view*, by contrast, stresses the importance of preferences or social norms. While this view is more common in the sociology literature (e.g., Figart and Golden 1998), recent work by economists has also investigated the role of social norms. Leamer (1999) explores the idea that countries differ in their preference for work effort ("industriousness"). Changing social norms are also among the reasons cited for rising labor force participation among women in the U.S. after World War II (Fernandez et al. 2004a, b; see also Goldin 1991).

This paper offers evidence that sheds light on the relative importance of incentives versus social norms for cross-country differences in hours worked and labor force participation. The method is

[1] See section 2 for details on data sources and measurement.

based on Carroll et al. (1994, 1999) who study the variation in saving rates across countries. The idea is to compare the hours worked of U.S. immigrants with their source country counterparts. If work hours vary across countries due to social norms, then immigrants should transfer these norms, at least partially, to the U.S. As a result, immigrants from hard working countries should also work hard in the U.S. If, on the other hand, work hours vary due to country specific incentives, such as tax rates, then work hours among immigrants should be similar to those of U.S. natives.

These issues are studied using a sample of working age U.S. immigrants drawn from the 1990 Public Use Micro Sample. Mean hours worked by men and women are calculated for immigrants from 77 source countries. Hours worked in the countries of origin are constructed from the International Labor Organization's Laborsta database and from the World Bank's World Development Indicators.

The findings support the social norms view for women, but not for men. Hours worked and labor force participation of immigrant women are strongly positively correlated with their source country counterparts. On average, a three hour increase in the country of origin hours is associated with a one hour increase among female immigrants. Hours worked by immigrant men, on the other hand, are generally within 5% of hours worked by U.S. natives. No correlation is found between male immigrant and source country hours. These findings hold for hours per worker, for hours per person, and for labor force participation. Controlling for differences in the demographic composition of immigrants makes little difference.

One interpretation of these findings is that social norms regarding female market work differ across countries, whereas social norms regarding male work do not. For example, some countries of Muslim faith discourage female employment. Consistent with this interpretation, I find that hours worked by female immigrants are strongly correlated with the religious composition of the source country population. Notably, female immigrant hours and labor force participation are negatively related to the fraction of the population of Muslim faith. No such correlation is found for men.

One limitation of the method employed in this paper is that immigrant self-selection and assimilation could obscure the effects of social norms. This is not a problem for the finding that social norms matter for female hours. It could, however, mean that the findings reported here understate the role of norms for male hours. For a more detailed discussion I refer the reader to Carroll et al. (1994, 1999).

The remainder of the paper is organized as follows. Section 2 summarizes the data and variable construction. Section 3 presents the findings. The final section concludes.

2 Data

This section summarizes the data sources and variable construction.

Immigrant data. Data on immigrant hours and other characteristics are taken from the 5% Public Use Micro Sample (PUMS) of the 1990 Decennial Census. Persons are sampled if they are aged 25 to 60, not in school, in good health, and do not live in group quarters. Three measures of hours worked are constructed:

1. *Hours worked per person* is directly taken from the PUMS variable HOUR89, which measures hours usually worked per week during the year.

2. *Hours per worker* is measured as the mean of HOUR89 among persons who report HOUR89 > 0.

3. The *labor force participation rate* is defined as the fraction of persons who report a labor force status (RLABOR) of employed or unemployed.

Source country data. Data on employment, labor force, population, and most other source country characteristics are taken from the World Development Indicators 2004. The religious composition of the population is compiled from the CIA World Fact Book 2004.

Average hours worked per employed person are taken from table 2A of the ILO Laborsta database. Hours for paid employment are used where available; otherwise total employment is used. A small number of countries have data that are clearly scaled incorrectly. For example, hours per week for Hungary and Poland are above 120. These cases are dropped. The ILO hours data suffer from two shortcomings: (i) Hours worked by sex are available for only 22 countries. (ii) The definition of hours is not entirely comparable across countries. Fortunately, the findings for labor force participation and hours worked are very similar, suggesting that these data limitations do not contaminate the results too severely.

3 Findings

The main findings may be summarized as follows:

1. For women, measures of hours worked are positively and significantly correlated between immigrants and source country workers.

2. For men, hours worked by immigrants and U.S. natives are quite similar. There is no evidence that immigrant men who came from hard working countries also work hard in the U.S.

