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MUSLIM YOUTH UNEMPLOYMENT AND ISLAMIC STATE RECRUITMENT – BORED TO DEATH?[1]

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Abstract

Empirical studies analyzing the push factors of Islamic State recruitment are scarce and typically give contradictory results. We hypothesize that youth unemployment, as opposed to overall unemployment, is a significant determinant of foreign fighters flow to join Islamic State (IS). Moreover, we also consider the interaction between youth unemployment and the Muslim population share as other meaningful variables affecting expat jihadism. Controlling for several variables including gross domestic product per capita; Gini; geographical proximity; the share of manufactures and services as a percentage of GDP; Polity score; and fractionalization, we provide strong evidence for the hypothesis that Muslim youth unemployment is a driver of Islamic State recruitment not only for Muslim-majority countries, but globally.

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الخلاصة

تتسم الدراسات التجريبية التي تُعنَى بتحليل العوامل الدافعة للتجنيد في تنظيم الدولة الإسلامية بأنها نادرة وعادة ما تعطي نتائج متناقضة. في هذه الدراسة، نفترض أن بطالة الشباب، وليس البطالة الكلية، هي أحد المحددات المهمة لتدفق المقاتلين الأجانب للانضمام إلى تنظيم الدولة الإسلامية. وننظر أيضا إلى التفاعل بين بطالة الشباب وحصة السكان المسلمين كمتغيرات أخرى ذات مغزى تؤثر على الجهادية المغتربة. وبتثبيت عدة متغيرات، بما في ذلك نصيب الفرد من الناتج المحلي الإجمالي ومعامل جيني والقرب الجغرافي وحصة الصناعة والخدمات كنسبة مئوية من الناتج المحلي الإجمالي ودرجة النظام السياسي والتقسيمات، نقدم أدلة قوية على فرضية أن بطالة الشباب المسلم هي الدافع للتجنيد في تنظيم الدولة الإسلامية، ليس فقط بالنسبة للبلدان ذات الأغلبية المسلمة ولكن على الصعيد العالمي.

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1- INTRODUCTION

The presence of foreign fighters in military conflicts has become a common ingredient of jihad.[2] In the 1980s, foreigners flocked to Afghanistan to fight alongside the mujahedeen during the Soviet-Afghan war. The same pattern, although to a lesser extent, was 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.[3]

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, and former Soviet Union states such as Russia, Kazakhstan and Uzbekistan.[4]

The foreign fighter phenomenon in Syria and Iraq poses severe security risks to the sender countries. Expat jihadists who have supported military, paramilitary and terrorist operations abroad may continue their fight against targets in their homeland. Estimates suggest that in 2016, almost 30 percent of European Union citizens who fought alongside the IS in Syria had returned home.[5]

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[2] Justin D. Dragon, *Western foreign fighters in Syria: an empirical analysis of recruitment and mobilization mechanisms* (Monterey: Dudley Knox Library-Naval Postgraduate School, 2015).

[3] Thomas Hegghammer, "Syria's Foreign Fighters," *Foreign Policy* (9 December 2013). Available at http://foreignpolicy.com/2013/12/09/syrias-foreign-fighters/ (accessed 12 June 2017); Hardin Lang and Muath Al Wari, the Flow of Foreign Fighters to the Islamic State: Assessing the Challenge and the Response (Washington, D.C.: Center for American Progress, 2016).

[4] The Soufan Group, *Foreign Fighters: An Updated Assessment of the Flow of Foreign Fighters into Syria and Iraq* (The Soufan Group, 2015).

[5] International Centre for Counter-Terrorism, *The Foreign Fighters Phenomenon in the European Union: Profiles, Threats & Policies* (The Hague: International Centre for Counter-Terrorism, 2016).

Thomas Hegghammer, Director of Terrorism Research at the Norwegian Defense Research Establishment in Oslo, asserts that "Syria will prolong the problem of jihadi terrorism in Europe by 20 years" and that attacks by returning foreign fighter are "almost inevitable".[6]

Bearing in mind this homeland security risk, it becomes imperative to better understand the factors behind the flow of foreign fighters into Syria. Relevant empirical studies are still quite scarce and have produced mixed results regarding the push factors of Islamic State recruitment. Some studies, for example, argue that the push factors have their origin in economic grievance; others deny such a relationship. Therefore, the objective of our paper is to contribute to the emerging discussion of the push factors of Islamic State recruitment and to complement the findings of the existing empirical studies.

Our main focus will be on the relationship between a country's unemployment rate and its propensity to produce expat jihadists joining IS. We hypothesize that youth unemployment, as opposed to overall unemployment, is a significant determinant of Islamic State recruitment. Moreover, we also argue that the interaction between youth unemployment and the Muslim population share is a meaningful proxy for other variables affecting Islamic State recruitment, such as conflict identity, alienation, and lack of assimilation. Our results show that youth unemployment both in Muslim countries and among Muslims in Western countries is a strong predictor of Islamic State recruitment. Youth unemployment among Muslims therefore serves as an early warning indicator, deserving of specific policy attention, regardless of the region.

