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Culture and household decision making: Native and foreign-born couples' balance of power and labor supply choices in the US*

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Abstract

This study investigates how spouses' cultural backgrounds mediate the role of intra-household bargaining in the labor supply decisions of foreign-born and US-native couples, in a collective-household framework. Using data from the 2000 US Census I show that the labor supplies of US-born couples, and of those foreign-born coming from countries with family institutions similar to the US, are significantly related to bargaining power forces such as differences between spouses in age, and non-labor income, controlling for both spouses' demographic and socioeconomic characteristics. Households whose culture of origin supports strict and unequal gender roles do not exhibit any association of balance of power and their labor supply decisions. This cultural asymmetry suggests that spousal traits are assessed differently across couples within the US, and that how households make use of their outside opportunities and economic and institutional environment may depend on their ethnicities.

JEL codes: D1, J15, J22.

Keywords: Culture, Household bargaining power, Labor supply.

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1. Introduction

This paper examines the household labor supply choices of foreign-born and US-native couples, to explore the role of spousal ethnic background on the extent to which bargaining power forces matter in household decisions, using data from the 2000 US Census.

The phenomena of immigrants‟ labor market outcomes and the influence of their cultural background on one side, and intra-household bargaining power and household decision-making on the other, have been widely studied in the literature. A large body of theoretical and empirical literature shows that the intra-household distribution of power influences households‟ outcomes in both developing and developed countries (Chiappori, Fortin, Lacroix, 2002; Grossbard-Shechtman, 1993; Grossbard and Amuedo-Dorantes, 2007; Lundberg and Pollak, 1996; Schultz, 1990; Thomas, 1990). In particular, the collective household behavior model predicts that household members make Pareto-efficient decisions according to their respective bargaining power positions, which in turn depend on outside opportunities and social and legal factors, such as members‟ relative share of non-labor income, their age differences, and abortion and divorce laws (Browning, Bourguignon, Chiappori, Lechene, 1994; Chiappori et al., 2002; Oreffice, 2007).

There is empirical evidence of these bargaining power effects concerning various countries, from different cultures and parts of the world (Grossbard-Shechtman, 2003; Rangel, 2006; Reggio, 2011; Schultz, 1990; Thomas, 1990). While each of these empirical studies has focused on one country, no emphasis has been devoted to differences across ethnicities within a country. A notable exception is represented by Gupta and Stratton‟s (2010) two-country analysis (US and Denmark). These authors argue that different social norms across countries can affect intra-household bargaining power, mitigating or reinforcing the bargaining effect on couples‟ decisions concerning leisure and labor supply. Still, a general comparison of the role of bargaining power forces in household decisions across different cultural and ethnic backgrounds is called for.

A recent strand of literature specifically emphasizes the role of culture and family experience on economic outcomes such as female labor force participation and fertility choices, and on the marriage market. Blau, Kahn, and Papps (2011), Fernandez and Fogli (2006, 2009), and Fernandez (2007) show that culture, as measured by female labor force participation rate and total fertility in country of origin, explains fertility and labor market choices of American women living in the US but born from foreign parents, while male labor supply is not affected by the country of origin. Using the same US Census data and the same sources of variation for cultural differences such as country of origin, length of stay in the US, and linguistic distance, related literature studies the determinants of interethnic marriages and living arrangements (e.g., Angrist, 2002; Chiswick, Houseworth, 2010; Furtado and Theodoropoulos, 2011; Giuliano, 2007). In particular, Giuliano (2007) emphasizes the importance of analyzing the role of culture in a “neutral environment”, using samples drawn from the population of only one country. Finally, culture and especially immigration has also

been linked to labor market activity and the extent of wage and employment consequences for native and foreign-born workers (e.g., Borjas, 1999; Adserà and Chiswick, 2007), but the present work is only indirectly linked to this latter field.

All these studies highlight that the main challenge in this line of research is to *disentangle* culture from institutional and traditional economic variables such as prices and income. Indeed, this paper addresses this feature using a common large data set such as the US Census, with native and foreign-born individuals from a large variety of countries at different stages of development and judgment of gender roles in society, who live and work in the US, facing the same institutions and also the same bargaining power measures.

Neither the literature on household decision-making and balance of power nor the studies on culture and labor supply or interethnic marriages account for the intra-household aspects of spouses‟ ethnicity. Actually, they do not consider an additional and potentially relevant mechanism through which culture affects couples‟ labor supplies and household decisions in general, which is their responsiveness to bargaining power forces and how culture can mitigate or reinforce gender empowerment through this channel.

This cultural mechanism through which intra-household bargaining power and couples‟ labor supplies may be related, is analyzed here using the five-percent national random sample of the 2000 US Census data on husbands and wives. Specifically, I investigate the extent to which spouses from different ethnicities respond heterogeneously to bargaining power forces in the US, as measured by the gaps in spouses‟ ages, and non-labor income, within a collective household labor supply framework. The recent immigration waves throughout Europe and the US, along with the sizable presence in the US of immigrants from a variety of ethnical backgrounds prompt to explore whether household decision-making depends on spouses‟ ethnicity and their gender roles models of reference.

The US Census data provide the most recent largest sample of households with foreign-born spouses, their detailed ethnic, demographic, labor and income information, along with standard samples of US-native individuals. The degree of cultural differences from the US mainstream is captured through the information on the country of birth of each spouse, and the country mainstream beliefs on women‟s family and labor market roles. Following the definition of culture offered by Fernandez (2007), I consider culture as a set of beliefs and preferences, which are important determinants of behavior. The cultural proxies of both the husband and the wife are analyzed, as the husbands‟ culture may be important in driving work decisions and household responsiveness to bargaining power forces (Fernandez and Fogli, 2009).

I focus on recent (first generation) immigrants, who are less likely to have assimilated and mitigated their culture and beliefs to the US mainstream, to better capture the corresponding disparities in the bargaining power effects at stake. Individuals in my sample face the same markets and institutions by construction, so that only the belief and preference components (the cultural components) are potentially relevant. The main assumption here is that

immigrants bring with them some of the attitudes of their country of origin (Carroll, Rhee, and Rhee, 1994). Then, since they differ by their own cultural heritage, it is still possible to estimate the impact of cultural differences on a common set of variables, as such eliminating unobserved heterogeneity and comparability concerns which would result from cross-country estimation from separate data sets.

