Attitudes, Policies and Work *

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Abstract

We study whether cultural attitudes towards gender, the young, and leisure are significant determinants of the evolution over time of the employment rates of women and of the young, and of hours worked in OECD countries. Beyond controlling for a larger menu of policies, institutions and structural characteristics of the economy than has been done so far, our analysis improves upon existing studies of the role of "culture" for labor market outcomes by dealing explicitly with the endogeneity of attitudes, policies and institutions, and by allowing for the persistent nature of labor market outcomes. When we do all this we find that culture still matters for women employment rates and for hours worked. However, policies and other institutional or structural characteristics are also important. Attitudes towards youth independence, however, do not appear to be important in explaining the employment rate of the young. In the case of women employment rates, the policy variable that is significant along with attitudes, is the OECD index of employment protection legislation. For hours worked the policy variables that play a role, along with attitudes, are the tax wedge and unemployment benefits. The quantitative impact of these policy variables is such that changes in policies have at least the potential to undo the effect of variations in cultural traits on labor market outcomes.

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1 Introduction and motivation

A number of labor market outcomes—the employment rate of women and of the young, the yearly hours worked by those who have a job—differ substantially across the OECD. In the period 1999-2002, for instance, the employment rate of those in the age bracket 16 to 25 was on average 41 per cent in Mediterranean countries, 43 percent in Continental Europe, and 58 per cent in Anglo-Saxon countries. In the same years the employment rate of women was 59 percent in Mediterranean countries and 80 percent in Nordic countries. These variables have also evolved differently within each group of countries over time: for instance, between the early 1980's and the beginning of this decade the employment rate of women has remained virtually constant in the Nordic countries, while it has increased by almost 20 percentage points in Continental Europe and in the Anglo-Saxon countries, and by 6 points in Japan. Average hours of work tend to decrease in the 80's, although at a different pace in each group of countries. In the 90's the rate of decrease tends to be smaller in Continental countries, and near to zero in Mediterranean and Nordic countries.

It has been claimed that attitudes towards gender and the young, what is sometimes referred to as a country's "culture", are important determinants of the cross-country and time series differences in the employment rates of various demographic groups.(see for instance Algan and Cahuc (2007) and Fortin (2005)). In related work, Alesina, Glaeser and Sacerdote (2005) have asked whether culture could explain the observed difference in hours worked between Europe and the United States, and Fortin (2009) has studied the effect of culture on an individual's decision to join the labor market in the United States.

However, the evidence on the role of "culture" on a country's labor market outcomes has so far been inconclusive, mainly for three reasons. First, as noted by Alesina, Glaeser and Sacerdote (2005), these papers often fail to allow for other factors that may determine labor market outcomes, in particular the differences across countries and the evolution within a country of economic structure (for instance the share of the services sector) and of labor market policies and institutions. Second, these analyses rarely recognize that the variables used to capture a country's "culture" are typically endogenous: attitudes towards leisure and work, for instance, are likely to be affected by a person's own labor market experience and by the experience of those around her. Finally, these papers seldom allow for the fact that employment rates and hours of work evolve gradually over time.

Our aim is to investigate whether culture plays a statistically and economically significant role when one tries to take care of the endogeneity of workers' attitudes, to allow for the persistent nature of labor market outcomes, and to control for a large menu of policies and institutions, recognizing—as is the case of attitudes—that some of these variables are also likely to be endogenous.

The investigation of the effects of workers' attitudes on labor market outcomes is part of a more general research program aimed at assessing the effect of culture on economic phenomena. The endogeneity of cultural traits is one of the central issues in this literature and various authors have tackled it different ways. Alesina and Giuliano (2007) use a variable based on the grammatical rule of pronoun drop as an instrument for a particular cultural trait: family ties. Guiso, Sapienza and

Zingales (2006) use the percentage of adherents to various religious denominations as an instrument for thrift, a cultural trait supposed to affect aggregate saving. Licht, Goldschmidt and Schwartz (2007) and Tabellini (2008b) investigate the role of culture in determining the quality of institutions, and also use a linguistic variable as an instrument for culture.[1] These papers are mostly cross sectional in nature. Even if repeated observations over time are available, country-fixed effects are typically not introduced because the instruments have little or no time variation. The exception is Tabellini (forthcoming) who instruments cultural traits—such as trust, obedience and respect—with past literacy rates and past institutions, and runs a cross sectional regression with regional data. This allows him to introduce country-specific effects, but obviously no region effects.

In their excellent survey of this literature Guiso, Sapienza and Zingales (2006) define culture as "those customary beliefs and values that ethnic, religious and social groups transmit fairly unchanged from generation to generation". This definition highlights the difficulties at identifying a country-specific effect of "culture". If culture is a time-invariant characteristic of a country it is very difficult to identify its causal influence on economic outcomes separately from the effect of other country-specific constant characteristics.[2] This paper exploits the variation within countries as well as across countries of cultural attitudes, policies and institutions. The use of panel data information allows us to identify the effect of culture, policies and institutions in determining a country's labor market outcomes, using their time varying component and controlling for time invariant country characteristics.

This approach is obviously informative only to the extent that attitudes, in addition to policies and institutions, have a significant time-varying component that differs across countries. This is the case, for instance, with the set of attitudes towards the role of women in the family and in the workplace—a potentially important cultural determinant of women employment outcomes: over the last quarter century, these particular attitudes have changed substantially and in a way that varies from one country to another. The same is true for attitudes towards desirable characteristics of the young, such as independence, and towards the value of leisure.

As in previous studies, we use the World Value Survey (WVS) to obtain a measure of attitudes towards women's work and towards youth independence, and assess their effect on the employment rate of women and the young, respectively. We also analyze the importance of attitudes towards holidays for average hours worked, a topic not investigated so far in the literature. Time varying measures for such attitudes are available at (approximately) equally spaced intervals of ten years for a set of OECD countries, from the beginning of the eighties to the beginning of the twenty first century.[3]

[1] Brugger, Lalive and Zweimuller (2009) use a regression discontinuity design across language barriers in Switzerland to investigate the effect of culture on unemployment.

[2] In a cross sectional context, the basic problem resides in the questionable assumption of orthogonality between the culture variable (or the instruments used for it) and the error term in the equation of interest, since one cannot control for time invariant unobservables.

[3] They are also available for the mid 1990's, but we have decided to rely on the lower frequency variation in order to give more time to attitude to evolve and because the survey in the mid 1990's is available only for a subset of countries.

As we already mentioned, a country's attitudes cannot be assumed to be exogenous. Attitudes towards women, or the young, or towards leisure are likely to be affected by present and past individual and aggregate labor market outcomes (in addition to policies and institutions). We thus need to use (time varying) instruments which are correlated with such attitudes but are uncorrelated with contemporaneous innovations in labor market outcomes—although they may reflect past innovations. In the dynamic panel estimation framework proposed by Arellano and Bond (1991) and Blundell and Bond (1998) these instruments can then be treated as predetermined variables. The GMM framework also allows us to account for the fact that labor market outcomes tend to have a degree of persistence over time, thus requiring the estimation of dynamic models for employment or hours.

One of the instruments we use is the percentage of people who believe in God, interacted with a country's historically prevalent religious affiliation (Catholic, Protestant, etc.). Our identifying assumption is that the evolution over time of this instrument is correlated with the evolution over time of those attitudes that are more directly relevant for labor market outcomes for women, youth and hours. However, contrary to those attitudes, religious beliefs (i) are not (contemporaneously) affected by labor market outcomes and (ii) are likely to affect outcomes only through such attitudes, once we control for other time varying policies, institutions and structural variables. Another instrument we experiment with reflects the degree of trust in others, but ultimately we do not rely on it in most case, because less informative and more open to objections concerning the validity of the exclusion restriction.[4]

We then extend our set of instruments in an important direction by including the attitudes towards women and towards sex and trust of second or higher generation American immigrants from different countries at different points in times. The evolution over time of the attitudes of American immigrants is correlated with that of attitudes in the country of origin, but can be assumed to be exogenous because they respond to institutional and economic shocks in the U.S. but are unlikely to be correlated, under certain assumptions, with economic shocks in the country of origin[5]

Our results thus improve upon previous findings, in particular on the seminal contributions of Algan and Cahuc (2007) and Fortin (2005) in three respects. Because those papers: *(i)* do not address the problem of endogeneity, *(ii)* rely on a static specification of labor market outcomes, and *(iii)* control for a much more limited menu of policies, institutions and structural variables.

[4] Fortin (2009) uses individual attitudes towards sex and politics as an instrument for family attitudes in an equation that explains a woman's participation decision in the U.S..

[5] The correlation between the behavior of immigrants and that of residents in the country of origin has been noted and exploited by several authors. For instance, Giuliano (2007) documents and studies the similarity in the living arrangements of children of immigrants with those in the country of origin. Fernandez (2007) uses both female LFP and attitudes in the women's country of ancestry as cultural proxies and show that both proxies have significant effects on women's work outcomes. Antecol (2000) also uses such an epidemiological approach. Algan and Cahuc (forthcoming) use the attitudes of American immigrants towards trust as an instrument to study the effect of trust on the growth rate of a country's per capita income in the long run (between 1935 and 2000). Fernandez and Fogli (2009) analyze fertility outcomes and labor market outcomes for US women, and instrument culture with past female labor force participation and total fertility rates from the woman's country of ancestry.

We find that, even after instrumenting, controlling for the role of time-varying structure, policies and institutions and for the persistence of participation and hours worked, culture still matters for two out of the three outcomes under study. Attitudes towards women's role in the family and attitudes towards leisure are statistically and economically important determinants of the employment rate of women and of average hours worked, respectively. However, policies and other institutional or structural characteristics of the labor market also matter, even when we recognize that policies and institutions may be endogenous because they may reflect changing economic conditions and cultural values. Attitudes towards youth independence, however, do not appear to be important in explaining the employment rate of the young. In the case of women employment rates, the policy variable that is significant along with attitudes, is the OECD index of employment protection legislation. For hours worked the policy variables that play a role, along with attitudes, is the tax wedge and benefits. The quantitative impact of these policy variables is such that changes in policies have at least the potential to undo the effect of variations in cultural traits on labor market outcomes.

The paper is organized as follows. In Section 2 we describe how the WVS data can be used to measure attitudes in OECD countries. In Section 3 we describe the econometric problem one faces when trying to assess a causal effect of attitudes on labor market outcomes. We then describe two IV estimation strategies based, respectively, on the evolution of deeper attitudes and on the changes in attitudes of immigrants to the United States from various countries. In Section 4 we report the Within Estimates (which do not address the issue of endogeneity, nor the persistence of outcomes) to provide a baseline and a comparison with previous results. Section 5 and 6 contain a discussion of the choice of instruments and of the GMM estimates of dynamic models for employment and hours. Section 7 concludes.

2 What do we mean by culture and how do we measure it?

The World Value Survey (WVS)—the main source of our data—includes a number of questions whose answers can be used to measure beliefs and values that are likely to be relevant for the aggregate employment rate of women and of the young, and for average hours of work. Such beliefs evolve over time, although they are likely to contain a country specific time invariant component.

The answers to a first set of questions capture a set of attitudes that, arguably, are of a *direct* relevance for labor market outcomes and will be used as explanatory variables in the employment or hours equation. One example is *"Do you think that a woman has to have children in order to be fulfilled or is this not necessary?"*: this is the question whose answers we use to measure attitudes that could affect women employment rates. We also use the answers to the question "*Do you agree or disagree with the following statement? When jobs are scarce, men should have more rights to a job than women*", but more sparingly, since it is available for a shorter period of time. When using these answers one must be aware that high employment rates for women are likely to be both a cause and an effect of attitudes towards what is necessary for a woman's fulfillment. Moreover, the

answer to such a question could be affected by policy—for instance by rasing the level of education of women—or by economic structure, for instance by changes in the share of the service sector in total employment—which presumably raises the number of jobs available for women. Another example is the question we use to measure attitudes that could affect hours worked: *"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",* where the answer might be affected by a worker's probability of finding (and/or maintaining) a job—if he asks for too frequent holidays—and thus by the cyclical state of the labor market, or by the strength of unions.[6] The same is true for the question we use to measure attitudes that could affect the employment rate of the young: *"Here is a list of qualities that children can be encouraged to learn at home. Which if any do you consider to be especially important? Independence"*. The answer to this questions might be affected by fluctuations in the youth employment rate. We use the three questions we have just reported to identify the (time varying) role of attitudes on the three labor market outcomes we are interested in: the employment rate of women, that of the young, and the yearly hours worked by those who have a job.

Since we are concerned by the possible correlation of our measures of attitudes with current labor market conditions, as well as with policies and institutions, we need to find instruments to identify their effects on employment and hours. As mentioned in the Introduction, we use two sets of instruments. First, we use the answers to a set of questions in the WVS that reflect deeper attitudes, i.e. features of a society's beliefs and values that change over time, but do so only slowly—and are thus unlikely to be affected by current labor market conditions—yet are likely to contain information about the evolution over time of attitudes towards gender, youth independence and leisure. After some experimentation, the main variable we use are answers to the question: "Which, if any, of the following do you believe in? God". This religious attitude variable is interacted with a country's prevalent historical religious affiliation (Catholic, Protestant, and other (Japan)) We have also experimented with answers to the question "Apart from weddings, funerals and christenings, about how often do you attend religious services these days?". We will point out below the similarities and differences with the results obtained using the belief in God as an instrument.

The basic idea, as we shall discuss in Section 5, is that these deeper attitudes are likely to be correlated with attitudes towards women, the young and leisure that we use as explanatory variables in the labor market outcomes equations, but they are not likely to affect labor market outcomes directly. Moreover, while outcomes and current policies can affect these deeper attitudes, they are assumed to do so only with a lag.

We also experiment with the answers to the question: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" (one possible answer being "Most people can be trusted", the others "Can't be too careful" and "Don't know").

[6] See Aghion, Algan and Cahuc (fortcoming) for a theoretical and empirical investigation of the relationships between labour market institutions and policies and beliefs about cooperation in the labor market.

However, we do not rely on this instrument for the women employment equation and for the hours equation because it is less informative and also more open to objections concerning the validity of the exclusion restriction.

Second, and more importantly, we use as instruments the attitudes of second or higher generation immigrants to the United States, classified by country of origin, obtained from the U.S. General Social Survey (GSS). The idea here is that the evolution over time of the attitudes of each immigrant group is informative about changes of attitudes in the country of origin, yet they are much less likely to be affected by shocks to labor market outcomes there. To capture the attitudes of US second (or third) generation immigrants towards women work we use answers to the question *"Do you approve or disapprove of a married woman earning money in business or industry if she has a husband capable of supporting her?"* We also explore as an instruments their attitude towards trust, measured in the same way as for the country of residence, and towards premarital sex. In this latter case we have used the answers to the question "*There's been a lot of discussion about the way morals and attitudes about sex are changing in this country. If a man and woman have sex relations before marriage, do you think it is always wrong, almost always wrong, only sometimes, or not wrong at all?*". We will discuss in greater length our choice of instruments in Section 3 and 5 below and report the GMM estimates in Section 6.

