

For God's sake. The impact of religious proximity on firms' exports*

Alessia Lo Turco,[†] Daniela Maggioni[‡]

Abstract

Using a rich firm level data set for Turkish manufacturing, we test whether the sharing of similar religious beliefs with potential contracting parties drives a firm's first time entry in export markets. We exploit variation in the practice of Islam across Turkish provinces and we find that firms located in provinces characterised by stronger religiousness are more likely to enter export destinations with a higher share of Muslims among their population. This result is robust to the control for trade, cultural and migration ties, reverse causality and to several further sensitivity checks. Religious proximity, in particular, eases export entry for producers of "trust intensive" goods and mitigates the role of export experience in subsequent foreign market entries. All in all, our evidence hints at the important role of religious proximity in reducing export entry sunk costs by fostering higher trust among contracting parties.

JEL: F14, F11, D22, D80, N30

Keywords: Islam, export entry, uncertainty, cultural distance

*The data used in this work are from the Foreign Trade Data, the Annual Business Statistics and the Production Surveys provided by Turkish Statistical Office (Turkstat). All elaborations have been conducted at the Microdata Research Centre of Turkstat under the respect of the law on the statistic secret and the personal data protection. The results and the opinions expressed in this article are exclusive responsibility of the authors and, by no means, represent official statistics. This work has particularly benefited from the comments and suggestions received on a previous version by Keith Head. Finally, we thank Seda Koymen, Silvia Nenci, Alberto Russo, Pasquale Tridico, Luca Salvatici and all participants to the Economics Department Seminars at Roma Tre University.

[†]*Department of Economics and Social Sciences, Università Politecnica delle Marche - Piazzale Martelli 8, 60121 Ancona, Italy. Corresponding Author. Email: a.loturco@univpm.it.*

[‡]*Department of Political Sciences, Università di Catania - Via Vittorio Emanuele 8, 95100 Catania, Italy. Email: d.maggioni@unict.it*

1 Introduction

Trade relationships entail a certain level of uncertainty which prevents their diffusion and shapes their geographical expansion. Although differences in firm level efficiency drive heterogeneous market entry patterns (Melitz, 2003; Bernard et al., 2003), they only partially explain them (Lawless, 2009; Armenter and Koren, 2014) and common culture between trade partners, by reducing contractual uncertainty, is a natural candidate to explain part of the observed "unexplained" firm export dynamics (Rauch, 1999; Rauch and Trindade, 2002). In particular, within the general notion of culture, commonality of religious beliefs can importantly affect trade relationships by favouring reciprocal trust and relaxing informational barriers (Guiso et al., 2003, 2009; Lewer and den Berg, 2007). Investigating whether entrepreneurs' export entry decisions are affected by religion fosters the understanding of countries' aggregate trade pattern, their geographic expansion and, then, the evolution of the world trade network. Despite small initial export shipments, new exporters account for a very large fraction of aggregate exports in the longer run (Eaton et al., 2008a). Furthermore, literature has shown that there exists an important spatial dependence in a firm's subsequent expansion in export markets (Chaney, 2014; Defever et al., 2015; Albornoz et al., 2012; Morales et al., 2014).

In this paper we provide the first piece of firm level evidence on the impact of religious proximity on firms' first time export entry by exploiting within country variation in religious practice. We model religious proximity as fostering bilateral trust and cooperation between home and foreign workers involved in a firm's market penetration function, hence reducing firms' market penetration costs. We then test whether closer religious ties with potential customers abroad ease Turkish manufacturing

firms' first time foreign market access. We, therefore, add to the analysis of the religion-trade nexus by documenting how commonality of religious beliefs affects the extensive margin of trade (Helpman et al., 2008). In doing so, we complement with a micro level perspective extant literature on the importance of religion and culture for aggregate economic outcomes (Barro and McCleary, 2003; Lewer and den Berg, 2007; Guiso et al., 2003, 2006, 2009; Felbermayr and Toubal, 2010; Nunn, 2012). To the best of our knowledge, among existing works exploring export dynamics, evidence on the impact of religious proximity between contracting parties on firms' export activity is missing,¹ so as no previous work on the economic consequences of Islam has focused on the role of Islamic religious proximity on export entry. Here stands our main contribution. By exploiting variation in Islamic active adherents across Turkish province-destination country pairs, we identify the effect of sharing common religious beliefs on Turkish manufacturing firms' first time export entry. In the context of an almost totally Muslim country, we use the number of mosques per inhabitant to measure potentially actively religious Muslims and/or religiously raised people (Guiso et al., 2003) and we document that this indicator represents the best available proxy of people's attachment to religion and of their conservative attitude and distrust towards diverse confessions. Then, by combining this measure with the share of Muslims in the destination market, we uncover the role of religious proximity in fostering a firm's probability to access an export market. Furthermore, in order to dissect the market access from the preference similarity channels we test the impact

¹A conference paper by Milet (2014) on the role of linguistic proximity for French exporters' expansion in further export destinations, as a by-product, finds a positive association between religious proximity and the firm's export probability of entering a new export market. Being the focus linguistic proximity, religion only varies by destination market and is constant across firms in the same country, France where, differently from Turkey where religion importantly shapes society and individual choices, secularism is the most widespread attitude of people with respect to social, economic and political matters.

of religious proximity on first time export entry values. Finally, we explore the effect of religion across products with heterogeneous market access costs and extend our analysis by investigating firms' subsequent entry in further markets and the decay through time of the role of religious proximity.

With our work we further contribute by studying the trade-religion nexus in Turkey. On one hand, since the 1980s the Turkish manufacturing sector has undergone a growing involvement in international production networks with an increasing number of firms engaged in export activities. On the other hand, religion appears to importantly matter in the political, social and economic life of Turkish citizens, especially since 2002 when the Islam-based Justice and Development Party (AKP) rose to power, even if Turkey is a secular State and the success of AKP has been supported by secular voters (Livny, 2014). The country, then, emerges as a context where the trade-religion nexus, which has been neglected so far, can be crucial.

Anticipating our findings, we show that religious proximity significantly fosters firms' first time export entry and this effect is robust to the control for extant trade, migration, cultural, spatial and colonial linkages and for reverse causality issues. Concerning the latter, we adopt an Instrumental Variables (IV) approach where the number of mosques per inhabitant is instrumented by means of historical data on the per capita tax on non Muslims under the Ottoman empire, *Jizya*, in 894 (Barkan, 1964) and of the share of Muslims resident in the province in the 1893 census (Karpat, 1978). The share of Muslims in the foreign market, instead, is instrumented by its distance from Mecca, hinging on the assumption that a higher geographical distance from the Islam holy city is a good predictor of the attachment to Islam.² Also, the export en-

²A full set of county-year fixed effects further accounts for countries' geographical and economic remoteness.

hancing effect of religious proximity seems to work mainly through export sunk costs reduction than through similarity in preferences. In this respect, our work represents a micro-level test of the hypothesis by [Helpman et al. \(2008\)](#) and would corroborate the finding on common religion affecting firms' export probabilities and not export volumes. Also, we show that the reduction in export sunk costs is related to an increase of trust among contracting parties, which can lower market penetration costs incurred by Turkish firms. Indeed, adherence to the same religion affects firms' export entry significantly more for producers of "trust intensive products", that is high advertising intensity and differentiated goods whose intrinsic characteristics are difficult to assess and, as such, entail a higher amount of trust in the trade relation.

With its micro level focus on religion and economic outcomes our work is related to [Gruber \(2005\)](#) who on U.S. data discloses a positive effect of religious market density on individuals' religious participation and on key economic indicators, such as individuals' education and income levels. Also our work is close to recent and burgeoning literature focusing on the impact of Islam on Muslim countries' economic performance ([Kuran, 1995](#); [Pryor, 2007](#); [Campante and Yanagizawa-Drott, 2013](#)). As some of its prescriptions would seem to work against a well functioning market economy, a few studies have explored the consequences of Islam for growth, labour productivity and people's perceptions of their happiness.³ [Guiso et al. \(2003\)](#) find that being raised as a Muslim develops higher intolerance towards diverse cultures, which

³Some literature regards a reduction of religious diversity as the major historical factor hampering innovation, science evolution and technological upgrading within the Muslim world ([Chaney, 2008](#)). In particular, some specific values of Islam would foster a diminished capacity for adaptation and innovation, would penalize an individualist economic morality, would favour an educational system that limits curiosity and innovation and would reduce the role of public discourse, hence, discouraging individuals from questioning ([Kuran, 1997](#)). Some scholars, however, oppose this view ([Ragab, 1980](#)), stressing that Islam promotes rationality, and activism rather than passiveness or fatalism and that the slow development of Islamic economies should be attributed to the lack of institutional development, hampered by the domination under the Ottoman Empire before, and the European colonialism later.

is even higher for people currently and actively religious. Hence, Islam seems to negatively affect its affiliates' perception of the new and of diversity (Chaney, 2008) and this can create a strong cultural barrier to trade. Nonetheless, whereas for Christianity trade does not create any value, Islam considers it as important as production, as it adds value to goods and enhances welfare for both trade parties (Helble, 2007). Islam, then, can importantly and selectively affect trade relationships of its affiliates with foreign customers and its overall impact remains an empirical issue. Finally, our work can be framed within the recent literature on firm export entry dynamics (Albornoz et al., 2012; Defever et al., 2015; Morales et al., 2014), although our focus is on the first time export access rather than on the subsequent export market entries.

The work is organised as follows: the next Section presents the theoretical background describing how religious proximity can favour a firm's export entry, while Section 3 introduces the data, the empirical model, our measure of religious proximity and discusses some estimation issues. Section 4 shows the estimation results, the robustness and the identification exercises, Section 5 investigates the time decay of religious proximity and the role of export experience. Section 6 concludes.

2 Theoretical Underpinnings

Religious proximity favours trust between trade partners and reduces informational barriers (Guiso et al., 2003; Lewer and den Berg, 2007). For these reasons it is sensible to assume that it negatively affects market penetration costs in a new export destination. In the following, we rely on a standard monopolistic competition framework (Dixit and Stiglitz, 1977) and assume that consumers' preferences in destination market c have the following CES utility function representation:

$$U = \left[\int_{\omega \in \Omega_c} q(\omega)^\rho \right]^{\frac{1}{\rho}} \quad 0 < \rho < 1 \quad (1)$$

Here, $\omega \in \Omega_c$ indexes goods available for consumption in destination c , $q(\omega)$ represents consumption.

Maximization of utility under budget constraint yields demand for good ω produced in region r by consumers in destination c :

$$q_{rc}(\omega) = \frac{p_c(\omega)^{-\sigma} M_c}{P_c^{1-\sigma}} \quad (2)$$

where p_c is the price of good ω in destination c , $\sigma = (1 - \rho)^{-1} > 1$ is the elasticity of substitution among any two goods, P_c represents the price index and M_c is country c 's income.