I am not aware of any previous study exploring the role of cultural background when analyzing the influence of intra-household bargaining power on labor supplies of couples living in the same country. In particular, the importance of this novel approach rests in providing an empirical assessment and cross-culture comparisons which may be useful to devise public policies targeting immigrant households and their women in particular. These households may be the ones least likely to respond and take advantage of an "empowerment" policy, because of their cultural background "constraining" them to ignore outside opportunities and welfare enhancement measures.

The focus here is on the differences in age and non-labor income ownership between spouses as indicators of intra-household bargaining power. The distributions of these traits within a couple, which capture each spouse‟s outside opportunities, are commonly estimated to have a significant impact on household choices such as labor supply, clothing expenditure and children‟s health (Browning et al., 1994; Browning, Chiappori, and Weiss, 2011; Grossbard-Shechtman, 1993; Grossbard and Amuedo-Dorantes, 2007; Schultz, 1990; Thomas, 1990), consistently with them representing bargaining power forces. When a spouse has a relatively better trait (relatively richer or older), the distribution of gains from the relationship would shift in his/her favor, generating opposite income effects on the spouses. Consequently, the spouse with a more favorable bargaining position would decrease his/her labor supply, while his/her mate would increase his/hers (Browning et al., 1994; Chiappori et al., 2002).

My identification strategy consists of estimating the associations of intra-household age and non-labor income gaps with both spouses‟ labor supplies, comparing differences in their labor supplies cross-sectionally among US-born, and foreign-born couples with various extents of cultural disparities. I test whether these bargaining power forces have stronger labor supply responses on married individuals with an ethnic background supporting more egalitarian gender roles. This study thus considers individuals who are already married to men and women of their same cultural background, leaving aside the interesting patterns of intermarriage or sorting by ethnicity, which have recently been empirically analyzed in Furtado and Theodoroupoulos (2011).

The empirical analysis shows that the labor supplies of US-born spouses are more responsive to the differences between spouses in age and non-labor income, than the labor supplies of couples where spouses belong to ethnicities supporting a traditional role of women. In US-born couples, and in those coming from countries with family institutions

similar to the US[1], a relatively older, or richer spouse supplies less labor, the opposite holding for his/her mate, controlling for both spouses' demographic and socioeconomic characteristics. This first piece of evidence on both spouses' labor supplies, and the signs of the estimated coefficients is consistent with the household bargaining power interpretation. Interestingly, households whose culture of origin is quite different and more "traditional" than the US do not exhibit any relationship between this measured balance of power and their labor supply decisions.

This evidence reveals that US-born married men work fewer annual hours the older, and/or the richer, they are relatively to their wives. A 5-year difference implies working about 12 hours less, and a 5,000 dollars more of non-labor income relative to their wives implies about 9 hours less. For wives, the corresponding figures are 8 and 50 hours more. While the foreign-born with cultural differences from the US do not exhibit any significant impact of these differences, those immigrant households with cultural background very similar to the US show a significant association with these bargaining power measures: for husbands, 25 and 12 hours less, and for their wives 26 and 50 hours more. The estimated correlation of labor supply and age difference is higher in magnitude than in the case of US-born couples. These estimates suggest that spousal traits and empowerment are assessed differently across couples within the US, according to their culture of origin.

The paper is organized as follows. Section 2 introduces the theoretical framework. Section 3 describes the empirical specification and the data. Section 4 presents the empirical results and robustness checks, while Section 5 considers alternative explanations. Finally, Section 6 concludes the paper.

2. Theoretical Framework

The collective household labor supply model with distribution factors(Chiappori et al., 2002) is applied to US-born and foreign-born couples with different degrees of cultural disparities with respect to the US, and thus with a potentially different responsiveness to bargaining power forces. A household is composed of two decision makers, husband and wife, each having a distinct utility function on consumption and leisure, and making Pareto-efficient decisions. Preferences are egoistic, in that one mate's utility does not depend on the other's consumption or leisure, although the model can be extended to allow for caring preferences and public goods. Let h^i and C^i for $i = h, w$ denote member i's labor supply and consumption of a private composite good (whose price is normalized to unity), y the household non-labor income, w_i the wage rate of spouse i, and z_i possible preference parameters and ethnic background of each spouse, such as education, race, country of birth, intensity of cultural beliefs. Finally, let s_1 and s_2 represent the two distribution factors

[1] The similarity of institutions is defined according to the country of origin, and categorized in the three groups "very similar", "somewhat similar", and "different" from the US culture, as detailed in Section 3.1.

(bargaining power forces) under analysis: the differences between spouses in non-labor income and age. The utility function of member $i = h, w$ is $U^i(1-h^i, C^i)$, where U is strictly quasi-concave, increasing, and continuously differentiable, while, following convention, the utility from companionship is assumed to be additive and not to influence the trade-off between leisure and consumption.

The optimal allocations of labor supply of each spouse are determined by the following program:

$$\max_{h^h, C^h} U^h(1-h^h, C^h)$$

subject to

$$C^h \leq \varphi(w_h, w_w, y, s_1, s_2, z_h, z_w) + w_h h^h$$

where the spouse faces a symmetric problem. $\varphi(w_h, w_w, y, s_1, s_2, z_h, z_w)$ represents the husband's share of non-labor income y, while the wife receives $y - \varphi(w_h, w_w, y, s_1, s_2, z_h, z_w)$, so that the stronger the husband's bargaining power, the higher his share of non-labor income and the lower his wife's. The sharing rule $\varphi(w_h, w_w, y, s_1, s_2, z_h, z_w)$ is a function of prices (here normalized to unity), spouses' wages, household non-labor income, distribution factors (here the non-labor income gap and age gap)[2], and other observable characteristics z (preference and ethnicity parameters).

The couple's Pareto-efficient decisions yield the following equilibrium labor supply functions of the two spouses:

$$h^h = h^h[w_h, \varphi(w_h, w_w, y, s_1, s_2, z_h, z_w)]$$

$$h^w = h^w[w_w, y - \varphi(w_h, w_w, y, s_1, s_2, z_h, z_w)]$$

The derivatives of each labor supply function with respect to the second arguments are expected to be negative, reflecting a pure income effect (leisure is commonly assumed to be a normal good). Hence, factors that strengthen the husband's bargaining power reduce the labor supplied by the husband and increase the labor supplied by the wife, ceteris paribus, in particular controlling for own wage and the couples' total non-labor income y. I empirically investigate whether foreign-born couples' hours of work are related to such factors in the direction predicted by the theory and already estimated for US-born couples in general, by testing their relationship on the labor supplies of foreign-born couples from different cultural backgrounds, and comparing it to the corresponding one of US-born spouses.