Let us return now to the choice of explanatory variables. Since our dependent variables are aggregate labor market outcomes, the explanatory variable we are interested in are a country's average attitudes. For instance, when we study women's participation we are interested in gender attitudes of both women and men: the first since it is a woman's decision whether or not to look for a job; the second, because hiring decisions could be made by men. Average attitudes however have a problem: they could move over time because the composition of the population (and thus of the sample in WVS) changes over time, not because the role of specific national features changes. For instance, the share of highly educated people in the sample could change. We could correct for this introducing such composition variables directly in the regression for aggregate outcomes, but this would consume too many degrees of freedom.

The alternative, following Algan and Cahuc (2007), and this is the strategy we have chosen, is to estimate a probit model for each question for each wave controlling for the main individual characteristics and including country-effects which capture the role of specific national features (see Table 1 for probit estimates for the wave 1999-2004).[7] We control for age and age squared, for the level of education, the marital status, the number of children, the family income (coded by the surveys between low, middle and high income) and for the employment status. The inclusion of the employment status should minimize the risk that answers to the attitudinal questions may be a pure reflection of one's employment experience. We also include the respondent's political views (coded by the surveys between left, center and right) and their religious views by distinguishing the following main categories: Catholic, Protestant, Buddhist, Muslim, Jews, other religions and with

[7] A closely related alternative is to interact the country dummies with wave dummies, but to impose the restriction that the coefficients of the individual characteristics variables are constant through time.

no religion affiliation. The variables we use to measure cultural attitudes are thus the estimated wave specific country effects in the probit regressions for gender attitudes, for attitudes towards youth independence, and towards the importance of holidays.[8] (We will follow a similar procedure to identify a country's average attitudes when we use instruments based on deeper attitudes of country of residence and US immigrants' attitudes.[9]). Using the within country variation of the country/wave effects one can hope to identify the effects on labor market outcomes of the time varying components of attitudes, controlling for those of components that remain unchanged over time and which cannot be separated form other country-specific and time-invariant components of institutions and policies that are captured by the country fixed effects.

We use data for those OECD countries in the WVS for which data are available at (approximately) equally spaced intervals of ten years (around 1980, 1990 and 2000) and we estimate the probit for the sample of working age population between 16 and 64 years of age [10]. Figure 1 documents how the answers to each of the questions we use change across the three waves.

The first panel of Figure 1 shows how the country wave effects of attitudes toward women (the answer to the question *"Do you think that a woman has to have children...."*, coded so that higher values correspond to more liberal attitudes towards women working) vary over time for different groups of countries (for ease of presentation).[11]This is important because our identification comes from the time variation of these variables. The figure shows that indeed there is time variation (and thus attitudes are not only a country fixed effect) and that the pattern differs across countries (and thus it is not captured a common year effect). The appropriate F-tests suggest that the country/wave effects change significantly over time (with a marginal significance level of less than 1%)[12] . The pattern for all groups shows a shift toward "conservatism" (meaning that the country-wave effects of the answers shift towards a view that women need to have children to be fulfilled) from 1980 to 1990, followed by a shift in the opposite direction in the following decade. Such shifts are consistent, possibly, with a political shift from progressive to conservative (Reagan in the US, Thatcher in the UK, ...) that occurred in many countries at the beginning of the 1980s, followed by a shift toward more progressive politics (Clinton, Blair...) in the following decade[13] . Within this

[8] Actually Algan and Cahuc (2007) use as regressor in the outcome equations the marginal effects of the country/wave variables. We do not follow this strategy because the average value of the individual variables affects the point at which the cumulative density function is evaluated to obtain the marginal effects. This may reintroduce composition effects that one intended to eliminate estimating a probit for each wave and recovering the wave specific country effects.

[9] We group immigrants from some countries in the same clusters of origin in order to have enough observations in each group when we run the probit regressions (see the Data Appendix for more details).

[10] For most countries the attitude variables we use are available for all three waves. For some countries, for only two waves. Details, including the precise timing of the surveys, are contained in the Data Appendix.

[11] In Figure 1 we collect countries in three clusters plus one for Denmark and one for Japan. The countries belonging to each cluster are: Anglo-Saxon (Canada, Ireland,UK and US), European continental (Belgium, France, Germany, Netherlands), Mediterranean (Italy, Spain). The countries for which we do not have 3 observations are shown separately but they are given the same color of the cluster they are commonly associated with.

[12] To perform the test we have imposed the restriction that the coefficients on the individual characteristics are the same in each wave.

[13] Fortin (2008) also shows, mostly using the 1972-2006 GSS, that these cultural traits are not an unchanging primitive. She reports evidence of large cohort effects: women tend to become more outward oriented, but there is a change in this trend in the 1990's.

common pattern, the shifts occur at different rates and are reflected in the slopes of the lines being different for each cluster. Denmark appears not to rebound from a shift toward more conservatism. [14]

The other panels of Figure 1 repeat the exercise for the country-wave effects of the other two attitudes (higher values reflect greater value placed on youth independence or on the importance of holidays). In each case the data show that all measures of culture we use are time varying. The value placed on youth independence appears to increase during the 1980's and decrease in the 1990's, although at different rates in each country. The evolution of attitudes towards holidays does not display any common pattern, although the importance of generous holidays increases for all countries between 1980 and 1990 and decreases or remains stationary for most countries from 1990 to 2000.

Finally in Figure 2 we report the evolution of the employment rate for women and for youth, and average annual hours[15]. Employment rates for women increase in every region, over our sample, with the only exception of the Nordic countries (where women participation has been historically very high) and Japan, where they have been stable in the 90's. The pattern of employment rates for the youth varies more across countries: it falls by 15 percentage points in the Mediterranean countries, more quickly in the 80's; it falls in the Nordic countries in the 80's and then it remains stable in the 90's; it falls and then recovers in the Anglo-Saxon countries. Average hours of work tend to decrease in the 80's, although at a different pace in each country. In the 90's the rate of decrease tends to be smaller in many countries, but not in all of them.

The bottom line is that our measures of attitudes are not constant over time and vary at different rates for different countries. Their effect can therefore be identified separately from that of other cultural traits that instead are constant over time and therefore can not be separated from other non time-varying country characteristic. If we assume that the time-varying and the time-invariant components of attitudes have identical effects on labor market outcomes, what we identify is the effect of attitudes *tout court*. If instead the two components have different effects on outcomes, what we identify is just the effect of the time varying one. Whether the correlation between labor market outcomes and attitudes can be given a causal interpretation (going from attitudes to outcomes), is the issue we address in the following sections.

3 Estimation strategy

In the previous section we have discussed the variation across countries and over time of a country and year specific measure of culture based on the country\wave effects in a cross sectional probit

[14] Given the pattern of attitudes towards the role of women in the labor market, a natural question arises as to the determinants of such evolution. For a theoretical analysis see Bisin and Verdier (2002), Fogli and Veldkamp (2007), Fernandez (2008), and Tabellini (2008b). For an empirical investigation see Fernandez, Fogli and Olivetti (2004) and Farre' and Vella (2007).

[15] For most countries, all these variables represent four year averages over the period 1981-1984, 1990-1993, 1999-2002. We will also use data for the 1972-1975 period in models with the lagged dependent variable. See the data appendix for further details.

equation for each attitude estimated on individual data for all countries at each point in time. Let A_{ct} denote this survey-based measure of country's c cultural attitudes at time t. We intend to estimate the effect of A_{ct} on economic outcomes, denoted by Y_{ct}, where Y_{ct} is determined by the following equation:

$$Y_{ct} = \alpha_0 + \alpha_1 Y_{ct-1} + \alpha_2 A_{ct} + \alpha_3' X_{ct} + \Psi_c + \Psi_t + \varepsilon_{ct} \tag{1}$$

Ψ_t denote common time effects. The country specific and the idiosyncratic components of the error term, Ψ_c and ε_{ct}, are independently distributed across c, and have the standard error component structure in which $E(\Psi_c) = 0$, $E(\varepsilon_{ct}) = 0$, $E(\Psi_c \varepsilon_{ct}) = 0$ and $E(\varepsilon_{ct}\varepsilon_{cs}) = 0$ for $s \neq t$). X_{ct} are other, time-varying variables that may influence the outcome of interest. They include time varying institutions, policies and other time varying structural characteristics of a country. For the purpose of our discussion here we will assume that the variables in X_{ct} are either not correlated with ε_{ct} at any time period, or they are not correlated with contemporaneous or future values of ε_{ct}, but may be correlated with its past values. The latter assumption is more appropriate for policy and institutional variables that may evolve in response to outcomes and attitudes, but with a lag. Actually, in estimation, we will allow some labor market policies, such as unemployment benefits, to be affected immediately by labor market conditions, but we suppose this is not the case here, purely for ease of exposition.

If there is persistence in Y_{ct} that goes beyond the one generated by the fixed effect Ψ_c or the persistence of the regressors, this justifies the inclusion of the lagged dependent variable in the equation. This seem a very plausible hypothesis for employment rates and hours. The main problem in estimating (1) arises because attitudes are likely to be correlated with the shock to the labor market outcome equation ($E(A_{ct}\, \varepsilon_{ct}) \neq 0$). Obviously, A_{ct} *is* also likely to be correlated with the time invariant and country specific component of the error term, Ψ_c, but assume for the time being that this issue can be addressed through an appropriate transformation of the data that removes Ψ_c from the equation. Returning to the issue of the correlation of attitudes with ε_{ct}, assume that $A_{c,t}$ is determined by the following equation:

$$A_{ct} = \tilde{\gamma}_0 + \sum_{j=1}^{J} \tilde{\gamma}_{1j} A_{ct-j} + \tilde{\gamma}_2 Y_{ct-1} + \tilde{\gamma}_3 Y_{ct} + \tilde{\gamma}_4' Z_{ct} + \tilde{\Phi}_c + \tilde{\Phi}_t + \tilde{\nu}_{ct} \tag{2}$$

where A_{ct-j} denotes past attitudes and Z_{ct} is a vector of additional explanatory variables. $\tilde{\nu}_{ct}$ shares the same characteristics of ε_{ct}, including lack of serial correlation. The variables in Z_{ct} are institutional and policy variables, as well as other variables that may affect labor market attitudes, such as the advances in the technology of contraception and their diffusion, the waxing and waning of broad cultural movements, such as the feminist movement, or of political tendencies towards more conservative or liberal views. The variables in Z_{ct} (like those in X_{ct}) are either strictly exogenous or predetermined (uncorrelated, in this latter case, with present or future values of $\tilde{\nu}_{ct}$ and ε_{ct}).

Equation (2) makes clear that attitudes respond to both present and past labor market out-

comes. Using equation (1) to obtain the reduced form for A_{ct} (substituting out Y_{ct}), we get:

$$A_{ct} = \gamma_0 + \sum_{j=1}^{J} \gamma_{1j} A_{ct-j} \ + \gamma_2 Y_{ct-1} + \gamma_3' W_{ct} + \Phi_c + \Phi_t + \nu_{ct} \tag{3}$$

where the $\gamma' s$ are a function of the $\tilde{\gamma}' s$ and $\alpha' s$. W_{ct} is the union of Z_{ct} and X_{ct}. Note that ν_{ct} is a linear combination of ε_{ct} and $\tilde{\nu}_{ct}$ ($\nu_{ct} = (\tilde{\gamma}_3 \varepsilon_{ct} + \tilde{\nu}_{ct})/(1 - \tilde{\gamma}_3 \alpha_2)$) and hence is certainly correlated with ε_{ct}, even if $\tilde{\nu}_{ct}$ and ε_{ct} are uncorrelated. This is one source of the endogeneity problem we have referred to and it would not be there if attitudes did not respond to contemporaneous labor market outcomes. Provided $1 - \tilde{\gamma}_3 \alpha_2$ is positive, a positive $\tilde{\gamma}_3$ would lead to a positive correlation between A_{ct} and ε_{ct}.Non zero correlation between $\tilde{\nu}_{ct}$ and ε_{ct} is another source of endogeneity.

It is likely that attitudes measured through survey responses on women role in the family and in the workplace are effected not only by past but also by contemporaneous employment experiences. For instance, high employment rates for women may reinforce the sense that having a role in the formal labor market is both rewarding and acceptable, and may lessen the perception of motherhood as a necessary component of fulfilment.[16] Moreover, it is plausible that the unobservables that lead to a more favorable response towards women working will be positively correlated with the unobservables that lead to higher women employment rates. Not addressing these endogeneity issues is likely to lead to an overestimate of the effect of attitudes towards women in the workplace on employment outcomes. The possible endogeneity of the attitude variable concerning the importance of independence as a positive trait for youth is, perhaps, less clear-cut. Even here, however, one can imagine that a buoyant youth labor market may quickly affect perceptions. The attitude about the importance of generous holidays is also very likely to respond to shocks to actual hours of work, although it is not clear in which direction. Working longer hours may be associated with an increase in the desire for leisure, through, for instance, an income effect or due to stress when annual hours actually worked get closer and closer to the bound represented by the total hours available in one year. However, if hours and wages are positively associated, longer hours would be associated with a demand for less leisure, through the substitution effect. Finally, another potential source of endogeneity arises from the possibility that some important policy variables are omitted from the equation. One example, in the case of women employment rates, is child care policies, for which we were not able to obtain complete and accurate data for the sample we use in estimation.

What can be done to address this endogeneity issue? Equation (2) offers some suggestions. Today's attitudes depend upon past attitudes and past outcomes that are not correlated, given our assumptions, with today's shock to the outcome variable. Moreover, there may be some other, deeper and slower moving attitudes that evolve over time, but respond only with a lag to economic outcomes in the labor market, such as religious beliefs and, perhaps the degree of trust.[17] These

[16] It is true that we control—in the regression generating the country-wave attitude variables—for an individual's employment status. However this is not enough to eliminate the endogeneity problem because individual responses may be affected not only by one's experience, but also by aggregate conditions.

[17] Fortin (2009) uses attitudes towards premarital sex as instruments for gender role attitudes. Guiso, Sapienza and Zingales (2006) employ the percentage of adherents of various religious denominations as an instrument for thrift in a regression with aggregate saving as the dependent variable in a pooled OLS regression.

deeper (or different) attitudes are assumed not to have a direct effect on labor market outcomes. This exclusion restriction (particularly for trust) could be questionable. For this reason we shall also rely on additional instruments we will discuss below (the attitudes of U.S. immigrants) for which the exclusion restriction is much more plausible.