Firms located in source region r produce differentiated goods under monopolistic competition and differ in their efficiency levels (Melitz, 2003). We assume that the marginal cost of producing a variety i for destination c is decreasing in a firm's efficiency, ϕ_i , and increasing in trade costs - $\tau_{rc} \geq 1$, when $r = c$ then $\tau_{rc} = 1$ - a firm has to incur to deliver a product from its location region to the final destination market:

$$MC_{rc}(i) = \frac{w_r \tau_{rc}}{\phi_i} \quad (3)$$

where w_r is region r 's unit price of labour services used to produce final output. As the profit maximizing price is a constant mark up over marginal cost,

$$p_{rc}(i) = \frac{w_r \tau_{rc}}{\rho \phi_i} \quad (4)$$

revenues of firm i in destination c are:

$$R_{rc}(i) = \frac{1}{\tau_{rc}^{\sigma-1}} \left[\frac{w_r}{\rho \phi_i P_c} \right]^{1-\sigma} M_c \quad (5)$$

Now, firm i enters destination market c if expected profits are positive and overcome the market specific entry sunk cost. To model the latter, we assume that the promotion and penetration of a good produced by firm i located in region r in destination market c requires the joint effort of firm i 's workers and of some workers in destination c which help building up the distributional chain for the product (Arkolakis, 2010). Hence, the total market penetration cost to reach a country c from region r is:

$$F_{rc} = \frac{w_r^\gamma w_c^{1-\gamma}}{\psi Trust_{rc}} \quad (6)$$

where ψ is labour productivity of workers employed in the firm's marketing function. Market penetration costs, then, depend on unit labour costs in the source region and in the destination market, w_r and w_c , respectively, and on the extent of reciprocal trust, $Trust_{rc}$ between workers of region r and country c that we assume to depend on their religious proximity, λ_{rc} with $0 < \lambda_{rc}(\omega) \leq 1$, in the following way: $Trust = \lambda_{rc}^\delta$. We assume that $\lambda = 1$ when variety ω is a home variety and $\lambda \rightarrow 0$ when variety ω is supplied by an increasingly religiously dissimilar country. In this setting, $\delta > 0$, thus implying that religious proximity favours market entry by easing contacts and cooperation between home and foreign workers involved in a firm's market penetration function.

Hence, a firm i located in region r will export if

$$\frac{\tilde{R}_{rc}(i)}{\sigma} > \frac{\tilde{F}_{rc}\tau_{rc}^{\sigma-1}}{\lambda_{rc}^\delta} \quad (7)$$

with $\tilde{R}_{rc}(i) = [\frac{w_r}{\rho\phi_i P_c}]^{1-\sigma} M_c$ and $\tilde{F}_{rc} = \frac{w_r^\gamma w_c^{1-\gamma}}{\psi}$.

Implications - Rearranging the terms of equation 7 and taking logs, we can specify the probability of a firm located in region r to serve market c as:

$$Prob(\text{export}_{irc} > 0) = Prob(\ln\tilde{R}_{rc}(i) - \ln\tilde{F}_{rc} - (\sigma - 1)\ln\tau_{rc} + \delta\ln\lambda_{rc}(i) > \epsilon_{irc}) \quad (8)$$

hence, a firm's export propensity positively depends on religious proximity, since it reduces market penetration costs.

Our theoretical model also implies that the probability of firm i located in region r to export to country c positively depends on its own productivity level, and on the destination market size, while it is negatively affected by a firm's region average wage and by bilateral trade costs. We will account for these indications in the empirical model. Although the mechanism just described is source-destination market specific and concerns all first time exporters in market c , regardless of their previous export activity in other markets, the estimation of the empirical model on a sample where established exporters are included could hamper the identification of the effect of religious proximity if export experience is correlated both with religious proximity and export entry in market c . Therefore, in the empirical model below we prefer to stick to the sample of firms entering for the very first time the export market and consider the role of export experience later on as an extension of the baseline model.

3 Empirical Framework

3.1 Firm Level Data Sources

We test the role of religious proximity on the export entry of Turkish firms, by employing data on all manufacturing firms with more than 20 employees observed in the time span 2003 - 2009. This data set originates from the merging of Foreign Trade Statistics (FTS) and Turkish Structural Business Statistics (SBS), all collected by the Turkish Statistical Office (Turkstat). FTS record trade flows by destination partner of goods for all Turkish firms. From SBS, instead, we recover information on manufacturing firms' turnover, input costs, employment, investments and sector of activity over the relevant period. SBS also provide information on firms' location at the detailed NUTS3 region level which for Turkey comprehends 81 different regions.

3.2 Empirical Model

From the above theoretical framework we specify the following linear probability model (LPM) to disclose the role of religious proximity λ_{rc} with potential foreign customers for firms' first time export entry:

$$E_{irct} = \alpha + \beta' X_{it-1} + \gamma dist_{rc} + \delta \ln \lambda_{rc} + \eta_j + \theta_{rt} + \mu_{ct} + \varepsilon_{irct} \quad (9)$$

where E_{irct} is a firm's export entry measured as a dummy taking value 1 if firm i , located in NUTS3 region r , starts exporting to country c in year t and was not exporting in that country in the previous two years. While we directly observe the first time entry in the export market, that is the one values, we attribute the value of zero to

all potential foreign countries where both new exporters and non exporters do not export to.⁴ We, then, exclude firms that are already active in a foreign market other than c and only retain in our sample first time exporters and never exporters over the relevant three year time span on which E_{irct} is defined.

Given the definition of new exporters and non exporters and the data availability, the analysis covers the period from 2005 to 2009. Table 1 shows the probability that a non exporting firm enters a foreign country for the first time when all potential destinations - all the zero values - are included in our sample and reveals that entering the export market is a rare event for new exporters in our sample.

Table 1: First-Time Export Entry Decision among all potential destination markets

	Sample	E_{irct}		
		0	1	%
2005	572,508	571,790	718	0.13
2006	830,588	829,735	853	0.10
2007	1,022,448	1,021,576	872	0.09
2008	1,143,760	1,142,595	1,165	0.10
2009	952,050	951,069	981	0.10
Total	4,521,354	4,516,765	4,589	0.10

Authors' elaborations on FTS and SBS datasets.

Turning to the right hand side variables included in model 9, $X_{i,t-1}$ is a set of firm level variables in the year before export entry, which, following the above theoretical discussion, includes the log of firm's labour productivity, Lp , and average wage, $Wage$. To further model firm heterogeneity, we also add firm size, $Size$, measured by the log of the number of employees, a dummy for the firm's import status, Imp , and a dummy for foreign owned firms, $Foreign$, which have been found to affect firms' exports by previous literature. Descriptive statistics of firms level variables are reported in Table A1 in Appendix.

⁴We consider as potential destinations all those countries which Turkey - at least one Turkish firm - exports to and for which we have time-varying information.

We consider the role of distance between the Turkish region r and the destination country c , $dist_{rc}$, which is meant to capture all unmeasured bilateral trade costs - such as transport costs and tariffs - other than religious distance represented by the term τ_{rc} in the above theoretical section.⁵

Furthermore, we include fixed effects for the firm's primary 2digit NACE sector of activity, η_j , to account for industry level unobserved determinants of firms' export propensity (e.g. comparative advantage). We then include NUTS3 region-year θ_{rt} and country-year μ_{ct} fixed effects. The control for time-varying unobserved country and region heterogeneity accounts for the level and time variation of all remaining barriers that Turkish regions and destination markets face in trading with the rest of the world (Anderson and van Wincoop, 2003), such as the possible adoption of export subsidy in some underdeveloped provinces, trade liberalisation processes and the changing economic size of destination countries. Region-year fixed effects also allow to capture differences in trade propensity across Turkish regions which originate from a heterogeneity in infrastructure, local economic system and cultural heritage. Furthermore, their inclusion controls for the direct effect of the regional share of Muslims on firms' trade, thus accounting for a different propensity to trade induced by religion. In the same way, country-year fixed effects capture the different propensity of destination countries to purchase goods in international markets stemming from the spread of Islam religion across their population.

3.3 Measuring Religious Proximity

Our main variable of interest in the baseline model 9 is religious proximity, $\ln\lambda_{rc}$

⁵Distance is calculated on the basis of countries' geographical coordinates from the CEPII GeoDist database (Mayer and Zignago, 2011) and of Turkish provinces geographical coordinates.

that we measure by means of a proxy similar to the one adopted by [Guiso et al. \(2009\)](#). In order to explore the impact of religious affinity on bilateral trade flows, FDI and financial transactions, they use the product of the fraction of individuals in the population of country i and j that belong to the same religion. Nevertheless, as 99.8% of the Turkish population is recorded as Muslim, we focus on the importance of Islam practice over the Turkish territory and interact the share of Muslims in the population of country c , $Share_c^{Muslims}$, with the log of the number of mosques in each Turkish region normalised by the population, $N_r^{Mosques}$ ([Livny, 2014](#)):⁶

$$\ln \lambda_{rc} = N_r^{Mosques} * Share_c^{Muslims} \quad (10)$$

Relying on the variation in the Muslim potential religious practice and identity intensity across the 81 Turkish NUTS3 regions together with the variation of Muslim affiliates in destination countries, we aim at uncovering the impact of religion on trade exchanges. In order to mitigate endogeneity issues, we take the pre-sample year 2000 value of the regional number of mosques and destination market share of Muslims.⁷

Although we identify the extent of "religiousness" of a firm on the basis of the "religiousness" of its location province, it is worth stressing that the importance of religion is not just related to its current and direct impact on believers' life, decisions

⁶Being Turkey an almost totally Muslim country, we discard the role of other religions which are unlikely to play a role in Turkish firms' export decisions. In the robustness checks we will however test the existence of some heterogeneity driven by the spread of different religious groups in the potential destination country. Furthermore, within Islam there is an important divide that separates Sunni and Shiite adherents and this could weaken a correct identification of religious ties measured by means of our proxy. Nonetheless, while Turkey is an almost totally Sunni country, Shiite Muslims are concentrated in a few among its export destinations that we will exclude in one of the robustness checks.

