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**FOR GOD'S SAKE. THE IMPACT OF RELIGIOUS  
PROXIMITY ON FIRMS' EXPORTS**

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

*Alessia Lo Turco\**, *Daniela Maggioni*<sup>§</sup>

## 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 NUTS3 regions and we find that firms located in regions 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 past trade, common language, cultural and migration ties and to several further sensitivity checks. In particular, religious proximity eases export entry for producers of "trust intensive" goods and it plays a role in subsequent foreign market entries. All in all, our evidence hints at an export enhancing effect of religious proximity working more through export sunk costs reduction than through similarity in preferences.

**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.

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# 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). 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; 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., 2008). 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). As a consequence, first time export entry determinants can have a significant and long-lasting influence on firms' and countries' export patterns.

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 access costs. We then investigate 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 the 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,<sup>1</sup> as well 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 region-destination country pairs, we iden-

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<sup>1</sup>The only exception is a conference paper by Milet (2014) who investigates the role of linguistic proximity for French exporters' expansion in further export destinations and, as a by-product, finds a positive association between religious proximity and the firm's export probability of entering a new export market. Here, religion is constant across firms in the same country - France - and varies by destination market, while we exploit within country variation to identify the impact of religion and propose a more extensive identification strategy of the impact of religion on firms' export entry. Also, the case of Turkey can be considered of higher relevance for the analysis of the impact of religious proximity on firms' exports, as religion importantly shapes society and individual choices of Turkish people, contrarily to France where secularism is the most widespread attitude of people with respect to social, economic and political matters.

tify 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 active 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. 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, we inspect the impact of religious proximity on first time export entry values and search for heterogeneous effects across products differing in their extent of differentiation and advertisement intensity, in order to dissect the market access from the preference similarity channels. Finally, we extend our analysis by investigating firms' subsequent entry in further markets and the declining role of religious proximity over time.

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, linguistic, spatial and colonial linkages. The export enhancing effect of religious proximity seems to work more through export sunk costs reduction than through similarity in preferences. In this respect, our work provides firm level evidence corroborating the finding on religious proximity affecting trade flows at the extensive rather than the intensive margin (Helpman et al., 2008). Also, we show that adherence to the same religion influences firms' export entry significantly more for producers of "trust intensive products", that is high advertising intensity and differentiated goods whose difficult assessment of the intrinsic characteristics may entail a higher amount of trust in the trade relation. In this respect, our evidence suggests that the reduction in export sunk costs is likely to be related to an increase of trust among contracting parties. It is worth highlighting that our empirical setting is particularly suitable to identify the impact of religious proximity vis-à-vis other relevant factors as we deal with a single country, well integrated into the global economy, with homogeneous institutions and exploit the existence of heterogeneity in the religious attachment of people living in different regions.

With its micro level focus on religion and economic outcomes our work is related to Gruber (2005) who, analysing 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 the 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.<sup>2</sup> Guiso et al. (2003) find that being raised as a Muslim develops higher intolerance towards diverse cultures, which 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. These peculiarities of the Islamic religion, however, could limit the external validity of findings of our analysis. The latter, then, discloses the impact of Islamic religious proximity rather than the effect of religious proximity *tout-court*.

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 main 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 can negatively affect market penetration costs in a new export destination. In the following, we rely on a standard monopolistic competition framework (Dixit and Stiglitz, 1977) where 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  $\omega$  produced in region  $r$  by consumers in destination  $c$ :

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<sup>2</sup>Some 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.

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

where  $p_c$  is the price of good  $\omega$  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  $i$  is decreasing in a firm's efficiency,  $\phi_i$ , and increasing in region  $r$ 's unit price of labour services,  $w_r$ , used to produce final output:

$$MC_r(i) = \frac{w_r}{\phi_i} \quad (3)$$

As the profit maximizing price is a constant mark up over marginal cost, the price of delivery to destination  $c$  is increasing in trade costs -  $\tau_{rc} \geq 1$ , when  $r = c$  then  $\tau_{rc} = 1$  - that a firm has to incur in order to deliver a product from its location region to the final destination market:

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

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  $\psi$  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,  $\lambda_{rc}$  with  $0 < \lambda_{rc}(\omega) \leq 1$ , in the following way:  $Trust = \lambda_{rc}^\delta$ . We assume that  $\lambda = 1$  when variety  $\omega$  is supplied at home and  $\lambda \rightarrow 0$  when variety  $\omega$  is supplied to a very 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,  $\phi_i$ , and on the destination market size,  $M_c$ , while it is negatively affected by a firm's region average wage,  $w_r$ , and by bilateral trade costs,  $\tau_{rc}$ . We will account for these indications in the empirical model by means of the inclusion of firm-year and country-year fixed effects and of the distance between a firm's location region and each destination market. Although the mechanism above described is source-destination 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 including established exporters 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 investigate 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 balance sheet information on manufacturing firms and sector of activity over the relevant period together with information on their 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 with potential foreign customers for firms' first time export entry:

$$E_{irct} = \alpha + \gamma dist_{rc} + \delta Rel\_Prox_{rc} + \theta_{it} + \mu_{ct} + \varepsilon_{irct} \quad (9)$$

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 at least 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.<sup>3</sup> As previously stated, 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 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	825,468	824,453	1,015	0.12
2006	1,053,550	1,052,510	1,040	0.1
2007	1,194,306	1,193,363	943	0.08
2008	1,317,128	1,315,948	1,180	0.09
2009	1,137,964	1,136,984	980	0.09
Total	5,528,416	5,523,258	5,158	0.09

Authors' elaborations on FTS and SBS datasets.