Deeper attitudes are determined by an equation similar to (2), but with the crucial difference that they respond to outcomes only with a lag so that the coefficient $\tilde{\gamma}_3$ of Y_{ct} equals zero. Moreover, it is less likely that the shocks in the structural equations for these attitudes are correlated with those in the outcome equation. The contemporaneous values of these deeper attitudinal variables (call them A^d_{ct}) can, therefore, be considered predetermined in the outcome equations in the sense that $E(A^d_{cs}\,\varepsilon_{ct}) = 0$ for $s \leq t$. These deeper (or different) cultural attitudes are also likely to be correlated with the labor market attitudes we are investigating, A_{ct}, for instance because they share some of the determinants contained in Z_{ct} in equation (3), or because both of them respond to lagged economic outcomes. Another option, with identical consequences from our point of view, would be to assume that labor market attitudes are determined by deeper attitudes (*i.e.*. assuming that A^d_{ct} is included in Z_{ct}) and to continue to maintain the assumption that the latter are uncorrelated with contemporaneous labor market shocks.

Using lagged values of attitudes, lagged outcomes, or contemporaneous values of the (predetermined) deeper attitudes as instruments in the context of the within estimator of equation (1) is, however, not legitimate, given the shortness of the panel. Nevertheless, one can use the GMM difference estimator proposed by Arellano and Bond (1991) and the GMM system estimator of Blundell and Bond (1998) to address the endogeneity issue. The system estimator (under the appropriate assumptions about initial conditions) is an appealing choice if attitudes are persistent. More precisely we will use appropriately lagged values of the levels of Y_{ct} , A_{ct} and A^d_{ct} for the equation in difference and of their differences for the equation in levels. Taking first differences of (1) we obtain:

$$\Delta Y_{ct} = \alpha_1 \Delta Y_{ct-1} + \alpha_2 \Delta A_{ct} + \alpha_3' \Delta X_{ct} + \Delta \Psi_t + \Delta \varepsilon_{ct} \tag{4}$$

The GMM difference estimator uses the fact that Y_{ct-j} , A_{ct-j} with $j \geq 2$ and A^d_{ct-j} with $j \geq 1$ are legitimate instruments for ΔY_{ct-1} and ΔA_{ct}, given the serially uncorrelated nature of ε_{ct}. The treatment of X_{ct} will depend upon the nature of the variables. Institutions and policies cannot be treated as strictly exogenous variables: it may be more plausible to assume that they are endogenous or predetermined, in which case they also need to be instrumented. We will address this issue in the GMM result section (see Section 6). In the GMM system estimator the orthogonality conditions for the differenced equation are augmented by the orthogonality conditions for the level equation. Blundell and Bond (1998, 2000) show that under appropriate assumptions about the initial conditions, we can use ΔY_{ct-1} , ΔA_{ct-1} , and ΔA^d_{ct} as instruments for Y_{ct-1} and A_{ct} in the equation in levels, (1).

Another complementary strategy to address the endogeneity issue is to use the attitudes of immigrants into the US to instrument for the attitudes in the country of origin (excluding the

US). Algan and Cahuc (forthcoming) use the attitudes of immigrants into the US in a reduced-form framework. They replace the country-level attitudes for Trust in 2000 and in 1935 with the corresponding inherited attitudes of second (or higher) generation immigrants in the US. The unobservable country-level attitudes in 1935 are those inherited by second generation Americans born before 1910, of third generation born before 1935, etc.

Given the assumptions embodied in our model—and also given the higher frequency of the observations for the labor market variables we employ, approximately ten year intervals—we consider a different approach that still uses information on the attitudes of US immigrants. Basically, we will use the contemporaneous values of the attitudes of immigrants in the US from a given country at a given point in time as an instrument for the attitudes of the country of origin at the same time (as opposed to the inherited attitudes used in Algan and Cahuc, forthcoming).

More specifically, assume that A_{ct}^{US} denotes the country of origin (c) and period (t) component of attitudes towards gender, youth and leisure, or other attitudes potentially correlated with labor market attitudes, of first or higher generation immigrants to the US, after controlling for personal characteristics. One could include in the sample all immigrants, except those who have come to the US after 1980, so that none of them has experienced the labor market in the home country during the period we use for estimation (1980-2000). If one is worried about the possibility is that first generation immigrants in the US may maintain close information or family ties with the country of origin and be affected by the evolution of attitudes and outcomes there, one can exclude first generation immigrants from the sample. We will follow the latter strategy and focus on second or higher generation immigrants. Assume that their attitudes,$A_{c,t}^{US}$, are determined by:

$$A_{ct}^{US} = \theta_0 + \sum_{j=1}^{J} \theta_{1j} A_{ct-j}^{US} + \theta_2 V_{ct}^{US} + \Phi_t^{US} + \Phi_c^{US} + \nu_{ct}^{US} \tag{5}$$

where V_{ct}^{US} are additional observable US, time and country of origin specific determinants of US attitudes. Φ_c^{US} is a time invariant effect specific to the country of origin. Φ_t^{US} represents a US specific factor that has a common effect, independently of country of origin. Finally, ν_{ct}^{US} is a serially uncorrelated random shock.

The first issue at stake is whether the time evolution of attitudes in the country of origin and those of immigrants to the US are correlated. It is plausible to assume that this may be the case because some of the country-of-origin specific determinants of immigrants attitudes (V_{ct}^{US}), are correlated with the determinants of attitudes in the country of origin (such as Z_{ct} or present or past Y_{ct}). This is likely to be the case for variables representing the group specific effect of broad cultural or political changes and technological innovations (feminist movement, swings towards political conservatism, innovation in contraception technology, etc.). For instance, changes in the contraception technology available are likely to be correlated across countries and to generate correlated effects on the attitudes of country c and on the attitudes of immigrants in the US from country c because they are filtered through a partly common cultural background, even though

law and regulations differ across countries.[18] A possible source of concern is that a selection issue may affect the emigration decision in the sense that people who left may be those who are more independent and less attached to the values of the country of origin (Alesina and Glaeser (2004), Alesina and Giuliano (2007)). This would weaken our instruments. Ultimately, the data will suggest whether the evolution of the attitudes of immigrants into the US is informative about the evolution of attitudes in the country of origin.[19]

The second issue is whether A_{ct}^{US} is uncorrelated with the error term in the outcome equation in country c at time t. Clearly A_{ct}^{US} is likely to be correlated with the country effect in the outcome equation, Ψ_c, since the latter contains, among other elements, time invariant and country specific components of culture that are partly transmitted to US immigrants (and are represented by Φ_c^{US} in (5).However, it is plausible to assume that after conditioning on time varying country variables, X_{ct} (that will include a country specific measure of business cycle conditions, policies and institutions) and a common time effect Ψ_t, A_{ct}^{US} is not correlated with the idiosyncratic shocks to labor market outcomes in each country at time t, ε_{ct} (or at any time period). Under these assumptions, it is legitimate to use (in countries other than the US) ΔA_{ct}^{US} as an instrument for ΔA_{ct} in the difference equation and for A_{ct} in the level equation. Note that in the case of attitudes of U.S. immigrants the exclusion restriction (i.e. that they do enter directly in the equation for labor market outcomes) is very plausible.

In any case, in Section 6 we will report the Hansen-Sargan test of over-identifying restrictions to test the lack of correlation between the instruments and the error term in the outcome equations. In Section 5 we will investigate the correlation between labor market attitudes and the potential instruments and we will assess their relevance by estimating the appropriate first stage regressions. Recall that in the GMM system estimator we have two sets of first stage regressions: one in differences and one in levels. Moreover, when a large number of cross sectional observations are available, in each first stage regression one can allow the coefficients to vary in each cross section. For the equation in difference, (4), assuming α_3' equal zero for simplicity, the first stage regression for ΔA_{ct} is a variant of:

$$\Delta A_{ct} = \pi_{0t}^d + \pi_{1t}^d Y_{ct-2} \ + \pi_{2t}^d A_{ct-2} \ + \pi_{3t}^d A_{ct-1}^d \ + \pi_{4t}^d \Delta A_{ct}^{US} + \omega_{ct}^d$$

where further lags of Y_{ct-2} , A_{ct-2} A_{ct-1}^d and ΔA_{ct}^{US} could also be included, if available. For the equation in levels the first stage regression for A_{ct} is a variant of:

$$A_{ct} = \pi_{0t}^l + \pi_{1t}^l \Delta Y_{ct-1} \ + \pi_{2t}^d \Delta A_{ct-1} \ \pi_{3t}^l \Delta A_{ct}^d \ + \pi_{4t}^l \Delta A_{ct}^{US} + \omega_{ct}^l$$

We have experimented both with time varying and time invariant coefficients, and we have settled in favor of the latter option, given the limited number of cross sectional observations at our

[18] Note that US shocks common to all groups, Φ_t^{US}, provide a time variation in attitudes that is not useful for instrumenting A_{ct} because it is completely absorbed by the period dummy in the outcome equation, Φ_t.

[19] As discussed in footnote 5, the evidence suggests that cultural traits of the country of origin are maintained by immigrants.

disposal. The asymptotic properties of GMM estimators depend upon the number of cross sectional units being large. The number of countries for which data are available (when we use the attitude of US immigrants as one of the instruments) is sixteen. On the other hand, the GMM estimator allows us to address the endogeneity issue in dynamic panels – something that has not been done so far in this literature.

There is a final issue we need to address. All the discussion above has been conducted under the implicit assumption that we can perfectly observe the attitudes towards gender, the young, or leisure. Assume instead that we can observe all attitudes only with an error so that $\widetilde{A}_{ct} = A_{ct} + \mu^{A}_{ct}$, $\widetilde{A}^{d}_{ct} = A^{d}_{ct} + \mu^{A^d}_{ct}$, and $\widetilde{A}^{US}_{ct} = A^{US}_{ct} + \mu^{A^{US}}_{ct}$, where $\widetilde{}$ denote measured variables and the $\mu's$ classical serially uncorrelated measurement errors. This would lead to attenuation bias when the outcome equations are estimated by least squares procedures. In terms of our instrumental variable procedure we now need to assume that measured deep attitudes or measured attitudes of US immigrants are not correlated both to the shock to the outcome equation, ε_{ct}, as well as with the measurement error for attitudes towards gender,youth and leisure, μ^{A}_{ct}. This requires, among other things, the measurement errors to be uncorrelated with each other.[20]

4 Within estimates

In this section we present and discuss a set of results obtained by estimating an equation for the employment to population ratio for women (*epr_w)* and youth (*epr_y)* and for average annual hours of work (*hours)*, using the Within (or least square dummy variable, LSDV) estimator. The explanatory variables for *epr_w* include cultural attitudes towards the need of having children for a woman to feel realized (*women_cn),* or towards the priority of male employment when jobs are scarce (*women_jp).* The former is available for up to three waves, while the latter is available only for a maximum of two waves. The variables are derived as the country/wave effect described in the previous section and are coded in such a way that increasing values denote a more progressive attitude towards women For youth employment rates, the cultural variable captures the importance given to youth independence as a desirable trait (*youth_i*).

The within (least square dummy variable, LSDV) estimator allows for country specific and time invariant effects. Such effects capture both time invariant cultural traits and time invariant institutions, in addition to other time invariant country characteristics that may affect the employment or hours outcomes. They also control for country specificity in interpreting the survey question and for lack of cross country comparability of the dependent variable. This is not a problem for women and youth employment rates, but is a potential problem for the hours of work series available.[21]

The main drawback of the within estimator is the fact that it does not recognize and address

[20] More precisely, when using the attitudes of US immigrants as instruments, for instance, one need to assume lack of correlation between (i) A^{US}_{ct} and ε_{ct}, as before, (ii) between $\mu^{A^{US}}_{ct}$ and ε_{ct}, and (iii) between μ^{A}_{ct} and both A^{US}_{ct} and $\mu^{A^{US}}_{ct}$. Parallel assumptions are required for deep attitudes.

[21] The OECD warns that the new series for hours they have produced and that we are utilizing (and that differs from the one used by Alesina, Glaeser and Sacerdote, 2005) is homogeneous through time within each country, but is not comparable across countries. This emphasizes the importance of including a country fixed effect in the regression.

the endogeneity of the cultural variables discussed in the previous section. The latter reflect phenomena unrelated to contemporaneous labor market experience (*i.e.* the "women revolution" or the technological improvement in contraception), but are also shaped by contemporaneous experiences or shocks in the labor market. In other terms, they are almost surely correlated with the stochastic shock in the employment and hours equations. Another potential source of endogeneity is measurement errors in the attitude variables (or in other regressors).

A final drawback of the within estimator is that one cannot properly address the issue that employment and hours outcome are likely to evolve gradually over time This would require the inclusion of the lagged dependent variable as an additional regressor. Yet, in this case the within estimator would not yield a consistent estimate of its coefficient, and of the coefficients on the other variables, even if the latter were strictly exogenous, since the time dimension is small (equal to three in our case).[22]

Yet, the within estimates are a useful starting point because they address some of the issues we are interested in (although not all) and have been used in the paper that is most closely related to ours, Algan and Cahuc (2007), who analyze the employment rates for women and youth in OECD countries using three waves of the WVS survey between 1980 and 2000.[23] That paper uses *women_jp* as the explanatory variable for the equation for women, and the same attitudinal variable we use for youth (*youth_i).* Fortin (2005), instead, presents estimates for the women employment rate in OECD countries in a specification that also considers multiple waves (roughly 1990, 1995 and 2000), and uses both *women_jp* and a variable similar to our *women_cn* (being a housewife is fulfilling), but does not include country dummies.

As additional controls we include in the equations "structural" variables, such as women education (*edu_w*), the share of services in value added (*serv_va),* the fraction of population above 65 (*pop_65)*, the average number of children per woman (*children).* We also include proxies for (time varying) policies or labor market institutions, such as unemployment benefits (*ben)*, employment protection legislation (*epl)*, union density (*udens),* taxes on labor income (*tax_wedge),* and, for a subset of countries, expenditure on child-care per child (*childcare)*[24]. We also control for the stage of the business cycle through a measure of the gap between actual and potential output (*gap).* In the within regressions these variables are all treated as exogenous, although in reality they may be correlated with present or past shocks in the outcome equations. The inclusion of a large menu of structural, institutional and policy variables allows us to isolate the direct effect of attitudes on outcomes All equations also include a wave dummy to capture common time effects.

The results for women employment rates using *women_cn* as an explanatory variable are reported in Table 2. Attitudes about the (lack of) need of having children for a woman to feel fully

[22] See Nickell (1981). In our case we have observations for three periods at ten years intervals for the attitude variables (from 1980 to 2000) and observations for four periods (from 1970 to 2000) for outcome variables.

