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ABSTRACT

Job Protection: The Macho Hypothesis*

This paper shows that employment protection is influenced by the male breadwinner conception which is itself shaped by religions. First, by using international individual surveys, we document that Catholics, Muslims and Orthodoxs are more likely to support such "macho values" than Protestants and atheists. Second, we develop a model showing that such a macho bias yields support to job protection legislation. This prediction is strongly supported by OECD panel data regressions including country-fixed effects.

JEL Classification: J16, J20, J71

Keywords: job protection, political economy, religion

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1 Introduction

The consequence of job protection on labor market performance is now a widely documented issue. However, much less effort has been devoted to understand why different countries adopt different employment protection legislations. Our paper tries to fill this gap. It is argued that employment protection is influenced by the male breadwinner conception which is itself largely shaped by religious values. Our starting point is that job protection favors job stability for insiders, who are more frequently male than female, but is detrimental to employment opportunities of outsiders, who are more frequently female than male. This point is illustrated by Figures 1 and 2. Figure 1 displays a negative correlation between prime-age female employment rates and the OECD indicator of job protection across OECD countries in the 1990s. Figure 2 suggests that such a negative correlation does not show up for the relation between prime-age male employment rates and job protection. Deeper empirical analysis confirms these results (Heckman and Pages, 2000). In this context, one should observe more support to job protection in countries in which a larger share of population agrees with the male breadwinner conception according to which men, owner of the paternal authority, work to bring back income at home while women stay at home to raise children. As shown in the paper, the conception of the gender division of work is strongly influenced by religions. Namely, Catholics, Muslims, Orthodoxs and – to a lesser extent Buddhists – are much more prone to support the male breadwinner conception than Protestants and unaffiliated people. This finding may account for the negative correlation between the share of individuals affiliated to the former group of religions and the stringency of job protection across OCDE countries as displayed by[1] Figure 3 .

The interactions between religion, preferences and institutions have recently gained new momentum in echo to the pioneering work of Weber (1905) one century ago.

[1]This relation is analyzed more in depth below.

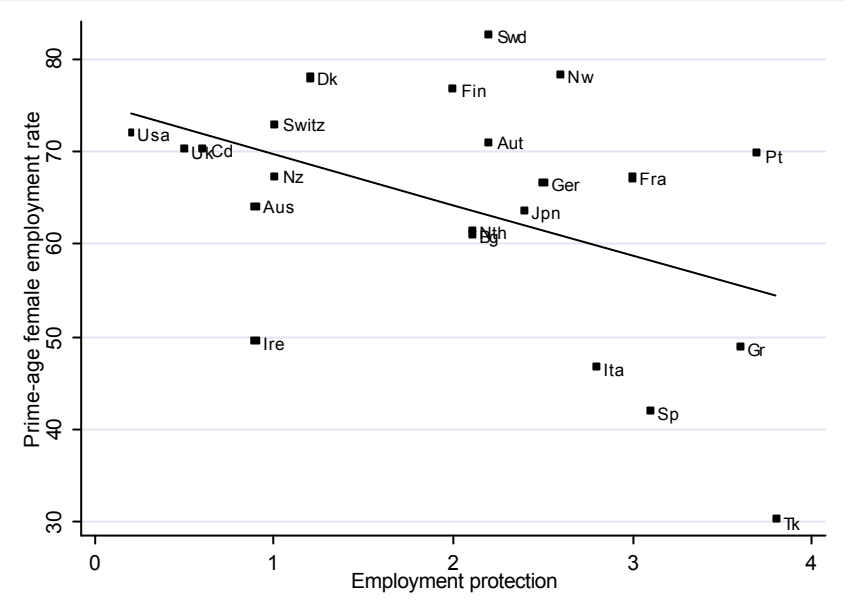

Figure 1: Prime age (25-55) female employment rate and the OECD indicator of job protection in the 1990s.

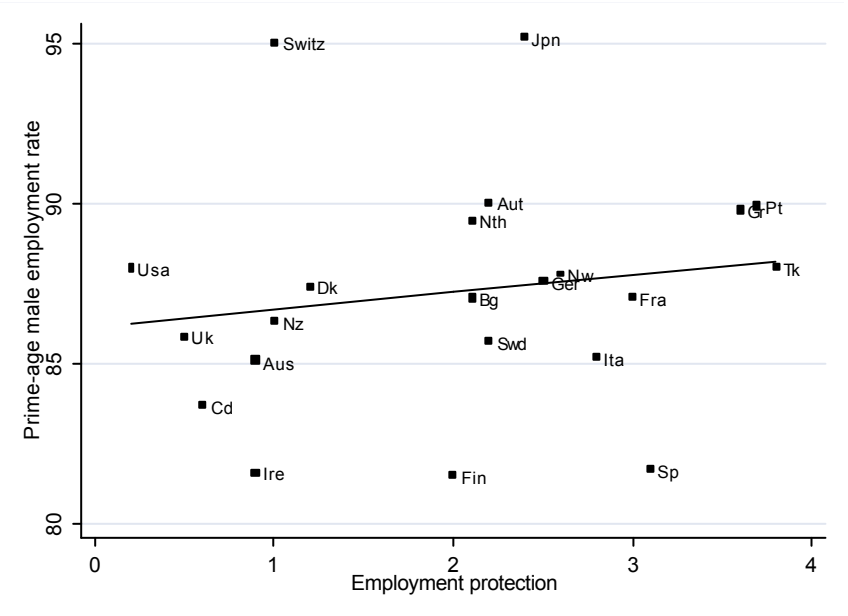

Figure 2: Prime age (25-55) male employment rate and the OECD indicator of job protection in the 1990s.

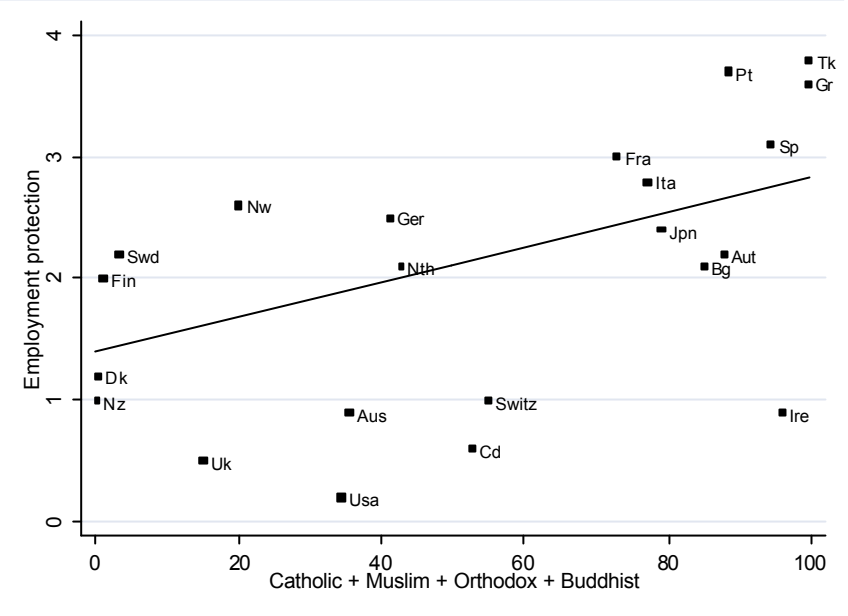

Figure 3: Religion and employment protection in the OCDE countries in the 1990s.

