Open Quantitative Sociology and Political Science

Submitted: 4th April, 2016
Published: 28th June, 2016

AN ANALYSIS OF ISLAMIST TERRORISM ACROSS WESTERN COUNTRIES

by

Noah Carl*

* Correspondence should be sent to: Noah Carl, Nuffield College, New Road, Oxford, OX11NF; noah.carl@nuffield.ox.ac.uk.

Acknowledgements

I acknowledge support from the University of Oxford, from Nuffield College, Oxford, and from the Economic and Social Research Council (UK). I would like to thank Emil O.W. Kirkegaard, John Fuerst and L.J. Zigerell for commenting on earlier versions of the manuscript.

Abstract

Islamist terrorism is an ongoing threat to Western countries. This paper tests two main hypotheses: first, that percentage of Muslims in the population is associated with Islamist terrorism across Western countries; and second, that military intervention in the Middle East is associated with Islamist terrorism across Western countries. For the purpose of testing these hypotheses, four separate measures of Islamist terrorism are utilised: first, number of Islamist terrorist attacks per capita (logged); second, number of casualties from Islamist terrorism per capita (logged); third, terrorism threat level reported by the Foreign and Commonwealth Office of the British government; and fourth, number of arrests for religiously inspired terrorism per capita (logged). The paper finds that percentage of Muslims in the population (logged) has a relatively strong association with the first (r = .62; β = 0.43–0.66), third (r = .67; β = 0.33–0.72) and fourth (r = .63; β = 0.44–0.71) measures of Islamist terrorism, but a somewhat weaker association with the second (r = .42; β = 0.16–0.46); while military intervention in the Middle East has a fairly strong relationship with the second (d = 0.53–1.27, r = .41; β = 0.29–0.45) and third (d = 0.69–1.97, r = .40; β = 0.38–0.55) measures, but an inconsistently significant relationship with the first (d = 0.54–1.53, r = .22; β = 0.23–0.38) and fourth (d = 0.39–1.72, r = .30; β = 0.33–0.43).

Key words

Terrorism; Western countries; European countries; percentage Muslim; military intervention

1. Introduction

There have been a number of highly destructive attacks by Islamist terrorists against Western countries over the last two decades, beginning with the September the 11th attacks in the United States. Other examples include the 2004 train bombings in Madrid, the 2005 bus and underground bombings in London, the 2009 Ft. Hood shootings in Texas, the 2015 *Charlie Hebdo* shootings in Paris, and the 2016 airport and metro station bombings in Brussels (see The Economist, 2015). As a consequence, Islamist terrorism has become an issue of central political concern for both citizens and policymakers in the West. Such concern has been exacerbated in recent years by the rise of the so-called Islamic State (also known as ISIS, the Islamic State of Iraq and Syria), an Islamist organisation that as of June 2016 controls substantial territory across Iraq and Syria, and which has already claimed responsibility for two major terrorist attacks against the West (the Novemeber 2015 Paris attacks, and the 2016 airport and metro station bombings in Brussels), as well as numerous attacks against Middle Eastern countries (The Economist, 2016).

Many possible factors could influence the risk of Islamist terrorism across countries. The present study focuses on two: percentage of Muslims in the population, and military intervention in the Middle East. Regarding the former, it seems plausible that the higher the percentage of Muslims in the population, the greater the share of citizens susceptible to Islamist radicalisation, and therefore the larger the fraction of the population that the security services should need to monitor. For example, ISIS has been actively attempting to radicalise young Muslims living in Western countries by disseminating Jihadist propaganda through social media (Gates & Podder, 2015; and see Benmelech & Klor, 2016). Regarding the latter, it stands to reason that Islamist terrorist organisations such as Al Qaeda and ISIS might selectively target countries that have intervened militarily in Muslim countries—particularly those in the Middle East, where the most sacred Islamic holy sites are located. Indeed, a number of Islamist martyr videos refer explicitly to Western military aggression in the Middle East as the justification for Jihad (Best, 2010; Pape & Feldman, 2010).

It should be noted that the first hypothesis, unlike the second, presumes that Islamist terrorists can be motivated by causes other than indignation over Western military aggression; for example, opposition to Western values, or simply a general desire to foment terror (see Berger, 2014). However, since different terrorists may obviously have different motivations, the two hypotheses are not mutually exclusive. The fact that many Islamist terrorist attacks have been perpetrated in Muslim countries that have not themselves taken

part in Western military operations (such as Indonesia, Bangladesh and Azerbaijan) constitutes rather strong evidence that at least some Islamist terrorists are motivated by grievances other than Western military intervention.

2. Data and measures

2.1 Measures of Islamist terrorism

The first measure of Islamist terrorism is the number of Islamist terrorist attacks per capita. The website TheReligionOfPeace.com compiles a list of every Islamist terrorist attack that has been carried out around the world since 9/11 (TheReligionOfPeace.com, 2016a). Among other things, this list records the country in which the attack took place, as well as the number of deaths and the number of injuries sustained. Only incidents involving deadly violence that are deemed to have been motivated by religious duty are included. It should be noted that the list is almost certainly incomplete. For further details as to how it is assembled, see the page 'About the List of Attacks' (TheReligionOfPeace.com, 2016b). Numbers of attacks in each country were summed across the years 2001-2016. The total number of attacks was then divided by the country's population in 2010, taken from the OECD (OECD, 2016a), and multiplied by 1,000,000. Finally, the logarithmic transformation was applied in order to reduce skewness.

The second measure of Islamist terrorism is the number of casualties from Islamist terrorism per capita. Again, data from the list compiled by TheReligionOfPeace.com were utilised for analysis (TheReligionOfPeace.com, 2016a). Casualties (deaths + injuries) in each country were summed across the years 2001-2016. The total number of casualties was then divided by the country's population in 2010, taken from the OECD (OECD, 2016a), and multiplied by 1,000,000. Finally, the logarithmic transformation was applied in order to reduce skewness.

The third measure of Islamist terrorism is the terrorism threat level reported by the Foreign and Commonwealth Office of the British government (FCO). This is reported continuously for every country in the world as part of the FCO's travel advice (FCO, 2016). There are four levels of terrorism threat: high, general, underlying, and low. Following the Brussels terrorist attacks (8:11 am London time), an article was published on the *Telegraph* newspaper's travel blog (1:30 pm London time) giving the contemporaneous FCO terrorism threat level in every country (Smith, 2016). For example, Belgium (unsurprisingly) had a

high terrorism threat level, Austria had a general terrorism threat level, Portugal had an underlying terrorism threat level, and Poland had a low terrorism threat level. The data reported in the *Telegraph* article were utilized for analysis. Terrorism threat level is treated as an interval scale, running from 1 (low) to 4 (high). It is important to note that insofar as FCO terrorism threat level was measured on the day of the Brussels terrorist attacks (which were perpetrated by Islamists), the threat of Islamist terrorism in countries where there was believed to be an underlying risk is likely to have been amplified relative to a day in which there had not just been an Islamist terrorist attack.

