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Abstract

While the presence of foreign fighters in military conflict has been a regular ingredient of jihad, never before in modern history have foreign fighters gathered at the scale and speed as they have in the territory of the so-called Islamic State. As the foreign fighter phenomenon in Syria and Iraq poses severe security risks for the sender countries, especially from battlefield returnees and lone-wolf sympathizers, it becomes imperative to better understand the push factors of expat jihadism. Empirical studies of these factors are still scarce and often generate contradicting results. The objective of our paper is to contribute to the emerging discussion of the push factors of expat jihadism and to complement the findings of the few empirical studies already conducted. Contrary to other studies, we provide strong evidence for the hypothesis that Muslim youth unemployment is a driver of expat jihadism not only for the Arab world, but globally.

JEL Classification: D7; F5; H5; J6

Keywords: Terrorism, youth unemployment, expat jihadism, Tobit model.

ملخص

لم يسبق مثيل في التاريخ الحديث أن يتجمع المقاتلون الأجانب على نطاق وسرعة كما فعلوا في أراضي ما يسمى بالدولة الإسلامية. وبما أن ظاهرة المقاتلين الأجانب في سوريا والعراق تشكل مخاطر أمنية شديدة بالنسبة للبلدان المرسلة، وخاصة من العائدين في ساحة المعركة والمتعاطفين مع الذئب الوحيد، يصبح من الضروري فهم العوامل الدافعة للمغادرة الجهادية بشكل أفضل. ولا تزال الدراسات التجريبية لهذه العوامل نادرة وغالبا ما تولد نتائج متناقضة. والهدف من ورقتنا هو المساهمة في النقاش الناشئ لعوامل دفع المغتربين الجهاديين واستكمال نتائج الدراسات التجريبية القليلة التي أجريت بالفعل. خلافا للدراسات الأخرى، فإننا نقدم دليلا قويا على فرضية أن بطالة الشباب المسلم هي محرك المغتربين الجهاديين ليس فقط للعالم العربي، ولكن على الصعيد العالمي.

1. Introduction

The presence of foreign fighters in military conflict has been a regular ingredient of jihad (Dragon 2015)(Dragon, 2015). In the 1980s, foreigners flocked to Afghanistan to fight alongside the mujahedeen during the Soviet-Afghan war. The same, albeit to a lesser extent, could be observed in Bosnia and Chechnya in the 1990s and again following the 2003 invasion of Iraq. Nevertheless, the Syrian civil war and the rise of the so-called Islamic State (IS) have broken new ground. Never before in modern history have foreign fighters gathered at the scale and speed as they have in the territory of the IS (Hegghammer, Syria's Foreign Fighters 2013, Lang and Al Wari 2016)(Hegghammer, Syria's Foreign Fighters, 2013; Lang & Al Wari, 2016).

Since the outbreak of the 2010 Arab uprising and the beginning of the Syrian civil war in 2011, tens of thousands of fighters from a multitude of countries have joined the IS and other extremist groups in Syria. The majority of foreign fighters come from Arab states, mainly Tunisia, Saudi Arabia, Jordan and Morocco. However, a significant number of foreign fighters also come from Western countries, including Belgium, France, Germany, the United Kingdom, along with former Soviet Union states such as Russia, Kazakhstan, and Uzbekistan (The Soufan Group 2015)(The Soufan Group, 2015).

The foreign fighter phenomenon in Syria and Iraq involves severe security risks to the sender countries. Expat jihadists who have supported military, paramilitary, and terrorist operations on the ground may continue their fight as returnees against targets in their homeland. In 2016, it has been estimated that almost 30 percent of European Union citizens who joined the fight in Syria have returned home (International Centre for Counter-Terrorism 2016)(International Centre for Counter-Terrorism, 2016). Thomas Hegghammer, Director of Terrorism Research at the Norwegian Defense Research Establishment in Oslo and cited in (Gardner 2013)(Gardner, 2013), suggests that "Syria will prolong the problem of jihadi terrorism in Europe by 20 years" and that attacks by foreign fighter returnees are "almost inevitable."

With this security risk in mind, it becomes imperative to better understand the factors behind the flow of foreign fighters into Syria. So far, the literature has produced mixed results regarding the push factors of expat jihadism. Some studies argue that they have their origin in economic grievance, others deny such a relationship. Empirical studies are generally still scarce. The objective of our paper is therefore to contribute to the emerging discussion of the push factors of expat jihadism and to complement the findings of the few empirical studies already conducted.

The remainder of this paper is organized as follows. Section two reviews the relevant literature. We present our data and methodology in section three. A discussion of our empirical findings follows in section four. We conclude with a summary of our main results and outlook in section five.

2. Literature Review

Following the recent emergence of IS, there has been a growing body of literature examining the foreign fighters' phenomenon and the determinants of Islamic radicalization in the west. Some studies argue that explanatory factors behind the phenomenon of foreign fighters in Syria are not systematic, but highly variable, coincidental, and even random. Lorenzo Vidino, a visiting fellow at the RAND Corporation and cited in (Helfont 2011)(Helfont, 2011) argues that "the whole experience of foreign fighters is often shaped by coincidences largely beyond the control of the 'wannabe' foreign fighter." Such coincidences may be social, cultural, and economic events that foreign fighters were exposed to prior to leaving their home. Likewise, Cilluffo et al. (2010)(2010) state that, "there is no single pathway to becoming a foreign fighter, nor is there a static profile of

the fighters themselves. Ideology, social circumstances, adventure seeking, political grievances, and so on, all appear to impact individuals' choices in this regard. Foreign fighters' socioeconomic circumstances also appear to be highly variable" (2010, 36)(2010, p. 36).

