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 employment rates of women and of the young, and of hours worked. We do this controlling for policies, institutions and other structural characteristics of the economy which may influence labor market outcomes. We identify a country-specific effect of culture exploiting the evolution over time within country as well as across countries, of cultural attitudes. We also address the endogeneity of attitudes, policies and institutions, and allow for the persistent nature of labor market outcomes. We find that culture matters for women employment rates and for hours worked. However, policies, in particular employment protection legislation and taxes, are also important and their quantitative impact substantial.

1 Introduction and motivation

To what extent does "culture" affect labor market outcomes? For instance, it has been claimed that cultural attitudes towards gender and the young are important determinants of the substantial cross-country and time series differences in the employment rates for women and youth in OECD countries (see for instance Algan and Cahuc (2007) and Fortin (2005)). In this vein, Alesina, Glaeser and Sacerdote (2005) have asked whether culture could explain the observed difference in hours worked between Europe and the United States, Stutzer and Lalive (2004) has studied the effect of social norms regarding work on the duration of unemployment in Switzerland, while Fortin (2009) has analyzed 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 as a determinant of cross country differences in labor market outcomes has so far been inconclusive, mainly for three reasons. First, as noted by Alesina,

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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, importantly, 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 the aggregate state of the labor market. 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 for labor market outcomes 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 (our focus is on the employment rate of women and the young and on the average number of hours worked) is part of a more general research program aimed at assessing the effect of culture on economic phenomena. 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.[1]

In this paper we address this issue by exploiting 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 role 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 cultural attitudes, in addition to policies and institutions, have a significant time-varying component that differs across countries. This is definitely 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, reflecting, among other factors, different ways in which innovations in reprductive technology or home production technology propagate, changes in the general level of education, broader changes in attitudes towards religion and evolving local labor market conditions. The same is true for attitudes towards desirable characteristics of the young, such as independence, and towards the value of leisure, a possible determinant of hours worked.

In order to obtain a measure of attitudes towards women's work and towards youth indepen-

[1] 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 in a cross section for time invariant unobservables.

dence, and assess their effect on the employment rate of women and the young, we use the World Value Survey (WVS). We also analyze the importance of attitudes towards holidays (also reported in the WVS) for average hours worked, a topic not investigated so far in the literature. Although the WVS has well known limitations, it has the advantage of being available for multiple waves over a long time period, thus providing potentially time-varying measures of cultural attitudes. For a set of OECD countries time varying measures for such attitudes are available at (approximately) equally spaced intervals of ten years from the beginning of the eighties to the beginning of the twenty first century.

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). 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. Moreover, during an economic expansion hours worked typically increase: longer hours could affect attitudes towards the desirability of long holidays (the variable we use to measure attitudes towards leisure) in two opposite directions. People could get used to work longer hours and think that long holidays are less important, or they could be tired and desire longer holidays. In both cases attitudes towards leisure will change as a result of the specific labor market experience. In the dynamic panel estimation framework proposed by Arellano and Bond (1991) and Blundell and Bond (1998) appropriately lagged values of attitudes and outcomes can be used as instruments, reflecting the idea that attitudes tend to be persistent and that they evolve in response to shocks to labor market outcomes. The GMM framework also allows us to obtain consistent estimates when labor market outcomes themselves have a degree of persistence over time, thus requiring the estimation of dynamic models for employment or hours.

Besides availing ourselves of these internal instruments, we extend the set of instruments using "deeper" attitudes that evolve over time, such as religious beliefs, as additional instruments. Our assumption is that the evolution over time of religious beliefs is correlated with the evolution over time of those attitudes that are more directly relevant for labor market outcomes. 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. Under these assumptions deeper attitudes can be treated as predetermined variables in the GMM framework we adopt, and their lagged values used as instruments. As we shall discuss, religious beliefs may signal more conservative values, among them the idea that women should be subordinated to men and naturally belong to the home in some countries, but not in others. For this reason we will interact measures of religious beliefs with a country's prevalent historical religious affiliation (Catholic, Protestant, and other (Japan)).

We further extend our set of instruments by including the attitudes of second or higher generation American immigrants from different countries at different points in time. The basic idea

is that the evolution over time of the attitudes of American immigrants is correlated with that of attitudes in the country of origin: this could be due to the fact that shocks that hit both the U.S. and the country of origin, are filtered by a person's culture in a way that persists across generations. These attitudes, however, 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. [2]

The endogeneity of cultural traits is one of the central issues in this literature and we are not the first to address it. For instance, Alesina and Giuliano (2010) 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.[3] 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.[4] The main difference between these and our contribution is our emphasis on using time varying instruments in a panel context.

Summarizing, our results attempt to improve upon previous findings about the effect of cultural attitudes on the labor market, in particular on the seminal contributions of Algan and Cahuc (2007) and Fortin (2005) in three respects: *(i) by* addressing the problem of endogeneity, *(ii)* by relying on a dynamic specification of the equations for labor market outcomes that allows for their persistence; *(iii)* by controlling for a more extended menu of policies, institutions and structural variables.

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

[2] 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 (2010) 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.

[3] Brugger, Lalive and Zweimuller (2010) use a regression discontinuity design across language barriers in Switzerland to investigate the effect of culture on unemployment.

[4] The exception is Tabellini (2008a) 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.

conditions and cultural values. Our measures of attitudes towards youth independence, however, does 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, altough less strongly, benefits. The quantitative impact of these policy variables (in particular, employment protection legislation and taxes) is large.

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 issues one faces when trying to assess a causal effect of attitudes on labor market outcomes. In order to make some progress, we outline a GMM strategy that uses the evolution over time of deeper attitudes and the changes in attitudes of immigrants to the United States from various countries as instrument, in addition to lagged values of labor market outcomes and attitudes . In Section 4 we discuss in more detail the choice and measurement issues related to these instruments. In Section 5 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 6 contains the results of the GMM estimation 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) 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 cultural attitudes towards women work that are likely to affect women employment rates. One such question is, *"Do you think that a woman has to have children in order to be fulfilled or is this not necessary?"*: We also experiment with 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"* and to the question "*Being a housewife is just as fulfilling as working for pay*" but more sparingly, since they are available for a shorter period of time. As we have pointed out in the introduction, 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. The endogeneity problem this poses is discussed more fully in the next section.

To capture attitudes towards leisure we use the question, *"Here are some more aspects of a job that people say are important. Please look at them and tell me which ones you personally think are important in a job. Generous holidays".* The attitudes towards leisure are obviously relevant in determining hours worked, although, once again, the answers might be affected by the cyclical state of the labor market, or by other institutional features of the labor market , such as the strength of unions.

Finally, the question we use to measure attitudes that could affect the employment rate of the young is, *"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 also be affected by fluctuations in the youth employment rate and by the state of the aggregate labor market. We also experiment with answer to the statement "*Parents should do their best for their children even at the expense of their well-being".*

We rely on the questions we have just reported to construct measures of attitudes to be used as explanatory variables for 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 our dependent variables are aggregate labor market outcomes, we need to aggregate the individual answers to the attitudinal questions at the country level for each period. One option would be to take simple averages of the individual answers in each wave. However, since individual answers reflect both country and individual characteristics, the evolution of average attitudes may then simply reflect changes in the composition of the WVS sample. Moreover, with an average size of approximately 700 respondents, one may have some worries about its representativeness. Finally, we want to minimize the risk that the answers simply reflect the personal labor market experience of the respondent.

For this reason we follow an alternative procedure proposed by Algan and Cahuc (2007): we 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.[5] We use data for all 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.[6] 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 as 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 as left, center and right) and their religious views by distinguishing the following main categories: Catholic, Protestant, Buddhist, Muslim, Jews, other religions and with no religion affiliation. The variables we use to measure cultural attitudes are thus the estimated wave specific country effects in the probit regressions for attitudes.

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 with country fixed effects for those components that remain unchanged over time and which cannot be separated form other country-specific and time-invariant components of institutions and policies. The data show that indeed there is time variation (and thus attitudes are not only a country

[5] As an example, we present the results of the probit model for the wave 1999-2004 in Table A.2. This table, as well as others to which we shall refer, is available in the Web Appendix that accompanies this paper.

[6] 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 Web Appendix.

fixed effect) and that the pattern differs across countries (and thus it is not captured a common year effect)[7] In all cases, the appropriate F-tests suggest that the country/wave effects change significantly over time (with a p value of less than 1%)[8].

Regarding the attitude towards women work, the pattern for many countries 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.[9] However, within this common pattern, the shifts occur with an intensity that varies across countries.[10]

The country-wave effects of the attitudes towards youth independence and towards leisure show that all measures of culture we use are also time varying. The value placed on youth independence appears to increase during the 1980's and decrease in the 1990's, although also 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 (at different rates) for all countries between 1980 and 1990 and decreases or remains stationary for most countries from 1990 to 2000.