[2] The sex ratio, divorce laws, abortion legalization, alimony, and child benefits laws, are other examples of distribution factors that have been studied in the literature on heterosexual households (Chiappori et al, 2002; Lundberg and Pollak, 1996; Oreffice, 2007).

The decisions of spouses whose country of origin supports strict gender roles and traditional family institutions relative to the US, may be very weakly related to bargaining power forces. Their household behavior may reflect a setting where spousal personal characteristics and outside opportunities do not influence their household decision-making. The non-labor income difference and age differences represent relevant monetary and demographic personal traits also enhancing spouses‟ outside opportunities, which have been extensively estimated to be sources of bargaining power (e.g., Browning et al., 2011). If they did not significantly enter an immigrant couple‟s decision process, this would suggest that its cultural background inhibits this mechanism and any actual intra-household bargaining, so that the labor supplies of this type of couples would not depend on these factors.

The following empirical analysis specifically tests the predictions of Chiappori et al. (2002) which were developed for married working couples. Within this framework, this study as well mainly focuses on marriages where both individuals are working, subsequently extending the estimation to include individuals who do not work, through a Heckman‟s sample selection model.

3. Empirical Specification and Data Description

3.1 Identification Strategy

The main sample under analysis consists of married couples with both spouses between 18 and 65 years of age. I identify US-born and foreign-born spouses using information on the person‟s place of birth, further categorizing foreign-born couples according to their specific country of origin and to whether husband and wife share the same cultural background[3]. The focus is on first generation immigrants, as a differential impact of bargaining power forces should be more pronounced for those who actually were born and spent some time in a country different from the US. Recent immigrants are less likely to have assimilated and mitigated their culture and beliefs to the US mainstream (Antecol, 2000). Individuals in the sample face the same markets and institutions, however, since they may differ by their own and/or their spouses‟ cultural heritage, it is still possible to estimate the impact of cultural differences on a common set of variables, as such eliminating unobserved heterogeneity and comparability concerns which would result from cross-country estimation from separate data sets (Fortin, 2005).

Spouses are defined to share the same cultural background if they are from the same country of origin, or from different countries of origin provided that these are characterized by similar prevailing beliefs in terms of gender roles, family institutions, and religion. To establish these comparisons, I follow a similar procedure to Carroll et al. (1994) and Antecol (2000), who identify sets of countries where the prevailing beliefs are comparable to the US

[3] Country of birth is considered a more robust measure than ancestry (e.g., Chiswick and Houseworth, 2011).

ones, and others where they are different, assuming that there are cultural similarities among the countries of each of these groups. More refined groups of countries are used here than in Carroll et al. (1994). Specifically, I construct dummy variables for each of the following set of countries, *according to views of gender roles in the family and society overall*: countries with culture very different from the US, i.e., all Central and South American countries, all Asian countries but China, all African and Middle-Eastern countries; countries with a somewhat similar culture to the US., i.e., Spain, Greece, Italy, Malta, Portugal, Cypro, Bulgaria, Check Republic, Slovakia, Hungary, Poland, Romania, Baltic Republics, China; countries with a very similar culture to the US, i.e., Canada, Scandinavian countries, UK, Austria, Germany, Belgium, France, Liechtenstein, Luxemburg, Monaco, Netherlands, Switzerland, Australia, New Zeland. This "full dummy controls" approach does not impose any restrictions on the influence of the country of birth, whereas specifications with female labor force participation or total fertility rates would, so that the former method is preferred here (e.g., Antecol, 2000 for a discussion of this advantage).

Moreover, excluded from the sample are all individuals in school, in the military, in farm households, or not working. A couple consists of the head of the household and his/her spouse, sorted into husbands and wives, controlling for the gender of the household head through a dummy variable[4]. Only couples where both the head and the spouse are actually present are considered, while I exclude households where there are multiple spouses, or more than two adults.

The following labor supply equations are estimated for husbands and wives, and run separately on each type of couples, US-born, foreign-born, and foreign-born divided into the three above categories reflecting different degrees of cultural similarity to the US:

$$h^h = \alpha_1 \ln w^h + \alpha_2 \ln w^w + \alpha_3 y + \gamma_1 y\_diff + \gamma_2 age\_diff + \delta X + \varepsilon^h$$

$$h^w = \beta_1 \ln w^h + \beta_2 \ln w^w + \beta_3 y + \lambda_1 y\_diff + \lambda_2 age\_diff + \psi X + \varepsilon^w$$

where the dependent variable is total annual hours worked in the previous year, and *y_diff* and *age_diff* are the two bargaining power factors under consideration[5]. The former is defined as the husband‟s total non-labor income in dollars minus the wife‟s total non-labor income in dollars, while the latter as the husband‟s age in years minus the wife‟s age in years. Both the individual non-labor income and age variables do not have any missing values and their differences can be either positive or negative, or zero[6]. In the Census, the age and all the

[4] The Census defines the head as the individual who owns the housing unit or signs the rental contract, and the partner/spouse is the individual who identifies himself/herself as such.

[5] The difference (ratio) in educational attainment across partners was also explored, but it did not exhibit any impact on household labor supplies, as in Browning et al. (1994).

[6] The ratio of non-labor incomes and the ratio of ages were used as alternative distribution factors. However, the former is not defined for the several couples with no non-labor income, and they both introduce non-linearities in the labor supply equations.

income questions are asked to each adult in the household, so that their measures are self-reported, rather than reported by a proxy respondent.

The identification strategy of these bargaining power factors consists of estimating γ_1 and γ_2 for husbands, and λ_1 and λ_2 for wives and comparing these estimates across couples with different cultural backgrounds. The role of the non-labor income difference on the labor supply of husbands and wives is captured by γ_1 and λ_1. According to the collective labor supply framework, if a spouse is relatively richer, then his/her labor supply should be lower and the labor supply of his/her mate should be higher than in other households without this income disparity. Hence, γ_1 should be negative, while λ_1 should be positive. The corresponding coefficients for age difference are γ_2 and λ_2. If being relatively older is a favorable trait associated to higher intra-household bargaining power, so that the older spouse‟s labor supply should be lower and the labor supply of his/her mate should be higher than in the absence of this age gap, then γ_2 should be negative and λ_2 positive.