Nevertheless, research on foreign fighters is usually distinguishing between pull and push factors behind such phenomenon (Daniels, et al. 2015)(Daniels, Halbgewachs, Hendriks, de Jong, Keijzer, & P.P, 2015). According to Schmid and Tinnes (2015, 38)(2015, p. 38), pull factors include existence of extremist ideology that provides significant justifications for attacks against outgroup members (e.g. non-Muslims), existence of like-minded militant peer-group that strengthens individual inclination to become foreign fighter, and personal recognition: prospect of recognition as valiant fighter for a holy cause and opportunity to boost one's (self-)image from near "zero [in own country] to hero" [in the land of jihad], among others. As for the push factors, they include estrangement from mainstream society by uprooted migrants in refugee camps and diasporas, socio-economic marginalization and aggravation, relative deprivation and/or political exclusion, as well as lack of future perspectives at home and desire to escape, among others (Schmid and Tinnes 2015, 38)(Schmid & Tinnes, 2015, p. 38).

Several recent studies investigate the aforementioned pull factors. Skidmore (2014)(2014) proposes that identifying with the conflict serves as a magnet for foreign fighters into Syria. This conflict identity could be the sectarian nature of the Sunni-Shiite conflict, the persisting effect of previous conflicts in nearby countries like Iraq and Afghanistan, and failing U.S. policies toward the ongoing conflict.

Duyvesteyn and Peeters (2015)(2015) use comparative case studies to investigate why the conflict in Syria attract more foreigners willing to fight without substantial pay and without any apparent link to the conflict other than religious affinity with the Muslim side. The authors claim that the diverging levels of Muslim foreign fighter recruitment in the most recent conflicts, including the one in Syria, can largely be explained by three factors: access to the battlefront, internal cohesion or group unity, and chances of success. They argue that all three factors are relevant to explain the record number of foreign fighters in Syria, as access to the Syrian battlefront was significantly easy. Once present on the ground, the chances of success were high as the IS was actively realizing the reestablishment of the Caliphate (2015, 26)(2015, p. 26). Interestingly, the authors also note that in reality rebel and opposition groups lack internal cohesion. Nevertheless, IS propaganda has been relatively successful in luring people into jihad with brotherly war romanticism.

Other studies focus on the push factors behind recruitment to militant Islamist groups - what Thomas Hegghammer calls the "underlying determinants of supply" (Hegghammer 2012, 4)(Hegghammer, 2012, p. 4). Using a series of correlations, Verwimp (2015)(2015) shows for a sample of European countries that a positive correlation exists between the gap in employment and education between first and second generation migrants and non-migrants on the one hand and the number of Syria fighters per million inhabitants on the other hand.

Examining factors associated with Islamist violence in OECD countries as well as in Syria, Thomas (2015)(2015) finds that OECD countries appear to experience Islamist violence as a result of large numbers of economically and socially segregated immigrants from the Middle East and North Africa. These immigrants do not benefit from the relatively high living standards, or levels of equality in their host countries. Consequently, more of them radicalize and participate in Islamist violence, either in Syria or in their new home. Moreover, the author shows that, for all non-OECD countries, stronger civil liberties appear to decrease both Islamist domestic violence and the outflow

of foreign fighters to Syria. This finding coincides with those of Krueger (2006, 3)(2006, p. 3), who reports that countries with low levels of civil liberties or political rights are likely to have more of their citizens join the Iraqi insurgency.

Recently, Benmelech and Klor (2016)(2016) find that poor aggregate economic conditions are not a major determinant of expat jihadism. The authors conclude that "in contrast to conjectures made recently by economists and policy makers, economic conditions are not the root causes of the global phenomenon of ISIS foreign fighters. In fact, many foreign fighters originate from countries with high levels of economic development, low income inequality, and highly developed political institutions" (11)(p. 11). The authors also take special issue with the fact that so many foreign fighters come from Western European countries, arguing that if "poverty and lack of social equality are not to blame, then why are Western European countries disproportionately significant sources of ISIS foreign fighters? The reason lies in other country characteristics: they are ethnically and linguistically homogenous. In fact, the more homogenous the host country is, the greater difficulty immigrants such as Muslims from the Middle East experience in assimilating. As other research has shown, isolation induces some of them to become radicalized" (11)(p. 11).

Moreover, Benmelech and Klor (2016)(2016) find that, in the case of non-Muslim-majority countries, unemployment is not a significant determinant of the likelihood of joining ISIS. The authors argue that "income inequality, unemployment, and social and political conditions are not determinants of joining ISIS in non-Muslim countries" (9)(p. 9). Such finding correlates with other studies that find no relationship between both unemployment and terrorism (Berman, et al. 2011, Feldmann and Perala 2004, Piazza 2006)(Berman, Callen, Felter, & Shapiro, 2011; Feldmann & Perala, 2004; Piazza, 2006).