The outcome variables we focus on are, as we already said, the employment rate for women and for youth, and average annual hours[11]. These labor market outcomes differ substantially across OECD countries. In the period 1999-2002, for instance, the employment rate of women 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. More importantly for our purposes, these variables have also evolved differently for each group of countries (and within each group) 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. The evolution pattern of employment rates for youth also varies 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

[7] The estimated country wave effects are available in the Web Appendix, Table A2.

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

[9] 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.

[10] 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).

[11] 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 Web Appendix for further details.

recovers in the Anglo-Saxon countries. 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.

The bottom line is that our measures of attitudes are not constant over time and vary at different rates for different countries. Their effect on labor market outcomes 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 estimate is the effect of attitudes *tout court*. If instead the two components have different effects on outcomes, what we estimate 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 Issues in estimating the effects of culture

In the previous section we have discussed the variation across countries and over time of a country and year specific measure of culture. This measure is the country-wave effect in a cross sectional probit 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 ease of exposition, we will assume for the time being that the variables in X_{ct} are strictly exogenous. However, policy and institutional variables are also either endogenous or, at best, predetermined. We will address this issue below.

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. However, the endogeneity of A_{ct} and the presence of the lagged dependent

variable makes the Within transformation not the appropriate one when the panel is short in the time dimension, as it is in our case.

The main reason why $E(A_{ct}\,\varepsilon_{ct}) \neq 0$ is because country-time specific measures of attitudes obtained from survey responses on women role in the family and in the workplace are likely to be affected not only by past but also by contemporaneous shocks to labor market outcomes. 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.[12] Overlooking these endogeneity issues may lead to an overestimate of the effect of attitudes towards women in the workplace on employment outcomes. Also in the case of attitudes towards the young, one can imagine that a buoyant youth labor market may affect perceptions about the desirability of youth independence as a character trait, even though it is not a priori clear how. The attitude about the importance of generous holidays is also likely to respond to shocks to actual hours of work, although also in this case the direction of the response is debatable. Working longer hours may be associated with an increase in the desire for leisure, through, an income effect or due to stress when annual hours actually worked get longer and longer. However, if hours and wages are positively associated, longer hours would be associated with a demand for less leisure, through the substitution effect. The general point we are making is that cultural attitudes shape economic outcome but are also shaped by such outcomes. The interplay between the formation of attitudes towards work and economic conditions has been emphasized recently by Doepke and Zilibotti (2008) who develop a model of preference formation that emphasizes the two ways interaction between the development of attitudes towards leisure and patience and socioeconomic change during the Industrial Revolution. Such interplay may exist also at higher frequency and poses a challenge in estimating the effect of cultural attitudes on labor market outcomes.

What can be done to address this endogeneity issue? Today's attitudes are likely to depend upon past attitudes because there is persistence in attitude formation, and upon past outcomes as well as current outcomes. This observation suggests a strategy based on "internal" instruments in the context of the GMM difference estimator proposed by Arellano and Bond (1991) or the GMM system estimator of Blundell and Bond (1998). The GMM estimator is designed for dynamic panel models with lagged dependent and endogenous regressors that renders inappropriate the use of the Within estimator when the time dimension is short, as it is in our case.[13] More precisely we will use appropriately lagged values of the levels of Y_{ct} and A_{ct} for the equation in difference, and of their differences for the equation in levels. Taking first differences of (1) in order to eliminate the country specific-time invariant component of the error term we obtain:

[12] In the regression generating the country-wave attitude variables we control 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.

[13] 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 the outcome variables and some of the structure/policy variables.

$$\Delta Y_{ct} = \alpha_1 \Delta Y_{ct-1} \ + \alpha_2 \Delta A_{ct} \ + \alpha_3' \Delta X_{ct} + \Delta \Psi_t + \Delta \varepsilon_{ct} \tag{2}$$

The GMM difference estimator uses the fact that Y_{ct-j} , A_{ct-j} with $j \geq 2$ are legitimate instruments for ΔY_{ct-1} and ΔA_{ct}, if ε_{ct} is serially uncorrelated and provided that these longer lags do not appear on their own as explanatory variables in the outcome equation. In the GMM system estimator the orthogonality conditions for the differenced equation are augmented by the orthogonality conditions for the level equation (1). Blundell and Bond (1998) show that under appropriate assumptions about the initial conditions, we can use ΔY_{ct-1} , ΔA_{ct-1} as instruments for Y_{ct-1} and A_{ct} in the equation in levels, (1). If ε_{ct} is a random walk one may advance the instruments for the difference equation by one period, but ΔY_{ct-1} and ΔA_{ct-1} would not be legitimate instruments for the level equations. We will discuss this issue in more detail in Section 6.

In addition to these internal instruments we shall use other, deeper and slower moving, attitudes that evolve over time, but for which it is reasonable to assume that they respond to shocks to the labor market with a lag.[14] If these deeper cultural attitudes are uncorrelated with contemporaneous labor market shocks and affect labor market outcomes only through attitudes towards women working, youth independence and leisure, they can be treated as predetermined and their appropriately lagged values could be used as additional instruments. We will discuss in the next section the extent to which religious attitudes can be used for such purpose. Denote such deeper attitudes with A^d_{ct} : then 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}. In the GMM system estimator ΔA^d_{ct} can be used as instruments for Y_{ct-1} and A_{ct} in the equation in levels, (1).

As an additional set of instruments, we shall use the attitudes of immigrants into the US to instrument for the attitudes in the country of origin (excluding the US). Algan and Cahuc (2010) rely on the attitudes of immigrants into the US of a previous generation in a reduced-form framework.[15] We 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.

More specifically, assume that A^{US}_{ct} denotes the country of origin (c) and period (t) 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 (in the next section we will discuss in details which attitudes of US immigrants we will use as instruments for attitudes in the country of origin). 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

[14] 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.

[15] Algan and Cahuc 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.

one is worried about the possibility 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.

The first issue at stake is why the time evolution of attitudes in the country of origin and those of immigrants to the US should be correlated. Are there common or correlated factors that determined both? It is plausible to assume that some of the determinants of immigrants' attitudes are correlated with the determinants of attitudes in the country of origin. This is likely to be the case for variables representing the ethnic group specific effect of broad cultural or political changes and technological innovations (the 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 over time 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. A possible source of concern is that a selection issue may affect the emigration decision in the sense that people who decided to leave 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 (2010)). 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.[16]

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. 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 country c 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 the 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, we will report below 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 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, with coefficients that can vary in each cross section. For the equation in difference, (2),

[16] As discussed in footnote (2), the evidence suggests that cultural traits of the country of origin are maintained by immigrants.

assuming α_3' equal zero for simplicity, the first stage regression for ΔA_{ct} is a variant of:

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

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:

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

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 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 which is less than optimal and constitutes a limitation of our exercise.[17] 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. We will also extend the cross sectional dimension of the data by estimating the model on regional data for European countries.

So far the discussion has been conducted under the implicit assumption that we can perfectly observe the attitudes towards gender, the young, or leisure. Assume now that we can observe all attitudes only with an error so that $\widetilde{A}_{ct} = A_{ct} + \mu_{ct}^{A}$, $\widetilde{A}_{ct}^{d} = A_{ct}^{d} + \mu_{ct}^{A^d}$, and $\widetilde{A}_{ct}^{US} = A_{ct}^{US} + \mu_{ct}^{A^{US}}$, where $\widetilde{}$ denote measured variables and the $\mu's$ are serially uncorrelated measurement errors. This would lead to attenuation bias when the outcome equations are estimated by least squares procedures. As it is well known the attenuation bias typically is greater after demeaning the data (as in the Within estimator) or applying first differences. In this sense it is a more serious issue in a panel context than it is in a cross sectional setting.[18] Our instrumental variable procedure in principle can address the measurement error issue: we now need to assume that measured attitudes of US immigrants, or measured deep attitudes, are not correlated both with the shock to the outcome equation, ε_{ct}, nor with the measurement error for attitudes towards gender,youth and leisure, μ_{ct}^{A}.[19] Under these assumptions we can deal with the measurement error in the sense that our instruments will be uncorrelated with the errors. However, in the presence of measurement error, we must recognize that the efficiency of our estimates may decrease as the information content for true labor market attitudes of measured deep attitudes and measured attitudes of US immigrants decreases.

It is necessary at this point to discuss the potential endogeneity of some of the variables included in X_{ct}, such as policies and institutions. Policies and institutions cannot be treated as strictly

[17] See Soto (2010) for small sample properties of various GMM estimators. The paper suggests that the system GMM estimator tends to have the lower bias and higher efficiency, provided the series have some persistence.

[18] See Griliches and Hausman (1986).

