Tempora mutantur, nos et mutamur in illis: religion and female employment over time

Fischer, Justina A.V. and Pastore, Francesco

Unversity of Heidelberg, Seconda Università di Napoli

22 November 2016

Tempora mutantur, nos et mutamur in illis:

religion and female employment over time

Justina A.V. Fischer and Francesco Pastore

Version: November 22nd 2016

Abstract

This study analyzes whether the role of religion for employment of women in Europe has changed over time and along women's life cycles. Using information on 44'000 married European women from the World Values Survey, spanning more than thirty years (1981-2013), we find that over time the impact of religion on female employment has been changing. In Western Europe, behavioral differences across denominations seem to have disappeared since roughly 1997. In contrast, for Eastern Europe, we find that differences by religion have reemerged again particularly among young women. However, for women in Eastern Europe who are older than 40 years, religion plays no role – a finding that we attribute to an upbringing under secular communist regimes that strongly promoted gender equality in the labor market. Only Muslim women show a lower employment probability that persists across time, across regions, and across life cycles.

Keywords: religion, labor market participation, secularization, modernization, gender, Europe, transition countries, Eastern Europe, OECD, World Values Survey

JEL codes: D83, J16, J22, N34, Z12, Z13

Authors:
(corresponding) Justina A.V. Fischer, University of Mannheim, Department of Economics, L7, 3-5, DE-68131 Mannheim, Germany, email: mail@justinaavfischer.de.

Francesco Pastore, Department of Law, Seconda Università di Napoli, Palazzo Melzi, Piazza Matteotti, I-81055, Santa Maria Capua Vetere (Caserta), Italy, email: francesco.pastore@unina2.it.

Introduction

Tempora mutantur, nos et mutamur in illis (John Owen) – "the times are changing and we also change with them." While many empirical studies have shown that religion and its inherent traditional role model negatively correlate with female labor market participation, such relationship may well change as time passes and as society and the economy transform. The study by Fernandez (2013) suggests that in the USA, over a time span of 120 years, a revision of conservative values in society appears to have caused higher female employment rates. In addition, we argue that the relative importance of household duties restricting labor market access might change not only with time – e.g. through changing government support and changing employers' policies – but also over an individual woman's life cycle.

Previous studies on the role of religious denominations for female employment have revealed that conservative values conveyed through religion are important factors correlating with many aspects of female participation in society, in general, and in the labor market, in particular. Several studies from the point of view of theology (Chernyak, 2016), social psychology (Morgan, 1987; Hill and Pargament, 2003), sociology (Inglehart and Norris, 2003; Read, 2003; Röder, 2014; Güven, Topçu and Karasoy, 2015), medicine (Koening, 2004; Chiswick and Mirtcheva, 2013; Ugwu and de Kok, 2015), and economics (for a survey, see Lehrer, 2004) show how different religious denominations are linked to specific gender roles and the perception of family and marriage within society. Regarding the economic viewpoint, an individual's religion has been shown to correlate with female employment (e.g. Lehrer 1995; Guiso, Sapienza and Zingales, 2003; H'madoun, 2010; Pastore and Tenaglia, 2013; Fischer and Aydiner-Avsar, 2015; Dilmaghani and Dean, 2016), the degree of gender equality (Klingorová and Havlíček, 2015) as well as, among others, women's attitude towards risk-loving behavior (Ball, Armistead and Austin, 2003; Figlio and Ludwig, 2012).

The question that spontaneously arises is then why this is the case: Why is there such a strikingly persistent difference among religious denominations and the way they relate to female labor supply? Is there a difference in the way these religions conceive gender roles?

For most religions, especially the Christian religions (Catholic and Christian Orthodox, above all), but also Buddhist, Hindu, and Muslim, the most important purpose of marriage is reproduction, the birth and raising of children; therefore, it is the chief responsibility and duty of a woman to care for her children (and her husband) as this is considered the way a woman serves society and God. With respect to values that promote gender equality in society, the relative influence of religious denominations was revealed as strikingly consistent across studies in different scientific fields, with the atheist or secularized societies tending to be not much different from the Protestant societies; the remaining Christian as well as the Buddhist societies are located in the middle of the gender-equality continuum while Muslim and Hindu societies are the least gender neutral (H'madoun, 2010; Bayanpourtehrani and Sylwester, 2012; Pastore and Tenaglia, 2013; Klingorová and Havlíček, 2015). Apparently, the role of religion in society has to do, on the one hand, with some specific nuances of distinct religions, and, on the other hand, with the secularization process itself, which is also related to the evolution of the economy and society as a whole.

This study confirms the existence of a systematic difference between Muslim and non-Muslim women in their employment behavior. In a large sample of developing countries, Sharabi (1988) and World Bank (2004) are perhaps among the first to see a strong difference between Muslim and non-Muslim economies with respect to the socio-economic determinants of female labor force participation. In a very innovative study on France, Adida, Laitin and Valfort (2012) show that Muslim immigrants from the Maghreb countries and their descendants tend to earn less income than the average French worker. This may also be because these immigrants tend to empower women less than the native local population. Using a dictator game set up between Christian and Muslim players of both genders, the same authors (2010) show that both men and women belonging to the Muslim denomination tend to discriminate against women belonging to their own religion. In fact, Christians also tend to discriminate against Muslim women, but not Christian women. This suggests that discrimination against Muslim women is the consequence of converging forms of discrimination in both the Christian and Muslim population.