One major caveat concerning this measure is that it was not possible to discern how the FCO actually puts it together. In particular, it was not possible to rule out that the measure is partly based on information such as percentage of Muslims in the population or military intervention in the Middle East. If it is partly based on such information, then the analyses in Section 3.3 are somewhat tautological. In an attempt to discern how the measure is in fact constructed, two emails were sent to the FCO (see Appendix A). However, in both cases, the reply received was wholly uninformative: each one simply provided a link to the FCO's travel advice page, namely FCO (2016). The analyses in Section 3.3 are predicated on the assumption that terrorism threat level is based on information such as secret intelligence reports, rather than demographic or foreign policy statistics.

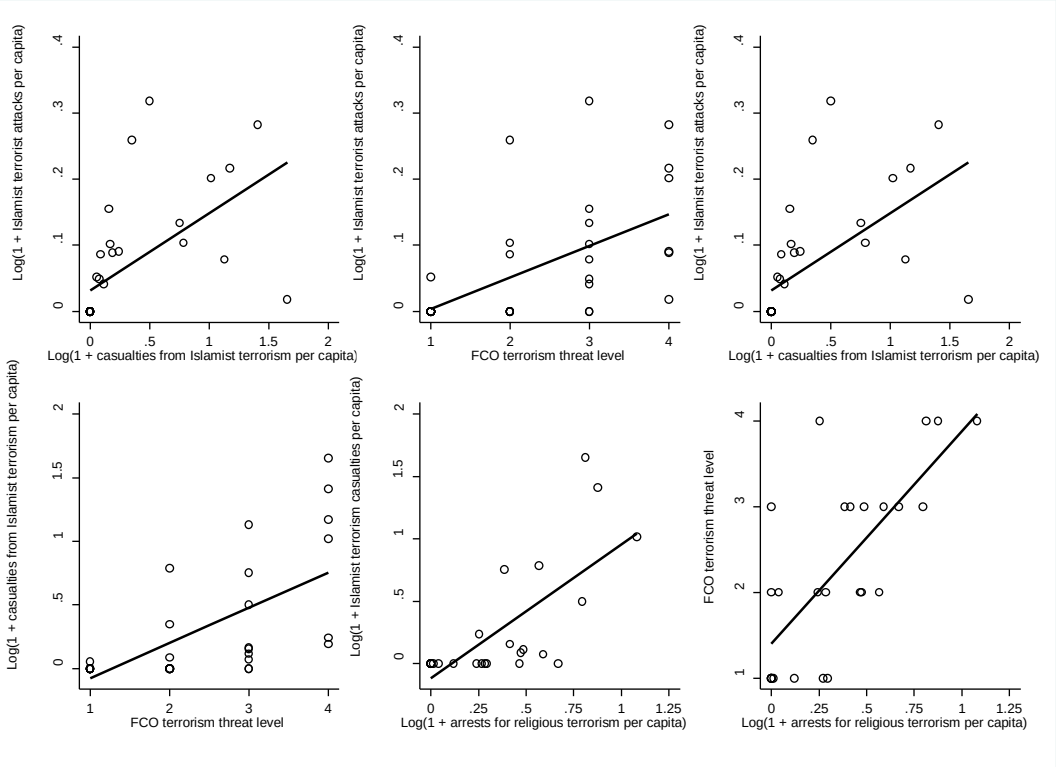
For the three preceding measures, Western countries were defined as: all the OECD countries located in Europe, plus the United States, Canada, Australia, and New Zealand (all of which are also in the OECD). The sample thus comprises 28 countries. In the Appendix, the analysis is repeated using two slightly different samples: first, all 34 OECD countries; and second, only the 24 OECD countries located in Europe. The mean Islamist terrorist attacks per capita (× 1,000,000) in the sample is 0.3, the median is 0.1, and the standard deviation is 0.3. The mean casualties from Islamist terrorism per capita (× 1,000,000) in the sample is 4.1, the median is 0.2, and the standard deviation is 9.7. The mean FCO terrorism threat level in the sample is 2.4, the median is 2.5, and the standard deviation is 1.1.

The fourth measure of Islamist terrorism is the number of arrests for religiously inspired terrorism per capita. Between 2007 and 2014, Europol released an annual report entitled 'TE-SAT: EU Terrorism Situation and Trend Report'. The report contains details about terrorist incidents within each European Union (EU) member state broken down by category (e.g., religiously inspired, right-wing, separatist). Note that in the 2007-2011 reports, there was no 'religiously inspired' category, but instead just an 'Islamist' category. Arrests for religiously inspired terrorism in each EU country were summed across the years

2006-2013 (since each report corresponds to the year before publication). Total arrests were then divided by the country's population in 2010, taken from Eurostat (Eurostat, 2016a), and multiplied by 1,000,000. Finally, the logarithmic transformation was applied in order to reduce skewness. Values were available for 26 EU countries: all those except Croatia, which was excluded because it did not become a member of the EU until 2013, and the UK, which does not provide terrorism arrests broken down by category. The mean arrests for religiously inspired terrorism per capita (× 1,000,000) in the sample is 2.0, the median is 1.0, and the standard deviation is 2.6.

The Pearson correlation between log of 1 + Islamist terrorist attacks and log of 1 + casualties from Islamist terrorism is r = .59 (p = 0.0002; 95% CI = [.33, .77]). The Pearson correlation between log of 1 + Islamist terrorist attacks and FCO terrorism threat level is r = .57 (p = 0.0003; 95% CI = [.30, .76]). The Pearson correlation between log of 1 + Islamist terrorist attacks and log of 1 + arrests for religious terrorism is r = .69 (p = 0.0001; 95% CI = [.41, .85]). The Pearson correlation between log of 1 + casualties from Islamist terrorism and FCO terrorism threat level is r = .65 (p = 0.00002; 95% CI = [.41, .81]). The Pearson correlation between log of 1 + casualties from Islamist terrorism and log of 1 + arrests for religious terrorism is r = .72 (p = 0.00003; 95% CI = [.47, .87]). And the Pearson correlation between FCO terrorism threat level and log of 1 + arrests for religious terrorism is r = .73 (p = 0.00002; 95% CI = [.47, .87]). All six correlations are therefore large and statistically significant. Scatterplots of the three relationships are displayed in Figure 1.