Turning to the right hand side variables included in model 9, our main regressor is religious proximity, henceforth labeled  $Rel\_Prox$ , which corresponds to  $\ln \lambda_{rc}$  in equation 8. We also 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  $\tau_{rc}$  in the above theoretical section.<sup>4</sup>

Furthermore, we include firm-year  $\theta_{it}$  and country-year  $\mu_{ct}$  fixed effects. The control for time-varying unobserved firm and country heterogeneity accounts for the level and time variation of all remaining barriers that Turkish firms, located in a specific Turkish region, and destination markets face in trading with the rest of the world (Anderson and van Wincoop, 2003), such as the existence of adequate infrastructures, the possible adoption of export subsidy in some underdeveloped Turkish regions, trade liberalisation processes and the changing economic size of destination countries. Also, country-year fixed effects capture the different propensity of destination

<sup>3</sup>We consider as potential destinations all those countries where Turkey - at least one Turkish firm - exports to.

<sup>4</sup>Distance is calculated on the basis of countries' geographical coordinates from the CEPII GeoDist database (Mayer and Zignago, 2011) and of Turkish regions' geographical coordinates.

countries to purchase goods in international markets stemming from the spread of Islam religion across their population. By the same token, firm-year fixed effects control for the direct effect of a firm's location region specific propensity to trade induced by religion. It is worth mentioning that, in the period under analysis, the Turkish government led by AKP, which has increasingly brought religion back at the center of the political and economic life of the country, signed about ten trade agreements, mostly with Muslim majority countries either located at the country's border or ex colonies of the Ottoman empire. This could open the route for a competing explanation on the mechanism through which religion affects trade flows based on the role of the government policies aimed at favouring both trade with Muslim majority destinations and the economy of more religious provinces. While the inclusion of country-year fixed effects, by capturing time-varying shocks, accounts for any nation wide change in trade policy, in the robustness checks we will specifically explore the relevance of a government-led trade expansion into religiously proximate countries.

### 3.3 Measuring Religious Proximity

Our main variable of interest in the baseline model 9 is religious proximity,  $Rel\_Prox$ , 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 countries  $i$  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 we proxy it with the log of the number of mosques in each Turkish region normalised by the population,  $N_r^{Mosques}$  (Livny, 2014).<sup>5</sup> Then we interact this measure of local religiosity with the share of Muslims in the population of country  $c$ ,  $Share_c^{Muslims}$ , with :

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

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 test for the pre-sample year 2000 value of the regional number of mosques and destination market share of Muslims.<sup>6</sup>

Data on the local number of mosques for the year 2000 are from the Diyanet İşleri Başkanlığı and 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 region 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

<sup>5</sup>Being 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.

<sup>6</sup>Both variables are not available for all of the years included in our analysis, but we expect that their change over the time span under analysis is negligible.

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 the Turkish territory 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. In our data the correlation between our proxy of local religiousness and the level of local development measured by per capita income is 0.27 and it is not significantly different from 0 at conventional significance levels. 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 a 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%. Mexico, Poland, Costa Rica, Bolivia and Peru, instead, are among the countries recording the lowest share (0.01%) of Muslims. Across Turkish regions, there is a positive correlation (0.23) between the number of mosques per 1000 inhabitants and the average share of Muslims in the 3 top destinations of Turkish new exporters.<sup>7</sup>

Although we identify the extent of "religiousness" of a firm on the basis of the "religiousness" of its location region, it is worth stressing that the importance of religion is not just related to its current and direct impact on believers' life, decisions 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" regions 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 the number of mosques over population is highly correlated with the NUTS3 level number of per capita Imam Hatip schools available from the National Education Statistics collected by Turkstat. Imam Hatip schools 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](#)), with the number of religious associations per inhabitant recorded in 2005 (available from the Department of Association of the Turkish Ministry of Interior) and with the share of participants to Quran courses (available from Turkstat).<sup>8</sup>

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<sup>7</sup>Furthermore, 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.

<sup>8</sup>The National Salvation Party was an Islamic party 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. 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

The Table also reveals that, among all of these indicators, our preferred proxy shows the highest correlation (0.75) with the share of individuals declaring that religion is very important in their lives,  $Share_r^{Religion\ Important}$  (available from the European Value Survey 1999, EVS99, for Turkey).<sup>9</sup> 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 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 that is significantly related to the variable  $Share_r^{Religion\ Important}$  and to the share of people attending religious offices,  $Share_r^{No\ Religious\ Attendance}$ . Also, we find a positive coefficient associated to the share of people declaring not to like Christians as neighbours,  $Share_r^{Dislike\ Neighbours}$ . The significance of this variable is fully captured by the other two. This points at our favourite indicator as a proxy of distrust in people of different religions. This insight is confirmed when in the right hand side of the Table we implement a similar analysis by exploiting an analogous indicator of religious importance, though inversely scaled, for NUTS1 Turkish regions retrieved from the 5th wave of the World Value Survey (WVS5), the only WVS wave including the region information for Turkey.<sup>10</sup> 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 region which significantly reflects the extent of Turkish people’s trust in individuals of the same religion and the distrust in people of different religions.