For the two decades before the year 2000, our study also reveals systematic differences between Protestantism and other Christian beliefs. Despite evidence that all Abrahamic religions propagate an engendered division of work for men and women, it appears that the Protestant-Calvinist beliefs are more tolerant when it comes to female labor market participation. We argue that, on the one hand, Protestant religious groups are among the few which accept women as religious leaders (women as preachers, priests, and even bishops), letting them serve in traditionally 'male' positions. Furthermore, we also observe that Protestant priests are allowed to marry (in contrast to their Catholic and Christian-Orthodox peers), putting their wives in the prominent role of managers of social services and activities that are an important part of the religious community life of their congregation. Overall, we conclude that, in contrast to their Christian peers, Protestant women did not appear to be as confined to household and child-caring activities from the very start of the Protestant movement.[1]

Another important point is the difference in risk attitude between Protestants and persons of the Catholic and Orthodox denominations. In a famous claim, the German sociologist, Max Weber, stated that Catholics – as opposed to Protestants – prefer a life with the greatest security rather than a life with the greatest honor and wealth. According to Algan and Cahuc (2006), this religion-based difference may be the underlying reason for the preference of Mediterranean countries for a labor market providing more employment protection.

Previous empirical studies appear to support this differentiated view on how the traditional role model is put into practice between the various Abrahamic religions. For example, Pastore and Tenaglia (2015) report for the 2008 cross-section of the European Values Survey a lower likelihood of employment for Catholic, Christian-Orthodox, and Muslim women compared to their Protestant peers. In contrast, the recent study by Heineck (2004) reveals for Germany, with a population roughly split in half between Catholics and Protestants, no behavioral difference by religion. We conclude that it is important to distinguish between the national culture prominent in a

[1] Luther's wife, Katharina von Bora, a former nun from the German nobility, was known to have actively participated in the theological discussions with the male leaders of the reformation movement, and her intellectual contributions to his theological writings are now closely investigated.

country and an individual's culture (upbringing, value, religion), which our empirical study design permits (see methodology section).

This article investigates (1) how religious beliefs of married women relate to their labor market participation choices in Europe, and (2) whether or not such relation, which we cautiously interpret as one-directional influence, might evolve and change over time. Moreover, we consider the possibility of differing development paths in Western Europe and in Eastern Europe, taking into account the differences in national culture and history across European regions, particularly during the communist period. This identification of differing development paths over the last 40 years and the influence of communism on this difference is our major contribution to the existing empirical literature in the field.

Bayanpourtehrani and Sylwester (2012) pose a question similar to the one we pursue in this study. They analyze the correlation between share of denominations in the population and female labor force participation rates in a cross-country setting over the years from 1985 to 2005. With respect to method but also to focus of analysis, their study is distinct from ours in various aspects. First, they employ a macro approach while we utilize the World Values Survey (WVS) that provides us with information on 300'000 individuals; the WVS lets us observe the relationship between the denomination of a single woman and her individual labor market participation decision, allowing us to control for many individual-level determinants that cannot be captured in macro studies. Second, these authors mix a large set of countries with very dissimilar and incomparable national institutions. Instead, our study focuses on OECD and European countries only, which share similar institutions of multi-party democracy and trade openness, reducing the degree of heterogeneity in the data. Other possibly confounding but unobservable cultural factors and their evolution over time we account for by using fixed effects and their interactions with the time dimension – an empirical approach previous cross-sectional analyses and most macro studies do not permit.

Finally, and most importantly, we investigate into a longer time horizon than most preceding studies do: we employ 5 waves of the WVS that provide a generation-long time horizon, covering a more extended period, ranging from the 1980s up to the

early 21st century, during which most societal value changes appear to be happening, as our study reveals. In contrast, most previous studies looked into a narrower, more recent time window only, mostly in a cross-sectional fashion, thereby neglecting the changing role of religion over time (e.g. Bayanpourtehrani and Sylwester, 2012, Pastore and Tenaglia, 2014). In sum, our analysis contributes to the existing literature not only by providing more reliable and robust findings than previous studies, but, most importantly, by providing new insights through exploiting individual-level information for a time horizon that spans more than one generation.

Data and Methodology

This study employs the World Values Survey (WVS) 1981-2013 that since 1981 has been conducted about every 5 years in more than 80 countries worldwide; with about 1'000 interviewees per country, the WVS gives rise to a repeated cross-section with a panel structure at the country level. We exploit this country panel structure to control for unobservable time-persistent country characteristics, unrecorded worldwide economic or political shocks, but also unobservable changes in national institutions and contemporary culture over time: first, by using country fixed effects (and their interactions with time), and second, by restricting our analysis to European countries which share a similar historical and cultural background. The WVS covers a time span of about 20 years for Eastern Europe but 30 years for Western Europe - allowing us to investigate the development of religion effects over time.

To analyze societal transformation processes with respect to religion, we split the sample of European countries into a pre-1996 period and a post-1997 period. In their empirical happiness study on the largest EU transition country, Poland, Grosfeld and Senik (2008) reveal as the turning point the years 1996 and 1997, when in this post-communist country people's perception of social mobility turns from positive to negative. They write: "We identify a break in the relationship between country satisfaction and income inequality at the end of 1996. In the first period (1992-1996), we observe a positive association between these variables, whereas in a second period (1997-2005), this relationship becomes negative" (p.4). Using the Hirshman-tunnel argument (Hirshman and Rothschild, 1973), a possible interpretation is that major social transformation processes and, hence, expected upward social mobility, in

European transition countries have come to a standstill. Our empirical analysis for Eastern Europe supports the year 1996-1997 as the societal transformation point.

The WVS also includes a set of socio-demographic characteristics such as sex, age, marital status, number of children, education, and occupational status. Religious denominations include Catholicism, Protestantism, Christian-Orthodoxy, Judaism, Islam, Free Church Associations (Evangelicals), Buddhism, Hinduism, 'no denomination', and Atheism. We exclude Buddhists and Hindus from the sample (around 20 observations each) and women with 'other denominations' (around 450 observations); women with 'no denomination' and 'Atheists' jointly form the reference group. For reasons of economic theory of female labor market choice under restrictions (husband, children), but also for reasons of reverse causality, we restrict the regression sample to married and cohabiting women in their working years, that is, aged between 25 and 60 years (see also Heineck, 2004). Our final sample includes about 44'000 women in more than 40 European countries. Table 1 presents descriptive statistics.

