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Abstract

In this paper, we study the role of peoples' attitudes on their labor market behavior. Focusing within a household, we estimate how one's labor market decisions are dependent on their partner's labor market outcomes, and how these decisions are driven by their culture component. Historically, man has been associated as the primary earner in a family. We argue that culture might play a role in determining a person's labor market outcomes as it induces an aversion to the situation of when the wife earns more than the husband. We find that husbands increase their participation in the labor market if their wives earn more and this effect is even more prominent if they are from a country where people have the traditional view that man should be the primary bread-winner for the family. However, wives do not exhibit any such behavior. We argue that this irregularity is explained by the role that culture plays on forming labor market decisions. This result is important as it might contribute to the explanation of the slowdown in the convergence of the gender gap in the recent past.

Keywords: Labor Force Participation; Gender; Identity; Machismo

JEL Classification: J12; J16; J21; J22; J31

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1 Introduction

US experienced the most striking improvements in the female labor force participation since 1950. In a report in February 2000, BLS[1] stated that while, in 1950 only one in three women used to participate in the labor force, by 1998, this ratio increased to three out of five women. Fig. 1 shows the civilian labor force participation[2] rate of men and women over a period of 1950-2010 and then a projection for the year 2020. The labor force participation rate of women in 1947 was around 31 percent, which almost doubled by 2000 (around 60 percent), the largest increase being in the age group 25-44 (more than double).

On the other hand, the male labor force participation has been declining since 1950. Being around 86 percent in 1950, it fell to around 75 percent by 2000. Accounting for the shifts in the labor supply of both men and women over time, the gender gap in labor force participation rate was approximately 55 percent, which declined to 15 percent in 2000 and remained fairly stable after that. Similar convergence in gender gap can also be seen in the earnings of men and women. According to the BLS report[3],women's-to-men's earnings ratio was around 64 percent in 1980, reached around 80 percent in early 2000's and has been quite the same since then.

A couple of reasons that might explain the above has been studied in the literature. Some of them include gender segregation across occupations, time spent on unpaid work by women, etc. Blundell and MaCurdy (1999) show that there is a dispersion in the labor supply estimates of elasticity in the literature. They find that the elasticity

[1]Bureau of Labor Statistics, U.S. Department of Labor, The Economics Daily, Changes in women's labor force participation in the 20th century on the Internet at https://www.bls.gov/opub/ted/2000/feb/wk3/art03.htm

[2]Civilian Labor Force: These individuals are civilians (not members of the Armed Services) who are age 16 years or older, and are not in institutions such as prisons, mental hospitals, or nursing homes.

[3]Bureau of Labor Statistics, U.S. Department of Labor, The Economics Daily, Women's-to-Men's Earning ratio by age, 2009

of participation is higher than the elasticity of hours worked. This helps explain the large elasticity of women as their participation is lesser than men. Blau and Kahn (2007) find that the married women's own-wage elasticity as well as cross-wage elasticity (with respect to husbands) fell during the period of 1980-2000, but the decrease in own- wage elasticity was greater than the decrease in cross-wage elasticity. Juhn and Murphy (1997) use the March CPS for the survey years 1968-92 and the 1960 census to show that, though the increase in employment and earnings for wives of middle and high-wage men was biggest, the decrease in employment and earnings was largest for low-wage men. This shows that the idea of married women having increased their labor supply to compensate for the earnings of their husbands need not be true. Evers, Mooij and Vuuren (2008) conduct meta-analysis of empirical estimates of uncompensated labour supply elasticities and find that the own-wage elasticity of women is higher than own-wage elasticity of men. Hyslop (2001) provides evidence on the implication that labor supply in early 1980's explains over 20 percent and 50 percent of the increase in the family inequality and female inequality, respectively.

Eckstein and Lifshitz (2015) find that the employment rate of women is lower in households where the wife's labor supply decision is dependent on her husband's income (which is a part of wife's non-labor income), as compared to the households where both husband and wife make labor supply decisions simultaneously. Nicodemo (2007) shows how the household income has a negative influence on the labor market outcomes (participation and wage earnings) of female in European countries. These papers show the inter-relation of spouses' labor decisions and their earnings. In this paper, we investigate the effect of spouse's earned income on labor force participation decisions of individuals. We argue that cultural background of individuals plays a role in determining the labor supply decisions. We use the decennial census, ACS data (Ruggles et al. 2018) and WVS data to study this effect. We examine whether

people who reside in the US but are originally from different cultural background behave differently in the labor market when the earnings of their spouse rises. We do this both for males and females.

The key motivation behind conducting this research is to check if culture plays a role in explaining the behavior of husbands to an increase in their wife's income. We suspect this behavior provides an additional reason as to why the earnings inequality has remained stagnant in the recent past. We hypothesize that cultural beliefs on gender-role results in men increasing their participation in the labor market when there is an increase in their wife's earnings. This will create a hindrance en-route to gender equality in the labor market by slowing down the convergence in gender pay. Fortin (2005) has done similar analysis for OECD countries using the data from World Value Survey (WVS). She argues that the questions asked in WVS like *'When jobs are scarce, men should have more right to a job than women'* and *'Being a house-wife is just as fulfilling as working for pay'* show the perception of men towards women's role as homemakers, which would allude to the slowdown of the gender convergence in pay in OECD countries in early 2000s.

We initially assess the relationship between spouse's earnings and participation decision. We find that the females, both US-born and foreign-born, reduce their participation rate in the labor market when their husband's earnings increase, whereas, males behave exactly opposite, i.e., they increase their participation in the labor market when their wife's earnings rise. But, this behavior in men is prominent for those who are foreign-born, as compared to US-born men. This is an unexpected result for males. We try to see if the culture or attitude of men towards their partners' work can explain this behavior. As in Carroll et al. 1994, we make this assumption that immigrants hold on to some of the attitudes of their country of origin and hence can behave differently with respect to certain characteristics. We argue that this could

be due to the different cultural backgrounds that these foreign-born men come from. To see if culture is explaining this behavior, we focus on men born outside the US.

In order to investigate this phenomenon further, we use the data from World Values Survey (WVS) to construct an index for culture, which we use to demonstrate the impact of cultural background on men's labor supply. Individuals were asked about the extent to which they agree with the statement: *"If a woman earns more money than her husband, it's almost certain to cause problems. Do you agree, disagree or neither agree nor disagree?"* We measure the share of people in a country who agree with this statement and provide evidence that cultural beliefs play a role in determining the labor supply decisions for males who are residing in the US but were born in a country with traditional gender-role attitudes. We find that the cultural index we created has a positive significant impact on the participation for men who are born in a country where people think that man should earn more than his wife.

The objective of the paper is to shed light on the probable reasons (other than the fall in the responsiveness of married women's labor supply to their husband's wages) for the increase in the labor supply of men when their wife's earnings increase. We examine the impact of cultural beliefs and traditional gender-role views of men as the cause of the increase in their labor supply. There is strong evidence in literature which shows that the culture plays a huge role in determining the female labor supply. Fernandez and Fogli (2009) show the significance of the culture in explaining the labor supply decisions of second-generation female immigrants in the US, by using their mother's past labor force participation (in the country of ancestry of the female immigrant) as the cultural proxy. A similar analysis on female immigrants of 26 European countries has been done by Bredtmann and Otter (2013), where they provide evidence of women's source country characteristics having a positive impact on their work behavior in host country. Kubota (2016) examines the huge decline in

labor force participation of females in Turkey from 1955 to 2011. He finds that this decrease is mainly due to a huge decline in women's agricultural employment and women failing to shift to the non-agriculture sector due to the societal stigma that Turkish women should not be working in non-family market. Using the European Value Survey (EVS), Uunk (2015) studies the importance of gender-role attitudes by providing evidence that women in more modern countries have a higher preference of being employed as compared to women in less modern countries. These papers focus on how the female labor supply decisions are affected by their *own* beliefs.