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

	$N_r^{Mosques}$	$N_r^{Imam\ Schools}$	$Share_r^{MSP\ in\ 1973}$	$N_r^{Rel\ Ass\ '05}$	$N_r^{Quran\ Schools\ Part}$
$N_r^{Mosques}$	1				
$N_r^{Imam\ Schools}$	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.

### 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

AKP share of voters is reflecting something more than simply Islamic identity.

<sup>9</sup>This indicator is only available for 13 out of the 26 NUTS2 Turkish regions. Due to its narrower cross-sectional range and higher aggregation we do not exploit it in our baseline analysis since it would deliver a partial analysis of Turkish manufacturing firms’ export entry. Nonetheless, we will use this measure when assessing the identification of our effect.

<sup>10</sup>Information on trust in people of different religion is not available in the EVS99.



Table 3:  $N_r^{Mosques}$ , Religiousness and Trust

	EVS99					WVS5					
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
<i>Share</i> <sup>Religion Important</sup>	9.580*** [0.971]				7.891*** [2.564]						
<i>Share</i> <sup>No Religious Attendance</sup>		-0.573*** [0.106]		-0.518*** [0.096]	-0.248* [0.126]						
<i>Share</i> <sup>Dislike Neighbours</sup>			1.422* [0.716]	0.879* [0.512]	-0.31 [0.628]						
<i>Share</i> <sup>Religion Not Important</sup>						-0.389** [0.170]		-0.065 [0.196]			-0.057 [0.195]
<i>Share</i> <sup>Trust Different Religions</sup>							-1.440*** [0.508]	-1.356** [0.607]		-1.342** [0.528]	-1.274** [0.621]
<i>Trust</i>									-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.

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).<sup>11</sup> Despite its pitfalls, the latter does not need any distributional assumption to model unobserved heterogeneity - in particular firm 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 near the center of the distribution of the regressor (Wooldridge, 2002).<sup>12</sup> Furthermore, as the LPM is affected by heteroskedasticity, our standard errors are robust and clustered at region-country level and our predicted probabilities always lie between zero and one.

## 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 proximity when controlling for firm-year and country-year fixed effects in column [1]<sup>13</sup> and when adding the number of firms in sector  $j$  exporting from NUTS3 region  $r$  to country  $c$ ,  $N_{jrc\ t-1}$ , in column [2].<sup>14</sup> The inclusion of the latter control 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), therefore the specification in column [2] is our preferred one. Our variable of interest is always strongly significant and predicts a higher export entry propensity when the religious proximity between the region where the firm is located and the destination country is higher. It is worth noting that controlling for export spillovers by neighbouring firms delivers a larger coefficient in column [2] than in the first one, hence disclosing a downward bias in

<sup>11</sup>This model has been employed in similar frameworks (Defever et al., 2015).

<sup>12</sup>Although 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.

<sup>13</sup>The positive and significant coefficients associated to our proxy for religious proximity is also confirmed when we just control for country, province and year fixed effects.

<sup>14</sup>This variables are built on the basis of the merge between FTS and SBS data. When we take the logarithm of the number of exporters we add the constant 1.

the estimate of column [1]. This suggests that an 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. Similarly, by trading with firms located in the region, foreign partners could, in turn, raise their level of trust in the local population and increase their propensity to engage in trade with new exporters from the same area.

As religious proximity is measured by the interaction term between the logged number of mosques and the share of Muslims, assessing the economic magnitude of the effect is not straightforward, but a way to grasp it is the following. The region at the 75th percentile of the number of mosques (high Islam attachment) is Kirsehir. The region at the 25th percentile (low Islam attachment) is Osmaniye. The country at the 75th percentile of the Muslim Share is Eritrea, while the country at the 25th percentile is Portugal. The coefficient estimate, then, predicts that firms in Kirsehir should have a probability by 0.014 points higher than firms in Osmaniye, to enter Eritrea as compared to Portugal. The export probability in our sample being equal to 0.093%, the effect of religion that we find is not only statistically, but also economically significant.