These findings are consistent with the view that hours variation among men is due to country specific incentives, while social norms play a larger role for women. The following sections present these results for three measures of hours: hours per person, hours per worker, and labor force participation.[2]

3.1 Hours Per Person

The broadest measure considered in this paper is hours per person. It captures differences in hours per worker as well as differences in employment rates. Table 1 provides a summary of the relationship between immigrant and source country hours per person for men and women. The data are also shown for men and women combined because this broadens the set of countries for which hours data exist.

Table 1: Hours per person.

	β	**s.e.**	R^2	$\bar{x}$	$\bar{y}$	σ_x	σ_y	N
Women	0.297	0.140	0.190	25.749	26.467	4.650	3.162	21
Men	-0.107	0.074	0.095	43.757	42.844	5.812	2.009	22
Men and women	0.118	0.058	0.110	38.091	34.202	4.953	1.758	35

Notes: β is the coefficient of an OLS regression of immigrant hours against source country hours. *s.e.* is the standard error of β. N denotes the number of observations. $\bar{x}$ and $\bar{y}$ are the means of the independent and the dependent variable, respectively. σ_x and σ_y are the corresponding standard deviations.

Consider first the results for *women*, shown in the first row of table 1. Data are available for $N = 21$ countries. The standard deviation of hours across source countries is $\sigma_x = 4.65$. Across immigrants, the standard deviation of mean hours by source country is $\sigma_y = 3.16$. Also shown

[2] Data for employment rates are very similar to those for labor force participation. They are not shown in order to conserve space.

are the results of an OLS regression of immigrant hours on source country hours. The regression coefficient is $\beta = 0.297$ with a standard error of 0.140 $\left(R^2 = 0.190\right)$.

The underlying data are shown in figure 1. Since the definition of source country hours is not exactly the same as that of immigrant hours, source country hours are scaled to match mean hours worked by U.S. natives in the PUMS data, which are shown as the horizontal line in figure 1. The upward sloping line is the fitted regression equation of table 1.

Two main observations stand out:

1. Immigrant and source country hours are positively correlated. The regression slope (β) is statistically significant at the 5% level. Source country hours explain a substantial fraction of the variation in immigrant hours $\left(R^2 = 0.19\right)$.

2. Immigrant women work on average about 3 hours less than do native women. This contrasts with the common perception that immigrants work harder than natives.

The dispersion of immigrant hours is smaller than that of source country hours. However, this may reflect differences in the demographic composition of immigrant and source country populations rather than differences in hours worked per person.

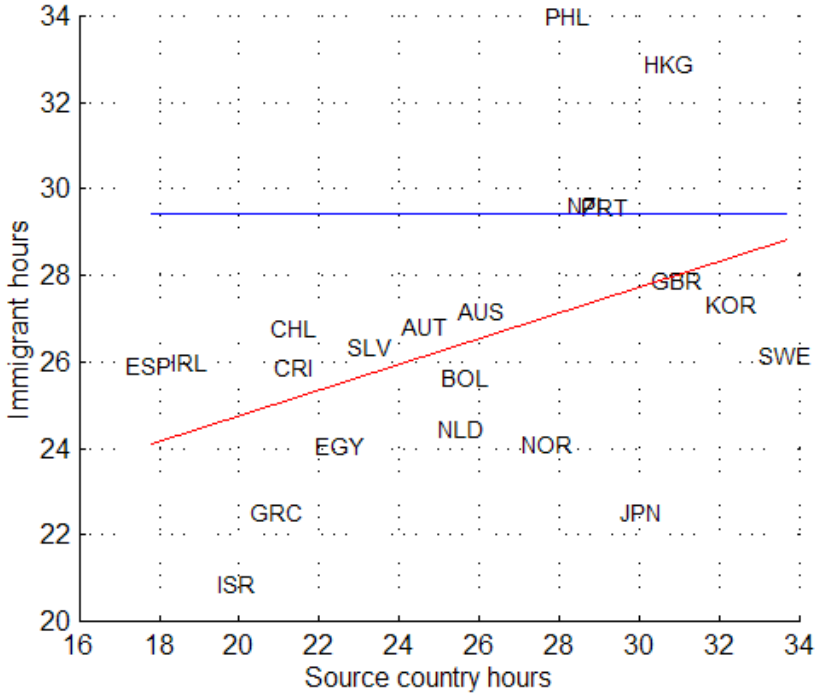

Figure 1: Hours worked per person. Women.