Another strand of literature talks about how *men's* beliefs have an effect on labor supply decisions of women. Chen and Ge (2018) find that traditional gender roles are more likely to be supported by the men who grew up in a household with non-working mothers. They are not in favor of having working wives and have a lower willingness to do household chores as compared to the men raised by working mothers. Bertrand, Kamenica and Pan (2015) argue that in families where the wife is likely to earn more than the husband, the wife tends to either not participate in the labor market or work less such that she earns less than her husband. Also, these couples have a very low rate of marriage satisfaction and have a higher probability of getting divorced. However, there is very little research on how culture and social norms can affect the labor supply decisions of males as well, which is the primary focus of our research paper. Oreffice (2014) analyzes the employment decisions of US-born and foreign-born couples to examine the effects of cultural background on the bargaining power in household decisions. The results in her paper provide evidence that hours worked are positively related to bargaining power for all US-born couples and for foreign-born, only those couples who come from countries with similar gender roles as US.

Several papers in the past have shown and discussed the effects of non-labor income

on labor supply outcomes. Imbens, Rubin and Sacerdote (2001) provide evidence on the effect of non-wage income on wage earnings using a survey of lottery players conducted in Massachusetts in mid- 1980. Using a natural experiment, Holtz-Eakin, Joulfaian and Rosen (1993) examine the effect on the decision to participate in labor force when people received huge amounts of money as inheritances. These papers provide evidence on the general theory of labor supply which says that increase in non-labor income generally reduces the labor income.

This paper shows an anomaly in the general theory of labor supply, which holds true for females but not for males. When we divide the non-labor income into two parts: spouse earnings and own- wage income, we observe that increase in spouse's earnings reduces the labor force participation for females (complying with the general theory), whereas it is just the opposite for males. Our results imply that when wife's earnings increase, husband's labor force participation goes up. However, this anomaly is prominent for people who are not US born. US citizens, both males and females, act in accordance with the general theory of labor supply. We argue that this difference in behavior between US-born and foreign-born males is due to the difference in culture and norms between US and foreign countries. Males coming from countries which support traditional (stricter and unequal) gender roles, where the social norm is that "the man should be the primary bread-earner for the family", contribute to this inconsistent behavior. Our paper is the first one to find out the inconsistent behavior of males in labor supply decisions when non-labor income (including spouse's income) increases. Our results hold when we use an instrument to account for the endogeneity of spouse income as well.

Machismo is seen as a form of masculinity which describes the dominance of men in any field. It is quite common that males are concerned more with achievements and females behave ideally in a nurturing manner. We make use of this and see if it

can shed some light on the behavior of men towards their wives in the labor market.

The structure of the paper is as follows. Section 2 describes the data used for the analysis. Section 3 explains the estimation strategy and section 4 presents the empirical results. Finally, section 5 concludes the paper.

2 Data

A. Census and ACS Data

We carry out the estimation on the US Census data for the years 1980 and 2000, by using its 5-percent sample "5% IPUMS data"[4]. This data gives us access to the sample of households with foreign-born spouses and US-born individuals, along with their detailed ethnic, demographic, labor and income information (Ruggles et al. 2010). In addition, we use the ACS data from 2001-15, which was obtained from IPUMS (1-in-100 national random sample of the population)[5]. Using this data, one can identify the country of birth of household members (we use the detailed code for birthplace), their earning levels, their spouse's earnings and education levels. We also get information on their labor force participation and the hours worked (Usual Hours worked), their ancestry, the number of years spent living in the US and other demographic data. The first-generation immigrants in the census and the ACS data are identified by using the country of birth, and this is considered a more robust measure than ancestry (e.g., Chiswick and Houseworth 2010). The data is for individuals sampled in the US. We focus our attention to first-generation immigrants only.

The process of sample selection is listed out in the appendix. For our analysis,

[4] 1-in-20 national random sample of the population for the years 1980,1990 and 2000.

[5] 2001: 1-in-232 (approximately) national random sample of the population; 2002: 1-in-261 (approximately) national random sample of the population; 2003: 1-in-236 (approximately) national random sample of the population; 2004: 1-in-239 (approximately) national random sample of the population; All other years: 1-in-100 national random sample of the population.

we include the household head & spouse only as our study is restricted to couples. Only couples where both the head and the spouse are present are considered, i.e., the marital status indicates "Married & Spouse present". Same-sex couples are not included in the sample. Moreover, we exclude from the sample the individuals below 16 years and above 65 years old. Individual weights are used throughout our analysis. We adjust for the top-coded values of income measures using the multiplier of 1.5 as is used in several other papers in the literature. Annual earnings are standardized to 1999 dollars. We generate a variable 'Participate' that indicates the labor force status (Participation=1 if in the labor market; 0, otherwise). In the Census, age and all the incomes are self-reported as those questions are asked to each adult in the household. We define Spouse's Income as the sum of wage income, business income and farm income (of the spouse). We do this to include both salaried workers and also the business and farm workers. We calculate Wage Income for both the individual and his/her spouse. We define Non-Wage Income as the difference between the Total Income earned by an individual less the Income (which is any earnings for which a person must work). The literature lists out Wage income and Non-Wage Income. We define the variable Non-Self Income[6] as the sources of income that the husband/wife has without working at all. This will include his/her own Non-Wage Income and his/her spouse's Total Income. We make this assumption that the income of spouse is available for the other person to use. We include this variable because this is the available amount of income that a person has at his/her disposal.

The other regressors that is included is a vector of covariates X. X includes education of the individual (number of completed years of schooling) divided into five groups: basic, high-school, some college, college and post-college; number of own chil-

[6]Juhn and Murphy (1997) referred it as Non-Labor Income. But there has been a loose usage of this term that confuses between Non-labor Income and Non-wage Income. We therefore, use it as Non-Self Income.

dren under 5 living in the household, age, age-squared, race and years lived in the US.

B. World Values Survey Data

The second dataset we use in our analysis is the World Values Survey (WVS). The WVS started in 1981 and consists of nationally representative surveys conducted in almost 100 countries which contain almost 90 percent of the world's population, using a common questionnaire. We employ the six cross-sectional waves of the WVS (1981–1984, 1990–1993, 1995–1997, 1999–2004, 2005- 2009 and 2010-2014). The WVS asks its respondents about their attitudes regarding a variety of topics, including religion, political preferences, family values and work ethics. We created two variables to measure the extent of attitude of husbands towards their wife's income levels compared to theirs, using the WVS. The variables were created from this question in WVS: *"If a woman earns more money than her husband, it's almost certain to cause problems. Do you agree, disagree or neither agree nor disagree?"* This question was asked in two waves of the six waves in WVS (Wave 3 and Wave 6[7]). Potential answers range from 1: Strongly Agree, 4: Strongly Disagree (in wave 3) and 1: Agree, 2: Disagree, and 3: Neither (in wave 6). We recoded the responses such that a higher value of each variable represents a higher problem if woman earns more than her husband and lower value indicates not a problem if she earns more. We make the WVS data consistent with the data obtained from Census by keeping only the male and female respondents[8] and taking their answers into consideration. The variables that we create are derived from the same question as mentioned. The variables are created using 2 methods:

[7]In WVS - Wave 3: 1995-1998 and Wave 6: 2010-2014

[8]We drop the observations where the sex of the respondents was missing or was not asked.