Nevertheless, considerable empirical literature finds unemployment to be positively associated with terrorist events (Flowers 2014, Goldstein 2006, Piazza 2006)(Flowers, 2014; Goldstein, 2006; Piazza, 2006). The presence of male youths is often considered as a "conflict risk" that makes the instigation and perpetuation of violence more likely. The authors of the *2003 World Youth Report* state that, "The dearth of opportunities in their communities often leads them to gravitate towards violent conflict and acts of terrorism" (United Nations 2003, 371)(United Nations, 2003, p. 371). Collier and Hoeffler (2004)(2004) postulate that the presence of uneducated and unemployed, mostly male, youths presents a significant variable that heightens conflict risk. Honaker (2011)(2011) shows that unemployment is a leading factor to explain violence in Northern Ireland. Sayre (2009)(2009) finds a positive relationship between unemployment and Palestinian suicide bombings in West Bank. Examining terrorist attacks from 1980-2008 across 56 countries, Richardson (2011)(2011) links high unemployment rates and poverty with terrorism. Caruso and Schneider (2011, 544)(2011, p. 544) finds that an increase of 1% in youth unemployment translates into a .5% increase in terrorist activity.

The association between youth unemployment and terrorism falls within the hypothesized argument of eruption of political violence in the presence of "youth bulge" (Urdal 2006) (Urdal, 2006). Lia (2003)(2003) defines "youth bulge" as a phenomenon, where the population under the age of 30 surpasses a ratio of 1.27 in comparison with the population over the age of 30 in a certain society. According to Urdal (2006)(2006), "youth bulges" pose significant challenges to governments, increasing amounts of terrorist activity in the face of economic downturns and rising education levels. The potential for violent crimes and terrorism begins to escalate as population growth exceeds economic growth. Cincotta (2005)(2005) argues that countries with a percentage of 40

percent or more young people of the population, combined with other factors, cross a "danger threshold" that makes it 2.5 times more probable that these societies will fall into violence.

Currently, the Arab world is suffering from a considerable youth bulge, as youth between the ages of 15 and 29 comprise more than 30 percent of the population of the Arab world - roughly 300 million people. This is the highest proportion of youth to adults in the region's history (Dhillon 2008, Moran 2016)(Dhillon, 2008; Moran, 2016). According to Dudley (2016)(2016), the World Bank estimates that unemployment is running at 11.5% around the Arab region, far higher than the global unemployment rate (5.9%) and most low and middle income countries (5.7%). Moreover, labor force participation rates are significantly lower than elsewhere in the world, at 53% overall and just 25% among women.

According to the latest *Arab Youth Survey*, conducted on 3,500 people between the age 18-24 in 16 Arab countries, lack of jobs is perceived by Arab youth as the biggest factor driving people into the arms of IS (ASDA'A Burson-Marsteller 2016)(ASDA'A Burson-Marsteller, 2016). More specifically 24% of respondents pointed to unemployment as the main recruiter for the jihadi movement. Other factors they pointed to include the belief by those joining ISIS that their interpretation of Islam was superior to others (18%) and regional tensions between Sunni and Shia groups (17%) (ASDA'A Burson-Marsteller 2016)(ASDA'A Burson-Marsteller, 2016).

Our paper is methodologically closest to Benmelech and Klor (2016)(2016), but we challenge their finding to rule out unemployment as a factor of expat jihadism. While the authors obtain in their empirical results some positive correlation between unemployment and the number of foreign fighters, they state that "ISIS foreign fighters per Muslim residents is (…) not highly correlated with unemployment" (7)(p. 7), and that the "positive correlation between unemployment and ISIS foreign fighters (…) is driven entirely by Muslim countries" (8)(p. 8).

In this paper we argue that youth unemployment, instead of general unemployment, is a determinant of expat jihadism. Moreover, we also consider the interaction between youth unemployment with the Muslim population share as another meaningful proxy for variables affecting expat jihadism, such as conflict identity, alienation, and lack of assimilation. This variable is also very robust in alternative specifications.

3. Theoretical Framework, Data and Methodology

What push factors drive foreign fighters into Syria? A theoretical framework for such a decision may be found in a simple time allocation model. Assume that a representative expat jihadist has the standard Cobb-Douglas utility function

$$U(C, J) = C^{\alpha} J^{1-\alpha} \qquad (1)$$

where

C = consumption good and

J = time spent on jihadist activity and

α and $(1-\alpha)$ = the utility elasticities of C and J, respectively.

We think of the time spent on jihadist activities as a spectrum that ranges from, for example, reading about jihadist ideology on the internet to actually preparing for jihadism. The first requires very little time allocation, the latter a lot. The more time a jihadist chooses to allocate towards

jihadist activity, the more likely this activity is concerned with preparations to become a foreign fighter.

In our simple model, the consumption function depends on exogenously determined available employment opportunities, *E*, and the time spent on jihadist activity, *J*. The amount of available employment opportunities has two effects on the jihadist's consumption possibility frontier. More employment opportunities increase both consumption opportunities and the opportunity cost of time spent on jihadist activity. This idea can be written as

$$C = E - \frac{E}{1-E} J \qquad (2)$$

We assume that employment opportunities can be expressed on a scale between $0<E<1$. This implies that as *E* approaches zero, the time available for jihadist activities becomes theoretically infinite. The closer *E* is to one, the more the economy can be thought of as operating on its production possibility frontier.

Substituting (2) in (1) and maximizing for the optimum jihadist time allocation, J^*, yields

$$J^* = (1-E)(1-\alpha) \qquad (3)$$

which shows that more employment opportunities reduce the optimum time allocated to jihadist activities.