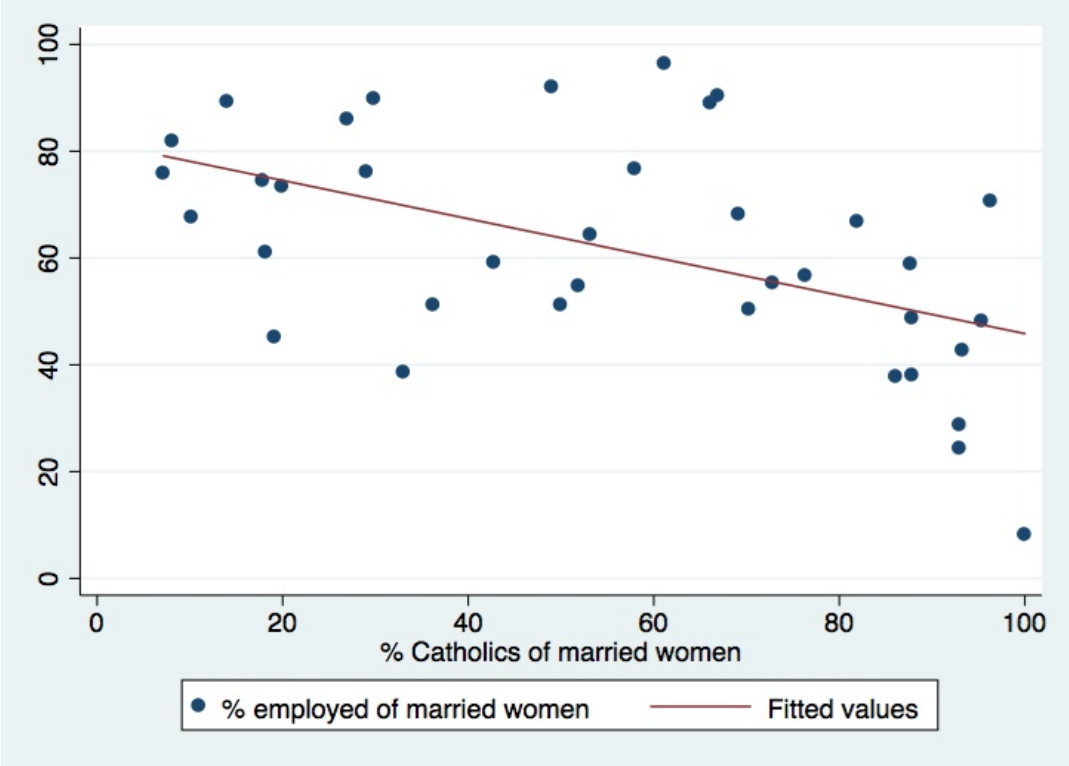
Table 1: Descriptive Statistics, WVS, Europe, 1981-2013, 44'069 married women

Variable	Mean	Std. Dev.	Min	Max
Employed	.62	.48	0	1
Active	.68	.47	0	1
No denomination/Atheist	(ref.cat.)			
Catholic	.35	.48	0	1
Protestant	.14	.34	0	1
Muslim	.03	.17	0	1
Orthodox	.19	.39	0	1
Jewish	.001	.03	0	1
Free Church	.03	.16	0	1
Atheist	.26	.44	0	1
Age	41.91	9.79	18	60
Number of children				
0	(ref.cat.)			
1	.22	.41	0	1
2	.44	.49	0	1
3	.16	.37	0	1
4	.05	.22	0	1
5	.02	.13	0	1
6	.01	.09	0	1
7	.002	.05	0	1
8	.002	.05	0	1
No information on children	.03	.16	0	1
Education				
Elementary	.47	.49	0	1
Secondary	(ref.cat.)			
Tertiary	.17	.37	0	1
Year	1996.87	7.96	1981	2013
OECD	.59	.49	0	1