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; and 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 phenomenon of foreign fighters and the determinants of Islamic radicalization in the West. Some

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[6] Frank Gardner, "Europe Could Feel the Backlash from Jihadist Conflicts," *BBC* (30 November 2013). Available at http://www.bbc.com/news/world-middle-east-25155188 (accessed 11 December 2016).

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, argues that "the whole experience of foreign fighters is often shaped by coincidences largely beyond the control of the 'wannabe' foreign fighter".[7] Such coincidences may be social, cultural, or economic events that foreign fighters were exposed to prior to leaving their home. Likewise, Cilluffo et al.,[8] 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".[9]

Nevertheless, current research on foreign fighters largely seeks to distinguish between pull and push factors behind the phenomenon.[1] According to Schmid and Tinnes, pull factors include extremist ideologies that provide significant justifications for attacks against others (e.g., non-Muslims), and like-minded militant peer-groups that strengthen an individual's inclination to become a foreign fighter.[1] Additionally, the prospect of personal recognition—the potential for an individual to be perceived as a valiant fighter for a holy cause—and the opportunity to boost one's (self-)image from near "zero [in one's own country] to hero" [in the land of jihad], is noted as a pull factor. Push factors include: estrangement by mainstream society of uprooted migrants in refugee camps and diasporas; socio-economic marginalization and aggravation; relative

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[7] Tally Helfont, "The Foreign Fighter Problem: Recent Trends and Case Studies," in Michael P Noonan*, ed, *The Foreign Fighters Problem, Recent Trends and Case Studies: Selected Essays* (Philadelphia, PA: Foreign Policy Research Institute, 2011), pp. 2-9.

[8] Frank J Cilluffo, Jeffrey B. Cozzens and Magnus Ranstorp, *Foreign Fighters: Trends, Trajectories & Conflict Zones* (Washington, D.C.: Homeland Security Policy Institute - The George Washington University, 2010).

[9] Ibid., p. 36.

[1] Ian Daniels, Jason Halbgewachts, Katie Hendriks, Eline de Jong, Laura Keijzer and Milad Talebi Pour, *Dealing with Muslim Radicalisation: An analysis of the strategies of Belgium, Canada, Germany, The Netherlands, Norway and the United Kingdom* (The Hague: CTC Theses, 2015).

[1] Alex P. Schmid and Judith Tinnes, "Foreign (Terrorist) Fighters with IS: A European Perspective," *The International Centre for Counter-Terrorism – The Hague* 6 (8) (2015), pp. 1-68.

deprivation and/or political exclusion; lack of future prospects at home; and desire to escape, among others.[1]

Among several recent studies investigating pull factors, Skidmore proposes that identification with the conflict serves as a magnet attracting foreign fighters to Syria.[1] This conflict identity could a) be sectarian in nature reflecting the Sunni-Shiite struggle, b) arise from persisting effects of previous conflicts in nearby countries like Iraq and Afghanistan, and c) be based on failing U.S. policies related to the present clash.

Duyvesteyn and Peeters use comparative case studies to investigate why the conflict in Syria attracts more foreigners willing to fight without substantial pay and without any apparent link to the conflict other than religious affinity with the Muslim side.[1] 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 in battleground. 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.[1] Interestingly, the authors also note that in reality, both rebel and opposition groups lack internal cohesion. Nevertheless, IS propaganda has been relatively successful in luring people into jihad

Other studies focus on the push factors behind recruitment to militant Islamist groups—what Thomas Hegghammer calls the "underlying determinants of supply".[1] Using a series of

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[1] Ibid., p. 38.

[1] J. Skidmore, *Foreign Fighter Involvement in Syria* (The Hague: International Institute for Counter-Terrorism, 2014).

[1] Isabelle Duyvesteyn and Bram Peeters, *Fickle Foreign Fighters? A Cross-Case Analysis of Seven Muslim Foreign Fighter Mobilisations (1980-2015)* (The Hague: International Centre for Counter-Terrorism, 2015).

[1] Ibid., p. 26.

[1] Thomas Hegghammer, "The Recruiter's Dilemma: Signaling and Rebel Recruitment Tactics," *Journal of Peace Research* 50 (1) (2012), pp. 3-16, p. 4.

correlations, Verwimp shows that in a sample of European countries, 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 foreign fighters going to Syria per million of sending country population on the other hand.[1][7]

Examining factors associated with Islamist violence in OECD countries as well as in Syria, Thomas 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.[1][8] 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 domestic Islamist violence and the outflow of foreign fighters to Syria. This finding coincides with those of Krueger, who reports that countries with low levels of civil liberties or political rights are likely to have had more of their citizens join the Iraqi insurgency.[1][9]

Recently, Benmelech and Klor find that poor aggregate economic conditions are not a major determinant of Islamic State recruitment. 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.[2][10] In fact, many foreign fighters originate from

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[1] Philip Verwimp, "Foreign Fighters in Syria and Iraq and the socio-economic environment they faced at home: a comparison of European countries." *ECARES working paper 2015-50* (201) (2015), pp. 1-11. Available at http://www.hicn.org/wordpress/wp-content/uploads/2012/06/HiCN-WP-2018.pdf (accessed 20 February 2017).

[1] Mark Thomas, 2015. "Foreign Fighters in Syria and Islamist Terror at Home: Determinants of Radical Islam in the OECD and Beyond." *Social Science Research Network (SSRN)* 1-18. Available at http://ssrn.com/abstract=2627414 (accessed 7 June 2017).