The Soufan Group (2015)(2015) provides two counts for the number of foreign fighters, an official and an unofficial count. Whenever an official and/or unofficial count was available, we used the official count. Whenever only an unofficial count was available, we used the unofficial count. This is in line with the approach by Benmelech and Klor (2016)(2016). The 2015 Soufan Group data is an update of its 2014 report. The two reports also mention foreign fighter sending countries for which, at the time of this writing, no foreign fighter numbers were available. Our data set includes a total of 81 foreign fighter sending countries, for 66 of which the Soufan Group provides numbers. Table 1 lists these countries and their foreign fighter numbers by region. The first and second number in parentheses are the total number of foreigner fighters and foreign fighters per one million citizens, respectively.

Unfortunately, data on youth unemployment among the Muslim population is not available for a large sample of Western countries. Yet, there is sufficient evidence from case studies that youth unemployment is not only highest among Arab countries in general, but that Muslim youth unemployment is also regularly above the national average in Western countries.

According to a report by The Muslim Council of Britain (MCB) based on census data from 2001 and 2011, Muslims have a higher rate of unemployment than the average, despite an increased level of education over the ten years. Almost half of the British Muslim population resides in the bottom 10% local authority districts for deprivation. Moreover, the report points out to the high proportion of the Muslim prison population (13%) and the proportion of Muslims in social housing (28%) as a cause for concern (Ridley 2015)(Ridley, 2015). In the period from 2010 to 2015, the number of young people from ethnic minority backgrounds, mostly Muslims, who have been unemployed for more than a year has risen by almost 50%, according to figures released by the Labour Party (Taylor 2015)(Taylor, 2015).

In 1999, when the general unemployment rate in France was around 10%, it was more than double at 22%, among immigrants (European Monitoring Centre on Racism and Xenophobia (EUMC) 2003)(European Monitoring Centre on Racism and Xenophobia (EUMC), 2003). In 2009, the "Sensitive Urban Zones", where many immigrants reside, had an unemployment rate of around 18.6% compared to a national average of 9.8%; for young people in those neighborhoods, the rate reached 43%, contributing to a strong feeling of discrimination (Kepel 2011)(Kepel, 2011). In a study following immigrant families over several generations, Maxwell (2009)(2009) shows the persistence of high unemployment among North Africans in France: up to 28%, with second-generation Muslims more affected than their parents (30% compared to 22%; but most of the parents' generation is already retired).

In the Netherlands, ethnic minorities suffer from higher unemployment rates than the average Dutch population. In 2009, when the overall rate of unemployment was 5% in the Netherlands, Dutch Muslim minority suffered from an 11% unemployment rate. This breaks down to 10% for Turks, and 12% for Moroccans. As for the general population, youths are hit especially hard by unemployment, at over 20% for 15-25 year- olds. Even more problematic, there has been an upward trend in minority youth unemployment in the last decade, and the second generation experiences even more difficulties than their immigrant parents (FORUM 2009)(FORUM, 2009). The situation is no different in Germany. Most recently, Reynolds (2016, 36)(2016, p. 36) states that out of the 378 German Muslim foreign fighters in Syria, only 119 were either in school or employed before departure.

Consequently, if we accept that, on average, youth unemployment is higher among Muslims, then the interaction term of youth unemployment with the Muslim population share becomes a meaningful proxy for the lack of assimilation among young Muslims and possibly relevant explanatory variable for expat jihadism. The interaction of youth unemployment with the Muslim population share is therefore one of our main independent variables. Another independent variable we are interested in is the interaction term of youth unemployment with the Muslim majority country dummy, which captures the fact that youth unemployment is particularly a big problem in Muslim majority countries.

Following Benmelech and Klor (2016)(2016), we also control for various socioeconomic characteristics. Our control variables include those that Benmelech and Klor (2016)(2016) use, among others. The control variables are: Gross domestic product per capita, human development index, Gini index, distance between a country's capital and Syria's capital Damascus, the share of manufactures and services as a percentage of GDP, the Polity score, an indicator of good governance, ethnic, linguistic and religious fractionalization indicators, as well as regional fixed effects. Our hypotheses are summarized in Table 2.

We explain the hypothesized signs of the control variables by three arguments. The first argument is that negative signs can be explained by variables that capture more economic opportunities and therefore higher opportunity costs of joining the Islamic State. In this category fall the variables GDP per capita, the Human Development Index, and a country's internationally competitive productive capacity as measured by the manufactures and services export share. The second argument refers to variables that suggest that government effectively addresses socioeconomic grievances. The variables Polity score and good governance are therefore hypothesized to carry a negative sign. The third idea is that there might be structural components in place that undermine equal socioeconomic opportunities and which therefore increase citizens' propensity to leave everything behind. These variables have an expected positive sign and are represented by the Gini

index and the ethnic, religious and linguistic fractionalization indicators. Income inequality is a proxy for the absence of social upward mobility, which may drive socioeconomic grievances. This might be especially true when inequality is associated with unequal economic opportunities as a result of certain historical events, such as a legacy of colonial rule. It also might be the result of perceived or actual, deliberately pursued, political and economic acts of discrimination. As for the latter, this will more likely occur in religiously, ethnically, and linguistically fractionalized societies where not all societal subgroups are equally represented in government. Last but not least, we control for the distance between a country's capital and Damascus and hypothesize that a greater distance from Damascus reduces a country's number of foreign fighters due to greater logistical hurdles.