The findings for *men* are strikingly different from those for women. Three main findings characterize the data shown in figure 2:

1. The correlation between immigrant and source country hours is slightly negative, but very small and not significant at conventional levels (see table 1).

2. On average, immigrant and native men work almost the same number of hours.

3. The dispersion of immigrant hours is only slightly more than one-third of the dispersion of source country hours. Immigrants from most countries work within 5% of native mean hours. This is also true for the broader set of 73 countries for which immigrant hours can be calculated.

These findings suggest that, to a first approximation, immigrant men work the same hours as native men.

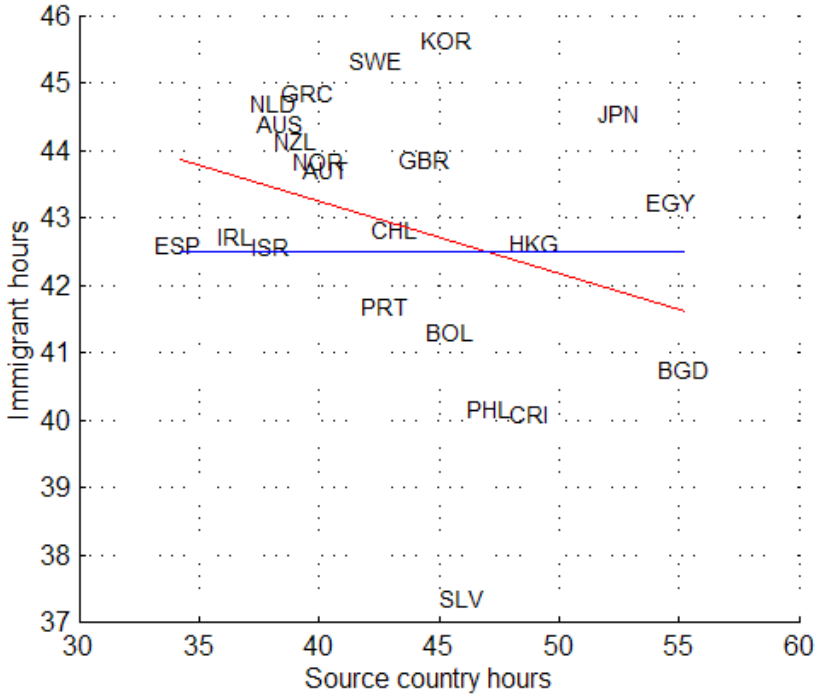

Figure 2: Hours worked per person. Men.

Combining the data for men and women permits to consider a larger set of countries. The data, shown in figure 3, resemble those for men. Mean immigrant hours are slightly below native hours, presumably due to lower hours worked by women. The correlation between immigrant and source country hours is close to zero.

3.2 Hours per worker

It is interesting to decompose hours variation into the contributions of hours per worker and labor force participation. The results for hours per worker are shown in table 2.

For *women*, the findings resemble those for hours per person (see figure 4). Mean hours are close to the mean for native women. The correlation between immigrant and source country hours is highly significant. Variation in source country hours accounts for 41% of immigrant hours dispersion. The data for *men* are also very similar to those for hours per person (see figure 5).

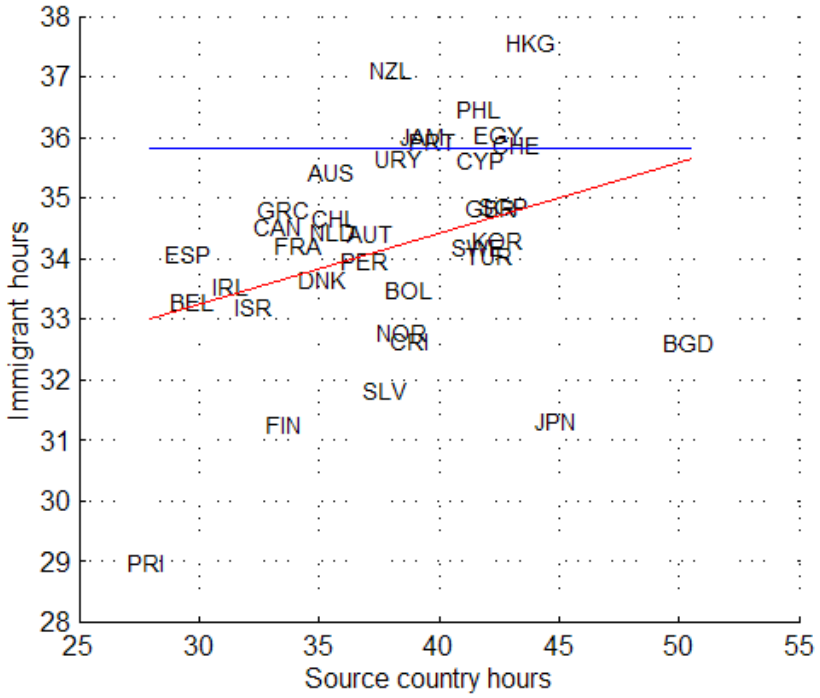

Figure 3: Hours worked per person. Men and women.