[1] Alan Krueger, *The National Origins of Foreign Fighters in Iraq* (Princeton: Princeton University Press, 2006), pp. 1-18, p. 3.

[2] Efraim Benmelech and Esteban F. Klor, "What Explains the Flow of Foreign Fighters to ISIS?" *NBER Working Paper No. 22190 (*2016), pp. 1-25.

countries with high levels of economic development, low income inequality, and highly developed political institutions."[2] 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.[2]

Moreover, Benmelech and Klor find that, in the case of non-Muslim-majority countries, unemployment is not a significant determinant of the likelihood of an individual joining ISIS. The authors argue that "income inequality, unemployment, and social and political conditions are not determinants of joining ISIS in non-Muslim countries".[2] Such finding correlate with other studies that find no relationship between unemployment and terrorism.[2] Krueger and Pischke find no relationship between the unemployment rate and the incidence of ethnic violence across 543 counties in Germany, once they control for a dummy variable indicating whether the county is

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[2] Ibid., p. 11.   [1]

[2] Ibid., p. 11.   [2]

[2] Ibid., p. 9.   [3]

[2] Eli Berman, Michael Callen,[4] Joseph H Felter and Jacob N Shapiro, "Do Working Men Rebel? Insurgency and Unemployment in Afghanistan, Iraq, and the Philippines," *Journal of Conflict Resolution* 55 (4) (2011), pp. 496–528; Andreas E. Feldmann and Maiju Perala, "Reassessing the Causes of Nongovernmental Terrorism in Latin America," *Latin American Politics and Society* 46 (2) (2004), pp. 101-32; James A. Piazza, "Rooted in Poverty?: Terrorism, Poor Economic Development, and Social Cleavages," *Terrorism and Political Violence* 18 (1) (2006), pp. 159-177; J. L. P. Thompson, "Deprivation and Political Violence in Northern Ireland, 1922-1985: A Time-Series Analysis," *Journal of Conflict Resolution* 33 (4) (1989), pp. 676–699; Robert W. White, "On measuring political violence: Northern Ireland, 1969-80," *American Sociological Review* 58 (1993), pp. 575-85.

located in the former East or West Germany.[2] In fact, Krueger, and Krueger and Maleckova argue that terrorists are most typically from more educated and better off backgrounds.[2]

Nevertheless, considerable empirical literature finds unemployment to be positively associated with terrorist events.[2] The presence of male youth 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".[2] Collier and Hoeffler postulate that the presence of uneducated and unemployed, mostly male, youths is a significant variable that heightens conflict risk.[2]

According to Bueno de Mesquita and Benmelech, Berrebi, and Klor, adverse economic conditions, including greater unemployment, allow leaders of terrorist groups to recruit more skilled operatives.[3] Honaker shows that unemployment is a leading factor explaining violence in Northern Ireland,[3] and Sayre similarly finds a positive relationship between unemployment and

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[2] Alan Krueger and Joern-Steffen Pischke, "A Statistical Analysis of Crime Against Foreigners in Unified Germany," *Journal of Human Resources* 32 (1) (1997), pp. 182–209.

[2] Alan Krueger, *What Makes a Terrorist? Economics and the Roots of Terrorism,* Lionel Robbins Lectures. (Princeton: Princeton University Press, 2007); Alan Krueger and Jitka Maleckova, "Education, Poverty and Terrorism: is there a causal connection?" *Journal of Economic Perspectives* 17 (4) (2003), pp. 119-44.

[2] Shannon C. Flowers, *The Relationship between Youth Unemployment and Terrorism* (Washington, DC: Georgetown University, 2014); Kevin B. Goldstein, "Unemployment, Inequality, and Terrorism: Another Look at the Relationship between Economics and Terrorism," *Carroll Round Proceedings* 1 (2006), pp. 18-28; Piazza, "Rooted in Poverty?: Terrorism, Poor Economic Development, and Social Cleavages.".

[2] United Nations, *World Youth Report* (New York: United Nations, 2003), p. 371.

[2] Paul Collier and Anke Hoeffler, "Greed and grievance in civil war," *Oxford Economic Papers* 56 (2004), pp. 563-595.

[3] Ethan Bueno de Mesquita, "Quality of Terror," *American Journal of Political Science* 49 (3) (2005), pp. 515-30; Efraim Benmelech, Claude Berrebi and Esteban F Klor, "Economic Conditions and the Quality of Suicide Terrorism," *Journal of Politics* 74 (1) (2012), pp. 113-28.