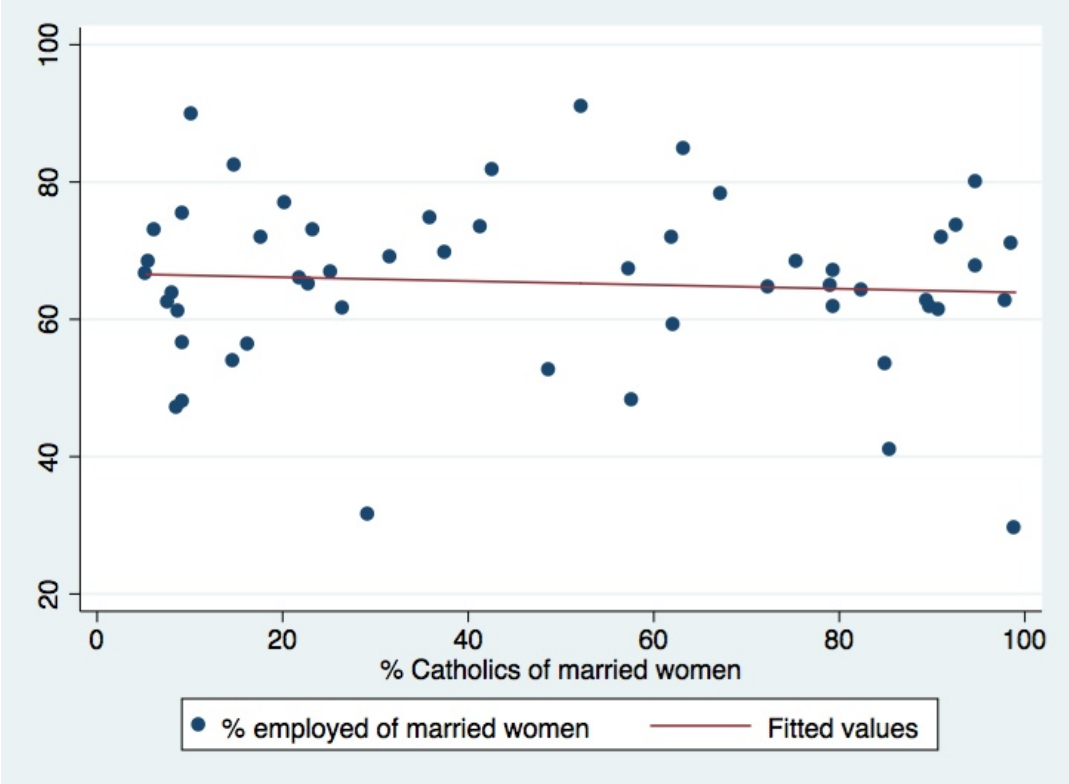
Panel (a) and (b) of Figure 1 provide a correlation analysis of the relationship between the share of Catholic women – one of the traditionally most conservative religions existent in Western and Eastern Europe, likewise – and the employment ratio in the female population. These population shares of married women have been derived from the individual information of the original WVS 1981-2013 data, excluding countries with a population share of Catholics of less than 5%.[2] In both panels, national employment ratios of women recorded per wave are depicted on the y-axis, while the x-axis records the share of Catholic women in the female population observed per wave and country. While Panel (a) shows this relationship for the years 1981-1996, Panel (b) focuses on the years from 1996 on. As we will discuss later, we believe that in Western Europe during the 1990s an important systemic change regarding the importance of religion for employment decisions of married women took place. The change in slope in the two panels of Figure 1, which reflects the degree of correlation between the two economic phenomena, supports this view: while the slope is negative in Panel (a) for the period 1981-1996, it becomes horizontal in Panel (b) for the period 1997-2013. To sum up, the relationship between the share of Catholic married women and employment ratio among married women is a negative one until 1996, while it turns out to be an uncorrelated one from 1997 on. Over time, religious beliefs appear to have become irrelevant for the labor market participation of married women.

[2] By excluding countries with less than 5% Catholics in the female population we omit most of the Eastern European countries. The cultural differences between Western and Eastern Europe will be discussed at a later stage.

Figure 1. Female employment rate of married women over time



Panel (a): 1981-1996.



Panel (b): 1997-2013.

In our multivariate analysis, that also accounts for correlates and other confounding factors of our variable of interest we estimate the probability of being employed for a married woman i living in country s at year t (Y_{ist} = employed) as a function of her religious denomination *religion*$_{ist}$:

$$\text{Prob}(Y_{ist} = \text{employed}) = \alpha\, religion_{ist} + \beta' X_{ist} + FE_s + FE_t + FE_s \times FE_t + \varepsilon_{ist}$$

where Y_{ist} denotes the employment status (dichotomous variable).[3] A vector of personal characteristics (X_{ist}) includes age, age squared, number of children, and education. A set of country and time fixed effects ($FE_s + FE_t$) and their interactions ($FE_s \times FE_t$) and an idiosyncratic error term complete our model. Standard errors are estimated with observations clustered at the country level to account for heteroskedasticity and within-country serial correlation.[4]

An important issue is that of causality. In our empirical approach, we address two possible sources of endogeneity that might bias the vector of coefficient estimates. First, labor market status might impact the decision to marry and to have children ('sample selection bias'). Second, the choice of religious denomination could be a response to changes in labor market participation ('reversed causality'). The first concern of sample selection we address by restricting our sample to married women only, in line with the state of the art in this field (e.g., Hayo & Caris 2013) – we focus on the labor market participation decisions of women for whom the traditional-role-model constraint 'family' becomes binding through marriage and planned reproduction, omitting ever-single and divorced women who are in different socio-economic situations. The second concern of converting to another religion as response to one's labor market choices – working women might convert to Protestantism or Atheism that are more supportive of their choice – appears an irrelevant one when one

[3] Comparison status is 'unemployed, housewife, or early retired'. Excluded from the sample are students and disabled persons. In most industrialized countries, the differences within the comparison groups are blurred: 'officially recorded as unemployed' and 'officially housewife but looking for a job' overlap the same way as 'inactive' and 'recorded as unemployed to obtain benefits but not actively looking for employment' do.

[4] Previous labor market literature often focuses on the question of wage level. Our analysis of employment probability by religion resembles the first stage of a Heckman-selection model in that context.

investigates appropriate individual-level information.[5] While the WVS does not provide information on converts and their previous denominations, the European Value Survey of 2008 lists only 300 converted women out of 20'000 women in 26 European OECD countries. In other words, most women tend to keep the religious denomination they have been brought up with, at least on paper. We therefore have good reason to view religious denomination as a largely exogenous family tradition.

Findings

Table 2 tests our empirical model of the presence of religion effects on female labor market choice from 1981 until 2013 in Europe (column 1) – the persistence of their influence over time is tested by splitting the sample into a 1981-1996 period and a post-transition 1997-2013 period, roughly halving the full sample (columns 3 through 5). As a robustness test, column 2 presents estimates for the 1981-1990 period, while column 1 reports estimates for the full WVS sample of about 44'000 women in Europe 1981-2013.