Guiso *et al.* (2003) used the *World Value Survey* to identify the relationship between intensity of religious beliefs and economic attitudes, in 55 countries, controlling for country-fixed effects. They study several economic attitudes towards cooperation, the government, working women, legal rules, thriftiness, and the market economy. They find that religious beliefs are associated with economic attitudes conducive to higher per capita income and growth. They also find that religious people tend to be less favorable with respect to working women. However, Guiso *et al.* (2003) provide very few information on the impact of religious denominations on the attitude towards women. This issue has already been addressed by Esping-Andersen (1990) in a classification that distinguishes social-democratic, liberal and conservative-corporatist countries. The latter are directly associated with the Catholic countries in Continental and Mediterranean Europe. Conservative-corporatism is said to promote the male breadwinner conception. However, if the argument about the influence of religious denomination looks *a priori* reasonable, Esping-Andersen does not provide quantitative evidence. Our contribution focuses precisely on

this issue for the OECD countries.

Several contributions have also analyzed the impact of religion on economic institutions and economic performance. Stulz and Williamson (2001) show that Catholic countries provide less protection to creditors rights and less support to long-term debt compared to other countries. Barro and McCleary (2002) find that economic growth responds positively to the extent of some religious beliefs but negatively to church attendance.

Our paper shows that this line of research can be fruitfully applied to the analysis of the foundation of job protection legislation. In particular, it has the potential to explain the heterogeneity in job protection legislation across-countries, adding a new dimension to the recent job protection political economy literature.[2]

In section 2, we use two complementary international surveys –*The World Values Survey* and the *International Social Survey Program* – which report religious affiliation alongside with individual preferences concerning the family organization and the gender division of work for the OECD countries in the 80's and the 90's. It turns out that Catholics, Orthodoxs and Muslims are more prone to the traditional male breadwinner conception than Protestants and atheists. In particular, people affiliated to the former religious group tend to claim that women should not enter the labor market when jobs are scarce for men and that women could endanger family life by working. This empirical result is robust to the inclusion of all traditional individual characteristics and to country-specific effects. This evidence strongly suggests that religious affiliation influences preferences over the gender division of work.

In section 3, we analyze the impact of the male breadwinner conception on job protection

[2]Saint-Paul (2001) and Boeri *et al.* (2003) have provided political economy models in which the support for employment protection is stronger in economies with higher rents and lower creative destruction in a context where the unskilled are considered as the main winners of employment protection. Fogli (2000) advocates that the level of altruism between parents and their children might explain the higher level of employment protection in Mediterranean countries. However this line of explanation has more to do with inter-generational income insurance rather than employment protection. In particular, it falls short of explaining why these countries prefer to support employment protection *per se* rather than unemployment benefits which are much lower compared to Anglo-Saxon and Scandinavian countries. By contrast, our macho hypothesis does provide a political economy analysis specific to employment protection.

policy. First, we provide a political economy model in which the preference for the male breadwinner conception directly enters the utility function. It is shown that more inclination for male breadwinner values yields more stringent employment protection. Moreover, the need for job protection rises when macroeconomic shocks reduce job stability in countries dominated by the male breadwinner conception. This helps explain why job protection legislation become much more stringent in the 1970s in the Mediterranean countries, a puzzle recently outlined by Saint-Paul (2004). The political support for job protection is then estimated on aggregate panel data for the OECD countries over the period 1970-2000. It turns out that the shares of Catholic, Orthodox and Muslim people have a significant positive impact on the level of job protection while the share of Non-religious and Protestant people have the opposite effect. Importantly enough, these estimations are robust to the inclusion of traditional economic variables and to country-fixed effects capturing additional national specificities. The different religious effects on gender role values thus appear to have key policy and macroeconomic consequences.

2 Empirical evidence on family and religious values

This section probes into the empirical impact of religious affiliation on people's attitude towards the gender division of work. We assess to what extent male breadwinner values come from religious affiliations and, if any, which religion denomination most matters in this realm. This evaluation closely disentangles the religious effect from the other institutional and individual specificities by controlling for country-fixed effects and traditional individual characteristics.

2.1 Religious affiliation and the male breadwinner conception

Not surprisingly, the first general statement about the various religious attitudes towards the gender division of work is associated with Weber. In his classic *Economy and Society*, Weber attributes man's prominence in the public sphere in Catholic and Muslim countries to the messianic message ingrained in these religions. The mission of spreading the religious faith worldwide often

meant to be able to raise an army and thus to be a man. By contrast, Protestantism abolished this gender distinction by challenging the messianic role of the Church. Weber's claim seem to have received strong historical support. On the political stage first, the Catholic countries seem to have lagged behind their Protestant counterparts in recognizing women's right to vote. While this political right was implemented in the early 20th century or just after World War I in most Protestant countries[3], women had to wait until World War II in Catholic, Orthodox or Buddhist ones.[4] Such political rights inequalities seem to have gone hand in hand with economic inequalities. As stated by Duby and Perrot (1998), World War I did not have the same economic meaning for women in Protestant countries compared to Catholic ones. For both countries, this war coincided with the massive entry of women in the labor market as a contribution to war efforts. But while this entry in the public sphere was considered as definitive and accompanied by political rights in the former countries, it was discarded as exceptional in the latter ones. Women were asked to go back to the private family sphere and were even directly banned to participate to the labor market during the Great Depression in countries such as Italy in order to protect their husband's job. The recognition of women's economic rights in Catholic countries took place only after their second contribution to war effort during World War II. Despite this new matter of fact, the current doctrine of the Catholic church is still in favor of the male breadwinner conception.[5]

[3]Finland: 1905, Denmark: 1915, Canada: 1918, United Kindgtom: 1918, United States: 1920, Sweden: 1920

[4]France: 1944, Japan: 1945, Italy: 1945, Greece: 1952, Spain: 1972, Portugal: 1976.

[5]Paulus II, in Encyclic *Laborem Exercens,* alinea 19, claims: "Just remuneration for the work of an adult who is responsible for a family means remuneration which will suffice for establishing and properly maintaining a family and for providing security for its future. Such remuneration can be given either through what is called a family wage – that is, a single salary given to the head of the family fot his work, sufficient for the needs of the family without the other spouse having to take up gainful employment outside the home – or through other social measures such as family allowances or grants to mothers devoting themselves exclusively to their families. These grants should correspond to the actual needs, that is, to the number of dependents for as long as they are not in a position to assume proper responsibility for their own lives.

Experience confirms that there must be a social re-evaluation of the mother's role, of the toil connected with it, and of the need that children have for care, love and affection in order that they may develop into responsible, morally and religiously mature and psychologically stable persons. It will redound to the credit of society to make it possible for a mother – without inhibiting her freedom, without psychological or practical discrimination, and without penalizing her as compared with other women – to devote herself to taking care of her children and educating them in accordance with their needs, which vary with age. Having to abandon these tasks in order to

However these facts cannot provide direct evidence of a causal link between the religious affiliation and the family values. At the macrolevel, the cross-country differences in family values could be linked to specific country fixed effects rather than to religions. To that respect, one may wonder if the traditional male breadwinner values have more to do with Mediterranean effects rather than religious effects. Empirical studies controlling for country-fixed effects are thus required to solve the problem. But there is also an endogeneity issue at the microlevel. As stated by Freeman (1986), "good kids may avoid drugs, stay in school, and go to church". Thus the correlation between religious affiliation and attitudes could go the other way around. To tackle this issue, one has to look for exogenous variables, such as the religious affiliation of the parents in our case. In sum, the theoretical predictions over the religious effects on family values still lack empirical foundations.

