



Taxes and culture of leisure: Impact on labor supply in Europe

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ABSTRACT

This paper uses micro data from the European Social Survey to investigate the impact of culture of leisure and taxes on labor force participation and hours worked of second-generation immigrants who reside in 26 European countries. These individuals are born in Europe, and they have been exposed to institutional, legal and labor market structures of their countries, including the tax rates. Their fathers are first-generation immigrants who migrated from 47 different countries. I construct measures of “taste for leisure” in the country of origin of each immigrant father. I employ average and marginal tax rates for each country of residence, and control for individual characteristics, in addition to a large set of attributes of the country of residence and country of origin. I demonstrate that systematic selection of first-generation immigrants (the fathers of the individuals analyzed) to countries of destination based on the tax rates is unlikely. The results show that for women, both taxes and culture of leisure impact labor force participation and hours worked. For men, taxes influence labor supply both at the intensive and the extensive margins, but culture of leisure has no impact. The results are insensitive to the omission of immigrants from Muslim countries.

1. Introduction

There are substantial differences between people around the world regarding how many hours they work in the labor market. For example, in 2012, the average annual hours worked by American workers was 1750. The average worker in Germany worked 17% fewer hours than an American worker in that year, and a French worker worked 15% less. A worker in Belgium spent about 9% less time at work in comparison to an American worker. Similar disparities are observed when hours per person are analyzed, instead of hours per worker.¹ Annual hours worked per working age population (ages 15 to 64) are 10% lower in Germany, 19% lower in France, and 17% lower in Belgium in comparison to the U.S.

In an influential paper, Prescott (2004) employed a growth model with a representative household and calibrated the model to show that the difference in hours worked between the United States and Europe in two points in time can be explained almost entirely by the differences in the tax rates on labor and consumption. A large literature that followed provided a number of nuanced extensions and modifications to Prescott's framework, regarding the preferred labor supply elasticities to calibrate such macro models, modifications to the model to incorporate the ability for the household to self-insure through asset accumulation, the role of productivity growth, and so on (e.g. Ljungqvist and Sargent 2006, Ohanian et al., 2008, Rogerson 2008, Olovsson 2009, Chetty et al., 2011, McDaniel 2011). In a different framework, Algan and Cahuc (2005) showed that family labor supply attitudes were important in explaining the variation in the employment rates of different demographic groups in OECD countries.

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¹ This measure incorporates both the willingness to participate in the labor market (the decision on whether or not to work) and the decision on how many hours to work.

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The finding that taxes are a major factor in explaining cross-country differences in market work is important because it implies that reductions in taxes can generate significant increases in economic activity. Alternative, or at least complementary, hypotheses have been proposed to explain the differences in hours worked between Europe and the U.S. These include the importance of regulations and labor unions (Alesina et al., 2006), and the role of home production (Olovsson 2015). An important aspect of this discussion, and the key component of this paper, is the role of preferences for leisure. The assumption of identical preferences between countries, and in particular between Europeans and Americans has been questioned (Blanchard 2006). This point is also emphasized by Alesina et al. (2006) who suggested that an initial decline in market work might increase individuals' utility from leisure and this process can be amplified by a social multiplier (Glaeser et al., 2003) if there exist complementarities in leisure – individuals' utility from leisure is enhanced when more people are consuming leisure.

The argument that Europeans have stronger taste for leisure than Americans (Blanchard 2004) is perhaps intuitive, and fits well with many people's pre-conceived image of longer vacations and shorter work weeks in most European countries. That image was brought to life in a Cadillac TV advertisement in the U.S., where the main character in the advertisement, an American middle-age upper-income male, first asks the question: "Why do we work so hard?" In answering his own question, he declares:

"[In] Other countries, they work, they stroll home, they stop by the café,
they take August off. *Off!* Why aren't you like that? Why aren't we like
that? Because we are crazy, driven, hard-working believers. That's why.
Those other countries think we are nuts. Whatever!"²

Although tastes for leisure can impact labor supply, no systematic analysis has been conducted on this subject.³ This paper focuses on European countries and investigates the impact of taxes and the *culture of leisure* on labor supply. Using a large micro data set consisting of individuals from 26 European countries I analyze people's labor supply decisions both at the extensive and the intensive margins.⁴ While there are significant differences between Americans and Europeans in hours worked, there are also substantial differences in market work *between* European countries. To demonstrate the extent of variation between countries in hours worked, Table 1 displays hours worked per population ages 15 to 64 in 2012 in a sample of European countries, calculated using the OECD data. This measure contains two dimensions of market work: the fraction of the working age population that actually works and the number of hours of those who work. The entries in Table 1 are standardized to portray average hours worked in each country relative to the U.K. For example, hours worked per person in France, Germany and Greece are 19%, 10%, and 3% lower, respectively, than in the U.K. Swedes work 4% more than the working age population in the U.K. Importantly, as shown later in the paper, there is also substantial variation in the effective marginal tax rates between European countries.

The critical issue for the purposes of this paper is how to measure the "taste for leisure," and how to identify its impact on market work. To that end, I focus on *second-generation* immigrants who reside in various European countries. These individuals are born in Europe, and they have been exposed to institutional, legal and labor market structures of their countries of residence, including the marginal tax rates on labor and consumption income. Their fathers had migrated from somewhere else in the world, and we know these fathers' countries of origin. Immigrant father's country of birth determines his ancestral roots, and it is assumed that culture of leisure in father's country of origin is transmitted from the immigrant father to the offspring. I focus on the father, rather than the mother because most of the literature uses the birth place of the father to assign country of origin to second-generation immigrants (Alesina et al., 2015; Alesina and Giuliano 2011; Alesina and Giuliano 2010; Fernández and Fogli 2009; Card et al., 1998). By exploiting a separate data set that asks people around the world various questions to gauge their *taste for leisure*, I connect these second-generation immigrants in Europe to the culture of leisure in their father's country of origin.

I analyze the labor supply of second-generation immigrants who are born in the countries to which their fathers have migrated. It is conceivable that fathers' migration decisions were motivated by the tax rates in the countries of destination. For example, people from those countries where leisure is valued highly could have chosen to migrate to destination countries which have high tax rates. If this is the case, such self-selection of migrants as a function of destination country tax rates could confound the estimated impact of taxes on the labor supply of the second-generation. To investigate this possibility, I divide the analysis sample into two groups: the

² Cadillac commercial can be found at: <http://www.ispot.tv/ad/7BkA/cadillac-elr-work-hard>.

³ Standard empirical models of labor supply include a vector of worker attributes including racial and ethnic background, if available, in an effort to control for pre-market factors that can impact labor supply, but explicit adjustment to taste for leisure has not been done so far.

⁴ The conjecture is that some countries have stronger preferences for leisure, and people in those countries would have worked fewer hours even if they faced lower marginal tax rates. On the face of it, this argument does not seem to explain the increasing wedge between labor supply of Americans and Europeans over the last three decades or so, because culture is not expected to change rapidly. Even though the goal of this paper is *not* to explain the divergence of hours worked between countries over time, it should still be emphasized that cultural attributes are malleable, and they change in reaction to external factors. For example, Fernández (2013) shows that social attitudes towards women's work endogenously change over time. Alesina and Fuchs-Schündeln (2007) find that individual preferences are shaped by the political regime in which the individual lives. Giuliano and Spilimbergo (2014) show that individuals' political preferences and support for government redistribution are impacted by whether or not they grew up during recessionary periods. Giavazzi et al. (2014) show that while some cultural values evolve slowly, others change rapidly. Cannonier and Mocan (2018) find that women in Sierra Leone, whose education is improved by an education reform, are more likely to disapprove the cultural practice of female genital mutilation. Mocan (2013) finds that the intensity of vengeful feelings depends on the economic environment of the individual.

Table 1

Hours worked per capita (ages 15–64) in selected OECD countries in 2012.

Source: OECD labor database and OECD productivity database.

	Hours worked per working age person (indexed to UK = 100)
Portugal	104
Sweden	104
Austria	103
United Kingdom	100
Greece	97
Italy	95
Netherlands	95
Denmark	93
Germany	90
Belgium	84
Spain	84
France	81
Turkey	74

countries with above-median tax rates, and the countries with below-median tax rates. I show that the observed characteristics of the second-generation immigrants and the characteristics of their immigrant fathers are balanced between these two groups of destination countries. Furthermore, the indicators of “taste for leisure” in the countries of origin are balanced as well, minimizing the concern of first-generation’s (fathers’) self-selection based on the tax rates.

Data are from about 7000 individuals who live and work in 26 European countries. These individuals have ancestral origins in 47 different countries.⁵ Thus, it is possible to *identify the impact of taxes* in the country of residence on hours worked, holding constant observable attributes of individuals, various attributes of the country in which they live, and attributes of their father’s country of origin, including the taste for leisure in that country of origin. Similarly, one can identify the impact of *culture of leisure* on labor supply, holding constant all personal attributes and various characteristics of the country of residence, including the tax rates. To eliminate, to the extent possible, the factors that may impact the labor market activity of the individuals stemming from the demand side and institutional structure, I control for such variables as the unemployment rate, per capita income, legal origin, religious make-up, as well as the size of the population and average education of the country of destination. A similar set of covariates is included for the country of origin. These variables are described in the data section below.

The results show that both taxes and culture of leisure impact labor force participation and hours worked for women. For men, taxes influence labor supply both at the intensive and the extensive margin, but culture of leisure has no impact. The magnitudes of the estimated effects indicate that while taxes on labor income are a significant determinant of aggregate hours worked, *culture of leisure* is important as well.

This paper is also related to a growing new literature that investigates the interplay between culture and economic outcomes. Some recent examples include [Fernández and Fogli \(2009\)](#) who investigate the impact of female labor force participation and fertility rates in the country of origin on work and fertility decisions of second-generation American women; [Alesina and Giuliano \(2011\)](#) who investigate the impact of family ties on political participation, labor force participation and trust. [Luttmer and Singhal \(2011\)](#) report that immigrants’ redistributive preferences are impacted by the average preference in their country of birth. [Ljunge \(2014\)](#) analyzes the transmission of trust to immigrant children. [Alesina et al. \(2015\)](#) find that people who inherit strong family ties are less mobile and have lower wages and higher unemployment. A detailed description of this literature can be found in [Alesina and Giuliano \(2015\)](#) and [Fernández \(2011\)](#).

2. Empirical implementation

Consistent with the theoretical framework outlined in [Prescott \(2004\)](#) and the literature that follows, I estimate the following specification to investigate the impact of taxes and taste for leisure on labor supply:

$$h_{ijnt} = \beta_0 + \beta_1 \tau_j + \beta_2 L_n + \mathbf{X}_i \Phi + \mathbf{C}_j \Omega + \mathbf{CO}_n \Psi + \delta_t + \varepsilon_{ijnt} \quad (1)$$

where h_{ijnt} stands for the labor supply of person i who is a second-generation immigrant, living in country j , surveyed at time t . Labor supply is measured both at the extensive and intensive margins, allowing for the estimation of models of labor force participation, and hours worked, conditional on participation. The subscript n represents the country-of-origin of this person’s father (who migrated from country n to country j). The vector \mathbf{X}_i includes personal attributes of individual i that may impact his/her labor supply decision such as age, completed years of education, marital status, and the size of the city of residence. Because minorities may face labor market discrimination which may alter their labor supply, the models also control for whether the person perceives him/herself as a minority in that country.

⁵ I have dropped individuals from the analysis sample if their countries of origin had contributed fewer than 10 observations to the sample. For example, we had two observations whose fathers had migrated from Thailand, and we had 3 observations whose country of origin was Mexico. However, including these countries had no impact on the results.

Table 2

Average hours worked and the effective marginal tax rate in selected European countries 2000–2012.

Source: Hours worked per working age population are constructed using data from the OECD Labor Database and the OECD Productivity Database. τ is the effective marginal tax rate on labor income (Prescott, 2004). Calculation of τ follows the formulation of Prescott (2004) and McDaniel (2011): $\tau = \frac{\tau_{ss} + 1.6 \tau_{inc} + \tau_c}{1 + \tau_c}$, where τ_{ss} , τ_{inc} , and τ_c are taken from McDaniel (2014) data.