⁷Both variables are not available for all of the years included in our analysis, but we expect that their changes over the investigated period are negligible.

and preferences, but also on its indirect effect on the system of values ruling the context where people - regardless of their religious faith and practice - operate. In other words, non religious entrepreneurs located in “highly religious” provinces are likely to have been raised religiously, therefore, despite their current lack of faith and of religious practice, their behaviour could still reflect beliefs and preferences sprung from Islam (Guiso et al., 2003). The validity of our indicator of religiousness across Turkish NUTS3 regions is supported by its positive correlation with other potential regional proxies of religiousness. In Table 2 we show that it is highly correlated with the NUTS3 level number of per capita Imam Hatip schools available from the National Education Statistics collected by Turkstat. The latter are educational institutions originally established in order to train Imams and preachers and currently devoted to the education of Turkish youths in a religious environment and according to the religious tradition. Our proxy also significantly correlates with the share of voters for the Islamic-rooted National Salvation Party (Milli Selamet Partisi, MSP) in 1973 elections (available from Guner and Uysal, 2014) and with the number of religious association per inhabitant recorded in 2005 available from the Department of Association of the Turkish Ministry of Interior.⁸ Nonetheless, the Table also reveals that among all of these indicators our preferred proxy shows the highest correlation (0.75) with the share of individuals that declare that religion is very important in their lives, $Share_r^{Religion\ Important}$, available from the European Value Survey 1999 (EVS99)

⁸The National Salvation Party was an Islamic party which was founded in the early 70s with the aim of restoring the country’s moral and spiritual reconstruction against the spreading of secularization and westernization. Religious associations are aimed at the construction of mosques, contributing to Quran Courses and sustaining Imam Hatip Schools and with the share of participants to Quran courses. Our proxy is also significantly correlated with the share of deputies obtained by the AKP party in the 2002 (0.36), 2007 (0.39), 2011 (0.30) and 2015 (0.26) national elections. It is worth stressing, though, that secular people increasingly more sustain AKP, hence AKP share of voters is reflecting something more than simply Islamic identity.

for Turkey.⁹ This evidence corroborates the use of the number of mosques over population as a proxy of religiousness across Turkish regions. According to the above theoretical sketch, religious proximity entails higher trust between trading partners and, through this, lowers market entry barriers. In order to test to what extent our religiousness proxy actually reflects the people's general feeling of trust and their specific trust in adherents to different religions we exploit further indicators from the EVS99. In Table 3 we show OLS descriptive evidence on our favourite religiousness indicator being significantly related to the variable $Share_r^{Religion\ Important}$ and to other relevant aspects of religiosity in the region, such as the share of people attending religious offices, $Share^{No\ Religious\ Attendance}$, and the share of people who do not like Christians as neighbours, $Share^{Dislike\ Neighbours}$. The first variable, though, captures the significance of the remaining two, especially the aversion to different religious communities as neighbours. This points at our favourite indicator being a proxy of distrust in people of different religions. Therefore, from the 5th wave of the World Value Survey (WVS5) - the only WVS wave including the region information for Turkey - we gather a similar indicator of religious importance for NUTS1 Turkish regions, though inversely scaled, and the right hand side of the Table further confirms the above findings.¹⁰ Despite the higher regional aggregation of the EVS99 and WVS5 and the narrower cross-section width of the former, this evidence supports the view that the number of mosques over population is a reliable proxy of the extent of religiousness in the province which significantly reflects the extent of Turkish people's trust in individuals of the same religion and the distrust in people of different

⁹The latter indicator is only available for 13 out of the 26 NUTS2 Turkish regions, then it would deliver a partial analysis of Turkish manufacturing firms' export entry due to its narrower cross sectional range and higher aggregation. Nonetheless, we will use this measure when assessing the identification of our effect.

¹⁰Information on trust in people of different religion is not available in the EVS99.

religions.

Table 2: Correlation of $N_r^{Mosques}$ with other relevant religiousness indicators

	$N_r^{Mosques}$	$N_r^{ImamSchools}$	$Share_r^{MSP}$ in 1973	$N_r^{Rel Ass '05}$	$N_r^{Quran Schools Part}$
$N_r^{Mosques}$	1				
$N_r^{ImamSchools}$	0.635	1			
$Share_r^{MSP}$ in 1973	0.232	<i>0.157</i>	1		
$N_r^{Rel Ass '05}$	0.326	0.485	<i>0.098</i>	1	
$N_r^{Quran Schools Part}$	0.469	0.593	0.469	0.637	1
$Share_r^{Religion Important}$	0.748	0.448	0.298	<i>0.110</i>	0.289

All correlations are significant with the exceptions of those reported in italic.

Table 3: $N_r^{Mosques}$

	$N_r^{Mosques}$ Religiousness and Trust										
	European Value Survey 1999					World Value Survey - 5th Wave					
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
$Share^{Religion Important}$	9.580*** [0.971]				7.891*** [2.564]						
$Share^{No Religious Attendance}$		-0.573*** [0.106]		-0.518*** [0.096]	-0.248* [0.126]						
$Share^{Dislike Neighbours}$			1.422* [0.716]	0.879* [0.512]	-0.31 [0.628]						
$Share^{Religion Not Important}$						-0.389** [0.170]		-0.065 [0.196]			-0.057 [0.195]
$Share^{Trust Different Religions}$							-1.440*** [0.508]	-1.356** [0.607]		-1.342** [0.528]	-1.274** [0.621]
$Trust$									-3.676* [2.195]	-0.934 [2.342]	-0.886 [2.346]
Observations	36	36	36	36	36	81	81	81	81	81	81
R2	0.56	0.457	0.167	0.517	0.623	0.105	0.041	0.106	0.035	0.107	0.108

Source: EVS99 and WVS5. Own Calculations.

Estimates in Columns 1-5 focus on the Turkish NUTS3 regions for which the corresponding NUTS2 region's data from EVS99 are available.

To calculate our religious proximity indicator, we gather data on the local number of mosques for the year 2000 from the Diyanet İşleri Başkanlığı and the figures on the regional population are from Turkstat. Figure A1 in the Appendix presents the variation of the number of mosques normalised by population, $N_r^{Mosques}$, across Turkish NUTS 3 regions. The province with the lowest density of mosques is Istanbul, with 0.27 mosques per 1,000 inhabitants, followed by Izmir and Ankara, 0.49 and 0.63, respectively. Kastamonu, Sinop and Bolu, instead, record the highest densities of mosques with 6.23, 4.42 and 4.13 mosques per 1,000 inhabitants, respectively. This evidence stresses a great heterogeneity across Turkish space in Islamic identity and discloses an interesting fact which further helps identifying the effect of religion on trade: the spread of Islamic identity across regions is not univocally related to their level of development. Some developed regions are, indeed, characterised by a low

religious attachment, as revealed by a lower value of the indicator in Istanbul; while other rich regions, such as Bolu, present strong religious background.

Finally, from [Kettani \(2010\)](#) we retrieve information on the share of population which declares to be Muslim in 2000 in each of the 174 potential destination countries for Turkish exporters. Mauritania, Somalia, Yemen, Libya, Iran are the countries with the highest share of Muslims, between 99.9% and 100%. On the contrary, Mexico, Poland, Costa Rica, Bolivia and Peru are among the countries recording the lowest share (0.01%) of Muslims. It is worth mentioning that, across Turkish regions, there is a positive correlation (0.23) between the number of mosques per 1000 inhabitants and the average share of Muslim in the top 3 destinations of Turkish new exporters.¹¹

3.4 Estimation Issues

Some estimation issues arise in our empirical setting. Entering a specific foreign market is a rare event for established exporters ([Defever et al., 2015](#)), and we have shown in Section 3.2 that it is even rarer for new exporters in our data. A rare event logistic regression would, then, be the most natural estimation choice ([King and Zeng, 2001](#)). Nonetheless, we choose to model export entry by means of a linear probability model (LPM).¹² Despite its pitfalls, the latter does not need any distributional assumption to model unobserved heterogeneity - in particular region and country time-variant and invariant characteristics that may drive a firm's export choice - and in general delivers good estimates of the partial effects on the response probability

¹¹Furthermore, countries with a very high share of Muslims often appear among the top 3 destinations of new exporters in our sample period, despite the fact that religion is only one among the numerous potential factors explaining trade flows. This evidence is not shown for brevity but it is available upon request.

¹²This model has been employed in similar frameworks ([Defever et al., 2015](#)).

near the center of the distribution of the regressor (Wooldridge, 2002).¹³ Furthermore, as the LPM is affected by heteroskedasticity, our standard errors are robust and clustered at country level and our predicted probabilities always lie between zero and one. Finally, due to the inclusion of all potential export destinations, as described in section 3.2, the number of zero observations becomes extremely high and makes the LPM estimation computationally unfeasible. For our estimation purposes, we, then, randomly select 20% of all zero observations.

4 Results

4.1 Baseline

Baseline results from the estimation of model 9 are shown in Table 4. The Table explores the effect associated to our proxy of religious commonality when including region, country and sector fixed effects in column 1, the number¹⁴ of exporters from NUTS3 region r to country c , $N_{rc\ t-1}$, in column 2, and the number of firms in sector j exporting from NUTS3 region r to country c , $N_{jrc\ t-1}$, in column 3.¹⁵ The inclusion of the latter two controls aims at better accounting for learning effects from neighbouring firms that could affect a firm's prior about foreign markets (Koenig et al., 2010; Fernandes and Tang, 2014). Our preferred specification is in column 4, where country-year and region-year fixed effects complement the specification of column 3 in place of time invariant region and country fixed effects.¹⁶

Our variable of interest is always strongly significant and predicts a higher export

¹³Although not accounting for any time-varying source region or destination market fixed effects, estimates by means of rare event logit, logit and probit models confirm the baseline LPM findings shown below. Results are not shown for the sake of brevity and are available from the authors upon request.

¹⁴When we take the logarithm of this number of exporters we add the constant 1.

¹⁵These variables are built on the basis of the merge between FTS and SBS data.

¹⁶As an alternative approach, we have estimated a poisson model for the number of firms in region r entering export market c for the first time where we further account for country-year and region-year fixed effects. Results corroborate our baseline evidence and are available upon request.

entry propensity, the higher is the religious proximity of the region where the firm is located to the destination country. It is worth noting that controlling for export spillovers by neighbouring firms delivers a larger coefficient in columns [2]-[4] than in the first one, hence disclosing a downward bias in the estimate of column 1. This suggests that increasing trade exposure of the firm's location region can lower the importance of religious proximity by favouring local people's contacts with new contexts and realities, thereby reducing their conservative attitudes.

To grasp the economic magnitude of the effect estimated in our baseline specification of column [4], we run a sort of *spatial* difference in differences exercise. For the typical firm located in the Turkish Province at the 75th percentile of the distribution of the number of mosques per 1000 inhabitants (high religious diffusion) - Kirsehir - we calculate the differential in its export entry probability, so as predicted by religious proximity, when it targets a country with a high presence of Muslims (at the 75th percentile in the distribution of $Share^{Muslims}$) - e.g. Eritrea - with respect to a country with a low presence of Muslims (at the 25th percentile in the distribution of $Share^{Muslims}$) - Portugal. Then, to identify the impact of religious proximity, we compare this effect with the one observed for the typical firm located in the Province at the 25th percentile of the distribution of the number of mosques per 1000 inhabitants (low religious diffusion), e.g. Osmaniye. We then predict that a firm in Kirsehir would have a higher probability of 0.07 percentage points, than a firm located in Osmaniye, of exporting to Eritrea as compared to Portugal. This differential probability should be contrasted with the export probability in our selected sample, that is 0.51%, so that the effect we find is not only statistically, but also economically significant.