Figure 1. Scatterplots of the relationships between log of 1 + Islamist terrorist attacks, log of 1 + casualties from Islamist terrorism, FCO terrorism threat level and log of 1 + arrests for religious terrorism.



2.2 Measures of percentage Muslim and military intervention in the Middle East

Percentage of Muslims in the population in 2010 was taken from Pew Research (2011). The logarithmic transformation was applied in order to reduce skewness. In the sample of 28 Western countries, percentage Muslim ranges from 0 (Czech Republic) to 7.5 (France), with a mean of 2.7, a median of 2.4, and a standard deviation of 2.3. In the sample of 26 EU countries, it ranges from 0 (Czech Republic) to 22.7 (Cyprus), with a mean of 3.6, a median of 2.3, and a standard deviation of 5.

Three measures of military intervention in the Middle East were utilised: first, whether a country sustained any military deaths in the Iraq (Operation Iraqi Freedom) or Afghanistan (Operation Enduring Freedom) wars, as reported by iCasualities.org (2016a,b); second, the number of military deaths sustained in Iraq or Afghanistan, as reported by iCasualities.org (2016a,b); and third, whether a country is part of the anti-ISIS military coalition, as reported by Wikipedia (2016). The logarithmic transformation was applied to number of military deaths in order to reduce skewness. Within the sample of 28 Western countries: 21 countries (75%) sustained at least one military death in Iraq or Afghanistan; the mean number of military deaths sustained in Iraq or Afghanistan is 294, while the median is

11; and 8 countries (29%) are part of the anti-ISIS military coalition. Within the sample of 26 EU countries: 19 countries (73%) sustained at least one military death in Iraq or Afghanistan; the mean number of military deaths sustained in Iraq or Afghanistan is 21, while the median is 7; and 5 countries (19%) are part of the anti-ISIS military coalition.

2.3 Control variables

Three control variables were utilised: GDP per capita at PPP; harmonised unemployment rate; and post-tax post-transfer Gini coefficient (a measure of income inequality). For the sample of 28 Western countries, these were taken from the OECD (2016b,c,d). Values of GDP per capita and unemployment rate for 2014 were utilised. Because there was no recent year in which the Gini coefficient was available for all OECD countries in the sample, the maximum value observed between 2009 and 2011 was utilised. For the sample of 26 EU countries, 2014 values of all the three control variables were taken from Eurostat (2016b,c,d). The logarithmic transformation was applied to GDP per capita in order to reduce skewness.

GDP per capita was chosen to obviate possible confounding due to a tendency for terrorists to selectively target richer countries. Unemployment rate was chosen to obviate possible confounding due to a tendency for terrorism to emerge out of inactivity, purposelessness and social exclusion. And Gini coefficient was chosen to obviate possible confounding due to a tendency for terrorism to emerge out of indignation or resentment toward a wealthy elite.

3. Results

3.1 Models of Islamist terrorist attacks per capita

The Pearson correlation between log of 1 + Islamist terrorist attacks and log of 1 + percentage Muslim is $r = .62$ ($p = 0.0004$; 95% CI = [.32, .81]). When log of 1 + percentage Muslim squared was included in a model of log of 1 + Islamist terrorist attacks alongside log of 1 + percentage Muslim it was not significant ($p = 0.608$), indicating minimal non-linearity. Cohen's d for log of 1 + Islamist terrorist attacks by any military deaths in Iraq or Afghanistan is $d = 0.54$ (95% CI = [–0.34, 1.40]). The Pearson correlation between log of 1 + Islamist terrorist attacks and log of 1 + military deaths is $r = .22$ ($p = 0.251$; 95% CI = [–.16,

.55]). When log of 1 + military deaths squared was included in a model of log of 1 + Islamist terrorist attacks alongside log of 1 + military deaths it was not significant (p = 0.811), indicating minimal non-linearity. Cohen's d for log of 1 + Islamist terrorist attacks by part of anti-ISIS military coalition is d = 1.53 (95% CI = [0.60, 2.44]). Figure 2 displays scatterplots of the relationships of log of 1 + Islamist terrorist attacks with log of 1 + percentage Muslim and log of 1 + military deaths.

Figure 2. Scatterplots of the relationships of log of 1 + Islamist terrorist attacks with log of 1 + percentage Muslim and log of 1 + military deaths.