In columns [3]-[5] we show that standard error clustering at firm, region and country level does not affect the significance of our baseline finding. To attenuate endogeneity issues, in column [6] we substitute the number of mosques in 1986 for the number of mosques in 2000 and we find the same result. Results are also confirmed when we rely on historical values on the share of Muslims resident in the region according to the 1893 census (Karpas, 1978) under the Ottoman Empire in column [7] and when, in column [8], we measure the extent of religiousness in the region on the basis of the per capita tax on non Muslims under the Ottoman Empire, *Jizya*, in 894 (Barkan, 1964). In the latter case, the number of observations drops, as the indicator is not available for some of the 81 Turkish NUTS3 regions. In column [9] we, then, substitute our favourite region level indicator with the number of Imam Hatip Schools in the region normalised by population. Finally, in order to exclude any spurious result led by geographical effects, in columns [10] and [11] 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 above mentioned - section 3.3 - indicator on the share of people who consider religion very important in their lives,  $Share_r^{Religion\ Important}$ . We interact the latter measure with 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

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]
$\ln(\lambda_{rc})$	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]
<b>FE:</b>										
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.



assume that it could concern any other different religious confession. Therefore, in column [3] we dig further and explore 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 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 export entry compared to all groups. The non significance of the coefficient associated to the interaction with the share of Christians reveals that they are not perceived by Turkish entrepreneurs located in highly religious provinces as different as other religious groups and non religious people. Statistical tests of the difference between religious groups in the lower part of the Table 5, instead, show that the coefficient on  $N_r^{Mosques} * Share_c^{Muslims}$  is definitely higher than the ones associated to the remaining two variables. In general, then, evidence from Table 5 suggests that our results can actually be driven by the extent of trust among the potential contracting parties, as the latter is especially low between Jews and Muslims.

Table 5: Is it really religion?

	Importance of Religion [1]	Dislike of Christians as Neighbours [2]	Presence of Other Religious Communities [3]
$Share_r^{Religion\ Important} * Share_c^{Muslims}$	0.0062*** [0.0012]		
$Share_r^{Dislike\ Neighbours} * Share_c^{Muslims}$		0.0025*** [0.0005]	
$Rel\_Prox_{rc}$			0.0006*** [0.0001]
$N_r^{Mosques} * Share_c^{Christians}$			0 [0.0001]
$N_r^{Mosques} * Share_c^{Jews}$			-0.0008* [0.0004]
$dist_{cr}$	-0.0029*** [0.0005]	-0.0029*** [0.0005]	-0.0027*** [0.0004]
$N_{jrc\ t-1}$	0.0009*** [0.0001]	0.0009*** [0.0001]	0.0009*** [0.0001]
Observations	4434752	4434752	5450364
R <sup>2</sup>	0.0288	0.0288	0.028
FE			
Firm-Year	y	y	y
Country-Year	y	y	y
			Coeff (P-Value)
Muslims-Christians			0.0006 (0.000)
Muslims-Jews			0.0013 (0.001)
Christians-Jews			0.0007 (0.087)

\* Significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level. Robust standard errors clustered by Province-Country of destination are in brackets.

Country-Year, and Firm-Year fixed effects are included in each specification.

As explained in the text  $Rel\_Prox_{rc}$  is equal to  $N_r^{Mosques} * Share_c^{Muslims}$ .

At the bottom of the Table, the difference between the coefficients associated to different religious groups and its significance is reported.

### 4.1.2 Further Robustness Checks

We present some relevant robustness checks that directly deal with the potential shortcomings of our baseline specification and sample definition in Table 6.

As firms are more likely to serve geographically closer markets, there could exist a non linear effect related to geographical contiguity which is not captured by geographical distance in our baseline specification. Sharing 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 factor in order to isolate the trade effect of religion. Hence, in column [1] we add a dummy measuring contiguity between region  $r$  and country  $c$ ,  $Contiguity_{rc}$ . Even if the coefficient associated to the latter variable is positive and highly significant, it 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 region,  $\frac{GDP_c^{per\ capita}}{GVA_r^{per\ capita}}$ , of location in column [2] 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 [3] we investigate whether our baseline finding is driven by the omission of an existing trade heritage between the country and the Turkish region. Beyond the number of local exporters to country  $c$ , we 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 indicator 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 [4], 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 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.<sup>15</sup> We then take the average value of all these variables for Turkish NUTS1 regions and available countries and compute the Euclidian Distance among these averaged indicators for each region-

<sup>15</sup>The 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.

country pair, *Cultural Distance*. Results in column [4] show that the significance of our religious proximity indicator is not affected by the inclusion of the cultural distance measure which is negative, although non 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 cultural linkages between Turkey and the destination markets, we acknowledge the partial overlap between Islam and Arabic speaking countries. Although only a very tiny share - roughly 1% - of the Turkish population also speaks Arabic, Arabic speaking Turkish citizens could be concentrated in a few locations and, as the importance of linguistic proximity for bilateral trade has been highlighted by recent work (Melitz and Toubal, 2014; Egger and Lassmann, 2015), this could cast some doubts on the identification of the role of religious proximity. Then, in order to prove that our result is not driven by the sharing of a common spoken language, in columns [5] and [6] we add to the baseline specification the product between the share of Arabic speaking population in the firm's location region and in the destination market,  $Arabic_r^{sh} * Arabic_c^{sh}$ . In column [5], the information on Arabic speaking population in Turkish regions is retrieved from *Eurobarometer* 2005 (EB05) at the NUTS2 level and is representative at the territorial unit. In column [6], the information is retrieved from the *Turkey Demographic and Health Survey (TDHS)* and is available for each of the 81 NUTS3 Turkish regions, even if the survey is not representative at such a detailed level of territorial disaggregation. In both cases, however, our baseline evidence is corroborated and sharing the Arabic language emerges as an alternative and distinct force fostering firms' first time export entry. It is worth mentioning that the presence of firm-year fixed effects further accounts for any possible firm-specific - as well as location specific - investment in Arabic learning by the firm local workforce in order to enter Muslim/Arabic countries.