Table 4: Export Entry

	Alternative S.E. Clustering of TurkishNUTS3 Regions									
	Baseline					Alternative Religiousness Indicators of TurkishNUTS3 Regions				
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
	$N^{Mosques}$	$N^{Imam.Schools}$	$N^{Mosques\ over\ Density}$	$Share^{Msp\ in\ 1973}$						
$ln(\lambda_{rc})$	0.0016*** [0.0006]	0.0029*** [0.0008]	0.0030*** [0.0008]	0.0030*** [0.0008]	0.0030*** [0.0003]	0.0030*** [0.0006]	0.0033*** [0.0009]	0.0029*** [0.0008]	0.0021*** [0.0006]	0.0202*** [0.0087]
Lpt_{t-1}	-0.0001 [0.0001]	-0.0001 [0.0001]	-0.0001 [0.0001]	-0.0001 [0.0001]	-0.0001 [0.0002]	-0.0001 [0.0001]	-0.0001 [0.0001]	-0.0001 [0.0001]	-0.0001 [0.0001]	-0.0001 [0.0001]
$Size_{t-1}$	0.0017*** [0.0003]	0.0017*** [0.0003]	0.0017*** [0.0003]	0.0017*** [0.0003]	0.0017*** [0.0003]	0.0017*** [0.0003]	0.0017*** [0.0003]	0.0017*** [0.0003]	0.0017*** [0.0003]	0.0017*** [0.0003]
$Wage_{t-1}$	0.0003 [0.0003]	0.0002 [0.0003]	0.0002 [0.0003]	0.0002 [0.0003]	0.0002 [0.0004]	0.0002 [0.0003]	0.0002 [0.0003]	0.0002 [0.0003]	0.0002 [0.0003]	0.0002 [0.0003]
Imp_{t-1}	0.0066*** [0.0013]	0.0066*** [0.0013]	0.0065*** [0.0013]	0.0065*** [0.0013]	0.0065*** [0.0004]	0.0065*** [0.0005]	0.0065*** [0.0013]	0.0065*** [0.0013]	0.0065*** [0.0013]	0.0065*** [0.0013]
$Foreign_{t-1}$	-0.0013 [0.0010]	-0.0013 [0.0010]	-0.0015 [0.0010]	-0.0014 [0.0010]	-0.0014 [0.0012]	-0.0014 [0.0018]	-0.0014 [0.0010]	-0.0011 [0.0010]	-0.0012 [0.0010]	-0.0013 [0.0010]
GDP_{ct-1}	0.0115*** [0.0034]	0.0101*** [0.0032]	0.0092*** [0.0031]	0.0092*** [0.0031]	-0.0140*** [0.0014]	-0.0140*** [0.0020]	-0.0140*** [0.0053]	-0.0146*** [0.0054]	-0.0139*** [0.0053]	-0.0154*** [0.0053]
$dist_{cr}$	-0.0199*** [0.0051]	-0.0172*** [0.0052]	-0.0141*** [0.0053]	-0.0140*** [0.0052]						
$N_{rc\ t-1}$		0.0023*** [0.0004]								
$N_{jrc\ t-1}$			0.0046*** [0.0007]	0.0046*** [0.0007]	0.0046*** [0.0003]	0.0046*** [0.0002]	0.0046*** [0.0007]	0.0046*** [0.0007]	0.0046*** [0.0007]	0.0046*** [0.0007]
FE:										
Country	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2 digit NACE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country*Year										
Province*Year										
Observations	938887	938887	938887	938887	938887	938887	939286	938547	939529	939395
R-squared	0.0315	0.032	0.0339	0.0358	0.0358	0.0358	0.0358	0.0354	0.0358	0.0358

* Significant at 10% level; ** significant at 5% level; *** significant at 1% level. Robust standard errors clustered by destination country are in brackets.

In columns [5]-[6] we show that standard error clustering at firm and province level does not affect the significance of our baseline finding. Also, the increasing size of standard errors from the firm, to the province and ultimately country level confirms that our choice of the latter as the baseline clustering strategy is the most conservative one. To attenuate endogeneity issues, in column [7] we substitute the number of mosques in 1986 for the number of mosques in 2000 and we find a pretty similar result. The coefficient is highly significant and slightly higher than the baseline one in column 4. Also, in column [8] we substitute our favourite region level indicator with the number of Imam Hatip Schools in the province normalised by population. The main insights are unaffected. Finally, in order to exclude any spurious result led by geography effects, in columns [9] and [10] we respectively normalise the number of mosques by provincial population density and substitute the share of voters for MSP in 1973 elections for the number of mosques in 2000. The significance of our effect is unaffected.

4.1.1 Is it really religion?

To further ascertain that our baseline result is capturing the effect of religion on Turkish firms' export entry, from EVS99 we exploit the indicator mentioned above in section 3.3 on the share of people who think religion is very important in their lives. Then, we interact the latter measure by the share of Muslims in the foreign country and, in column [1] of Table 5, we find a positive and significant coefficient on the interaction, thus confirming that we are actually capturing the impact of religious proximity on export entry. However, as the indicator is only available for 13 out of the 26 NUTS2 Turkish regions, the analysis is run on the subset of firms located in these regions. In column [2] we further show that export entry is favoured even by

a more widespread presence of individuals who claim not to like people belonging to other religious confessions. In particular, $Share^{Dislike\ Neighbours}$ measures - for each Turkish NUTS2 region - the share of individuals who in the EVS99 respond not to like Christians as neighbours. Although the question refers to Christians, it is sensible to assume that it could concern any other different religious confession. Therefore, in column [3] we dig further and test the impact of the existence and importance of other religious communities in the destination markets. From [Alesina et al. \(2003\)](#) we retrieve information on the share of Muslims, Jews, Christians and other religious and non religious groups in a country's population by country and interact them by the number of Mosques per thousands of inhabitants in the Turkish NUTS3 regions. Being the reference group made up of individuals belonging to other religious communities and non religious people, column 3 reveals that a higher share of Muslims in the destination market increases a firm's probability to export to that market compared to all remaining religious groups, as shown from the test of the significance of the difference in the coefficients reported at the bottom of the Table. A higher presence of Jews, instead, reduces the export entry compared to all groups. The coefficient on the share of Christian is negative although non significant. Nonetheless, statistical tests of the difference between religious groups in the lower part of the [Table 5](#) reveal that the coefficient on the $N_r^{Mosques} * Share_c^{Christians}$ is definitely lower than the one associated to $\ln(\lambda_{rc})$ and higher than the one on $N_r^{Mosques} * Share_c^{Jews}$.

In general, then, the overall set of results in [Table 5](#) suggests that our results are driven by the trust level among the potential contracting parties which could be especially low between Jews and Muslims. Hence, religious proximity significantly fosters trade by reducing access costs and favouring the expansion of the extensive mar-

gin of trade due to higher trust and tolerance among people belonging to the same religion.

Table 5: Is it really religion?

	Importance of Religion	Dislike of Christians as Neighbours	Presence of Other Religious Communities
	[1]	[2]	[3]
$Share_r^{Religion\ Important} * Share_c^{Muslims}$	0.0320*** [0.0090]		
$Share_r^{Dislike\ Neighbours} * Share_c^{Muslims}$		0.0136*** [0.0039]	
$ln(\lambda_{rc})$			0.0028*** [0.0009]
$N_r^{Mosques} * Share_c^{Jews}$			-0.0066*** [0.0016]
$N_r^{Mosques} * Share_c^{Christians}$			-0.0002 [0.0010]
Test			
Muslims-Christians			0.003*** [0.001]
Muslims-Jews			0.009*** [0.002]
Christians-Jews			0.006*** [0.002]
Observations	754337	754337	950810
R-squared	0.0371	0.0371	0.0357

* Significant at 10% level; ** significant at 5% level; *** significant at 1% level. Robust standard errors clustered by destination country are in brackets.

Country-Year, NUTS 3 Region-Year and firm's primary 2digit NACE sector fixed effects are included in each specification. Each specification includes all the controls present in the baseline specification of column 4 of Table 4: firm log-labour productivity, Lp_{t-1} , log-employment level $Size_{t-1}$, log-wage, $Wage_{t-1}$, import status, Imp_{t-1} , foreign ownership status, $Foreign_{t-1}$, distance between the firm's location NUTS 3 region and the destination market, $dist_{cr}$, and the log-number of firms in NACE two digit sector j exporting from NUTS3 region r to country c , $N_{jrc\ t-1}$. Complete results are not shown for brevity, but they are available upon request.

4.1.2 Omitted Variables

We deal with the potential omitted variable bias in Table 6. First of all, we account for firm level unobservables possibly driving or affecting our main finding. Therefore, in column [1] we control for firm fixed effects and in column [2] we control for firm-year fixed effects. Being our sample is mostly made up of repeated cross-sections, our main result is substantially unaffected both in its size and significance. As firms are more likely to serve geographically closer markets (Defever et al., 2015), there could exist a non linear effect related to geographical contiguity which is not

captured by geographical distance in our baseline specification. Sharing of common borders can also reflect similarity in cultural values, other than religion. Geographical contiguity can both promote trade and foster the spread of religion, then it is fundamental to control for this in order to isolate the trade effect of religion. Hence, in column [3] we add a dummy measuring contiguity between region r and country c , $Contiguity_{rc}$. We find a positive and highly significant coefficient associated to the sharing of a common border, which however does not affect the role of religious proximity. Our result also survives to the inclusion of income level differences between the destination country and the firm's province of location in column [4] to account for the overlapping demand structures under the Linder hypothesis. This control suggests that our finding on religious proximity does not reflect any effect related to the impact of demand similarity on firms' export entry. Therefore, we do not find any support for the possibility that religious proximity favours export entry through a demand channel, nonetheless below we will further address this issue by testing the impact of religion on firms' export entry values.

In column [5] we investigate whether our baseline finding is driven by the omission of an existing trade heritage between the country and the Turkish province. Besides the number of local exporters to country c , we then add the total existing manufacturing export value of region r to country c at time $t - 1$, $Exp_{cr,t-1}$. The inclusion of this variable accounts for the existence of established trade links between the region where a firm operates and its potential trade partner. Also, this control allows to account for a potential influence of trade in spurring religious beliefs ([Michalopoulos et al., 2012](#)). We find that pre-existing bilateral trade flows increase the likelihood of creation of new trade linkages between new exporters in the Turkish region r and

the destination country c , but they do not affect the impact of religious proximity. In column [6], we test whether our main finding is capturing the extent of cultural proximity between trading parties. To this purpose we build a measure of cultural distance between Turkish regions and their trading partners. We follow existing literature (Tabellini, 2010; Guiso et al., 2009) and from the WVS we retrieve information on a number of indicators reflecting the values and cultural traits of people in all the 12 NUTS1 Turkish regions and the potential destination countries in our sample for which data are available. While data for Turkish NUTS1 regions are from WVS5, for each potential destination we consider the most recent wave for which the information is available. The selected variables reflect the important qualities that people think that should be transmitted to children together with the importance of work, family, friendship, leisure time and politics in people's lives.¹⁷ We then take the average value of all these variables for each Turkish NUTS1 region and country and for each pair we compute a bilateral cultural distance indicator as Euclidian Distance among these averaged indicators. Results in column 11 show that the significance of our religious proximity indicator is not affected by the inclusion of the cultural distance measure which is negative, although not significant. It is worth mentioning though that the cultural distance variable has a low variation due to the NUTS1 aggregation of regional data and, especially, to the few partner countries for which the relevant indicators could be retrieved from the WVS. Hence, this evidence should be read with caution. In order to further isolate the role of religion from any other source of linkages between Turkey and the potential destination we control for the role of

¹⁷The important qualities that people think that should be transmitted to children that are mentioned in the WVS and we consider in our proxy calculation are obedience, unselfishness, determination/perseverance, thrift, tolerance/respect, imagination, feeling of responsibility, hard work, independence.

migration. We include a proxy of bilateral migration in column [7] and of the Turkish diaspora in column [8]. As data on immigrants into Turkish provinces by nationality are not available we multiply the log of the total number of immigrants in the Turkish province by the log of Turkish migrants in the destination country (Artuc et al., 2015). Then, in column [8] we multiply the latter variable by the log of the number of Turkish workers in each Turkish province sent abroad by the Turkish Labour Office (IIBK) from 1978 until 2000 in order to obtain a proxy of the importance of the Turkish diaspora. Our results are unaffected in both cases, while we find a positive, although not significant, role of migration flows on firms' export entry. To further test the Turkish diaspora effect, in column 5 we exclude from the sample those countries hosting at least 10,000 Turkish citizen¹⁸ and in order to ascertain that our main finding is not driven by the importance of past colonial ties¹⁹ we exclude export destinations that in past centuries were part of the Ottoman empire.²⁰ Finally, we exclude countries with at least 10% of Shiite Muslims in the total Muslim population (Alesina et al., 2003).²¹ In all cases our findings are corroborated.