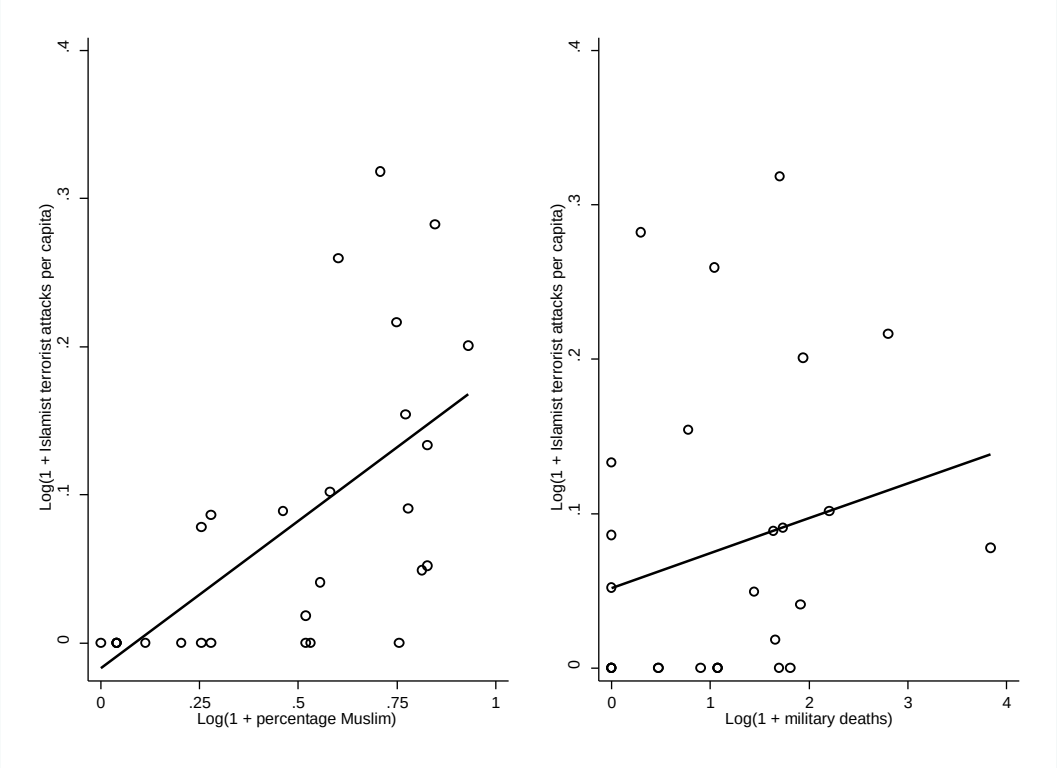


Table 1 displays estimates from multiple linear regression models of log of 1 + Islamist terrorist attacks. Log of 1 + percentage Muslim has a positive and significant effect in all models. The estimate is largest when conditioning on any military deaths in Iraq or Afghanistan, and smallest when conditioning on part of anti-ISIS military coalition. Controlling for log GDP per capita, unemployment rate and Gini coefficient reduces the estimates by 2-6% of a standard deviation. Log of 1 + military deaths does not have a significant effect in either model. By contrast, any military deaths in Iraq or Afghanistan and part of anti-ISIS military coalition have significant positive effects in both models. Controlling for log GDP per capita, unemployment rate and Gini coefficient increases the estimate of any military deaths in Iraq or Afghanistan by 3% of a standard deviation.

Appendix B repeats the analysis using all OECD countries (except Israel, an outlier), and using only the OECD countries located in Europe.

Table 1. Standardised effects of log of 1 + percentage Muslim and military intervention in the Middle East on log of 1 + Islamist terrorist attacks among Western countries.

	Log(1 + Islamist terrorist attacks per capita)					
Log(1 + percentage Muslim in 2010)	0.66***	0.62***	0.45**	0.60**	0.59**	0.43*
Any military deaths in Iraq or Afghanistan	0.32*			0.35*		
Log(1 + military deaths in Iraq or Afghanistan)		0.23			0.37	
Part of anti-ISIS military coalition			0.38*			0.38*
Log(GDP per capita)				0.15	0.08	0.04
Unemployment rate				–0.16	–0.12	–0.13
Gini coefficient				–0.14	–0.29	–0.18
n	28	28	28	28	28	28
R^2	0.48	0.44	0.50	0.58	0.56	0.57

Notes: Entries in the first seven rows are standardised coefficients from OLS regression models. Significance levels: *5%, **1%, ***0.1%.

3.2 Models of casualties from Islamist terrorism per capita

The Pearson correlation between log of 1 + casualties from Islamist terrorism and log of 1 + percentage Muslim is r = .42 (p = 0.025; 95% CI = [.06, .69]). When log of 1 + percentage Muslim squared was included in a model of log of 1 + casualties from Islamist terrorism alongside log of 1 + percentage Muslim it was not significant (p = 0.844), indicating minimal non-linearity. Cohen's d for log of 1 + casualties from Islamist terrorism by any military deaths in Iraq or Afghanistan is d = 0.53 (95% CI = [–0.34, 1.40]). The Pearson correlation between log of 1 + casualties from Islamist terrorism and log of 1 + military deaths is r = .41 (p = 0.031; 95% CI = [.04, .68]). When log of 1 + military deaths squared was included in a model of log of 1 + casualties from Islamist terrorism alongside log of 1 + military deaths it was not significant (p = 0.224), indicating minimal non-linearity. Cohen's d for log of 1 + casualties from Islamist terrorism by part of anti-ISIS military coalition is d = 1.27 (95% CI = [0.37, 2.15]). Figure 3 displays scatterplots of the

relationships of log of 1 + casualties from Islamist terrorism with log of 1 + percentage Muslim and log of 1 + military deaths.

Figure 3. Scatterplots of the relationships of log of 1 + casualties from Islamist terrorism with log of 1 + percentage Muslim and log of 1 + military deaths.

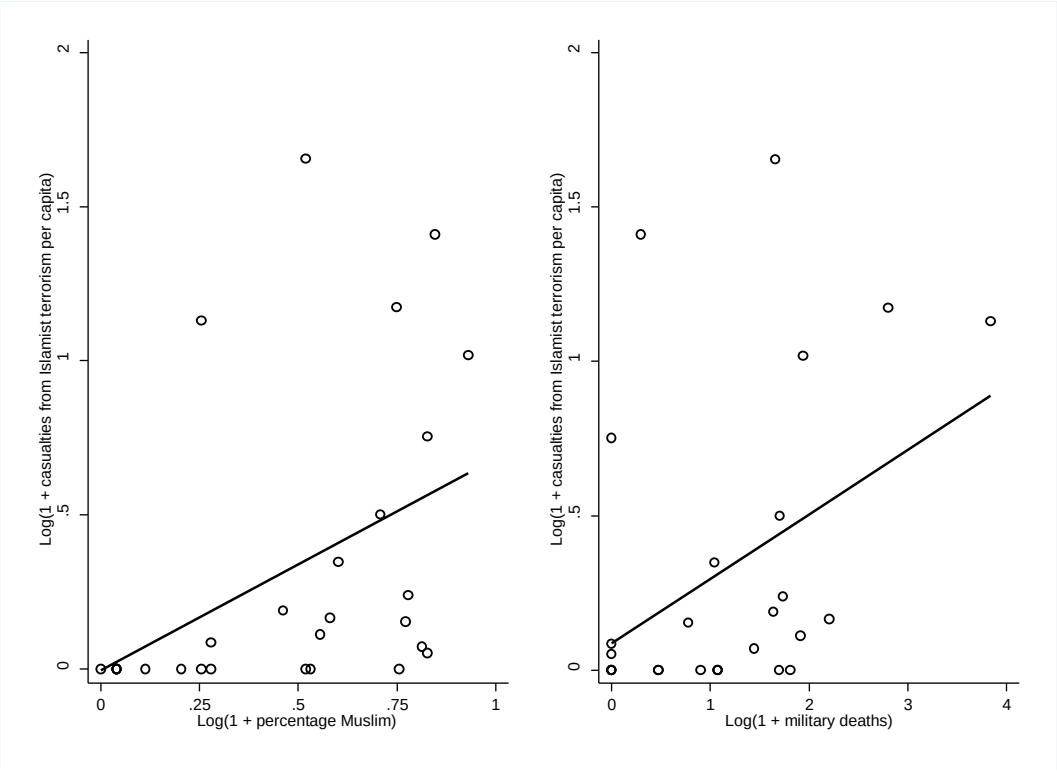


Table 2 displays estimates from multiple linear regression models of log of 1 + casualties from Islamist terrorism. Log of 1 + percentage Muslim has a significant positive effect in the first two models, but not in the subsequent four. Any military deaths in Iraq or Afghanistan does not have a significant effect in either model. By contrast, both log of 1 + military deaths and part of anti-ISIS military coalition have significant positive effects in both models. Controlling for log GDP per capita, unemployment rate and Gini coefficient increases the estimates of log 1 + military deaths and part of anti-ISIS military coalition by 3-4% of a standard deviation. Appendix C repeats the analysis using all OECD countries, and using only the OECD countries located in Europe.