The other regressors are the logarithm of the hourly wage rate w^i of each spouse $i = h, w$, the couple‟s total non-labor income y[7], and a vector of covariates X. X includes education of each spouse (number of completed years of schooling), number of each spouse‟s own children living in the household, citizenship status, and only own age of spouse i, so that the effect of *age_diff* can be identified. Dummy variables for racial profiles are also included at the individual level. Taking into account education can eliminate the indirect effect that culture may have on spouses‟ labor supply choices, as those individuals‟ (especially women‟s) who work in the labor market due to their cultural background, are also more likely to be more highly educated. This aspect should not interfere with the effect of the bargaining power variables.

The vector X also includes state fixed effects, which should capture the different labor market opportunities and social and legal attitudes toward immigrants and interethnic couples that exist across states.[8] Robust standard errors clustered by state are used to allow for correlation of household observations within state. I alternatively clustered by metropolitan area (or microdata area „puma‟ or „conspuma‟)[9]. My specifications do not use a differences-in-differences estimator: husbands‟ and wives‟ regressions are estimated separately, across types of couples. As such, they should not suffer from the understated standard errors

[7] All wage and income variables refer to the previous year 1999. I consider individuals who are not self-employed, so that earned income coincides with wage income, and non-labor income indeed represents non-earned income sources. Results are robust to the inclusion of the self-employed (less than 10 percent of my samples).

[8] Alternatively, I include the state unemployment rate, the state total labor force participation and female labor force participation, to control for the level of economic activity in a state, and especially for employment opportunities.

[9] The Census reports that many metropolitan areas have only been partially identified in 2000, and that "users should not assume that the identified portion of a partly-identified metropolitan area is a representative sample of the entire metropolitan area". Therefore the main specifications above are clustered by state.

highlighted by Bertrand, Duflo, and Mullainathan (2004). At any rate, clustering by state (metropolitan area) should rectify such an underestimation, if it is present.

The focus here is on working individuals. However, results are robust to the inclusion of non-working spouses in the estimation of each spouse‟s labor supply equation, accounting for a potential selection bias toward working individuals, by correcting for sample selection with Heckman‟s sample selection model, estimated by means of maximum likelihood. The selection equation for the head is given by:

$$P^h = \varphi_1 y + \Phi_2 y\_diff + \Phi_3 age\_diff + \Theta young\_ch^h + \Gamma X + u^h$$

where the dependent variable is whether the individual participates in the labor market, and young children $young\_ch^h$ (defined as "the number of own children age 4 and under"), affects only the participation decision, i.e., it is the exclusion restriction.

The outcome equation for the head is given by

$$h^h = \alpha_1 \ln w^h + \alpha_2 \ln w^p + \alpha_3 y + \gamma_1 y\_diff + \gamma_2 age\_diff + \delta X + \varepsilon^h$$

where the dependent variable is total annual hours worked in the previous year and the other covariates were described above[10]. These equations are similarly defined for the spouse. As it is well-known, the assumption about normality on the distribution of u^h and ε^h can be used as a source of identification, since the inverse mills ratio is a non-linear function of the variables in the selection equation. However, I am also including young children as exclusion restriction. Both procedures yield similar robust results.

3.2 Data Description

Estimation is carried out on the US Census data for the year 2000, specifically its five-percent sample "5% IPUMS data" (1-in-20 national random sample of the population), which provides the most recent largest sample of households with foreign-born spouses, their detailed ethnic, demographic, labor and income information, along with standard samples of US-born individuals. These data allow to identify the country of birth of household members, along with the number of years already spent living in the US (both in terms of time since first entered in the US, and years lived in the US). These latter variables capture the accumulation of US-specific human capital, and may also proxy for marital duration, and will

[10] Predicted wages are used to measure the non-working spouses‟ wages and to address the possible endogeneity of individuals‟ observed wages. To predict individuals‟ wages, a standard human capital approach is implemented, as it has been in the collective labor-supply literature (e.g., Donni, 2007), through a wage equation in which wage depends on the individual‟s age, race, education, education squared, and education cubed, but does not depend on his/her spouse‟s characteristics. This equation is then estimated separately for husbands and wives, with a correction for selection bias. This participation decision depends on the number of children, dummies for age brackets, education, race and measures of local economy. The fitted values thus generated then replace the wage observations of the corresponding individuals in the samples (Tables report estimation with the predicted spouse‟s and own wages).

be used as additional controls. Many cross-country differences in the economic environment are difficult to capture with aggregate statistics, so that cross-country analyses may fail because of mis-measuring or omitting important variables. The advantage of the approach at stake to use US Census household level data from a single country is that all the immigrants face the same economic environment and institutions. Also, within-country studies provide better controls for human capital and labor factors, such as education (Antecol, 2000).

Specifically, a random sample (50 percent) of married "heads" and "spouses" were extracted from the Census using the variables "relationship to household head" and "marital status". Records in these files were then matched on the household identification code "serial" to create a single observation for each couple. Using the variable "sex", couples with the head being the husband were then identified with a dummy variable index. Individuals with imputed values for sex, marital status, relationship to household head and country of origin were excluded from the main samples (about 1% of observations are dropped). This method prevents couples from being misclassified, in particular in terms of cultural backgrounds.

Individual weights are used to make the sample representative of the US population and economy. The state unemployment rate, state total labor force participation and female labor force participation are retrieved from the Bureau of Labor Statistics. Couples of US-born spouses are restricted to non-Hispanic whites, to hold a uniform reference group representing US culture.

Table 1 presents the descriptive statistics for the husbands' and wives' main variables, by type of couple. On average, wives are younger, less educated, earn a lower wage and work fewer hours than their spouses, regardless of their US or foreign-born status. In the US-born samples, spouses are more similar in terms of age, education and hours worked. The more dissimilar to US culture, the less educated couples are. On average, the age difference is about 1.98 for US-born and 2.83 years for foreign-born ones overall, while the non-labor income difference is around $ 2,002 and $ 1,285, respectively. Both of these differences exhibit a sizable variation in all these samples, the standard deviations being several times larger than their means.