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 migration. It is worth highlighting that this robustness check also allows to account for the potential role of a common native language spoken by Turkish citizens living abroad. We include a proxy of bilateral migration in column [7] and of the Turkish diaspora in column [8].<sup>16</sup> As data on immigrants into Turkish regions by nationality are not available we multiply the log of the total number of immigrants in the Turkish region by the log of Turkish migrants in the destination country (Artuc et al., 2015),  $Foreigners_r * Turkish_c$ . Then, in column [8] we multiply the latter variable by the log of the number of Turkish workers in each Turkish region 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,  $Emigrants_r * Turkish_c$ . Our results are unaffected in both cases, but we find a positive, although non significant, role of migration flows on firms' export entry. To further test the Turkish diaspora effect, in column 5 we exclude from the sample

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<sup>16</sup>As an additional control we have accounted for the local presence of affiliates of firms headquartered in export destinations. Results confirm our baseline finding, as the inclusion of the log number of firms owned by residents of foreign country  $c$  does not affect the significance of religious proximity, however this set of estimates is not shown for the sake brevity but is available upon request.

those countries hosting at least 10,000 Turkish citizens<sup>17</sup> and, in order to ascertain that our main finding is not driven by the importance of past colonial ties,<sup>18</sup> we exclude export destinations that in past centuries were part of the Ottoman empire.<sup>19</sup> Furthermore, we take into account of the important divide between Sunni and Shiite adherents within Islam, which could weaken a correct identification of religious ties measured by means of our proxy. While Turkey is an almost totally Sunni country, Shiite Muslims are concentrated in a few among its export destinations. Then, we exclude countries with at least 10% of Shiite Muslims in the total Muslim population (Alesina et al., 2003).<sup>20</sup> Finally, in order to exclude that our result may be driven by government policies in favour of more religious provinces coupled with increasing trade negotiations with Muslim majority countries, in the last column of the Table we augment our baseline specification with the interaction between a dummy taking value 1 if Turkey has a regional trade agreement in force with destination market  $c$ ,  $RTA_c$ , and a dummy taking value 1 if region  $r$  benefits from the subsidy scheme introduced by Law 5084/2004 and Law 5350/2005,  $Subsidy_r$ .<sup>21</sup>

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 and denoting them as those firms entering an export market which were not exporting to in the previous three years; ii) excluding foreign firms in order to ascertain that our main result is not driven by any of the activities of foreign firms with their home country; iii) running our model by year. Also, we have used an alternative functional form for religious proximity in the baseline specification when combining information on Turkish regions' religious identity and countries' share of Muslims in the population. Finally, we have estimated a Poisson model for the number of firms in region  $r$  entering export market  $c$  for the first time where we account for country-year and region-year fixed effects. In all cases results corroborate our baseline evidence.

## 4.2 Dissecting the Channels of the Religion-Trade nexus. Market Access or Preference Similarity?

### 4.2.1 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. Although previous evidence at the aggregate level support this view (Helpman et al., 2008), com-

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<sup>17</sup>Data are from Artuc et al. (2015). We also test the robustness of results by employing different threshold numbers.

<sup>18</sup>The 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.

<sup>19</sup>These countries are Albania, Bulgaria, Bosnia and Herzegovina, Armenia, South Cyprus, Egypt, Greece, Iraq, Libya, Macedonia, Palestine, Syria, Tunisia, Yemen, Kosovo, Montenegro and Serbia.

<sup>20</sup>We confirm our results even when we, alternatively, exclude countries with other threshold shares of Shiite Muslims in the total Muslim population.

<sup>21</sup>These are the only industrial policies we are aware of, for the period under analysis. According to the two laws, subsidies had to be granted in order to support newly created and existing firms in underdeveloped regions expanding their workforce, by means of reductions in social security contributions, credits on income taxes on wages, subsidies for electricity consumption and land subsidies (Betcherman et al., 2010).