Last but not least, we control for regional fixed effects to capture characteristics that go beyond the various country specific variables. The regional dummies represent the regional classification of Table 1. We run on the right hand side the five developing areas East Asia and the Pacific (EAP), Eastern Europe and Central Asia (EECA), which are the former socialist countries, Latin America and the Caribbean (LAC), South Asia (SA), and Sub Saharan Africa (SSA) against the reference group consisting of North America (NAM) and Western Europe (WE).

Table 3 describes the variables that we use for our empirical analysis, their abbreviation, and sources. For those variables whose distributional characteristics could be improved through data manipulations, we also indicate the nature of the transformation. Table 4 provides summary statistics for our variables. While we use in the regression transformed variables as described in Table 3, the summary statistics of Table 4 are based on non-transformed values.

Because our data is left-censored with countries which have sent zero foreign fighters while the observations for those countries that sent foreign fighters are essentially continuous (because it is per million citizens), we had to choose between a Tobit and a Heckit model. Heckit is often deemed superior to Tobit if there are different underlying variables for explaining non-zero observations and the magnitude of the non-zero observations. This is not the case here. Youth unemployment can be assumed to explain both the decision to become an expat jihadist and the magnitude of a country's expat jihadism. We therefore employ a simple Tobit (Tobit 1) model. We run our regression using the open source statistical analysis software "gretl," whose accompanying manual also provides a technical description of the Tobit estimator.

4. Empirical Results

In order to be prepared for eventual multicollinearity problems, we first present in Table 5 a Pearson correlation matrix for our right-hand-side variables (using the transformed variables as described in Table 3). As the correlation matrix shows, our key variables "MusXyuer" and "MusMajXyuer" (the interaction terms of Muslim population and Muslim majority dummy with the youth unemployment rate) are not strongly correlated with any of the other explanatory variables (which are not part of the interaction term), except for the variable "Dist" We therefore do not expect non-significance or unexpected signs for the "MusXyuer" or "MusMajXyuer" variable due to multicollinearity except when run together with "Dist" We also expect that running the variables "lny," "HDI", and "GovX" together on the right hand side may lead to unexpected non- significance or flipping signs.

Table 6 shows the Tobit regression results for various specifications. The results indicate that the two interaction terms "MusXyuer" and "MusMajXyuer" are highly significant when run individually (not shown) and when run together with their individual components (Model I). Models II-IV add the two variables "lny" and "HDI" first individually and then jointly on the right

hand side of model specification one. The two interaction terms "MusXyuer" and "MusMajXyuer" are still highly significant with the expected signs. Our results confirm the non-intuitive finding already presented by Benmelech and Klor (2016) that countries with higher GDP per capita incomes and greater human development have, ceteris paribus, more foreign fighters joining the Islamic State (Models II and III). In Model IV, which compared to Model I includes both "lny" and "HDI" on the right hand side, the sign of "lny" is now flipped and negatively significant compared to Model II. In the subsequent Models V to VIII we therefore only keep "HDI" on the right hand side and drop "lny". Model V adds the variable "MSExpShr" to the specification of Model III and we obtain an unexpected positive, but statistically non-significant, coefficient. Model VI adds the two variables "Polity" and "GovX" to Model V, for which we obtain the expected negative signs, but the coefficients are not significant. Model VII is concerned with the addition of the socio-structural parameters "Gini" and the various fractionalization indicators. Here, the Gini coefficient receives a statistically significant negative sign, which is another finding that is in line with Benmelech and Klor (2016). Last but not least, Model VIII adds to Model VII the variable "Dist" and regional fixed effects. In this specification, the variable "Gini" keeps the unexpected negative sign, but is no longer significant. The regional fixed effect for Sub Saharan Africa is negative and statistically significantly (relative to the high income regions Western Europe and North America as the reference regions not included in the regression). The variable "Dist" is also not significant.

While the regressions provide many puzzling results, especially the non-expected signs for "lny", "HDI" and "Gini", our theoretical key variables "MusXyuer" and "MusMajXyuer" are highly robust and carry the expected sign across all specifications. We therefore do not arrive at the same conclusion as Benmelech and Klor (2016) who find that the unemployment problem behind expat jihadism is driven by Arab countries exclusively. Instead, based on our regression results, we would argue that youth unemployment among the Muslim population is an explanatory factor of expat jihadism worldwide.

While we find that focusing on youth unemployment is a more appropriate indicator to understand the phenomenon of expat jihadism, it is clearly the interaction of youth unemployment and Muslim population shares that drive our results. We then wanted to see whether an interaction term of the regular unemployment rate with the Muslim population share, as well as with a Muslim majority dummy would generate different results and found (not reported here) that we essentially get the same story. This means that if Benmelech and Klor (2016) had used interaction terms as well, they would have received highly significant results as well.

It is important to state again that our interaction term of the Muslim population share and youth unemployment does not measure youth unemployment among the Muslim population per se, but is a proxy for economic grievance among Muslims. Yet again, there is strong case study evidence that youth unemployment rates among Muslims are above aggregate youth unemployment levels in Western countries. Youth unemployment is also a distinct problem in Arab countries.

5. Conclusions

The discussion about the push factors behind the flow of foreign fighters into Syria is unresolved and filled with riddles. One particular issue of controversy is the role of economic grievance, especially the role of unemployment. Some scholars find support for the hypothesis that unemployment is a driver of expat jihadism, others reject this idea. Different studies, of course, use different samples and different methodologies and it will still take some time until a predominant opinion is solidified with evidence. Our paper contributes to this discussion by supporting the unemployment-matters camp.