2.2 Empirical investigation

2.2.1 Data

Our empirical estimation is based on two international surveys : the *World Value Survey* (WVS) and the *International Social Survey Programme* (ISSP). These surveys provide complementary information on individual values over religion and gender roles in a large cross-section of countries. The former survey covers three waves (1981-1984, 1990-93 and 1995-1997). The latter is made up of one specific wave devoted to religious affiliations in 1998 covering the OECD countries.[6] For the sake of comparison, our analysis will be restricted to 21 OECD countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey (in *WVS* only), UK and USA.

The *WVS* reports three main questions related to the male breadwinner conception. The

take up paid work outside the home is wrong from the point of view of the good of society and of the family when it contradicts or hinders these primary goals of the mission of a mother".

[6]The ISSP provides a special issue on religious values in 1992 but which covered too few countries to be exploited.

first one directly refers to job protection of male jobs at the expense of women: "*When jobs are scarce, men should have more rights to a job than women*". The second question provides complementary information on the income side: "*If a woman earns more money than her husband, it is almost certain to cause problems*". The third one is rather linked to the role that women should play in society: "*Being a housewife is just as fulfilling as working for pay*". Concerning the *ISSP* survey, it reports two main questions on the gender role values: "*Family life suffers when the wife has a full-time job*" and "*Man's job is to earn money, wife's job is look after home and family*". Answers to each question are coded 1-4 from the highest to the lowest level of agreement. Since all these questions share the same flavor about the gender role values, we only pick up one question from each survey in this section. The estimation results of the remaining questions are reported in the Appendix.

The structure of the two surveys enables us to control for the different identification problems which plagued the previous studies. First, their cross-national nature makes it possible to disentangle the religious effects from country specific effects.

Second, the surveys provide different measures of religious affiliation allowing us to overcome the traditional endogeneity effect. Both survey report the current religious affiliation by the question: "*Do you belong to a religious affiliation? If yes: which one* ?". The *WVS* breakdowns the religious denominations into nine major categories: Catholics, Protestants, Muslims, Jews, Hindu-Buddhists, Other religions (including Orthodoxs) and No religious affiliation. The *ISSP* provides more detailed information by distinguishing Protestants from Anglicans. Moreover, the *ISSP* also reports the religious affiliation of the parents and the religious upbringing with the question: "*Were you raised religiously? If yes: in which religion?*". This question enables us to identify the effect of religion which is independent of the individual characteristics and to partly overcome the spurious effect associated with the current religious affiliation. The *WVS* also reports if the respondent was brought up religiously but without indicating the corresponding

religious affiliation, making this information less worthwhile. Eventually the two surveys report the intensity of the religious affiliation measured by the frequency of praying or attendance at religious services.

Third, both surveys provide an extensive set of information about the other individual characteristics allowing us to control for the specific role of religious affiliation. The information are quite similar across the two surveys. The most relevant control variables are the age, the sex, the level of education measured either by the time spent in education or the highest education degree, and the family income. The summary statics of the two samples are reported in Table 5 in the Appendix.

2.2.2 Findings

We estimate the impact of religious affiliation on gender role values by running Ordered Probit estimations in cross-national regressions.[7] Since the answers are ranked from the lowest value 1 for "*Strongly agree*" to the highest value 4 for "*Strongly disagree*", a negative sign indicates that the associated individual characteristic increases the likelihood that the respondent agrees with the statement. In each regression, the religion of reference is Catholicism.

We first focus on the most relevant question in the *WVS* for the issue at stake: "*When jobs are scarce, men should have more rights to a job than women*". In order to disentangle the impact of religious affiliation from other individual or national characteristics, we follow a two steps approach. Since the religious affiliation is likely to influence the other individual characteristics such as education and to be highly correlated to the national culture, we first estimate the religious effects by ignoring any additional controls, except time periods. The estimation results, reported in Table 1 - Column (1), suggest a sharp opposition pattern between

[7] We have also performed country-by-country estimations. This strategy yields close but less robust results since the share of some religious denominations is dramatically reduced when one focuses on a peculiar country. We have also been able to consider different definitions of religious affiliations according to the intensity of religious practice as we have information on the involvement of individuals in religious activities. The results of such exercises confirm those presented in the paper: Catholics and Muslims who are more involved in religious activities are more prone to support the male breadwinner conception.

religious denominations. Protestants and - to a lesser extent- non-religious people are strongly at odds with Catholics to provide job priority to men while Muslims and Buddhists are even more favorable than Catholics to such a policy. The correlations are statistically significant at 1 or 5 percent for these denominations. The correlation pattern is less clear-cut for Jews and people belonging to other religious denominations. This first broad picture is thus fully consistent with the heterogeneity in women employment rates and job security legislation observed across countries.

We check the robustness of this correlation pattern by controlling for other individual characteristics and country fixed effects in Table 1 - Column (2). It turns out that the previous opposition between Catholics and Muslims on one side and Protestants on the other side still holds. Remarkably enough, the religious influence is robust to the inclusion of fixed country effects, suggesting that such religions capture male breadwinner values which are not explained by other cultural features. Interestingly, as shown by Table 2, the fixed effects coefficients indicate that Catholic countries, Buddhist countries (Japan) and Muslim countries (Turkey) have a strong bias in favor of male job priority compared to Protestant countries (either Anglo-Saxon or Scandinavian ones). Thus the dominant religion seems to affect individual values by shaping the cultural environment of the respondent. Table 2 also shows that the likelihood to claim male job priority decreases with the level of education and income but increases with age and the fact to be a man. At this stage, it is worthwhile to differentiate the religious effects depending on the gender to highlight the "macho" hypothesis. Table 1 - Column (3) reports the estimation results by taking the Catholic man as the reference. It turns out that the religious effect significantly depends upon the sex. While Protestant men are significantly at odds with their Catholic and Muslim counterparts, the women strongly reject job priority for men whatever their religious affiliation.

We now turn to the questions reported in the *ISSP* survey. The most complementary one

with the *WVS* refers to family values: "*Family life suffers if women have a full-time job*". The added-value of this survey is to distinguish more precisely the religious affiliation and to provide information on the upbringing religion. The additional control variables are the same as those used in the *WVS*. We first estimate the impact of current religious affiliation on such values. As previously, there is a sharp opposition between Catholics and Muslims on one side and Protestants on the other side whatever the presence of control and fixed effects variables. Tab 3-Column (1) shows that Protestants significantly reject the fact that a working woman could endanger family life while Catholics and - above all- Muslims are strong proponent of such values. But the new element is that both Scandinavian Protestants and Anglo-Saxon Anglicans – who are usually considered to be closer to Catholic values than the other Protestants – reject the male breadwinner conception.

Let's now probe into the potential identification problem by using the religion in which the respondent was raised rather than her current religion. This information allows us to cope with potential spurious effect in the previous estimations since some underlying characteristics might shape both religious behavior and the gender role values. By contrast, the upbringing religious affiliation is not an individual choice and is therefore more exogenous to individual values. Tab 3-Column (2) shows that the religious effect is slightly lowered when one copes with this identification problem. However, the main opposition pattern between Protestants and Catholics or Muslims remains statistically significant.

Some results on the additional questions concerning the gender roles values are reported in are provided in the Appendix - Table 7. The estimation results confirm that the male breadwinner conception is influenced by religious affiliations. Compared to Catholics, Protestants are strongly at odds with the idea that the woman's job is to be a housewife and that earning more than her husband could raise a problem. By contrast, Muslims have an upward bias in favor of such macho values. All these results suggest that religious affiliations indeed influence individual

values over the gender roles. This influence might have far reaching economic effects. The next section deeps further this issue by analyzing the consequence of the preference for the male breadwinner conception on employment protection legislation.