[23] Algan and Cahuc (2007) also analyze the employment rate for older workers as a function of attitudes towards forcing older workers to retire when jobs are scarce. We do not because the latter variable is only available for the 1990 wave of the WVS and for the 1995 wave for a smaller set of countries.

[24] See, for instance, Nickell, Nunziata and Ochel (2005) for an analysis of the effects of time-varying policies on unemployment.

realized are positively associated with the employment outcomes for women. The coefficient on this variable, however, is significant only in half of the specifications and its value tends to decrease somewhat when one adds additional controls.[25] We will assess whether this positive association can be given a causal interpretation in the next section.

We start in column (1) from a simple specification with only *women_cn*. We then add *gap* in column (2) (and in all remaining columns). In column (3) we add the structure variables, while in column (4) we add the policy and institutional variables. Column (5) contains both sets of variables, while in column (6) we report a more parsimonious model containing the more significant variables among the structure, policy, and institutional variables. In column (7) and (8) we include *childcare* as an explanatory variable for the subset of observations for which it is available.

The *gap* variable is positively associated with the women employment rate, as one would expect, but it is rarely significant. Among the structural variables, the relative size of the service sector displays a positive coefficient, reflecting the relatively greater employment opportunities for women in this sector, but is significant only when all policies and structural variables are included. Not surprisingly, the coefficient for the number of children is, instead, negative and significant in most specifications. The significance of the coefficient of the percentage of the population above 65 varies across specifications. The effect of this latter variable could go either way a priory: grandparents can provide baby-sitting services, but also may increase the demand for care, that may fall disproportionately on women. The latter effect seems to weakly dominate. Employment protection, the generosity of employment benefits and union density all have a negative and significant coefficient in the specification with the structure variables. Taxes and employment protection are the only policy variables negatively associated with employment rates in the more restricted specification. Surprisingly, women education is never significant .

The coefficient on *childcare* is positive, but never significant (we have included two specifications as an example in columns (7) and (8)). We have also experimented with the number of weeks of parental leave due to the birth of a child, which is available for all our observations (see Bassanini and Duval (2006)). The coefficient of this variable is not significant and its inclusion does not have an effect on the other results.[26]

The overall impression is that some policies (in particular employment protection legislation and the tax wedge) matter as determinants of the women employment rate. The effect of attitudes is quantitatively sizeable, but its significance varies across specifications. For instance, in the specification of column (5) an increase from the first to the third quartile of the distribution of *women_cn* is associated with an increase in the employment rate for women of approximately 5.7 percentage points. This represents a third of the difference between the first and the third quartile of the employment distribution (18.1 percentage points). An increase in *epl* from the first to the third quartile is associated with a decrease of 13.3 percentage points in *epr_w*. A similar change

[25] The standard errors reported in the table allow for heteroskedasticity and correlation within each country. Significance levels do not improve by assuming that the errors are i.i.d...

[26] The conclusion about childcare expenditure and weeks of parental leave also hold for the GMM estimates we will discuss in Section 6. In this case, we have treated these variables as predetermined variable.

in taxation is associated with a decrease in epr_w of approximately 14 percentage points. Finally changes from the first to the third quartile in the number of children are associated with a decrease in epr_w of 3 percentage points each.

Taking these results at face value and comparing them with those in Algan and Cahuc (2007), one concludes that Algan and Cahuc overstate the dominance of culture as a determinant of the employment rates of women and understate the role of policies. The direct effect of culture is sizeable but not always significant, and policies matter even more. It is certainly possible that the effect of culture goes through policies and institutions, however the direct effect is not precisely estimated. In the specification with the attitudinal variable based on job priority for men (*women_jp*), which is the variable actually used by Algan and Cahuc, its coefficient is more often significant (See Table 3). In this specification two policy variables are very significant, the tax wedge and child-care expenditure. However, the model suffers from a severe case of overfitting, given the small number of observations, since no data are available for *women_jp* in the 80's.[27]. Therefore, we should attach less weight to this specification and we will not pursue it further.

In Table 4 we report the within estimates for the youth employment rate. Attitudes towards child independence as a positive trait (*youth_i*) are not significantly associated with youth employment rates (and actually the point estimates of the coefficient are negative). Youth employment increases significantly during expansions, and is negatively and significantly associated with taxation. Certainly, there is no support from these results for the proposition that cultural attitudes are important determinants of youth employment outcomes.

Finally, in Table 5 we report the results for hours of work. Listing generous holidays as an important attribute of a job (*holidays*) is not significantly associated with actual annual hours. In addition to *gap*, other important variables are employment protection legislation and women employment rate (both with a negative coefficient). More employment protection is often associated with restrictions on work hours. Moreover, women are more likely than men to have part time jobs, which explains the negative sign of epr_w. In terms of the quantitative importance of policies, consider that the third quartile of the distribution of hours is 14.2 percent higher that the first quartile. An increase in *epl* from the first to the third quartile is associated with a decrease of 12.1 percent in hours of work.

Because of all the econometric issues we have outlined above it is premature to draw any definitive conclusion from these within regressions. Yet, conditional on structure and policies, our within result do not lend support to the hypothesis that cultural attitudes play an overwhelming role in explaining the evolution over time of employment or hours. Gender attitudes appear to be sometimes important for women employment rates, but some policy variables matter even more for labor market outcomes.

[27] Algan and Cahuc (2007) use three waves for the outcome and attitude variable (early 80's, early 1990's and late 1990's), but it is not clear how the data for *women_jp* for the 80's were constructed, given that the question was only asked in 1990, 1995 (for a smaller set of countries) and 2000.

5 Choice of instruments

In order to address the endogeneity issues discussed in Section 3, we will use "deeper attitudes" in the country of residence— attitudes towards trust and belief in God—and attitudes toward trust, pre-marital sex and women work among US immigrants, as potential instruments. In order to assess whether these variables are indeed good instruments we need to check whether they contain time varying information about attitudes towards women, child independence and the importance of generous holidays, our proxies for a country's "culture". Ultimately, it will be the data, in the first stage regressions, to tell whether the evolution of these variables matters for *women_cn*, *youth_i*, and *holidays,* but it is useful to start thinking about reasons why such correlations may arise.

Consider first the attitudes towards trust. It has been suggested that lack of trust is typical of hierarchical societies.[28] A hierarchical structure of society is likely to be associated with an emphasis on traditional gender roles within the family. Moreover, in hierarchical societies families tend to be relatively more important, inducing people to engage in more non-market, family centered activities.[29] Finally, in such an environment, citizens may think that they have less control on their life and that individual effort is not likely to pay off, leading to a reduced importance of independence as a desirable characteristic of the young. [30] In addition to trust in the country of residence, we will also use trust of US immigrants as an instrument.

Consider next the question about beliefs in God and religious beliefs in general. It has been suggested that religious beliefs may signal more conservative values, among them the idea that women should be subordinated to men and naturally belong to the home.[31] It has also been suggested that this may be particularly true for Christian traditions with an emphasis on hierarchy, such as Roman Catholicism and Eastern Orthodoxy.[32]Among Protestants, Max Weber's hypothesis would imply a positive correlation between religious beliefs and work ethic, with more emphasis on work versus leisure and, possibly, a more favorable view of women employment.[33] However, there is evidence that for Catholics there has been a change in the nature of religious beliefs and their association with attitudes towards women after Vatican II.[34] All this suggests that beliefs in God or other indices of religiosity are instruments worth exploring, particularly if interacted with the historically dominant religious affiliation of each country.[35]

[28] See Banfield (1958) and Tabellini (fortcoming).

[29] See Algan and Cahuc (2006).

[30] In the model studied by Aghion, Algan, Cahuc and Shleifer (forthcoming), communities where trust among their citizens is low regulate economic activity in the attempt to limit the negative externalties produced by the lack of trust. But regulation must be implemented by government officials: if trust is low officials will tend to be corrupt. As a consequence,investment in social capital will not pay off. People expect to live in an uncivil community, do not invest in social capital and remain uncivil and unproductive.

[31] Guiso, Sapienza and Zingales (2003) present micro evidence that the presence of religious beliefs and their intensity is associated with less favorable attitudes towards women working.

[32] See, for instance Luperini et al. (1997) and Archimandrite (1981, p.38).

[33] Weber (1930).

[34] See Guiso, Sapienza and Zingales (2003).

[35] It is important to note that our "deeper" attitudes are time-varying, even if it may take some time for them to evolve. For instance, beliefs in God (or participation in organized religious activities) can change in response to

Further, consider the question about pre-marital sex among US immigrants. More conservative values towards premarital sex could signal more importance attached to the role of women in the home relative to their role in the workplace [36]. Moreover, if more conservative attitudes toward premarital sex reflect a more traditional and hierarchical society, the effect on attitudes toward leisure will be similar to those outlined above when we were discussing the attitudes towards trust.

Finally, answers to the question asked of US immigrants *"Do you approve or disapprove of a married woman earning money in business or industry if she has a husband capable of supporting her"* are informative about attitudes towards the "male breadwinner" model, and suggest themselves as a natural instrument for gender attitudes in the country of residence. [37]

We will show below that the evolution over time of attitudes towards work and towards sex of US immigrants is correlated with the evolution over time of attitudes towards the role of women in the country of origin. What could produce such a correlation? One possibility is that common development, cultural and political shocks that affect both residents of the country of origin and the US immigrants are filtered through a cultural sensitivity that the immigrants carry with themselves from the mother country and that decays slowly over time.

In Table 6 we present information about the relevance of these instruments in explaining the level, or change in *women_cn, youth_i, and holidays*. We do not report all our experiments and focus on the more promising ones, or on some of those that are indicative of the challenges one faces. In the first part of the table we focus on deeper attitudes in the country of residence. Recall that these are treated as predetermined variables. In the first row we present the $F-test$ of joint significance of (the country/wave effects of) belief in God lagged once, interacted with the historically dominant religious affiliation of each country, in a regression of $\Delta women_cn$ on the lagged religious belief variables (God for short) and time dummies. We then report the $F-test$ obtained in the regression of $women_cn$ on the lagged change of such religious belief variable and time dummies. The results suggest that our measure of belief in God is informative for the level of $women_cn$, but not for its change. The marginal significance level of the $F-test$ (in parenthesis) is 0.0021 in the first case and only 0.287 in the second. Adding to the information reported in the table, note that an increase in the percentage of believers in historically Catholic countries (there are no Eastern Orthodox countries in our sample) or in Japan (the only non Catholic or non Protestant country in our sample) is associated with a significantly lower level of $women_cn$, while this is not the case for the historically Protestant countries. In the third line we repeat the same

economic development (secularization hypothesis) and to changes in competition among religion providers ("supply-side" theory) (see Barro and McClearly, 2004). For a discussion of the determinants of trust see, instead, Alesina and La Ferrara (2002).

[36] Fortin (2009) uses contemporaneous individual attitudes towards sex and politics in the country of residence as an instrument for family attitudes in an equation that explains a woman's participation decision in the United States. We have experimented with the answers to a question in the WWS about the importance of happy sexual relationship for a marriage, but they did not appear to contain useful information for any of the attitudinal variables we use as regressors.

[37] We have also experimented with the attitude of immigrant towards women in politics. The answers to this variable seem to contain some information about attitudes towards women work in the country of residence, but not as much as the answers to the questions in the text.

exercise for holidays. The results suggest that there is useful information in religious beliefs for the level and change of holidays, although more for the former than the latter [38]. In the equation for the level of holidays an increase in belief in God in historically Protestant countries is significantly and negatively associated with holidays, while there is no significant association for Catholic countries (and a positive and significant one for Japan). The difference between Catholic and Protestant countries is broadly consistent with the arguments summarized earlier in this section. Finally, in the second row of the table we report the correlation coefficient between *youth_i* and *trust*. Lagged values of trust contain very little information for the change in *youth_i*, and only a bit more for the level of *youth_i*. This is just an example of the difficulty of finding deeper attitudes that are correlated with attitudes towards child independence.

In the second part of Table 6, we study the correlation in the panel of attitudes in the various countries with those of US immigrants from the same countries (after controlling for time dummies): *imm_fework* denotes the attitude of immigrants towards women working even when the husband could support her, *imm_sex* denotes the attitude towards pre-marital sex. The answers are coded so that higher values of these variables reflect more liberal attitudes. Recall that changes in the attitude of immigrants are treated as exogenous in both the level and difference outcome equations and are, therefore, used as instruments in both equations. We report the relevant correlation coefficients, after partialling out the effect of time dummies. Both Δimm_fework and Δimm_sex are positively and significantly associated with the change in *women_cn*, but not with its level. Change in immigrant trust is negatively and almost significantly associated with the level *youth_i*. Changes in *imm_trust* and *imm_sex* are significantly associated (at around the 5% level) with the change and level of *holidays*.

Summarizing, there is *prima facie* evidence that the first set of instruments (deeper attitudes) contain useful information to estimate the level equations for *epr_w* and *hours*. The attitudes of US immigrants contain useful information for the difference equation for *epr_w* and *hours*, and for the level equation of the latter variable. Finding appropriate instruments for *youth_i* remains an open issue.

In the lower part of Table 6 we turn to the first stage regressions for various models (with and without policy variables) we will present in the following tables (detailed information is contained in the footnotes to Table 6). We present the $F-test$ on the additional instruments for the first stage regressions containing, in addition to the attitude of US immigrants and deeper domestic attitudes, lagged outcomes. The lagged outcome variable is included to capture the idea that attitudes can be affected by outcomes. We impose the restriction that the first stage regression coefficients do not change across waves. The results confirm that in both models without and with policy variables the instruments for our measure of gender attitudes and of attitudes towards holidays are informative both in the level and difference equation, while it is very hard to find relevant instruments for our measure of attitudes towards youth independence, particularly for the difference equation.

[38] In the equation for the change in *holidays,* the low value of the marginal significance level of the $F-test$ is entirely due to the significance of the coefficient of the interaction of *God* with the Japan dummy. Beliefs in God do not matter for Protestant or Catholic countries.

The first stage regressions (not reported here in full for reasons of space) also suggest that more liberal attitudes towards women (in levels) are positively and significantly associated (at the 5% level) with past changes in *epr_w* in addition to being significantly associated with the attitudes of US immigrants and/or deeper domestic attitudes). Past increases in hours worked have a positive effect (significant at the 5% level in the restricted model and at the 10% in the more general model) in the first stage regression for the level of *holidays*, suggesting that working longer hours is associated with a greater desire for leisure, through, for instance, an income effect or due to stress.