Table 6: Robustness

	Contiguity		Income Level Differences		Bilateral Export Value		Bilateral Cultural Distance		Arabic Language EB05		Arabic Language TDHS		Migration Bilateral		Turkish Diaspora		Diaspora Countries		Exclusion of Ottoman Colonies		Shiite Countries		RTAs	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]												
$Rel\_Prox_{rc}$	0.0006*** [0.0001]	0.0006*** [0.0001]	0.0006*** [0.0001]	0.0011*** [0.0002]	0.0006*** [0.0001]	0.0006*** [0.0001]	0.0006*** [0.0001]	0.0006*** [0.0001]	0.0003*** [0.0001]	0.0004*** [0.0001]	0.0005*** [0.0001]	0.0006*** [0.0001]												
$Contiguity_{cr}$	0.0068*** [0.0024]																							
$GDP_{cr}$ per capita		-0.0001** [0.0000]																						
$GA_{cr}$ per capita			0.0000*** [0.0000]																					
$Ve_{cr,t-1}$				-0.0008 [0.0006]																				
$Cultural\ Distance$																								
$Arabic_{cr}^{sh} * Arabic_C$					0.0066* [0.0038]					0.0002** [0.0001]														
$Foreigners_r * Turkish_c$							0.000 [0.0000]																	
$Emigrants_r * Turkish_c$								0.0000 [0.0000]																
$Subsidy_r * RTA_c$																								
$dist_{cr}$	-0.0026*** [0.0004]	-0.0028*** [0.0005]	-0.0027*** [0.0004]	-0.0026*** [0.0007]	-0.0028*** [0.0004]	-0.0028*** [0.0004]	-0.0027*** [0.0004]	-0.0027*** [0.0004]	-0.0028*** [0.0004]	-0.0020*** [0.0005]	-0.0018*** [0.0004]	-0.0029*** [0.0004]												
$N_{jrc,t-1}$	0.0010*** [0.0001]	0.0009*** [0.0001]	0.0010*** [0.0001]	0.0014*** [0.0002]	0.0010*** [0.0001]	0.0010*** [0.0001]	0.0009*** [0.0001]	0.0009*** [0.0001]	0.0006*** [0.0001]	0.0009*** [0.0001]	0.0009*** [0.0001]	0.0010*** [0.0001]												
Observations	5528416	4029206	5528416	2298114	4944470	4936413	5151296	5151296	5057008	5174860	5322175	5528416												
R <sup>2</sup>	0.0276	0.0299	0.0276	0.0459	0.0298	0.0298	0.029	0.029	0.0204	0.0283	0.0284	0.0276												
FE																								
Firm-Year	y	y	y	y	y	y	y	y	y	y	y	y												
Country-Year	y	y	y	y	y	y	y	y	y	y	y	y												

\* Significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level. Robust standard errors clustered by Province-Country of destination are in brackets. Firm-Year and Country-Year fixed effects are included in each specification.

monality of religious beliefs could ease a firm's export activity even via similarity in preferences.<sup>22</sup> In this respect, foreign customers could 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 the export market entry, allows firms to reap higher sales and revenues in more religiously proximate markets than in 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.<sup>23</sup>

To deal with this issue we extend our empirical framework to account for the impact of religious proximity on firms' export entry values. Column [1] of Table 7, then, shows OLS results on the log of first time export values by new exporters, conditional on exporting. It is worth noting that firm-year fixed effects are substituted with region-year fixed effects and time-varying firm level covariates. Firm-year fixed effects cannot be included in this specification as we investigate export entry values for exporters in the year of first time entry. The evidence is 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, the lack of control for selection into exporting casts some doubts on this evidence. In order to account for self selection we run a two step estimation where we use Arabic linguistic proximity as exclusion restriction. We hinge on the evidence reported in columns [2] and [3] showing that in our data Arabic linguistic proximity does not directly affect the intensive margin of exports.<sup>24</sup> In columns [4]-[7], then, we perform two-step estimates where, as a first

<sup>22</sup> Felbermayr and Toubal (2010) model the hypothesis that common culture favours bilateral trade through similarity in preferences and reduced sunk entry costs.

<sup>23</sup> 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

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

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.

<sup>24</sup> Evidence on the role of linguistic proximity for the intensive margin of trade is mixed. In line with our findings, Egger and Lassmann (2015) find that common native language only spurs the extensive margin of trade, while Melitz and Toubal (2014) show that linguistic proximity spurs trade both at the extensive and intensive margin.



step, we run a version of our baseline model 9 augmented with the product of the share of Arabic speaking countries in the firm's location region and destination market that we, therefore, use as exclusion restriction.<sup>25</sup> The difference between the set of estimates in columns [4]-[5] and [6]-[7] relies on the above mentioned different source for data on Arabic speaking population in Turkish regions which is the EB05 in columns [4]-[5] and *TDHS* in columns [6]-[7]. In both sets of estimates, we find that, once accounted for selection, religious proximity has no impact on the export value. This evidence reveals 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. Indeed, if religious proximity between contracting parties engenders a higher trust between them, we expect this mechanism to be more important for the exchange of those products that, due to their intrinsic characteristics, are more difficult to be assessed by the typical consumer in the destination country. Religious proximity could, then, be more relevant for those firms selling goods whose advertisement intensity is higher. Indeed, advertisement expenditures are also directed to engender trust across potential consumers. We test this hypothesis in columns [1] and [2] of Table 8 where we compare firms exporting high-versus low-advertisement intensity goods on the basis of the average advertisement intensity of products produced by the firm.<sup>26</sup> We rely on advertisement intensity measure at the product level compiled by Ma et al. (2014)<sup>27</sup> at the HS 6 digit classification system and, exploiting the Turkish Annual Industrial Production statistics, we calculate the average advertisement intensity of products sold by the firm.<sup>28</sup> 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 with only a subset of goods that are classified as differentiated goods are assumed to

<sup>25</sup>As our first step model is a LPM, we control for sample selection by including the OLS residuals from the LPM estimation in the second step (Rivers and Vuong, 1988; Vella, 1998).

<sup>26</sup>Firms exporting high/low advertising intensity goods are those whose products' average advertising intensity is above/below the median across firms.