[19] For our additional instruments this requires that the measurement errors be uncorrelated with each other. More precisely, when using the attitudes of US immigrants as instruments, for instance, one needs to assume lack of correlation between (i) A_{ct}^{US} and ε_{ct}, as before, (ii) between $\mu_{ct}^{A^{US}}$ and ε_{ct}, and (iii) between μ_{ct}^{A} and both A_{ct}^{US} and $\mu_{ct}^{A^{US}}$. Parallel assumptions are needed for measured deep attitudes.

exogenous variables. They are likely to be correlated with contemporaneous or lagged shocks to labor market outcomes and, therefore, must be treated either as endogenous or predetermined variables and need to be instrumented.[20] For instance, a negative shock to employment may induce unions to lobby for stricter employment protection legislation or for more generous unemployment benefits.[21] They could also be correlated with attitudes: for instance, more conservative views of gender roles may be associated with policies that tend to protect the male bread-winner model.[22] For policies and institutions we will use the same instrument set that we use for attitudes. Finally, we will allow for the fact that there tends to be an element of persistence in policies and institutions so that their past values contain information about their present and future values.

4 More on the choice of instruments

We have outlined in the previous section our basic strategy to address the endogeneity of attitudes (and policies) based on augmenting the set of internal instruments with "deeper attitudes" in the country of residence and attitudes of US immigrants. We will discuss now in more detail the choice of these additional instruments, how we construct them using the answers to questions in the WWS and in the U.S. General Social Surveys (GSS), and why they may be informative about the evolution of *women_cn*, *youth_i*, and *holidays.*

Among deeper attitudes, we focus mainly on religious beliefs. 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.[23] 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.[24]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.[25] 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.[26] All this suggests that indices of religiosity are instruments worth exploring, particularly if interacted with the historically dominant religious affiliation of each country.

In order to measure religious beliefs, we rely mostly on the WVS answers to the question: *"Which, if any, of the following do you believe in? God"*. This religious attitude variable is in-

[20] In Section 6 we will discuss which policies/institutions will be considered endogenous and which ones predetermined.

[21] See Aghion, Algan and Cahuc (2011) for a theoretical and empirical investigation of the relationships between labour market institutions and policies, and beliefs about cooperation in the labor market.

[22] Actually policies themselves may contribute to the evolution of cultural attitudes. For instance, the existence of generous child care may affect the evolution of attitudes towards women in the work place by making it easier to combine market work with family responsibilities.

[23] 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.

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

[25] Weber (1930).

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

teracted with a country's prevalent historical religious affiliation: Catholic, Protestant, and other (Japan is the only country in our sample belonging to this third group). More precisely, our instrument is, as in the case of labor market attitudes, the wave specific country effect obtained from estimating a separate probit for each wave containing country effects and individual characteristics of the respondent (consistently with what we have done for attitudes towards women work, youth independence and leisure). We have also used a measure of the intensity of religious practice contained in the answers to the question "*Apart from weddings, funerals and christenings, about how often do you attend religious services these days?*". We will rely mostly on the answer to the belief question because the frequency of church attendance is likely to respond rather quickly to economic shocks, which would invalidate it as instrument. For instance, Gruber and Hungerman (2008) provide evidence that there was a decline in church attendance following the repeal of laws restricting Sunday retail activity. Belief in God also may evolve over time in response to economic conditions, but it is plausible to assume that such response is slow.[27] No approach is fool-proof so that it will be useful to pay attention to the test of overidentifying restrictions and how the results change for different instrument sets.

If we regress the level and change of *women_cn* on the change and the lagged level, respectively, of such religious belief variables interacted with the historically dominant religious affiliation and time dummies, the $F-test$ on the set of belief in God variables (*God)* suggest that our measure of belief in God is informative for the level of *women_cn*, but not so much for its change.[28] 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. Concerning the consequences on attitudes towards leisure, 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 [29]. 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 in the previous paragraph.

Finally, we have also explored as instruments attitudes towards sex, but without much success. More conservative values towards sexual relationships could be associated with a more traditional

[27] For instance, beliefs in God (or participation in organized religious activities) can change in response to economic development (secularization hypothesis) and to changes in competition among religion providers ("supply-side" theory) (see Barro and McClearly, 2004).

[28] The p value for the $F-test$ is 0.0021 in the first case and 0.287 in the second. See Table A.5 in the web appendix for details. Similar results are obtained using the degree of religious beliefs, measured by weekly church attendance. The p value for the $F-test$ is slightly higher. This pattern is repeated in the first stage regressions for *holidays*. Recall that given our assumptions on the predetermined nature of religious belief, its value lagged once is the earliest available instrument.

[29] In the equation for the change in *holidays,* the low p value for 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.

view of the role of women in the home relative to their role in the workplace [30]. Moreover, if more conservative attitudes toward premarital sex reflect a more traditional and hierarchical society, they may be also informative about attitudes towards leisure, because in hierarchical societies people may tend to engage in more non-market, family centered activities. There is a question in the WWS about the importance of happy sexual relationship for a marriage ("*Here is a list of things which some people think make for a successful marriage. Please tell me, for each one, whether you think it is very important, rather important, or not very important: happy sexual relationship, how important is this for a successful marriage?*"), but it is not clear that it is a good measure of liberal attitudes towards sex. Indeed answers to this question do not appear to contain useful information for any of the attitudinal variables we use as regressors.

The other set of additional instruments are the attitudes of second or higher generation immigrants to the United States, classified by country of origin, obtained from the 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, because, for instance, cultural, political, technological shocks that possess a common component across countries are filtered through a sensitivity that is similar in each specific immigrant community to the US and in the country of origin.

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?"* . These answers capture attitudes towards the "male breadwinner" model, and suggest themselves as a natural instrument for gender attitudes in the country of residence. Unfortunately there are no questions in the GSS similar to those in the WVS on youth independence and the importance of generous holidays. Instead, two questions that turn out to be useful concern attitudes towards sex and trust. The question we use to capture attitudes towards sex are the answer in the GSS 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?*" The answers to this question appear, *prima facie*, to provide useful information about how liberal are attitudes about sex. Such liberal orientation may be informative about attitudes towards the labor market of US immigrants and of residents of the country of origin. Finally, we have also experimented with using attitudes towards trust (the question is identical in the GSS and in the WWS) in immigrant communities as instruments for our attitudinal regressors for the reasons we have already discussed above[31]. We denote with *imm_fework, imm_sex* and *imm_trust* the country wave effects for immigrants attitudes towards women work, sex and trust.

We find that changes in attitudes towards women work and sex of immigrants in the US are positively and significantly associated with those of residents in the country of origin (after partialling out the time dummies). More precisely, the correlation coefficients between Δimm_fework

[30] 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.

[31] For a discussion of the determinants of trust see Alesina and LaFerrara (2002)

and Δimm_sex are .386 and .382 respectively and are significantly different from zero at the 5% level. Δimm_trust and Δimm_sex are significantly associated (at around the 5% level) with the change and level of *holidays.*

5 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 variable for *epr_w* is our measure of the cultural attitudes towards the need of having children for a woman to feel realized (*women_cn).* The variable is derived as the country/wave effect described in Section 2 and is 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*). Listing generous holidays as an important attribute of a job (*holidays*) is the attitudinal variable used to explain average hours of work (*hours).*

The Within 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.[32]

The main drawback of the Within estimator is the fact that it does not recognize and address the endogeneity of the cultural variables discussed in the previous section. Another drawback is that one cannot properly address the issue that employment and hours are likely to evolve gradually over time in response to shocks. This would require the inclusion of the lagged dependent variable as an additional regressor. In this case, however, the within estimator would not yield a consistent estimate of the coefficient on the lagged dependent variable, and of the coefficients on the other variables too, even if the latter were strictly exogenous, since the time dimension is small (equal to three in our case).

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.[33] That paper uses the attitude towards the priority of male employment when jobs are scarce (*women_jp)* as the

[32] The OECD warns that the new series for hours they have produced and that we are utilizing (and that differs from the one used in 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.

[33] 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 analyize the latter variable because it is only available for the 1990 wave of the WVS for all countries in our sample and for the 1995 wave for a smaller set of countries.

explanatory variable for the equation for women, and the same attitudinal variable we use for youth (*youth_i)*. Fortin (2005) 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 whether being a housewife is as fulfilling as working for pay (*housewife)*, 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 measures of (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/specifications, expenditure on child-care per child (*childcare).*[34] 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.

All the results are reported in Table 1 for a simple specification with only the cultural attitude variable, for a general specification with structural, policy and business cycle variables and for a more restricted specification that retains only the more significant regressors among the latter group.