We also report the first stage regression for the policy variables that are significant in the outcome equations (*epl* in the women employment equation and *tax-wedge* and *ben* in the hours equation). The values of the F test suggest that the levels of both *tax-wedge* and *ben* are very significantly associated with the instruments, while this is not true for their changes. Effectively their coefficients in the second stage for hours of work are identified by the orthogonality condition for the equation in levels. Note that for both *tax-wedge* and *ben*, an increase in the belief in God in Catholic countries is associated with a larger welfare state that comes in the form of an increase in benefits and in the tax wedge.

We only present the first stage regression for the change in *epl* (the more important policy determinant of *epr_w)* in the most parsimonious equation containing policies because, as we shall discuss later, the Arellano-Bond serial correlation test suggest that in the case of women employment rates we should focus on the difference GMM estimator. The most important determinant of Δepl is its own past level (with a t statistic of 2.49 and a negative coefficient suggesting persistence*).* Past level of the number of children are also significantly associated with an increase in *epl (*with a t of 2.03).

6 GMM estimates

In Table 7 we present the GMM system estimates of the equation for women's employment rate.[39] We use the belief in God (interacted with the historically prevalent religious affiliation, and appropriately lagged) plus Δimm_fework and Δimm_sex as instruments, in addition to the appropriately lagged values of *epr_w* and *women_cn* (and of the additional regressors). Relative to the idiosyncratic component of the error term, *gap, ben, ser_va and children* are treated as endogenous, *edu_w, tax_wed, udens and epl*, as predetermined, and *pop65* as exogenous. Given the limited number of observations we have constrained the coefficients of the first stage regression to be equal across the three waves. For the same reason, we have used only the shortest lag allowed for each variable as instrument. The results suggest that *women_cn* remains a significant determinant of the evolution of women employment rates in all specifications, even when instrumented. Another result of note is that there is substantial persistence in the evolution of *epr_w*, as suggested by the coefficient on the lagged dependent variable (around 0.8). Interestingly, labor market policies and structural variables are also significant determinants of the evolution over time of women employ-

[39] The GMM estimates are obtained using the option xtabond2 in Stata. See Roodman (2006).

ment rates. In our preferred parsimonious specification reported in column (6), and obtained from imposing restrictions on the more general specification of column (5), both employment protection legislation and the number of children have a negative effect.

The $p-value$ of the Hansen-Sargan test of overidentifying restrictions (*HSp* in the Table) is not suggestive of misspecification. However, the Arellano-Bond test of first order serial correlation ($AB1z$) suggests that the residuals (in difference) are white noise, which is consistent with the idiosyncratic shock in the equation in level being a random walk. If that were the case, lagged differences of predetermined or endogenous variables would not be legitimate instruments for the equation in levels and the use of the system estimator would be inappropriate in this case. For this reason, in Table 8 we present a set of results obtained using the GMM difference estimator that does not suffer from this problem.[40] Note that, in the difference estimator, we have not used beliefs in God as instruments because they are uninformative for changes in attitudes. The coefficient is essentially identified by changes in beliefs of U.S. immigrants**.** Column (1) contains the most general model. Columns (2) through (4) present more restricted versions of the model in column (1). The coefficient of *women_cn* is significant (at levels between 1% and 10%), as it was in the Within estimates. Among the policy and structure variables, employment protection and the number of children display a significant negative coefficient (the level of significance for *epl* ranges between 5% and 10%).

Summarizing, it appears that attitudes, employment protection, and the number of children all play an important role in determining women employment rates.[41] In assessing the quantitative implication of the model, one must now differentiate between impact and long run effects. However, the relative importance of the direct effect of attitudes and institutions does not depend on this choice. Using the results in column (4), for instance, a change in our measure of attitudes from the first to the third quartile generates a change in women employment rates of 12.7 percentage points on impact, while a similar change in employment protection legislation results in an increase of 20 percentage points. One can also ask to what extent differences across countries in employment rates are due to those attitudes or policies that have a time varying component. For instance, in 2000 the women employment rate in the UK was 21.4 percentage points higher than in Italy: 10 percentage points are explained by differences in attitudes (more liberal in the UK) and 14.8 percentage point by differences in employment protection legislation (stricter in Italy).

The negative link between changes in *epl* and changes in employment rates of women is consistent with the idea that strict systems of employment protection disproportionately protect the permanent jobs of prime age males at the expense of outsiders who spend significant time out of

[40] In estimating the differenced model, if the difference of the error term was serially uncorrelated, we could advance all lagged instruments by one period. We have tried this, but with no improvement in the results, so we have decided not to change the timing of the instruments. We have, however, excluded religious attitudes as an instrument because it contains no information about changes in attitude towards women work in the country of residence.

[41] Experiments in which we replaced the belief in God, as an instrument, with the degree of religious participation (measured by (at least) weekly attendance at religious services) yield similar results concerning the effects of culture, policies and structure. The only exception is that unemployment benefits are now positively and significantly associated with women employment rates, which is puzzling.

work or shifting among temporary jobs. (Kahn, 2007) Indeed, women are more likely to be subject to entry problems in the labour market, and they are therefore likely to be disproportionately affected by the effects of EPL on firms' hiring decisions. (OECD, 2004)

In summary, both policies and culture matter. There is, therefore, at least the potential for policies to offset the effect of variation in attitudes. Whether the required changes in policies are feasible is an issue we do not address in this paper.

As we have already discussed, culture could affect outcomes indirectly, through the effect it has on policies and institutions. For instance, societies characterized by a more traditional view of gender roles could set up policies and institutions to protect the male bread winner model through employment protection legislation that is likely to be more beneficial for primary workers in formal sectors, the majority of whom are likely to be men[42]. If this were the case our estimate of the effect of culture on women employment rates would capture only the direct effect of culture and would thus be downward biased.

In fact, if we look at the overall correlation coefficient between *women_cn* and *epl*, controlling for time dummies, it is (consistently with the discussion above) negative (-0.4) and significant at the 1% level, when we use current *women_cn*, and negative (-0.38) and significant at 5%, when we use lagged *women_cn*. However, there is no information in the evolution over time of *women_cn* for the evolution in *epl* within countries (the correlation is not significantly different from zero, after introducing country fixed effects or running the regression in differences). All the correlation is cross sectional.[43] Moreover, deeper attitudes or the attitudes of US immigrants do not matter in the first stage regression of *epl*. Hence, there is no evidence of an indirect effect of changes in attitudes (or in their exogenous component) on women employment rates, through their effect on the evolution of labor market policies.

Next we turn to Table 9 where we repeat a similar exercise for the youth employment rate. Recall that there was no association between the attitude towards child independence and employment outcomes in the LSDV estimator. Instrumenting for *youth_i* using trust in the country of residence and of US immigrants as additional instruments, yields little support for the importance of attitudes towards child independence for youth employment rates. Even if we focus on the results obtained using the system estimator (columns (1) through (7)), in just one case (column (6)) *youth_i* displays a positive and significant coefficient. Policies do not appear to matter much either in the GMM estimates. Probably, the difficulty in finding adequate instruments does not allow us to pin down the effect of culture and policies on youth employment rates.

Finally in Table 10 we present the GMM estimates for the (log) hours of work. We report only the GMM system estimates because, the Arellano-Bond test of first-order serial correlation suggests that the idiosyncratic component of the error term is not serially correlated in the level

[42] See Algan and Cahuc (2006) for a discussion of the effect of religious affiliation on employment protection.

[43] Alesina, Algan, Cahuc and Giuliano.(2010), using a larger set of countries, also find a positive cross sectional correlation between cultural attitudes (importance of family ties, both actual and inherited) and various measures of labor market regulation. Using micro data they also find a positive correlation between family ties and the desire for employment protection, whether or not one includes country fixed effects.

equation (and hence is $MA(1)$ in the difference equation). [44] The test of overidentifying restrictions, moreover, is not suggestive of misspecification. The big difference relative to the Within estimates is that now the coefficient of *holidays* is negative and significant: considering holidays an important attribute of a job results in lower average hours of work. However, policies are also important. Contrary to the Within results, now the policy variables more robustly associated with hours of work are *tax-wedge* and *ben.* A wider tax wedge or more generous unemployment benefits lead to lower hours worked on average in a country. Using the results in column (8), for instance, an increase in the wedge from the first to the third quartile results in a decrease in hours work of 4.1 % on impact, while a similar increase in benefits results in a 2.5% drop. A change in attitudes towards generous holidays from the first to the third quartile leads to a 4.1% drop. These are sizeable effects, particularly those for *tax-wedge* and *holidays* (recall that the difference from the first to the third quartile of hours is 14.3%). Union density is also significantly and positively associated with average hours, which is consistent with the opposition of union to part-time work. Finally, as for the within estimates, a higher fraction of women in the labor force is negatively associated with hours of work, while the association with the relative size of the service sector is positive.[45] The bottom line is that in the case of hours worked too, both policies and attitudes matter.

Also in this case there is no evidence that contemporaneous or past changes in attitudes (*holidays*) are correlated with changes in policies (*tax_wedge* and *ben*). However, in the first stage regression for Δ*tax-wedge*, there is information in some of the cultural instruments. For instance, Δ*tax-wedge* is negatively and significantly associated at the 5% level with Δ*imm_trust* and positively and significantly associate at the 10% level with Δ*imm_sex*. In this case, an evolution in the exogenous component of cultural attitudes has both a direct and indirect effect on hours worked, the latter coming through its effect on taxes (there is no indirect effect, though, through the unemployment benefit variable). However, the thought experiment of changing , for instance, the tax wedge (or, more precisely, the component not related to culture) to offset the effect on hours worked of variations in attitudes, is still possible.

7 Conclusions

We have studied whether cultural attitudes towards work, gender and the young are a significant determinant of the evolution over time of the employment rates of women and of the young, and of hours worked in OECD countries. Beyond controlling for a larger menu of policies, institutions and other structural characteristics of the economy than has been done so far, our analysis improves upon existing studies of the role of "culture" on economic outcomes by dealing explicitly with the

[44] For instance, in columns (6) and (7) the test suggests that we can reject the hypothesis that the difference of the error term is white noise at or close to the 5% level. The test of overidentifying restrictions is not indicative of misspecification.

[45] Experiments in which we replace the belief in God with the degree of religious participation give less sharp results on the effect of culture, probably because frequency of attendance at religious services is less informative about attitudes towards leisure than beliefs in God in the first stage regression.

endogeneity of attitudes, policies and institutions, and by allowing for the persistent nature of labor market outcomes.

By using panel data we were able to identify the effect of attitudes, policies and institutions on labor market outcomes. If we assume that the time-varying and the time-invariant components of attitudes and policies have identical effects, what we have identified is the effect of attitudes and policies tout court. If instead the two components have different effects on outcomes, what we have identified is just the effect of the time varying ones.

We find that, even after instrumenting, allowing for persistence of outcomes and for an extensive menu of additional controls, culture still matters. More specifically, attitudes towards a woman's role in the family and towards leisure are statistically and economically important determinants of the employment rate of women and of average hours worked, respectively. However, we find that policies and other institutional or structural characteristics also matter. The results on the role of attitudes towards leisure, policies and institutions in determining the evolution over time of hours worked are new and particularly interesting in the light of the debate initiated by Prescott (2004) and Alesina, Glaeser and Sacerdote (2005).

In the case of women employment rates, the policy variable that is significant along with attitudes, is the OECD index of employment protection legislation. For hours worked the policy variables that play a role, along with attitudes, are the tax wedge and benefits. The quantitative impact of these policy variables (in particular, employment protection legislation and taxes) is large, so that changes in policies have at least the potential to undo the effect of variations in cultural traits on labor market outcomes.

We have used as instruments deeper attitudes in the country of residence and the attitudes of US immigrants, grouped by country of origin. Other instruments could be investigated in future work. For instance, following Giuliano (2007), the living arrangements of American immigrants could be used as an instrument for attitudes toward the young. Another interesting extension would require exploiting the variation over time in work attitudes and employment outcomes at the regional level in Europe. An additional strategy to identify the effect of culture would be to compare the labor market outcomes for immigrants from different countries who live in the same area. All this is on our research agenda for the future.

References

[1] Aghion, P., Y. Algan and P. Cahuc (forthcoming), "Can Policy Affect Culture? Minimum Wage and the Quality of Labor Relations," *Journal of the European Economic Association.*

[2] Aghion, P., Y. Algan, P. Cahuc and A. Shleifer (forthcoming), "Regulation and Distrust" *Quarterly Journal of Economics".*

[3] Alesina A., Y. Algan, P. Cahuc and P.Giuliano (2010), "Family Values and the Regulation of Labor," NBER Working Papers. 15747.

[4] Alesina A., and P. Giuliano (2007), "The Power of the Family," NBER Working Papers 13051, National Bureau of Economic Research, Inc.

[5] Alesina A., and P. Giuliano (2009), "Preferences for Redistribution," NBER Working Papers 14825, forthcoming in A. Bisin and J. Benhabib (eds.) *Handbook of Social Economics,* North Holland, Amsterdam.

[6] Alesina, A., E. Glaeser and B. Sacerdote (2001), "Why Doesn't the United States Have a European-Style Welfare State?,"*Brookings Paper on Economics Activity*, Fall, 187-278.

[7] Alesina, A., E. Glaeser and B. Sacerdote (2005), "Work and Leisure in the U.S. and Europe: Why So Different?," *NBER Macroeconomic Annual* 2005, 1-64.

[8] Alesina A., and E. Glaeser (2004), *Fighting Poverty in the US and Europe: A World of Difference*, Oxford University Press, Oxford UK.

[9] Alesina A., and E. La Ferrara (2002), "Who trusts others?," *Journal of Public Economics*, vol. 85(2), August, 207-234.

[10] Algan, Y., and P. Cahuc (2006), "Job Protection: the Macho Hypothesis," *Oxford Review of Economic Policy*, 22, 2, November, 290-410.

[11] Algan, Y., and P. Cahuc (2007), "The Roots of Low European Employment: Family Culture?," in Pissarides, C. and Frenkel, J. (eds.) *NBER International Seminar on Macroeconomics 2005*, MIT Press, 65-109.

[12] Algan, Y., and P. Cahuc (forthcoming), "Inherited Trust and Growth", *American Economic Review*, previously circulated as "Cultural Change and Economic Development" (2008).

[13] Antecol, H. (2000), "An Examination of Cross-Country Differences in the Gender Gap in Labor Force Participation Rates", *Labour Economics,* 7, 409-426.

[14] Archimandrite, C. (1981), "Women in the Orthodox Church," *Orthodox Life*, 31, 1, 34-41.

[15] Arellano, M., and S. Bond (1991), "Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations," *Review of Economic Studies,* 58, 277-297.