Table 2. Standardised effects of log of 1 + percentage Muslim and military intervention in the Middle East on log of 1 + casualties from Islamist terrorism among Western countries.

	Log(1 + casualties from Islamist terrorism per capita)					
Log(1 + percentage Muslim in 2010)	0.46*	0.43*	0.24	0.38	0.35	0.16
Any military deaths in Iraq or Afghanistan	0.29			0.31		
Log(1 + military deaths in Iraq or Afghanistan)		0.42*			0.45*	
Part of anti-ISIS military coalition			0.40*			0.44*
Log(GDP per capita)				0.20	0.17	0.12
Unemployment rate				0.21	0.30	0.28
Gini coefficient				0.23	0.02	0.16
n	28	28	28	28	28	28
R^2	0.26	0.35	0.31	0.37	0.41	0.41

Notes: Entries in the first seven rows are standardised coefficients from OLS regression models. Significance levels: *5%, **1%, ***0.1%.

3.3 Models of FCO terrorism threat level

The Pearson correlation between FCO terrorism threat level and log of 1 + percentage Muslim is r = .67 (p = 0.00009; 95% CI = [.40, .84]). When log of 1 + percentage Muslim squared was included in a model of FCO terrorism threat level alongside log of 1 + percentage Muslim it was not significant (p = 0.501), indicating minimal non-linearity. Cohen's d for FCO terrorism threat level by any military deaths in Iraq or Afghanistan is d = 0.69 (95% CI = [–0.19, 1.56]). The Pearson correlation between FCO terrorism threat level and log of 1 + military deaths is r = .40 (p = 0.037; 95% CI = [.03, .67]). When log of 1 + military deaths squared was included in a model of FCO terrorism threat level alongside log of 1 + military deaths it was not significant (p = 0.896), indicating minimal non-linearity. Cohen's d for FCO terrorism threat level by part of anti-ISIS military coalition is d = 1.97 (95% CI = [0.98, 2.93]). Figure 4 displays scatterplots of the relationships of FCO terrorism threat level with log of 1 + percentage Muslim and log of 1 + military deaths.

Figure 4. Scatterplots of the relationships of FCO terrorism threat level with log of 1 + percentage Muslim and log of 1 + military deaths.

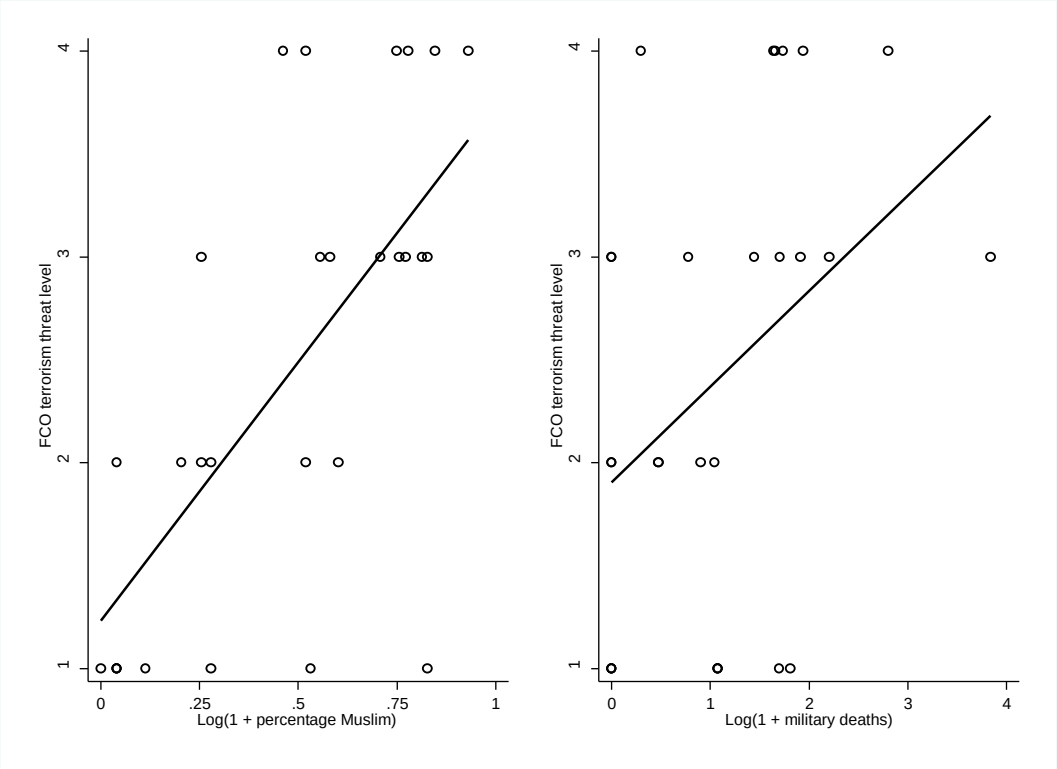


Table 3 displays estimates from multiple linear regression models of FCO terrorism threat level. Log of 1 + percentage Muslim has a positive and significant effect in all models. The estimate is largest when conditioning on any military deaths in Iraq or Afghanistan, and smallest when conditioning on part of anti-ISIS military coalition. Controlling for log GDP per capita, unemployment rate and Gini coefficient reduces the estimates by 10-13% of a standard deviation. All three measures of military intervention in the Middle East have positive and significant effects in both models. Controlling for log GDP per capita, unemployment rate and Gini coefficient increases the estimates by 5-8% of a standard deviation. Appendix D repeats the analysis using all OECD countries, and using only the OECD countries located in Europe.

Table 3. Standardised effects of log of 1 + percentage Muslim and military intervention in the Middle East on FCO terrorism threat level among Western countries.