Behavioral patterns of women have been shown to differ between Western and Eastern Europe, defined by the Hapsburg empire borders, which closely follows the demarcation between the Western and Eastern Roman Empires (Fischer and Aydiner-Asnar, 2015). For this reason, Table 2 splits the post-1996 sample into two groups: OECD and non-OECD member states within Europe, where membership in OECD reflects economic openness, democratization, and other forms of societal modernization (columns 4 and 5).[6] The focus of our discussion is on Catholics, Protestants, Christian-Orthodox, and Muslims.

The full sample estimates in column 1 support the finding of the previous literature that Catholic, Christian-Orthodox, and Muslim women are less likely to be employed than their Protestant peers (e.g. Pastore and Tenaglia, 2013).

[5] Similarly to the problem of sample selection in Heckman models, there is no valid instrument for marital status or religious denomination that satisfies the exclusion restriction (of not explaining employment status).

Table 2: Religion and female employment over time in Europe

	(1)	(2)	(3)	(4)	(5)
	1981-2013	1981-1989	1981-1996	1997-2013	1997-2013
	Full sample	Western Europe		OECD	Non-OECD
Catholic	-0.258**	-0.353*	-0.420**	-0.0333	-0.351**
	[0.0539]	[0.146]	[0.0921]	[0.0636]	[0.115]
Protestant	-0.150	-0.188	-0.327	0.0217	-0.0535
	[0.130]	[0.216]	[0.242]	[0.0751]	[0.110]
Muslim	-0.879**	-2.093*	-0.911**	-1.228**	-0.761**
	[0.167]	[1.021]	[0.245]	[0.301]	[0.208]
Orthodox	-0.189**	-	-0.219	-0.331	-0.166
	[0.0635]	-	[0.147]	[0.244]	[0.0883]
Jewish	-0.655	-1.124	-0.817	-0.743	-0.352
	[0.378]	[0.836]	[0.756]	[0.520]	[0.616]
Free Church	-0.228*	-0.173	-0.562*	-0.0485	-0.0681
	[0.109]	[0.247]	[0.218]	[0.151]	[0.322]
micro vars.	yes	yes	yes	yes	yes
country FE	yes	yes	yes	yes	yes
time FE	yes	yes	yes	yes	yes
interacted fixed effects	yes	yes	yes	yes	yes
Obs.	44’069	4’109	20’068	12’131	11’870
Countries	41	14	33	22	19
Pseudo R2	0.179	0.163	0.205	0.139	0.182

Notes: Logit estimations with the WVS, 1981-2013, married or cohabiting women in Europe, between the age 25 and 60 years. Dependent variable is employment (binary), where '1' indicates 'employed full-time, part-time, or self-employed', and '0' 'not-employed (early retired, unemployed, housewife). Disabled women and female students have been excluded. The set of individual controlling variables include age, age squared, number of children, and educational attainment. All models include country and time fixed effects and their interactions. Squared brackets report robust standard errors obtained through clustering at the country level; ** $p<0.01$, * $p<0.05$.

Table 2 shows clearly that, in OECD-Europe, the importance of religion as determinant of female employment diminishes over time, as the comparison across the two time periods 1981-1996 and 1997-2013 reveals (columns 2, 3, and 4).[7] Put differently, the behavior of married women of all sorts of religious denominations appears to have converged over time when it comes to labor market participation. The only exception pertains to Muslim women who continue abstaining from gainful employment (column 4).

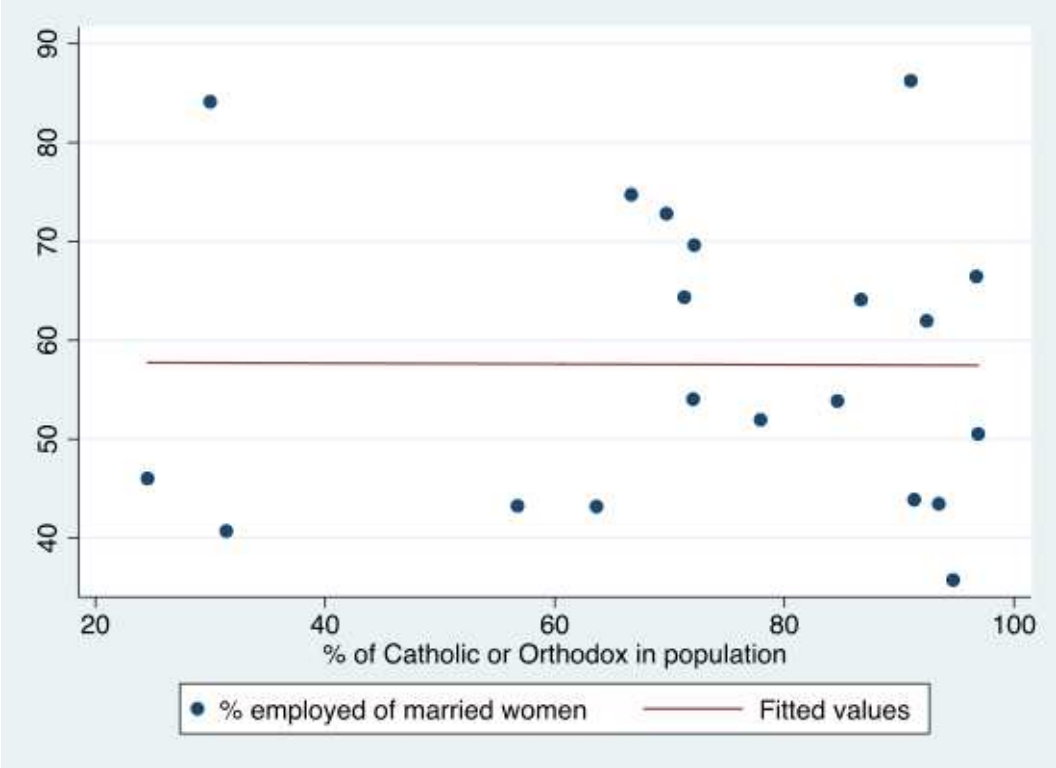
For non-OECD-Europe, however, column 5 of Table 2 reveals a differential behavior between Catholic and Protestant married women in the expected fashion that persists even now, which we conjecture was caused by lagging modernization processes. Unfortunately, the WVS does not provide information for the communist era, prior to 1991. Muslim women are, again, less likely to participate in the labor market.