Table 1: When jobs are scarce, men should have more right to a job than women: Religious effects

Current religion	No controls (1)	Controls+ fixed effects (2)	Controls+ fixed effects (3)	
			Men	Women
Catholic	Reference	Reference	Ref	.218*** (.023)
Protestant + Anglican	.452*** (.015)	.046** (.016)	.068** (.034)	.244*** (.032)
Muslim	-.454*** (.026)	-.025 (.119)	-.119 (.115)	.116 (.129)
Jews	.591*** (.115)	.442 (.152)	.483** (.225)	.627*** (.205)
Buddhist	-.455*** (.043)	.085 (.060)	.119 (.094)	.271*** (.082)
Others	.174*** (.047)	-.037 (.058)	-.005 (.083)	.152** (.079)
No religion	.211*** (.017)	.206 (.024)	.195*** (.032)	.445*** (.034)
Controls	No	Yes***	Yes***	
Fixed effects	No	Yes***	Yes***	
Period effects	Yes***	Yes***	Yes***	
Adj- R^2	.02	.10	.10	
Nb of observations	38936	28614	28614	

A negative sign increases the likelihood that individuals agree with the statement.
*** : 1%, ** : 5%, *: 10%

Table 2: When jobs are scarce, men should have more right to a job than women: Other controls

Individual characteristics & Country Fixed effects in regression (2)		
Variables	Coefficient	(Std. Err.)
Age	-.019***	(.002)
Age2	.000	(.000)
Education	.051***	(.002)
Low-income	Reference	
Mid-income	.120***	(.020)
Up_income	.201***	(.019)
Men	-.204***	(0.015)
Australia	-.468***	(.054)
Austria	-303***	(.046)
Canada	.236***	(.049)
Denmark	.735***	(.066)
Finland	.165***	(.052)
France	-.208***	(.057)
Germany	-.039	(.041)
Ireland	-.121***	(.055)
Italy	-.121***	(.049)
Japan	-.804***	(.049)
Netherlands	.105*	(.058)
Norway	.651***	(.051)
Portugal	-.063	(.053)
Spain	.070	(.041)
Sweden	.985***	(.061)
Switzerland	-.307***	(.054)
Turkey	-.680***	(.123)
UK	-.093	(.051)
USA	.108**	(.042)
Period effects	Yes**	
Adj- R^2	.10	
Nb of observations	28614	
*** : 1%, ** : 5%, * : 10%		

Table 3: Family life suffers when women work

Variables	Current religion	Upbringing religion
	(1)	(2)
Catholic	Reference	Reference
Protestant + Anglican	.120*** (.029)	.061*** (029)
Protestant	.119*** (.033)	.049* (.032)
Anglican	.122*** (.041)	.095** (.040)
Muslim	-.669*** (.181)	-.459*** (.168)
Jews	-.000 (.181)	.025 (.184)
Buddhist	.191** (.086)	.229*** (077)
Others	-.054 (.051)	-.043 (.051)
No religion	.329*** (.027)	.264*** (.037)
Controls	Yes***	Yes***
Fixed effects	Yes***	Yes***
Adj- R^2	.056	.054
Nb of observations	15872	15879
A negative sign increases the likelihood that individuals agree with the statement.		
*** : 1%, ** : 5%, *: 10%		

3 Labor market policy outcome of religious values

3.1 The model

This section explores the theoretical consequences of the preferences brought to the fore in the previous section on labor market institutions. To that end, we take into account an explicit valuation of the male breadwinner preference in a political economy model in which individuals vote over job protection.

3.1.1 Preferences and technology

We consider a static economy with two goods: labor and a numeraire good. The numeraire good can be produced either at home or by firms. There are men and women. Both populations have the same size, normalized to one. All men participate in the labor market because their productivity at home is very low. However, women have to choose whether they stay at home or they enter into the labor market. This framework allows us to capture the fact that the wage elasticity of labor supply is close to zero for men and positive for women (Blundell and MaCurdy, 1999).

The preferences are represented by a utility function that depends on the consumption of the numeraire good, c, on the male employment rate, e_m, and the female labor force participation rate, ℓ_f. It is assumed that the utility function takes the simple form: $v(c)+\phi s(e_m, \ell_f)$, where v is a twice derivable function, strictly increasing and concave; s is a twice derivable function that is strictly increasing with respect to e_m and strictly decreasing with respect to ℓ_f; all individuals have the same v and s functions; $\phi \in \mathbb{R}$, which is an individual specific parameter, measures the intensity of the concern for male breadwinner values. An individual with higher ϕ puts more value on marginal increases in male employment rate or marginal decreases in the female labor force participation rate.

Women staying outside the labor market work at home. All women who belong to the labor

force, whether employed or unemployed, lose the opportunity to produce at home. Domestic productivity varies across women. The cumulative distribution function of domestic productivity, h, is denoted by $G(h) : \mathbb{R} \rightarrow [0, 1]$.

The productivity of jobs created by firms amounts to $y_0 > 0$ with probability $(1 - q)$. With probability q, idiosyncratic productivity shocks occur. In that case, the productivity is drawn from a distribution $F(y)$ with support in the range of $(-\infty, +\infty)$. If a low value of the productivity is drawn, the worker can be fired, but the firm has to pay firing costs, denoted by p, to the government. p is a pure deadweight loss. The probability q, that productivity shocks occur, will turn out to be useful to analyze the impact of productivity uncertainty on the level of job protection.

Decisions are taken in the following stages:

1. Individuals vote on the level of job protection;
2. "Nature" chooses the domestic productivity of each female;
3. Women decide whether they enter into the labor market;
4. Firms create jobs and sign contracts with workers;
5. "Nature" chooses the productivity of each job;
6. Firms decide whether they keep or destroy their jobs;

The optimal decisions are obtained by backward induction. Accordingly, we first describe labor market equilibrium before analyzing the vote over job protection.

3.1.2 Labor market equilibrium

The labor market is competitive. Firms compete to offer labor contracts that comprise wages, $w(y)$, which can depend on productivity y, unemployment benefits, denoted by b, and the threshold value of productivity below which jobs are destroyed, denoted by R. In equilibrium, the free entry condition implies that contracts maximize the expected utility of workers who participate

in the labor market subject to the zero profit condition. Accordingly, the optimal contract is the solution to the following program:[8]

$$\max_{\{w(y),b,R\}} (1-q)v(w(y_0) + q\left[\int_R^{+\infty} v(w(y))dF(y) + F(R)v(b)\right]$$
$$\text{subject to } (1-q)\left[y_0 - w(y_0)\right] + q\left(\int_R^{+\infty}\left[y - w(y)\right]dF(y) - (p+b)F(R)\right) = 0$$

The first-order condition yields

$$\begin{aligned} w(y) &= b = (1-q)y_0 + q\left[\int_{-p}^{+\infty} ydF(y) - pF(-p)\right], \forall y \\ R &= -p \end{aligned}$$

It turns out that all individuals who participate in the labor force get the same income, whether they work or not, because firms provide full insurance. The labor market income is a decreasing function of the firing costs that will henceforth be denoted by $b(p)$. In this context, all women whose home production is smaller than the labor market income enter into the labor force. Therefore, the female labor force participation rate reads $\ell_f(p) = G(b(p))$.

Firing costs have a positive impact on male employment, that is defined by

$$e_m(p) = 1 - qF(-p).$$

However, firing costs, which decrease the labor market income b, decrease the female participation rate and have an impact on female employment, $e_f = G(b)e_m$, whose sign is ambiguous. But job protection is always more favorable to male employment than to female employment, because job protection exerts a negative impact on female participation in the labor market. Accordingly, protecting employment thanks to job protection deteriorates the relative performance of women in the labor market.[9]

[8] It is straightforward that the optimal contract does not depend on the preference for the male breadwinner conception as the term $\phi s(e_m, \ell_f)$ that appears in the utility function is taken as given at the individual level.