<sup>27</sup>The measure is available from one of the author's web page <http://www.hwtang.com/data.html>.

<sup>28</sup>As 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 product level indicator by 2 digit NACE sectoral mean.

Table 7: Religious Proximity and Export Entry Value

	Baseline	Income Level Differences	Bilateral Export Value	Bilateral	Migration	Diaspora	Diaspora Countries	Exclusion of Ottoman Colonies	Shiite Countries
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[8]
$\ln(\lambda_{rc})$	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]	
$\frac{GDP_{per\ capita}}{GVA_{r\ per\ capita}}$		-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.



produce non differentiated goods. Results are shown in columns [3]-[4] for the conservative version of the differentiated products' classification by Rauch (1999) and in columns [5]-[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 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, only firms with all homogeneous or reference priced goods 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 producing at least one differentiated good 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 which entail larger entry costs.

## 5 Extensions: The role of Export Experience

Up to now, we have explored the role of religious affinity in promoting the first time export entry. However, the sharing of common religious beliefs could also contribute to drive firms' entry in subsequent markets.

In Table 9 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 closer to and/or shares similar characteristics with the destinations they already export to (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  $c$ . The sample of specifications in columns [1]-[2], then, includes first time exporters in the country - regardless of their previous export experience in other countries - and non exporters. We, then, build a dummy for export experience,  $exp_{it-1}^{other}$ , taking value 1 for firms that were exporting to other destinations in time  $t - 1$  and 0 for non exporters in  $t - 1$ , and interact it 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. It is worth noting that the inclusion of firm-year fixed effects prevents from the estimation of the experience dummy coefficient. Results in column [2] show that export experience reduces the impact of religious proximity on market entry.

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 our variable of interest with the number of years,  $Years_i^{exp}$ , that 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 up to 5 years of previous export experience. Corresponding results in column [2] show that the higher the number of years in the

Table 8: 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		Conservative		Liberal		Conservative		Liberal	
	A: High	[1]	A: All Diff.	B: Not All Diff.	A: All Diff.	B: Not All Diff.	A: At least one Diff.	B: None Diff.	A: At least one Diff.	B: None Diff.
		[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
$Rel\_Prox_{rc}$	0.00130*** [0.00022]	0.00059*** [0.00015]	0.00093*** [0.00016]	0.00063*** [0.00017]	0.00102*** [0.00017]	0.00041*** [0.00015]	0.00095*** [0.00017]	0.00023 [0.00017]	0.00095*** [0.00016]	0.00019 [0.00016]
$dist_{cr}$	-0.00401*** [0.00066]	-0.00284*** [0.00057]	-0.00299*** [0.00057]	-0.00377*** [0.00059]	-0.00316*** [0.00058]	-0.00340*** [0.00058]	-0.00310*** [0.00054]	-0.00399*** [0.00084]	-0.00311*** [0.00053]	-0.00351*** [0.00069]
$N_{jrc\ t-1}$	0.00184*** [0.00020]	0.00112*** [0.00009]	0.00145*** [0.00014]	0.00136*** [0.00013]	0.00146*** [0.00015]	0.00133*** [0.00012]	0.00145*** [0.00014]	0.00112*** [0.00016]	0.00143*** [0.00014]	0.00112*** [0.00014]
Observations	1638500	1638664	2796532	1022166	2653574	1165124	3336280	482418	3113206	705492
R <sup>2</sup>	0.03419	0.03045	0.02966	0.03567	0.02954	0.03538	0.03197	0.01984	0.03116	0.03078
Test:										
$Rel\_Prox_{rc}^A = Rel\_Prox_{rc}^B$	7.15642	7.15642	1.6581	1.6581	7.21771	7.21771	9.20397	9.20397	10.77277	10.77277
P-Value	0.007	0.007	0.198	0.198	0.007	0.007	0.002	0.002	0.001	0.001
FE	y	y	y	y	y	y	y	y	y	y
Firm-Year	y	y	y	y	y	y	y	y	y	y
Country-Year	y	y	y	y	y	y	y	y	y	y

\* Significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level. Robust standard errors clustered by Region- Destination are in brackets.

Firm-year and Country-Year fixed effects are included in each specification.

In columns [1] and [2] Advertising intensity is defined according to the measure available from Heiwai Tang's web page <http://www.hwatang.com/data.html>. Column [1] reports estimates for the group of firms producing high advertising intensity goods while column [2] reports estimates for the group of firms producing low advertisement intensity goods, defined as the ones presenting an advertising intensity above/below the median across firms, respectively.

In columns [3]-[10] differentiated products are defined according to the classification - conservative in columns [3]-[4] and [7]-[8] and liberal in columns [5]-[6] and [9]-[10] - by Rauch (1999). Columns [3] and [5] report estimates for the group of firms whose products are all differentiated while columns [4] and [6] report estimates for the complementary group of firms whose product baskets also include homogeneous or referenced priced goods. Columns [7] and [9] report estimates for the group of firms whose product baskets include at least one differentiated product while columns [8] and [10] report estimates for the complementary group of firms whose product baskets only includes homogeneous or referenced priced goods.

At the bottom of the Table the significance test for the difference in the estimated coefficients for different groups of firms are reported.