[3] James Honaker, "Unemployment and Violence in Northern Ireland: A Missing Data Model for Ecological Inference," *mimeo* 1-31, 2011. Available at http://hona.kr/papers/files/ni.pdf (accessed 1 February 2017).

the occurrence of Palestinian suicide bombings in the West Bank.[3] Examining terrorist attacks from 1980-2008 across 56 countries, Richardson links high unemployment rates and poverty with terrorism.[3] Caruso and Schneider finds that an increase of 1 percent in youth unemployment translates into a 0.5 percent increase in terrorist activity.[3] [4]

The association between youth unemployment and terrorism fits with the argument that the "youth bulge" is associated with the eruption of political violence.[3] Lia defines "youth bulge"[5] as a demographic 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.[3] According to Urdal, youth bulges pose significant challenges to governments, increasing the occurrence of terrorist activity in the face of economic downturns and rising education levels.[3] The potential for violent crimes and terrorism begins to escalate as population growth exceeds economic growth. Cincotta argues that countries where young people comprise 40 percent or more 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.[3] [8]

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

[3] Edward Sayre, "Labor Market Conditions, Political Events, and Palestinian Suicide," *Peace Economics, Peace Science, and Public Policy* 15 (1) (2009), pp. 1-28.

[3] Clare Richardson, *Relative Deprivation Theory in Terrorism: A Study of Higher Education and Unemployment as Predictors of Terrorism* (New York: Politics Department, New York University, 2011).

[3] Raul Caruso and Friedrich Schneider, "The Socio-Economic Determinants of Terrorism and and political violence in Western Europe (1994–2007)," *European Journal of Political Economy* 27 (1) (2011), pp. 37–49.

[3] Henrik Urdal, "A Clash of Generations? Youth Bulges and Political Violence," *International Studies Quarterly* 50 (2006), pp. 607-629.

[3] Brynjar Lia, *Globalisation and the future of terrorism: patterns and predictions* (London and New York: Routledge, 2003).

[3] Urdal, "A Clash of Generations? Youth Bulges and Political Violence."

[3] Richard Cincotta, *Youth bulge, underemployment raise risks of civil conflict,* Global Security Brief No. 2, in *State of the World 2005* (Washington, D.C.: Worldwatch Institute, 2005).

300 million people. This is the highest proportion of youth to adults in the region's history.[3] The World Bank estimates that unemployment is running at 11.5 percent in the Arab region, far higher than the global unemployment rate (5.9 percent) and most low- and middle-income countries (5.7 percent). Moreover, labor force participation rates are significantly lower than elsewhere in the world, at 53 percent overall and just 25 percent among women.[4]

According to a recent report from the World Bank, a strong association is found between a country's male unemployment rate and the propensity of that country to supply IS foreign recruits.[4] This result is similar to that of Bhatia and Ghanem who demonstrate, using opinion polls from a sample of eight Arab countries, that unemployment among educated Arabs leads to a greater probability of holding radical views.[4] Moreover, using data on attitudes toward extreme violence

[3] Navtej Dhillon, "Middle East Youth Bulge: Challenge or Opportunity?" *Brookings (*22 May 2008). Available at https://www.brookings.edu/on-the-record/middle-east-youth-bulge-challenge-or-opportunity/ (accessed 5 February 2017); Kate Moran, "Leveraging the Youth Bulge to Transform the Arab World," *CIPE Development Blog.* (2 February 2016). Available at http://www.cipe.org/blog/2016/02/02/leveraging-the-youth-bulge-to-transform-the-arab-world/#.WACaO0dE4Td (accessed 23 June 2017).

[4] Dominic Dudley, "Unemployment Is Driving Young Arabs Into The Hands Of Islamic State, Says Survey," *Forbes* (12 April 2016). Available at http://www.forbes.com/sites/dominicdudley/2016/04/12/unemployment-is-driving-young-arabs-into-the-hands-of-islamic-state-says-survey/#508d2a921628 (accessed 18 January 2017).

[4] Shanta Devarajan, Lili Mottaghi, Quy-Toan Do, Anne Brockmeyer, Clément Joubert, Kartika Bhatia and Mohamed Abdel Jelil, *Economic and Social Inclusion to Prevent Violent Extremism,* Middle East and North Africa Economic Monitor (Washington, DC: World Bank, 2016).

[4] Kartika Bhatia and Hafez Ghanem, *How do education and unemployment affect support for violent extremism? Evidence from eight Arab countries,* Global Economy and Development at Brookings (Washington, DC: Brookings Institution, 2017). Available at https://www.brookings.edu/wp-content/uploads/2017/03/global_20170322_violent-extremism.pdf. (accessed 11 February 2017).

from 27 developing countries, Kiendrebeogo and Ianchovichina find a significant association between radical views and unemployment or economic hardship.[4] [3]

According to the latest Arab Youth Survey, which surveyed 3,500 people between the ages of 18 and 24 in 16 Arab countries, lack of jobs is perceived to be the biggest factor driving people into the arms of IS.[4] Overall, 24 percent of respondents pointed to unemployment as the main driver for recruitment into the jihadi movement. Other factors include the belief by those joining ISIS that their interpretation of Islam was superior to others (18 percent) and regional tensions between Sunni and Shia groups (17 percent).[4] [5]

Interestingly, according to a study conducted by the World Bank based on leaked internal documents from IS, more than a quarter of foreign jihadists had a university level education, and only 15 percent of the 3,803 case studies had not finished secondary school. Two percent were illiterate, thus challenging the idea that poverty and low education levels are linked to radicalization.[4] Most importantly, according to an article published by The Independent in October 2016, IS foreign jihadists are more likely to be "young, single, with low access to resources or employment with which to start a family, and have a 'slightly more than basic' understanding of Islam, even if they are well educated". In addition, it is reported that "would-be suicide bombers were mostly likely to have experienced unemployment or have military experience, and were also the wealthiest of foreign recruits".[4] [7]

[4] Youssouf Kiendrebeogo and [3]Elena Ianchovichina, *Who Supports Violent Extremism in Developing Countries? Analysis of Attitudes Based on Value Surveys,* Policy Research Working Paper Series 7691 (Washington, DC: the World Bank, 2016). Available at doi:10.1596/1813-9450-7691 (accessed 11 March 2017).