Attitudes about the need of having children for a woman to feel fully realized are positively associated with the employment outcomes for women (see column (1) through (3)). The coefficient on this variable, however, is only significant at the 10% level in two of the three specifications and its value tends to decrease somewhat when one adds additional controls. If one uses *women_jp* as a proxy for attitudes, its coefficient is never significant, while the coefficient of *housewife* is significant in only one of the specifications. Note that these measures are available for at most two equi-spaced waves for a large set of countries, while *women_cn* is available for up to three waves[35]

The *gap* variable is positively and significantly associated with the women employment rate in the more parsimonious specification. Among the structural variables, only the coefficient for the number of children is negative and significant in all specifications. Employment protection (*epl*) and taxes (*tax_wedge*) are the policy variables that are negatively and significantly associated with employment rates in the more restricted specification. Surprisingly, women education is never significant .

[34] See the Web Appendix for more details on the definition of each variable. Note that *epl* is increasing in the stringency of regulation and, in the sample, takes multiple values between zero and four. See, Nickell, Nunziata and Ochel (2005) for an analysis of the effects of time-varying policies on unemployment.

[35] For instance, the job priority question is available only for EVS/WVS1990, WVS 1995 for a limited number of countries, and EVS/WVS2000, see pag. 134 of WVS Integrated Questionnaire. It is not avaialble for the beginning of the 80's. We do not use WVS 1995 becasue only a limited number of countries replied to the questionnaire and because we need equispaced intervals for the dynamic specification that is the core of our paper. See table A.4 of the web appendix for results.

In some robustness exercises not reported here we have included child care expenditures for a smaller set of the country year observations for which it is available. Its coefficient is positive but significant, at best, at the 10% level. 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 as well.

Taking these results at face value they do not provide support for the Algan and Cahuc (2007) conclusion that culture is the dominant determinant of women employment rates, while policies play a less important role. In our sample the direct effect of culture is often not significant, and the effect of policy is often more precisely estimated, altough it is certainly possible that the effect of culture goes through policies and institutions.

In column (4) through (6) 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[36].

Finally, in column (7) through (9) 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.

Because of all the serious econometric issues we have outlined above it is premature to draw any definitive conclusion from these Within regressions. The estimate of the coefficient of the attitude variables are biased and inconsistent, although it is not clear whether this leads to an overestimate or underestimate of their effect. It is therefore wise to suspend judgement on the effect of culture and policies until the next section.

6 Instrumenting for attitudes: GMM estimates

This section contains results of the effects of cultural attitudes and policies based on the GMM estimator for the employment rate for women and for average hours worked. We do not report the GGM estimates for the youth employment rate. The difficulty in finding adequate instruments does not allow us to pin down the effect of either culture or policies on this outcome. In addition to the country level results, for the employment rates of women we will also present evidence based on regional data.

[36] We have also experimented with the answers to the question "'Parents should do their best for their children, even at expenses of their own well-being" but without greater success: this measure of attitudes is never significant (see Table A.4)

6.1 Country-level results

In Table 2, columns (1) through (6), we present the GMM system estimates of the equation for women's employment rate.[37] We use the belief in God (interacted with the historically prevalent religious affiliation, and appropriately lagged) plus US immigrants attitudes towards women work and sex, 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_wedge, udens and epl*, as predetermined, and *pop65* as exogenous. These additional endogenous and predetermined variables are instrumented using the same set of instruments that we use for *women_cn.* Given the limited number of observations, we have constrained the coefficients of the first stage regression to be equal across the three waves. For similar reasons, we have used only the shortest lag allowed for each variable as instrument, in order to keep the number of instruments under control relative to the number of observations and reduce the risk of overfitting.[38] *women_cn* now becomes a significant determinant of the evolution of women employment rates in all specifications. 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 employment rates. In our preferred parsimonious specification reported in column (6), and obtained imposing restrictions on the more general specification of column (5), both employment protection legislation and the number of children have a significant negative effect (the coefficient on employment protection is significant at the 5% level). 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 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).

The p value of the Hansen-Sargan test of overidentifying restrictions (*HS-pv* in the Table) is not suggestive of misspecification. However, the Arellano-Bond test of first order serial correlation (*AB1z*) suggests that we cannot reject the hypothesis 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 2 we also present a set of results obtained

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

[38] Note that the question necessary to construct *women_cn* (as well as *holidays)* was not asked in 2005, so we cannot add this wave to the sample. Moreover, but less importantly, even if the information were available, it may not add much to the variation of the attitudinal explanatory variables because it takes time for attitudes to change (this is one reason why we use 10 years intervals).

using the GMM difference estimator that does not suffer from this problem.[39] Column (7) contains the most general model and Column (8) a more restricted parsimonious version. The coefficient of women_cn is significant (at levels between 1% and 10%). Among the policy and structure variables, employment protection and the number of children display a significant negative coefficient. The level of significance for the epl coefficient ranges between 5% and 1%. An increase in the share of output in the service sector is, instead, positively and significantly associated with higher employment rates for women.

Although no summary measure of the relevance of instruments for the endogenous variables has been developed for GMM panel data models, useful information is contained in the first stage regressions. At the bottom of the table we report the p value for the $F-test$ of significance of the instruments (besides the period dummies) for *women_cn* in the first stage regressions for the model without policy/structure variables and for *women_cn* and *epl* for the most parsimonious specification of the model with policy/structure variables. Recall that there are two sets of first stage regressions, one for the model in difference (3) and one for the model in levels (4). In both cases the instruments seem to have a degree of explanatory power for gender attitudes. The explanatory power is greater for the level equations (with p values less than .001) and smaller for the difference equation (with p values between .012 and .027). The latter fact may raise some concerns for the identification of the GMM difference model. The p value for the first stage regression for *epl* and its change are .02 and .03 respectively.[40]

It thus appears that on the basis of both the system and difference GMM estimates both attitudes and policies, in the form of employment protection, all play an important role in determining women employment rates.[41] This general conclusion holds if we do not rely on the standard error we derive from the asymptotic distribution but on the confidence intervals derived from bootstrapping the t statistic. For our preferred specification in columns (6) and (8) we report the 95% bootstrapped confidence intervals in square brackets.[42] The conclusions concerning the role of attitudes and policies are essentially identical to those obtained from the standard errors based on the asymptotic distribution.

Note that both attitudes and policies are important quantitatively. Using the results in column

[39] 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.

[40] The statistics and p values have been calculated by allowing, in the first stage regressions, only for heteroskedasticity but no correlation in the errors across time for the same country. As it turns out, this provides conservative tests on the adequacy of the instruments. When we allow for such correlation, the F statistics increase and their p values decrease in such a degree to raise doubt about the appropriatedness of clustering by country in obtaining the covariance matrix of the first stage regression, given the limited number of countries at our disposal.

[41] If we include child care expenditure (and treat it as predetermined variable) its coefficients are never significant at the 5% level.

[42] The results presented in Table 2 and 3 are based on block bootstrapping (given the panel data nature of the data, we sample countries, with replacement) with 5000 replications. It has been argued that bootstrapping methods based on an asymptotically pivotal statistic like the t- ratio usually have better properties than bootstrapping other statistics (Horowitz (2001)). Whether they provide a better approximation to the small sample distribution than the asymptotic approximations is an open question. See Poi (2004) for the implementation in Stata.

(8), for instance, a change in our measure of attitudes from the first to the third quartile generates a change in women employment rates of 11.5 percentage points on impact, while a similar change in employment protection legislation results in an increase of 19.9 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: 9.1 percentage points are explained by differences in attitudes (more liberal in the UK) and 14.7 percentage point by differences in employment protection legislation (stricter in Italy).

In order to check for the robustness of our results to the choice of instruments, we have estimated the models in column (6) and (8) using different sets of instruments: only internal instruments, internal instruments augmented only with deep attitudes or only with the attitudes of immigrants to the US or with both.[43] The punch line is that the coefficient of attitudes in the GMM system equation is more precisely estimated when deep attitudes are included in the instrument set (the attitudes of immigrants are less important), while the GMM difference equation requires the presence of immigrant attitudes in the instrument set (but not deep attitudes) to gain precision in estimating the effect of attitudes towards women work.

Finally, we have checked whether labor market attitudes could proxy for more general attitudes or personal traits such as trust, thrift, or perseverance. None of these variables, treated as endogenous, is a significant determinant of women employment rates at the 5% level, when added to column (6) or column (8) of Table 2 (only perseverance is significant at 10% level when added to column (6) , and even then, the attitude towards women working remains significant). These results suggest that such more general attitudes can be excluded from the equations.[44]

In summary, the result that both policies and culture matter is fairly robust. There is, therefore, at least the potential for changes in policies to offset the effect of 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.[45] 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. 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

[43] The detailed results are reported in the web appendix in Table A.6

[44] See Table A.8 in the web appendix.