As the next step, we investigate life cycle effects for married women in Western and Eastern Europe separately. Prior to conducting a multivariate analysis, we introduce graphical representations of our major finding in the Eastern European subsample. For illustration, we split the sample by female life cycle (25-39 year old versus 40-60 years old) and by time period, focusing on the years 2000+ where the economic and societal transformation in the post-communist regimes should have reached a new stable equilibrium state. Analogous to Figure 1, panels (a) and (b) of Figure 2 present correlations between the female employment ratio in the respective age group and the combined share of Catholic and Christian-Orthodox women in the female sub-population – panel (a) for the older women, and panel (b) for the younger ones.[8]

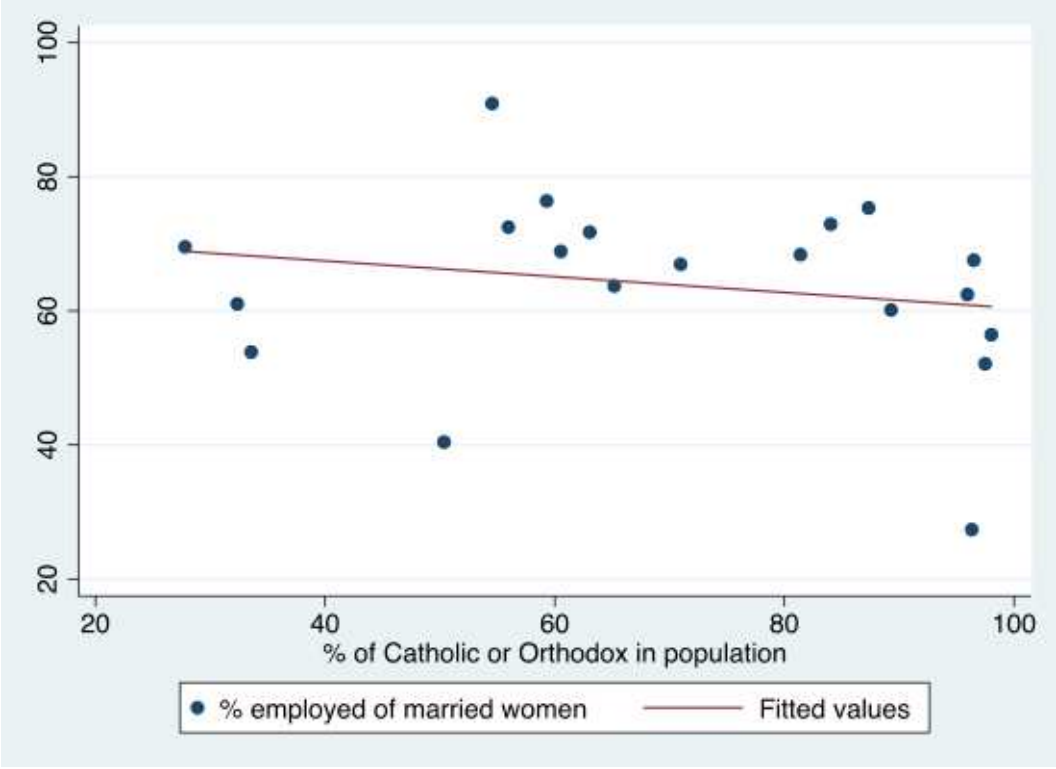
[7] In column 2, the restriction of the regression sample to Western Europe is by the original WVS data collection procedure – only after 1989 did European countries behind the 'Iron curtain' participate in the WVS.

[8] Six countries reported a share of 0% Catholics, while in 3 countries there are no Christian-Orthodox people in their survey samples. Catholics and Christian-Orthodox of the Christian beliefs in Eastern Europe are both known to have similarly conservative views on the role of women in society.

Figure 2: Female employment and religion, in Eastern Europe, 2000-2013



Panel (a): aged 40 – 60 years



Panel (b): aged 25 – 39 years

Figure 2 reveals a surprise: only for younger women is there a negative correlation between the conservative Christian beliefs and female employment in Eastern Europe, while there is no relationship for older women. In Table 3, the multivariate analysis will confirm this finding. For the older women in panel (a), the correlation coefficient is about zero, while it amounts to -0.20 for the younger ones in panel (b).

Table 3 tests the presence of life cycle effects of religion for female employment in a multivariate fashion, analogous to Table 2: we estimate the employment probability model for two subsamples of women, those aged 25-39 years and those aged 40-60 years, and, again, test differential effects across two relevant transition time periods 1981-1996 and 1997-2013, following Grosfeld and Senik (2008). Choosing Eastern European women aged 40-60 years in the more recent 1997-2013 period and contrasting them with (1) their equally-aged peers in Western Europe and (2) their younger peers in the same world region, permits us to gain an insight into the role of upbringing under communist regimes for female labor market participation.

In OECD-Europe, prior to 1996, both older and younger married Catholics appear equally conservative in behavior: both show a lower likelihood of being employed compared to their Protestant peers. After 1996, this picture changes: there is convergence in behavior and irrelevance of religion in either age group.