Table 1. Summary Statistics

	All Couples				American Couples				Foreign Couples			
	Husbands		Wives		Husbands		Wives		Husbands		Wives	
Variable	mean	std. dev	mean	std. dev	mean	std. dev	mean	std. dev	mean	std. dev	mean	std. dev
Age_diff	2.18	4.53	2.18	4.53	1.98	4.23	1.98	4.23	2.82	4.14	2.82	4.14
Y_diff	3543	18115	3543	18115	2002	13851	2002	13851	1285	11362	1285	11362
Hours worked*	2007	887	1252	975	2247	596	1713	707	2079	672	1690	734
Log of wage*	2.92	.69	2.54	.66	2.93	.64	2.55	.64	2.72	.75	2.43	.73
Age	44.43	10.75	42.26	10.51	43.42	10.13	41.43	9.83	43.06	9.8	40.24	9.45
Education	13.25	2.71	13.16	2.50	13.64	2.22	13.66	2.05	12.32	4.16	12.17	3.94
Couple's non-labor income Y	6695	20901	6695	20901	4228	16005	4228	16005	2762	13659	2762	13659
Number of children	1.27	1.22	1.27	1.22	1.18	1.12	1.18	1.12	1.74	1.31	1.74	1.31
Number of observations	446614		446614		407181		407181		39433		39433	

	Foreign Couples with different culture from US				Foreign Couples with somewhat similar culture to US				Foreign Couples with very similar culture to US			
	Heads		Partners		Heads		Partners		Husbands		Wives	
Variable	mean	std. dev	mean	std. dev	mean	std. dev	mean	std. dev	mean	std. dev	mean	std. dev
Age_diff	2.84	4.89	2.84	4.89	2.89	4.03	2.89	4.03	2.18	4.24	2.18	4.24
Y_diff	876.86	9644	876.86	9644	1767	13436	1767	13436	7449	35999	7449	35999
Hours worked*	2049	661	1664	731	2122	683	1787	720	2281	743	1664	815
Log of wage*	2.65	.73	2.37	.73	2.84	.77	2.55	.73	3.13	.82	2.70	.71
Age	42.21	9.67	39.37	9.32	45.47	9.44	42.58	8.95	46.92	10.44	44.74	10.28
Education	11.79	4.18	11.69	3.99	13.62	3.96	13.34	3.65	14.32	2.93	13.87	2.55
Couple's non-labor income Y	2085	11052	2085	11052	4249	17801	4249	17801	14188	39157	14188	39157
Number of children	1.90	1.34	1.90	1.34	1.34	1.024	1.34	1.024	1.09	1.22	1.09	1.22
Number of observations	29449		29449		7003		7003		2981		2981	

Data from the U.S. Census year 2000, five percent sample of the Public Use Microdata Set (PUMS).

Age_diff (Y_diff) is defined as husband's age (total non-labor income) minus wife's age (total non-labor income).

*For women and men with positive hours of work.

4. Results

4.1 Main Evidence

Table 2 presents the results of several regressions where the dependent variable is the husbands‟ or the wives‟ annual hours of work (our measure of labor supply), separately for couples of different cultural backgrounds.

Columns 1-4 and 11-12 show a negative significant relationship of the age and income differences on the hours worked by married men, whereas for married women the coefficients are positive significant, controlling for both spouses‟ demographic and socioeconomic characteristics. The older or richer husbands are, the lower their labor supply and the higher the labor supply of their wives, in the overall sample, in US-born couples or in foreign-born couples whose cultural background is very similar to the US. The older (richer) spouse may hold a more favorable bargaining position and works less, while his/her mate works more. Specifically, in US-born couples, a 5 year difference is associated to working about 12 hours less, and a 5,000 dollars more non-labor income to about 9 hours less. For wives, the corresponding figures are 8 and 50 hours more. While the foreign-born with actual cultural differences from the US do not exhibit any significant association with these differences (columns 7-10), those immigrant households with a cultural background very similar to the US show a significant and larger response to these bargaining power measures: for husbands, 25 and 12 hours less, and for their wives 26 and 50 hours more. The fact that these couples seem more responsive to bargaining power than US-born spouses, may reflect the fact that these type of immigrant couples react to changes in the environment and in outside opportunities, as shown by their decision to migrate to another country.

As reported in columns 7-10, in couples whose ethnicity has a more traditional view on gender roles, spouses do not tend to work more or fewer hours according to the balance of power measures of age and income differences. This independence of their labor supply may strengthen the household-bargaining interpretation of the labor supply responses of the other groups of couples, insofar as these two specific factors are present in the household power balance, as extensively found in the literature (e.g., Browning, et al., 2011). More traditional gender roles attitudes may prevent individuals from taking into account of and responding to balance of power incentives. Only immigrant couples whose cultural background is very similar to the US seem to respond to bargaining power forces in the direction predicted and found for US-born couples. It may also be the case that a strong disparity in cultural background is associated to more rigid labor supplies due to job type or commitment to work of these immigrants, so that the power factor measured here would not play any role along the labor supply dimension.

Table 2. Labor Supply Regressions of Age and Non-Labor Income differences on US-born, and Foreign-born Married Couples, by Culture

	All Couples		American Couples		Foreign Couples	
	Husbands	**Wives**	**Husbands**	**Wives**	**Husbands**	**Wives**
	(1)	(2)	(3)	(4)	(5)	(6)
Age_diff	**-2.16** ***	**1.035** ***	**-2.42** ***	**1.682** ***	-1.83	-.796
	(.324)	**(2.66)**	**(.354)**	**(.284)**	(.843)	(.713)
Y_diff	**-.0015** ***	**.01** ***	**-.0017** ***	**.01** ***	.0002	**.0098*** **
	(.0001)	**(.0006)**	**(.0001)**	**(.0006)**	(.0003)	**(.0005)**
Number of observations	446614	446614	407181	407181	39433	39433

	Foreign Couples with different culture from US		Foreign Couples with somewhat similar culture to US		Foreign Couples with very similar culture to US	
	Husbands	**Wives**	**Husbands**	**Wives**	**Husbands**	**Wives**
	(7)	(8)	(9)	(10)	(11)	(12)
Age_diff	-1.36	-.88	-2.15	-2.24	**-5.04** ***	**5.39***
	(.948)	(.627)	(1.61)	(1.35)	**(.743)**	**(3.16)**
Y_diff	.0002	.01	-.0002	.009 ***	**-.0023** **	**.009*** **
	(.0006)	(.0008)	(.0006)	(.0009)	**(.0011)**	**(.001)**
Number of observations	29449	29449	7003	7003	2981	2981

* ; ** ; *** significant at 10 %, 5% and 1 %. Estimated coefficients, robust standard errors (in parenthesis) clustered by state.