[9] Bertola *et al.* (2003) use the same type of argument to show that trade union power reduces female employment more than male employment.

3.1.3 The determinants of job protection

At the first stage of the sequence of decisions, individuals vote over job protection.

At this stage, the expected utility of men is

$$V_m(p,\phi) = v(b(p)) + \phi s(e_m(p), \ell_f(p)).$$

Since women do not yet know their domestic productivity when they vote, their expected utility reads

$$V_f(p,\phi) = G(b(p))v(b(p)) + \int_{b(p)}^{\infty} v(h)dG(h) + \phi s(e_m(p), \ell_f(p)).$$

Knowing that the labor market income b decreases with firing costs, it appears immediately that both men and women want zero job protection if they have no concern for (or are opposed to) the male breadwinner values. However, as job protection exits females outside the labor force and favors male employment, individuals whose preference for the male breadwinner values is sufficiently strong support positive firing costs.

For the sake of simplicity, and without loss of generality, let us consider the case in which there are two types of individuals with respect to the preference for the male breadwinner conception. Namely, there are two values of ϕ : $\phi^- = 0$ and $\phi^+ > 0$. Moreover, let us assume that there is the same share of males and females with parameter ϕ^+, denoted by λ. In this simple framework, four types of individuals vote: males with high ϕ, males with low ϕ, females with high ϕ and females with low ϕ.

The vote is represented by a probabilistic voting model (following Persson and Tabellini, 2000, chapter 3). In such a model, the outcome of the vote maximizes a weighted social welfare function. We consider the simple case in which the weight of each group hinges on its relative size only[10]. The outcome of the vote is the solution to the following program:

$$\max_{p>0} \lambda \left[V_f(p,\phi^+) + V_m(p,\phi^+)\right] + (1-\lambda)\left[V_f(p,0) + V_m(p,0)\right]$$

[10]This assumption is satisfied if the ideological bias is represented by an additive term in the utility function and is distributed with a uniform distribution that is the same in all groups, see Perssons and Tabellini, 2000.

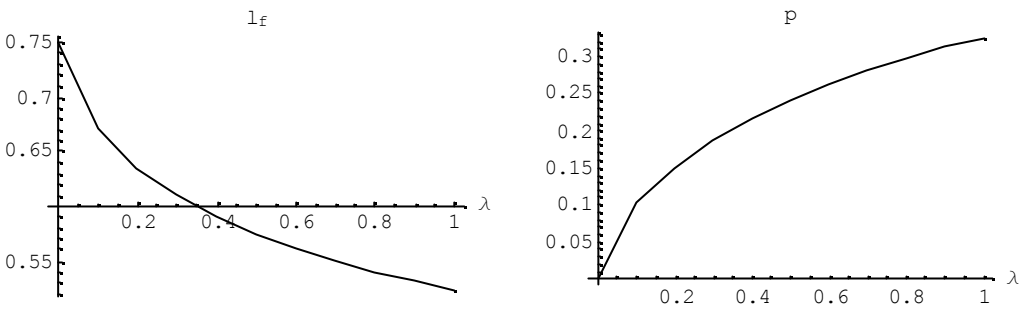

Figure 4: Effect of changes in the share of the male breadwinner supporters λ on female labor force participation rate and on job protection, $\phi^+ = 2$..

For an interior solution, the first-order condition reads

$$\Psi(p,\lambda) \equiv b'(p)v'(b(p))\left[1+G(b(p))\right] + \phi^+\lambda\frac{ds(e_m(p),\ell_f(p))}{dp} = 0$$

where $\frac{ds(e_m(p),\ell_f(p))}{dp} = \frac{\partial s(e_m(p),\ell_f(p))}{e_m}e'_m(p) + \frac{\partial s(e_m(p),\ell_f(p))}{\ell_m}\ell'_f(p) > 0.$

The first-order condition implicitly defines p as a function of λ. Since the second-order condition requires $\partial\Psi(p,\lambda)/\partial p < 0$, the sign of the derivative of p with respect to λ is the same as the sign of $\partial\Psi(p,\lambda)/\partial x$, which is positive. Thus this model suggests that job protection legislation ought to be more stringent in countries in which a larger share of the population supports the male breadwinner value.

Figure 4 illustrates the impact of male breadwinner values on job protection and female labor force participation for specific functional forms and values of the parameters[11]. It shows that job protection is increased by the share of population that supports the male breadwinner values. The job protection hike entails a drop in the female labor force.

Our model also sheds light on the reaction of labor market institutions to changes in the economic environment. In many countries, job protection legislation has been reinforced during the seventies, when the intensity of job reallocation increased. In our model, this phenomenon

[11]The functional forms are $v(c) = \frac{c^{1-\alpha}}{1-\alpha}, s(e_m,\ell_f) = \frac{(e_m-\ell_f)^{1-\sigma}}{1-\sigma}$ with $\sigma = \alpha = 1.5$. G and F are uniform over $[-0.1, 0.2]$ and $[-1,1]$ respectively. $y_0 = \int_{-\infty}^{+\infty} ydF(y)$.The probability of productivity shocks, q, amounts to 0.5. These values imply that the employment rate of men is equal to 75% and the participation rate of women amounts to 75% when $\lambda = 0$.

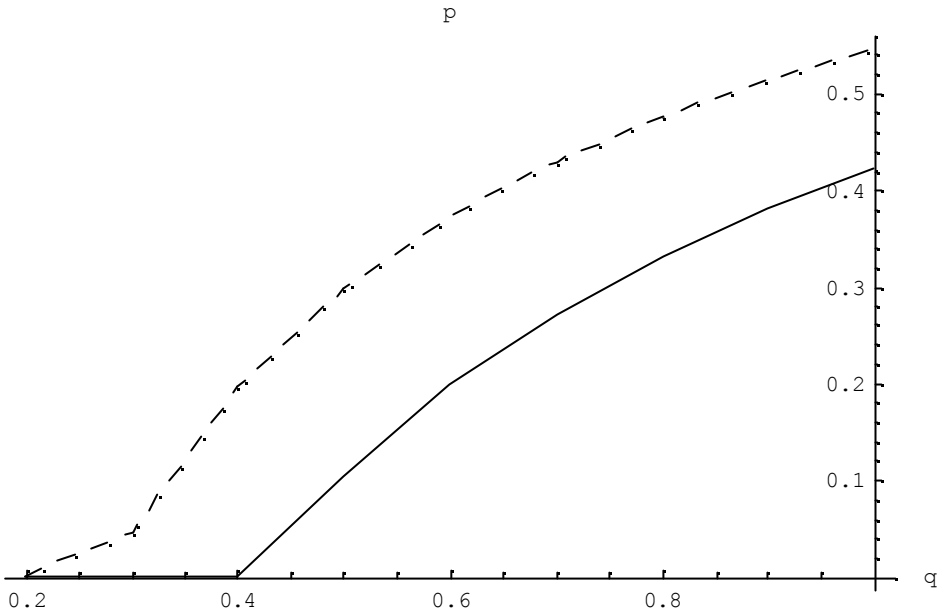

Figure 5: The effects of changes in the probability q of productivity shocks on job protection with low share (continuous line: $\lambda = 0.1$) and high share (dotted line: $\lambda = 0.9$) of individuals supportive of the male breadwinner model ($\phi^+ = 2$).

can be represented by rises in the probability q of productivity shocks. As shown by Figure 5, workers vote for more job protection when there is more job instability. Moreover, this reaction is more pronounced when the share of population in support of the male breadwinner values is larger. This mechanism might explain why some economies with a large share of Catholics supportive of the male breadwinner values have increased job protection in the seventies, as shown in Appendix B.