Table 9: 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]
$Rel\_Prox_{rc}$	0.0018*** [0.0003]	0.0019*** [0.0004]	0.0066*** [0.0015]
$Rel\_Prox_{rc} * exp_{it-1}^{other}$	-0.0005*** [0.0001]		
$Rel\_Prox_{rc} * Years_i^{exp}$		-0.0002*** [0.0000]	
$Rel\_Prox_{rc} * Years_c^{exp}$			-0.0024*** [0.0005]
$Years_{ic}^{exp}$			0.1822*** [0.0030]
$dist_{cr}$	-0.0045*** [0.0007]	-0.0045*** [0.0008]	-0.0237*** [0.0045]
$N_{jrc\ t-1}$	0.0035*** [0.0001]	0.0032*** [0.0001]	0.0221*** [0.0007]
Observations	14275895	8990190	2182866
R <sup>2</sup>	0.0395	0.0395	0.5906
FE:			
Firm-Year	y	y	y
Country-Year	y	y	y
<b>Test</b>			
Entry Year		0.0019*** [0.0004]	0.0066*** [0.0015]
Second Year		0.0017*** [0.0003]	0.0042*** [0.0016]
Third Year		0.0016*** [0.0003]	0.0019 [0.0018]
Fourth Year		0.0014*** [0.0003]	-0.0005 [0.0021]
Fifth Year		0.0012*** [0.0002]	-0.0029 [0.0025]
Sixth Year		0.0010*** [0.0002]	-0.0053* [0.0029]

\* Significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level. Robust standard errors clustered by Province-Country of destination are in brackets.

Firm-Year and Country-Year fixed effects are included in each specification.

In Column [1] and [2] 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, while in column [3] the analysis covers both exporters and non exporters (20% of zeroes is randomly selected).

Estimations in columns [2] and [3] refer to the 2007-2009 period in order to be able to test for 5 years of overall and country-specific export experience, respectively.

export market the lower the effect of religious proximity, but this attenuation 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 a specific country. With respect to the analysis run in the previous columns, in column [3] we add incumbent exporters in market  $c$  to the sample of non exporters and new exporters.<sup>29</sup>  $Years_{ic}^{exp}$  now measures the number of years firm  $i$  located in region  $r$  has been exporting to country  $c$ , that is the destination market-specific export experience. 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, a firm's long-lasting presence in the market fosters the building of its reputation as a trustworthy contracting party. Results suggest that religious proximity has a significant role in favouring a firms' stay in exporting the first and the second year. However, since the third export year in country  $c$ , the importance of religious affinity fades away.

## 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 regions where firms are located, with the share of Islam adherents in total population across potential destination markets, we identify and test the role of Islamic 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 Islamic religious proximity reducing sunk costs 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. Our work then supports the view that the innate trade orientation of Islam, coupled with evidence on Muslims' higher intolerance towards "others" can drive a selective export behavior of firms.

The positive effect of religious proximity on firms' export entry is economically meaningful and is not driven by spatial contiguity, cultural proximity, language commonality, trade heritage, migration and by preferences similarity. Furthermore, religious proximity has no impact on the entry export value and especially favours export entry of producers of high advertising intensity and differentiated goods. Finally, we show that the role of religious ties is attenuated by export experience and we disclose a declining return on exports of religious proximity 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. Further evidence on other cultural contexts

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<sup>29</sup>This extension of the analysis to all firms in our sample obliges us to restrict our focus on a randomly selected 20% of zero observations.

would be needed to corroborate our piece of evidence on the Islamic religion.

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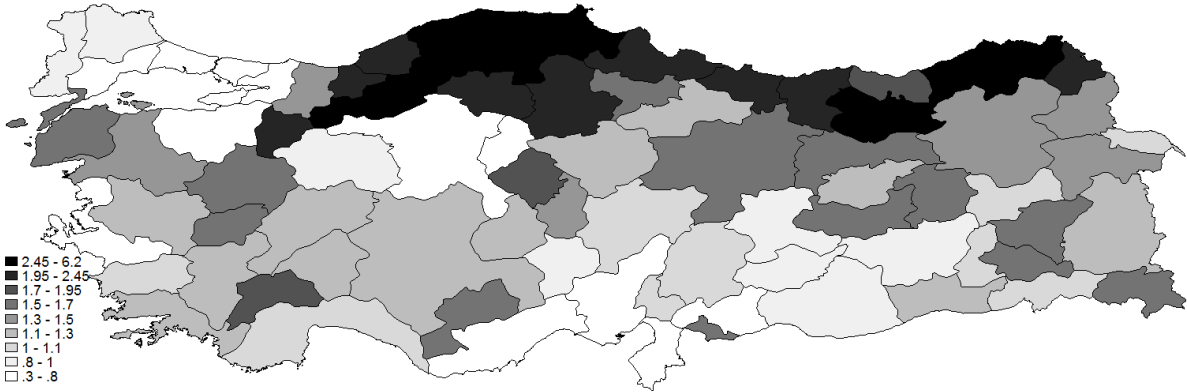
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# A Additional figures and tables

Figure A1: Mosques' distribution across Turkish NUTS3 regions



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