Year	France		Germany		United Kingdom		Belgium	
	Hours worked per working age population	Effective marginal tax rate	Hours worked per working age population	Effective marginal tax rate	Hours worked per working age population	Effective marginal tax rate	Hours worked per working age population	Effective marginal tax rate
2000	995	55.5	1045	52.7	1217	44.1	976	58.0
2001	997	54.8	1037	52.4	1218	44.1	982	57.8
2002	969	54.3	1026	52.3	1209	43.2	972	58.6
2003	960	54.6	1014	52.6	1203	42.8	965	58.0
2004	972	54.7	1021	51.5	1191	43.3	966	58.2
2005	968	55.2	1007	51.4	1204	43.6	970	57.6
2006	956	55.2	1029	51.7	1200	43.6	977	56.6
2007	974	54.7	1053	52.2	1199	43.9	986	56.3
2008	979	54.7	1065	52.6	1190	43.8	991	56.4
2009	953	54.8	1038	52.6	1156	42.9	971	56.2
2010	954	54.4	1057	51.3	1154	43.2	973	56.5
2011	962	55.6	1071	51.4	1157	43.9	988	56.9
2012	960	56.9	1067	52.1	1182	43.3	989	57.7

The variable τ measures the effective marginal tax rate on labor income in country j where person i resides and works. Following the literature, and as detailed in the next section, I use country-specific tax rates generated by previous research (Prescott 2004; McDaniel 2011). Although surveys of individuals from different years are used, the two measures of taxes (the effective marginal tax rate, as well as the average tax rate for a single person without a dependent) do not change appreciably within a country in the sample period. Thus, the impact of taxes on labor supply is identified from cross-country variation in tax rates.

L_n stands for various measures of the *culture of leisure* in the country of origin, constructed by using data from the World Values Survey and the European Values Study. For example, one particular question in these surveys is: “How important is leisure in your life?” Possible answers range from 1 (not important) to 4 (very important). The average value of answers to this question was 3.5 in Sweden, 3.3 in Uruguay, 2.9 in Morocco, and 2.6 in China, suggesting that people in Sweden value leisure more strongly in comparison to those who live in Morocco or in China. Other examples of indicators for culture of leisure are responses to such statements as “People who don’t work turn lazy” (agree-disagree on a scale from 1 to 5) and “Work is a duty to society” (agree-disagree from 1 to 5). The details of these and other measures of culture of leisure in the country of origin are explained in the data section.

The framework described above is termed an “epidemiological” approach by Fernández (2008, 2007) because it aims to identify the impact of inherited, pre-existing factors on behavior, holding constant the context in which the decision takes place. Note that reverse causality from labor supply to “taste for leisure” is unlikely to be an issue here because the labor supply decision of the individual cannot have an impact on the extent of the taste for leisure in father’s country of origin. Similarly, an individual’s labor supply is not expected to have an immediate impact on the tax rate in her country of residence. Even if the government wanted to react to a variation in aggregate hours worked in the economy by altering the tax rates, it cannot do so quickly, because it is well known that the inside-lags are substantial in case of fiscal policy. In other words, changes in taxes necessitate negotiations both in the parliament and with different constituents including labor unions. Because of the lags in legislative implementation, it is implausible that tax rates would react contemporaneously to a change in the aggregate hours worked in the economy.

Neither the tax rates nor aggregate labor supply vary significantly within a country from year to year. For example, in Germany average hours worked per working-age population were 1065 in 2008, 1057 in 2010, and 1067 in 2012. Aggregate hours worked and the effective marginal tax rates for France, Germany, the U.K. and Belgium from the OECD data over the period of 2000–2012 are displayed in Table 2.⁶ There is no systematic change in hours worked or in the tax rate in these countries over the course of these 13 years. When year-to-year change in average hours worked and in the effective marginal tax rate over the same period for the 26 European countries used in the analysis is calculated, it is found that the average annual growth rate is essentially zero for both hours worked and taxes (the average growth rate is -0.002 in case of annual hours and 0.0002 in case of taxes).

It is conceivable that “culture of leisure” might differ systematically between countries due to income differences. Put differently, to the extent that leisure is a normal good, it would be valued differently as the average income level of the country goes up. To account for this effect, I control for per capita income in the country of origin (as part of the vector CO_n). Note, however, that most of the questions that aim to measure “culture of leisure” do not target inter-temporal aspect of work-leisure tradeoff. Specifically, the answers to questions such as “Do you think people who don’t work turn lazy?” and “Do you think work is a duty to society?” should be largely independent of cyclical variations in economic conditions. Rather, the answers to these questions should, arguably, reflect beliefs that are rather stable. The vector CO_n contains a number of other attributes of the country of ancestry, such as the index of ethno-linguistic fragmentation, legal origin indicators, a measure of democracy, and the religious make-up of the country of origin.

⁶ The descriptions of effective marginal tax rate of the country and its source are provided in the data section.

The vector C_j controls for the attributes of the country of residence that may influence labor supply through their impact on aggregate labor productivity, institutional factors and so on. It is also possible that both country-level taxes and individual labor supply are driven by certain socio-economic and cultural attributes of the country. For example, societies can be rated on a scale ranging from “individualistic” to “collectivist” using the index of individualism, developed by Hofstede (2001) and Hofstede (2005).⁷ Lower values indicate the higher extent of collectivism of the society, which stands for the extent to which individuals are integrated into groups. In collectivist societies, people from birth onwards are integrated into strong, cohesive in-groups, often extended families (with uncles, aunts and grandparents) which continue protecting them in exchange for unquestioning loyalty. Higher values of the index represent individualistic societies where the ties between individuals are loose, and where people are expected to look after themselves and their immediate family.⁸ There is substantial variation around the world in the extent to which countries are individualistic or collectivist. For example Australia is rated a highly individualistic country with a score of 90 (out of 100), and the most collectivist societies are Colombia with a score of 13, Indonesia with a score of 14 and Costa Rica with a score of 15. It could be the case that the extent of individualism in the country may be correlated with the peoples’ desired level of government regulation and tax rates, as well as with the extent of the labor supply. Therefore, the models control for individualism in the country to account for such an effect.

The vector C_j contains additional variables that potentially impact both taxes and labor supply including per capita GDP in the country of residence, average educational attainment in the country, the index of ethno-linguistic fragmentation, size of the population, legal origin indicators, and number of years in which country experienced democracy between 1930 and 1995. I control for the unemployment rate as an indicator of the labor market conditions in the survey year because the tightness of the labor market would impact the labor supply decision of the individual. Religious make-up of the country is controlled for as it may impact labor supply as a cultural attribute. I also control for the indicators of legal origin of the country. These indicators account for whether the country’s legal origin is British common law, French commercial code, socialist or communist law, German commercial law or Scandinavian commercial law. These variables are explained in the descriptive statistics Table 4.

Time fixed-effects, δ_t , account for the year in which individuals are surveyed. Standard errors are clustered at the country of origin. Alternative versions of Eq. (1) are estimated as shown below.

$$h_{ijnt} = \alpha_0 + \alpha_1 \tau_j + \mathbf{X}_i \Theta + \mathbf{C}_j \Xi + \xi_t + \mu_n + \nu_{ijnt}, \tag{2}$$

$$h_{ijnt} = \lambda_0 + \lambda_1 L_n + \mathbf{X}_i \Lambda + \mathbf{CO}_n \Gamma + \theta_t + \omega_j + u_{ijnt}, \tag{3}$$

In Eq. (2) all country-of-origin variables are replaced by country-of-origin fixed-effects (μ_n). This specification does not contain measures of culture of leisure, but it includes country-of-residence attributes as well as the tax rate in the country of origin. Analogously, in Eq. (3), the country-of residence variables, including the tax rate, are replaced by country-of-residence fixed-effects (ω_j), whereas variables measuring country-of-origin attributes, including proxies for culture of leisure, are retained. Eq. (2) allows the investigation of the sensitivity of the tax impact when for country-of-origin differences are controlled for by a set of country-of-origin fixed effects. Eq. (3) does the reverse: it allows us to analyze the sensitivity of the culture-of-leisure coefficient when we control for the attributes of the countries of residence by a set of country-of-residence fixed-effects.

3. Data and descriptive statistics

The analyses are based on a number of different data sets. Data on labor supply and personal attributes of individuals are from the European Social Survey (ESS). Five cross-sectional rounds of the ESS, conducted biennially between years 2004 and 2013, are employed. The ESS covers 35 European countries that participated in at least one round of the survey. The analyses include 26 countries for which the OECD tax data are available. The core module of the ESS is administered in all rounds and contains information about respondents’ socio-economic circumstances, including employment history and work-related variables. Starting with the second round, the ESS asks its respondents the countries in which their mother and father were born, in addition to asking about respondent’s own country of birth. The sample consists of second-generation immigrants. These individuals were born in their country of residence but their fathers have migrated from a different country.

3.1. Tax measures

Two different tax measures are employed. The first tax measure is obtained from the OECD Tax Database. It is the average personal income tax and the social security contribution rate on gross labor income for a single person without a dependent. This measure is available for 26 countries in the ESS for all years from 2000 to 2013. Our second tax measure is the effective marginal tax rate on labor income (τ) as used by others (e.g. Prescott 2004, McDaniel 2011). The average tax series updated by McDaniel (2014) is employed to construct τ .⁹ This tax measure is not available for all 26 countries and for all years for which the OECD average tax rate is available. In particular, Estonia, Iceland, Israel, Luxembourg, and Turkey have missing data for all years. Thus, the regressions that

⁷ The data are downloaded from http://www.geert-hofstede.com/hofstede_dimensions.php.

⁸ The description is obtained from (http://www.geert-hofstede.com/geert_hofstede_resources.shtml).

⁹ The calculation of τ follows the formulation of Prescott (2004) and McDaniel (2011): $\tau = \frac{\tau_{ss} + 1.6 \cdot \tau_{inc} + \tau_c}{1 + \tau_c}$, where τ_{ss} , τ_{inc} , and τ_c are taken from McDaniel (2014) data.

Table 3
Tax rates in countries of residence.

Country	τ	Average personal income tax
Austria	56.497	32.763
Belgium	57.293	42.427
Czech Republic	45.076	22.970
Denmark	62.847	40.851
Estonia		20.193
Finland	55.740	30.787
France	55.252	28.284
Germany	52.082	41.531
Greece	42.194	24.171
Hungary	52.668	35.554
Iceland		27.340
Ireland	41.181	16.697
Israel		20.925
Italy	53.681	29.366
Luxembourg		25.883
Netherlands	48.625	31.951
Norway	50.617	29.771
Poland	41.895	26.559
Portugal	40.641	22.666
Slovakia	39.054	21.653
Slovenia	45.979	34.223
Spain	42.124	20.740
Sweden	63.378	28.644
Switzerland	30.547	17.469
Turkey		29.602
United Kingdom	43.532	25.813

The first tax measure (τ) is the effective marginal tax rate on labor income (Prescott, 2004).

The second tax measure is the average personal income tax and social security contribution rate on gross labor income is that for a single person without a dependent earning 100% of average earnings of industry workers in the country (Source: OECD Tax Database Table 5).

The tax values are averaged for the period 2000 to 2013.

use τ are based on smaller samples. Table 3 displays the tax rates for countries in which individuals in the sample reside. The two measures are highly correlated with a correlation coefficient of 0.75. The tax variables are merged with the individual-level data based on the year of work when the outcome is the weekly hours normally worked, and based on the year of interview when the outcome is labor force participation.