[4] ASDA'A Burson-Marsteller, *8th Annual ASDA'A Burson-Marsteller Arab Youth Survey: Inside the Hearts and Minds of Arab Youth* (Dubai, UAE: ASDA'A Burson-Marsteller, 2016).

[4] Ibid. [5]

[4] Bethan McKernan, "Secret ISIS files reveal fighters are relatively educated and well-off but unemployed," *The Independent* (7 October 2016). Available at http://www.independent.co.uk/news/world/middle-east/isis-secret-files-fighters-soldiers-who-are-they-educated-wealthy-unemployed-a7350366.html (accessed 27 April 2017).

[4] Ibid. [7]

Our paper is methodologically closest to that of Benmelech and Klor,[4] but we challenge their conclusion that unemployment is not a factor for expat jihadism. Whereas their empirical results suggest 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",[4] and that the "positive correlation between unemployment and ISIS foreign fighters…is driven entirely by Muslim countries".[5]

In this paper, we argue that youth unemployment, rather than general unemployment, is a determinant of Islamic State recruitment. Moreover, in line with results discussed in the literature, we hypothesize that the interaction between youth unemployment and the Muslim population share is also a meaningful proxy for other variables affecting Islamic State recruitment, namely conflict identity, alienation and lack of assimilation. We argue, essentially, that socioeconomic frustration increases people's identification with certain conflicts, especially ongoing ones, makes them feel alienated and prevents assimilation. We also acknowledge that this hypothesis remains untested due to the lack of empirical data addressing the concepts of conflict identity, alienation, and lack of assimilation.

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;

J = time spent on jihadist activity; and

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

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[4] Benmelech and Klor, "What Explains the Flow of Foreign Fighters to ISIS?"

[4] Ibid., p. 7.

[5] Ibid., p. 8.

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

This model, therefore, highlights the significant effect that available employment opportunities have on increasing the opportunity cost of jihadist activity. The model does not directly incorporate other determinants of Islamic State recruitment such as conflict identity, adventurism, or religiosity. We argue, however, that anecdotal evidence strongly suggests that many of these determinants of Islamic State recruitment are more easily triggered by socioeconomic frustration embedded in unemployment, especially youth unemployment.

The Soufan Group provides two counts for the number of foreign fighters, an official and an unofficial count.[5] Whenever an official and/or unofficial count were available, we used the official count: if only an unofficial count was available, we used that. This is in line with the approach by Benmelech and Klor.[5] The 2015 Soufan Group data is an update of its 2014 report. The two reports also mention sending countries for which, at the time of this writing, no foreign fighter numbers were available. Our dataset includes a total of 81 foreign fighter sending countries, the Soufan Group provides numbers for 66 of these. 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.

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[5] The Soufan Group, *Foreign Fighters: An Updated Assessment of the Flow of Foreign Fighters into Syria and Iraq*.

[5] Benmelech and Klor, "What Explains the Flow of Foreign Fighters to ISIS?"

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.

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 an above average rate of unemployment, despite increasing education levels over the ten year period. Moreover, the report points to the high proportion of the prison population being Muslim (13 percent) and the proportion of Muslims in social housing (28 percent) as a cause for concern.[5] From 2010 to 2015, the number of young people from ethnic minority backgrounds, mostly Muslims, who have been unemployed for more than a year rose by almost 50 percent, according to figures released by the Labour Party.[5] [4]

In 1999, when the general unemployment rate in France was around 10 percent, it was more than double that (22 percent) among immigrants.[5] In 2009, the "Sensitive Urban Zones," where many immigrants reside, had an unemployment rate of around 18.6 percent compared to the national average of 9.8 percent; for young people in those neighborhoods, the rate reached 43 percent, which contributed to strong perceptions of discrimination.[5] In a study following [6] immigrant families over several generations, Maxwell shows the persistence of high unemployment among North Africans in France: up to 28 percent, with second-generation Muslims more affected than their parents (30 percent compared to 22 percent, though most of the parents' generation were already retired).[5] [7]

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 percent in the Netherlands, Dutch Muslim minorities suffered from an 11 percent unemployment rate. This

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[5] Louise Ridley, *British Muslims Among The Most Deprived In The Country, Finds Landmark Report (*13 February 2015). Available at http://www.huffingtonpost.co.uk/2015/02/12/british-muslims-facts_n_6670234.html (accessed 3 November 2016).

[5] Matthew Taylor, "50% rise in long-term unemployment for young ethnic minority people in UK," *The Guardian* (10 March 2015). Available at https://www.theguardian.com/society/2015/mar/10/50-rise-in-long-term-unemployed-youngsters-from-uk-ethnic-minorities (accessed 25 September 2016).