[16] Banfield E. C. (with L. Fasano) (1958), *The Moral Basis of a Backward Society,* The Free Press, Glencoe, IL.

[17] Barro, R., and R. McCleary (2004), "Religion and Economic Growth," *Milken Institute Review*, April.

[18] Barro, R., and J-W. Lee (2001), "International Data on Educational Attainment Updates and Implications," *Oxford Economic Papers*, July.

[19] Bassanini A., and R. Duval (2006), "Employment Patterns in OECD Countries: Reassessing the Role of Policies and Institutions, "OECD Economics Department Working Papers No. 486.

[20] Bisin, A., and T. Verdier (2001), "The Economics of Cultural Transmission and the Evolution of Preferences," *Journal of Economic Theory*, 97(2), 298-319, 2001.

[21] Blundell, R., and S. Bond (1998), "Initial Conditions and Moment Restrictions in Dynamic Panel Data Models," *Journal of Econometrics* 87: 11-143.

[22] Brugger, B., R. Lalive, and J. Zweimuller (2008), "Does Culture Affect Unemployment? Evidence from the Rostigraben," CEPR Discussion Paper N. 7405.

[23] Farré, L., and F. Vella, (2007), "The Intergenerational Transmission of Gender Role Attitudes and its Implications for Female Labor Force Participation," IZA Discussion Papers 2802, Institute for the Study of Labor.

[24] Fernàndez, R., A. Fogli and C. Olivetti (2004), "Mothers and Sons: Preference Formation and Female Labor Force Dynamics," *Quarterly Journal of Economics* 119: 1249-299.

[25] Fernàndez, R., and A. Fogli (2009), "Culture: An Empirical Investigation of Beliefs, Work and Fertility," *American Economic Journal: Macroeconomics* 1: 146-177.

[26] Fernàndez, R. (2007), "Women, Work and Culture," *Journal of the European Economic Association.*

[27] Fernàndez, R. (2008), "Culture as Learning: The Evolution of Female Labor Force Participation over a Century," mimeo, NYU.

[28] Fogli, A., and L. Veldkamp, (2007), "Nature or Nurture? Learning and Female Labor Force Dynamics,". Federal Reserve Bank of Minneapolis. Staff Report 386.

[29] Fortin, N. (2005), "Gender Role Attitudes and Women's Labour Market Outcomes Across OECD countries, " *Oxford Review of Economic Policy*, 21, 3: 416-438.

[30] Fortin, N. (2009), "Gender Role Attitudes and Women's Labor Market Participation: Opting-Out, AIDS, and the Persistent Appeal of Housewifery," mimeo, University of British Columbia.

[31] Giuliano, P. (2007), "Living Arrangements in Western Europe: Does Cultural Origin Matter?," *Journal of the European Economic Association*, 5: 927-952.

[32] Guiso, L., P. Sapienza and L. Zingales (2003), "People's Opium? Religion and Economic Attitudes," *Journal of Monetary Economics* 50: 225-282.

[33] Guiso, L., P. Sapienza, and L. Zingales (2006), "Does Culture Affect Economic Outcomes?," J*ournal of Economic Perspectives, 2,* Spring, 23-48.

[34] Kahn, L. M. (2007), "The Impact of Employment Protection Mandates on Demographic Temporary Employment Patterns: International Microeconomic Evidence," *Economic Journal*, 117, 333-356.

[35] Licht, A., C. Goldschmidt, and S. H. Schwartz (2007), "Culture Rules: The Foundations of the Rule of Law and Other Norms of Governance," *Journal of Comparative Economics,* 35, 659-688.

[36] Luperini, R., P. Castaldi, and L. Marchiani (2005), "*La scrittura e l'interpretazione: storia e antologia della letteratura italiana nel quadro della civiltà europea,*" Palumbo editore, Palermo.

[37] Nickell, S. (1981), "Biases in Dynamic Models with Fixed Effects", *Econometrica*, 49, 6, November, 1417-1426.

[38] Nickell, S., L. Nunziata and W. Ochel (2005), "Unemployment in the OECD Since the 1960s: What Do We Know?," *The Economic Journal*, 115, January, 1-27.

[39] OECD (2004), "*Employment Outlook*," Paris: OECD.

[40] Prescott, E. (2004), "Why Do Americans Work so Much More than Europeans?," *Quarterly Review*, Federal Reserve Bank of Minneapolis, July, 2-13.

[41] Roodman, D. (2006), "How to Do xtabond2: An Introduction to "Difference" and "System" GMM in Stata", W.P. 103, Center for Global Development, Washington, D.C..

[42] Tabellini G. (2008a), "Institutions and Culture," *Journal of the European Economic Association Papers and Proceedings*, 6, 2-3.

[43] Tabellini G. (2008b), "The Scope of Cooperation: Values and Incentives," *The Quarterly Journal of Economics*, vol. 123, issue 3, pages 905-950

[44] Tabellini G. (forthcoming), "Culture and Institutions: Economic Development in the Regions of Europe," *Journal of the European Economic Association*

[45] Weber, M. (1930), *The Protestant Ethic and the Spirit of Capitalism,* London, Allen & Unwin.

A Data Appendix: sources and definitions

A.1 Employment and hours

For most countries the employment and hours variables represent four year averages over the period 1981-1984, 1990-1993, 1999-2002. We will also use data for the 1972-1975 period in models with the lagged dependent variable. See Table A.1 for summary statistics on the main variables used in our econometric work.

epr_w *Employment/Population ratio for Women.*

Definition: Proportion of an economy's female population aged 25-54 that is employed. Source: OECD Labour Force Statistics. Updated in July 2008

Data adjustments: Austria: For the period 1990-1993 we used the observation in 1994 from OECD Labour Force Statistics. Belgium, Denmark: For the period 1972-1975 we used the E/P ratios estimates for women aged 25-54 years obtained using the following procedure. We started from the formula E/P=(E/LF)*(LF/P) where P is population of the relevant sex and age group, LF labor force, E employed in civilian employment and armed forced. We took the average LF/P, E and LF of women aged 15-64 between '72 and '75 and '81 and '84 from OECD Labor Force Statistics 1969-1989. We calculate the growth rate between these two periods and project backward our 1981-1984 figure for the employment/population ratio for women. Canada : For the period 1972-1975 we used the E/P ratios estimates for women aged 25-54 years obtained using the following procedure: we started from the formula E/P= LF/P – U/P = LF/P –U/LF * LF/P, where P is population of the relevant sex and age group, LF labor force and U unemployment, so that LF/P is the participation rate and U/LF is the unemployment rate. We took the average LF/P and U/LF of women aged 25-54 between '72 and '75 and '81 and '84 from OECD Labor Force Statistics 1969-1989. We calculated the growth rate between these two periods and projected backward our 1981-1984 figure for the employment/population ratio for women. Portugal : For the period 1972-1975 we used the average of the E/P ratios for women aged 25-54 years in 1974 and 1975. United-Kingdom: For the period 1981-1984 we used the observation in 1984 from OECD Labour Force Statistics. (Updated July 2008). For the period 1972-1975 we followed the same procedure explained for Canada.

epr_y *Employment/Population ratio for Young.*

Definition: Proportion of an economy's population aged 15-24 that is employed. Source: OECD Labour Force Statistics. Updated July 2008

Data adjustments: Austria: For the period 1972-1975 we used the E/P ratios estimates for youth aged 15-24 years for the Census years 1971. For the period 1981-1984 we used the E/P ratios estimates for youth aged 15-24 years for the Census years 1981. The estimates were derived using registered unemployment data by age and gender obtained from the OECD. For the period 1990-1993 we used the observation in 1994 from OECD Labour Force Statistics. (updated in July 2008).Belgium, Denmark: We followed the same procedure explained for *epr_w,* except that since the figures for men and women aged 15-24 were not available from OECD Labor Force Statistics, we had to apply the rate of growth of employment/population ratios of men and women aged 15-64. Canada : We followed the same procedure explained for *epr_w.* Portugal : We followed the same procedure explained for *epr_w.* United-Kingdom: We followed the same procedure explained for *epr_w.*

hours *Average annual hours actually worked per worker*

Definition: Total number of hours worked over the year divided by the average number of people in employment. Hours actually worked per person in employment are consistent with National Accounts concepts for Austria, Canada, Denmark, Finland, France, Germany, Italy, Korea, Norway, Spain, Sweden. Secretariat estimates for annual hours worked based on the European Labour Force Survey are used for Belgium, Ireland, the Netherlands and Portugal . The OECD warns that the data are intended for comparisons of trends over time and are unsuitable for comparisons of the level of average annual hours of work for a given year, because of differences in their sources, even within the first group of countries. Part-time workers are covered as well as full-time. Country specific notes can be found at: www.oecd.org/employment/outlook. Source: OECD Labour Force Statistics

A.2 Attitudes in the country of residence

List of countries with indication of the year of the survey for each available wave. Austria: 2nd wave 1990, 3rd wave 1999. Belgium: 1st 1981 , 2nd 1990 , 3rd 1999. Canada: 1st 1982, 2nd 1990, 3rd 2000. Denmark: 1st 1981, 2nd 1990, 3rd 1999. Finland: 2nd 1990, 3rd 2000. France: 1st 1981, 2nd 1990, 3rd 1999. Germany: 1st 1981 (West Germany), 2nd 1990, 3rd 1999. Great Britain: 1st 1981 , 2nd 1990, 3rd 1999. Ireland: 1st 1981, 2nd 1990, 3rd 1999. Italy: 1st 1981, 2nd 1990, 3rd 1999. Japan 1st 1981, 2nd 1990, 3rd 2000. Netherlands: 1st 1981, 2nd 1990, 3rd 1999. Norway 1st 1982, 2nd 1990. Portugal: 2nd 1990, 3rd 1999. Spain: 1st 1981, 2nd 1990, 3rd 2000. Sweden: 1st 1982, 2nd 1990, 3rd 1999. United States: 1st 1982, 2nd: 1990, 3rd 1999. Note : *women_cn* is not available for Sweden 1st wave. *women_jp* is only available for 2nd and 3rd wave.

women_cn The country/wave fixed effect in the probit model that uses "*Do you think that a woman has to have children in order to be fulfilled or is this not necessary?*" 0 denotes 'Necessary', 1 denotes 'Not Necessary' - See Table 1. Source: World and European Values Surveys (four waves integrated files: 1981-2004, v.20060423, 2006). The World Values Survey Association (www.worldvaluessurvey.org)and European Values Study Foundation (www.europeanvalues.nl).

women_jp The country/wave fixed effect in the probit model that uses "Do you agree or disagree with the following statements? When jobs are scarce men should have more right to a job than women?" 0 denotes agreement with the questions, 1 denotes disagreement – see Table 1. Source: World and European Values Surveys

youth_i The country/wave fixed effect in the probit model that uses "Here is a list of qualities that children can be encouraged to learn at home. Which if any do you consider to be especially important?Independence." 1 denotes independence being mentioned, 0 not mentioned - See Table 1. Source: World and European Values Surveys

holidays The country/wave fixed effect in the probit model that uses "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" 1 denotes generous holidays being mentioned, 0 not mentioned - See Table 1. Source: World and European Values Surveys

god The country/wave fixed effect in the probit model that uses "*Which, if any, of the following do you believe in? God*" Source: World and European Values Surveys

trust The country/wave fixed effect in the probit model that uses "*Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with*

people?" 1 denotes the answer "Most People can be trusted", 0 denotes "Can't be too careful" and "Don't know". Source: World and European Values Surveys

week The country/wave fixed effect in the probit model that uses "*Apart from weddings, funerals and christenings, about how often do you attend religious services these days?*" 1 denotes the answers 'More than once a week' and 'Once a week'; 0 denotes the other alternatives ('Once a month, 'Only on special holy days/Christmas/Easter days', 'Other specific holy days', 'Once a year', 'Less often', 'Never, practically never'). Source: World and European Values Surveys

A.3 Attitudes of second (or higher) generation immigrants in US

imm_fework The cluster/wave fixed effect in the probit model that uses "*Do you approve or disapprove of a married woman earning money in business or industry if she has a husband capable of supporting her?"* 1 denotes disagreement, 0 agreement. The probit model for the first wave is run over the period before 1985, for the second wave over the period 1986 -1993 and for the third wave over the period after 1994. The clusters are: 1.Irish (Ireland) 2. Japanese (Japan). 3.British (England & Wales) 4.Canadian (French Canada-Other Canada) 5. German Speaking (Germany-Austria) 6.European Continental not German Speaking (Belgium, France, Netherlands) 7.Mediterranean (Italy, Spain, Portugal) 8.Nordic (Denmark, Finland, Norway, Sweden) Source: GENERAL SOCIAL SURVEYS.

imm_premarsx The cluster/wave fixed effect in the probit model that uses "*There's been a lot of discussion about the way morals and attitudes about sex are changing in this country. If a man and woman have sex relations before marriage, do you think it is always wrong, almost always wrong, wrong only sometimes, or not wrong at all?*" 1 denotes "wrong only sometimes, or not wrong at all", 0 "always wrong, almost always wrong". Periods for each wave and Clusters - see *imm_fework.* Source: GENERAL SOCIAL SURVEYS

imm_ *trust* The cluster/wave fixed effect in the probit model that uses "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" 1 denotes the answer "Most People can be trusted", 0 denotes "Can't be too careful" and "Don't know". Periods for each wave and Clusters - see *imm_fework.* Source: GENERAL SOCIAL SURVEYS

A.4 Labour market policies

ben *Average unemployment benefit replacement rate*

Definition: average unemployment benefit replacement rate across two income situations (100% and 67% of APW earnings), three family situations (single, with dependent spouse, with spouse in work) and three different unemployment durations (1st year, 2nd and 3rd years, and 4th and 5th years of unemployment).Source: OECD, Benefits and Wages Database. Data adjustments: original data are available only for odd years. Data for even years are obtained by linear interpolation.

tax_wedge *Tax wedge on labour use*

Definition: share of personal income tax and all social security contributions (net of social benefits) to total labour cost (wages and employers' social security contributions) and averaged over two family types (single household and a couple with a dependent spouse and two children, both family types earning 100% of an average worker income). Source: OECD, Taxing Wages.

epl *Employment Protection Legislation (epl)*

Definition: OECD summary indicator of the stringency for Employment Protection Legislation for indefinite contract (regular) workers and fixed-term contract (temporary) workers, measured as a simple average of the index for indefinite and fixed-term contracts. Information on regular contracts include procedural inconveniences that employers face when trying to dismiss a worker; notice and several payments at different job tenures; and prevailing standards of and penalties for unfair dismissals. Information on fixed-term and temporary work agency contracts include: the objective reasons under which they can be offered; the maximum number of successive renewals; and the maximum cumulated duration of the contract.