- Average of people's responses, and
- Percentage of people agreeing

that it is a problem if woman earns more than her husband. In each of the variables, the country having a higher value would be considered as having a bigger aversion to a woman earning more than her husband. This is the measure of culture (or machoism, as we would like to refer it to). The summary statistics are listed on Table 1.

Having obtained the WVS data for the relevant question at country level, and also country and wave level, we merge it with the census data to see if the analogous behavior of husbands can be explained by the effect of culture in their home countries (countries where an individual is born). There are two ways by which we match the two datasets:

- Match with birthplace and census year: we match the two datasets using the place of birth and census year[9]. For everyone in the sample, we have the variation depending on their place of birth and the year they were observed. We do the match for foreigners and get the measure of culture for their respective country of birth. The culture moves from more macho (high value) to low macho (less value) for almost all the countries over time[10]. This can be because of changing beliefs over time.
- Impute Values of Culture and match by year: we perform a linear imputation for the culture variable for those countries which had been asked twice in the WVS survey. We control for other characteristics such as age, sex, education, income and if they have children, to estimate the rate of decline in the attitude

[9] A variable wave consistent with WVS data was created based on the year observed. See Appendix 1 for more details.

[10] Controlling for other characteristics such as education, age, income, etc.

of people towards their wives' work. Having obtained the imputed values, we match them by years with the census data. Here, we have the variation by country and year observed for each of the years in the sample.

3 Estimation Strategy

There are three main specifications that we use in our analysis. Each of them is explained below:

Specification 1: OLS Model

$$Y_{i,s,t} = \beta_1 (Log\ Non\ Self\ Income)_{i,s,t} + \beta X_{i,s,t} + \gamma_s + \delta_t + \varepsilon_{i,s,t} \tag{1}$$

where the dependent variable is the status of participation in the labor market of the respondent 'i' in state 's' at time 't'. The census data relates to the previous calendar year, while the ACS uses the previous 12 months as the reference period.

The role of the non-self-income is captured by β_1. According to the collective labor supply framework, if a person's non-self-income is higher, then his/her labor supply should be lower. Hence, β_1 should be negative. This is the Income Effect. Dummy variables for racial profiles are also included in this specification at the individual level. X includes the controls that we discussed before; γ_s denotes the state fixed effects, which will capture the different labor market opportunities and social and legal attitudes that exist across states; and δ_t denotes the time fixed effects. We estimate the specification separately for males and females.

Specification 2A: OLS Model

$$Y_{i,s,t} = \beta_0 + \beta_1(Log\ Non\ Wage\ Income)_{i,s,t} + \beta_2(Log\ Spouse\ Income)_{i,s,t} + \beta X_{i,s,t} + \gamma_s + \delta_t + \varepsilon_{i,s,t} \quad (2)$$

This is similar to specification 1 except for the income variable. We have specified the dependency of a person's participation decision on his/her own non-wage income and his/her spouse's total income. The role of the log non-wage income is captured by β_1 and β_2 captures the role of Spouse's income on LFP of an individual. According to the collective labor supply framework, both β_1 and β_2 should be negative for both males and females.

Specification 2B: Instrumental Variables Model

$$(Log\ Spouse\ Income)_{i,s,t} = \alpha_1(Education\ Spouse)_{i,s,t} + \alpha X_{i,s,t} + \gamma_s + \delta_t + \varepsilon_{i,s,t} \quad (3)$$

To overcome the endogeneity problem of spouse income, we use the education level of spouse as an instrument for spouse income[11]. We estimate the above first-stage regression to show the relationship between spouse income and education of spouse. The coefficient of interest is α_1, which estimates the effect of additional years of education on the spouse's income. We expect α_1 to be positive. We estimate the second stage as:

$$Y_{i,s,t} = \pi_0 + \pi_1(Log\ Non\ Wage\ Income)_{i,s,t} + \pi_2(Log\ \widehat{Spouse\ Income})_{i,s,t} + \pi X_{i,s,t} + \gamma_s + \delta_t + \varepsilon_{i,s,t} \quad (4)$$

[11]This is similar to Blau & Kahn (2007)

The parameter of interest is π_2, which estimates the effect of increase in spouse income on the probability of participation for a given individual.

Specification 3A: OLS Model

$$Y_{i,s,g,t} = \beta_0 + \beta_1(Log\ Non\ Wage\ Income)_{i,s,t} + \beta_2(Log\ Spouse\ Income)_{i,s,t} + \beta_3 Culture_{g,t} + \beta_4(Log\ Spouse\ Income_{i,s,t} * Culture_{g,t}) + \beta X_{i,s,t} + \gamma_s + \delta_t + \varepsilon_{i,s,g,t} \quad (5)$$

This specification is estimated for males born outside the US as they show an analogous behavior with respect to their wives' incomes. The set of controls remain the same and we have included state and time fixed effects. Robust standard errors clustered by birth country are used to allow for correlation of individuals belonging from a country. Here we have introduced the variable Culture which can be measured in two ways as discussed in the data section. Based on the way that we have merged the datasets, Culture variable has a value before 2000 and another after 2000 for individuals born in a country. Also, when we impute, culture's measure changes by years for each country. For the countries that have been asked twice in the WVS, we see that the measure of culture has declined: the percentage people agreeing to the question that it is a problem if wife earns more than husband has declined over time. We thus, make the imputation that is in line with this decline. The rate of decline is different for different countries and we take that into account. we interact the culture in a country with the log spouse income and this effect is captured by β_4. Ideally, we expect β_4 to be positive and that would mean for husbands who are born in a country where more people believe that it is a problem if woman earns more than husband, then they work even harder if their wives earn more. We estimate the specification

using both the measures of culture - Average of the index and Percentage of people agreeing.

Specification 3B: Instrumental Variables Model

We estimate the second stage as the following:

$$Y_{i,s,g,t} = \pi_0 + \pi_1(Log\ Non\ Wage\ Income)_{i,s,t} + \pi_2(Log\ \widehat{Spouse\ Income})_{i,s,t} + \pi_3 Culture_{g,t} + \pi_4(Log\ \widehat{Spouse\ Income}_{i,s,t} * Culture_{g,t}) + \pi X_{i,s,t} + \gamma_s + \delta_t + \varepsilon_{i,s,g,t} \quad (6)$$

The parameter of interest is π_4, which should be positive which would mean that husbands who are born in a country where more people believe that *is a problem if woman earns more than husband*, work even harder if their wives earn more. Again, we estimate this specification using both the measures of culture - Average of the index and Percentage of people agreeing. We run this specification on the pre and post 2000 assignment of culture to individuals first. Next, we impute values of culture by years for each country and estimate this specification as we have more variation in the culture for each country.

4 Empirical Results

Specification 1:

The figure 2 shows us the effect of Non-Self Income on the participation (extensive margin) for both males and females (foreigners). We see that the effect is as expected, i.e., if the non-self-income increases for any individual, the probability of his/her participation decreases, which is consistent with the theory. We see that this

result holds for the years specified, taken separately or together as the figures show. Specifically, the Non-Self Income elasticity is 3 percent in 1980 and 1.4 percent in 1990 for males. Non-Self Income has similar effects on participation decision of females as males, though with a higher elasticity. The Non-Self Income elasticity for females is 8.4 percent in 1980 and 6.7 percent in 1990. For citizens, please refer to the Appendix figure 1A. They behave as expected by the theory, i.e., the probability of participation decreases when the non-self-income increases. These results indicate that males are less responsive to Non-Self Income as compared to females. This is consistent with the theory.