	FCO terrorism threat level on the day of the Brussels terrorist attacks					
Log(1 + percentage Muslim in 2010)	0.72***	0.68***	0.46**	0.59***	0.58***	0.33*
Any military deaths in Iraq or Afghanistan	0.38**			0.44**		
Log(1 + military deaths in Iraq or Afghanistan)		0.41**			0.46**	
Part of anti-ISIS military coalition			0.47**			0.55***
Log(GDP per capita)				0.29	0.21	0.17
Unemployment rate				0.33*	0.37*	0.39*
Gini coefficient				0.19	0.01	0.12
n	28	28	28	28	28	28
R^2	0.60	0.61	0.62	0.74	0.71	0.77

Notes: Entries in the first seven rows are standardised coefficients from OLS regression models. Significance levels: *5%, **1%, ***0.1%.

3.4 Models of arrests for religious terrorism per capita

The Pearson correlation between log of 1 + arrests for religious terrorism and log of 1 + percentage Muslim is r = .63 (p = 0.0006; 95% CI = [.32, .82]). When log of 1 + percentage Muslim squared was included in a model of log of 1 + arrests for religious terrorism alongside log of 1 + percentage Muslim it was not significant (p = 0.602), indicating minimal non-linearity. Cohen's d for log of 1 + arrests for religious terrorism by any military deaths in Iraq or Afghanistan is d = 0.39 (95% CI = [–0.49, 1.26]). The Pearson correlation between log of 1 + arrests for religious terrorism and log of 1 + military deaths is r = .30 (p = 0.143; 95% CI = [–.10, .61]). When log of 1 + military deaths squared was included in a model of log of 1 + arrests for religious terrorism alongside log of 1 + military deaths it was not significant (p = 0.343), indicating minimal non-linearity. Cohen's d for log of 1 + arrests for religious terrorism by part of anti-ISIS military coalition is d = 1.72 (95% CI = [0.62, 2.80]). Figure 5 displays scatterplots of the relationships of log of 1 + arrests for religious terrorism with log of 1 + percentage Muslim and log of 1 + military deaths.

Figure 5. Scatterplots of the relationships of log of 1 + arrests for religious terrorism with log of 1 + percentage Muslim and log of 1 + military deaths.

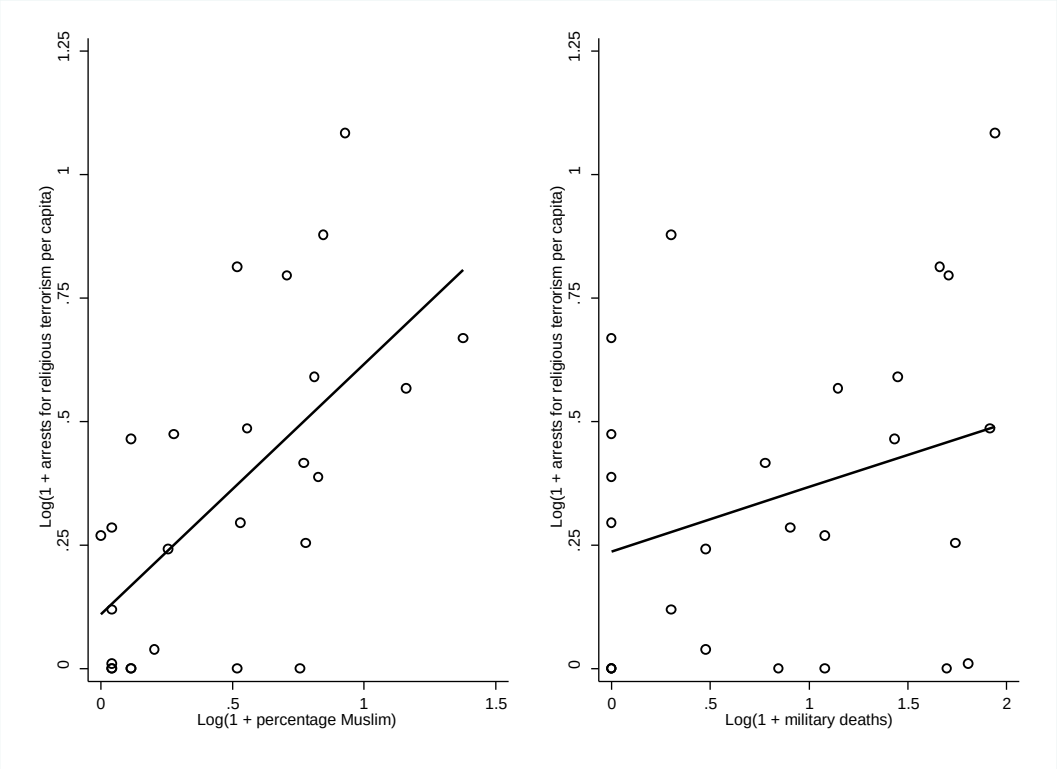


Table 4 displays estimates from multiple linear regression models of log of 1 + arrests for religious terrorism. Log of 1 + percentage Muslim has a positive and significant effect in all models. The estimate is largest when conditioning on any military deaths in Iraq or Afghanistan, and smallest when conditioning on part of anti-ISIS military coalition. Controlling for log GDP per capita, unemployment rate and Gini coefficient reduces the estimates by 3-4% of a standard deviation. All three measures of military intervention in the Middle East have positive and significant effects in both models. Controlling for log GDP per capita, unemployment rate and Gini coefficient increases the estimates by 4-5% of a standard deviation. Appendix E repeats the analysis using the first principal component from a PCA on the four measures of Islamist terrorism as the dependent variable.

Table 4. Standardised effects of log of 1 + percentage Muslim and military intervention in the Middle East on log of 1 + arrests for religious terrorism among EU countries.

	Log(1 + arrests for religious terrorism per capita)					
Log(1 + percentage Muslim in 2010)	0.71***	0.65***	0.47**	0.68***	0.61**	0.44*
Any military deaths in Iraq or Afghanistan	0.35*			0.40*		
Log(1 + military deaths in Iraq or Afghanistan)		0.33*			0.37*	
Part of anti-ISIS military coalition			0.38*			0.43*
Log(GDP per capita)				0.07	0.03	–0.12
Unemployment rate				0.15	0.14	0.17
Gini coefficient				–0.20	–0.22	–0.15
n	26	26	26	26	26	26
R^2	0.51	0.51	0.51	0.55	0.55	0.55

Notes: Entries in the first seven rows are standardised coefficients from OLS regression models. Significance levels: *5%, **1%, ***0.1%.