3.2 Empirical religious effects on job protection

The political economy research agenda has recently gained momentum in the theoretical labor market literature, especially concerning the employment protection legislation (Persson and Tabellini, 2000, Saint-Paul, 2001). Yet this literature still faces difficulties in explaining the heterogeneity of labor market institutions across countries. This section contributes to fill the gap by estimating the religious determinants of job security. To that end, we identify our

previous theoretical indicator ϕ describing the intensity of the concern for male breadwinner values with the religious affiliation, in lines with the evidence that emerges from the individual surveys. The estimations are run over the period 1970-2000 on the same 21 OECD countries used in the micro-econometric estimation adding Greece.

We start by a brief description of the aggregate data. Concerning the job protection index, we use the Nickell et al. (2001) time-varying indicator which is an increasing measure of the legislation stringency. The full definition and evolution of this indicator is described in the Appendix. According to this index, the employment protection legislation has risen a lot in Catholic countries while it has remained quite stable in Protestant ones. The timing of this increase in the former countries is also insightful. Actually, the legislation rose and reached a maximum during the late sixties and the seventies precisely at a time when the economic environment – as proxied by the unemployment rate – started to worsen. This evolution pattern is quite consistent with the prediction of the model : when there are more job destructions, the male insiders are all the more prone to increase their employment protection that they are attached to male breadwinner values. Regarding the aggregate religious affiliations in OECD countries, we use the World Christian Encyclopedia (*WCE*) of Barrett (1982) rather than the individual surveys in order to get more historical information. Actually, the *WCE* reports the international religious affiliation for the early 70's, the mid-late 75's, the mid-late 85's and the late 1990's. The analysis uses a breakdown into eight major categories: Catholics, Protestants, Orthodoxs, Muslims, Jews, Buddhists, other religions and non-religious people. Table 6 in the Appendix displays the share of each religious denomination in the OECD countries.

Our empirical investigation also controls for the traditional economic determinants provided by the political economy literature. According to Saint-Paul (2001), employment protection has mainly risen as an endogenous answer from unskilled workers to the biased technological progress. To capture this feature at the aggregate level, we make use of the labor demand shift

indicator constructed by Blanchard and Wolfers (2000). We also control for the lagged level and growth rate of GDP taken in US 1995 dollars values. Furthermore, Agell (2001) has claimed that the degree of openness gives rise to more uncertainty for households and could have fueled their need for more insurance. Traditional country-fixed effects and time effects are taken into account.

The regressions are pooled cross-section time series over three periods: 1970, 1980 and 1990. The data for the dependent variable and the controls are ten years average. In order to cope with any endogeneity bias, we also provide regressions using past rather than current values of religion. For instance, the average level of employment protection over the 70's is explained by the religious affiliations in the early 70's rather than its average value over the decay and so on. Henceforth, the share of Catholic people stands for the religious reference. Thus each estimated coefficient should be interpreted as the effect from the associated religion relative to Catholics.

Tab. 4 reports the GLS estimation of the determinants of employment protection. Column (1) indicates the estimation results when the current religious affiliations stand for the only control variables. The coefficients are fully consistent with the previous microeconomic estimations. Compared to Catholics, Protestants tend to decrease the level of employment protection while Muslims increase it. Orthodoxs, mainly represented in Greece, share the same effects as their Muslim counterpart. More importantly, these results remain statistically significant at 1% level whatever the inclusion of traditional controls in Column (2) or fixed effects in Column (3). By contrast the share of Buddhists is never statistically significant and the sign of the coefficient associated with Jews changes across specifications, raising doubt about its interpretation.

Interestingly, the previous religious effects still hold when the employment protection legislation is explained by the lagged value of the various religious shares. Tab. 4 - Column (6) indicates the same opposition pattern between the positive impact of the share of Catholic, Muslim and Orthodox on this legislation compared to the Protestant and the non religious persons.

Yet, the size of the coefficient estimates is decreased compared to the specification with current religion in Column (3), suggesting an endogeneity bias in previous regression. But remarkably enough, the religious effect highlighted on aggregate data remains statically significant whatever the specification at stake and provides a picture fully consistent with the one derived from individual values. Religious affiliations thus turn out to have a significant impact on job protection legislation.

4 Conclusion

This article has probed into the religious underpinnings of job protection legislation. The stringency of this legislation in Mediterranean countries and Japan has long been recognized to have detrimental effects on women employment rates at the benefit of incumbent prime age males. But the new claim of this paper is that such an institution is largely shaped by male breadwinner values conveyed by the dominant religious denominations in these countries. We have first provided international micro-evidence that Catholics, Muslims and - to a lesser extent Orthodoxs and Buddhists- are more prone to support traditional gender division of work compared to Protestants, Jews and non religious people. The policy implications of such male breadwinner values have then been derived in a political economy model for job protection and have been successfully tested on OECD macro-estimations.

The link between religious values and labor market institutions outlined in this article may have far reaching positive and normative consequences. On the positive side, the negative impact of the Mediterranean religions on women employment rates could account for the low economic performance of these countries compared to their Anglo-Saxon and Scandinavian counterparts. On the normative side, such discrepancies in women employment rates give scope to potential reforms, as recommended by the Lisbon treatise. However, the fact that labor market institutions are shaped by religious values make their reform much less clear cut than the naive picture

Table 4: GLS estimation of employment protection determinants in OECD countries (1970-2000)

Variables	Current religion			Past religion		
	(1)	(2)	(3)	(4)	(5)	(6)
Catholic			Reference			
Protestant + Anglican	-.006*** (.001)	-.003*** (001)	-.011*** (.002)	-.004*** (.000)	-.002** (.001)	-.027*** (.005)
Orthodox	.003*** (.001)	.004*** (.001)	.144*** (.029)	.002*** (.000)	.004*** (.001)	.103** (.065)
Muslim	.004*** (.001)	.005*** (.001)	.358*** (.047)	.003*** (.000)	.004*** (.001)	.196** (.108)
Jews	-.421*** (.057)	-.665*** (.059)	1.985*** (.307)	-.449*** (.036)	-.642*** (.056)	.644 (.766)
Buddhist	.000 (.002)	-.002 (.002)	-.011 (.021)	.006*** (.001)	-.000 (.002)	-.038 (.032)
Others	-.031 (.025)	-.076 (.022)	-.086*** (.016)	-.099*** (.012)	-.087 (.020)	-.081*** (.025)
No religion	.013 (.006)	.007 (.004)	-.020*** (.002)	.018*** (.005)	.008 (.007)	-.014*** (.009)
Openness		.000 (.001)	- .000 (.000)		.000 (.000)	.006*** (.001)
Skilled labor bias		.057 (.059)	.058 (.039)		.058 (.039)	.0525** (.023)
Gdp growth rate		-.006 (.002)	-.011 (.010)		.003 (.016)	-.034*** (.009)
Gdp level (ln)		.231*** (.036)	.171*** (.053)		.212 (.042)	.205 (.083)
Constant	1.560*** (.105)	-4.460*** (.993)	-8.229 (2.254)	1.541*** (.077)	-3.991*** (1.127)	-3.534*** (2.273)
Fixed effects	No	No	Yes***	No	No	Yes***
Time effects			Yes***			
Nb observ.			66			

GLS estimation with heteroskedastic standard errors. *** : 1%, ** : 5% , *:10%

traditionally suggested by the economic literature.