[45] See Algan and Cahuc (2006) for a discussion of the effect of religious affiliation on employment protection and Alesina, Algan, Cahuc and Giuliano (2010) on the relationship between the strength of family ties and labor market regulation.

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.[46] 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 over time of labor market policies.

In Table 3 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 equation (and hence is $MA(1)$ in the difference equation). Considering the p value of the F-test on the significance of instruments in the first stage regression reported at the bottom of the table, it appears that instruments do have explanatory power for attitudes towards work. The explanatory power is greater for the level equations (with p values less than .001) and somewhat smaller for the difference equation (with p values between .017 and .036). The coefficient for the policy variables, taxes and unemployment benefits, are identified only by the orthogonality conditions of the level equations.

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. The policy variable more robustly associated with hours of work is the *tax-wedge. ben* also matters, but not as strongly (it is significant only at the 10% in the last column). A wider tax wedge or more generous unemployment benefits lead to lower hours worked on average in a country. Using the results in column (6), for instance, an increase in the wedge from the first to the third quartile results in a decrease in hours worked of 6.6 % on impact, while a similar increase in benefits results in a 1.4% drop. A change in attitudes towards generous holidays from the first to the third quartile leads to a 4.3% 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%). The results suggest that, for instance in 2000, if tax wedge and unemployment benefits had been the same in Spain as they were in that year in the UK, hours worked would have been higher in Spain by 2,9% [47]. 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. The bottom line is that in the case of hours worked too, both policies and

[46] 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.

[47] This in a situation where, contrary to attitudes toward women employment, attitudes toward hard work are similar in the two countries

attitudes matter[48].

When we experiment with different subsets of instruments, the results suggest that the inclusion of attitudes of American immigrants or religious beliefs of residents as instruments sharpens the precision of the coefficient on attitudes towards leisure and on policies.[49] Contrary to the equation for the women employment rate, the bootstrapped confidence intervals for culture, policies and structure are quite wide (they do not include zero only for the lagged dependent variable). However, as observed in footnote (42), there is no guarantee that bootstrapping provides more accurate inference than the standard errors based on the asymptotic distribution.

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*). Interestingly, in the first stage regression for Δ*tax-wedge*, there is information in some of the cultural instruments (such as *god* for *tax_ wedge).* In this case, an evolution in deep attitudes has an effect on hours work both through attitudes towards leisure and through policies. However, provided there are exogenous components in policy choices that are unrelated to attitudes, one can still think how policies can be used to affect labor market outcomes independently of attitudes.[50]

6.2 Some regional results

In Table 4 we report some results on the effect of cultural attitudes on women employment rates based on observations at the region-wave level. The advantage of using regional data is that we can increase the number of cross sectional units available for estimation. We have collected regional data from Eurostat and we have been able to match them with the World value service data for 43 European regions. A disadvantage is that no homogeneous data is available for periods earlier than the beginning of the 80's, so that in a model with the lagged dependent variable we have only one cross-section available for estimation of the model in differences. In the first two columns we present the OLS estimates controlling first for country effects and common period dummies, and then for country specific period dummies. In both cases *women_ cn* is significant at the 10% level. In columns 3 and 4 we report the fixed effects estimates. As in the case of the Within estimates on country level data, the coefficients of attitudes towards women work are not significant at conventional levels. In the next two columns we report the GMM difference estimates of the dynamic model, with either belief in God (*god)* or the intensity of religious practice (*week)*

[48] The general conclusion obtained from the GMM estimates about the determinants of average hours worked also holds when we use average attitudes towards leisure, as opposed to the country specific periods effects (see the discussion in Section 2), as an explanatory variable. Using average gender attitudes, the results for women employment rates would be similar in terms of sign and significance for the GMM system estimator, but would be much more imprecise for the GMM difference estimator. Neither average attitudes towards women work nor towards leisure are significantly associated with labor market outcomes when we use the Within estimator.

[49] See Table A.7 in the web appendix for details.

[50] Finally, we have also experimented with including a human capital variable (average years of education of those older than 25 years of age from Barro and Lee (2001)) as a regressor instead of *epr_ w.* The results are reported in Table A.9. Our essential results hold (see the last column of A.9). The coefficient of the education variable is significant at the 10% level. The coefficient on the policy variables remain significant (actually the one for unemployment benefits becomes more significant) and their magnitudes are very similar. The coefficient on the attitudinal variable is now significant at the 10% level (instead of 5% as in column 6 of Table 3) but the coefficient remains similar.

as additional instruments, with common year dummies. In this case the coefficient of *women_cn* is significant at the 10% and 5% level respectively (perhaps reflecting he fact that *week* is more informative than *god* for *women_cn, as suggested by* the first stage regressions). As in the case of the country level data the lagged women employment rate is very significant with a coefficient of around .9. When we add year country dummies culture becomes insignificant and there are serious doubts on the informativeness of the instruments. The introduction of country specific wave dummies controls for country specific policies and structure, but it also controls for the component of culture that varies over time in the same way for all regions in a country. The data suggest that it is very difficult to identify the effect of regional specificity in the evolution of culture on the regional employment rate of women. More work is needed at the regional level before a definitive conclusion can be reached. At a minimum, these results and the previous seminal work by Tabellini (2008a) suggest that it is worth pursuing the research at the regional level.

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 attempts to improve upon existing studies of the role of "culture" on economic outcomes by dealing explicitly with the endogeneity of attitudes, policies and institutions, and by allowing for the persistent nature of labor market outcomes.

The availability of panel data helps us in assessing 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, we can identify the effect of attitudes and policies tout court. If instead the two components have different effects on outcomes, what we have estimated is just the effect of the time varying components.

We find that, even after instrumenting, allowing for persistence of outcomes and for an extensive menu of additional controls, culture 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, and of 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 variable that more clearly plays a role, along with attitudes, is the tax wedge. The quantitative impact of these policy variables is large.

In our work we have used deeper attitudes in the country of residence and the attitudes of US immigrants, grouped by country of origin, as additional instruments. Other instruments could be investigated in future work. For instance, following Giuliano (2010), the living arrangements of American immigrants could be used as an instrument for attitudes toward the young. 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. Further explorations with regional data may also be helpful, since we have just scratched the surface in this regard. All this is on our research agenda for the future.

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Table 1: Family and Work Attitudes and Employment Rates for Women (epr_w), Youth (epr_w) and Hours (hours): within estimates

	(1) epr_w	(2) epr_w	(3) epr_w	(4) epr_y	(5) epr_y	(6) epr_y	(7) hours	(8) hours	(9) hours
women_cn	11.97*	7.529*	5.430						
	(6.732)	(4.007)	(5.245)						
youth_i				-9.984	-5.172	-5.625			
				(7.266)	(4.021)	(5.180)			
holidays							-0.0190	-0.00613	-0.0121
							(0.0389)	(0.0342)	(0.0325)
gap		0.466	0.706*		1.357*	1.271**		0.0113**	0.00813**
		(0.499)	(0.400)		(0.642)	(0.461)		(0.00439)	(0.00343)
epl		-7.585***	-5.153***		-3.230			-0.0522**	-0.0460**
		(2.241)	(1.759)		(3.266)			(0.0207)	(0.0168)
udens		-0.182			-0.149			0.00121	
		(0.225)			(0.116)			(0.00143)	
benall		-0.123			0.339			0.000453	
		(0.267)			(0.237)			(0.00109)	
tax_wedge		-0.759	-1.133***		-1.629***	-1.164**		-0.00321	
		(0.454)	(0.283)		(0.306)	(0.440)		(0.00369)	
children		-53.90**	-41.15***						
		(19.85)	(12.06)						
serv_va		0.396			-0.295			0.00382	
		(0.432)			(0.314)			(0.00331)	
pop65		-1.151							
		(0.910)							
edu_w		-0.986							
		(2.020)							
epr_w								-0.00332***	-0.00327**
								(0.000981)	(0.00119)
edu_y					-6.849				
					(4.929)				
Observations	46	46	46	47	47	47	44	44	44
Countries	17	17	17	17	17	17	16	16	16

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Standard errors, in parentheses, allow for heteroskedasticity and correlation within each country
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 denotes 'not necessary', 0 'needs children'
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
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