Specification 2A: (OLS Estimation)

Figure 3 shows us the effect of Spouse's log earnings on the Participation rate of an individual. As per the theory, we expect that an increase in spouse's earnings will lead to a fall in the probability of participation in the labor of an individual. For females, this is what we observe: i.e. when the husband's earnings increase, then they participate less in the labor market. The results are reported in tables 2 and 3 for females and males respectively. In Table 2, we see that when the husband's income increases (which is a non-wage income for the wife), the wife's participation in the labor market decreases. In particular, a 1 percent increase in husband's income decreases wife's probability of participation by 0.0067 percentage points in 2000. However, for males, we see a different behavior: when their wives earn more, they participate more thus, contradict the predictions of the theory. In table 3, for the years 1980, 1990 and 2000 and 1980-2000, the coefficient on β_2 (for participation equation) is positive and significant, suggesting this relationship for husbands. Also, we see that the effect pre-2000 is higher than the effect post- 2000. The spouse income elasticity for males is about 1.3 percent in pre-2000 era and shows no impact in post-2000 era,

controlling for their non-wage incomes and other characteristics. This implies that husbands were more responsive to their wife's income before 2000 compared to post-2000. One reason that we think can attribute to this is that people's thinking is changing over time and they are no longer holding on to the old beliefs about role of women in the household. This is also seen in the WVS question that we report here. The percentage of people agreeing to the question that it is a problem if woman earns more has declined in almost all the countries by about half[12] (See figures 4-7).

Specification 2B: (Instrumental Variable Model Estimation)

Tables 4 and 5 gives us the first stage results for foreign-born males and females to show the relationship between spouse income and his/her years of schooling. It shows a strong relation between them; the spouse's years of schooling positively and significantly determines the spouse income. Specifically, column 2 in Table 4 shows that one extra year of schooling by spouse increases her income by 7.5 percent in the year 2000. Overall, from 1980-2015 the increase in spouse income ranges from around 7 percent to 9.5 percent. Similar estimates are seen in table 5 for females as well. The two-stage least squares estimates for the effect of spouse income on husband's participation in labor market from 1900-2015, are provided by Table 6. It is clear from the results in column 2 that in 2000, if wife's income increases by 1 percent, the probability of husband participating in the labor market increases by 0.08 percentage points. Over time from 2001-05, in column 3 we see that this effect reduces to 0.036 percentage points, thus showing that post 2000 the attitude of men towards women is changing. Table 7 shows us the two stage least squares estimates for the effect of husband's income on female participation in labor market. We see that the results for females are consistent with the theory, i.e., the probability of participation of wife

[12]For countries which have been asked the question in more than one wave.

decreases as her husband earns more. These estimates are stronger as compared to the OLS results.

Specification 3A: (OLS Estimation)

1. **Combined with Birthplace and Waves (by Census Years):**

   The results for participation are reported in Tables 8 (Measure used: Culture Average) and 9 (Measure used: Percentage Agreeing). We see that the effect on spouse's income is larger before 2000 than after 2000 in both the tables. We see a positive and significant result for the year 2000 for the interaction of percentage agreeing with spouse income. To put things in perspective, a person observed in 2000 and born in a country where 50 percent of its people agree that it is a problem if woman earns more than husband is 0.0123 percentage points more likely to participate in the labor market if his wife's earnings increase by 1 percent. Whereas, a person born in a country where 90 percent of the people believe that it is a problem if wife earns more than husband, has a 4 times higher probability of participation. Similarly, a person born in a country where 50 percent of its people agree and is observed before 2000 is more likely to increase his participation by 0.01 percentage points if his wife's earnings increases by 1 percent. This would amount to a 1 percent increase in participation relative to the mean value of males participation (0.88). Compared to this, we don't see any significant effect in males participation post 2000.

2. **Combined with Birthplace and Years (by Census Years) Imputed Values:**

   The results in this section are calculated using the imputed values (linear imputation) and then matched by the census year. Tables 10 and 11 show the

results. The results are similar to the above method (without imputed values) but the magnitude of the effect is slightly larger. In Table 11, in 2000, when a person is from a country with 90 percent people having an issue with higher wife income, he is 0.05 percentage points more likely to participate. We find negative and insignificant results for a similar person post-2000.

Specification 3B: (Instrumental Variable Model Estimation)

1. **Combined with Birthplace and Waves (by Census Years):**

   The 2SLS estimates for the effects of spouse income on husband's participation due to the effect of cultural attitudes are shown in Tables 12 (Measure used: Culture Average) and 13 (Measure used: Percentage Agreeing). The 2SLS estimates are larger than the OLS estimates, as expected. We again see that the increase in wife's earnings positively and significantly affects the husband's participation decision. And, also that this effect is higher pre-2000 as compared to post-2000. Before 2000, a person born in a country where 50 percent people agree that their wife should not earn more than them, is 0.06 percentage points more likely to participate in the labor market. With a mean of 0.88, this will increase the participation by almost 7 percent. Whereas, after 2000 the similar person is likely to increase his participation by 0.04 percentage points, increasing his participation by around 4 percent. This effect is mainly because post-2000 we see a 50 percent drop in the percentage of people who have a problem with their wife earning more.

2. **Combined with Birthplace and Waves (by Census Years) Imputed Values:**

   We estimate the results for imputed values using the instrumental variables

model and see larger effects as compared to the results for imputed values in OLS estimation. The 2SLS estimates for the effects of spouse income on participation of husband using the imputed values is shown in tables 14 (Measure used: Culture Average) and 15 (Measure used: Percentage Agreeing). Column 2 of table 15 provides evidence for a positive and significant relationship between spouse income and husband's participation in labor market in the year 2000. A person in the year 2000 is 0.085 percentage points more likely to participate if he is from a country with 50 percent people agreeing that wife's earning must be less than their husband's. This amounts to a 9.6 percent increase in husband's participation relative to its mean of 0.88. These results provide evidence on the anomaly we observed in men's behavior. It shows that culture plays an important role in determining men's labor supply decisions as men from a culture where it is believed that man should earn more than wife, exhibit a competitiveness to their wives' income growth. This behavior of men makes this phenomenon one of the reasons for the slowdown in the convergence of gender gap.

5 Concluding Remarks

In this paper, we empirically analyze the labor supply decisions of married males and females based on their spouse's income and their cultural gender-role attitudes (machismo), using 1980-2000 US Decennial Census data and 2001-2015 ACS data from IPUMS. Specifically, we examine whether the cultural background of foreign-born males have a role in influencing their labor supply decisions. We find a significant positive relationship between spouse income and the labor supply decisions of foreign-born males by exploring the role of culture, suggesting that the social norm *"a man*

should be the primary bread-earner of the family" influences the husband to participate even more when their wife's income increases. We also show that these social norms have a higher impact before 2000, thus, implying that preference of men for women's role in household income is evolving over time. This paper provides the first evidence on the effect of culture in this manner on men's labor supply decisions.