According to our empirical model, both youth unemployment in Muslim countries and youth unemployment among Muslims in Western countries are a strong predictor of expat jihadism. Youth unemployment among Muslims therefore serves as an early warning indicator which should receive particular policy attention, regardless of the region of the world.

As Muslim youth unemployment, at least in our study, is a universal driver of expat jihadism, the policy implications are very different for Muslim states and Western countries where Muslims are a minority. Muslim states face the problem of providing access to economic opportunities to everyone, Western countries with a minority Muslim population face a problem of successful integration and assimilation.

As far as the Western states are concerned, the problems are indeed far beyond pure economics. Is Muslim youth unemployment the result of Muslim immigrants' inability to assimilate in a culturally different society, or is it because Western states fail to develop successful integration strategies? Whatever it is, our paper strongly indicates that jobs to young Muslims is to expat jihadism what is water to fire.

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Appendix

Table 1: Foreign Fighter Sending Countries in Syria and Iraq by Region

East Asia and the Pacific (EAP)	Eastern Europe and Central Asia (EECA)	Latin America and the Caribbean (LAC)	Middle East and North Africa (MENA)
Australia (120, 5.2)	Albania (90, 31.1)	Argentina (23, 0.5)	Algeria (170, 4.5)
Cambodia (1, 0.1)	Armenia (n/a, n/a)	Brazil (3, 0)	Bahrain (n/a, n/a)
China (300, 0.2)	Azerbaijan (104, 11)	Chile (n/a, n/a)	Egypt, Arab Rep. (600, 6.8)
Indonesia (700, 2.8)	Bosnia and Herzeg. (330, 86.3)	Trinidad and Tobago (50, 37.1)	Iran, Islamic Rep. (n/a, n/a)
Japan (9, 0.1)	Bulgaria (n/a, n/a)		Iraq (n/a, n/a)
Malaysia (100, 3.4)	Czech Republic (n/a, n/a)		Israel (45, 5.6)
N. Zealand (7.5, 1.7)	Estonia (n/a, n/a)		Jordan (2000, 277.9)
Philippines (100, 1)	Georgia (50, 13.2)		Kuwait (70, 19.6)
Singapore (2, 0.4)	Hungary (n/a, n/a)		Lebanon (900, 171.3)
	Kazakhstan (300, 17.6)		Libya (600, 95.6)
	Kosovo (232, 128.5)		Morocco (1200, 35.9)
	Kyrgyz Republic (500, 87.3)		Qatar (10, 4.8)
	Macedonia, FYR (146, 70.5)		Saudi Arabia (2500, 82.8)
	Moldova (1, 0.3)		Tunisia (6000, 551)
	Montenegro (30, 48.3)		United Arab Em. (15, 1.7)
	Romania (1, 0.1)		
	Russia (2400, 16.7)		
	Serbia (60, 8.4)		
	Tajikistan (386, 47.6)		
	Turkmenistan (360, 68.7)		
	Uzbekistan (500, 16.5)		
North America (NAM)	**South Asia (SA)**	**Sub Saharan Africa (SSA)**	**Western Europe (WE)**
Canada (130, 3.7)	Afghanistan (50, 1.6)	Chad (n/a, n/a)	Austria (300, 35.3)
USA (150, 0.5)	Bangladesh (n/a, n/a)	Cote d'Ivoire (n/a, n/a)	Belgium (470, 42.1)
	India (23, 0)	Eritrea (n/a, n/a)	Denmark (125, 22.2)
	Maldives (200, 508.9)	Madagascar (3, 0.1)	Finland (70, 12.9)
	Pakistan (70, 0.4)	Mauritania (n/a, n/a)	France (1700, 25.7)
		Somalia (70, 6.8)	Germany (760, 9.3)
		South Africa (1, 0)	Ireland (30, 6.5)
		Sudan (70, 1.8)	Italy (87, 1.4)
			Luxembourg (n/a, n/a)
			Netherlands (220, 13.1)
			Norway (81, 16)
			Portugal (12, 1.1)
			Spain (133, 2.9)
			Sweden (300, 31.2)
			Switzerland (57, 7)
			Turkey (2100, 27.6)
			UK (760, 11.8)

Source: The Soufan Group (2015) and authors' calculations.

Table 2: Hypothesis Table (Dependent Variable = Foreign Fighters per one Million Citizens)

Main Independent Variables					
Independent Variable	Interaction Term of Youth Unemployment and Muslim Population Share	Interaction Term of Youth Unemployment and Muslim Majority Country Dummy	Youth Unemployment Rate	Muslim Population Share	Muslim Majority Country Dummy
Expected Sign	+	+	+	+	+
Control Variables					
Independent Variable	GDP per capita	Human Development Index	Gini index	Manufactures and Services Export Share	Polity Score (A proxy for political rights and democracy)
Expected Sign	-	-	+	-	-
Independent Variable	Good Governance Index	Distance to Damascus	Ethnic Fractionalization	Linguistic Fractionalization	Religious Fractionalization
Expected Sign	-	-	+	+	+