These findings point toward married US-native and US-similar couples valuing being relatively old, controlling for wages and education of each spouse, and for individual age. This evidence is consistent with what is found in the literature, where the spouses‟ age difference is considered a traditional measure of bargaining power, and the older spouse has a favorable position (e.g. Browning et al., 1994). The same holds in regard of the significance of the non-labor income gap, showing that income pooling may not hold for the US-born or US-similar couples, in line with the several empirical tests in the literature (e.g., Browining et al., 2011K Browning et al., 1994).

Couples‟ significant relationship between these forces and labor supply responses are sizable, corresponding to several days of work a year. The concurrent significance on both spouses, and with opposite outcomes, is remarkable given the acknowledged rigidities in the labor supplies, and the frequency of the reported labor supply peaking around 40 hours of work per week. Traditional analyses do not emphasize changes by both spouses, let alone their labor supply responding to bargaining power forces.

Moreover, no study finds that households‟ labor supply decisions are related to differences in non-labor income ownership and age according to their cultural background, suggesting that they may reflect the collective household behavior of US-born couples. The intra-household decision process does not appear to vary by foreign status per se, but it depends on the specific culture views on gender roles. These findings also show that income pooling does not hold for either US-born or immigrant couples whose culture is very similar to the US. So far, the income pooling hypothesis and the prediction that bargaining power forces are irrelevant to intra-household decisions had been empirically rejected for several countries and time periods (Bonke and Browning, 2009; Browning et al., 1994; Grossbard-Shechtman, 1993; Grossbard and Amuedo-Dorantes, 2007; Schultz, 1990; Thomas, 1990).

Tables 3 and 4 present the corresponding regression results with all the estimated coefficients. As to the other covariates in the labor supply equations, most parameter estimates for all couples are comparable to the literature. In particular, the spouses‟ own wage response is negative significant, as is the cross-wage effects between spouses‟ labor supplies. The couple‟s total non-labor income and own age have a negative effect on labor supply, while education has a positive impact, although the coefficients are not always precisely estimated. Children living in the household are associated with fewer hours of work for wives, but the opposite holds for husbands, for whom children have a positive effect on labor supply. These estimates are in line with the findings in the household labor supply literature, reported for instance in Blundell and MaCurdy (1998).

Overall, the findings presented here are consistent with the spousal ethnical background mediating the role of bargaining power in household decisions, also suggesting that spousal traits and their differences are not uniformly associated to labor supply across couples within the US. Their responsiveness to a common economic and institutional environment may depend on their ethnicities. From a policy perspective, these comparisons can help to devise

Table 3. Estimation of the Labor Supply Regressions of US-born, and Foreign-born Married Couples

	All Couples		**American Couples**		**Foreign Couples**	
	Husbands	**Wives**	**Husbands**	**Wives**	**Husbands**	**Wives**
	(1)	(2)	(3)	(4)	(5)	(6)
Age_diff	**-2.16 *****	**1.035 *****	**-2.42 *****	**1.682 *****	-1.83	**-.796**
	(.324)	**(2.66)**	**(.354)**	**(.284)**	(.843)	(.713)
Y_diff	**-.0015 *****	**.01 *****	**-.0017 *****	**.01 *****	.0002	**.0098 *****
	(.0001)	**(.0006)**	**(.0001)**	**(.0006)**	(.0003)	**(.0005)**
Couple's non-labor income Y	-.0013 ***	-.012 ***	**-.002** ***	-.012 ***	.0016 ***	-.011 ***
	(.0001)	(.0005)	(.0001)	(.0006)	(.0003)	(.0005)
Log of wage of husband	-107.8 ***	-91.56 ***	-106.33 ***	-100.58 ***	-157.39 ***	-49.58 ***
	(6.13)	(3.13)	(5.91)	(3.47)	(7.67)	(6.89)
Log of wage of wife	-8.88 ***	-423.99 ***	14.72 ***	-408.19 ***	-.49	-501.38 ***
	2.24	(10.86)	(2.48)	(14.81)	(6.62)	(15.96)
Own Age	-2.53 ***	1.22 ***	-3.35 ***	.405	.71	6.48 ***
	(.32)	(.28)	(.37)	(.27)	(.854)	(.401)
Education of husband	37.39 ***	-7.53 ***	37.46 ***	-12.48 ***	25.22 ***	5.12 **
	(.512)	(1.69)	(.69)	(.66)	(.974)	(2.33)
Education of wife	12.45	16.12 ***	9.68 ***	15.14 ***	11.17 ***	14.94 ***
	(.834)	(1.28)	(.69)	(1.52)	(1.53)	(1.86)
Number of children	22.23 ***	-67.45 ***	31.03 ***	-80.35 ***	8.11	-15.55 ***
	(2.09)	(2.92)	(1.41)	(3.49)	(5.57)	(3.27)
Number of observations	446614	446614	407181	407181	39433	39433

* ; ** ; *** significant at 10 %, 5% and 1 %. Estimated coefficients, robust standard errors (in parenthesis) clustered by state

Table 4. Estimation of the Labor Supply Regressions of Foreign Born Married Couples by Culture

	Foreign Couples with different culture from US		Foreign Couples with somewhat similar culture to US		Foreign Couples with very similar culture to US	
	Husbands	**Wives**	**Husbands**	**Wives**	**Husbands**	**Wives**
	(5)	(6)	(7)	(8)	(9)	(10)
Age_diff	-1.36	-.88	-2.15	-2.24	**-5.04** ***	**5.39***
	(.948)	(.627)	(1.61)	(1.35)	**(.743)**	**-3.16**
Y_diff	.0002	.01	-.0002	.009	**-.0023** **	**.009*****
	(.0006)	(.0008)	(.0006)	(.0009)	**(.0011)**	**(.001)**
Couple's non-labor income Y	.0021 ***	-.013 ***	.0011 ***	-.009 ***	.0026 ***	.009***
	(.0005)	(.0009)	(.0005)	(.0009)	(.0008)	(.002)
Log of wage of husband	-178.09 ***	-38.92 ***	-144.94 ***	-55.19 ***	-44.39 *	-129.98 ***
	(9.22)	(8.75)	(13.70)	(15.46)	(27.15)	(20.56)
Log of wage of wife	-.19' ***	-507.02 ***	11.59	-537.72 ***	-51.66	-450.21 ***
	(8.61)	(17.80)	(12.56)	(30.18)	(34.56)	(49.64)
Own Age	-.066	6.65 ***	-2.03	4.62 ***	10.87 *	-.379
	(.641)	(.492)	(1.59)	(.849)	(6.48)	(1.87)
Education of husband	24.37 ***	7.37 ***	20.05 ***	-.384	46.38 ***	-24.14 ***
	(1.22)	(2.23)	(3.49)	(3.23)	(15.64)	(6.86)
Education of wife	12.18	12.23 ***	5.24	15.99 ***	-.305	27.12 **
	(1.54)	(2.04)	(4.32)	(4.69)	(15.55)	(8.26)
Number of children	11.01 *	-11.49 ***	20.45 *	-12.93 ***	13.62	-81.82 ***
	(5.78)	(3.49)	(11.60)	(7.86)	(20.09)	(13.84)
Number of observations	29449	29449	7003	7003	2981	2981