3.2. Outcomes and personal attributes

The two outcome variables are labor force participation and hours of work for the individual. The labor force participation variable takes the value of one if the individual reported being engaged in any paid work in the last 7 days or has been unemployed and is actively looking for a job. The second measure of the labor supply measures the intensive margin, where the outcome is hours normally worked in a week at the main job. This information is obtained from individuals who are either working at the time of the interview or have worked in the past. In the former case, hours worked pertains to hours at the current job, while in the latter case, hours worked corresponds to the hours worked at the respondent's last job. We know the year in which this last job was held and the sample is limited to those who last worked in the year 2000 or later. The reason is twofold: first, the OECD tax measure is only available after year 2000, and second, measurement error is likely to increase as people have to recall their weekly work hours from further back in the past.

Table 4 presents the descriptive statistics of the sample used in the hours worked equation. The descriptive statistics of the sample used in participation regressions are provided in the Appendix Table A2. Although the samples in the labor force participation and the hours regressions are different by design, their descriptive statistics are similar. The first panel of Table 4 presents the summary statistics by dividing the sample by gender, as well as by the availability of the tax measure. Average weekly hours worked is about 36 for females and 43 for males. Average age is about 41 for both sexes and average years of schooling is about 13 years.

3.3. Measures of culture of leisure in the country of origin

To construct culture of leisure measures, data from the World Values Survey (WVS) and the European Values Study (EVS) are used. Five cross-sectional waves of the WVS (1981–1984, 1990–1993, 1995–1997, 1999–2004, and 2005–2009) are employed. The WVS coverage starts with 22 countries in the 1981–1984 wave, and reaches 87 countries by the time of the 2005–2009 wave. The WVS asks its respondents about their attitudes regarding a variety of topics, including religion, political preferences, family values and work ethics.

The European Values Study consists of four waves of cross-sectional surveys conducted in 49 predominantly European countries (1981–1984, 1990–1993, 1999–2001, and 2008–2010). The formulation of EVS questions about attitudes to work and leisure is identical to the WVS formulation. By pooling the WVS and the EVS, we are able to cover a large number of countries around the world to gauge the beliefs about the importance of work and leisure in people's lives in these countries. When using WVS/EVS to measure preferences towards leisure in the country of origin, I have excluded immigrants whenever information on immigration status was available.

The descriptions of the variables and their sample means and standard deviations are provided in Panel B of Table 4. Five variables are created to measure the extent of culture of leisure. Higher values of each variable represent a higher appreciation of leisure in that country. The first variable “*Leisure Important*” is the average response in the country to the question “*Indicate how important leisure time is in your life.*” Potential answers range from 1: Not at all important to 4: Very important. Table 4 shows that for individuals who enter the hours of work regressions the average value of this variable is 3.1. Appendix Table A1 displays the average response to *Leisure Important* variable in each of the countries that represent the country-of-origin of the immigrant father. For example, the value of *Leisure Important* is 3.251 in Austria.¹⁰ In comparison, the average value of Cyprus is 3.47, indicating that Cypriots attach a higher value to leisure than Austrians do.¹¹

The second variable that gauges culture of leisure in a country is based on the question of “*Do you agree or disagree with the statement: People who don't work turn lazy.*” Possible answers range from 1: Strongly agree to 5: Strongly disagree. A higher value indicates a more tolerant attitude towards not working. The third and fourth variables in this group are measured similarly, and they are based on answers to the following questions: “*Do you agree or disagree with the statement: Work is a duty toward society,*” and “*Do you agree or disagree with the statement: Work should always come first, even if it means less spare time.*” A fifth variable is created to measure the extent of appreciation of leisure in a country by calculating the proportion of people in the country who believe that provision of *generous holidays* is an important aspect of a job.

Finally, two other measures are created that capture the extent of labor market attachment in the country-of-origin. They are the labor force participation rates and average weekly hours worked in father's country-of-origin. Labor force participation in the country of ancestry has been used before as a cultural proxy for work (Fernández and Fogli 2009, 2006). These variables are created by gender. This allows for more nuanced analyses. For example, we can investigate how the labor supply decision of a female second-generation immigrant in Europe is impacted by the intensity of labor market activity of women in the country from which this person's father migrated. Furthermore, this measure is fine-tuned to connect it to the relevant age groups using the age bands of 15–24, 25–54 and 55–64.¹²

Similarly, weekly hours actually worked per employed person in the country of origin are obtained. The data come from the International Labor Organization ILOSTAT Database. Because the annual data are not available for every year and country, available values over the time period 2000 to 2013 are averaged. The ILOSTAT indicator covers both employees and the self-employed and it counts hours people have worked either on all jobs, or, in some country-years, at the main and second job only. Both part-time and full-time employment hours are accounted for.¹³ Our measure of weekly hours in the country of origin is gender-specific, but not age-group specific, as the ILOSTAT does not provide age group-specific indicator.

3.4. Country attributes

Each specification also controls for a host of country characteristics both in the country of respondent's residence and in his/her father's country of origin. These variables include, among others, ethno-linguistic fragmentation, the legal origin of the country, the religious composition of the country, and the number of years in which the country was democratic from 1930 to 1995. Additionally, the models include per capita income, average country education, unemployment rate, population size, and individualism index in the country of residence. The full definitions and the descriptive statistics of these and other country attributes used in the regressions are presented in panels C and D of Table 4.

4. Results

Table 5 displays the summary results for females. Panel A presents the coefficients of tax and culture variables in the labor force participation equation, and Panel B presents the estimated tax and culture coefficients from the hours equation for those who reported positive work hours. All models include control variables pertaining to the individual, country of ancestry and country of residence. These variables are summarized in panels A, C, and D of Table 4. The coefficients of these variables are not reported in the interest of space, although Appendix Table A3 displays the full set of coefficients of the model in column (1) of Panel A in Table 5.

¹⁰ This number is the average response of 4391 Austrians surveyed in various waves of the WVS and the EVS between 1990 and 2010.

¹¹ The average response in Cyprus is based on 1971 Cypriots who were surveyed in various waves between 2005 and 2010.

¹² For example, I connected the propensity to participate in the labor market of a female 2nd generation immigrant in Europe who is 20 years old to the labor force participation rate of women ages 15–24 in her father's country of origin. Country-age-and gender specific labor force participation rates were obtained from the International Labor Organization ILOSTAT database. Because the annual data are not available for every year, country, and age band, we use averaged available values over the time period 2002 to 2013.

¹³ In addition, the ILOSTAT provides a number of flags indicating data inconsistencies that can complicate analysis across time and countries. For example, in China, Costa Rica, Guatemala, Egypt, Pakistan, Panama, Viet Nam, and Zimbabwe only full-time employment hours are counted, and we exclude these countries from our sample.

Table 4
Descriptive statistics for the hours worked sample.

Variable	Description (Source)	Females Average pers. inc. tax sample	τ sample	Males Average pers. inc. tax sample	τ sample
Panel A: Personal characteristics					
Normal weekly hours	Hours normally worked in a week at the main job as reported by the ESS respondents	36.693 (11.993)	35.916 (12.301)	43.549 (11.948)	42.802 (11.950)
Age	Age of the respondent	42.273 (12.668)	41.656 (12.871)	41.356 (13.297)	41.125 (13.375)
Ethnic minority	= = 1 if the respondent belongs to minority ethnic group in country	0.127 (0.333)	0.090 (0.287)	0.147 (0.354)	0.113 (0.317)
Years of schooling	Number of years of full-time education completed	13.597 (3.492)	13.443 (3.702)	13.197 (3.459)	13.214 (3.617)
Married	= = 1 if the respondent is married, 0 otherwise	0.539 (0.499)	0.488 (0.500)	0.537 (0.499)	0.500 (0.500)
City	= = 1 if respondent lives in a big city, 0 otherwise	0.333 (0.471)	0.218 (0.413)	0.297 (0.457)	0.216 (0.412)
Panel B: Culture of Leisure in country of origin					
Leisure important	Average country response to the question “How important is Leisure Time in your life?” 1: ‘Not at all important’ 2: ‘Not very important’ 3: ‘Rather important’ 4 ‘Very important’ (A)	3.070 (0.190)	3.117 (0.199)	3.083 (0.178)	3.118 (0.182)
Generous holidays	Average country response to the question “Please tell me if generous Holidays are important in a job.” (A): 0: Not Important, 100: Very Important.	34.742 (14.992)	30.952 (12.823)	34.323 (14.872)	31.367 (13.246)
People turn lazy	Average country response to the question “Do you agree or disagree with the following statement: People who don't work turn lazy. 1 ‘Strongly agree’ 2 ‘Agree’ 3 ‘Neither agree nor disagree’ 4 ‘Disagree’ 5 ‘Strongly disagree’” (A)	2.182 (0.305)	2.240 (0.319)	2.190 (0.306)	2.234 (0.321)
Work is a duty to society	Average country response to the question “Do you agree or disagree with the following statement: Work is a duty towards society.” 1: ‘Strongly agree’ 2: ‘Agree’ 3: ‘Neither agree nor disagree’ 4: ‘Disagree’ 5: ‘Strongly disagree’ (A)	2.269 (0.329)	2.256 (0.252)	2.253 (0.324)	2.236 (0.262)
Work should come first	Average country response to the question “Do you agree or disagree with the following statement: Work should always come first, even if it means less spare time.” 1: ‘Strongly agree’ 2: ‘Agree’ 3: ‘Neither agree nor disagree’ 4: ‘Disagree’ 5: ‘Strongly disagree’ (A)	2.552 (0.445)	2.613 (0.403)	2.561 (0.435)	2.600 (0.405)
Average weekly hours	Weekly hours actually worked per employed person in the country of origin (I)	35.547 (3.574)	35.079 (3.531)	41.855 (3.092)	41.845 (3.048)
Panel C: Other country of origin characteristics					
Per capita income	PPP adjusted GDP per capita in constant 2011 US\$ (D)	24,483 (13,032)	28,551 (13,365)	25,437 (12,965)	28,653 (13,182)
Ethnolinguistic fragmentation	Roeder's 1985 Index of the extent of ethnolinguistic fragmentation in the country (B)	0.272 (0.193)	0.238 (0.199)	0.264 (0.188)	0.239 (0.197)
Democratic	Number of years in which the country experienced democracy between 1930 and 1995 (C)	22.397 (24.976)	30.589 (25.758)	24.353 (25.055)	30.849 (25.367)
British legal origin	= = 1 if the legal origin of home country is English Common Law, 0 otherwise (C)	0.099 (0.299)	0.133 (0.340)	0.097 (0.296)	0.122 (0.328)
French legal origin	= = 1 if the legal origin of home country is French Commercial Code, 0 otherwise (C)	0.376 (0.484)	0.415 (0.493)	0.413 (0.493)	0.450 (0.498)
Socialist/Communist Legal origin	= = 1 if the legal origin of home country is Socialist/ Communist Laws, 0 otherwise (C)	0.397 (0.489)	0.270 (0.444)	0.350 (0.477)	0.247 (0.432)
German legal origin	= = 1 if the legal origin of home country is German Commercial Code, 0 otherwise (C)	0.079 (0.270)	0.115 (0.319)	0.098 (0.298)	0.130 (0.337)
Scandinavian legal origin	= = 1 if the legal origin of home country is Scandinavian Commercial Code, 0 otherwise (C)	0.049 (0.216)	0.067 (0.251)	0.042 (0.200)	0.051 (0.219)
% Catholic 1980	% Catholic in a country in 1980 (C)	31.794 (36.427)	45.138 (37.028)	35.046 (37.157)	46.263 (36.856)
% Muslim 1980	% Muslim in a country in 1980 (C)	22.412 (38.369)	15.947 (34.450)	21.958 (38.257)	17.049 (35.651)
% Protestant 1980	% Protestant in a country in 1980 (C)	10.916 (22.721)	14.243 (25.154)	10.619 (21.964)	13.377 (23.675)
% Other denomination 1980	% Other denomination in a country in 1980 (C)	34.878 (35.100)	24.672 (26.649)	32.377 (34.007)	23.311 (25.857)
Panel D: Country of residence characteristics					
Average tax rate	Average personal income tax and social security contribution rate on gross labor income for a single person without a dependent (G)	25.403 (8.233)		26.394 (8.678)	
τ	The effective marginal tax rate calculated using McDaniel data (H)		48.956 (9.372)		48.828 (9.426)

(continued on next page)