A.5 Labour market institutions

udens *Union density*

Definition: trade union density rate, i.e. the share of workers affiliated to a trade union, in %. Source: OECD, Employment Outlook 2004.

A.6 Other variables

gap *Output gap*

Definition: OECD measure of the gap between actual and potential output as a percentage of potential output. Source: OECD (2005) Economic Outlook 77.

edu_w *Female education*

Definition: number of years of education of female population aged 25 and over.

Source: Barro, R. J. and J-W. Lee (2000). Data adjustments as in Bassanini A., Duval R. (2006).

edu_y *Relative youth education*:

Definition: difference between the number of education years of total population aged 15 and over and the number of education years of total population aged 25 and over.

Source: Barro, R. J. and J-W. Lee (2000). Data adjustments as in Bassanini A., Duval R. (2006).

childcare *Childcare expenditure per child*

Definition: log of public expenditure per child on Day care / Home-help services / Child care (without pre-school) in PPP terms. The figures on public expenditure in domestic currency have been calculated using the methodology in the OECD Family Database (for a detailed explanation see http://www.oecd.org/dataoecd/45/27/37864512.pdf). The main data source for Public expenditure on Day care / Home-help services / Child care is the Social Expenditure Database (SOCX, www.oecd.org/els/social/expenditure). We are grateful to Willem Adema and Maria Huerta (OECD) for providing us the data. We have used the PPP GDP price index from the PWT 6.3 as a deflator (Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 6.3,Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, August 2009). The population figures for children aged 0-4 is obtained from the United Nations World Population Prospects 1950-2050. Data adjustments: for all countries the data for the last period is obtained averaging the values in 1999 and 2000. For Austria and Norway the first period is obtained averaging the values in 1980 and 1985. The population of children aged 0-4 is taken in 1980, 1990 and 2000.

serv_va *Services, etc., value added (% of GDP).*

They include value added in wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services. Also included are imputed bank service charges, import duties, and any statistical discrepancies noted by national compilers aswell as discrepancies arising from rescaling. Source: World Development Indicators

children *Number of children per woman*

Definition: ratio of total population aged 0-14 to female population aged 15-64.

Source: OECD, Annual Labour Force Statistics.

pop65 *Population ages 65 and above (% of total).*

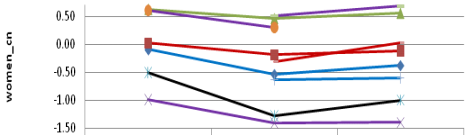
Source: World Development Indicators

prot dummy variable, equal to 1 if the adherence fraction of population in 1900 for protestant religion is greater than that of any other religion , 0 otherwise. Source: Barro and McCleary (2003)

cath dummy variable, equal to 1 if the adherence fraction of population in 1900 for catholic religion is greater than that of any other religion , 0 otherwise. Source: Barro and McCleary (2003)

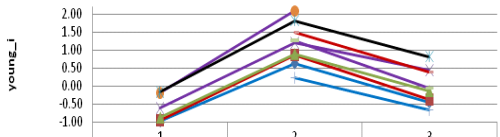
oth_rel dummy variable, equal to 1 if the greatest adherence fraction of population in 1900 is not for protestant religion, nor for catholic religion , 0 otherwise. Source: Barro and McCleary (2003)

Figure 1a - Evolution of country/wave effects: gender attitudes



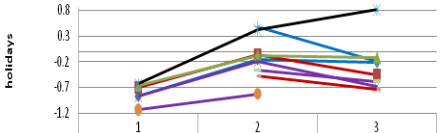
	1	2	3
ITA+ESP	-0.09	-0.54	-0.38
PORTUGAL		-0.64	-0.60
cont (-AUT)	0.02	-0.19	-0.12
anglo	0.63	0.46	0.56
DENMARK	-0.99	-1.40	-1.39
SWE+NOR	0.61	0.31	
FINLAND		0.51	0.68
JAPAN	-0.51	-1.28	-0.99
AUSTRIA		-0.31	0.03

Figure 1b: Evolution of country/wave effects - attitudes towards young



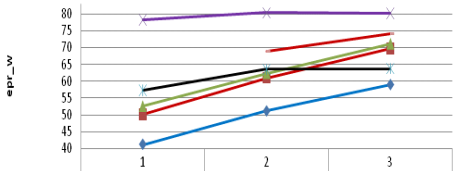
	1	2	3
ITA+ESP	-0.98	0.64	-0.45
PORTUGAL		0.23	-0.67
cont (-AUT)	-0.95	0.87	-0.37
anglo	-0.87	0.89	-0.13
DENMARK	-0.60	1.22	0.44
NORWAY	-0.19	2.09	
FINLAND		1.27	-0.06
JAPAN	-0.16	1.82	0.83
AUSTRIA		1.49	0.40

Figure 1c: Evolution of country/wave effects - attitudes towards work



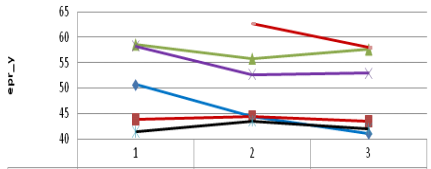
	1	2	3
ITA+ESP	-0.8755945	-0.1540212	-0.20878
PORTUGAL		0.49	-0.19
cont (-AUT)	-0.6961936	-0.0605304	-0.4631689
anglo	-0.67	-0.08	-0.12
DNK+SWE	-0.870737	-0.1937968	-0.6819354
FINLAND		-0.37	-0.58
JAPAN	-0.64	0.42	0.81
AUSTRIA		-0.47	-0.73
NORWAY	-1.13	-0.83	

Figure 2a Evolution of Employment/Population ratio for Women
Levels 1980-1990-2000



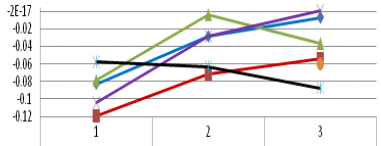
	1	2	3
medit	41.16126	51.11366	58.96629
cont(-AUT)	50.20441	61.00782	69.71458
anglo	52.51411	62.32301	71.03131
nordic	78.23276	80.35899	80.29039
JAPAN	57.36258	63.54523	63.78038
AUSTRIA		68.93591	74.22128

Figure 2b Evolution of Employment/Population ratio for Young
Levels 1980-1990-2000



	1	2	3
medit	50.65911	44.40303	41.08686
cont(-AUT)	43.87597	44.40972	43.43053
anglo	58.51532	55.8095	57.5579
nordic	58.28899	52.69729	52.92105
JAPAN	41.49017	43.56394	41.9526
AUSTRIA		62.647	57.92737

Figure 2c Evolution of average annual hours
Log Differences
1980-70/1990-80/2000-1990



	1	2	3
ITA+ESP	-0.082702	-0.028352	-0.006766
cont(-AUT)	-0.119713	-0.071653	-0.053832
anglo	-0.078856	-0.003998	-0.036717
nordic	-0.103885	-0.028279	0.000553
JAPAN	-0.057508	-0.063042	-0.087294
PORTUGAL			-0.060021

Table 1: Estimations of Family and Work Attitudes : Probit Estimates for 2000 Wave

	(1) child necessary	(2) job priority for men	(3) important child qualities:indep.	(4) important in a job:gen.holidays
sex	-0.158***	-0.146***	-0.200***	0.0530
	(0.0557)	(0.0388)	(0.0403)	(0.0328)
age	0.0110**	-0.00438	0.0158***	-0.000339
	(0.00461)	(0.00642)	(0.00606)	(0.00380)
age2	-0.000152***	-0.0000378	-0.000218***	-0.0000498
	(0.0000468)	(0.0000624)	(0.0000542)	(0.0000368)
edu_age	0.0386***	0.0802***	0.0390***	-0.0224***
	(0.00582)	(0.00704)	(0.00523)	(0.00746)
children	-0.0859***	-0.0318***	-0.000828	0.00219
	(0.0136)	(0.00708)	(0.00862)	(0.00877)
married	-0.0677**	-0.119***	-0.0477	-0.0444
	(0.0314)	(0.0340)	(0.0318)	(0.0321)
employed	0.0615	0.217**	0.0363	0.0270
	(0.0690)	(0.0887)	(0.0563)	(0.0554)
no_workforce	0.0103	0.0730	-0.0374	0.0435
	(0.0701)	(0.0931)	(0.0476)	(0.0666)
low	-0.0712**	-0.0922***	-0.0287	-0.0523***
	(0.0309)	(0.0316)	(0.0309)	(0.0201)
high	0.0583**	0.177***	0.0922***	0.0131
	(0.0296)	(0.0333)	(0.0223)	(0.0262)
left	0.0842	0.0471	0.106***	0.0895*
	(0.0611)	(0.0413)	(0.0359)	(0.0540)
right	-0.119***	-0.253***	-0.188***	-0.0778**
	(0.0292)	(0.0465)	(0.0475)	(0.0340)
cath	0.140	-0.183	-0.193	0.0506
	(0.141)	(0.146)	(0.149)	(0.221)
prot	0.376**	-0.189	-0.0775	0.0311
	(0.154)	(0.142)	(0.144)	(0.232)
muslim	-0.781***	-0.565***	-0.399**	0.0503
	(0.274)	(0.219)	(0.165)	(0.329)
other_rel	0.198	-0.184	-0.148	-0.000839
	(0.173)	(0.168)	(0.149)	(0.222)
Observations	11904	13242	13423	13379
Country Effects	YES***	YES***	YES***	YES***

Clustered errors in parentheses(allowing for arbitrary correlations within countries) * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Omitted Categories : Unemployed, Medium Income, Pol.Views:Center, No Religion. In columns 1 and 2, 0 denotes agreement with the questions 1 denotes disagreement. In column 3, 1 denotes independence being mentioned; 0 not mentioned
In column 4, 1 denotes generous holidays being mentioned; 0 not mentioned

Table 2: Family and Work Attitudes and employment rates for women (using *women_cn*): within estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	epr_w	epr_w	epr_w	epr_w	epr_w	epr_w	epr_w	epr_w
women_cn	11.97*	9.096	7.989	10.48**	7.529*	5.430	9.281***	5.965
	(6.732)	(5.915)	(5.048)	(3.787)	(4.007)	(5.245)	(2.238)	(6.162)
gap		0.827	0.385	0.675	0.466	0.706*	1.322***	0.774*
		(0.503)	(0.657)	(0.403)	(0.499)	(0.400)	(0.358)	(0.374)
children			-56.66***		-53.90**	-41.15***	-27.54*	-26.45
			(14.82)		(19.85)	(12.06)	(13.26)	(18.30)
serv_va			0.704		0.396		1.675***	
			(0.556)		(0.432)		(0.450)	
pop65			-1.602*		-1.151		-1.661***	
			(0.867)		(0.910)		(0.544)	
edu_w			-1.902		-0.986		1.450	
			(1.482)		(2.020)		(1.786)	
epl				-7.448***	-7.585***	-5.153***	-9.955***	-5.137*
				(2.260)	(2.241)	(1.759)	(1.977)	(2.735)
udens				-0.442*	-0.182		-0.624***	
				(0.252)	(0.225)		(0.171)	
benall				-0.353	-0.123		-0.585***	
				(0.245)	(0.267)		(0.185)	
tax_wedge				-0.412	-0.759	-1.133***	-0.175	-1.190***
				(0.451)	(0.454)	(0.283)	(0.217)	(0.314)
childcare							1.917	2.793
							(1.398)	(2.112)
Observations	46	46	46	46	46	46	37	37
Countries	17	17	17	17	17	17	14	14

Standard errors in parentheses, allowing for heteroskedasticity and correlation within each country (cluster option in Stata)
Period Effects and Country Effects are entered in every column
women_cn is the country/wave fixed effect in the probit model that uses: -Do you think that
a woman has to have children in order to be fulfilled or is this not necessary
1 means 'not necessary', 0 'needs children' - See Table 1
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Family and Work Attitudes and employment rates for women (using *women_jp*): within estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	epr_w	epr_w	epr_w	epr_w	epr_w	epr_w	epr_w	epr_w
women_jp	59.43*	58.20*	31.34	37.94**	26.13**	37.32**	4.514	23.14**
	(31.10)	(30.12)	(20.87)	(16.10)	(9.835)	(14.60)	(8.329)	(9.553)
gap		0.132	-0.0598	0.296	-1.160*	0.0623	-0.495	0.0805
		(0.621)	(1.110)	(0.352)	(0.633)	(0.397)	(0.294)	(0.224)
children			-68.16***		-87.41***	-48.23***	26.75	16.91
			(23.04)		(25.35)	(15.49)	(31.76)	(16.50)
serv_va			0.329		-0.559		-1.004	
			(0.884)		(0.487)		(0.617)	
pop65			-0.871		-2.200*		0.310	
			(1.260)		(1.253)		(1.058)	
edu_w			-5.546*		-5.700***		-1.967*	
			(3.040)		(1.890)		(1.048)	
epl				-1.469	-2.479		0.469	
				(3.391)	(1.484)		(0.562)	
udens				-0.525*	0.213		-0.326	
				(0.271)	(0.313)		(0.263)	
benall				0.155	0.270*		0.168***	
				(0.305)	(0.135)		(0.0523)	
tax_wedge				-1.490***	-1.592***	-1.243***	-1.681***	-1.165***
				(0.449)	(0.192)	(0.251)	(0.209)	(0.107)
childcare							7.396***	7.401***
							(1.372)	(1.611)
Observations	33	33	33	33	33	33	29	29
Countries	17	17	17	17	17	17	16	16

Standard errors in parentheses, allowing for heteroskedasticity and correlation within each country (cluster option in Stata)
Period Effects and Country Effects are entered in every column
women_jp is the country/wave fixed effect in the probit model that uses: -Do you agree or disagree with the following statements? When jobs are scarce, men should have more right to a job than women 0 denotes agreement 1 disagreement - See Table 1
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Family and Work Attitudes and employment rates for youth: within estimates

	(1)	(2)	(3)	(4)	(5)	(6)
	epr_y	epr_y	epr_y	epr_y	epr_y	epr_y
youth_i	-9.984	-6.125	-5.047	-4.527	-5.172	-5.625
	(7.266)	(6.621)	(5.862)	(4.499)	(4.021)	(5.180)
gap		1.469**	1.608**	1.579**	1.357*	1.271**
		(0.571)	(0.752)	(0.580)	(0.642)	(0.461)
serv_va			0.245		-0.295	
			(0.559)		(0.314)	
edu_y			-2.734		-6.849	
			(4.586)		(4.929)	
epl				-3.441	-3.230	
				(3.220)	(3.266)	
udens				-0.0606	-0.149	
				(0.135)	(0.116)	
benall				0.362	0.339	
				(0.235)	(0.237)	
tax_wedge				-1.487***	-1.629***	-1.164**
				(0.344)	(0.306)	(0.440)
Observations	47	47	47	47	47	47
Countries	17	17	17	17	17	17