* ; ** ; *** significant at 10 %, 5% and 1 %. Estimated coefficients, robust standard errors (in parenthesis) clustered by state.

public policies targeting immigrant households and their female members in particular, as these households may be the ones least likely to respond to family policies or to social and institutional factors due to their cultural background "constraining" them to ignore outside opportunities and welfare enhancement measures.

4.2 Additional Findings

Seeminlgy unrelated regressions are presented to fully account for the joint decisions of husbands and wives, and the potential correlation between their unobservables. Table 5 shows the corresponding estimates, for all types of couples. The significant associations between age or income differences, and spouses‟ hours of work, reflect the same pattern as in the main findings of Table 2, where controls for spouses‟ characteristics were already present and the standard errors instead accounted for heteroskedasticity and clustered by state.

The bargaining power factors are significant for US-born couples and for those foreign ones with similar cultural background to the US. Other types of foreign born couples do not exhibit any association, not even when the standard errors account for the significant correlation at the couple level. Finally, one can see that this correlation appears stronger among foreign-born couples than American ones[11].

Table 6 reports the maximum likelihood estimates of the Heckman‟s sample selection model described in Section 3. Its analysis and the comparison between these Heckman selection estimations and the main estimations on working couples presented in Table 2 clearly indicate that controlling or not for sample selection does not affect the associations between age and income gaps and couples‟ labor supplies. The significance and the relevance of these possible bargaining power factors are not altered in any group of households. Indeed, the strength of this entire empirical evidence rests on the fact that, with and without selection, the same qualitative results are obtained in terms of significance, signs, for all types of couples. Quantitatively, the estimates of the coefficients of interest are also similar, as can be seen in Table 6.

[11] The Breusch-Pagan tests do not reject the correlations, for all types of couples.

Table 5. Labor Supply SUR Regressions of Age, Non-Labor Income differences on US- and Foreign-born Married Couples, by Culture

	All Couples		American Couples		Foreign Couples	
	Husbands	**Wives**	**Husbands**	**Wives**	**Husbands**	**Wives**
	(1)	(2)	(3)	(4)	(5)	(6)
Age_diff	**-2.10 *** **	**1.04 *** **	**-2.42 *** **	**1.684 *** **	-1.83 **	-.803
	(.194)	**(.185)**	**(.226)**	**(.220)**	(.734)	(.678)
Y_diff	**-.0016 *** **	**.01 *** **	**-.0016 *** **	**.01 *** **	.0002	**.0096*** **
	(.0007)	**(.00008)**	**(.00008)**	**(.00008)**	(.0003)	**(.0003)**
Correlation error terms	.0522		.0358		.1437	
Breusch Pagan Test X2 (P value)	1471.3 (.00)		522.2 (.00)		814.6 (.00)	
Number of observations	446614	446614	407181	407181	39433	39433

	Foreign Couples with different culture from US		Foreign Couples with somewhat similar culture to US		Foreign Couples with very similar culture to US	
	Husbands	**Wives**	**Husbands**	**Wives**	**Husbands**	**Wives**
	(7)	(8)	(9)	(10)	(11)	(12)
Age_diff	-1.37	-.889	-2.15	-2.25	**-5.04 *** **	**5.51***
	(.910)	(.762)	(2.11)	(1.83)	**(.796)**	**(3.26)**
Y_diff	.0002	.0001	-.0002	.008 ***	**-.00015 ** **	**.009*** **
	(.0005)	(.0005)	(.0007)	(.0006)	**(.0001)**	**(.001)**
Correlation error terms	.1435		.1808		.1273	
Breusch Pagan Test X2 (P value)	606.4 (.00)		228.8 (.00)		30.5 (.00)	
Number of observations	29449	29449	7003	7003	2981	2981

* ; ** ; *** significant at 10 %, 5% and 1 %. Estimated coefficients, standard errors (in parenthesis) estimated by seemingly unrelated regressions.

Correlation of the error terms of the husbands' and wives' regressions, and the Bresch Pagan test results (X2 and P-value)

Table 6. Estimation of the Labor Supply Regressions of US-born, and Foreign-born Married Couples. Heckman MLE Estimation.

	All Couples		American Couples		Foreign Couples	
	Husbands	**Wives**	**Husbands**	**Wives**	**Husbands**	**Wives**
	(1)	(2)	(3)	(4)	(5)	(6)
Age_diff	**-2.31 *****	**2.31 *****	**-2.67** ***	**1.43** ***	**-2.43 *****	1.43
	(.234)	**(.298)**	**(.313)**	**(.493)**	**(.538)**	(.797)
Y_diff	**-.0012 *****	**.007 *****	**-.0013** ***	**.007** ***	.0001	**.0059*****
	(.0001)	**(.0004)**	**(.0001)**	**(.0004)**	(.0003)	**(.0005)**
ρ	-.102 ***	.073 *******	-.129 ***	.089 ***	-.110 ***	-.715***
	(.006)	(.004)	(.005)	(.005)	(.022)	(.050)
Number of observations	661404	661404	590484	590484	70920	70920

	Foreign Couples with different culture from US		Foreign Couples with somewhat similar culture to US		Foreign Couples with very similar culture to US	
	Husbands	**Wives**	**Husbands**	**Wives**	**Husbands**	**Wives**
	(7)	(8)	(9)	(10)	(11)	(12)
Age_diff	-2.103	2.02	-2.40	-1.15	**-9.36** *	**9.19***
	(1.86)	(7.84)	(1.69)	(1.70)	**(5.46)**	**(5.03)**
Y_diff	.0006	.0059	.0005	.004 ***	**.00007** *	**.0033*****
	(.0004)	(.0078)	(.0005)	(.0011)	**(.00005)**	**(.0008)**
ρ	.006	-.747	-.142 ***	.004	.027	-.558**
	(.030)	(.049)	(.046)	(.018)	(.209)	(.192)
Number of observations	55361	55361	11341	11341	4218	4218

* ; ** ; *** significant at 10 %, 5% and 1 %. Estimated coefficients, robust standard errors (in parenthesis) clustered by state.
Regressions are corrected for sample selection with Heckman maximum likelihood estimation.