5 Appendix

5.1 Data

- Individual data

Table 5 reports the main individual characteristics of the respondents in the *WVS* and the *ISSP* surveys. The characteristics are quite similar across the two samples. The ordering in the distribution of religious affiliation is equivalent, with a prominence of Catholic, Protestant and Atheist in the OECD sample. The variable "Age" is expressed in age. The variable "Education" is the age at which the respondent completed her highest education. The variable "Income" derives from the question : "Here is a scale of incomes. We would like to know in what group your household is, counting all wages, salaries, pensions and other income that come in". The variable is ranked into deciles. We constructed three categories : low income (1th-3th deciles), mean income (4th-6th) and high income (7th-10th).

Table 5: Summary statistics of WVS and ISSP

Variables	WVS				ISSP			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
men	0.481	0.5	0	1	0.469	0.499	0	1
age	42.807	17.278	18	92	46.228	17.332	16	95
age education	17.317	3.582	9	39	11.845	3.885	1	50
low-income	0.426	0.494	0	1	0.418	0.493	0	1
mid-income	0.236	0.498	0	1	0.485	0.5	0	1
up-income	0.339	0.473	0	1	0.097	0.296	0	1
Catholics	0.413	0.492	0	1	0.379	0.485	0	1
Protestants	0.322	0.467	0	1	0.289	0.453	0	1
Muslims	0.043	0.202	0	1	0.003	0.051	0	1
Jews	0.005	0.074	0	1	0.002	0.043	0	1
Buddhists	0.025	0.155	0	1	0.02	0.139	0	1
Others	0.025	0.155	0	1	0.032	0.175	0	1
no_religion	0.168	0.374	0	1	0.268	0.443	0	1

- Aggregate data

- Religious affiliation :

Tab. 6 reports the average religious distribution by country in the World Christian encyclopedia (WCE). The religious affiliation distribution closely matched the one obtained in the *WVS* and *ISSP* surveys.

Table 6: Religious denomination by country in the World Christian encyclopedia

Country	Catholics	Protestants	Orthodoxs	Jews	Muslims	Buddhists Hindu	Other affiliations	No r affili
Australia	29.6	52.5	3	0.5	0	0	1.5	14.9
Austria	88.8	6.2	0.8	0.1	0.6	0	0.8	2.7
Belgium	90	.4	0.4	0.4	1.1	0	0.2	7.5
Canada	46.6	38.5	2.8	1.4	.6	1	3.8	5.3
Denmark	.6	95.1	0	0.2	0.	0.	0.6	3.5
Finland	.1	92.5	1.1	0	0	0	0.8	5.5
France	76.4	2	0.8	1.1	3	0.	1.1	15.6
Germany	43.9	46.7	0.8	0.1	0	0	3.9	4.6
Greece	0.4	0.1	97.6	0	1.5	0	0.2	0.2
Ireland	95.3	3.7	0	0.1	0	0	0.6	0.3
Italy	83.2	0.4	0.1	0	1.2	0	0	15.1
Japan	0	0	0	0	0	82	8	10
Netherlands	42.6	41.8	0	0.2	1	0	2.3	12.1
Norway	.3	97.7	0	0	0	0	.3	1.7
Portugal	94.1	0.8	0	0	0	0	0.5	4.6
Spain	96.9	0.1	0	0	0	0	0.1	2.9
Sweden	1.4	67.6	1.1	0.3	0	0	.9	28.7
Switzerland	52.8	42.9	0	0.3	0.4	0	1.7	1.9
Turkey	0.5	0	0	0	99.2	0	0.3	0
United Kingdom	13.1	71.8	0	0.8	1.4	0	4.1	8.8
United States	30	59.3	0	3.2	0.8	0	0	6.7

- Gross domestic product: in 1995 US dollars. Source OECD : http://www.oecd.org

- Openness : external exposure computed as the total share of international trade (exports + imports) in output. Source OECD : http://www.oecd.org

- Labor demand shift: negative of the log of the labor share constructed by Blanchard and Wolfers (2000).

- Employment protection:

This a yearly time varying index constructed by Nickell *et al.* (2001) on the basis of Blanchard

and Wolfers (2000) and OECD measures. The indicator encompasses different employment protection dimensions : procedural inconvenience, notice period and severance pay. It covers both temporary and regular contracts. The index lies in the interval [0,2] increasing with employment protection strictness.

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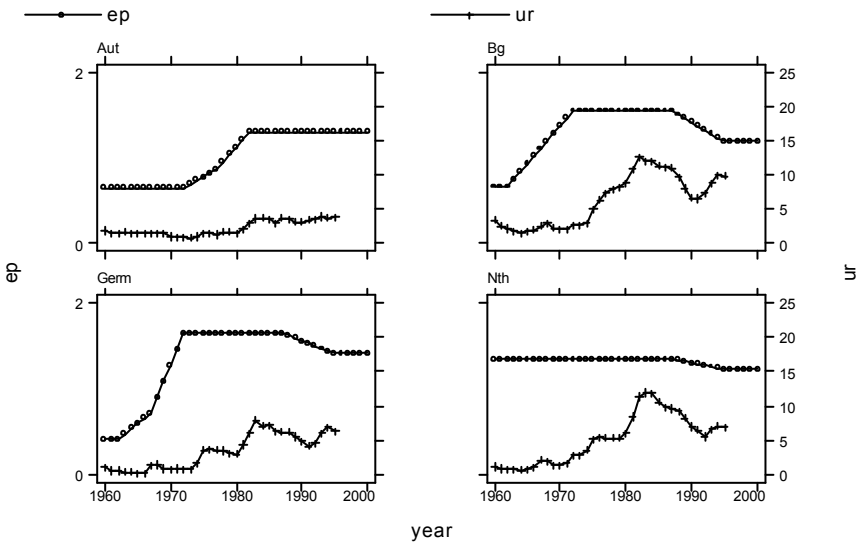
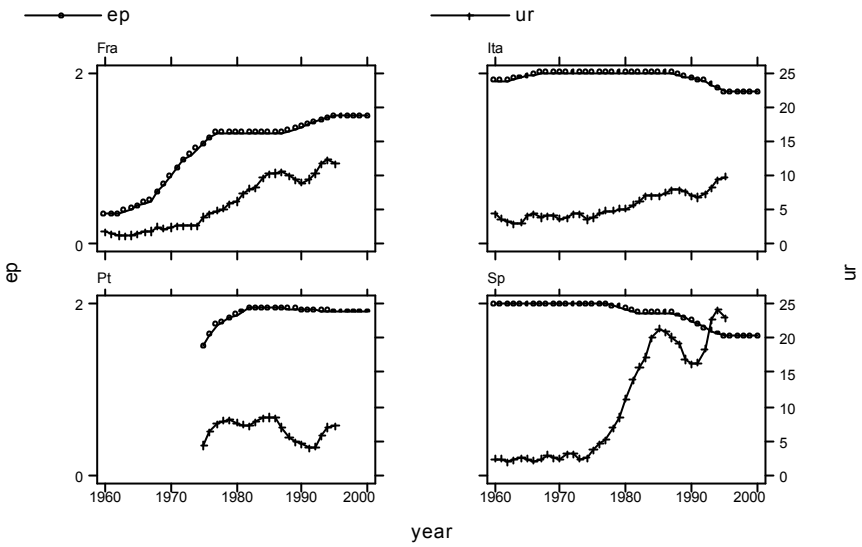
Interestingly, the employment protection index (ep) seems to have mainly risen with the tightening of the labor market in the 1970's - measured by the unemployment rate - in Catholic countries. The pictures below document this evolution pattern.