Table 4 (continued)

Variable	Description (Source)	Females Average pers. inc. tax sample	τ sample	Males Average pers. inc. tax sample	τ sample
Unemployment rate	Country unemployment rate (D)	7.590 (3.153)	7.038 (2.955)	7.583 (3.157)	7.139 (3.015)
Per capita Income	PPP adjusted GDP per capita in constant 2011 US\$ (D)	35,310 (11,244)	39,661 (9084)	37,060 (12,718)	40,265 (9258)
Average country education	Average education of individuals aged 15 and over in the country (E)	11.542 (0.897)	11.277 (0.974)	11.491 (0.923)	11.315 (0.944)
Population	Country population in millions (D)	19.944 (25.763)	30.458 (29.406)	22.328 (27.447)	31.732 (29.991)
Individualism	Hofstede Index of the degree to which individuals are integrated into groups (F)	63.688 (11.555)	68.242 (12.494)	64.580 (11.307)	68.644 (11.328)
Ethnolinguistic fragmentation	Roeder's 1985 Index of the extent of ethnolinguistic fragmentation in the country (B)	0.313 (0.178)	0.278 (0.191)	0.318 (0.187)	0.292 (0.201)
Democratic	Number of years in which the country experienced democracy between 1930 and 1995 (C)	42.853 (24.625)	50.973 (22.305)	44.644 (24.477)	52.220 (21.294)
British legal origin	= = 1 if the legal origin of home country is English Common Law, 0 otherwise (C)	0.287 (0.453)	0.112 (0.316)	0.232 (0.422)	0.101 (0.302)
French legal origin	= = 1 if the legal origin of home country is French Commercial Code, 0 otherwise (C)	0.199 (0.399)	0.310 (0.463)	0.244 (0.430)	0.328 (0.469)
Socialist/communist legal origin	= = 1 if the legal origin of home country is Socialist/ Communist Laws, 0 otherwise (C)	0.248 (0.432)	0.154 (0.361)	0.228 (0.419)	0.136 (0.343)
German legal origin	= = 1 if the legal origin of home country is German commercial code, 0 otherwise (C)	0.168 (0.374)	0.288 (0.453)	0.198 (0.399)	0.309 (0.462)
Scandinavian legal origin	= = 1 if the legal origin of home country is Scandinavian commercial code, 0 otherwise (C)	0.098 (0.298)	0.136 (0.343)	0.098 (0.297)	0.126 (0.332)
% Catholic 1980	% Catholic in a country in 1980 (C)	31.747 (34.614)	49.905 (30.920)	36.258 (35.250)	51.067 (30.705)
% Muslim 1980	% Muslim in a country in 1980 (C)	2.277 (4.404)	0.829 (0.997)	2.053 (5.665)	0.823 (0.998)
% Protestant 1980	% Protestant in a country in 1980 (C)	27.803 (30.374)	27.502 (28.591)	28.046 (30.325)	27.575 (28.850)
% Other denomination 1980	% Other denomination in a country in 1980 (C)	38.173 (32.659)	21.764 (21.311)	33.643 (31.243)	20.534 (20.649)
N	^	2909	1649	2738	1719

Notes: Personal characteristics variables data come from the ESS survey. The question about hours normally worked in a week refers to the respondent's current job if he or she is currently employed and to the most recent job if he or she is unemployed at the time of the interview. We restrict our sample to second-generation immigrants who are either working at the time of the interview or have held their last job in year 2000 or later and are/were between 16 and 64 years of age at the time of working. We also exclude individuals who reported either zero hours normally worked or more than 100 h. Survey weights are used.

Average Tax Rate sample includes the following countries of destination: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.

τ sample includes the following countries of destination: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

Depending on specification, measures of culture of leisure are available for the following number of observations: Leisure Important – from 1649 to 2909; Generous Holidays – from 1619 to 2796; People Turn Lazy, Work Is a Duty to Society, and Work Should Come First – from 1555 to 2676; Country of Origin Average Hours – from 1392 to 1920.

A: World Values Survey and European Values Study data. The original variable Leisure Important had reverse scale; it was recoded so that higher values correspond to “lazier” culture. B: Roeder, 2001. “Ethnolinguistic Fractionalization (ELF) Indices, 1961 and 1985” <<http://pages.ucsd.edu/~proeder/elf.htm>>; C: Teorell et al. (2013); D: World Bank's World Development Indicators Database <[http://databank.worldbank.org /data/databases.aspx](http://databank.worldbank.org/data/databases.aspx)>; E: Barro and Lee (2013). The variable is available for the years 2000, 2005, and 2010; the values in between are interpolated; years 2010, 2011, 2012, and 2013 are assigned the 2010 value; F: Hofstede, G. “Cultural Dimensions” <<http://geert-hofstede.com/countries.html>>. G: OECD Tax Database Table 5 <http://stats.oecd.org/libezp.lib.lsu.edu/index.aspx?DataSetCode=TABLE_I5#>; H: <<http://www.caramcdaniel.com/researchpapers>>; I: International Labor Organization ILOSTAT Database annual weekly hours actually worked per employed person gender-specific indicator, averaged over the period since year 2000.

Table 5 presents six specifications in six columns. Each specification includes a different culture of leisure construct, which is displayed at the column header. For example, in the model of column (1) culture of leisure is measured by the mean value of the question that gauges the importance of leisure in people's lives (*Leisure Important*). Similarly, in column (2) culture of leisure is measured by responses to the statement of “*People who don't work turn lazy*” in the country of origin. Higher values of culture variables in columns (1) to (5) indicate stronger preference for leisure. Thus, the estimated coefficient of culture of leisure in these columns is expected to be negative.

In column (6) of Table 5, culture is measured by the labor force participation rate in the country of origin when we estimate models on the extensive margin (Panel A), or as the average hours worked in the country of origin when we estimate models on the

Table 5
The impact of tax rates and culture of Leisure on labor supply—females.

<i>Panel A: Dependent variable: Labor force participation</i>						
The measure of culture is →	(1) Leisure important	(2) People turn lazy	(3) Work is a duty to society	(4) Work should come first	(5) Generous holidays	(6) Low LFPR in origin country
Models with the average personal income tax rate						
Average tax	−0.004*** (0.001)	−0.003** (0.001)	−0.003** (0.001)	−0.003** (0.001)	−0.004*** (0.001)	−0.004** (0.002)
Culture	−0.131*** (0.029)	−0.036 (0.035)	−0.022 (0.047)	0.007 (0.033)	−0.001*** (0.000)	−0.003*** (0.001)
N	3770	3489	3489	3489	3626	2705
Models with the effective marginal tax rate						
τ	−0.004* (0.002)	−0.003 (0.002)	−0.003 (0.002)	−0.003 (0.002)	−0.004* (0.002)	−0.004 (0.003)
Culture	−0.126*** (0.037)	−0.069* (0.040)	−0.067 (0.045)	−0.022 (0.036)	−0.002*** (0.000)	−0.003** (0.001)
N	2204	2091	2091	2091	2165	1864
<i>Panel B: Dependent variable: Weekly hours normally worked in main job</i>						
The measure of culture is →	(1) Leisure important	(2) People turn lazy	(3) Work is a duty to society	(4) Work should come first	(5) Generous holidays	(6) Average hours in origin country x (−1)
Models with the average personal income tax rate						
Average tax	−0.083* (0.042)	−0.102** (0.043)	−0.105** (0.042)	−0.108** (0.042)	−0.083** (0.040)	−0.122** (0.047)
Culture	0.861 (1.854)	−2.249* (1.132)	−2.545* (1.326)	−1.834* (1.056)	0.014 (0.022)	0.029 (0.181)
N	2909	2676	2676	2676	2796	1920
Models with the effective marginal tax rate						
τ	−0.262*** (0.066)	−0.280*** (0.070)	−0.282*** (0.068)	−0.289*** (0.067)	−0.281*** (0.064)	−0.308*** (0.071)
Culture	0.176 (1.913)	−3.069** (1.183)	−2.755 (1.799)	−3.704** (1.289)	0.057** (0.026)	−0.114 (0.227)
N	1649	1555	1555	1555	1619	1392

τ – The effective marginal tax rate on labor income (Prescott 2004). Low LFPR = 1-Labor Force Participation Rate.

Average tax – Average personal income tax and social security contribution rate on gross labor income for a single person without a dependent (OECD Tax Database Table 5). In regressions of column (6) of panel B, average hours in the origin country variable is multiplied by minus one to convert the expected sign of this variable to negative.

Each regression includes the control variables listed in Panels A, C, and D of Table 4.

Standard errors, clustered at the country of origin, are in parentheses. The estimations use sampling weights and include survey year dummies.

* $p < 0.1$.

** $p < 0.05$.

*** $p < 0.01$.

intensive margin (Panel B). The coefficients of these variables are expected to be positive to the extent that work effort in the country of ancestry is a cultural attribute transmitted to the offspring. However, for consistency in the signs of the estimated coefficients of culture of leisure across specifications, I re-scaled the labor force participation rate (LFPR) variable used in the regression as (1-LFPR) so that countries with higher LFPR have lower values for (1-LFPR) in the regressions and the estimated coefficient of (1-LFPR) is expected to be negative in the labor force participation equation in Panel A. Similarly, the average hours worked in the country of origin is multiplied by (−1) so that its estimated coefficient is expected to be negative in regression of weekly hours worked in Panel B. Thus, the coefficients of all culture variables are expected to have negative signs.

Panel A and Panel B of Table 5 have two sections each. The models in the top section of each panel use the first tax measure (average tax), while the models in the bottom section employ τ (effective marginal tax) as the measure of the tax rate in the country. Panel A of Table 5 shows that taxes have a negative impact on female labor force participation in all models when taxes are measured by the average tax. The same is true also in models where taxes are measured by the effective marginal tax rate τ, although the point estimates are significant only at the 12–20% level in models of columns 2, 3, 4 and 6.

Culture of leisure in the country of origin has a negative and statistically significant impact on female labor force participation in models displayed in columns (1) and (5) where culture is measured by people's valuation of leisure (*leisure is important*) and by valuation of the generous holidays attached to a job (*generous holidays*). In the regression reported in column (6), culture of leisure is measured by low female labor force participation in the country-of-ancestry (1-LFPR). Its coefficient is also negative as expected, and significantly different from zero. When culture of leisure is measured by the variable *People Turn Lazy*, its impact on individuals' labor force participation is significantly different from zero in the model that uses the marginal tax rate τ in the bottom section of Panel A.

Panel B presents the results where the dependent variable is hours worked for females, conditional on working. Both higher taxes in the country of residence and higher culture of leisure in the country of origin reduce female hours. Culture coefficients are

Table 6
The impact of tax rates and culture of Leisure on labor supply—males.

<i>Panel A: Dependent variable: Labor force participation</i>						
The measure of culture is →	(1) Leisure important	(2) People turn lazy	(3) Work is a duty to society	(4) Work should come first	(5) Generous holidays	(6) Low LFPR in origin country
Models with the average personal income tax rate						
Average tax	−0.003** (0.001)	−0.003*** (0.001)	−0.003*** (0.001)	−0.004*** (0.001)	−0.003** (0.001)	−0.004*** (0.001)
Culture	0.020 (0.045)	0.007 (0.037)	0.028 (0.032)	0.024 (0.032)	−0.000 (0.000)	0.001 (0.001)
N	3295	3060	3060	3060	3178	2313
Models with the effective marginal tax rate						
τ	−0.005*** (0.002)	−0.005*** (0.002)	−0.005*** (0.002)	−0.005*** (0.002)	−0.004** (0.002)	−0.006*** (0.002)
Culture	0.080 (0.058)	−0.003 (0.034)	0.022 (0.036)	0.041 (0.033)	−0.000 (0.001)	0.001 (0.001)
N	2022	1913	1913	1913	1998	1692
<i>Panel B: Dependent variable: Weekly hours normally worked in main job</i>						
The measure of culture is →	(1) Leisure important	(2) People turn lazy	(3) Work is a duty to society	(4) Work should come first	(5) Generous holidays	(6) Average hours in origin country x (−1)
Models with the average personal income tax rate						
Average Tax	−0.094** (0.043)	−0.096* (0.048)	−0.094* (0.048)	−0.099** (0.048)	−0.100** (0.044)	−0.096* (0.051)
Culture	2.250 (2.136)	1.326 (1.532)	2.688 (1.950)	3.780*** (1.241)	0.015 (0.022)	0.389 (0.364)
N	2738	2533	2533	2533	2652	1876
Models with the effective marginal tax rate						
τ	−0.196** (0.074)	−0.196** (0.079)	−0.200** (0.077)	−0.195** (0.075)	−0.199** (0.075)	−0.198** (0.083)
Culture	2.032 (2.789)	1.241 (1.573)	3.188 (2.291)	3.183* (1.698)	0.006 (0.026)	0.492 (0.494)
N	1719	1624	1624	1624	1703	1436

τ – The effective marginal tax rate on labor income (Prescott 2004). Low LFPR = 1-Labor Force Participation Rate.