In this analysis, we don't have any measure for culture for states in the US. Having a measure would help us understand the behavior of US citizens as opposed to foreign born residents with regards to their attitude about their spouses' earning more. Another way to show causality could be by using a panel data in which we can observe how the earnings and participation decisions of the same individuals are changing over time. This is the plan for future work.

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List of Tables and Figures

Figure 1: Labor Force Participation Rate of Males and Females from 1950-2020 to show Gender Gap

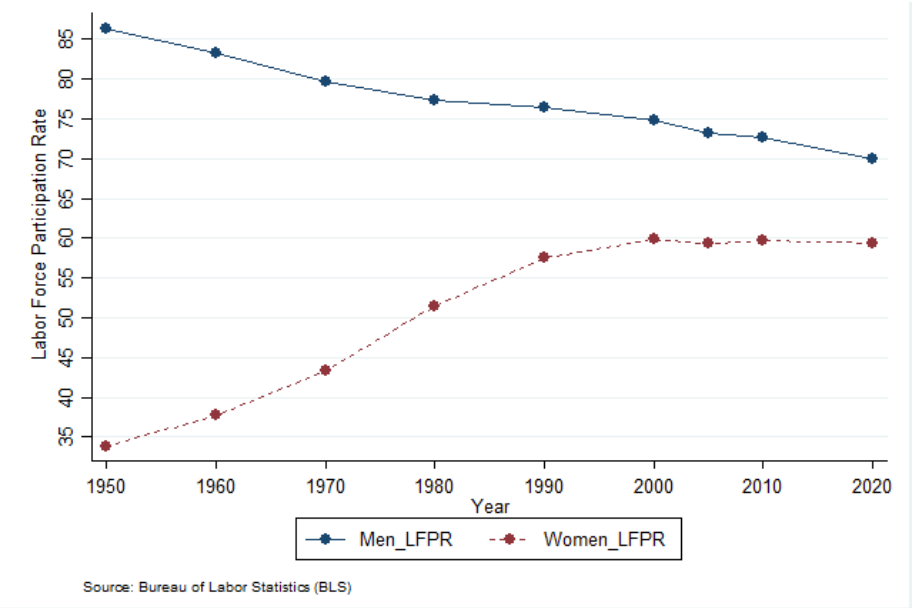

Figure 2: Coefficient of β_1 in Specification 1 for Males and Females (Y=Participation) [Foreigners]

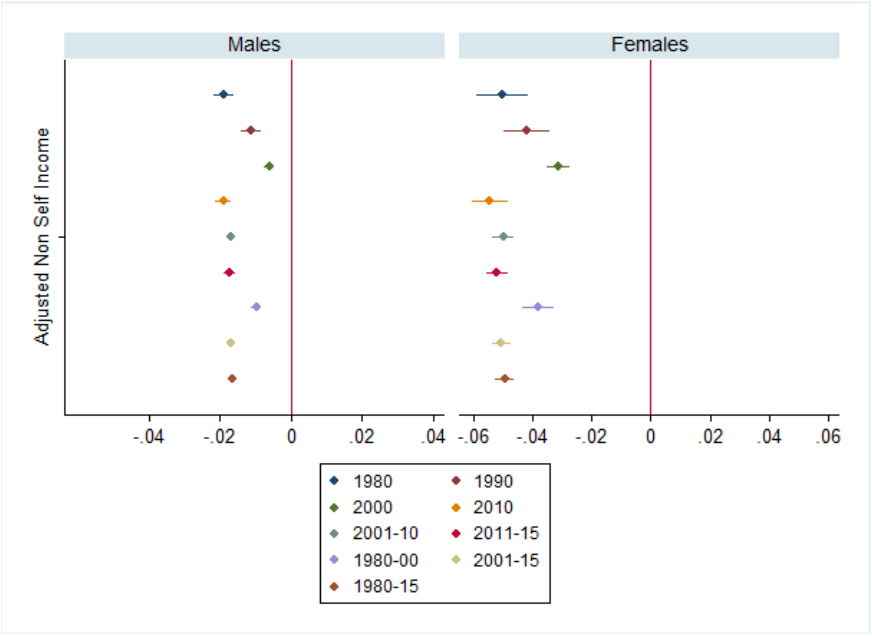

Figure 3: Coefficient of β_2 in Specification 2 for Males and Females (Y=Participation) [Foreigners]

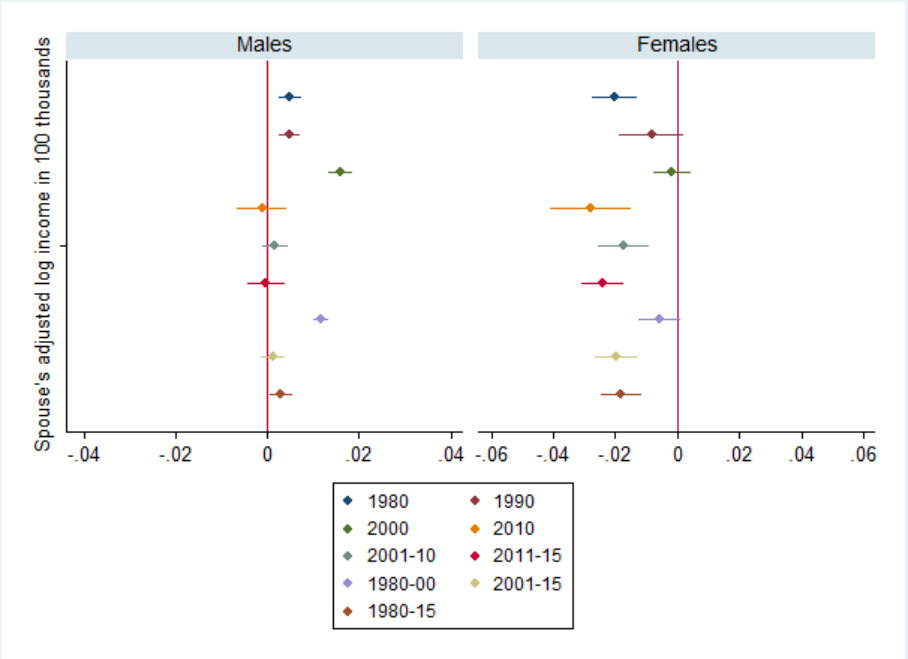

Figure 4: Percentage of people agreeing that it's a problem if woman earns more in different countries (i)

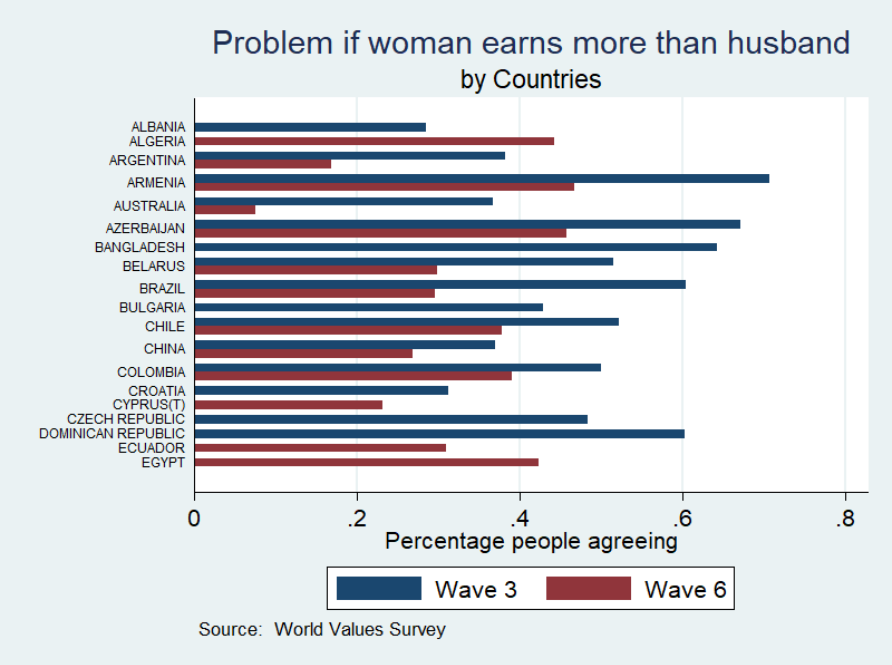

Figure 5: Percentage of people agreeing that it's a problem if woman earns more in different countries (ii)