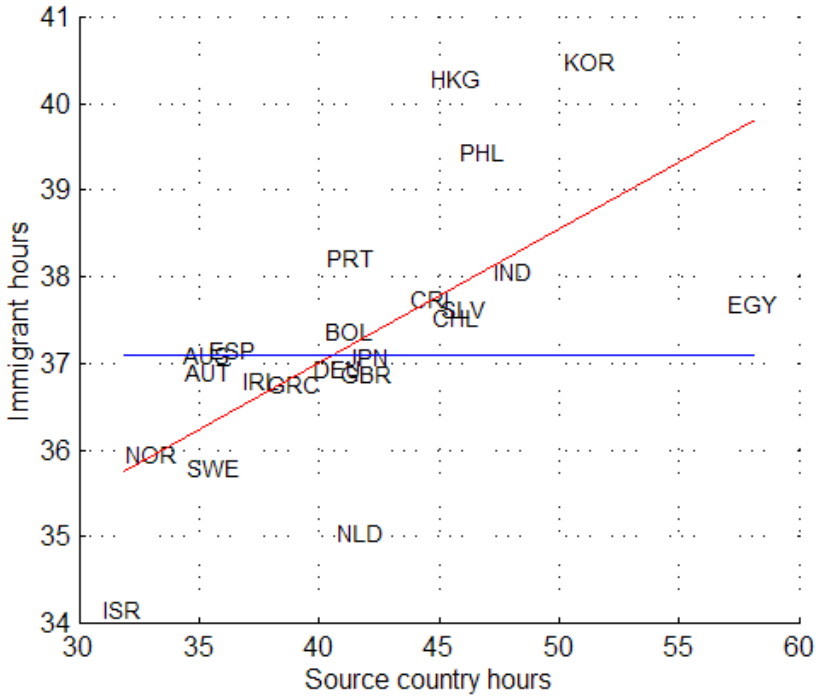

Figure 4: Hours per worker. Women.

Table 2: Hours per worker.

	β	**s.e.**	R^2	$\bar{x}$	$\bar{y}$	σ_x	σ_y	N
Women	0.154	0.040	0.431	41.897	37.302	6.292	1.476	22
Men	-0.045	0.078	0.015	44.878	44.867	4.555	1.681	24
Men and women	0.092	0.032	0.173	47.947	41.565	5.401	1.191	41

Notes: See table 1.

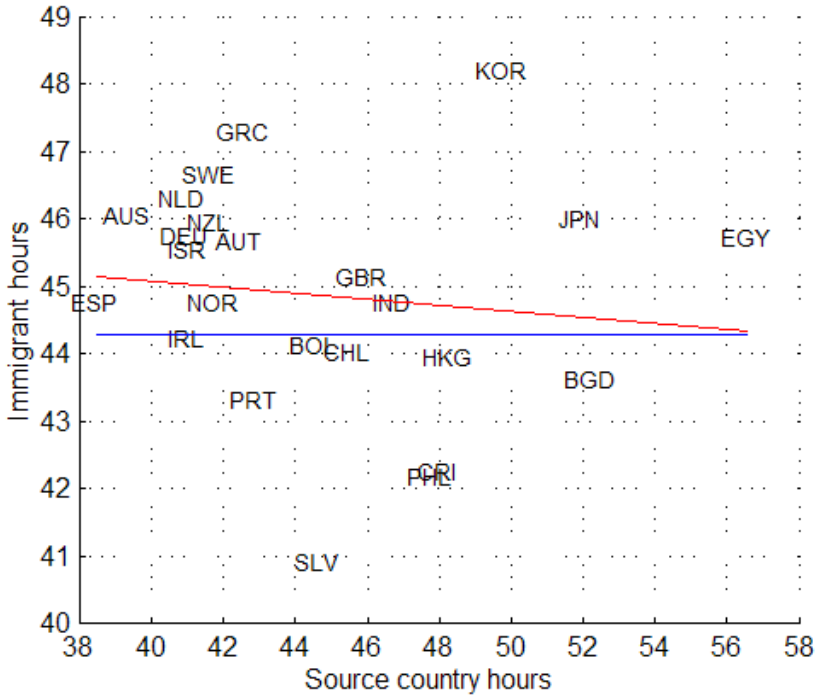

Figure 5: Hours per worker. Men.