5. Alternative explanations

It may be possible that the labor supply of the older or richer spouse is not lower as a result of the bargaining power forces, but due to poor local economic opportunities and/or unfriendly attitudes toward immigrants. Similarly, it could be that older and richer US-born individuals work less, and their spouses work more, because they face worse job opportunities. There are at least two reasons to believe that the local economy and attitude hypothesis does not provide a plausible alternative explanation for the findings illustrated above. First, the labor supply regressions include individuals‟ wages and education, own age, and state fixed effects (alternatively, state unemployment rate, total and female labor force participation rate) which account for the variation in labor market opportunities and attitudes. The findings are also robust to adding individual controls for occupation categories. Second, the predicted labor supply responses are distinctively opposite on the members of each type of couple, and many immigrants with a cultural background different from the US do not exhibit any relationship between labor supply and the two bargaining factors. It is difficult to understand why the labor supply of an immigrant individual should be lower while his/her spouse is higher, when they share the same cultural background, and thus the same labor market conditions and potential earnings discrimination. Indeed, immigrants from a very distant culture may be more likely to face discrimination and experience lower labor supplies, the opposite pattern to my empirical evidence. As to US-born couples, it is hard to reconcile with labor market disparities the opposite outcome of relative age and income on the two spouses, when they share the cultural background and more similar age, wage and education profiles.

Moreover, state fixed effects and clustering the standard errors by state or metropolitan area capture attitudes and labor market conditions, so that there should be no reason why neither the husband nor the wife of the more “traditional” immigrant couples would respond to labor market patterns. In particular, the findings show that it is in the couples with a culture more similar to the US that one of the spouses exhibits lower hours of work, which is inconsistent with a discriminatory explanation against immigrants with ethnicities very different from the US. Finally, as emphasized by Carroll et al. (1994) and Fernandez (2007), immigrants are unlikely to be a representative sample of their home country‟s population and they may experience various shocks making them deviate from their traditional behavior. However, all these issues would create a bias toward finding culture to be insignificant, and toward immigrants to be more likely to behave as US-born individuals.

Controlling for own age and wage, the age difference between spouses should not capture an individual‟s marginal utility of leisure and affect his/her labor supply through this channel. Matching preferences either do not provide a plausible alternative explanation for my findings. Older individuals may prefer to marry younger persons, but this youth value does not translate into a higher preference for leisure. Matching with younger individuals does not necessarily affect the marginal utility from leisure, making the older spouse work less.

The same reasoning holds for non-labor income differences. In particular, if non-labor income is endogenous to labor supply choices, then it is likely that high non-labor income suggests high labor supply. If an individual‟s disutility from work is low, he/she works many hours and as a result owns a high non-labor income. However, this endogeneity bias cannot explain the findings presented in this study since it would predict more hours of work with higher income, whereas these bargaining power forces predict that higher non-labor income differences are associated with lower labor supply, and the more "traditional" immigrant couples do not exhibit any labor supply relationship at all. Finally, non-labor income has been treated as an exogenous measure of bargaining power by the literature (Browning et al, 1994; Thomas, 1990)[12].

It may be argued that bargaining power variables such as income and age difference may somewhat capture differential productivity in household production. Those foreign-born couples distant from the US culture may not respond to these factors because their labor supply choices follow a family human capital investment, in which wives work more hours and in worse jobs to allow for the husband to make the main human capital investment (Chiswick and Houseworth, 2010). Their labor supplies would correspond to stronger household specialization and therefore be much less responsive to any bargaining power force. However, controlling for own age, and education and wages of both spouses, should ensure that comparative advantage and household productivity is properly controlled for and disentangled from other factors. Besides, there is no specific economic reason why the older spouse should specialize in household production and work less, while the younger partner works more in the labor market regardless of the gender of the older. A similar argument holds for non-labor income ownership. Being relatively richer does not imply being more productive at home and working less in the labor market. Finally, the literature emphasizes that this family investment model argument for immigrant families may not be so relevant in explaining their labor supply behavior (Blau et al., 2003).

6. Conclusions

The labor supply choices of married men and women are empirically analyzed according to their cultural background and balance of power, using US 2000 Census data on native and foreign-born individuals. Specifically, I test whether and how different spousal ethnic backgrounds mediate the role of bargaining power in household decisions.

The labor supplies of US-born spouses, and of those foreign-born with similar cultures to the US, are found to be significantly associated with two common bargaining power forces, the age and non-labor income differences between spouses, while the labor supplies of

[12] The cross-sectional nature of the Census decennial data and their lack of any individual wealth variable do not provide instruments for individual non-labor income and the non-labor income bargaining factor.

couples where spouses belong to ethnicities supporting a traditional gender role and institutions are not. The significant negative relationship between hours worked and being the relatively older and/or richer spouse holds only for US-born couples and for those foreign-born households coming from countries with similar family institutions to the US, controlling for both spouses‟ demographic and socioeconomic characteristics. Interestingly, households whose culture of origin is quite different from the US, with traditional views on gender roles, do not exhibit any association between these age and income gaps and their labor supply decisions. These culture-asymmetric estimates suggest that spousal traits and outside opportunities are assessed differently across couples within the US, and that their responsiveness to a common economic and institutional environment depends on their ethnicities.

This study provides the first evidence on the relationship between cultural background, bargaining power, and household labor supply, suggesting a link between ethnicity and the role of bargaining power forces in labor supply decisions, within a country and a common institutional framework. Accounting for cultural background may be significant in the analysis of household decision-making, to capture the mechanism through which individuals relate to and make use of their outside opportunities within the couple. Moreover, the degree of effectiveness of a public policy targeting families, or of social and institutional factors indirectly related to households, may depend upon households‟ perceptions and incentives to respond to these policies. In this perspective, my contribution is complementary to the existing literature on household behavior (e.g., Browning et al., 2011), and also to the studies on labor supply effects of culture (e.g., Fernandez and Fogli, 2006; Furtado and Theodoropoulos, 2011).

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