We have run further robustness checks which are not presented for the sake of brevity but are available upon request. In particular, we have modified the estimation sample composition by: i) adopting a stricter definition of export starters as those firms entering an export market which were not exporting in the previous three years; ii) excluding foreign firms in order to ascertain that our main result is not driven by any

¹⁸Sources Artuc et al. (2015). We also test the robustness of results by employing different threshold numbers.

¹⁹The impact of religious commonality could be upward biased if past colonial ties positively affect trade between the colonizer and its past colonies. Nonetheless, Head et al. (2010) show that, vis-à-vis third countries, the colonizer loses importance in colonies' trade relationships after independence.

²⁰These countries are Albania, Bulgaria, Bosnia and Herzegovina, Armenia, South Cyprus, Egypt, Greece, Iraq, Libya, Macedonia, Palestine, Syria, Tunisia, Yemen, Kosovo, Montenegro and Serbia.

²¹We confirm our results even when we, alternatively, exclude countries with at least 30% of Shiite Muslims in the total Muslim population

of the activities of foreign firms with their home country; iii) randomly selecting 20% of both one and zero values, thus retaining a sample reflecting the same export entry share as the original data set; iv) restricting the number of zeros in our export entry measure by randomly selecting 10% - rather than 20% - of all zero observations. To further ascertain the goodness of our random zero selection, we have also run 250 repetitions of the baseline model estimate by randomly selecting 20% of zero export entry observations and results are confirmed.²² Finally, we have estimated our empirical model by year where we include all of the available firm-destination combinations and, hence, all the zero observations. These estimations then represent a test for the sample selection and show that the latter is altering neither the insights of our analysis nor the magnitude of the estimated effect of religious proximity on export entry. As a matter of fact, a unit change of our proxy for religious proximity increases the probability to enter the foreign market by about 58% in both cases.

4.1.3 An IV Approach

In the baseline estimation, in order to mitigate any potential endogeneity, we have tested for the 2000 pre-sample value of the variable reflecting the religious commonality. Also, we have checked the robustness of our finding by using historical values of our proxy and of similar measures as reported in Table 4. Nevertheless, [Maystre et al. \(2014\)](#) show that trade can favour cultural convergence. This implies that trade could have the potential to engender religious convergence, too. If this is the case, an upward bias should be present in our estimation. Nonetheless, religion represents that particular aspect of culture which is strongly rooted in people's

²² The average coefficient associated to religious proximity is 0.0031 - minimum 0.0029 and maximum 0.0032 - and is always significant and almost unchanged across all the repetitions.

Table 6: Robustness - Omitted Variables

	Firm Controls		Contiguity	Income Level Differences	Bilateral Export Value	Cultural Distance	Migration		Exclusion of		
	Firm FEs	Firm-Year FEs					Bilateral	Turkish Diaspora	Diaspora Countries	Ottoman Colonies	Shiite Countries
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
$\ln(\lambda_{rc})$	0.0029*** [0.0008]	0.0028*** [0.0008]	0.0030*** [0.0008]	0.0026*** [0.0007]	0.0030*** [0.0008]	0.0049*** [0.0014]	0.0029*** [0.0008]	0.0029*** [0.0008]	0.0010** [0.0005]	0.0018*** [0.0006]	0.0024*** [0.0008]
$Contiguity_{cr}$			0.0158* [0.0091]								
$\frac{GDP^{per\ capita}}{GVA^{per\ capita}}$				-0.0004 [0.0003]							
$Ve_{exp\ cr\ t-1}$					0.0002*** [0.0001]						
$Cultural\ Distance$						-0.0044 [0.0033]					
$Foreigners_r * Turkish_c$							0.0001 [0.0001]				
$Emigrants_r * Turkish_c$								0.0001 [0.0001]			
Observations	938887	938887	938887	740570	938887	427119	927856	927856	808738	848474	878395
R-squared	0.0903	0.1246	0.0358	0.0354	0.0358	0.0404	0.0358	0.036	0.0182	0.0219	0.0376

* Significant at 10% level; ** significant at 5% level; *** significant at 1% level. Robust standard errors clustered by destination country are in brackets. Country-Year, NUTS 3 Region-year and firm's primary 2digit NACE sector fixed effects are included in each specification, with the exclusion of column [1] (and [2]) where firm (firm-year) substitute for NUTS 3 Region-year fixed effects. Each specification includes all the controls in the baseline specification of column 4 of Table 4: firm log-labour productivity, Lpt_{t-1} , log-employment level $Size_{t-1}$, log-wage, $Wage_{t-1}$, import status, Imp_{t-1} , foreign ownership status, $Foreign_{t-1}$, distance between the firm's location NUTS 3 region and the destination market, $dist_{cr}$, and the log-number of firms in NACE two digit sector j exporting from NUTS3 region r to country c , $N_{jrc\ t-1}$. Complete results are not shown for brevity and are available upon request.

belief and is intimately related to their conscience and spiritual life. Therefore, it is sensible to expect that religion is hardly affected by external pressures. Although through trade different cultures can become more similar in their preferences and consumption habits, it is difficult to imagine that trade can make them equal in their religious beliefs. Furthermore, as trade allows for contacts among different and diverse individuals it has a great potential to transmit and help developing tolerance and to reduce conservative attitudes. This would imply that, as far as groups of people enter in touch with different contexts through trade, their religious beliefs matter less in their economic decisions since they become less conservative. If this is the case, our estimated coefficient could be affected by a downward bias. This interpretation seems to be corroborated by the increase of the coefficient associated to $\ln\lambda$ in Table 4 following the inclusion of the number of exporters in the region-destination pair and of the historical value of the number of mosques normalized by population. In order to rule out any concern about reverse causality we implement an instrumental variable strategy by instrumenting both the number of mosques in the Turkish provinces and the destinations' share of Muslims. We the latter with a country's distance from Mecca hinging on the assumption that a higher geographical distance from the Islam holy city is a good predictor of the attachment to Islam. It is worth mentioning that, across Turkish export destinations, there is a negative and non - negligible correlation (-0.54) between a country's log distance from Mecca and its share of Muslims in the population. A possible shortcoming of this instrument is that the distance from Mecca could just represent a transformation of a generic measure of a country's remoteness in terms of distance from a big economic center like Brussels. Nonetheless, the inclusion of country level fixed effects accounts for

this.

The regional level of number of mosques over population is instrumented by means of two instruments. First, we use historical data about the regional variation in the average value of the per capita tax on non Muslims under the Ottoman empire, *Jizya*, in 894, as reported in Barkan (1964). The discriminatory nature of this tax is controversial among scholars. However, it is likely that a higher value of this tax is associated with a higher level of religious conservatism and intolerance towards non Muslims, which can indicate a stronger Islamic identity as reflected by a higher number of mosques. It is, instead, unlikely that this variable could affect the export entry of firms in our sample through a channel different than the Islamic identity. The second variable we use as instrument is represented by the share of Muslims resident in the province in the 1893 census as from Karpas (1978).²³ The two measures show a positive and significant correlation of 0.20 and 0.42, respectively, with the number of mosques per population. We, then, interact both measures with trading partner countries' distance from Mecca and use these two interactions as our instruments. Because of the lack of information of *Jizya* for some provinces, the number of observations is lower with respect to the baseline estimation. Also, we control for country, province and year FEs, since the inclusion of country-year FE and province-year FE is computationally unfeasible in our IV regression, due to technical problems. However, we believe that this forced choice will not sensitively affect our results as it can be inferred from the comparison of columns [3] and [4] of Table 4. For these reasons, we prefer to stick to IV estimates as a final robustness and identification check rather than applying IV as our main estimation method.

²³Due to the different geographical partition in provinces of the Turkish territories under the Ottoman Empire, we use the share of Muslims in the main district for each province.

Table 7 reports the results we get from the IV strategy. We alternatively used the instrument based on Jizya alone, and together with the one based on the 1893 share of Muslims in Turkish provinces. For comparison, we report the OLS estimation referred to the same sample where we include the same set of fixed effects in column [5]. First-Stage estimations show that the interaction between country c 's log distance from Mecca and province r 's log level of *Jizya* and the share of Muslims in 1893 are negatively correlated with our measure of religious commonality between country c and province r . Indeed, the commonality of Islamic beliefs between country c and province r is higher when the lower is the distance from Mecca, the higher are the level of *Jizya* and the presence of Muslims in 1893 in the province. First stage F-test proves the relevance of our instruments in both sets of estimates. In terms of magnitude of the effect, we find that, if anything, our baseline estimate was affected by a slight downward bias. We then conclude that the estimated coefficient of the baseline model can be considered a lower bound estimate of the real effect of religious proximity on firm level first time export entry, thus revealing that trade flows can indeed help in reducing the religion-induced conservative attitudes of individuals.

4.2 Dissecting the Channels of the Religion-Trade nexus

4.2.1 Market Access or Preference Similarity? The Analysis of the Entry Export Value

In the above theoretical underpinnings we have hypothesised that religious proximity favours export entry by easing export market penetration costs. Nonetheless, commonality of religious beliefs could ease a firm's export activity via similarity in preferences (Felbermayr and Toubal, 2010). In this respect, foreign customers could

Table 7: Instrumental Variables Estimates

	IV				OLS
	Second Stage	First Stage	Second Stage	First Stage	E_{irct}
	E_{irct}	$\ln\lambda_{rc}$	E_{irct}	$\ln\lambda_{rc}$	E_{irct}
	[1]	[2]	[3]	[4]	[5]
$\ln\lambda_{rc}$	0.009* [0.005]		0.010*** [0.003]		0.007*** [0.002]
$\ln Jizya_r * \text{Indistance}_{c\ Mecca}$		-0.799*** [0.081]		-0.456*** [0.048]	
$\text{Share}_r^{\text{Muslims } 1893} * \text{Indistance}_{c\ Mecca}$				-0.958*** [0.094]	
Observations	266016	266016	266016	266016	266016
R-squared					0.072
F-Test		97.21		51.92	
Hansen P-Value			0.85		

* Significant at 10% level; ** significant at 5% level; *** significant at 1% level. Robust standard errors clustered by destination country are in brackets.