Table 3: Description of Data

Variable Name	Abbreviation	Transformation	Source
Foreign Fighters (per Million)	FFperMill	ln(FF/Pop× 1,000,000+1)	The Soufan Group, An Updated Assessment of the Flow of Foreign Fighters, December 2015.
Youth unemployment rate (Unemployment, youth total (% of total labor force ages 15-24), modeled ILO estimate)	yuer	ln(yuer)	World Bank Development Indicators, Average 2011-2014
Muslim population (% total)	Muslim	n/a	Association of Religion Data Archives (online), World Religion Dataset: National Religion Dataset, 2010 Observations
Interaction term of Muslim population and youth unemployment rate	MusXyuer	ln(muslim*yuer+1)	Association of Religion Data Archives (online) and World Bank Development Indicator Database.
Interaction term of youth unemployment rate and Muslim Majority Country Dummy (Muslim > 50%) Dummy	MusMajXyuer	n/a	Calculated from Association of Religion Data Archives and World Bank Development Indicator Database
GDP per capita ($2005)	y	ln(y)	World Bank Development Indicator Database
Human Development Index	HDI	n/a	United Nations Development Programme – Human Development Report, http://hdr.undp.org/en/data (accessed: March 8, 2017)
Distance of country's capital to Damascus (in km)	Dist	ln(Dist)	Mayer, Thierry, and Soledad Zignago. "Notes on CEPII's distances measures: The GeoDist database" (2011) – dist_cepii.dta dataset
Gini Index	Gini	n/a	World Bank Development Indicator Database, Latest available observation.
Manufacturing and services export (% GDP)	MSExpShr	ln(MSExpShr+1)	Calculated from World Bank Development Indicator Database using the variables Merchandise exports by the reporting economy (current US$), Manufactures exports (% of merchandise exports), Service exports (BoP, current US$), and GDP (current US$). 2010 Values
Polity Score	Polity	n/a	Center for Systemic Peace, Polity 2 Indicator, 2010 observation
Good Governance	GovX	Simple arithmetic mean of the indicators Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption.	World Bank Worldwide Governance Indicators, 2010 Observations
Population	Pop	n/a	World Bank Development Indicator Database, 2011-2015 average.
Ethnic Fractionalization	Ethnic	n/a	Alesina et al. (2003)
Linguistic Fractionalization	Lang	n/a	
Religious Fractionalization	Relig	n/a	

Table 4: Summary Statistics of Variables

	Sample	Mean	Median	Minimum	Maximum	Std. Dev.	IQ range
	All	13.63	0.00	0.00	551.04	59.26	1.49
FFperMill	FFCtry=1	41.70	8.86	0.01	551.04	98.34	33.88
	FFCtry=0	0.00	0.00	0.00	0.00	0.00	0.00
	All	498.47	58.78	0.00	4,520.20	871.00	586.01
MusXyuer	FFCtry=1	816.22	183.99	0.18	4,520.20	1,072.60	1,593.50
	FFCtry=0	225.61	17.34	0.00	2,977.90	517.84	173.32
	All	4.31	0.00	0.00	46.60	9.24	0.00
MusMajXyuer	FFCtry=1	7.85	0.00	0.00	46.60	11.80	15.75
	FFCtry=0	1.63	0.00	0.00	32.48	5.35	0.00
	All	25.00	4.06	0.00	99.56	35.91	43.59
Muslim	FFCtry=1	37.93	12.89	0.01	99.56	40.25	86.77
	FFCtry=0	15.28	1.00	0.00	99.00	28.82	14.77
	All	0.24	0.00	0.00	1.00	0.43	0.00
MusMaj	FFCtry=1	0.38	0.00	0.00	1.00	0.49	1.00
	FFCtry=0	0.13	0.00	0.00	1.00	0.34	0.00
	All	18.37	15.25	0.70	58.43	12.29	16.05
yuer	FFCtry=1	20.95	18.50	0.70	58.43	13.08	17.13
	FFCtry=0	16.18	11.53	0.70	52.68	11.18	14.61
	All	14,851	5,021	214	145,220	22,822	17,335
y	FFCtry=1	19,879	8,916	414	103,270	22,922	34,132
	FFCtry=0	11,470	3,547	214	145,220	22,215	10,783
	All	0.68	0.71	0.33	0.94	0.16	0.26
HDI	FFCtry=1	0.75	0.77	0.37	0.94	0.14	0.21
	FFCtry=0	0.63	0.64	0.33	0.90	0.15	0.26
	All	39.45	38.81	24.09	63.38	8.55	12.89
Gini	FFCtry=1	35.37	33.83	25.90	63.38	7.12	9.98
	FFCtry=0	42.41	42.75	24.09	60.97	8.30	11.80
	All	27.56	20.35	0.00	169.73	28.96	28.75
MSExpShr	FFCtry=1	29.87	21.01	0.00	151.49	29.58	25.95
	FFCtry=0	25.62	16.39	0.22	169.73	28.45	27.42
	All	3.80	6.00	-10.00	10.00	6.23	10.75
Polity	FFCtry=1	3.89	7.50	-10.00	10.00	6.69	12.00
	FFCtry=0	3.71	6.00	-10.00	10.00	5.80	9.00
	All	-0.02	-0.18	-2.33	1.87	0.91	1.42
GovX	FFCtry=1	0.09	-0.08	-2.33	1.87	1.05	1.87
	FFCtry=0	-0.09	-0.25	-1.74	1.65	0.80	1.32
	All	0.44	0.43	0.00	0.93	0.26	0.48
Ethnic	FFCtry=1	0.41	0.40	0.01	0.88	0.25	0.46
	FFCtry=0	0.46	0.47	0.00	0.93	0.26	0.48
	All	0.39	0.36	0.00	0.92	0.28	0.51
Lang	FFCtry=1	0.35	0.33	0.01	0.87	0.26	0.43
	FFCtry=0	0.42	0.38	0.00	0.92	0.29	0.54
	All	0.44	0.46	0.00	0.86	0.23	0.40
Relig	FFCtry=1	0.41	0.43	0.00	0.86	0.24	0.41
	FFCtry=0	0.46	0.49	0.00	0.82	0.22	0.39
	All	6,284	5,180	86	18,162	4,183	6,932
Dist	FFCtry=1	4,092	3,062	86	16,286	3,399	3,359
	FFCtry=0	7,674	6,630	161	18,162	4,046	6,225