Average tax – Average personal income tax and social security contribution rate on gross labor income for a single person without a dependent (OECD Tax Database Table 5). In regressions of column (6) of panel B, average hours in the origin county variable is multiplied by minus one to convert the expected sign of this variable to negative.

Each regression includes the control variables listed in Panels A, C, and D of Table 4.

Standard errors, clustered at the country of origin, are in parentheses. The estimations use sampling weights and include survey year dummies.

* $p < 0.1$.

** $p < 0.05$.

*** $p < 0.01$.

statistically different from zero in models 2, 3, and 4 when taxes are measured by average personal income tax rate for a single person without a dependent, and in models 2, 4 and 5 with effective marginal tax rate on labor income, although the coefficient is positive in model 5. The picture that emerges in Table 5 is that for females, taxes have a negative impact on labor supply both at the extensive and intensive margins, and culture of leisure also negatively impacts labor supply, although the precision of the estimated coefficients varies between specifications.

Table 6 reports the results of the same models for males. In Panel A we observe that taxes have a negative impact on labor force participation, regardless of the measure of culture and regardless of the measure of taxes. On the other hand, there is no clear pattern in the estimated culture variables. Five of the estimated coefficients are negative, seven are positive, and none is statistically different from zero. Panel B summarizes the models that investigate hours worked for males, conditional on working. While there is strong evidence for the impact of taxes on male labor supply, culture of leisure has no statistically significant impact for males, with the exception of the model in column (4) where the coefficient of the culture variable is positive and significant in contrast to theoretical expectations.¹⁴

It is possible that second-generation Muslim immigrants are different from non-Muslim immigrants in a number of dimensions ranging from labor market attachment to the impact of culture of leisure. This may be particularly true for Muslim women. To

¹⁴ The effects are expected to be stronger if both the father and the mother migrated from the same county. In the data, however, there is not enough number of individuals for whom both parents are migrants. When we consider only the mother's country of origin we find no statistically significant effects on hours worked regressions for either gender. In labor force participation regression, taxes, but not culture have a negative impact for men.

Table 7

The impact of tax rates and culture of Leisure on labor supply—Females excluding muslim immigrants.

<i>Panel A: Dependent variable: Labor force participation</i>						
The measure of culture is →	(1) Leisure important	(2) People turn lazy	(3) Work is a duty to society	(4) Work should come first	(5) Generous holidays	(6) Low LFPR in origin country
Models with the average personal income tax rate						
Average tax	–0.002 (0.001)	–0.002 (0.001)	–0.002* (0.001)	–0.002* (0.001)	–0.002* (0.001)	–0.003* (0.002)
Culture	–0.109** (0.045)	–0.019 (0.039)	–0.021 (0.050)	0.033 (0.040)	–0.001 (0.001)	–0.002* (0.001)
N	3075	3033	3033	3033	3023	2249
Models with the effective marginal tax rate						
τ	–0.002 (0.002)	–0.001 (0.002)	–0.001 (0.002)	–0.002 (0.002)	–0.002 (0.002)	–0.003 (0.003)
Culture	–0.113** (0.051)	–0.063 (0.039)	–0.125*** (0.038)	–0.048 (0.038)	–0.001 (0.001)	0.001 (0.001)
N	1890	1851	1851	1851	1851	1624
<i>Panel B: Dependent variable: Weekly hours normally worked in main job</i>						
The measure of culture is →	(1) Leisure important	(2) People turn lazy	(3) Work is a duty to society	(4) Work should come first	(5) Generous holidays	(6) Average hours in origin country x (–1)
Models with the average personal income tax rate						
Average tax	–0.092** (0.045)	–0.085* (0.046)	–0.089* (0.045)	–0.091** (0.044)	–0.095** (0.045)	–0.107** (0.049)
Culture	–3.576 (2.585)	–2.549** (1.177)	–3.011** (1.410)	–2.735** (1.117)	–0.062 (0.037)	0.038 (0.181)
N	2383	2352	2352	2352	2352	1799
Models with the effective marginal tax rate						
τ	–0.234*** (0.064)	–0.238*** (0.068)	–0.249*** (0.067)	–0.244*** (0.066)	–0.252*** (0.068)	–0.254*** (0.067)
Culture	–5.550** (2.630)	–3.255** (1.238)	–1.579 (1.992)	–3.772** (1.485)	–0.067 (0.054)	–0.188 (0.240)
N	1446	1416	1416	1416	1416	1311

τ – The effective marginal tax rate on labor income (Prescott 2004). Low LFPR = 1–Labor Force Participation Rate.

Average tax – Average personal income tax and social security contribution rate on gross labor income for a single person without a dependent (OECD Tax Database Table 5). In regressions of column (6) of panel B, average hours in the origin country variable is multiplied by minus one to convert the expected sign of this variable to negative. Regressions include the control variables listed in Panels A, C, and D of Table 4. Standard errors, clustered at the country of origin, are in parentheses. The estimations use sampling weights and include survey year dummies.

* $p < 0.1$.

** $p < 0.05$.

*** $p < 0.01$.

investigate if the results are sensitive to the behavior of Muslim immigrants, I dropped from the sample those individuals whose fathers have migrated from Morocco, Turkey, Algeria, Iraq and Iran. The overwhelming majority of the population in these countries adheres to Islam, and these countries represent the largest Muslim immigrant groups in the data. The results for women are presented in Table 7. Sample sizes decline by 500 to 700 observations because of the omission of Muslim immigrants, but the results are very similar to those displayed in Table 5, although the impact of taxes is weaker in the labor force participation regressions. Table 8 presents the results for non-Muslim second-generation immigrant men. This table is the counterpart to Table 6 and the results are very similar between the two tables. Thus, Tables 7 and 8 show that the results are not impacted by the inclusion or exclusion of Muslim immigrants to the analysis.

Table 9 summarizes these results by reporting them in elasticity form. The elasticities with respect to taxes are based on median estimate of the effective marginal tax rate coefficients, and the elasticity with respect to culture is the median estimate within the relevant panels of Tables 5 and 6. The implied aggregate hours elasticity for taxes is –0.63 for females and –0.54 for males.¹⁵ The impact of culture of leisure, expressed in elasticity terms, is smaller than the impact of taxes, but still sizable for female labor supply, while culture of leisure has no impact on men's labor market activity.

To put these elasticities in perspective, note for example, that in Belgium average hours per working age population was 989 in 2012, and the effective marginal tax rate was 57%. In Portugal, average hours worked in 2012 was 1237 and the effective marginal tax rate was 41%. If the tax rate in Belgium went down 16 percentage points to bring it down to the level prevailing in Portugal, this would have been a 28% reduction. Using the elasticity estimates for men and women in Table 9, and using the weights of men and

¹⁵ These estimates are smaller than those summarized by Chetty et al. (2011) but the numbers reported in Table 7 are uncompensated elasticities, while the ones reported by Chetty et al. (2011) are compensated elasticities.

Table 8

The impact of tax rates and culture of Leisure on labor supply—Males excluding muslim immigrants.

<i>Panel A: Dependent variable: Labor force participation</i>						
The measure of culture is →	(1) Leisure important	(2) People turn lazy	(3) Work is a duty to society	(4) Work should come first	(5) Generous holidays	(6) Low LFPR in origin country
Models with the average personal income tax rate						
Average tax	−0.004*** (0.001)	−0.004*** (0.001)	−0.004*** (0.001)	−0.004*** (0.001)	−0.004*** (0.001)	−0.004*** (0.001)
Culture	0.002 (0.060)	0.032 (0.036)	0.020 (0.035)	0.029 (0.036)	−0.001 (0.002)	0.000 (0.001)
N	2670	2646	2646	2646	2633	1899
Models with the effective marginal tax rate						
τ	−0.005** (0.002)	−0.005** (0.002)	−0.005** (0.002)	−0.005** (0.002)	−0.005** (0.002)	−0.006** (0.002)
Culture	−0.020 (0.060)	0.005 (0.035)	0.012 (0.043)	0.035 (0.040)	−0.003** (0.001)	0.001 (0.001)
N						
<i>Panel B: Dependent variable: Weekly hours normally worked in main job</i>						
The measure of culture is →	(1) Leisure important	(2) People turn lazy	(3) Work is a duty to society	(4) Work should come first	(5) Generous holidays	(6) Average hours in origin country x (−1)
Models with the average personal income tax rate						
Average tax	−0.096 (0.057)	−0.098* (0.058)	−0.095 (0.058)	−0.099* (0.058)	−0.096* (0.056)	−0.085 (0.059)
Culture	−1.261 (3.887)	1.502 (1.572)	2.381 (2.123)	3.086** (1.449)	0.116** (0.054)	0.311 (0.399)
N	2235	2219	2219	2219	2219	1741
Models with the effective marginal tax rate						
τ	−0.203** (0.094)	−0.205** (0.096)	−0.207** (0.095)	−0.205** (0.093)	−0.194* (0.096)	−0.198* (0.098)
Culture	−0.471 (4.932)	1.472 (1.580)	4.136 (2.732)	2.895 (1.838)	0.114* (0.063)	0.461 (0.515)
N	1470	1454	1454	1454	1454	1335

τ – The effective marginal tax rate on labor income (Prescott 2004). Low LFPR = 1-Labor Force Participation Rate.

Average tax – Average personal income tax and social security contribution rate on gross labor income for a single person without a dependent (OECD Tax Database Table 5). In regressions of column (6) of panel B, average hours in the origin country variable is multiplied by minus one to convert the expected sign of this variable to negative. Regressions include the control variables listed in Panels A, C, and D of Table 4. Standard errors, clustered at the country of origin, are in parentheses. The estimations use sampling weights and include survey year dummies.

* $p < 0.1$.

** $p < 0.05$.

*** $p < 0.01$.

Table 9

Elasticities.

		Extensive margin	Intensive margin
Females	Tax	−0.25	−0.38
	Culture of Leisure	−0.15	−0.20
Males	Tax	−0.32	−0.22
	Culture of Leisure	0.00	0.00

women in employment, we find that aggregate hours would go up by 16% or by 158 h per working-age person. This would help close the gap in hours of work between Belgium and Portugal (see Table 1) by about 64%.

The mean value of the response to the question of *Work is Duty towards Society* (1: Strongly Agree, 5: Strongly disagree) is 2.3 in Belgium. If the tastes for leisure were weaker so that the mean response to this question were 1.91 (the level in Portugal), this would constitute a 17% decline in the intensity of tastes for leisure. This particular change in preferences would impact hours worked only through its effect on females, because in case of males neither participation nor hours respond to changes in culture of leisure. The impact on aggregate hours worked per working age population would be an increase by 30 h (about 3%). This would close the gap in hours worked between Belgium and Portugal by 15%.

Table 10 reports the same models reported earlier, but these models include country-of-origin fixed-effects. As a result, the impact of leisure variables cannot be identified, but once can investigate whether the impact of taxes is altered by this specification. Table 10 displays the coefficients of the average and marginal taxes in both the participation and hours equations. They are very similar to

Table 10
The impact of tax rates on labor supply. Models with country of origin fixed effects.