Country, NUTS 3 Region and firm's primary 2digit NACE sector fixed effects are included in each specification. Each specification includes all the controls present in the baseline specification of column 4 of Table 4: firm log-labour productivity, Lp_{t-1} , log-employment level $Size_{t-1}$, log-wage, $Wage_{t-1}$, import status, Imp_{t-1} , foreign ownership status, $Foreign_{t-1}$, distance between the firm's location NUTS 3 region and the destination market, $dist_{cr}$, and the log-number of firms in NACE two digit sector j exporting from NUTS3 region r to country c , $N_{jrc\ t-1}$. Complete results are not shown for brevity and are available upon request.

be more keen on buying a firm's good if they perceive it as more culturally close. If this is the case, religious proximity not only allows for reduced sunk entry costs, but, given export market entry, allows firms to reap higher sales and revenues in more religiously proximate markets than in the more distant ones. Hence, the reduced form model we estimate would prevent us from dissecting the revenue from the sunk cost effect of religious proximity.²⁴

²⁴ Assuming that religious proximity affects preferences implies the following form of the utility function:

$$U = \left[\int_{\omega \in \Omega_c} \lambda_{rc}(\omega)^{\iota(1-\rho)} q(\omega)^\rho \right]^{\frac{1}{\rho}} \quad 0 < \rho < 1 \quad (11)$$

The parameter $\iota > 0$, then, is the positive elasticity of demand with respect to religious proximity and revenues of firm i in destination c become:

$$R_{rc}(i) = \frac{\lambda_{rc}(i)^\iota}{\tau_{rc}^{\sigma-1}} \left[\frac{w_r}{\rho \phi_i P_c} \right]^{1-\sigma} M_c \quad (12)$$

According to this alternative theoretical framework, exporting to religiously proximate countries delivers higher revenues to firms due to the higher attachment of foreign customers to goods coming from countries which are similar in terms of religious beliefs. Hence, a firm i located in region r will export if

$$\frac{\tilde{R}_{rc}(i)}{\sigma} > \frac{\tilde{F}_{rc} \tau_{rc}^{\sigma-1}}{\lambda_{rc}^\beta} \quad (13)$$

with $\beta = \iota + \delta$, $\tilde{R}_{rc}(i) = \left[\frac{w_r}{\rho \phi_i P_c} \right]^{1-\sigma} M_c$ and $\tilde{F}_{rc} = \frac{w_r^\gamma w_c^{1-\gamma}}{\psi}$. and

$$\text{Prob}(\text{export}_{irc} > 0) = \text{Prob}(\ln \tilde{R}_{rc}(i) - \ln \tilde{F}_{rc} - (\sigma - 1) \ln \tau_{rc} + \beta \ln \lambda_{rc}(i) > \epsilon_{irc}) \quad (14)$$

To deal with this issue we extend our empirical framework to account for the impact of religious proximity on firms' export entry values. A firm's survival and expansion in the export market is deeply rooted in its learning process after the entry, hence firms entering a new market start with a small amount of sales and then expand them in subsequent years when uncertainty is reduced (Rauch and Watson, 2003; Eaton et al., 2008b; Araujo and Ornelas, 2007; Eaton et al., 2011; Iacovone and Javorcik, 2010). Results in column [1] of Table 8, then, are in line with the uncertainty reduction effect of common religion and imply that common religious beliefs ease the shipment of larger initial export values, although the significance associated to this effect is low. However, when in columns [2]-[8] we perform a few selected robustness checks, we find that the result on the positive impact of religious proximity on first time export value fails to pass the test of the inclusion of the distance in income levels (column [2]) and of the control for the Turkish diaspora (columns [5] and [6]). Hence, these results suggest that the effect of religious proximity on export entry reflects the reduction of market penetration costs rather than preferences similarity (Helpman et al., 2008).

4.2.2 Product Heterogeneity

As a final identification exercise, we test whether commonality of religion has a stronger impact in favouring export market penetration of firms exporting goods with higher market penetration costs. We, indeed, expect that if religious proximity between contracting parties engenders higher trust between them, this mechanism turns to be more important for the exchange of those products that, due to their

Then, if religious proximity affects exports through both market access and preferences, the reduced form empirical model that we estimate prevents from dissecting the revenue from the sunk cost effect of religious proximity.

Table 8: Religious Proximity and Export Entry Value

	Baseline	Income Level Differences	Bilateral Export Value	Bilateral	Migration	Diaspora	Diaspora	Exclusion of	Shiite
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Countries
$\ln(\lambda_{rc})$	0.2724* [0.1418]	0.1086 [0.1919]	0.2759* [0.1475]	0.2997* [0.1732]	0.2225 [0.1486]	0.262 [0.1979]	0.3849* [0.1965]	0.2565 [0.1697]	
Lpt_{-1}	0.1167*** [0.0419]	0.1415*** [0.0473]	0.1166*** [0.0419]	0.1169*** [0.0418]	0.1151*** [0.0418]	0.1206* [0.0628]	0.1279** [0.0499]	0.1216*** [0.0441]	
$Size_{t-1}$	0.3173*** [0.0588]	0.3408*** [0.0773]	0.3174*** [0.0588]	0.3169*** [0.0586]	0.3172*** [0.0588]	0.3076*** [0.0951]	0.3212*** [0.0695]	0.3179*** [0.0640]	
$Wage_{t-1}$	-0.0419 [0.0810]	-0.0188 [0.1007]	-0.0416 [0.0810]	-0.0424 [0.0808]	-0.0386 [0.0808]	0.0389 [0.1214]	-0.0966 [0.0861]	-0.0486 [0.0872]	
Imp_{t-1}	-0.3481*** [0.0789]	-0.3859*** [0.0816]	-0.3478*** [0.0784]	-0.3473*** [0.0792]	-0.3473*** [0.0788]	-0.2936** [0.1158]	-0.3199*** [0.0895]	-0.3768*** [0.0899]	
$Foreign_{t-1}$	-0.2397 [0.4265]	-0.3549 [0.4776]	-0.2401 [0.4264]	-0.2386 [0.4262]	-0.24 [0.4270]	0.107 [0.5061]	-0.409 [0.5315]	-0.0796 [0.4328]	
$dist_{cr}$	0.0894 [0.2094]	0.1181 [0.3258]	0.0977 [0.2125]	0.0905 [0.2077]	0.0885 [0.2071]	0.0797 [0.2448]	0.0417 [0.3613]	0.2016 [0.2534]	
$N_{jrc\ t-1}$	0.2857*** [0.0672]	0.3071*** [0.0797]	0.2847*** [0.0679]	0.2889*** [0.0660]	0.2828*** [0.0664]	0.2023** [0.1013]	0.3579*** [0.0715]	0.2972*** [0.0775]	
$\frac{GDP_{per\ capita}}{GVA_r^*}$		-0.2572* [0.1490]							
$Verper\ t-1$			0.0049 [0.0277]						
$Cultural\ Distance$									
$Foreigners_r * Turkish_c$				-0.0029 [0.0073]					
$Emigrants_r * Turkish_c$					0.0073** [0.0030]				
Observations	4903	3535	4903	4903	4903	2703	4009	4257	
R-squared	0.2564	0.2552	0.2564	0.2564	0.2568	0.3215	0.2678	0.2615	

* Significant at 10% level; ** significant at 5% level; *** significant at 1% level. Robust standard errors clustered by destination country are in brackets. The dependent variable is the log of exports accounted for by first time exporters in their year of export market entry. Country-Year, NUTS 3 Region-Year and firm's primary 2digit NACE sector fixed effects are included in each specification.

intrinsic characteristics, are more difficult to be assessed by the typical consumer in the destination country. According to our theoretical background we expect religious proximity to be more relevant for those firms selling goods whose advertisement intensity is higher. Indeed, advertisement expenditures are directed to engender trust across potential consumers towards. We test this hypothesis in columns [1] and [2] of Table 9 where we compare firms exporting high versus low advertisement intensity goods. We rely on the product level advertisement intensity measure available from [Ma et al. \(2014\)](#) at the HS 6 digit classification system and, by exploiting the Turkish Annual Industrial Production statistics, we calculate the average advertisement intensity of products sold by the firm.²⁵ The two columns reveal that the coefficient estimate of high advertisement intensity firms is significantly higher. To further explore this issue, in columns [3]-[10] we split the sample of firms on the basis of their product basket differentiation level defined according to the classification of goods by [Rauch \(1999\)](#). Differentiated goods require relationship specific investments and, as such, they are expected to entail a higher extent of trust between buyers and sellers ([Nunn, 2007](#)). We first define a firm as a producer of differentiated goods if it produces all differentiated goods in the same year. As a consequence, firms for whom only a subset of goods are differentiated are assumed to produce non differentiated goods. Corresponding results are shown in columns [3]-[4] for the conservative version of the differentiated products classification by [Rauch \(1999\)](#) and in columns [5]-

²⁵As defining the firm extent of advertisement intensity of its product basket on the basis of export products would raise a sample selection issue due to the lack of identification of the export product basket for non exporting firms, we define a firm as a producer of high advertisement intensity goods on the basis of its current product basket. Then, for this part of the analysis we combine our firm level sample with firm production information from the Turkish Annual Industrial Production Statistics (AIPS) available for firms with more than 20 employees in our sample for the period 2005-2009. In the estimations we loose those firms for which production data are not available. Finally, to account for sectoral specificities in determining advertisement intensities we have normalised the original indicator by 2 digit NACE sectoral mean.

[6] for the liberal one. Under this definition of differentiated products, the effect of religious proximity is significantly higher for firms producing all differentiated goods just when the liberal classification is adopted. In the columns [7]-[10] we define a firm as a producer of differentiated goods if it produces at least one differentiated good in the same year. As a consequence, firms for whom all goods are homogenous or reference priced under the conservative classification and strictly homogeneous under the liberal one are assumed to produce non differentiated goods. We, thus, prove that religious proximity is not important at all for firms in the second group, while it matters for firms in the first one and the difference in the coefficients across the two groups is significant when either the conservative or liberal classifications are used. In conclusion, the impact of religious proximity on market entry is importantly moderated by the nature of exported goods and is particularly relevant for "trust intensive" goods.

5 Extensions

5.1 The role of Export Experience

Up to now, we have explored the role of religious affinity in promoting the first time export entry. However, it could also moderate the role of firms' export experience in affecting their entry in subsequent markets.

In Table 10 we further explore the interplay between religious proximity and a firm's previous export experience in affecting its entry in new destinations and its ability to stay in the export market.