[5] European Monitoring Centre on Racism and Xenophobia (EUMC), *Migrants, Minorities and Employment in France* (Paris: European Monitoring Centre on Racism and Xenophobia, 2003).

[5] Gilles Kepel, *Banlieue de la République* (Paris: Institut Montaigne, 2011).

[5] Rahsaan Maxwell, "Pour en finir avec un faux débat : les statistiques ethniques," *En Temps Réel* 40 (2009), pp. 1-29.

breaks down to 10 percent for Turks and 12 percent for Moroccans. As for the general population, youth are hit especially hard by unemployment, at over 20 percent for the 15 to 25-year-old segment. Even more problematic, there has been an upward trend in minority youth unemployment in the last decade, as the second generation experiences even more difficulties in securing employment than their immigrant parents.[5] The situation is no different in Germany. Most recently, Reynolds states that out of the 378 German Muslim foreign fighters in Syria, only 119 were either in school or employed before departure.[5][9]

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, a relevant explanatory variable for Islamic State recruitment. 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 a particularly significant problem in Muslim majority countries.

Following Benmelech and Klor,[6] we also control for various socioeconomic characteristics. Our control variables include those used by Benmelech and Klor. The control variables are as follows: gross domestic product per capita; Human Development Index; Gini; distance between a country's capital and Syria's capital, Damascus; the share of manufactures and services as a percentage of GDP; Polity score; a Good Governance index; ethnic, linguistic, and religious fractionalization indicators; and regional fixed effects. Our hypotheses are summarized in Table 2.

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[5] FORUM, *Ethnic minorities on the Dutch labour market: effects of the economic crisis* (Utrecht: FORUM Monitor, 2009).

[5] Sean C. Reynolds, *German foreign fighters in Syria and Iraq* (Monterey, CA: Naval Postgraduate School, 2016), p. 36.

[6] Benmelech and Klor, "What Explains the Flow of Foreign Fighters to ISIS?"

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	-	-	+	+	+

We explain the hypothesized signs of the control variables in three arguments. Firstly, negative signs can be explained by variables that capture more economic opportunities and therefore, higher opportunity costs of joining the Islamic State. The following variables fall into this category: 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 suggesting that government effectively addresses socioeconomic grievances. The variables Polity score and good governance are therefore hypothesized to carry a negative sign. The third argument is that there might be structural components in place that undermine equal socioeconomic opportunities, therefore increasing citizens' propensity to leave everything behind. These variables are expected to have a 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 could 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 could also be the result of perceived or actual, deliberately pursued, political and economic acts of discrimination. As for the latter, this is more likely to occur in religiously, ethnically, and linguistically fractionalized societies where not all societal subgroups are equally represented in

government.[6] Furthermore, 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.

Finally, we control for regional fixed effects to capture characteristics that go beyond the various country-specific variables. The regional dummies represent the regional classification shown in Table 1. On the right hand side, we run the five developing areas – East Asia and the Pacific (EAP), Eastern Europe and Central Asia (EECA) (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 abbreviations and sources. For those variables whose distributional characteristics could be improved through data manipulations, we also indicate the nature of the transformation.

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[6] Alberto Alesina, Arnaud Devleeschauwer, William Easterly, Sergio Kurlat and Romain Wacziarg,

"Fractionalization," *Journal of Economic Growth* 8 (2) (2003), pp. 155–194

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	ln(yuer*MusMaj+1)	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	
Linguistic Fractionalization	Lang	n/a	Alesina et al. (2003)
Religious Fractionalization	Relig	n/a	

Table 4 provides summary statistics for our variables. Although we use transformed variables (as described in Table 3) in the regression, the summary statistics of Table 4 are based on non-transformed values.

Table 4. Summary Statistics of Variables

	Sample	Mean	Median	Minimum	Maximum	Std. Dev.	IQ range
FFperMill	All	13.63	0.00	0.00	551.04	59.26	1.49
	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
MusXyuer	All	498.47	58.78	0.00	4,520.20	871.00	586.01
	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
MusMajXyuer	All	4.31	0.00	0.00	46.60	9.24	0.00
	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
Muslim	All	25.00	4.06	0.00	99.56	35.91	43.59
	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
MusMaj	All	0.24	0.00	0.00	1.00	0.43	0.00
	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
yuer	All	18.37	15.25	0.70	58.43	12.29	16.05
	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
y	All	14,851	5,021	214	145,220	22,822	17,335
	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
HDI	All	0.68	0.71	0.33	0.94	0.16	0.26
	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
Gini	All	39.45	38.81	24.09	63.38	8.55	12.89
	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
MSExpShr	All	27.56	20.35	0.00	169.73	28.96	28.75
	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
Polity	All	3.80	6.00	-10.00	10.00	6.23	10.75
	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
GovX	All	-0.02	-0.18	-2.33	1.87	0.91	1.42
	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
Ethnic	All	0.44	0.43	0.00	0.93	0.26	0.48
	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
Lang	All	0.39	0.36	0.00	0.92	0.28	0.51
	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
Relig	All	0.44	0.46	0.00	0.86	0.23	0.40
	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
Dist	All	6,284	5,180	86	18,162	4,183	6,932
	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

Because our data is left-censored with countries that have sent zero foreign fighters, and whereas the observations for those countries that sent foreign fighters are essentially continuous

(as the observations are in 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. However, 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 ran our regressions using the open source econometric software "gretl," whose accompanying manual also provides a technical description of the Tobit estimator.