Standard errors in parentheses, allowing for heteroskedasticity and correlation within each country (cluster option in Stata)
Period Effects and Country Effects are entered in every column
youth_i is the country/wave fixed effect in the probit model that uses: -Here is a list of qualities
that children can be encouraged to learn at home. Which if any do you consider to be especially important?
1 denotes independence being mentioned, 0 not mentioned - See Table 1
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Family and Work Attitudes and average annual hours: within estimates

	(1)	(2)	(3)	(4)	(5)	(6)
	hours	hours	hours	hours	hours	hours
holidays	-0.0190	-0.0182	-0.0236	-0.000561	-0.00613	-0.0121
	(0.0389)	(0.0353)	(0.0372)	(0.0306)	(0.0342)	(0.0325)
gap		0.00347	0.00758*	0.00664	0.0113**	0.00813**
		(0.00523)	(0.00409)	(0.00441)	(0.00439)	(0.00343)
serv_va			0.00260		0.00382	
			(0.00301)		(0.00331)	
epr_w			-0.00363**		-0.00332***	-0.00327**
			(0.00145)		(0.000981)	(0.00119)
epl				-0.0458*	-0.0522**	-0.0460**
				(0.0236)	(0.0207)	(0.0168)
udens				0.00222	0.00121	
				(0.00202)	(0.00143)	
benall				0.000376	0.000453	
				(0.00158)	(0.00109)	
tax_wedge				-0.00149	-0.00321	
				(0.00355)	(0.00369)	
Observations	44	44	44	44	44	44
Countries	16	16	16	16	16	16

Standard errors in parentheses, allowing for heteroskedasticity and correlation within each country (cluster option in Stata)
Period Effects and Country Effects are entered in every column
holidays is the country/wave fixed effect in the probit model that uses: -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
1 denotes generous holidays being mentioned, 0 not mentioned - see Table 1
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Relevance of Instuments for Attitudes and Policies

DEEP ATTITUDES					
$\Delta women_cn_t, god_{t-1}$	F=1.33	(.287)	$women_cn_t, \Delta god_t$	F=6.57	(.0021)
$\Delta youth_i_t, trust_{t-1}$	r=.161	(.395)	$youth_i_t, \Delta trust_t$	r=.387	(.035)
$\Delta holidays_t, god_{t-1}$	F=5.39	(.006)	$holidays_t, \Delta god_t$	F=105.76	(.0000)
US IMMIGRANTS ATTITUDES					
$\Delta women_cn_t, \Delta imm_fework_t$	r=.408	(.035)	$women_cn_t, \Delta imm_fework_t$	r=.014	(.941)
$\Delta women_cn_t, \Delta imm_premarsx_t$	r=.423	(.028)	$women_cn_t, \Delta imm_premarsx_t$	r=.22	(.242)
$\Delta young_i_t, \Delta imm_trust_t$	r= -.146	(.460)	$youth_i_t, \Delta imm_trust_t$	r= -.34	(.061)
$\Delta holidays_t, \Delta imm_trust_t$	r= -.0384	(.048)	$holidays_t, \Delta imm_trust_t$	r= -.345	(.067)
$\Delta holidays_t, \Delta imm_premarsx_t$	r= -.376	(.053)	$holidays_t, \Delta imm_premarsx_t$	r= -.367	(.050)
1st-STAGES (restricted model w/out policies/structure)	diff eq.		level eq.		
(a) *women_cn*	F=4.83	(.006)	F=14.55	.(000)	
(b) *youth_i*	F=1.04	(.367)	F=11.45	.(000)	
(c) *holidays*	F=6.99	(.002)	F=90.02	.(000)	
1st-STAGES (more general model)	diff eq.		level eq.		
(d) *women_cn*	F=3.57	(.015)			
(e) *epl*	F=2.50	(.051)			
(f) *holidays*	F=9.65	(.001)	F=10.93	(.000)	
(g) *tax_wedge*	F=1.46	(.274)	F=73.70	(.000)	
(h) *ben*	F=0.52	(.830)	F=6.41	(.004)	

r denotes the correlation coefficient.Marginal probabilities in parentheses.
god denotes the interaction of beliefs in God with the historically dominant religious affiliation of the country(prot, cath, other)
The F for *god* denotes the F-Test of significance of the instruments.
Time dummies always included.
Each first-stage regression refers to one of the specifications in Tables 7-10, as follows:
(a) Table 7 Column 1; (b) Table 9 Column 1; (c) Table 10 Column 1
(d) and (e) Table 8 Column 4 (*gap* excluded as instrument); (f), (g), (h) Table 10 Column 8

Table 7: Family and Work Attitudes and Employment Rates for Women : GMM system estimates

	(1)	(2)	(3)	(4)	(5)	(6)
	epr_w	epr_w	epr_w	epr_w	epr_w	epr_w
l_epr_w	0.811***	0.828***	0.835***	0.775***	0.825***	0.756***
	(0.166)	(0.122)	(0.102)	(0.0676)	(0.0584)	(0.0743)
women_cn	4.860***	4.055***	3.074***	5.045***	3.812***	4.527***
	(0.948)	(1.006)	(0.934)	(1.570)	(1.111)	(1.576)
gap		1.489**	1.852***	1.399***	1.571***	1.427***
		(0.633)	(0.527)	(0.390)	(0.417)	(0.384)
benall			0.104*		0.0940**	0.0807
			(0.0608)		(0.0399)	(0.0569)
tax_wedge			0.0238		0.0590	
			(0.127)		(0.133)	
udens			-0.0436		-0.0410	
			(0.0696)		(0.0679)	
epl			-1.013		-1.847	-1.898*
			(0.779)		(1.187)	(0.985)
pop65				-0.290	0.272	
				(0.416)	(0.481)	
edu_w				0.0600	-0.301	
				(0.397)	(0.510)	
serv_va				0.207	-0.0849	
				(0.250)	(0.200)	
children				-32.90***	-28.11***	-39.35***
				(9.603)	(8.968)	(11.17)
Observations	43	43	43	43	43	43
AR(1)z	1.998	1.841	1.243	0.847	0.568	0.599
HansPv	0.304	0.814	0.990	0.874	1.000	0.977

Standard errors in parentheses

Period Effects are entered in every columns

Columns 1 to 6 report the system estimator results using religious beliefs of the country of residence (treated as predeterminate) and attitudes towards female work and sex of American immigrants (treated as exogenous) as instruments in addition to lagged epr_w and lagged women_cn

For all variables only the shortest allowable lagged is used as instrument

gap, ben, serv_va, children treated as endogenous, pop65 as exogenous

edu_w, tax_wed, udens and epl as prederminate

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Family and Work Attitudes and Employment Rates for Women : GMM difference estimates

	(1)	(2)	(3)	(4)
	epr_w	epr_w	epr_w	epr_w
women_cn	5.446	6.371**	9.095*	11.22***
	(3.531)	(3.208)	(5.340)	(3.770)
l_epr_w	0.610	0.628***	0.739***	0.808***
	(0.560)	(0.211)	(0.247)	(0.277)
gap	0.941	1.370*	2.099**	1.671***
	(0.944)	(0.773)	(0.877)	(0.469)
pop65	-2.517*	-1.953		
	(1.471)	(1.202)		
edu_w	-3.088			
	(5.288)			
serv_va	1.312*	1.166*	0.706	
	(0.746)	(0.651)	(1.173)	
children	-86.67***	-73.88***	-49.05***	-48.92***
	(32.78)	(16.49)	(9.200)	(16.23)
benall	-0.401			
	(0.255)			
tax_wedge	0.00806			
	(0.654)			
udens	0.178			
	(0.333)			
epl	-9.710**	-8.518**	-8.146**	-8.714*
	(3.855)	(3.894)	(3.999)	(5.291)
Observations	27	27	27	27
AR(1)z	-0.673	-0.538	-0.0377	0.386
HansPv	0.251	0.597	0.532	0.395

Standard errors in parentheses

Period Effects are entered in every columns

Columns 1 to 4 report the difference estimator results using attitudes towards female work and sex of American immigrants (treated as exogenous) as instruments in addition to lagged epr_w and lagged women_cn

For all variables only the shortest allowable lagged is used as instrument

gap, ben, serv_va, children treated as endogenous, pop65 as exogenous

edu_w, tax_wed, udens and epl as prederminate

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Family and Work Attitudes and Employment Rates for Youth: GMM estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	epr_y	epr_y	epr_y	epr_y	epr_y	epr_y	epr_y	epr_y	epr_y
youth_i	11.76**	5.915	4.798	4.870	5.824	5.065	6.938***	-8.000	-13.81
	(5.471)	(3.830)	(3.214)	(3.795)	(3.905)	(4.601)	(2.534)	(7.186)	(13.19)
l_epr_y		0.621***	0.715***	0.623***	0.649***	0.655***	0.627***	0.317	0.138
		(0.157)	(0.0896)	(0.142)	(0.131)	(0.170)	(0.117)	(0.219)	(0.241)
gap			0.386	1.802***	1.299	2.735***	2.134	1.638	3.175
			(1.004)	(0.556)	(1.051)	(0.898)	(1.422)	(1.212)	(1.982)
ben				0.494*		-0.0269		0.101	
				(0.266)		(0.310)		(0.863)	
tax_wedge				-0.160		0.245		-0.446	
				(0.572)		(0.535)		(1.164)	
udens				0.00823		-0.0556		-0.530	
				(0.177)		(0.120)		(0.870)	
epl				-2.775		-3.438**	-2.417	-3.423	-1.899
				(2.566)		(1.708)	(1.993)	(7.928)	(5.282)
edu_y					-0.830	-1.955		-11.20	
					(3.549)	(5.911)		(17.83)	
serv_va					1.064	1.639**	1.372**	0.139	1.382
					(0.799)	(0.768)	(0.611)	(1.434)	(2.417)
Obs	44	44	44	44	44	44	44	28	28
AB1z	0.589	-0.772	-1.368	-1.144	-2.004	-1.140	-1.578	-0.601	0.150
HSp	0.327	0.607	0.162	0.765	0.550	1.000	0.565	0.556	0.775

Standard errors in parentheses.* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.Period Effects are entered in every columns
Columns 1 to 7 report the system estimator results using attitudes towards trust of the country of residence (treated as predeterminate) and attitudes towards trust of American immigrants (treated as exogenous) as additional instruments. Columns 8 and 9 report the difference estimator results using attitudes towards trust of American immigrants as additional instruments.
In all equations appropriately legged included variables are used as instruments.
gap, ben, serv_va treated as endogenous, edu_y, tax_wed, udens and epl as prederminate
For all variables only the shortest allowable lag is used as instrument.
AB1z: Arellano-Bond test of first order serial correlation of the differenced residuals, distributed as N(0,1)
HSp: p-value of the Hansen-Sargan test of overidentifying restrictions.

Table 10: Family and Work Attitudes and Log Average Annual Hours: GMM system estimates

	(1) hours	(2) hours	(3) hours	(4) hours	(5) hours	(6) hours	(7) hours	(8) hours
holidays	-0.0524***	-0.0511***	-0.0425*	-0.0813***	-0.0781***	-0.0840***	-0.0704***	-0.0638***
	(0.0187)	(0.0177)	(0.0217)	(0.0292)	(0.0220)	(0.0203)	(0.0218)	(0.0244)
l_hours	0.990***	0.972***	0.963***	0.839***	0.950***	0.914***	0.822***	0.773***
	(0.110)	(0.107)	(0.134)	(0.0835)	(0.0786)	(0.101)	(0.0865)	(0.0952)
gap		-0.00151	-0.00249	-0.00296	0.000838	-0.000574		
		(0.00433)	(0.00438)	(0.00336)	(0.00234)	(0.00254)		
serv_va			0.000433		0.00571***	0.00468**		
			(0.00295)		(0.00178)	(0.00224)		
epr_w			0.000483		-0.00125**	-0.00135***	-0.00110**	-0.00109*
			(0.000785)		(0.000492)	(0.000474)	(0.000527)	(0.000657)
tax_wedge				-0.00389***	-0.00382***	-0.00422***	-0.00256**	-0.00292**
				(0.00127)	(0.00131)	(0.00111)	(0.00101)	(0.00142)
epl				0.00792	-0.00305			
				(0.00680)	(0.00552)			
udens				0.00141***	0.00186***	0.00195***	0.00147***	0.00190**
				(0.000387)	(0.000438)	(0.000408)	(0.000388)	(0.000759)
benall				-0.00120**	-0.000904*	-0.00106**	-0.00121***	-0.00152***
				(0.000514)	(0.000468)	(0.000506)	(0.000416)	(0.000414)
Observations	36	36	36	36	36	36	36	36
AR(1)z-stat	-1.820	-1.483	-1.296	-1.283	-1.986	-1.879	-1.806	-1.715
Hansen-Pvalue	0.580	0.761	0.782	0.880	1.000	1.000	0.992	0.988

Standard errors in parentheses
Period Effects are entered in every columns
In all columns except column 8 religious attitudes of the country of residence (treated as predeterminate) and attitudes towards trust and sex of American immigrants (treated as exogenous) are used as instruments in addition to lagged hours and holidays
In column 8 only religious attitudes are used as instruments in addition to lagged hours and holidays
For all variables only the shortest allowable lagged is used as instrument
gap, ben, serv_va, epr_w treated as endogenous, tax_wed, udens and epl as prederminate
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.1: Summary Statistics

Variable	**Mean**	**Std. Dev.**	**N**
women_cn	-0.034	0.696	46
women_jp	0.764	0.113	33
youth_i	0.114	0.897	47
holidays	-0.374	0.432	47
epr_w	63.552	14.198	47
epr_y	49.984	11.497	47
hours	7.442	0.094	44
l_epr_w	56.158	16.255	47
l_epr_y	52.415	11.025	47
l_hours	7.485	0.099	39
god	0.513	0.643	47
trust	-1.088	0.351	47
week	-1.785	0.794	47
imm_fework	-0.096	0.31	44
imm_premarsx	0.249	0.3	44
imm_trust	-1.346	0.298	44
ben	30.64	13.833	47
tax_wedge	44.038	9.336	47
epl	2.217	1.124	47
udens	40.375	22.194	47
childcare	-0.377	1.571	38
gap	-0.621	2.196	47
serv_va	65.231	5.446	47
edu_w	8.499	1.861	47
children	0.58	0.106	47
edu_y	0.1	0.364	47
pop65	14.318	2.196	47
prot	0.532	0.504	47
cath	0.404	0.496	47
other_rel	0.064	0.247	47