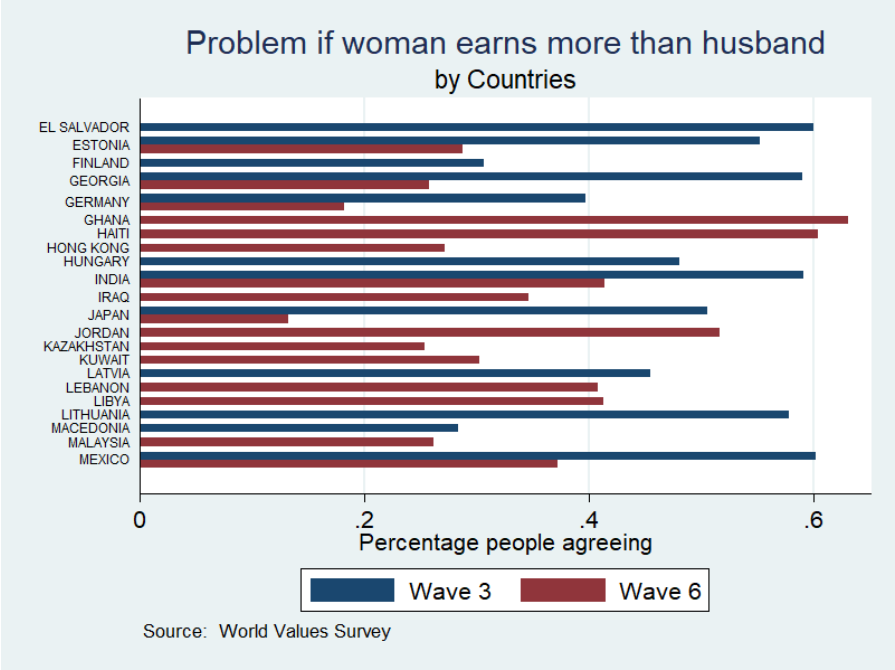

Figure 6: Percentage of people agreeing that it's a problem if woman earns more in different countries (iii)

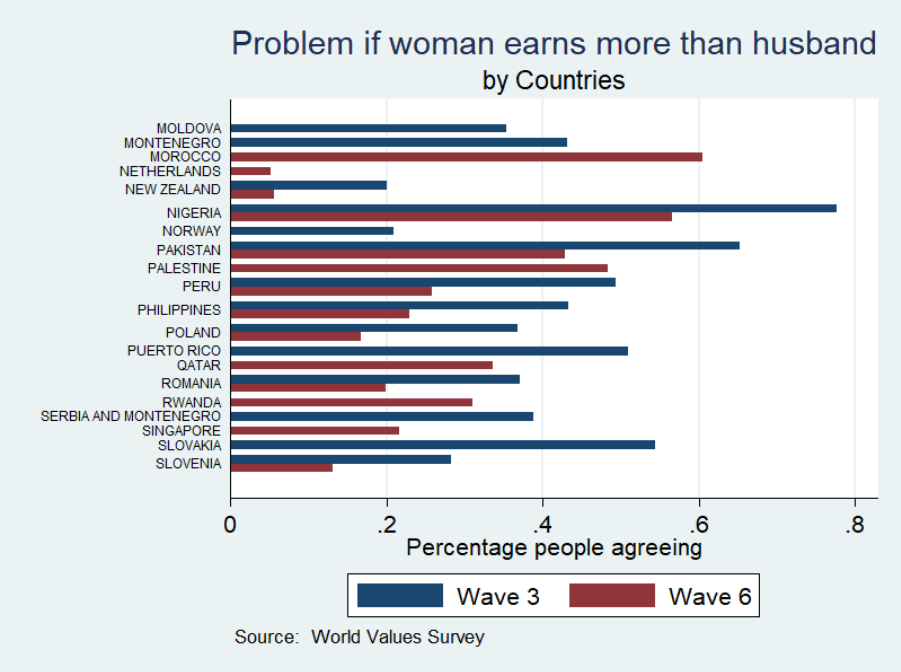

Figure 7: Percentage of people agreeing that it's a problem if woman earns more in different countries (iv)

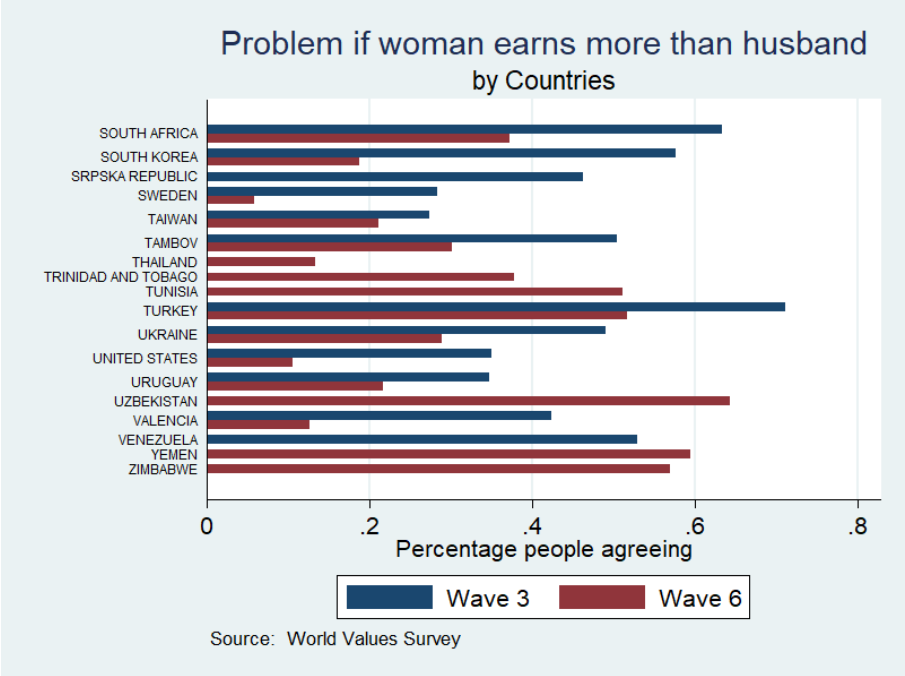

Table 1: Descriptive Statistics						
Variables	Males					
	Foreigners			Citizens		
	N	Mean	SD	N	Mean	SD
Participation in Labor Market	1645462	.8842635	(.3199088)	10981085	.8839117	(.3203308)
Hours Worked per week	1645462	39.62349	(16.12156)	10981085	40.47847	(16.6885)
Log Adjusted Non-Self Income in thousands	1243261	2.645624181	(1.381467)	9518114	2.738629181	(1.360113)
Log Spouse's Adjusted Income in thousands	1053844	2.768896181	(1.146596)	7949000	2.769494181	(1.147227)
Log Adjusted Non Wage Income in thousands	436858	0.840157181	(2.037508)	4452339	0.877184181	(2.155377)
Age	1645462	43.73173	(10.73678)	10981085	44.91472	(11.54649)
Variables	Females					
	Foreigners			Citizens		
	N	Mean	SD	N	Mean	SD
Participation in Labor Market	1718020	.6019365	(.4894988)	10908527	0.6799247	-0.4665052
Hours Worked per week	1718020	23.45912	(20.10947)	10908527	26.40828	-18.98957
Log Adjusted Non-Self Income in thousands	1668453	3.438808181	(.9765534)	10908527	3.614460981	-0.8831308
Log Spouse's Adjusted Income in thousands	1565268	3.431384181	(.9663147)	9863469	3.579626181	-0.9165922
Log Adjusted Non Wage Income in thousands	267421	0.529759181	(1.964345)	2527193	0.522455181	-2.051575
Age	1718020	41.31838	(10.55292)	10908527	42.70457	-11.43377