4-   EMPIRICAL RESULTS

In anticipation of multicollinearity issues, we first present a Pearson correlation matrix for our right-hand side variables (using the transformed variables as described in Table 3) (Table 5). 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 side may lead to unexpected non-significance or flipping signs.

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 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 that countries with higher GDP per capita and greater human development produce,[6] ceteris paribus, [2] more foreign fighters joining the Islamic State (Models II and III). In Model IV, which, in comparison to Model I, includes both "lny" and "HDI" on the right side, the sign of "lny" is now flipped and negatively significant compared to Model II. Therefore, in subsequent Models V to VIII we only keep "HDI" on the right side and drop "lny". Model V adds the variable "MSExpShr" to the specifications 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; however, the coefficients are not significant. Model VII represents the addition of the socio-structural parameters, "Gini" and the various fractionalization indicators. Here, the Gini coefficient receives a statistically significant negative sign, which aligns with the findings of Benmelech and Klor.[6] Lastly, Model VIII adds[3] the variable "Dist" and regional fixed effects to Model VII. 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 reference high-income regions of Western Europe and North America not included in the regression). The variable "Dist" is also not significant.

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[6] Ibid. [2]

[6] Ibid. [3]

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*** (1.103)	-10.316*** (1.627)	-9.714*** (1.473)	-8.175*** (1.504)	-9.536 *** (1.499)	-10.318*** (2.045)	-4.895** (2.289)	0.545 (2.717)
MusXyuer	0.888*** (0.210)	0.863*** (0.191)	0.826*** (0.181)	0.806*** (0.170)	0.799*** (0.173)	0.748*** (0.164)	0.629*** (0.155)	0.681*** (0.153)
MusMajXyuer	2.176 ** (0.920)	2.319*** (0.841)	1.804** (0.810)	1.981** (0.799)	1.736** (0.803)	1.492* (0.784)	1.862** (0.770)	1.906*** (0.729)
Muslim	-0.041 (0.024)	-0.021 (0.021)	-0.017 (0.021)	-0.015 (0.02)	-0.019 (0.02)	-0.021 (0.02)	-0.002 (0.020)	-0.015 (0.019)
MusMaj	-3.986 (2.682)	-5.166** (2.435)	-3.748 (2.359)	-4.287* (2.318)	-3.078 (2.373)	-2.436 (2.387)	-4.400* (2.329)	-3.969* (2.127)
lnyuer	-0.077 (0.42)	-0.461 (0.374)	-0.659* (0.368)	-0.660* (0.350)	-0.782** (0.353)	-0.750 (0.354)**	-0.659** (0.316)	-0.811** (0.328)
ln(y)		0.919*** (0.147)		-0.689* (0.361)				
HDI			11.299*** (1.565)	17.781*** (4.001)	11.078*** (1.612)	12.551*** (2.478)	8.758*** (2.401)	1.506 (3.161)
ln(MSExpShr)					0.175 (0.218)	0.200 (0.229)	0.151 (0.240)	-0.003 (0.248)
Polity						-0.004 (0.042)	-0.058 (0.043)	-0.065 (0.044)
GovX						-0.349 (0.404)	0.247 (0.360)	0.856* (0.500)
Gini							-0.049 ** (0.024)	-0.017 (0.03)
Ethnic							0.843 (1.040)	0.372 (1.112)
Lang							-1.390 (0.858)	-0.864 (0.914)
Relig							0.047 (0.859)	0.111 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

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

While the regressions present 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. Thus, we do not arrive at the same conclusion as Benmelech and Klor who find that the unemployment problem behind Islamic State recruitment is driven by Arab countries exclusively.[6] Instead, based on our regression results,[4] we would argue that youth unemployment among the Muslim population is an explanatory factor of Islamic State recruitment worldwide.

Although we find that youth unemployment is an important variable for understanding the phenomenon of Islamic State recruitment, it is clear that it is the interaction of youth unemployment and Muslim population share that drives our results. We also examine 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 find that we essentially get the same story (not reported here). This suggests that if Benmelech and Klor had also used interaction terms,[6] they would have received similar highly significant results as well.

In summary, what is the gist of our regression results? Unfortunately, regression coefficients in Tobit models cannot be interpreted as easily as regression coefficients in ordinary least square (OLS) models. Whereas OLS regression coefficients capture the partial marginal effect of the independent on the dependent variable, Tobit regression coefficients capture a combination of an independent variable's marginal effect on whether a certain observation is non-zero and its marginal effect on non-zero observations. In technical terms, the marginal effect is written as

$$\frac{\partial FFperMill_i}{\partial IV_i} = \Phi\left(\widehat{FFperMill_i}\right) \times \beta_j \tag{3}$$

where $\Phi\left(\widehat{FFperMill_i}\right)$ is the cumulative density of the predicted standardized value of the Tobit regression evaluated at the mean values of all right hand side variables and β_j the Tobit coefficient of interest.