Firms already active in any foreign market have already learnt about their ability of meeting foreign demand and can better forecast demand in untested destinations (Nguyen, 2012). Hence, they could more easily enter a new foreign market which is

Table 9: Product Level Advertisement Intensity and Differentiated vs Homogenous Goods

	Advertising Intensity					Firm produces all differentiated products or not					Firm produces at least one differentiated product or not									
	B:Low		A:All Diff.		B:Not All Diff.		A:At least one Diff.		B:None Diff.		A:At least one Diff.		B:None Diff.		A:At least one Diff.		B:None Diff.			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
$\ln(\lambda_{rc})$	0.007*** [0.002]	0.003** [0.001]	0.005*** [0.001]	0.002** [0.001]	0.005*** [0.001]	0.001* [0.001]	0.005*** [0.001]	0	0.005*** [0.001]	0	0.005*** [0.001]	0	0.005*** [0.001]	0	0.005*** [0.001]	0	0.005*** [0.001]	0	0.005*** [0.001]	0
Lpt_{t-1}	0.001*** [0.000]	0.000* [0.000]	0.001*** [0.000]	0	0.001*** [0.000]	0	0.001*** [0.000]	0	0.001*** [0.000]	0	0.001*** [0.000]	0	0.001*** [0.000]	0	0.001*** [0.000]	0	0.001*** [0.000]	0	0.001*** [0.000]	0
$Size_{t-1}$	0.003*** [0.001]	0.002*** [0.000]	0.002*** [0.000]	0.003*** [0.001]	0.002*** [0.000]	0.003*** [0.001]	0.003*** [0.001]	0.003*** [0.001]	0.003*** [0.001]	0.001** [0.001]	0.003*** [0.001]	0.001** [0.001]	0.003*** [0.001]	0.003*** [0.001]	0.003*** [0.001]	0.003*** [0.001]	0.003*** [0.001]	0.003*** [0.001]	0.003*** [0.001]	0.003*** [0.001]
$Wage_{t-1}$	0 [0.001]	-0.001 [0.001]	-0.001** [0.000]	0.001 [0.001]	-0.001** [0.000]	0.001 [0.001]	0.001 [0.001]	0.001** [0.001]	-0.001** [0.000]	0.001 [0.001]	-0.001** [0.000]	0.002** [0.001]	-0.001** [0.001]	0.002** [0.001]	-0.001** [0.000]	0.002** [0.001]	-0.001** [0.000]	0.002** [0.001]	-0.001** [0.000]	0.002** [0.001]
Imp_{t-1}	0.006*** [0.001]	0.004*** [0.001]	0.006*** [0.001]	0.002*** [0.001]	0.006*** [0.001]	0.003*** [0.001]	0.005*** [0.001]	0.003*** [0.001]	0.005*** [0.001]	0.003*** [0.001]	0.006*** [0.001]	0.003*** [0.001]	0.005*** [0.001]	0.003*** [0.001]	0.005*** [0.001]	0.003*** [0.001]	0.005*** [0.001]	0.003*** [0.001]	0.005*** [0.001]	0.003*** [0.001]
$Foreign_{t-1}$	-0.007*** [0.002]	0 [0.002]	-0.004*** [0.001]	0 [0.002]	-0.004*** [0.001]	-0.002 [0.002]	-0.004*** [0.001]	0 [0.002]	-0.004*** [0.001]	-0.002 [0.002]	-0.004*** [0.001]	0 [0.002]	-0.004*** [0.001]	0 [0.002]	-0.004*** [0.001]	0 [0.002]	-0.004*** [0.001]	0 [0.002]	-0.004*** [0.001]	0 [0.002]
$dist_{cr}$	0 [0.000]	0 [0.000]	-0.016*** [0.006]	-0.018*** [0.006]	-0.017*** [0.006]	-0.016*** [0.005]	-0.016*** [0.006]	-0.018*** [0.006]	-0.016*** [0.005]	-0.016*** [0.006]	-0.016*** [0.005]	-0.016*** [0.006]	-0.016*** [0.005]	-0.016*** [0.006]	-0.016*** [0.005]	-0.016*** [0.006]	-0.016*** [0.005]	-0.016*** [0.006]	-0.016*** [0.005]	-0.016*** [0.006]
$N_{jrc\ t-1}$	0 [0.000]	0 [0.000]	0.007*** [0.001]	0.006*** [0.001]	0.007*** [0.001]	0.006*** [0.001]	0.007*** [0.001]	0.006*** [0.001]	0.007*** [0.001]	0.006*** [0.001]	0.007*** [0.001]	0.006*** [0.001]	0.007*** [0.001]	0.006*** [0.001]	0.007*** [0.001]	0.006*** [0.001]	0.007*** [0.001]	0.006*** [0.001]	0.007*** [0.001]	0.006*** [0.001]
Observations	278857	278962	478448	171607	454564	195491	568993	81062	531175	118880	568993	81062	531175	118880	568993	81062	531175	118880	568993	81062
R-squared	0.059	0.043	0.049	0.058	0.051	0.047	0.047	0.046	0.047	0.046	0.047	0.046	0.047	0.046	0.047	0.046	0.047	0.046	0.047	0.046
Test:																				
$\ln(\lambda_{rc})^A = \ln(\lambda_{rc})^B$		4.019		2.33		5.379		6.731		7.973		6.731		7.973		6.731		7.973		6.731
P-value		0.045		0.13		0.02		0.01		0.01		0.01		0.01		0.01		0.01		0.01

* Significant at 10% level; ** significant at 5% level; *** significant at 1% level. Robust standard errors clustered by destination country are in brackets. Country-Year, NUTS 3 Region-Year and firms primary 2digit NACE sector fixed effects are included in each specification. In columns [1] and [2] Advertising intensity is defined according to the measure available from Ma et al. (2014). In columns [3]-[10] differentiated products are defined according to classification by Rauch (1999).

closer and/or shares similar characteristics (Albornoz et al., 2012; Defever et al., 2015; Morales et al., 2014). If this is the case, the role of common religion should be more relevant for unexperienced exporters than for the experienced ones. Compared to the previous analysis, new exporters are now defined with respect to the first time entry in country c and the sample of specifications in columns [1]-[3], then, includes first time exporters in the country - regardless of their previous export experience in other countries - and non exporters.²⁶ To account for export sunk costs, which are common among all the potential destinations, we include a dummy for export experience, exp_{t-1}^{other} , taking value 1 for firms that were exporting to other destinations in time $t - 1$ and 0 for non exporters in $t - 1$. We, then, interact the latter with our proxy for the sharing of Islamic beliefs in order to detect a heterogeneous effect of religious proximity according to a firm's experience in foreign markets. Results in column [1] show that export experience reduces the impact of religious proximity on market entry. Nonetheless, when the export experience dummy is included in the specification of column [2], the coefficient on the interaction term is always negative but not statistically different from 0. Hence, although being an exporter to another market enhances a firm's export entry propensity in a new market²⁷, it does not shape the effect of religious ties.

Next we investigate the heterogeneous impact of common religion according to the number of years of a firm's overall export experience. Incumbent exporters can more easily enter new destinations and survive in the export market. We interact

²⁶We always randomly select the 20% of zero observations to keep the sample small enough to be computationally manageable.

²⁷We find an increase by 2.8 percentage points that, however, refers to the restricted sample - with 0 values randomly selected - where the probability to start exporting to a new foreign destination is 3.26%. Then, experienced exporters are likely to start exporting a new country by around 86% more than non exporters.

Table 10: The Role of Export Experience

	First Time Exporters in Country c and Non Exporters			Exporters and Non Exporters
	Entry in Market c			Export Status in Market c
	[1]	[2]	[3]	[4]
λ_{rc}	0.0114*** [0.0022]	0.0072*** [0.0025]	0.0076*** [0.0027]	0.0130*** [0.0048]
$\lambda_{rc} * exp_{t-1}^{other}$	-0.0058*** [0.0010]	-0.002 [0.0013]		
exp_{t-1}^{other}		0.0276*** [0.0042]		
$\lambda_{rc} * Ny_c^{exp}$			-0.0007* [0.0003]	
Ny_c^{exp}			0.0077*** [0.0010]	
$\lambda_{rc} * Ny_c^{exp}$				-0.0038** [0.0016]
Ny_c^{exp}				0.1380*** [0.0085]
Observations	2449583	2449583	1600762	1034135
R-squared	0.0834	0.0866	0.087	0.5821
Test				
Entry Year			0.0076*** [0.0027]	0.0130*** [0.0048]
Second Year			0.0070*** [0.0024]	0.0092* [0.0056]
Third Year			0.0063*** [0.0021]	0.0054 [0.0066]
Fourth Year			0.0057*** [0.0019]	0.0016 [0.0078]
Fifth Year			0.0050*** [0.0016]	-0.0022 [0.0092]
Sixth Year			0.0044*** [0.0014]	-0.006 [0.0106]

* Significant at 10% level; ** significant at 5% level; *** significant at 1% level. Robust standard errors clustered by destination country are in brackets.

Country-Year, NUTS 3 Region-year and firm's primary 2digit NACE sector fixed effects are included in each specification. In Column [1], [2] and [3] the estimation sample is made up of first time exporters in country c - regardless of their previous export experience in other markets - and non exporters (20% randomly selected), while in column [4] the analysis covers both exporters and non exporters (5% randomly selected).

All estimations refer to the 2005-2009 period, with the exception of columns [3] where we restrict the analysis to the 2007-2009 period in order to be able to test for 5 years of overall and country-specific export experience, respectively.

our variable of interest with the number of years, Ny^{exp} a firm entering market c has been exporting to other markets and we restrict our analysis to the sample for the years 2007-2009 in order to test for 5 years of previous export experience. Corresponding results in column [3] show a positive impact of the number of years in the export market, thus implying that export experience attenuates the incidence of per period sunk costs (Roberts and Tybout, 1997). The role of experience, though, is mitigated when exporting to religious proximate countries. Religious proximity seems, then, to act as a substitute of export experience, but this effect is mild. Finally, we test whether there exists a time decay in the return on exports stemming from common religious ties once the firm enters that country. With respect to the analysis run in columns [1]-[3], in column [4] we add incumbent exporters in market c to the sample of non exporters and new exporters.²⁸ Ny_c^{exp} now measures the number of years firm i located in region r has been exporting to country c . We find some evidence of a declining importance of common religious beliefs for exports. Sharing similar religious beliefs and values helps firms in entering a new market, however this factor loses importance after a firm is active in that market, and can directly get in touch with further customers, strengthen the existing business relationships and collect information about consumers' preferences, business environment, demand evolution. Also, the presence in the market can help the firm to build a good reputation, thus to be perceived as a trustworthy contracting party. Religious proximity has a significant, even if mild, role in favouring a firms' stay in exporting. However, since the third export year in country c , religious affinity has no role anymore.

²⁸This extension of the analysis to all firms in our sample obliges us to restrict our focus on a randomly selected 5%, instead of 20%, of zero observations.

6 Conclusion

This paper documents for the first time the impact of religion on the extensive margin of trade at the micro level. By combining the heterogeneity in the spread of Islamic beliefs across Turkish provinces where firms are located, with the share of Islam adherents in total population across potential destination markets, we identify and test the role of religious proximity for Turkish manufacturing firms' first-time export entry. We show that a firm's decision on the first export market is positively and significantly affected by the commonality of religious beliefs with foreign potential customers. Our evidence points at religious proximity mainly reducing sunk costs through its positive effect on trust between contracting parties. As a matter of fact, we find heterogeneous effects of religious mismatch according to the type of religion shared by people in the destination country, with the share of Jews bearing the most detrimental effect for exports with respect to other non-Muslim religions. The positive effect of religious proximity on firms' export entry is economically meaningful and is not driven by spatial contiguity, cultural proximity, trade heritage, migration and by preferences similarity. Causal IV estimates corroborate a causal interpretation of this robust association between religion and exports at firm level. Furthermore, religious proximity favours export entry of producers of high advertising intensity and differentiated goods and attenuates the role of export experience in reducing the incidence of burdensome sunk entry costs. Finally, once the firm enters a country, religious ties have a declining return on exports which fades away starting from the third export year to the country.