Table 2: OLS Estimates for Participation on Spouse's Income for Foreigners for Females

	Participation in Labor Mkt.					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
Log Spouse Income	-0.0125**	-0.0067**	-0.0148***	-0.0280***	-0.0101***	-0.0231***
	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)
Log Non-Wage Income	-0.0481***	-0.0491***	-0.0512***	-0.0426***	-0.0484***	-0.0435***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Observations	30072	46339	24362	50321	102363	120918

Standard errors in parentheses

SE's clustered at State level

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 3: OLS Estimates for Participation on Spouse's Income for Foreigners for Males

	Participation in Labor Mkt.					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
Log Spouse Income	0.0042***	0.0146***	0.0022	-0.0012	0.0109***	0.0000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log Non-Wage Income	-0.0288***	-0.0345***	-0.0444***	-0.0417***	-0.0332***	-0.0413***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Observations	44295	57751	27794	59220	137286	139659

Standard errors in parentheses

SE's clustered at State level

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: First Stage Estimates using the Instrument Years of Schooling for Foreigners for Males

	Log Spouse Income					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
School Years Spouse	0.0699***	0.0752***	0.0868***	0.0945***	0.0680***	0.0906***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
N	44295	57751	27794	59220	137286	139659

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5: First Stage Estimates using the Instrument Years of Schooling for Foreigners for Females

	Log Spouse Income					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
School Years Spouse	0.0632***	0.0602***	0.0736***	0.0788***	0.0616***	0.0774***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
N	30072	46339	24362	50321	102363	120918

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 6: 2SLS Estimates for Participation on Spouse's Income for Foreigners for Males

	Participation in Labor Mkt.					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
Log Spouse Income	0.0347***	0.0828***	0.0364***	0.0158	0.0682***	0.0225***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Non-Wage Income	-0.0291***	-0.0347***	-0.0444***	-0.0418***	-0.0334***	-0.0414***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Observations	44295	57751	27794	59220	137286	139659

Standard errors in parentheses

SE's clustered at Birthplace level

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 7: 2SLS Estimates for Participation on Spouse's Income for Foreigners for Females

	Participation in Labor Mkt.					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
Log Spouse Income	-0.0527***	0.0133	0.0077	-0.0556***	-0.0284*	-0.0293***
	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)	(0.01)
Log Non-Wage Income	-0.0478***	-0.0493***	-0.0510***	-0.0427***	-0.0483***	-0.0436***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Observations	30072	46339	24362	50321	102363	120918

Standard errors in parentheses

SE's clustered at Birthplace level

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 8: OLS Estimates for Participation on Spouse's Income for Foreigners for Males - Culture Average [Matched by Birthplace and Wave (Pre and Post 2000)]

	Participation in Labor Mkt.					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
Log Spouse Income	-0.0001	-0.0928**	-0.0171	-0.0270*	-0.0551**	-0.0212*
	(0.02)	(0.04)	(0.02)	(0.02)	(0.02)	(0.01)
Log Non-Wage Income	-0.0258***	-0.0344***	-0.0415***	-0.0392***	-0.0319***	-0.0387***
	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)
Wife Earns More (Avg.)	-0.0306	0.0140	0.0084	0.0153	-0.0014	0.0127
	(0.03)	(0.04)	(0.02)	(0.02)	(0.03)	(0.02)
Log Spouse Income × Wife Earns More (Avg.)	0.0007	0.0416***	0.0075	0.0099	0.0257***	0.0081*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Observations	23328	34165	16217	35326	74231	83144

Standard errors in parentheses

SE's clustered at Birth Country level

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 9: OLS Estimates for Participation on Spouse's Income for Foreigners for Males - Culture Percent [Matched by Birthplace and Wave (Pre and Post 2000)]

	Participation in Labor Mkt.					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
Log Spouse Income	0.0058	-0.0255**	-0.0084	-0.0112	-0.0111	-0.0098*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Log Non-Wage Income	-0.0258***	-0.0343***	-0.0415***	-0.0391***	-0.0319***	-0.0387***
	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)
Wife Earns More (Percent Agree)	-0.0756	-0.0077	0.0392	0.0112	-0.0397	0.0281
	(0.06)	(0.07)	(0.08)	(0.07)	(0.07)	(0.06)
Log Spouse Income × Wife Earns More (Percent Agree)	-0.0086	0.0755***	0.0278	0.0221	0.0413**	0.0229
	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Observations	23328	34165	16217	35326	74231	83144

Standard errors in parentheses

SE's clustered at Birth Country level

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 10: OLS Estimates for Participation on Spouse's Income for Foreigners for Males - Imputed Culture Average

	Participation in Labor Mkt.					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
Log Spouse Income	0.0351	-0.1120***	-0.0065	-0.0154	0.0262	-0.0013
	(0.03)	(0.03)	(0.04)	(0.02)	(0.03)	(0.01)
Log Non-Wage Income	-0.0234***	-0.0307***	-0.0425***	-0.0387***	-0.0288***	-0.0387***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)
Wife Earns More (Avg.)	-0.0382	-0.0032	-0.0089	0.0066	-0.0640	-0.0006
	(0.04)	(0.04)	(0.04)	(0.03)	(0.05)	(0.02)
Log Spouse Income $\times$ Wife Earns More (Avg.)	-0.0129	0.0494***	0.0029	0.0044	-0.0069	-0.0006
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Observations	20425	29566	14376	31428	64140	73690

Standard errors in parentheses

SE's clustered at Birth Country level

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 11: OLS Estimates for Participation on Spouse's Income for Foreigners for Males - Imputed Culture Percent

	Participation in Labor Mkt.					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
Log Spouse Income	0.0123	-0.0281***	0.0066	-0.0021	0.0222*	0.0037
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)
Log Non-Wage Income	-0.0234***	-0.0306***	-0.0424***	-0.0386***	-0.0289***	-0.0386***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)
Wife Earns More (Percent Agree)	-0.0574	-0.0886	-0.0959	-0.0712	-0.1520**	-0.0888
	(0.06)	(0.08)	(0.08)	(0.07)	(0.07)	(0.06)
Log Spouse Income × Wife Earns More (Percent Agree)	-0.0197	0.0843***	-0.0144	-0.0082	-0.0266	-0.0182
	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Observations	20425	29566	14376	31428	64140	73690