3.3 Labor Force Participation

The literature has proposed social norms as one reason for cross-country or time series variation in labor force participation, especially among females (Fernandez et al. 2004a, b). The data shown in table 3 are consistent with this view.

Table 3: Labor force participation rates.

	β	**s.e.**	R^2	$\bar{x}$	$\bar{x}$	σ_x	σ_y	N
Women	0.104	0.080	0.033	0.601	0.683	0.145	0.083	52
Men	0.005	0.030	0.001	0.981	0.957	0.065	0.014	52

Notes: See table 1.

Female labor force participation differs greatly across countries. It is below 50% in some South American and Islamic countries, but above 80% in parts of Northern Europe (see figure 6). Among immigrants, labor force participation is substantially less dispersed. For most countries, immigrant participation is above the source country levels, but below the mean for U.S. native women.

The data show a statistically significant correlation between immigrant and source country participation rates. As an example, consider Egypt. Presumably for religious reasons, female participation is low in Egypt (less than 0.35). Participation of Egyptian immigrants is also below average, but substantially higher than in Egypt (near 0.65). Overall, these findings resemble those for hours per person.

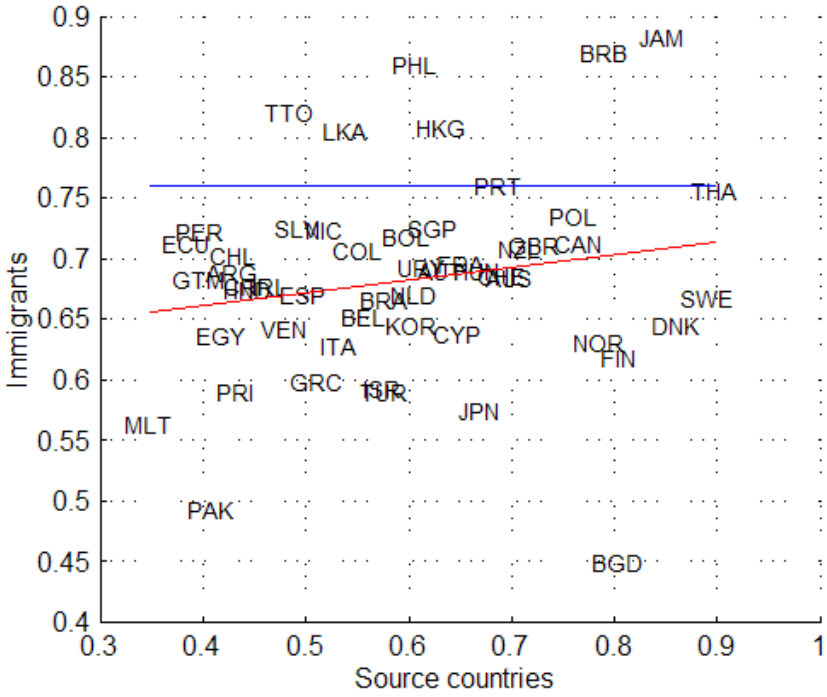

Figure 6: Labor force participation. Women.

The same is also true for male labor force participation. It too differs greatly across source countries, ranging from 0.83 in Belgium to 1.14 in Guatemala (see figure 7).[3] The dispersion among immigrants is much smaller. The standard deviation of immigrant participation is less than one-fourth of the standard deviation of source country participation rates. The data show no evidence for cultural effects.

3.4 Discussion

The preceding analysis leads to similar conclusions for all of the measures of hours worked studied in this paper. For women, the data are consistent with the social norms view. Hours worked of immigrants are significantly correlated with source country hours. For men, the data do not support the social norms view. Immigrant men, to a first approximation, work similar hours as do native men.

This raises the question why the findings differ between male and female immigrants. To shed light on this question, I study the correlation between immigrant hours per person and source country characteristics. Specifically, I regress hours worked by immigrants on the fraction of the population of Muslim faith in the source country and on log real GDP per capita. The results are

[3]The labor force can be larger than the working age population due to work by children or the elderly.