Our empirical analysis suggests that, by affecting the extensive margin of trade, religious proximity can significantly contribute to determine countries' aggregate

trade flows and their spatial evolution.

References

- Albornoz, F., Calvo Pardo, H.F., Corcos, G., Ornelas, E., 2012. Sequential exporting. *Journal of International Economics* 88, 17–31.
- Alesina, A., Devleeschauwer, A., Easterly, W., Kurlat, S., Wacziarg, R., 2003. Fractionalization. *Journal of Economic Growth* 8, 155–94.
- Anderson, J., van Wincoop, E., 2003. Gravity with gravitas: A solution to the border puzzle. *American Economic Review* 93, 170–192.
- Araujo, L., Ornelas, E., 2007. Trust-Based Trade. CEP Discussion Papers dp0820. Centre for Economic Performance, LSE.
- Arkolakis, C., 2010. Market penetration costs and the new consumers margin in international trade. *Journal of Political Economy* 118, 1151–1199.
- Armenter, R., Koren, M., 2014. Economies of scale and the size of exporters. *Journal of the European Economic Association* .
- Artuc, E., Docquier, F., Ozden, C., Parsons, C., 2015. A Global Assessment of Human Capital Mobility: The Role of Non-OECD Destinations. *World Development* 65, 6–26.
- Barkan, O.L., 1964. Yili cizyenin taksimatina ait muhasebe bilanÅŞolari. Belgeler, II Ankara, 1–117.
- Barro, R.J., McCleary, R., 2003. Religion and Economic Growth. NBER Working Papers 9682. National Bureau of Economic Research, Inc.

- Bernard, A.B., Eaton, J., Jensen, J.B., Kortum, S., 2003. Plants and productivity in international trade. *American Economic Review* 93, 1268–1290.
- Campante, F.R., Yanagizawa-Drott, D.H., 2013. Does Religion Affect Economic Growth and Happiness? Evidence from Ramadan. NBER Working Papers 19768. National Bureau of Economic Research, Inc.
- Chaney, E., 2008. Tolerance, Religious Competition and the Rise and Fall of Muslim Science. mimeo. Harvard University.
- Chaney, T., 2014. The network structure of international trade. *American Economic Review* 104, 3600–3634.
- Defever, F., Benedikt, H., Larch, M., 2015. Spatial exporters. *Journal of International Economics* 95, 145–156.
- Dixit, A.K., Stiglitz, J.E., 1977. Monopolistic competition and optimum product diversity. *American Economic Review* 67, 297–308.
- Eaton, J., Eslava, M., Kugler, M., Tybout, J., 2008a. The margins of entry into export markets: evidence from colombia, in: In: Helpman, E., Marin, D., Verdier, T. (Eds.), *The Organization of Firms in a Global Economy*. Harvard University Press, Cambridge, MA.
- Eaton, J., Eslava, M., Kugler, M., Tybout, J., 2008b. The margins of entry into export markets: evidence from colombia, in: Helpman, E., Marin, D., Verdier, T. (Eds.), *The Organization of Firms in a Global Economy*. Harvard University Press. NBER Chapters, pp. 261–338.

- Eaton, J., Krizan, C.J., Eslava, M., Kugler, M., Tybout, J., 2011. A search and learning model of export dynamics. mimeo .
- Felbermayr, G.J., Toubal, F., 2010. Cultural proximity and trade. *European Economic Review* 54, 279–293.
- Fernandes, A.P, Tang, H., 2014. Learning to export from neighbors. *Journal of International Economics* 94, 67 – 84.
- Gruber, J., 2005. Religious Market Structure, Religious Participation, and Outcomes: Is Religion Good for You? NBER Working Papers 11377. National Bureau of Economic Research, Inc.
- Guiso, L., Sapienza, P, Zingales, L., 2003. People’s opium? Religion and economic attitudes. *Journal of Monetary Economics* 50, 225–282.
- Guiso, L., Sapienza, P, Zingales, L., 2006. Does Culture Affect Economic Outcomes? *Journal of Economic Perspectives* 20, 23–48.
- Guiso, L., Sapienza, P, Zingales, L., 2009. Cultural Biases in Economic Exchange? *The Quarterly Journal of Economics* 124, 1095–1131.
- Guner, D., Uysal, G., 2014. Culture, Religiosity and Female Labor Supply. IZA Discussion Papers 8132. Institute for the Study of Labor (IZA).
- Head, K., Mayer, T., Ries, J., 2010. The erosion of colonial trade linkages after independence. *Journal of International Economics* 81, 1–14.
- Helble, M., 2007. Is God Good for Trade? *Kyklos* 60, 385–413.

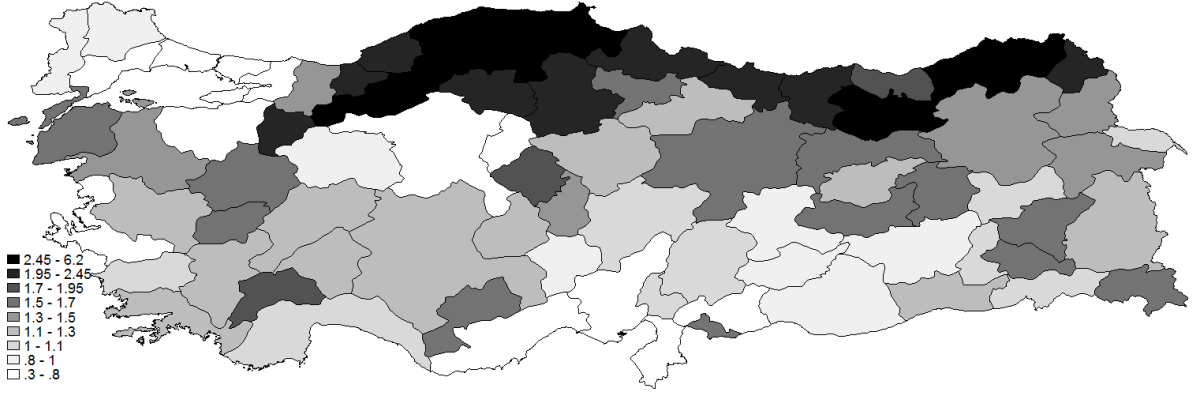
- Helpman, H., Melitz, M., Rubinstein, Y., 2008. Estimating trade flows: trading partners and trading volumes. *Quarterly Journal of Economics* CXXIII, 441–487.
- Iacovone, L., Javorcik, B.S., 2010. Multi-product exporters: product churning, uncertainty and export discoveries. *The Economic Journal* 120, 481–499.
- Karpat, H.K., 1978. Ottoman Population Records and the Census of 1881/82 and 1893. *International Journal of Middle East Studies* 9, 237–274.
- Kettani, H., 2010. World muslim population: 1950-2020. *International Journal of Environmental Science and Development* 1, 127–170.
- King, G., Zeng, L., 2001. Logistic regression in rare events data. *Political Analysis* 9, 137–163.
- Koenig, P., Mayneris, F., Poncet, S., 2010. Local export spillovers in France. *European Economic Review* 54, 622–641.
- Kuran, T., 1995. Islamic Economics and the Islamic Subeconomy. *Journal of Economic Perspectives* 9, 155–173.
- Kuran, T., 1997. Islam and Underdevelopment: An Old Puzzle Revisited. *Journal of Institutional and Theoretical Economics* 153, 41–71.
- Lawless, M., 2009. Firm export dynamics and the geography of trade. *Journal of International Economics* 77, 245–254.
- Lewer, J., den Berg, H.V., 2007. Religion and international trade. does the sharing of a religious culture facilitate the formation of trade networks? *American Journal of Economics and Society* 66, 765–794.

- Livny, A., 2014. Faith in the Electorate: Islam, Trust, and Coordination among Turkish Voters. mimeo. Stanford University.
- Ma, Y., Tang, H., Zhang, Y., 2014. Factor intensity, product switching, and productivity: Evidence from chinese exporters. *Journal of International Economics* 92, 349–362.
- Mayer, T., Zignago, S., 2011. Notes on CEPII's distances measures: the GeoDist Database. CEPII Working Paper 2011-25. CEPII.
- Maystre, N., Olivier, J., Thoenig, M., Verdier, T., 2014. Product-based cultural change: Is the village global? *Journal of International Economics* 92, 212 – 230.
- Melitz, M.J., 2003. The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica* 71, 1695–1725.
- Michalopoulos, S., Naghavi, A., Prarolo, G., 2012. Trade and Geography in the Origins and Spread of Islam. NBER Working Papers 18438. National Bureau of Economic Research, Inc.
- Milet, E., 2014. Linguistic proximity and export dynamics. *http* : [//www.etsg.org/ETSG2014/Papers/003.pdf](http://www.etsg.org/ETSG2014/Papers/003.pdf) .
- Morales, E., Sheu, G., Zahler, A., 2014. Gravity and Extended Gravity: Using Moment Inequalities to Estimate a Model of Export Entry. NBER Working Papers 19916. National Bureau of Economic Research, Inc.
- Nguyen, D.X., 2012. Demand uncertainty: Exporting delays and exporting failures. *Journal of International Economics* 86, 336–344.

- Nunn, N., 2007. Relationship-specificity, incomplete contracts, and the pattern of trade. *The Quarterly Journal of Economics* 122, 569–600.
- Nunn, N., 2012. Culture and the historical process. *Economic History of developing Regions* , S108–s126.
- Pryor, F.L., 2007. The economic impact of islam on developing countries. *World Development* 35, 1815 – 1835.
- Ragab, I., 1980. Islam and Underdevelopment: An Old Puzzle Revisited. *World Development* 8, 513–521.
- Rauch, J.E., 1999. Networks versus markets in international trade. *Journal of International Economics* 48, 7–35.
- Rauch, J.E., Trindade, V., 2002. Ethnic Chinese Networks In International Trade. *The Review of Economics and Statistics* 84, 116–130.
- Rauch, J.E., Watson, J., 2003. Starting small in an unfamiliar environment. *International Journal of Industrial Organization* 21, 1021–1042.
- Roberts, M.J., Tybout, J.R., 1997. The decision to export in colombia: An empirical model of entry with sunk costs. *American Economic Review* 87, 545–564.
- Tabellini, G., 2010. Culture and Institutions: Economic Development in the Regions of Europe. *Journal of the European Economic Association* 8, 677–716.
- Wooldridge, J., 2002. *Econometric analysis of cross-section and panel data*. MIT Press .

A Additional figures and tables

Figure A1: Mosques' distribution across Turkish provinces



Source: Diyanet İşleri Başkanlığı data and TurkStat. Own calculations.

Table A1: Descriptive Statistics of Firm level variables

	Obs.	Mean	St. Dev.	Min	Max
Lp_{t-1}	938887	9.462	0.864	0.144	14.631
$Size_{t-1}$	938887	3.706	0.696	0	8.675
$Wage_{t-1}$	938887	8.754	0.387	4.371	12.093
Imp_{t-1}	938887	0.300	0.458	0	1
$Foreign_{t-1}$	938887	0.009	0.092	0	1

Descriptive Statistics refer to the estimation sample, obtained by randomly selecting 20% of zero observations for E_{irct} .