	Female		Male	
	(1)	(2)	(3)	(4)
	Labor force participation	Weekly hours	Labor force participation	Weekly hours
Models with the average personal income tax rate				
Average tax	−0.004** (0.001)	−0.063 (0.044)	−0.003** (0.001)	−0.120*** (0.043)
N	3770	2909	3295	2738
Models with the effective marginal tax rate				
τ	−0.003 (0.003)	−0.236*** (0.076)	−0.004** (0.002)	−0.228*** (0.073)
N	2204	1649	2022	1719

τ – The effective marginal tax rate on labor income (Prescott 2004).

Average tax – Average personal income tax and social security contribution rate on gross labor income for a single person without a dependent (OECD Tax Database Table 5).

Each regression includes the control variables listed in Panels A, C, and D of Table 4.

Standard errors, clustered at the country of origin, are in parentheses. The estimations use sampling weights and include survey year and country of origin dummies. * $p < 0.1$.

** $p < 0.05$.

*** $p < 0.01$.

Table 11
The impact of culture of leisure on labor supply–females. Models with country of residence fixed effects.

The measure of culture is →	Panel A: Dependent variable: Labor force participation					
	(1) Leisure important	(2) People turn lazy	(3) Work is a duty to society	(4) Work should come first	(5) Generous holidays	(6) Low LFPR in origin country
Average personal income tax rate sample						
Culture Coefficient	−0.111*** (0.034)	−0.040 (0.034)	−0.059 (0.042)	0.007 (0.031)	−0.001*** (0.000)	0.003*** (0.001)
N	3770	3489	3489	3489	3626	2705
Effective marginal tax rate sample						
Culture Coefficient	−0.109** (0.043)	−0.075* (0.042)	−0.124** (0.045)	−0.030 (0.038)	−0.001*** (0.000)	0.003** (0.001)
N	2204	2091	2091	2091	2165	1864
The measure of culture is →	Panel B: Dependent variable: Weekly hours normally worked in main job					
	(1) Leisure important	(2) People turn lazy	(3) Work is a duty to society	(4) Work should come first	(5) Generous holidays	(6) Average hours in origin country x (−1)
Average personal income tax rate sample						
Culture Coefficient	0.263 (1.886)	−1.818 (1.134)	−1.704 (1.307)	−1.910* (1.092)	0.010 (0.024)	−0.003 (0.194)
N	2909	2676	2676	2676	2796	1920
Effective marginal tax rate sample						
Culture Coefficient	−0.303 (2.090)	−2.814* (1.381)	−1.892 (1.665)	−3.806** (1.410)	0.048 (0.029)	0.128 (0.250)
N	1649	1555	1555	1555	1619	1392

Each regression includes the control variables listed in Panels A, C, and D of Table 4. Low LFPR = 1-Labor Force Participation Rate. In regressions of column (6) of panel B, average hours in the origin county variable is multiplied by minus one to convert the expected sign of this variable to negative.

Standard errors, clustered at the country of origin, are in parentheses. The estimations use sampling weights and include survey year and country of destination dummies.

* $p < 0.1$.

** $p < 0.05$.

*** $p < 0.01$.

those reported in Tables 5 and 6. For example, the top panel of Table 5 shows that the coefficients of the average tax in the labor force participation regression are −0.003 or −0.004, depending on the model. Column (1) of Table 10 shows that the coefficient of average tax is −0.004 for female participation equation in the models with country of origin fixed effects. For men, the top panel of Table 6 shows that the coefficient of average tax is −0.003 in most participation models, and column (3) of Table 10 reports the same magnitude as the tax coefficient. Other coefficients are also comparable between Tables 5, 6 and 10. For example, the bottom panel of

Table 12
The impact of culture of leisure on labor supply—males. Models with country of residence fixed effects.

<i>Panel A: Dependent variable: Labor force participation</i>						
The measure of culture is →	(1)	(2)	(3)	(4)	(5)	(6)
	Leisure important	People turn lazy	Work is a duty to society	Work should come first	Generous holidays	Low LFPR in origin country
Average personal income tax rate sample						
Culture Coefficient	0.019 (0.044)	0.017 (0.039)	0.041 (0.036)	0.040 (0.034)	−0.000 (0.000)	−0.001 (0.001)
N	3295	3060	3060	3060	3178	2313
Effective marginal tax rate sample						
Culture Coefficient	0.075 (0.054)	0.010 (0.034)	0.034 (0.039)	0.047 (0.032)	0.000 (0.001)	−0.001 (0.001)
N	2022	1913	1913	1913	1998	1692
<i>Panel B: Dependent variable: Weekly hours normally worked in main job</i>						
The measure of culture is →	(1)	(2)	(3)	(4)	(5)	(6)
	Leisure important	People turn lazy	Work is a duty to society	Work should come first	Generous holidays	Average hours in origin country x (−1)
Average personal income tax rate sample						
Culture Coefficient	1.614 (2.178)	0.817 (1.558)	1.756 (2.033)	3.398** (1.325)	0.015 (0.022)	−0.319 (0.406)
N	2738	2533	2533	2533	2652	1876
Effective marginal tax rate sample						
Culture Coefficient	1.397 (2.875)	0.728 (1.658)	2.461 (2.293)	2.667 (1.707)	0.005 (0.026)	−0.360 (0.513)
N	1719	1624	1624	1624	1703	1436

Each regression includes the control variables listed in Panels A, C, and D of Table 4. Low LFPR = 1-Labor Force Participation Rate. In regressions of column (6) of panel B, average hours in the origin country variable is multiplied by minus one to convert the expected sign of this variable to negative.

Standard errors, clustered at the country of origin, are in parentheses. The estimations use sampling weights and include survey year and country of destination dummies. * $p < 0.1$.

** $p < 0.05$, *** $p < 0.01$.

Table 5 shows that the coefficient of the effective marginal tax rate on hours worked for women ranges from −0.26 to −0.30. The corresponding coefficient in column (2) of Table 10 is −0.236.

Tables 11 and 12 display the results of the analogous exercise, but in this case, the country-of-residence variables, including the tax rates, are replaced with country of residence dummies. Country-of-origin variables, including leisure measures, are retained. Table 11 presents the results for females. The estimated coefficients of various measures of leisure are consistent with the ones reported earlier in both participation and hours decisions, but the statistical significant is spotty. The results for males, shown in Table 12, are also consistent with those reported earlier: taste for leisure is not a statistically significant determinant of men's labor market activity for men.

4.1. Potential self-selection of immigrant fathers

First-generation immigrants are a self-selected group of people who chose to leave their country-of-origin and decided to migrate to another country. Thus, their unobserved attributes, including their propensity to work, may be different from the general population. This could be an issue if the first-generation immigrants (who are the fathers of our survey respondents) have self-selected themselves into destination countries based on the tax rates of those countries. For example, if people from countries with a strong “culture of leisure” choose to migrate to countries with high tax rates, and if the first-generations’ taste for leisure is transmitted to the second-generation, then the impact of taxes on the labor supply of second generation will be estimated with bias. To shed light on this issue, I divided the sample into two groups: immigrants in destination countries with above-median tax rates, and immigrant in destination countries with below-median tax rates. I calculated the mean values of the “culture of leisure” variables using each second-generation immigrant's country of heritage. Table 13 shows that there are 2957 s-generation immigrants in the data set whose fathers have migrated to high-tax countries, and that the average tax rate in those countries is 34.59%. There are 4108 s-generation immigrants in the data set who live in low-tax countries by the virtue of their fathers having migrated to these countries. The average tax rate in these countries is 19.90%. The mean value of the *Leisure Important* variable is 3.12 in the former group and it is 3.04 in the latter. This indicates that the average taste for leisure in the country of origin of second-generation immigrants who live in high-tax countries is not different from the taste for leisure in countries of origin of other second-generation immigrants who live in low-tax countries. The same picture emerges when we consider “People Turn Lazy if they don't work” variable. The mean value of this variable attached to those who live in high-tax countries is 2.20, whereas it is 2.15 for those who live in low-tax countries. Similarly, the mean values of *Work Is a Duty*, *Work Should Come First* and *Generous Holidays* variables are very similar between the two groups. Columns 3–6 show that the same conclusion is reached when women and men are analyzed separately. Thus, Table 13 indicates that

Table 13
Balance of covariates for high and low tax destination countries.

Variable	Both genders		Females		Males	
	(1) High tax countries	(2) Low tax countries	(3) High tax countries	(4) Low tax countries	(5) High tax countries	(6) Low tax countries
Average tax rate	34.591 (5.965)	19.897 (3.334)	34.346 (5.809)	19.687 (3.203)	34.853 (6.118)	20.142 (3.465)
Culture of Leisure in the country of origin by migration destination (high vs. low tax countries)						
Leisure important	3.122 (0.180)	3.040 (0.198)	3.127 (0.180)	3.039 (0.198)	3.118 (0.179)	3.041 (0.198)
People turn lazy	2.204 (0.336)	2.146 (0.288)	2.219 (0.338)	2.141 (0.287)	2.189 (0.332)	2.152 (0.289)
Work is a duty to society	2.202 (0.306)	2.266 (0.351)	2.215 (0.299)	2.268 (0.352)	2.188 (0.313)	2.263 (0.350)
Work should come first	2.549 (0.453)	2.521 (0.448)	2.560 (0.453)	2.512 (0.453)	2.536 (0.453)	2.531 (0.441)
Generous holidays	32.711 (15.646)	36.830 (14.759)	32.226 (15.433)	37.030 (14.800)	33.228 (15.860)	36.597 (14.712)
Survey participant (second-generation immigrant) characteristics by country of residence (high vs. low tax countries)						
Labor force participation	0.700 (0.459)	0.740 (0.438)	0.665 (0.472)	0.687 (0.464)	0.737 (0.441)	0.803 (0.398)
Years of schooling	13.126 (3.580)	13.125 (3.417)	13.200 (3.619)	13.294 (3.391)	13.048 (3.537)	12.926 (3.438)
Father completed upper-secondary education	0.553 (0.497)	0.566 (0.496)	0.547 (0.498)	0.573 (0.495)	0.559 (0.497)	0.559 (0.497)
Father worked when respondent was 14 years old	0.880 (0.325)	0.904 (0.294)	0.878 (0.328)	0.892 (0.311)	0.883 (0.322)	0.919 (0.274)
N	2957	4108	1527	2243	1430	1865

Notes: Personal characteristics variables data come from the ESS survey.

High Tax sample includes the following countries of destination: Belgium, Germany, Denmark, Hungary, Slovenia, Austria, the Netherlands, Finland, Norway, Turkey, Italy, Sweden, and France.

Low Tax sample includes the following countries of destination: Iceland, Poland, Luxembourg, the United Kingdom, Greece, Czech Republic, Portugal, Slovakia, Israel, Spain, Estonia, Switzerland, and Ireland.

the taste for leisure in the country of origin is the same between migrants who migrated to high-tax or to low-tax countries. This provides evidence against the hypothesis that tastes for leisure might have motivated people to migrate based on the tax rates in the countries of destination.

Table 13 also demonstrates that the second-generation immigrants who are analyzed in the paper have the same average education levels regardless of whether they reside in a high-tax or low-tax country. More importantly, Table 13 shows that the education levels of the fathers of these individuals, who have chosen which country to migrate to, are similar between high-tax and low-tax countries. Fifty-five percent of the fathers who have chosen to migrate to a high-tax country have completed upper secondary education. The rate is about 57% among immigrant fathers who have migrated to a low-tax country. Finally, Table 13 also shows that labor force participation decisions of fathers who have migrated to high vs. low-tax countries were also similar. That is, the first-generation immigrants (the fathers of the individuals analyzed in this paper) had similar labor market attachments regardless of whether they moved to a high-tax vs. low-tax country. In summary, Table 13 does not support the conjecture that first-generation immigrants' education levels, labor market attachments or the taste for leisure in their country of origin are related to the tax rates in the country of destination.