Table 2: Family and Work Attitudes and Employment Rates for Women (epr_w)GMM system and difference estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	epr_w	epr_w	epr_w	epr_w	epr_w	epr_w	epr_w	epr_w	epr_w
l_epr_w	0.825***	0.904***	0.788***	0.892***	0.858***	0.834***	0.772***	0.502*	0.646***
	(0.113)	(0.0622)	(0.0911)	(0.0632)	(0.0748)	(0.0664)	(0.0989)	(0.274)	(0.201)
						[.58,1.01]			[.36, 1.09]
women_cn	4.441***	2.701***	4.739***	3.985***	4.771***	5.081***	5.641***	3.885	10.18**
	(1.021)	(0.824)	(1.590)	(1.097)	(0.965)	(1.227)	(1.778)	(4.140)	(4.510)
						[3.98,13.02]			[1.13,28.12]
gap		1.873***	1.319***	1.661***	1.943***	1.622***	1.775***	1.545***	2.161***
		(0.480)	(0.291)	(0.370)	(0.346)	(0.338)	(0.446)	(0.521)	(0.376)
						[.81,2.63]			[1.77,3.20]
benall		0.0600		0.0621				0.0271	
		(0.0626)		(0.0394)				(0.465)	
tax_wedge		0.140		0.178				-0.518	
		(0.116)		(0.136)				(0.623)	
udens		-0.0897		-0.0995*	-0.00808			0.153	
		(0.0650)		(0.0576)	(0.0449)			(0.269)	
epl		-0.760		-2.188	-2.124**	-1.776**	-3.800**	-10.67***	-8.672**
		(0.769)		(1.355)	(0.894)	(0.811)	(1.601)	(1.932)	(4.400)
						[-6.69,-.44]			[-21.10,-1.41]
pop65			-0.315	0.455				-1.709	
			(0.466)	(0.540)				(1.095)	
edu_w			0.355	-0.531				-4.825	
			(0.596)	(0.686)				(4.096)	
serv_va			0.0540	-0.242	0.369*	0.306	0.651***	1.261*	0.891**
			(0.247)	(0.216)	(0.193)	(0.232)	(0.223)	(0.649)	(0.418)
						[-.48,1.18]			[0.04,1.90]
children			-38.11***	-25.19***	-37.16***	-36.87***	-45.46***	-86.06***	-50.74***
			(8.406)	(9.171)	(7.750)	(8.081)	(13.36)	(22.99)	(10.69)
						[-86.02,-37.02]			[-79.04,-35.10]
Observations	43	43	43	43	43	43	43	27	27
AR(1)z	1.981	1.098	0.720	0.438	0.212	0.559	0.432	-1.028	-0.121
HansPv	0.448	0.977	0.751	1.000	0.999	0.999	1.000	0.535	0.641

Table 2: Notes

1st Stage col 1	women	F=8.6 {.000}	d.women	F=3.0 {.027}
1st Stage col 6	women	F=12 {.000}	d.women	F=3.7 {.012}
	epl	F=3.3 {.021}	d.epl	F=3.0 {.029}
1st Stage col 6,	women	F=14 {.000}	d.women	F=3.0 {.033}
internal inst. only	epl	F=3.8 {.008}	d.epl	F=3.5 {.017}
1st Stage col 7	women	F=16.2 {.000}	d.women	F=5.2 {.002}
	epl	F=2.6 {.05}	d.epl	F=2.5 {.053}
1st Stage col 9	d.women	F=5.2 {.002}	d.epl	F=2.5 {.053}
1st Stage col 9,				
internal inst. only	d.women	F=3.0 {.033}	d.epl	F=3.5 {.017}

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$,*** $p < 0.01$
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 the appropriately lagged values of the regressors
Column 7 reports the system estimator using, in addition to the appropriately lagged values of the regressors, religious beliefs of the country of residence as an additional instrument for the level equation, and the attitudes towards female work and sex of American immigrants for the difference equation.
Columns 8 and 9 report the difference estimator results using attitudes towards female work and sex of U.S. immigrants as instruments, in addition to the appropriately lagged values of the regressors
For all variables only the shortest allowable lagged is used as instrument
gap, benall, serv_va, children treated as endogenous,pop65 as exogenous; edu_w, tax_wed, udens, epl as prederminate
When policy variables are included benall is used as instrument for the level eq. even when not included as a regressor
AR(1)z: Arelanno and Bond (1999) test of first order serial correlation, distributed as (N(0,1)).
HansPv: p-value of Hansen test of overidentifying restrictions.
F denotes the F test of significance of the instruments (besides the period dummies) in the first stage regressions for selected variables (in levels or differences).p-value in curly brackets

Table 3: Family and Work Attitudes and Log Average Annual Hours: GMM system estimates

	(1)	(2)	(3)	(4)	(5)	(6)
	hours	hours	hours	hours	hours	hours
holidays	-0.0522***	-0.0477**	-0.0398	-0.0497	-0.0605**	-0.0666**
	(0.0183)	(0.0216)	(0.0274)	(0.0331)	(0.0298)	(0.0270)
						[-.23, 0.08]
l_hours	0.990***	1.005***	0.995***	0.872***	0.897***	0.912***
	(0.0990)	(0.101)	(0.116)	(0.0959)	(0.0841)	(0.0925)
						[.42,1.28]
gap		-0.00162	-0.00278	-0.00346	-0.000871	
		(0.00469)	(0.00415)	(0.00452)	(0.00293)	
serv_va			0.000512		0.00407**	0.00512***
			(0.00204)		(0.00166)	(0.00192)
						[-.010,.015]
epr_w			-0.000408		-0.00142***	-0.00208***
			(0.000720)		(0.000488)	(0.000775)
						[-.005, .0005]
tax_wedge				-0.00224	-0.00312**	-0.00403***
				(0.00166)	(0.00155)	(0.00143)
						[-.001,.003]
epl				-0.00197	-0.00217	
				(0.00702)	(0.00616)	
udens				0.000969**	0.00164***	0.00214***
				(0.000412)	(0.000424)	(0.000432)
						[-.0051,0.0004]
benall				-0.000819	-0.00119***	-0.000843*
				(0.000594)	(0.000389)	(0.000482)
						[.001,.005]
Observations	36	36	36	36	36	36
AR(1)z-stat	-1.830	-1.528	-1.590	-1.212	-1.881	-1.827
Hansen-Pvalue	0.587	0.746	0.960	0.962	1.000	0.932
First Stage (col 1)	holidays	F=36.92 {.000}	d.holidays	F=4.05 {.017}		
First Stage (col 6)	holidays	F=30.11 {.000}	d.holidays	F=3.52 {.036}		
	tax_wedge	F=36.20 {.000}	d.tax_wedge	F= 1.84 {.174}		
	ben	F=9.78 {.001}	d.ben	F= 0.88 {.581}		
First Stage (col 6,	holidays	F= 6.78 {.002}	d.holidays	F= 6.08 {.003}		
internal IVs only)	tax_wedge	F= 4.37 {.009}	d.tax_wedge	F= 1.45 {.262}		
	ben	F= 2.91 {.042}	d.ben	F= 1.42 {.271}		

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.Standard errors in parentheses. Period effects are entered in every columns
In all columns except column 6 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 6 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, benall, serv_va, epr_w treated as endogenous, tax_wed, udens and epl as predermínate
AR(1)z: Arelanno and Bond (1999) test of first order serial correlation, distributed as (N(O,1)).
HansPv: p-value of Hansen test of overidentifying restrictions.
F denotes the F test of significance of the instruments (besides the period dummies) in the first stage regressions
for selected variables (in levels or differences). p-value in curly brackets

Table 4: Family and Work Attitudes and Employment Rates for Women : estimates for European Regions

	(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	3.269*	4.702*	-0.541	0.381	3.604*	3.731**	-0.454	1.983
	(1.812)	(2.569)	(1.191)	(1.216)	(2.036)	(1.544)	(2.670)	(2.020)
l_epr_w					0.904***	0.909***	0.796**	-0.0143
					(0.109)	(0.109)	(0.323)	(0.646)
Observations	101	101	101	101	43	43	43	43
HansPv					0.458	0.922	0.179	0.455
F1		17.85 [.000]		31.48 [.000]			10.86 [.054]	15.73 [.008]
F2					5.60 [.001]	12.27 [.000]	2.19 [.092]	3.36 [.021]

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

Standard errors in parentheses; in Columns 1-4 they allow for heteroskedasticity and correlation within each region

Period Effects are entered in every columns

Column 1 reports the OLS estimator when country effects are included. Column 2 adds country-period effects.

Column 3 reports the Within estimator. Column 4 adds country-period effects.

Column 5 reports the difference estimator results using religious beliefs (treated as predeterminate) as instruments in addition to the appropriately lagged values of the regressors

Column 6 reports the difference estimator results using intensities of religious attendance (treated as predeterminate) as instruments in addition to the appropriately lagged values of the regressors

Column 7 and 8 add country-period effects to Column 5 and 6 respectively

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

HansPv: p-value of Hansen test of overidentifying restrictions.

F1 denotes the F test for the equality of coefficients of the country-wave dummies

F2 denotes the F test of significance of the instruments (besides the period or countr-period dummies) in the first stage regressions for selected variables (in levels or differences). p-value in square brackets

A Web Appendix

A.1 Data: sources and definitions

A.1.1 Country level analysis

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

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

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

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. *epl* is increasing in the stringency of regulation and, in the sample, takes multiple values between zero and four.