4. Conclusion

Islamist terrorism is an ongoing threat to Western countries. This paper tested two main hypotheses: first, that percentage of Muslims in the population is associated with Islamist terrorism across Western countries; and second, that military intervention in the Middle East is associated with Islamist terrorism across Western countries. Four separate measures of Islamist terrorism were utilised: first, the number of Islamist terrorist attacks per capita (logged); second, the number of casualties from Islamist terrorism per capita (logged); third, the terrorism threat level reported by the Foreign and Commonwealth Office of the British government; and fourth, the number of arrests for religiously inspired terrorism per capita (logged).

Both hypotheses received some support from the analyses. Percentage of Muslims in the population (logged) had a relatively strong association with the first, third and fourth measures of terrorist threat, but a somewhat weaker association with the second. Military intervention in the Middle East had a fairly strong relationship with the second and third measures, but an inconsistently significant relationship with the first and fourth.

There are of course several important limitations to this study. First, FCO terrorism threat level could be a tautological measure insofar as it might itself be based on information

such as percentage of Muslims in the population or military intervention in the Middle East. Second, FCO terrorism threat level was measured at a single point in time, meaning that it may not be representative of the medium-run risk of terrorism in different Western countries. Indeed before 2000, Islamist terrorist attacks accounted for only trivial proportion of the deaths from terrorism in Europe (Datagraver, 2016). Third, arrests for religious terrorism per capita might be confounded by differences in policing, surveillance and covert operations across countries.

In view of the preceding limitations, it could be argued that number of Islamist terrorist attacks per capita and number of casualties from Islamist terrorism per capita are the more valid measure of Islamist terrorism, and therefore that the analyses in section 3.1 and section 3.2 should be given the most credence. One caveat is that, because terrorist attacks are relatively rare and characterized by a highly skewed distribution of event sizes, the average number of attacks and the average number of casualties in any given country gleaned from only 15 years of data may not be very representative of the true, underlying risk of terrorism in that country (see Taleb, 2007; Cirillo & Taleb, 2015).

Fourth and finally, the analysis was correlational in nature, rather than causal. It is possible that either percentage Muslim or military intervention in the Middle East was confounded by some extraneous variable that affects the risk of Islamist terrorism.

References

Benmelech, E. & Klor, E. (2016). What explains the flow of foreign fighters to ISIS? *NBER Working Paper.*

Berger, L. (2014). Foreign policies or culture: What shapes Muslim public opinion on political violence against the United States? *Journal of Peace Research, 51,* 782–796.

Best, S. (2010). Liquid terrorism: Altruistic fundamentalism in the context of liquid modernity. *Sociology, 44,* 678-694.

Cirillo, P. & Taleb, N.N. (2015). On the statistical properties and tail risk of violent conflicts. *Working Paper.*

Datagraver. (2016). People killed by terrorism per year in Western Europe 1970-2015. *Datagraver*, 22nd March.

The Economist. (2015). Terror attacks and arrests in Western Europe. *The Economist* newspaper, November 16th.

The Economist. (2016). The Brussels attacks show that Islamic State is still growing in ambition and capability. *The Economist* newspaper, March 22nd.

Eurostat. (2016a). Total population on 1 Janurary, 2010. *Population and social conditions: Main tables.*

Eurostat. (2016b). Total population on 1 Janurary, 2010. *Population and social conditions: Main tables.*

Eurostat. (2016c). Total population on 1 Janurary, 2010. *Population and social conditions: Main tables.*

Eurostat. (2016d). Total population on 1 Janurary, 2010. *Population and social conditions: Main tables.*

FCO. (2016). How the Foreign & Commonwealth Office puts together travel advice. *GOV.UK.*

Gates, S. & Podder, S. (2015). Social media, recruitment, allegiance and the Islamic State. *Perspectives on Terrorism, 9,* 107–116.

iCasualties.org. (2016a). Operation Iraqi Freedom: Fatalities by country. *iCasualties.org.*

iCasualties.org. (2016a). Operation Enduring Freedom: Fatalities by country. *iCasualties.org.*

OECD. (2016a). Population: All ages. *OECD Statistics.*

OECD. (2016b). Income distribution and poverty: Gini (disposable income, post taxes and transfers). *OECD Statistics.*

OECD. (2016c). Short-term labour market statistics: Harmonised unemployment rate. *OECD Statistics.*

OECD. (2016d). Level of GDP per capita and productivity: GDP per head of population. *OECD Statistics.*

Pape, R. & Feldman, J. (2010). *Cutting the Fuse: The Explosion of Global Suicide Terrorism and How to Stop It.* Chicago, IL: University of Chicago Press.

Pew Research (2011). Table: Muslim Population by Country. *Pew Research Centre,* Religion & Public Life. January 27th.

Smith, O. (2016). Mapped: Terror Threat Around the World. *The Telegraph Travel.*

Taleb, N.N. (2007). *The Black Swan: The Impact of the Highly Improbable*. Bristol, UK: Allen Lane.

TheReligionOfPeace.com. (2016a). List of Islamic Terror Attacks. *TheReligionOfPeace.com,* 31st May.

TheReligionOfPeace.com. (2016b). About the List of Attacks. *TheReligionOfPeace.com,* 31st May.

Wikipedia. (2016). Military intervention against ISIL: CJTF-OIR, Coalition of foreign countries. *Wikipedia*, the free encyclopaedia.

Appendix A

First email sent to the FCO (30th March, 2016):

To whom it may concern,

Please could you provide me with a few details as to how you measure the terror threat level in each country. In particular, what sort of variables and information is this based on?

Many thanks

Second email sent to the FCO (11th April, 2016):

To whom it may concern,

On your travel advice page, it is stated that:

"We constantly review the threat of international terrorism to advise British nationals travelling and living abroad.... All of our country travel advice pages have a terrorism section. We use four levels of terrorist threat"

I am interested to know what sort of information a particular country's terrorism threat level is based on. For example, is it just based on secret intelligence reports from that country, or does it take into account other information as well?

Many thanks

Appendix B

Table B1. Standardised effects of log of 1 + percentage Muslim and military intervention in the Middle East on log of 1 + Islamist terrorist attacks among all OECD countries except Israel.