Standard errors in parentheses

SE's clustered at Birth Country level

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 12: 2SLS Estimates for Participation on Spouse's Income for Foreigners for Males - Culture Average [Matched by Birthplace and Wave (Pre and Post 2000)]

	Participation in Labor Mkt.					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
Log Spouse Income	-0.2287*	-0.5168***	-0.0302	-0.0867	-0.4937***	-0.0421
	(0.13)	(0.19)	(0.07)	(0.05)	(0.13)	(0.05)
Log Spouse Income x Wife Earns More (Avg.)	0.1016*	0.2318***	0.0237	0.0428*	0.2204***	0.0241
	(0.05)	(0.07)	(0.03)	(0.02)	(0.05)	(0.02)
Log Non-Wage Income	-0.0258***	-0.0348***	-0.0415***	-0.0393***	-0.0322***	-0.0388***
	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)
Wife Earns More (Avg.)	0.1640*	0.3477***	0.0375	0.0669**	0.3662***	0.0392*
	(0.10)	(0.10)	(0.04)	(0.03)	(0.08)	(0.02)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Observations	23328	34165	16217	35326	74231	83144

Standard errors in parentheses

SE's clustered at Birth Country level

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 13: 2SLS Estimates for Participation on Spouse's Income for Foreigners for Males - Culture Percent [Matched by Birthplace and Wave (Pre and Post 2000)]

	Participation in Labor Mkt.					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
Log Spouse Income	-0.0441	-0.1379***	-0.0269	-0.0426	-0.1316***	-0.0307
	(0.05)	(0.05)	(0.03)	(0.03)	(0.04)	(0.02)
Log Spouse Income x Wife Earns More (Percent Agree)	0.1433	0.4077***	0.1619*	0.1678**	0.3854***	0.1369**
	(0.10)	(0.11)	(0.08)	(0.08)	(0.08)	(0.06)
Log Non-Wage Income	-0.0258***	-0.0345***	-0.0416***	-0.0392***	-0.0320***	-0.0388***
	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)
Wife Earns More (Percent Agree)	0.2257	0.5768***	0.2750**	0.2463**	0.6162***	0.2173**
	(0.19)	(0.15)	(0.14)	(0.10)	(0.12)	(0.09)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Observations	23328	34165	16217	35326	74231	83144

Standard errors in parentheses

SE's clustered at Birth Country level

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 14: 2SLS Estimates for Participation on Spouse's Income for Foreigners for Males - Imputed Culture Average

	Participation in Labor Mkt.					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
Log Spouse Income	-0.2560***	-0.5461***	-0.0838	-0.2731***	0.1006	-0.0946
	(0.06)	(0.11)	(0.08)	(0.08)	(0.18)	(0.07)
Log Spouse Income x Wife Earns More (Avg.)	0.1083***	0.2485***	0.0441	0.1182***	-0.0148	0.0455*
	(0.02)	(0.05)	(0.03)	(0.03)	(0.07)	(0.03)
Log Non-Wage Income	-0.0233***	-0.0312***	-0.0426***	-0.0388***	-0.0295***	-0.0388***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)
Wife Earns More (Avg.)	0.1971***	0.3514***	0.0683	0.1868***	-0.0514	0.0757**
	(0.05)	(0.07)	(0.05)	(0.04)	(0.12)	(0.04)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Observations	20425	29566	14376	31428	64140	73690

Standard errors in parentheses

SE's clustered at Birth Country level

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 15: 2SLS Estimates for Participation on Spouse's Income for Foreigners for Males - Imputed Culture Percent

	Participation in Labor Mkt.					
	(1)	(2)	(3)	(4)	(5)	(6)
	1990	2000	2001-05	2006-10	1980-00	2001-15
Log Spouse Income	-0.0343	-0.1258***	-0.0137	-0.1059***	0.1024	-0.0153
	(0.03)	(0.02)	(0.02)	(0.03)	(0.08)	(0.02)
Log Spouse Income x Wife Earns More (Percent Agree)	0.1078**	0.4210***	0.0842	0.2956***	-0.0785	0.0731
	(0.04)	(0.06)	(0.06)	(0.07)	(0.12)	(0.05)
Log Non-Wage Income	-0.0234***	-0.0309***	-0.0425***	-0.0385***	-0.0296***	-0.0387***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)
Wife Earns More (Percent Agree)	0.2006**	0.5321***	0.0907	0.4251***	-0.2004	0.0699
	(0.08)	(0.11)	(0.11)	(0.11)	(0.21)	(0.10)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes	Yes
Observations	20425	29566	14376	31428	64140	73690

Standard errors in parentheses

SE's clustered at Birth Country level

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix I

Sample Selection:

I select the sample from the Census using the variables "Relationship to the head of household/householder" and "Marital Status". The Census defines the head as the individual who owns the housing unit or has his/her name on the rental contract, and the partner/spouse is the individual who identifies himself/ herself as such.

Matching data of Census and WVS:

I generate a wave variable in the census data similar to the WVS waves, called wvs_wave. When matching with the year of survey, I construct the wave a little differently. The following rule is applied while creating wave variable in census based on Census year: Anyone observed before 2000 and after 2000 are matched to waves 3 & 6 respectively of the WVS. The intuition of matching them as such is because the way people behave before 2000 and after 2000. Before 2000, I see that husbands are very responsive to changes in their wives' incomes. I also see that in the WVS over time for countries, the percentage of people agreeing to the question *'It is a problem if wife earns more'* has also declined (Using the data available for wave 3 and wave 6). I hypothesize that people before year 2000 were relatively more macho compared to people observed after 2000. Therefore, I associate a higher value of out culture index to them.

Figure 1A: Participation on Non-Self Income (Citizens)

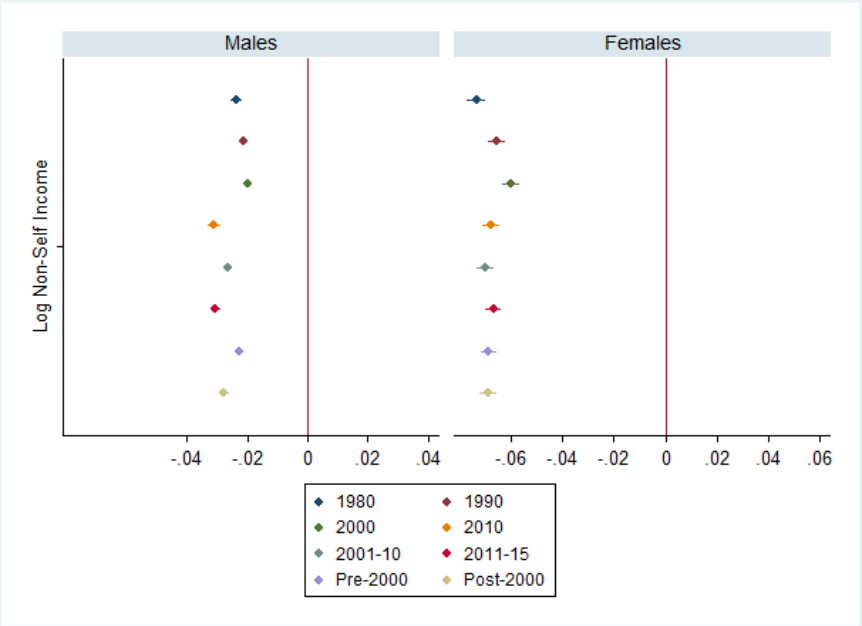

Figure 3A: Participation on Spouse's Income (Citizens)