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.

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: average 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).

edu25 *Education of population aged 25 and over.*

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

Source: Barro, R. J. and J-W. Lee (2000). Data adjustments: Observation for Germany in the '80s is for West Germany.

Childcare

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 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)

A.1.2 Regional Level Analysis

The data we constructed for the European regions was based off of the data acquired from WVS and Eurostat. The countries used in the analysis were Belgium, France, West Germany, Italy, Netherlands, and the United Kingdom. Within each country, we partitioned our data into regions, giving each region a unique regional code. In Belgium, we had 3 regions, while France had 7, Germany had 8, Italy had 13, Netherlands had 4, and the UK had 11.

The regions in each country are as follows: Belgium: Vlaams Gewest, Region Wallonne, Reg. Bruxelles; France: Ile de France, North France, East France, West France, Southwest France, Southeast France, Mediterrean, Paris Basin East/West; West Germany: Baden-Wuerttemberg, Bayern, Bremen Hamburg, Hessen, Niedersachsen, Nordrhein-Westfalen, Rheinland-Pfalz Saarland, Schleswig-Holstein; Italy: Umbria-Marche, Lazio, Campania, Puglia, Abruzzi-Molise-Basilicata, Calabria, Sicilia-Sardegna, Toscana, Emilia-Romagna, Piedmonte-Vallle D'Aosta, Liguria, Lombardia, Trentino Alto Adige –Veneto-Friuli Venezia Giulia; Netherlands: Noord Netherland-Groningen, Oost Nederland, West Nederland, Zuid Nederland; UK: North, East Midlands, East Anglia, Southeast, Southwest, West Midlands, Northwest, Wales, Scotland, Northern Ireland, Yorkshire-Humbershire.

Once we constructed the data set, we grouped the data into 3 period based off of time period. Period 1 was defined as 1981-1984, whereas period 2 and period 3 were 1990-1993 and 1999-2002 respectively.

A.2 Tables for Web Appendix

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
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

Table A.2: Estimations of Family and Work Attitudes : Probit Estimates for 2000 Wave

	(1) child necessary	(2) important child qualities:indep.	(3) important in a job:gen.holidays
sex	-0.158***	-0.200***	0.0530
	(0.0557)	(0.0403)	(0.0328)
age	0.0110**	0.0158***	-0.000339
	(0.00461)	(0.00606)	(0.00380)
age2	-0.000152***	-0.000218***	-0.0000498
	(0.0000468)	(0.0000542)	(0.0000368)
edu_age	0.0386***	0.0390***	-0.0224***
	(0.00582)	(0.00523)	(0.00746)
children	-0.0859***	-0.000828	0.00219
	(0.0136)	(0.00862)	(0.00877)
married	-0.0677**	-0.0477	-0.0444
	(0.0314)	(0.0318)	(0.0321)
employed	0.0615	0.0363	0.0270
	(0.0690)	(0.0563)	(0.0554)
no_workforce	0.0103	-0.0374	0.0435
	(0.0701)	(0.0476)	(0.0666)
low	-0.0712**	-0.0287	-0.0523***
	(0.0309)	(0.0309)	(0.0201)
high	0.0583**	0.0922***	0.0131
	(0.0296)	(0.0223)	(0.0262)
left	0.0842	0.106***	0.0895*
	(0.0611)	(0.0359)	(0.0540)
right	-0.119***	-0.188***	-0.0778**
	(0.0292)	(0.0475)	(0.0340)
cath	0.140	-0.193	0.0506
	(0.141)	(0.149)	(0.221)
prot	0.376**	-0.0775	0.0311
	(0.154)	(0.144)	(0.232)
muslim	-0.781***	-0.399**	0.0503
	(0.274)	(0.165)	(0.329)
other_rel	0.198	-0.148	-0.000839
	(0.173)	(0.149)	(0.222)
Observations	11904	13423	13379
Country Effects	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 column, 0 denotes agreement with the questions 1 denotes disagreement. In column 2, 1 denotes independence being mentioned; 0 not mentioned
In column 3, 1 denotes generous holidays being mentioned; 0 not mentioned

Table A.3: List of Fixed Effects

country	period	women_cn	youth_i	holidays
	1	.	.	.
Austria	2	-.31	1.49	-.47
	3	.03	.40	-.73
	1	-.12	-1.13	-.66
Belgium	2	-.10	.63	.04
	3	-.06	-.46	-.23
	1	.54	-.89	-.79
Canada	2	.32	.74	-.16
	3	.48	-.02	-.39
	1	-.99	-.10	-.74
Denmark	2	-1.40	1.87	-.47
	3	-1.39	.77	-.76
	1	.	.	.
Finland	2	.51	1.27	-.37
	3	.68	-.06	-.58
	1	-.83	-1.43	-1.11
France	2	-1.18	.28	-.55
	3	-.86	-.87	-.72
	1	-.02	-.37	-.43
Germany	2	-.39	1.62	.09
	3	-.64	.30	-.45
	1	.60	-.87	-.49
Ireland	2	.52	.95	.01
	3	.76	-.17	.12
	1	-.17	-.99	-1.27
Italy	2	-.82	.53	-.34
	3	-.49	-.52	-.24
	1	-.51	-.16	-.64
Japan	2	-1.28	1.82	.42
	3	-.99	.83	.81
	1	1.07	-.87	-.59
Netherlands	2	.92	.96	.18
	3	1.10	-.44	-.46
	1	.48	-.19	-1.13
Norway	2	.28	2.09	-.83
	3	.	.	.
	1	.	.	.
Portugal	2	-.64	.23	.49
	3	-.60	-.67	-.19
	1	-.02	-.96	-.48
Spain	2	-.25	.75	.03
	3	-.26	-.38	-.18
	1	.74	-1.11	-1.00
Sweden	2	.34	.56	.08
	3	.	.11	-.61
	1	.66	-.96	-.89
Great Britain	2	.51	.82	-.20
	3	.40	-.20	-.15
	1	.72	-.78	-.53
United States	2	.50	1.05	.03
	3	.59	-.13	-.06

Table A.4: Family and Work Attitudes and Employment Rates for Women (epr_w) and Youth (epr_i): Within estimates using alternative measures of attitudes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	epr_w	epr_w	epr_w	epr_w	epr_w	epr_w	epr_y	epr_y	epr_y
women_jp	6.044	-2.046	8.228						
	(10.31)	(6.541)	(6.531)						
housewife				3.266	18.16***	4.204			
				(4.831)	(4.825)	(6.765)			
parents							0.991	-4.673	1.932
							(3.175)	(3.825)	(2.587)
gap		-1.450*	-0.202		2.164**	0.192		1.350**	1.453***
		(0.721)	(0.397)		(0.811)	(0.888)		(0.583)	(0.469)
epl		-1.768	-0.627		0.0842	-0.667		-4.586	
		(1.792)	(2.565)		(2.536)	(2.061)		(3.244)	
udens		0.340			0.0845			-0.247	
		(0.361)			(0.239)			(0.180)	
benall		0.414*			0.0870			0.378	
		(0.231)			(0.118)			(0.261)	
tax_wedge		-1.709***	-1.335***		-1.678***	-1.305***		-1.864***	-1.100*
		(0.195)	(0.230)		(0.176)	(0.239)		(0.408)	(0.582)
children		-111.4***	-61.47***		-170.4***	-48.49			
		(30.36)	(10.91)		(22.57)	(31.39)			
serv_va		-0.403			-0.138			-0.225	
		(0.532)			(0.252)			(0.359)	
pop65		-3.703			0.657				
		(2.235)			(1.020)				
edu_w		-5.200*			-15.31***				
		(2.779)			(2.996)				
edu_y								-8.799	
								(5.716)	
Observations	33	33	33	31	31	31	46	46	46
Countries	17	17	17	17	17	17	17	17	17

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Standard errors, in parentheses, allow for heteroskedasticity and correlation within each country
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
housewife is the country/wave fixed effect in the probit model that uses: 'Being a housewife is just as fulfilling as working for pay' 0 denotes agreement 1 disagreement
parents is the country/wave fixed effect in the probit model that uses: 'Parents should do their best for their children, even at expenses of their own well-being' 0 denotes agreement 1 disagreement

Table A.5: Correlation of Deep Attitudes and US Immigrants Attitudes with Work and Family Attitudes

DEEP ATTITUDES					
$\Delta women\_cn_t, god_{t-1}$	F=1.33	(.287)	$women\_cn_t, \Delta god_t$	F=6.57	(.0021)
$\Delta holidays_t, god_{t-1}$	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=.386	(.030)	$women\_cn_t, \Delta imm\_fework_t$	r=.003	(.989)
$\Delta women\_cn_t, \Delta imm\_premarsx_t$	r=.382	(.026)	$women\_cn_t, \Delta imm\_premarsx_t$	r=.199	(.214)
$\Delta holidays_t, \Delta imm\_trust_t$	r= -.408	(.023)	$holidays_t, \Delta imm\_trust_t$	r= -.383	(.090)
$\Delta holidays_t, \Delta imm\_premarsx_t$	r= -.384	(.001)	$holidays_t, \Delta imm\_premarsx_t$	r= -.378	(.003)

Note:

r denotes the correlation coefficient. p values 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 *god*.