In non-OECD-Europe, surprisingly, younger married Christian-Orthodox or Catholic women now appear more under the influence of their religion than married women aged 40 to 60 years. That is, for the younger generation of women in post-communist regimes, religious denomination appears decisively correlated with their labor market participation. There are two possible explanations: for younger wives, the restriction of child-caretaking might be more binding. Alternatively, there might be a secular communist regime-effect and path dependency in the older age group. The negative and significant coefficients of the Christian-Orthodox and Catholic denominations in the 1997-2013 sample for younger wives (column 5) combined with the insignificances for the older ones (column 6) confirms the communist regime-effect-interpretation.

Table 3: Religion and female employment across age groups in Europe

	(1)	(2)	(3)	(4)	(5)	(6)
	1981-1996	1981-1996	1997-2013	1997-2013	1997-2013	1997-2013
	age < 40	age > 39	age < 40	age > 39	age < 40	age > 39
			OECD	OECD	Non-OECD	Non-OECD
Catholic	-0.297**	-0.548**	-0.103	0.0038	-0.587**	-0.190
	[0.0954]	[0.118]	[0.134]	[0.0760]	[0.149]	[0.146]
Protestant	-0.417	-0.314	-0.0194	0.0427	-0.232	0.141
	[0.234]	[0.260]	[0.0913]	[0.0928]	[0.213]	[0.255]
Muslim	-0.963**	-1.092**	-0.936**	-1.486**	-0.834**	-0.790**
	[0.306]	[0.276]	[0.338]	[0.236]	[0.268]	[0.214]
Orthodox	0.0205	-0.441*	-0.249	-0.342	-0.339**	-0.0460
	[0.168]	[0.196]	[0.315]	[0.345]	[0.104]	[0.122]
Jewish	-0.889	-0.466	-1.248	-0.628	-0.165	-0.254
	[0.856]	[0.906]	[0.659]	[0.576]	[1.013]	[0.804]
Free Church	-0.491*	-0.654*	-0.174	0.0150	-0.156	-0.196
	[0.250]	[0.309]	[0.135]	[0.273]	[0.275]	[0.524]
micro vars	yes	Yes	yes	yes	yes	Yes
country FE	yes	Yes	yes	yes	yes	Yes
time FE	yes	Yes	yes	yes	yes	Yes
interacted fixed effects	yes	Yes	yes	yes	yes	yes
Obs.	9’239	10’823	4’911	7’220	5’076	6’789
Countries	33	33	22	22	19	19
Pseudo R2	0.182	0.239	0.104	0.181	0.161	0.221

Notes: see Table 2.

In contrast, married Muslim women in Europe show the identical labor market-abstaining behavior in all estimated models and for all subsamples – that is, Muslim women are less likely to be employed in both Western and Eastern Europe, and across all ages and time periods, likewise.

Conclusion

Our study is the first to analyze whether the relationship of religion with female employment in Europe differs a) by time period, b) over the life cycle, and c) across cultural regions. We are able to detect substantial differences between Western and Eastern Europe particularly in the younger generation of women – the reemergence of 'religious' values in the East of Europe also plays a prominent role in the current refugee crisis.

In European OECD member states the religious denominations as determinants of the employment probability of married women do not appear to be persistent, but seem to exert an influence that diminishes over time. Using the World Values Survey 1981-2013, we detect in the early years of the survey (1981-1996) behavioral differences by religion that, however, in the more recent years (1997-2013) have disappeared, for both young and older married women, alike (except for married Muslim women). In explanation, membership in OECD might promote modernization processes in member states or might be a mere manifestation of past modernization processes.

In non-OECD-Europe, however, even after 1996, religion still appears as an important determinant of the labor market participation decision of married women. To our surprise, this effect appears to be driven by women *younger* than 40 years, while older women do not show any behavioral differences across religions at all (except for Muslims). As possible explanation, we point to the upbringing of the older generation under the communist regimes that promoted female labor market participation and combatted the societal influence of religious values for ideological reasons. Only Muslim women are less likely to be gainfully employed, across all time periods, in both regions, across all life years.

Our finding that Muslim women are less likely to get outside employment even today corroborates similar findings in previous studies, such as Hayo and Caris, (2013) who

focus on the period 2000-2005. These authors, however, neglect the dissimilarity across Christian denominations in the 1980s and 1990s, which we show to first have existed but then have diminished over time. Bayanpourtehrani and Sylwester (2012) find, similar to our study, that Catholics, Hindus, and Muslim women have a lower likelihood of labor market participation than Protestants. However, they omit in their cross-country macro study the distinction between Western Europe and post-communist Eastern Europe (and the specific role of Christian Orthodoxy) – two regions we show to be on differing development paths for female labor market participation.

Future research on Europe needs to be carried out over a longer period of time than this study covers and might bring new support to the so-called "melting pot" hypothesis (Gleason, 1980), namely, that immigrants belonging to different cultural and religious traditions tend to converge in life styles over time. Considering the existing evidence speaking against the melting pot hypothesis (e.g. Bisini and Verdier, 2000), a possibility could be that a melting pot exists only with respect to some specific societal dimensions. We believe that gender roles and female labor market participation might be among these converging dimensions.

In conclusion, cultural differences and diverging development paths within Europe can possibly explain contradictory findings of various preceding studies on religion and female labor market participation. In a broader perspective, our analysis suggests that the impact of religion on women's behavior in markets changes with a country's history and institutions.

References

Adida C. L., D. D. Laitin and M.-A. Valfort (2010), „Identifying barriers to Muslim integration in France“, *Proceedings of the National Academy of Sciences* 197(52): 384-390.

Adida C. L., D. D. Laitin and M.-A. Valfort (2012), “Gender, economic development and Islam: a perspective from France“, IZA Discussion Paper N°6421. This paper is available at the following address: http://ftp.iza.org/dp6421.pdf

Algan, Y. and P. Cahuc (2006), “Job Protection: The Macho Hypothesis”, *Oxford Review of Economic Policy*, 22(3): 390-410.