Our preferred model is Model III in Table 6, because it has the highest number of observations and appears to be the most parsimonious. All subsequent models contribute few explanatory variables to the model and suffer from a substantial loss of observations and likely multi-collinearity issues. Table 7 summarizes the calculated marginal effects for the four right-

[6] Ibid.   4

[6] Ibid.   5

hand-side variables "MusXyuer," "yuer," "Muslim", and "MusMajXyuer" of Model III in Table 6.

Table 7. Summary of Marginal Effects (DV: lnFFperMill)

Independent Variable	Marginal Effect on "lnFFperMill"
Interaction term of Muslim Population Share and Youth Unemployment ("MusXyuer")	+0.291
Youth unemployment ("yuer")	-0.232
Muslim population share ("Muslim")	-0.006
Interaction Term of Youth Unemployment and Muslim Majority Country Dummy ("MusMajXyuer")	+0.635

The results suggest that for every 10 percent increase in the youth unemployment rate (for example, from 10 to 11 percent) and holding constant the Muslim population share, the number of foreign fighters per million increases by 2.91 percent. Yet, the marginal effect of the youth unemployment component individually is -2.32 percent. The net effect is therefore +0.59 percent.

We put this result into a numerical context by assuming that a certain country has a population of 400 million and a total of 4,000 expat jihadists, or 10 foreign fighters per million. A 10 percent increase in the youth unemployment rate would then increase the number of foreign fighters per million to 10.059, or 4,023.6 in total. Although an extra 23 foreign fighters seems negligible relative to the total population of 4,000 expat jihadist, another 23 potentially battle-experienced radicalized fighters can be a tremendous risk to homeland security.

Similarly, for every 10 percent increase in the Muslim population share when holding constant the youth unemployment rate, the number of foreign fighters per million has a net increase of 2.904 percent. Germany's context may usefully illustrate the potential long-term consequences of an increase of the Muslim population share, which has increased roughly by 25 percent (four to five million) since 2015. The predicted long-run equilibrium increase in the number of foreign fighters is therefore estimated to increase by 7.26 percent. With approximately 9 foreign fighters per million, this number would have the potential to increase to 9.65. Assuming a population of 80 million, the total number of expat jihadists would then increase from 720 to 772.

In the context of the refugee crisis that has unfolded in Europe since 2015, comparison of the two scenarios suggests the following: the potential threat to Europe from refugees who become disillusioned because of the inability to find work and, therefore, to assimilate seems to be much greater than the expat jihadist threat associated with a deterioration of the youth labor market in countries with a high Muslim population share.

Lastly, as far as Muslim majority countries are concerned, a 1 percent increase in youth unemployment corresponds, on average, to a 0.4 percent increase in the number of foreign fighters.

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 AND OUTLOOK

The discussion about the push factors behind the flow of foreign fighters into Syria is open-ended and filled with riddles. One particularly controversial issue is the role of economic grievance, especially that driven by unemployment. Some scholars find support for the hypothesis that unemployment is a driver of Islamic State recruitment; others reject this idea. Different studies, of course, use different datasets and different methodologies. More empirical evidence is required to model such phenomenon better. Our paper contributes to this discussion by supporting the "unemployment matters" camp.

We see our main contribution to be that which examines the importance of the interaction of youth unemployment with the Muslim population share, which has been overlooked in previous studies. We show that consideration of an interaction term suggests a strong role for youth unemployment as a driver of Islamic State recruitment.

According to our empirical model, both youth unemployment in Muslim countries and among Muslims in Western countries are strong predictors of Islamic State recruitment. Youth unemployment among Muslims therefore serves as an early warning indicator, which is deserving of targeted policy attention, regardless of the region of the world.

If Muslim youth unemployment is a universal driver of Islamic State recruitment, as shown in our study, 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, whereas Western countries with a minority Muslim population are faced with the problem of successful integration and assimilation.

The problems for Western states are indeed far beyond those of pure economics. Is Muslim youth unemployment the result of Muslim immigrants' inability to assimilate into a culturally different society? Or does the problem lie in Western states' failure to develop successful integration strategies? Whatever it is, our paper strongly indicates that increasing economic opportunities for young Muslims is like water to the fire of expat jihadism.

Our research is not free of limitations. As data on the employment status of foreign jihadists joining the Islamic State is not available, we use data aggregated at the country-level. Thus, our study may suffer from an ecological fallacy. In other words, inferences about the nature of foreign jihadist individuals are deduced from inferences for the group to which those individuals belong. Our study could also benefit if data on the socio-economic status of expat jihadists were available.

Our study has explored the effect of one main determinant of Islamic State recruitment, namely Muslim youth unemployment. Nevertheless, many other determinants remain uninvestigated. For instance, do social welfare payments play a role in mitigating the effect of unemployment on Muslim youths, thus decreasing their tendency to join IS? Will the rise of right-wing political movements in the west affect pro-IS radicalization? Are poorly educated Muslims more prone to join IS?

Moreover, there could be significant differences in motivations to join IS among Muslims living in Western countries compared to those living in Muslim majority countries. Whereas the former could experience marginalization and lack of integration into their new homeland, the latter could be experiencing many social and psychological problems living in underdeveloped economies with conservative and patriarchal societies. Thus, further research is needed to investigate the considerable differences in radicalization mechanisms between developed and developing countries.