Period effects always included.

Table A.6: Family and Work Attitudes and Employment Rates for Women (epr_w): GMM system and difference estimates using alternative sets of instruments

	(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	5.081***	5.128***	5.885***	6.681**	9.589**	10.18**	12.10*	13.40
	(1.227)	(1.353)	(1.715)	(2.816)	(4.771)	(4.510)	(7.049)	(14.12)
l_epr_w	0.834***	0.842***	0.741***	0.774***	0.663***	0.646***	0.592***	0.767
	(0.0664)	(0.0738)	(0.0870)	(0.106)	(0.156)	(0.201)	(0.196)	(0.736)
gap	1.622***	1.879***	1.167**	1.341	2.139***	2.161***	2.223***	1.014
	(0.338)	(0.344)	(0.561)	(0.909)	(0.364)	(0.376)	(0.526)	(5.050)
children	-36.87***	-43.04***	-42.92***	-45.99***	-50.68***	-50.74***	-50.65***	-55.74
	(8.081)	(10.70)	(11.94)	(15.86)	(11.54)	(10.69)	(13.14)	(58.13)
serv_va	0.306	0.440	0.284	0.756	1.148**	0.891**	1.387	2.334
	(0.232)	(0.366)	(0.398)	(0.574)	(0.580)	(0.418)	(0.878)	(4.548)
epl	-1.776**	-3.039*	-2.470	-3.202	-6.636**	-8.672**	-7.388	2.170
	(0.811)	(1.837)	(1.989)	(2.714)	(3.318)	(4.400)	(5.729)	(38.62)
Observations	43	43	43	43	27	27	27	27
AR(1)z	0.559	0.250	0.983	0.895	0.240	-0.121	0.148	0.446
HansPv	0.999	0.985	1.000	0.951	0.750	0.641	0.571	.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.Standard errors in parentheses. Period Effects are entered in every columns
Column 1 reports 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
benall is also used as instrument for the level equation
Column 2 removes religious beliefs from the set of instruments in Column 1
Column 3 removes the attitudes of American immigrants from the set of instruments in Column 1
Column 4 removes both religious beliefs and the attitudes of American immigrants from the set of instruments in Column 1
Column 5 reports the difference 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
Column 6 removes religious beliefs from the set of instruments in Column 5
Column 7 removes the attitudes of American immigrants from the set of instruments in Column 5
Column 8 removes both religious beliefs and the attitudes of American immigrants from the set of instruments in Column 5
For all variables only the shortest allowable lagged is used as instrument
AR(1)z: Arelanno and Bond (1999) test of first order serial correlation, distributed as (N(0,1)).
HansPv: p-value of Hansen test of overidentifying restrictions.

Table A.7: Family and Work Attitudes and Log Average Annual Hours (hours): GMM system estimates using alternative sets of instruments

	(1)	(2)	(3)	(4)
	hours	hours	hours	hours
holidays	-0.0821***	-0.0773***	-0.0666**	-0.0870**
	(0.0237)	(0.0268)	(0.0270)	(0.0404)
l_hours	0.933***	0.905***	0.912***	0.974***
	(0.0836)	(0.0902)	(0.0925)	(0.112)
tax_wedge	-0.00433***	-0.00394**	-0.00403***	-0.00392*
	(0.000933)	(0.00169)	(0.00143)	(0.00202)
benall	-0.00108**	-0.000811*	-0.000843*	-0.000851
	(0.000469)	(0.000480)	(0.000482)	(0.000609)
serv_va	0.00538***	0.00649***	0.00512***	0.00851***
	(0.00149)	(0.00196)	(0.00192)	(0.00325)
epr_w	-0.00157***	-0.00209***	-0.00208***	-0.00242**
	(0.000535)	(0.000770)	(0.000775)	(0.000979)
udens	0.00188***	0.00215***	0.00214***	0.00211***
	(0.000320)	(0.000437)	(0.000432)	(0.000438)
Observations	36	36	36	36
AR(1)z-stat	-1.696	-1.738	-1.827	-1.557
Hansen-Pvalue	0.991	0.923	0.932	0.532

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.Standard errors in parentheses. Period Effects are entered in every columns
In Column 1 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
Column 2 removes religious attitudes from the set of instruments in Column 1
Column 3 removes the attitudes of American immigrants from the set of instruments in Column 1
Column 4 removes both religious attitudes and the attitudes of American immigrants from the set of instruments
For all variables only the shortest allowable lagged is used as instrument
AR(1)z: Arelanno and Bond (1999) test of first order serial correlation, distributed as (N(0,1)).
HansPv: p-value of Hansen test of overidentifying restrictions.

Table A.8: Family and Work Attitudes and Employment Rates for Women (epr_w) : GMM system and difference estimates controlling for trust, thrift and perseverance

	(1)	(2)	(3)	(4)	(5)	(6)
	epr_w	epr_w	epr_w	epr_w	epr_w	epr_w
women_cn	4.801***	4.592***	2.947**	13.82*	10.17**	9.689
	(1.114)	(1.019)	(1.159)	(7.965)	(4.836)	(13.46)
l_epr_w	0.835***	0.850***	0.861***	0.482	0.656***	0.613***
	(0.0660)	(0.0528)	(0.0526)	(0.317)	(0.153)	(0.154)
gap	1.552***	1.710***	1.919***	1.950***	2.021***	2.250*
	(0.331)	(0.350)	(0.419)	(0.574)	(0.453)	(1.169)
children	-28.86***	-35.42***	-28.01***	-44.74***	-44.09**	-51.51***
	(8.471)	(7.235)	(10.85)	(16.82)	(19.40)	(12.88)
serv_va	0.333	0.323	0.273	1.034*	0.611	0.873
	(0.220)	(0.232)	(0.177)	(0.547)	(0.959)	(1.338)
epl	-1.194*	-1.982**	-2.443***	-13.88	-7.168*	-9.584
	(0.677)	(0.836)	(0.603)	(9.796)	(3.740)	(6.675)
trust	1.771			-14.13		
	(2.318)			(17.12)		
thrift		-0.821			4.177	
		(1.810)			(9.377)	
perseverance			-5.066*			0.0206
			(2.797)			(21.15)
Observations	43	43	43	27	27	27
AR(1)z	0.868	0.443	0.254	-0.163	0.174	-0.447
HansPv	0.991	1.000	0.999	0.978	0.610	0.605

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.Standard errors in parentheses. Period Effects are entered in every columns
Columns 1 to 3 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
benall is also used as instrument for the level equation
Columns 4 to 6 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
AR(1)z: Arelanno and Bond (1999) test of first order serial correlation, distributed as (N(0,1)).
HansPv: p-value of Hansen test of overidentifying restrictions.

Table A.9: Family and Work Attitudes and Log Average Annual Hours: GMM system estimates

	(1)	(2)	(3)
	hours	hours	hours
holidays	-0.0389	-0.0498*	-0.0531*
	(0.0313)	(0.0259)	(0.0276)
gap	0.000273	-0.00253	
	(0.00485)	(0.00321)	
edu25	0.0103*	-0.0148***	-0.0136*
	(0.00590)	(0.00528)	(0.00764)
serv_va	0.00483*	0.00290**	0.00460*
	(0.00263)	(0.00147)	(0.00253)
l_hours	1.177***	0.774***	0.801***
	(0.143)	(0.0923)	(0.113)
tax_wedge		-0.00377**	-0.00485**
		(0.00165)	(0.00204)
epl		-0.0107	
		(0.00974)	
udens		0.00176***	0.00248***
		(0.000561)	(0.000770)
benall		-0.00153***	-0.00147***
		(0.000543)	(0.000505)
Observations	36	36	36
AR(1)z-stat	-1.635	-1.208	-1.534
Hansen-Pvalue	0.851	1.000	0.834

Standard errors in parentheses

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

Period Effects are entered in every columns

In columns 1 and 2 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 3 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, benall, serv_va, edu25 treated as endogenous, tax_wed, udens and epl as prederminate

AR(1)z: Arelanno and Bond (1999) test of first order serial correlation, distributed as (N(O,1)).

HansPv: p-value of Hansen test of overidentifying restrictions.