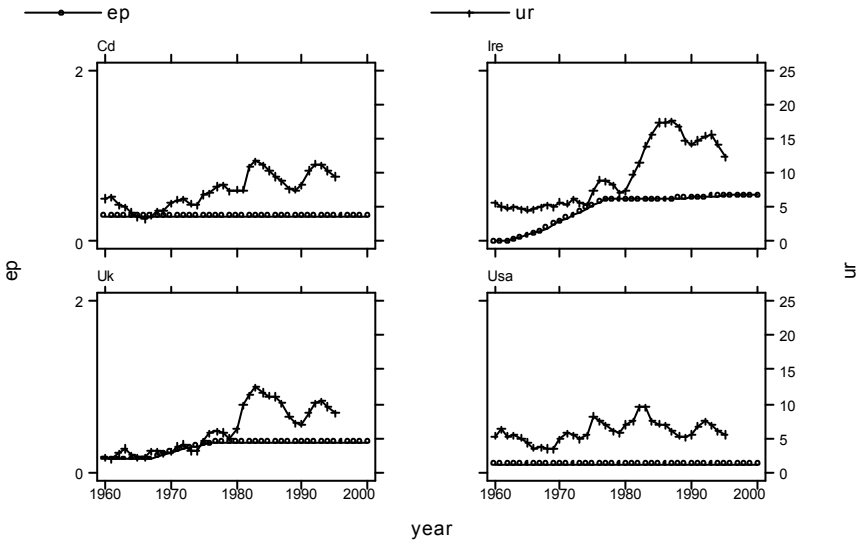
i) Continental Europe:



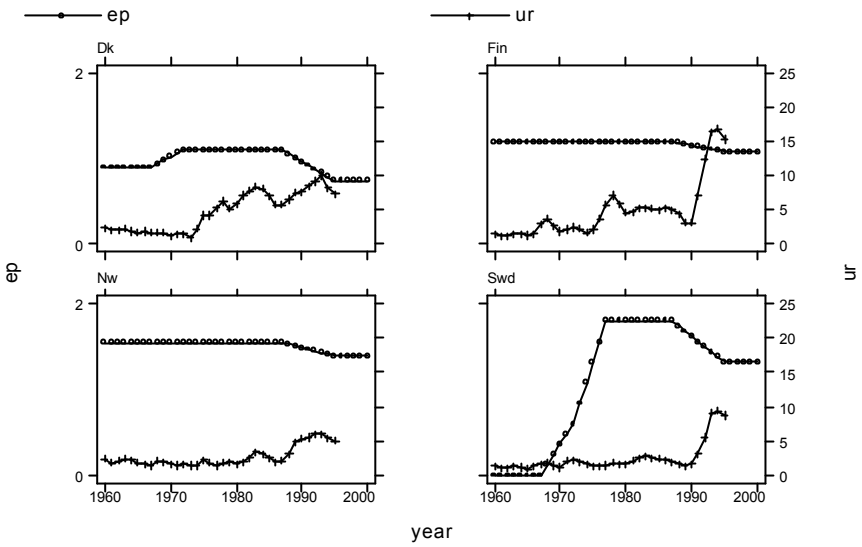
ii) Mediterranean Europe:



iii) Anglo-Saxon countries:



iv) Scandinavian countries: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5.2 Estimation results on gender role values

Table 7: Religious effects on individual family values

	If a woman earns more money than her husband, it will cause a problem (WVS)	Man's job is to earn money, woman's job is family ($ISSP$)	Being a housewife is just as fulfilling as working for pay (WVS)
Catholic	Reference	Reference	Refence
Protestant + Anglican	.09**	.05**	.10***
	(.04)	(02)	(02)
Muslim	-.02	-.26**	-.99***
	(.13)	(.10)	(.18)
Jews	.06	.16	.14
	(.17)	(.11)	(.18)
Buddhist	-.12	.22**	.19**
	(.09)	(.05)	(.06)
Others	-.07	-.07	-.08
	(.07)	(.05)	(.05)
No religion	-.00	.22***	.33***
	(.04)	(.02)	(.02)
Controls	Yes***	Yes***	Yes***
Fixed effects	Yes***	Yes***	Yes***
Adj- R^2	.05	.03	.08
Nb of informations	8014	25892	16831

A negative sign increases the likelihood that individuals agree with the statement

*** : 1%, ** : 5%, *: 10%

References

[1] Agell, J., 2001, "On the determinants of labor market institutions : Rent seeking versus Social Insurance", CESifo working paper.

[2] Barrett, D.B, 1982, World Christian Encyclopedia, Oxford University Press.

[3] Barro, R.J and McCleary, R., 2002, "Religion and Political Economy in an International Panel", Harvard working paper

[4] Barro, R.J and Lee, J.W, 2001, "International data on Educational Attainment : Updates and Implications", Oxford Economic Papers, pp. 541-563.

[5] Bertola, G., Blau, F. and Kahn, 2003, "Labor market institutions and Demographic employment patterns", IUF working paper.

[6] Blanchard, O. and Wolfers, J., 2000, "The role of Shocks and Institutions in the rise of European Unemployment: The Aggregate Evidence", Economic Journal, vol 110, pp. 1-33.

[7] Blundell, R. and MaCurdy, T. , 1999, "Labor supply : A review of alternative approaches", in Ashenfelter, O.and Card. D (eds), Handbook of Labor Economics, Elsevier Science Publisher, vol 3A, Chap 27.

[8] Boeri, T., Conde-Ruiz, I. and Galasso, V., 2003, "Protecting against labor market risk : Employment protection or Unemployment benefits?", IZA DP n°834.

[9] Duby, C. and Perrot, M., 1998, L'histoire des femmes en Occident, Flammarion.

[10] Esping-Andersen, G., 1990, The Three Worlds of Welfare Capitalism, Cambridge.

[11] Esping-Andersen, G., 1999, Social Foundations of Postindustrial Economies, Oxford.

[12] Fogli, A., 2000, "Endogeneous Market Rigidities and Family ties", New York University working paper

[13] Guiso, L., Sapienza, P., Zingales, L., 2003, "People's opium? Religion and economic attitudes", Journal of Monetary Economics, pp. 225-282.

[14] Freeman, R.B, 1986, Who escapes? The relation of churchgoing and other background factors to the socioeconomic performance of black male youths from inner-city tracts. The Black Youth Employment Crisis. Chicago Press, pp. 353-376.

[15] Heckman, J. and Pagès, C., 2000, "The cost of job security regulation : evidence from Latin American Labor Markets", NBER n°7773.

[16] Nickell, S., Nunziata, L., Ochel, W. and Quintini, G., 2001, "The Beveridge curve, Unemployment and Wages in OECD from the 1960s to the 1990s", LSE working paper n°0502.

[17] Persson, T. and Tabellini, G., 2000, Political Economics, MIT Press.

[18] Paulus II, 1981, *Laborem exercens*, Papal Encyclical, Vatican city.

[19] Saint-Paul, G., 2001, "The Political Economy of Employment Protection", Journal of Political Economy, pp. 672- 704.

[20] Saint-Paul, G., 2004, Why are European Countries Diverging in Their Unemployment Experience?, IZA DP n°1066.

[21] Stultz, R. and Williamson, R., 2001, "Culture, Openness and Finance", NBER working paper n° 8222, forthcoming, Journal of Finance.

[22] Weber, M., 1956, Economy and Society, London, Allen&Unwin.

[23] Weber, M., 1905, The Protestant Ethic and the Spirit of Capitalism, London, Allen&Unwin.