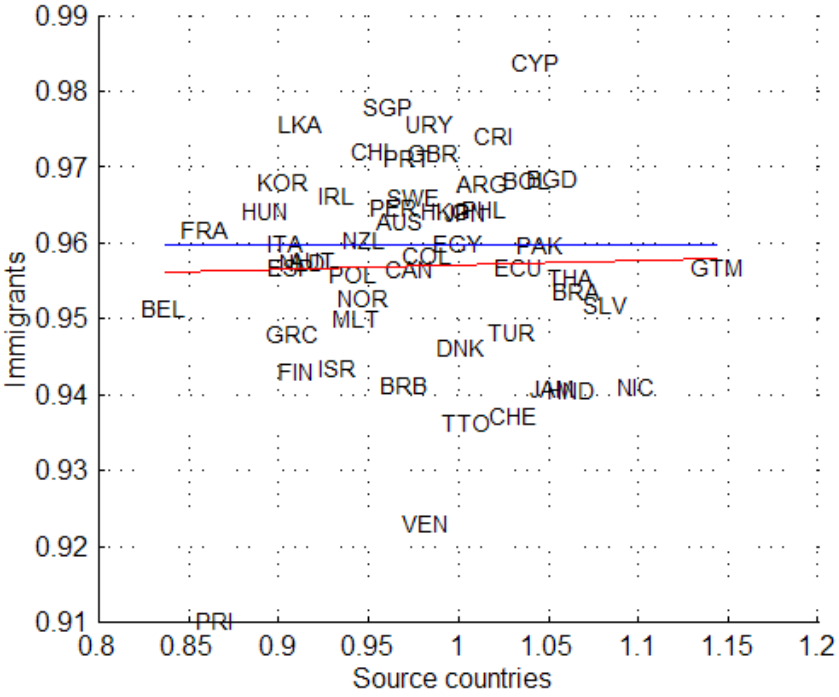

Figure 7: Labor force participation. Men.

shown in table 4.

The findings once again differ strikingly between men and women. Female immigrants work fewer hours if they come from Muslim countries or from high income countries. These two regressors account for 30% of variation across source countries. The fraction of the population of Muslim faith alone accounts for 28% of the variation. Given that religious affiliation is measured very crudely, this relationship is remarkably strong. For men the opposite pattern emerges. Men work harder if they come from non-Muslim or high income countries. The two regressors account for 40% of the variation in immigrant hours. Most of this (x%) is due to real GDP.[4]

Table 4: Source country hours per person.

	Men	Women
Fraction Muslim	2.45 (0.86)	-7.08 (1.34)
Log real GDP per capita	1.71 (0.26)	-0.78 (0.42)
N	68	68
R^2	0.40	0.30

Notes: The dependent variable is hours worked per person in the source countries.

One interpretation is that social norms differ across countries regarding women's work, but not regarding men's work. This is consistent with the strong role of Muslim faith for female work. In some Muslim countries women's employment is strongly discouraged. To the extent that these

[4] Using Wacziark et al.'s (2003) measures of religious composition yields qualitatively similar results, although the R^2 for women drops to 0.13.

norms carry over to immigrant families, this could account for the low labor force participation of women who immigrated from predominantly Muslim countries.

Assimilation and self-selection. It is possible that the results presented here understate the role of norms due to the self-selection and assimilation of immigrants. As pointed out by Carroll et al. (1994, 1999), immigrants may self-select to embody more similar social norms that the typical source country person. In addition, immigrant families may come to adopt the social norms of the host country after living in the U.S. for a number of years. In both cases, the results presented here understate the role of social norms for hours worked. This reinforces the results for women, but casts doubt on the results for men.

4 Conclusion

This paper investigates two explanations for cross-country differences in hours worked. The institutions view attributes hours differences to institutional features or tax incentives for work in the source countries. The social norms view attributes hours differences to intrinsic variation in culture or industriousness across countries.

Data on hours worked by U.S. immigrants are consistent with the social norms view for women, but not for men. Female hours worked are significantly correlated between immigrants and source country workers. Moreover, the religious composition of the source countries accounts for a sizeable share of the observation variation in hours worked among female immigrants. Immigrant men, on the other hand, typically work similar hours as do native men, regardless of their countries of origin. One interpretation is that social norms discourage female market work in some countries, notably those of Muslim faith, whereas male market work is generally not discouraged.

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