	Log(1 + Islamist terrorist attacks per capita)					
Log(1 + percentage Muslim in 2010)	0.66***	0.66***	0.48**	0.67***	0.69***	0.52**
Any military deaths in Iraq or Afghanistan	0.23			0.23		
Log(1 + military deaths in Iraq or Afghanistan)		0.20			0.19	
Part of anti-ISIS military coalition			0.38*			0.34*
Log(GDP per capita)				0.12	0.04	0.03
Unemployment rate				–0.23	–0.24	–0.17
Gini coefficient				0.01	–0.09	–0.11
n	33	33	33	33	33	33
R^2	0.52	0.51	0.57	0.60	0.59	0.62

Notes: Israel was excluded due to being an extreme outlier: it single-handedly accounted for 89% of the variance in the dependent variable. Results were qualitatively similar when Israel was included. Entries in the first seven rows are standardised coefficients from OLS regression models. Significance levels: *5%, **1%, ***0.1%.

Table B2. Standardised effects of log of 1 + percentage Muslim and military intervention in the Middle East on log of 1 + Islamist terrorist attacks among European OECD countries.

	Log(1 + Islamist terrorist attacks per capita)					
Log(1 + percentage Muslim in 2010)	0.65***	0.60**	0.37	0.61**	0.58**	0.38
Any military deaths in Iraq or Afghanistan	0.32			0.35*		
Log(1 + military deaths in Iraq or Afghanistan)		0.23			0.30	
Part of anti-ISIS military coalition			0.43*			0.39
Log(GDP per capita)				0.11	0.08	0.06
Unemployment rate				–0.18	–0.14	–0.13
Gini coefficient				–0.12	–0.21	–0.13
n	24	24	24	24	24	24
R^2	0.49	0.44	0.51	0.59	0.56	0.57

Notes: Entries in the first seven rows are standardised coefficients from OLS regression models. Significance levels: *5%, **1%, ***0.1%.

Appendix C

Table C1. Standardised effects of log of 1 + percentage Muslim and military intervention in the Middle East on log of 1 + casualties from Islamist terrorism among all OECD countries.

	FCO terrorism threat level on the day of the Brussels terrorist attacks					
Log(1 + percentage Muslim in 2010)	0.59***	0.60***	0.58**	0.54***	0.58***	0.56**
Any military deaths in Iraq or Afghanistan	0.20			0.28		
Log(1 + military deaths in Iraq or Afghanistan)		0.18			0.17	
Part of anti-ISIS military coalition			0.08			0.08
Log(GDP per capita)				0.14	0.05	0.07
Unemployment rate				0.08	0.05	0.07
Gini coefficient				0.33	0.23	0.23
n	34	34	34	34	34	34
R^2	0.42	0.42	0.39	0.50	0.46	0.44

Notes: Entries in the first seven rows are standardised coefficients from OLS regression models. Significance levels: *5%, **1%, ***0.1%.

Table C2. Standardised effects of log of 1 + percentage Muslim and military intervention in the Middle East on log of 1 + casualties from Islamist terrorism among European OECD countries.

	FCO terrorism threat level on the day of the Brussels terrorist attacks					
Log(1 + percentage Muslim in 2010)	0.53**	0.47*	0.32	0.46	0.41	0.20
Any military deaths in Iraq or Afghanistan	0.30			0.33		
Log(1 + military deaths in Iraq or Afghanistan)		0.31			0.35	
Part of anti-ISIS military coalition			0.31			0.42
Log(GDP per capita)				0.12	0.13	0.09
Unemployment rate				0.19	0.26	0.26
Gini coefficient				0.14	0.02	0.12
n	24	24	24	24	24	24
R^2	0.34	0.34	0.31	0.40	0.40	0.40

Notes: Entries in the first seven rows are standardised coefficients from OLS regression models. Significance levels: *5%, **1%, ***0.1%.

Appendix D

Table D1. Standardised effects of log of 1 + percentage Muslim and military intervention in the Middle East on FCO terrorism threat level among all OECD countries.

	FCO terrorism threat level on the day of the Brussels terrorist attacks					
Log(1 + percentage Muslim in 2010)	0.66***	0.67***	0.50***	0.54***	0.60***	0.40***
Any military deaths in Iraq or Afghanistan	0.27*			0.37***		
Log(1 + military deaths in Iraq or Afghanistan)		0.35**			0.32**	
Part of anti-ISIS military coalition			0.42**			0.45***
Log(GDP per capita)				0.43**	0.29*	0.28*
Unemployment rate				0.33**	0.29*	0.37***
Gini coefficient				0.38**	0.24	0.22*
n	34	34	34	34	34	34
R^2	0.57	0.62	0.63	0.75	0.72	0.77

Notes: Entries in the first seven rows are standardised coefficients from OLS regression models. Significance levels: *5%, **1%, ***0.1%.

Table D2. Standardised effects of log of 1 + percentage Muslim and military intervention in the Middle East on FCO terrorism threat level among European OECD countries.

	FCO terrorism threat level on the day of the Brussels terrorist attacks					
Log(1 + percentage Muslim in 2010)	0.76***	0.70***	0.50**	0.64***	0.59***	0.30
Any military deaths in Iraq or Afghanistan	0.38**			0.45**		
Log(1 + military deaths in Iraq or Afghanistan)		0.34*			0.42**	
Part of anti-ISIS military coalition			0.38*			0.55**
Log(GDP per capita)				0.24	0.22	0.19
Unemployment rate				0.33*	0.39*	0.43*
Gini coefficient				0.14	0.01	0.12
n	24	24	24	24	24	24
R^2	0.66	0.64	0.62	0.79	0.75	0.79

Notes: Entries in the first seven rows are standardised coefficients from OLS regression models. Significance levels: *5%, **1%, ***0.1%.

Appendix E

Table E1. Standardised effects of log of 1 + percentage Muslim and military intervention in the Middle East on a principal component of Islamist terrorism among EU countries.

	Principal component of Islamist terrorism					
Log(1 + percentage Muslim in 2010)	0.75***	0.69***	0.47**	0.68***	0.61***	0.40*
Any military deaths in Iraq or Afghanistan	0.36*			0.45**		
Log(1 + military deaths in Iraq or Afghanistan)		0.30*			0.37*	
Part of anti-ISIS military coalition			0.46**			0.52**
Log(GDP per capita)				0.26	0.20	0.04
Unemployment rate				0.19	0.17	0.22
Gini coefficient				–0.13	–0.15	–0.08
n	26	26	26	26	26	26
R^2	0.57	0.54	0.62	0.65	0.61	0.66

Notes: The principal component of Islamist terrorism explained 75% of the variance across the three measures. Entries in the first seven rows are standardised coefficients from OLS regression models. Significance levels: *5%, **1%, ***0.1%.