5. Summary and conclusion

There are substantial differences in aggregate hours worked between countries. In an influential paper, using a growth model Prescott (2004) argued that virtually all of the difference in hours worked between the U.S. and Europe could be explained by the differences in tax rates. A large literature that followed Prescott (2004) provided various extensions ranging from consideration of households' self-insurance through asset accumulation (Ljungqvist and Sargent 2006) to incorporation of household production (McDaniel 2011).

Taxes distort the margin at which the market labor supply decision is made and higher taxes on labor income motivate people to shift away from market work to leisure. The large magnitude of the labor supply response in the Prescott framework, however, prompted the skeptics to suggest alternative or complementary mechanisms to explain the labor supply differences between countries, including the importance of regulations and labor unions (Alesina et al. 2005). One important point in this framework is the assumption of homogeneous preferences between countries. While it has been explicitly acknowledged that preferences for leisure

Table A1
Measures of culture of Leisure in the countries of origin.

Country	Leisure important (Not all: 1 to Very Important:4)	People turn lazy (Str. Agree: 1 to Strongly Disagree: 5)	Work is a duty to society (Strongly Agree:1 to Strongly Disagree: 5)	Work should come first (Str. Agree: 1 to Strongly Disagree: 5)	Generous holidays are Important (0 to 100—higher values, stronger agreement)
Algeria	2.953				20.515
Austria	3.251	2.141	2.078	2.556	20.708
Belarus	3.006	2.175	2.353	3.089	39.322
Belgium	3.255	2.667	2.302	3.179	28.246
Brazil	3.297	2.163	2.131	2.395	16.107
Bulgaria	2.955	2.036	2.121	2.219	37.069
Canada	3.280	2.671	2.392	3.028	26.680
Chile	3.213	2.117	2.106	2.534	26.159
China	2.571	2.039	2.084	2.234	13.701
Croatia	3.109	2.464	2.598	2.816	33.549
Cyprus	3.470	1.954	1.911	2.228	39.550
Czech Republic	3.020	2.112	2.453	2.604	25.070
Denmark	3.391	2.322	2.119	2.777	18.842
Egypt	2.554	1.548	1.418	1.431	12.900
Estonia	2.996	2.289	2.534	2.902	30.144
Ethiopia	3.275	1.736	1.639	1.636	
Finland	3.343	2.521	2.422	3.090	14.920
France	3.195	2.609	2.378	3.182	15.553
Georgia	3.184	2.004	2.123	1.975	23.132
Germany	3.177	2.580	2.290	2.487	24.623
Greece	3.361	2.325	2.485	2.760	24.982
Hungary	3.123	1.988	2.192	2.172	34.146
India	2.599	1.861	1.946	2.084	39.353
Indonesia	2.817	1.975	2.507	2.003	29.980
Iran	3.038				37.480
Iraq	2.933				
Ireland	3.271	2.563	2.380	3.012	38.054
Italy	3.108	2.077	2.198	2.701	23.574
Latvia	2.866	2.189	2.535	2.974	27.232
Macedonia	3.405	2.076	2.257	2.223	33.774
Morocco	2.916	1.794	1.494	1.565	77.658
Netherlands	3.467	2.984	2.419	3.439	36.185
Norway	3.388	2.546	1.854	2.838	11.825
Pakistan	2.246				
Poland	3.119	2.134	2.371	2.609	31.796
Portugal	3.041	2.160	1.910	2.647	49.582
Romania	2.975	1.848	2.162	2.071	45.499
Russia	2.968	2.139	2.662	2.686	37.635
Slovak Republic	3.088	1.939	2.336	2.369	28.923
Spain	3.221	2.318	2.382	2.725	30.524
Sweden	3.485	3.016	2.468	3.196	20.754
Switzerland	3.346	2.662	2.267	2.869	18.506
Turkey	3.176	1.706	1.762	2.115	50.846
Ukraine	2.975	2.135	2.550	2.709	39.890
United Kingdom	3.373	2.734	2.483	3.223	29.204
United States	3.297	2.566	2.502	3.111	31.466
Vietnam	2.573	1.840	1.666	2.079	42.000
N	47	43	43	43	44
Mean	3.099	2.226	2.215	2.571	30.401
St. Dev.	(0.271)	(0.342)	(0.302)	(0.481)	(12.188)

may not be identical between countries (Blanchard 2006), no research has addressed the question of whether or not the “taste for leisure” has a role in labor supply differences.

This paper uses micro data from European Social Survey that include information on labor force participation and hours worked of second-generation immigrants who reside in 26 European countries. These individuals are born in Europe, and they have been exposed to institutional, legal and labor market structures of their countries, including the tax rates. Fathers of these individuals are first-generation immigrants and our data allow us to identify 47 different countries they migrated from. Following the recent literature on the impact of culture on economic behavior (Alesina et al., 2015; Alesina and Giuliano 2010; Fernández 2011) immigrant father’s country of birth is used to determine the ancestral roots, and it is assumed that culture of leisure in father’s country of origin is transmitted from the immigrant father to the offspring.

Using the World Values Survey and the European Values Study, I construct measures of “taste for leisure” in the country of origin of each immigrant father. These measures include average responses in a country to such questions as “How Important is leisure time in your life?” “Do you agree or disagree with the statement: People who don’t work turn lazy.” “Do you agree or disagree with the statement:

Table A2
Descriptive statistics for the labor force participation sample.

Variable	Description (Source)	Females Average tax sample	τ sample	Males Average tax sample	τ sample
Panel A: Personal characteristics					
Labor force Participation	= = 1 if the individual reported being engaged in any paid work in the last 7 days or has “Unemployed and actively looking for a job” marked as his or her main activity in the last week, 0 otherwise	0.682 (0.466)	0.678 (0.467)	0.780 (0.414)	0.777 (0.416)
Age	Age of the respondent	39.971 (13.587)	39.314 (13.875)	38.103 (13.758)	37.956 (13.925)
Ethnic minority	= = 1 if the respondent belongs to minority ethnic group in a country	0.133 (0.340)	0.106 (0.308)	0.156 (0.363)	0.122 (0.327)
Years of schooling	Number of years of full-time education completed	13.267 (3.524)	13.025 (3.708)	13.000 (3.468)	12.969 (3.577)
Married	= = 1 if the respondent is married, 0 otherwise	0.507 (0.500)	0.457 (0.498)	0.471 (0.499)	0.434 (0.496)
City	= = 1 if respondent lives in a big city, 0 otherwise	0.326 (0.469)	0.217 (0.412)	0.304 (0.460)	0.226 (0.418)
Panel B: Culture of Leisure in country of origin					
Leisure important	Average country response to the question “For each of the following aspects, indicate how important it is in your life. Leisure time: 1 ‘Not at all important’ 2 ‘Not very important’ 3 ‘Rather important’ 4 ‘Very important’” (A) The variable was recoded so that higher values imply “lazier culture” Description (A)	3.077 (0.191)	3.116 (0.201)	3.081 (0.183)	3.112 (0.189)
Generous holidays	Average country response to the question “Here are some more aspects of a job that people say are important. Please look at them and tell me which ones you personally think are important in a job. Generous holidays” (A)	34.910 (15.213)	31.653 (13.690)	34.769 (15.133)	32.300 (13.972)
People turn lazy	Average country response to the question “Do you agree or disagree with the following statements: People who don’t work turn lazy. 1 ‘Strongly agree’ 2 ‘Agree’ 3 ‘Neither agree nor disagree’ 4 ‘Disagree’ 5 ‘Strongly disagree’” (A)	2.177 (0.311)	2.226 (0.326)	2.175 (0.306)	2.210 (0.324)
Work is a duty to society	Average country response to the question “Do you agree or disagree with the following statements: Work is a duty towards society. 1 ‘Strongly agree’ 2 ‘Agree’ 3 ‘Neither agree nor disagree’ 4 ‘Disagree’ 5 ‘Strongly disagree’” (A)	2.251 (0.330)	2.238 (0.266)	2.242 (0.334)	2.222 (0.279)
Work should come first	Average country response to the question “Do you agree or disagree with the following statements: Work should always come first, even if it means less spare time. 1 ‘Strongly agree’ 2 ‘Agree’ 3 ‘Neither agree nor disagree’ 4 ‘Disagree’ 5 ‘Strongly disagree’” (A)	2.535 (0.452)	2.587 (0.415)	2.541 (0.441)	2.577 (0.416)
Labor force participation	Gender and age group-specific labor force participation in the country of origin (I)	54.866 (23.292)	57.171 (22.891)	76.593 (20.485)	75.628 (20.805)
Panel C: Other country of origin characteristics					
Per capita income	PPP adjusted GDP in constant 2011 US\$ (D)	24,730 (12,986)	28,229 (13,398)	24,955 (12,965)	27,785 (13,240)
Ethnolinguistic fragmentation	Roeder’s 1985 Index of the extent of ethnolinguistic fragmentation in the country (B)	0.276 (0.195)	0.245 (0.200)	0.275 (0.192)	0.246 (0.198)
Democratic	Number of years in which the country experienced democracy between 1930 and 1995 (C)	22.448 (24.853)	29.569 (25.579)	23.500 (24.842)	29.466 (25.332)
British legal origin	= = 1 if the legal origin of home country is English Common Law, 0 otherwise (C)	0.096 (0.295)	0.123 (0.328)	0.098 (0.297)	0.124 (0.329)
French legal origin	= = 1 if the legal origin of home country is French Commercial Code, 0 otherwise (C)	0.393 (0.488)	0.430 (0.495)	0.422 (0.494)	0.459 (0.499)
Socialist/Communist legal origin	= = 1 if the legal origin of home country is Socialist/Communist Laws, 0 otherwise (C)	0.384 (0.486)	0.270 (0.444)	0.353 (0.478)	0.256 (0.437)
German legal origin	= = 1 if the legal origin of home country is German Commercial Code, 0 otherwise (C)	0.084 (0.277)	0.119 (0.324)	0.088 (0.284)	0.113 (0.317)
Scandinavian legal origin	= = 1 if the legal origin of home country is Scandinavian Commercial Code, 0 otherwise (C)	0.044 (0.205)	0.058 (0.233)	0.039 (0.193)	0.048 (0.213)
% Catholic 1980	% Catholic in a country in 1980 (C)	32.551 (36.536)	44.392 (36.952)	33.474 (36.980)	43.948 (37.216)
% Muslim 1980	% Muslim in a country in 1980 (C)	22.851 (38.687)	17.908 (36.176)	22.996 (38.684)	19.535 (37.598)
% Protestant 1980	% Protestant in a country in 1980 (C)	10.655 (21.976)	13.553 (24.059)	9.966 (21.275)	12.290 (22.910)
% Other Denomination 1980	% Other Denomination in a country in 1980 (C)	33.943 (34.599)	24.148 (26.473)	33.564 (34.646)	24.227 (26.979)
Panel D: Country of destination characteristics					
avg_all_in100	Average personal income tax and social security contribution rate on gross labor income for a single person without a dependent (G)	25.632 (8.472)		26.420 (8.771)	

(continued on next page)

Table A2 (continued)