Ball, J., L. Armistead and B.-J. Austin (2003), “The relationship between religiosity and adjustment among African-American, female, urban adolescents”, *Journal of Adolescence*, 26(4): 431-446.

Bayanpourtehrani, G. and K. Sylwester (2012), “Female Labor Force Participation and Religion: A Cross-Country Analysis”, *Bulletin of Economic Research*, 65(2): 107-133.

Bisin, A. and T. Verdier (2000), “Beyond the Melting Pot: Cultural Transmission, Marriage, and the Evolution of Ethnic and Religious Traits”, *Quarterly Journal of Economics*, 115(3): 955-988.

Chernyak, E. (2016), “What is a Woman Cretated for? The Image of Women in Russia through the lens of the Russian Ortodox Church”, *Feminist theology*, 24(3): 299-313.

Chiswick, B. R. and D. M. Mirtcheva (2013), “Religion and Child Health : Religious Affiliation, Importance, and Attendance and Health Status of among American Youth”, *Journal of Family and Economic Issues*, 34(1): 120-140.

Dilmaghani, M. and J. Dean (2016), “Religiosity and Female Labor Market Attainment in Canada: The Protestant Exception”, *International Journal of Social Economics*, 43(3): 244-262.

Feldmann, H. (2007), “Protestantism, Labor Force Participation, and Employment Across Countries”, *American Journal of Economics and Sociology*, 66(4): 795-816.

Fernandez R. (2013), "Cultural Change as Learning: The Evolution of Female Labor Force Participation over a Century", *American Economic Review*, 103(1), 472–500.

Figlio, D. and J. Ludwig (2012), "Sex, Drugs, and Catholic Schools: Private Schooling and Non-Market Adolescent Behaviors", *German Economic Review*, 13(4): 385-415.

Fischer, J.A.V., & N. Aydıner-Avsar (2016), "Are women in the MENA region really that different from women in Europe? Globalization, conservative values and female labor market participation" in Comparative Political and Economic Perspectives on the MENA Region, M. M. Erdoğdu and B. Christiansen (eds.), Hershey, PA: IGI Global, 75-110.

Gleason, Ph., "American Identity and Americanization," in *Harvard Encyclopedia of American Ethnic Groups,* Thernstrom A. Stephan, Ann Orlov, and Oscar Handlin, eds. (Cambridge, MA: The Belknap Press of Harvard University Press, 1980).

Guiso L., P. Sapienza and L. Zingales, (2003), "People's opium? Religion and economic attitudes", Journal of Monetary Economics, 50(1): 225-282.

Güven, S., Z. Topçu and D. Karasoy (2015), "Views on Social Gender Roles in Turkey", *The International Journal of Interdisciplinary Social and Community Studies*, 10(2): 29-41.

H'madoun, M. (2010), "Religion and labor force participation of women", University of Antwerp, Department of Applied Economics, Research Paper 2010-007.

Hayo, B., & T. Caris (2013), "Female Labour Force Participation in the MENA Region: The Role of Identity", *Review of Middle East Economics and Finance*, 9(3), 271–292.

Heineck, G. (2004), "Does religion influence the labor supply of married women in Germany?", *Journal of Socio-Economics*, 33, 307–328.

Hill, P.C. and K.I. Pargament (2003), "Advances in the conceptualization and measurement of religion and spirituality: Implications for physical and mental health research", *American Psychologist*, 58(1): 64-74.

Hirschman, A. and M. Rothschild,(1973), "The changing tolerance for income inequality in the course of economic development", *Quarterly Journal of*

Economics 87: 544-566.

Inglehart, R. and P. Norris (2003), *Rising Tide*, Cambridge University Press, Cambridge.

Klingorová, K. and T. Havlíček (2015), "Religion and Gender Equality: The Status of Women in the Societies of World Religions", *Moravian Geographical Report*, 23(2): 2-11.

Koenig, H.G. (2004), "Religion, Spirituality, and Medicine: Research Findings and Implications for Clinical Practice", *Southern Medical Journal*, 97(12): 1194-1200.

Lehrer, E. (1995), "The Effects of Religion on the Labor Supply of Married Women", *Social Science Research*, 24, 281–301.

Lehrer, E. (2004), "Religion as a Determinant of Economic and Demographic Behavior in the United States", *Population and Development Review*, 30(4): 707-726.

Morgan, M.Y. (1987), "The Impact of Religion on Gender-Role Attitudes", *Psychology of Women Quarterly*, 11(3): 301-310

Pastore, F., & S. Tenaglia (2013), Ora et non Labora? A Test of the Impact of Religion on Female Labor Supply, IZA DP No. 7356.

Petersen, L.R. and G.V. Donnewerth (1998), "Religion and Declining Support for Traditional Beliefs about Gender Roles and Homosexual Rights", Sociology of Religion, 59(4): 353-371.

Read, J.G. (2003), "The Sources of Gender Role Attitudes among Christian and Muslim Arab-American Women", *Sociology of religion*, 64(2): 207-222.

Röder, A. (2014), "Explaining Religious Differences in Immigrants' Gender Role Attitudes: The Changing Impact of Origin Country and Individual Religiosity", *Ethnic and Racial Studies*, 37(14): 2615-2635.

Grosfeld, I., and C. Senik (2009), "The emerging aversion to inequality - Evidence from long subjective data", PSE Working Papers 2008-19.

Sharabi, H. (1988). *Neopatriarchy: A Theory of Distorted Change in Arab Society*, NewYork: Oxford University Press.

Ugwu, M.U. and D. de Kok (2015), "Socio-cultural Factors, Gender Roles and

Religious Ideologies Contributing to Caesarian-Section Refusal in Nigeria", *Reproductive Health*, 12:70.

World Bank. (2004). *Gender and Development in the Middle East and North Africa*, Washington DC: World Bank.