Table 5: Pearson Correlation Matrix of Right-Hand Side Variables

	Muslim	MusMaj	Dist	Gini	Polity	GovX	Ethnic	Lang	Relig	HDI	MSExpShr	MusXyuer	MusMajXyuer	ln(y)
Muslim	1													
MusMaj	0.95	1												
Dist	-0.44	-0.37	1											
Gini	-0.14	-0.16	0.46	1										
Polity	-0.46	-0.4	0.22	-0.12	1									
GovX	-0.4	-0.37	0.09	-0.29	0.56	1								
Ethnic	0.26	0.19	-0.12	0.26	-0.24	-0.42	1							
Lang	0.17	0.11	-0.12	0.15	-0.15	-0.3	0.7	1						
Relig	-0.33	-0.31	0.2	0.19	0.1	0.1	0.15	0.26	1					
HDI	-0.27	-0.23	-0.02	-0.37	0.31	0.77	-0.5	-0.54	-0.07	1				
MSExpShr	-0.27	-0.22	-0.06	-0.3	0.34	0.52	-0.42	-0.2	0.07	0.49	1			
MusXyuer	0.79	0.69	-0.62	-0.17	-0.34	-0.25	0.3	0.27	-0.13	-0.17	-0.19	1		
MusMajXyuer	0.94	0.97	-0.38	-0.16	-0.42	-0.35	0.13	0.03	-0.32	-0.17	-0.23	0.7	1	
ln(y)	-0.25	-0.21	-0.03	-0.28	0.26	0.81	-0.4	-0.44	-0.05	0.93	0.4	-0.13	-0.16	1

Table 6: Tobit Regression Results (DV: lnFFperMill)

	Model I	Model II	Model III	Model IV	Model V	Model VI	Model VII	Model VIII
const	-3.311***	-10.316***	-9.714***	-8.175***	-9.536 ***	-10.318***	-4.895**	0.545
	(1.103)	(1.627)	(1.473)	(1.504)	(1.499)	(2.045)	(2.289)	(2.717)
MusXyuer	0.888***	0.863***	0.826***	0.806***	0.799***	0.748***	0.629***	0.681***
	(0.210)	(0.191)	(0.181)	(0.170)	(0.173)	(0.164)	(0.155)	(0.153)
MusMajXyuer	2.176 **	2.319***	1.804**	1.981**	1.736**	1.492*	1.862**	1.906***
	(0.920)	(0.841)	(0.810)	(0.799)	(0.803)	(0.784)	(0.770)	(0.729)
Muslim	-0.041	-0.021	-0.017	-0.015	-0.019	-0.021	-0.002	-0.015
	(0.024)	(0.021)	(0.021)	(0.02)	(0.02)	(0.02)	(0.020)	(0.019)
MusMaj	-3.986	-5.166**	-3.748	-4.287*	-3.078	-2.436	-4.400*	-3.969*
	(2.682)	(2.435)	(2.359)	(2.318)	(2.373)	(2.387)	(2.329)	(2.127)
lnyuer	-0.077	-0.461	-0.659*	-0.660*	-0.782**	-0.750	-0.659**	-0.811**
	(0.42)	(0.374)	(0.368)	(0.350)	(0.353)	(0.354)**	(0.316)	(0.328)
ln(y)		0.919***		-0.689*				
		(0.147)		(0.361)				
HDI			11.299	17.781	11.078***	12.551***	8.758***	1.506
			(1.565)	(4.001)	(1.612)	(2.478)	(2.401)	(3.161)
ln(MSExpShr)					0.175	0.200	0.151	-0.003
					(0.218)	(0.229)	(0.240)	(0.248)
Polity						-0.004	-0.058	-0.065
						(0.042)	(0.043)	(0.044)
GovX						-0.349	0.247	0.856*
						(0.404)	(0.360)	(0.500)
Gini							-0.049 **	-0.017
							(0.024)	(0.03)
Ethnic							0.843	0.372
							(1.040)	(1.112)
Lang							-1.390	-0.864
							(0.858)	(0.914)
Relig							0.047	0.111
							(0.859)	0.934)
Dist								0 .000
								(0.000)
EAP								-0.953
								(0.937)
EECA								0.277
								(0.702)
LAC								-0.486
								(1.115)
SA								-1.310
								(0.998)
SSA								-2.489**
								(1.039)
n	149	146	146	145	123	116	100	100
left-censored	85	83	84	83	68	62	56	56
Log-likelihood	-188.343	-161.618	-152.634	-147.534	-129.262	-122.812	-90.436	-86.1

Notes: Standard errors in parentheses, ***=significant at 1%, **=significant at 5%,*=significant at 10%.