Variable	Description (Source)	Females Average tax sample	τ sample	Males Average tax sample	τ sample
τ	The effective marginal tax rate calculated using McDaniel data (H)		48.737 (9.383)		48.947 (9.338)
Unemployment rate	Country unemployment rate (D)	7.595 (3.236)	7.051 (2.961)	7.646 (3.187)	7.234 (2.963)
Per capita income	PPP adjusted GDP in constant 2011 US\$ (D)	36,285 (11,813)	40,004 (8984)	37,280 (12,921)	40,148 (9171)
Average country education	Average education of individuals aged 15 and over in the country (E)	11.570 (0.955)	11.330 (1.009)	11.530 (0.946)	11.351 (0.961)
Population	Country population in millions (D)	20.096 (25.875)	29.582 (29.333)	22.057 (27.507)	31.622 (30.257)
Individualism	Hofstede Index of the degree to which individuals are integrated into groups (F)	63.363 (12.014)	67.420 (13.274)	64.218 (11.349)	67.961 (11.841)
Ethnolinguistic fragmentation	Roeder's 1985 Index of the extent of ethnolinguistic fragmentation in the country (B)	0.311 (0.180)	0.284 (0.195)	0.315 (0.187)	0.288 (0.201)
Democratic	Number of years in which the country experienced democracy between 1930 and 1995 (C)	43.202 (24.351)	50.135 (22.507)	44.124 (24.547)	51.170 (21.718)
British legal origin	= 1 if the legal origin of home country is English Common Law, 0 otherwise (C)	0.272 (0.445)	0.098 (0.297)	0.226 (0.418)	0.091 (0.288)
French legal origin	= 1 if the legal origin of home country is French Commercial Code, 0 otherwise (C)	0.215 (0.411)	0.319 (0.466)	0.241 (0.428)	0.326 (0.469)
Socialist/Communist legal origin	= 1 if the legal origin of home country is Socialist/Communist Laws, 0 otherwise (C)	0.235 (0.424)	0.155 (0.362)	0.232 (0.422)	0.143 (0.351)
German legal origin	= 1 if the legal origin of home country is German Commercial Code, 0 otherwise (C)	0.185 (0.388)	0.307 (0.461)	0.203 (0.402)	0.322 (0.467)
Scandinavian legal origin	= 1 if the legal origin of home country is Scandinavian Commercial Code, 0 otherwise (C)	0.093 (0.291)	0.122 (0.327)	0.098 (0.298)	0.118 (0.323)
% Catholic 1980	% Catholic in a country in 1980 (C)	34.053 (35.189)	50.908 (30.644)	36.545 (35.475)	51.646 (30.574)
% Muslim 1980	% Muslim in a country in 1980 (C)	2.512 (7.016)	0.801 (0.952)	2.257 (7.334)	0.806 (0.983)
% Protestant 1980	% Protestant in a country in 1980 (C)	26.788 (29.941)	26.961 (28.024)	28.012 (30.311)	26.991 (28.473)
% Other denomination 1980	% Other Denomination in a country in 1980 (C)	36.647 (32.754)	21.330 (21.558)	33.187 (31.047)	20.557 (20.852)
N		3770	2204	3295	2022

Notes: Personal characteristics variables data come from the ESS survey and cover years from 2004 to 2013. The sample is restricted to second-generation immigrants between 16 and 64 years of age, who do not reporting being permanently disabled or being in military/community service as their main activity in the last 7 days. Survey weights are used.

avg_all_in100 sample includes the following countries of destination: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.

τ sample includes the following countries of destination: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

Depending on specification, measures of culture of leisure are available for the following number of observations: Leisure Important – from 2022 to 3770; Generous Holidays – from 1998 to 3626; People Turn Lazy, Work Is a Duty to Society, and Work Should Come First – from 1913 to 3489; Country of Origin LFP – from 1692 to 2705.

A: World Values Survey and European Values Study data. The original variable Leisure Important had reverse scale; it was recoded so that higher values correspond to “lazier” culture.

B: Roeder, 2001. “Ethnolinguistic Fractionalization (ELF) Indices, 1961 and 1985” <<http://pages.ucsd.edu/~proeder/elf.htm>>; C: Teorell, Jan, Nicholas Charron, Stefan Dahlberg, Sören Holmberg, Bo Rothstein, Petrus Sundin & Richard Svensson, 2013. “The Quality of Government Dataset” version qog_std_cs_20dec13 <<http://www.qog.pol.gu.se>>; D: World Bank's World Development Indicators Database <<http://databank.worldbank.org/data/databases.aspx>>; E: Barro and Lee data set version BL2013_MF1599_v2.0 <<http://www.barrrolee.com/data/full1.htm>>. The variable is available for the years 2000, 2005, and 2010; the values in between are interpolated; years 2010, 2011, 2012, and 2013 are assigned the 2010 value; F: Hofstede, G. “Cultural Dimensions” <<http://geert-hofstede.com/countries.html>>. G: OECD Tax Database Table 5 <http://stats.oecd.org/libezp.lib.lsu.edu/index.aspx?DataSetCode=TABLE_I5#>; H: <<http://www.caramcdaniel.com/researchpapers>>; I: International Labor Organization ILOSTAT Database annual gender-and-age-group-specific indicator, averaged over the period since year 2002. The following bands were used for the age groups: 15–24, 25–54, and 55–64.

Work is a duty to society. “Do you agree or disagree with the statement: *Work should always come first even if it means less spare time.*” The details of these and other variables that aim to gauge the extent of culture of leisure in the country of origin are provided in the paper.

Two different tax measures are employed. The first one is the average personal income tax and the social security contribution rate on gross labor income for a single person without a dependent. The second one is the effective marginal tax rate on labor income. I control for individual characteristics such age, education, marital status, size of the city and ethnic minority status. I also control for

Table A3
Models of Table 4 column (1) and Table 5 column (1): Reporting all coefficients.

	Females (1) LFP	(2) Weekly Hours	Males (3) LFP	(4) Weekly Hours
Average tax	−0.004*** (0.001)	−0.083* (0.042)	−0.003** (0.001)	2.250 (2.136)
Leisure important	−0.131*** (0.029)	0.861 (1.854)	0.020 (0.045)	−0.094** (0.043)
Personal characteristics				
Age	0.081*** (0.004)	0.429** (0.160)	0.093*** (0.003)	0.842*** (0.121)
Age squared	−0.001*** (0.000)	−0.004** (0.002)	−0.001*** (0.000)	−0.009*** (0.001)
Ethnic minority	0.016 (0.020)	0.248 (0.660)	0.017 (0.022)	−0.698 (0.638)
Years of schooling	0.012*** (0.002)	0.241*** (0.069)	0.001 (0.003)	0.108 (0.064)
Married	−0.089*** (0.016)	−1.798*** (0.528)	0.029** (0.015)	1.165* (0.640)
City	0.022 (0.018)	−0.090 (0.559)	−0.018 (0.019)	−1.595*** (0.424)
Country of origin characteristics				
Per capita income	0.000* (0.000)	−0.000 (0.000)	−0.000 (0.000)	−0.000 (0.000)
Ethnolinguistic	0.054 (0.037)	−1.587 (1.631)	0.044 (0.028)	−0.080 (1.588)
Fragmentation	0.001 (0.001)	−0.037 (0.034)	0.000 (0.001)	0.001 (0.031)
Democratic	0.072* (0.037)	−0.072 (1.102)	0.008 (0.028)	1.394 (1.116)
French legal origin	0.131** (0.049)	−3.051 (2.010)	0.041 (0.039)	2.627 (2.048)
Socialist/Communist	0.047 (0.038)	−0.387 (1.213)	−0.020 (0.024)	3.006** (1.259)
Legal origin	0.111* (0.055)	2.374 (1.908)	−0.051 (0.039)	−0.578 (2.275)
Origin	0.000 (0.000)	−0.031*** (0.010)	0.001*** (0.000)	−0.001 (0.015)
% Catholic 1980	0.001*** (0.000)	−0.038** (0.017)	0.000 (0.000)	0.022 (0.019)
% Muslim 1980	−0.000 (0.001)	−0.047** (0.022)	0.001*** (0.000)	0.026 (0.026)
% Protestant 1980				
Country of destination characteristics				
Unemployment	−0.006 (0.004)	0.030 (0.102)	−0.003 (0.003)	0.080 (0.097)
Rate	−0.000** (0.000)	0.000* (0.000)	0.000** (0.000)	0.000** (0.000)
Per capita income	−0.008 (0.013)	−1.606*** (0.446)	−0.012 (0.012)	0.549 (0.643)
Average country	0.001** (0.000)	0.018 (0.018)	0.000 (0.000)	0.041** (0.019)
Education	−0.002** (0.001)	−0.042 (0.042)	0.001 (0.001)	0.016 (0.045)
Individualism	0.122* (0.065)	0.742 (2.639)	0.134** (0.065)	6.272* (3.199)
Ethnolinguistic	0.002 (0.002)	−0.059 (0.045)	−0.002* (0.001)	−0.104* (0.059)
Fragmentation	−0.020 (0.040)	2.490 (1.694)	−0.074 (0.058)	−0.281 (1.435)
Democratic	0.021 (0.102)	8.147*** (2.438)	−0.100 (0.064)	−1.295 (3.229)
French legal origin	−0.004 (0.053)	3.407** (1.581)	−0.058 (0.050)	1.029 (1.802)
Socialist/Communist	0.040 (0.073)	9.247*** (2.210)	−0.008 (0.048)	4.010* (2.335)
Legal origin	0.001 (0.001)	−0.054** (0.021)	0.001 (0.000)	−0.034* (0.018)
Origin	−0.004*** (0.001)	−0.266*** (0.088)	−0.002* (0.001)	−0.006 (0.030)
% Catholic 1980	0.002** (0.001)	−0.113*** (0.033)	0.001 (0.001)	−0.078** (0.030)
% Muslim 1980				
% Protestant 1980				

(continued on next page)

Table A3 (continued)

	Females (1) LFP	(2) Weekly Hours	Males (3) LFP	(4) Weekly Hours
	(0.001)	(0.024)	(0.001)	(0.030)
N	3770	2909	3295	2738

avg_all_in100 – Average personal income tax and social security contribution rate on gross labor income for a single person without a dependent (OECD Tax Database Table 5).

Standard errors clustered at the country of origin are in parentheses. The estimations use sampling weights and include survey year dummies.

* $p < 0.1$.

** $p < 0.05$.

*** $p < 0.01$.

a large set of attributes of the country of residence and country of origin, ranging from per capita income to the unemployment rate, from legal origin of the country to the religious composition. Thus, the impact of taxes on labor supply (both at the extensive and intensive margin) can be identified, holding constant observable attributes of individuals, various attributes of the country in which they live, and attributes of their father's country of origin, including the taste for leisure in that country of origin. Similarly, the impact of culture of leisure on labor supply can be identified, holding constant personal characteristics, and country attributes, including taxes.

It can be argued that migration decisions could be motivated by the tax rates in the destination countries. For example, people from countries where leisure is valued highly could have chosen to migrate to destination countries which have high tax rates, perhaps because such countries have more generous welfare benefits. If this is the case, self-selection of migrant fathers as a function of destination country tax rates could confound the estimated impact of taxes on the labor supply of their children. I show, however, that the taste for leisure in the immigrants' country of origin is not related to the tax rates in the country of destination. Furthermore, education levels and labor force participation rates of first-generation immigrants are very similar regardless of whether they chose to migrate to a low-tax or high-tax country of destination.

The results show that for women, both taxes and culture of leisure impact participation and hours worked. For men, taxes influence labor supply both at the intensive and the extensive margin, but culture of leisure has no impact. Uncompensated aggregate labor supply elasticity is -0.63 for women and -0.54 for men. The elasticity for "taste for leisure" is -0.35 for women and zero for men. These results suggest that while labor income tax is a significant determinant of aggregate hours worked, culture of leisure in the country is important as well.

Although this paper does not address the question of "what determines the difference in culture of leisure between countries?" it should be emphasized that recent research has shown that cultural attributes are malleable, and they react to external factors. For example, Fernández (2013) shows that social attitudes towards women's work endogenously change over time. Alesina and Fuchs-Schündeln (2007) find that individuals' preferences are shaped by the political regime in which they live. Giuliano and Spilimbergo (2014) report that individuals' political preferences and their support for government redistribution policies are impacted by whether or not they grew up during recessionary periods. Cannonier and Mocan (2018) find that women in Sierra Leone, whose years of schooling is increased by an education reform, are more likely to disapprove certain cultural norms and behaviors. Tastes for leisure, too, are likely to evolve over time as a cultural attribute. A simple example is the one given by Alesina et al. (2006) who suggest that an initial decline in market work might increase individuals' utility from leisure and this process can be amplified by a social multiplier (Glaeser et al., 2003) if there exist complementarities in leisure. But, regardless of whether culture of leisure evolves gradually or quickly over time, the results of this paper indicate that people would work less in a country if the taste for leisure is stronger in that country.

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