

# Exposure to Transit Migration, Public Attitudes, and Entrepreneurship among the Native Population\*

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## Abstract

We study the impact of the recent migration crisis on entrepreneurship in 18 European transit countries using a unique locality-level panel from the 2010 and 2016 rounds of the Life in Transition Survey. To capture the exogenous variation in exposure to transit migration, we construct an instrument that exploits the distance of each locality to the optimal routes that minimise travelling time between the main origin and destination countries. We find that the entrepreneurial activity of natives falls considerably in localities that are more exposed to mass migration, compared to those located further away. We explore the mechanisms explaining the decline in entrepreneurial activity; our findings are consistent with the view that this decline is driven by decreased willingness to take risks, lower institutional trust and higher perceived political instability. We also document an increase in the anti-migrant sentiment while attitudes towards other minorities remained unchanged.

*JEL classification:* F22, L26, D91, O15, O10

*Keywords:* migrant routes, entrepreneurship, public attitudes, political instability

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# 1 Introduction

International migration and its implications for economy and society is a central issue in the global policy debate. According to the United Nations (UN), the number of international migrants—including both voluntary migration and forced displacement—has continued to grow rapidly and reached 258 million worldwide (3.4 per cent of the global population) in 2017, up from 153 million (2.9 per cent) in 1990.<sup>1</sup> Forced displacement across international borders, while declining in relative terms (from 0.4 per cent in 1990 to 0.2 per cent of global population in 2017), remained substantial in absolute figures: the total number of cross-border refugees in 2017 was estimated at 20 million people.

Irregular migrants and refugees often come from distant countries. In most cases, they cannot obtain a visa or apply for asylum from outside the intended destination country. Lacking legal channels, they often use irregular migration routes, relying on the services offered by smugglers. In 2015, about 885 thousand migrants arrived in the EU via the Eastern Mediterranean route – 17 times the respective 2014 figure (Frontex, 2019). The vast majority of them came by sea from Turkey to Greece and continued to travel through Europe to reach Germany and Sweden (Aksoy and Poutvaara, 2019). Reaching the destination country often involved overland journeys and crossing multiple transit countries.

Despite the comprehensive examination of the implications of mass migration for receiving societies (for example, see Becker and Ferrara, 2019), there has been little empirical research on the transit countries. We address this gap in the literature by focusing on the countries that are located along the Eastern Mediterranean route (and its extensions in Europe).

The impact of the refugee crisis on the transit countries is fundamentally different from that on the host countries. Migrants typically pass through transit countries in a short amount of time with no intention of staying there (see also Section 2). Therefore, there is little scope for repeated social interactions, which may result in reinforcing rather than dispelling pre-existing prejudices.<sup>2</sup> This seems to be especially the case in situations (such as the one in our paper) where the exposure to out-group individuals may cause a disruption in everyday life.<sup>3</sup> Hangartner et al. (2019) show that exposure to refugee and irregular migrants passing through Greek islands induces lasting increases

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<sup>1</sup> International migrants are defined as individuals residing in countries that are different from their countries of birth.

<sup>2</sup> Following the seminal paper by Allport et al. (1954), many papers have described the conditions under which the interactions between in-group and out-group individuals would increase empathy and integration (for instance, Barlow et al., 2009; Berg, 2009; Pettigrew, 1998; Pettigrew and Tropp, 2006; Enos, 2014). As Hangartner et al. (2019) summarise, there are typically three main factors: (i) both groups have to share status and goals, (ii) both groups need to live in a cooperative—rather than competitive—environment and (iii) they need to operate under a well-defined set of norms, laws and regulation. None of these conditions hold in the case of transit refugees.

<sup>3</sup> A local resident in Bosnia reported to Associated Press (2019) that “they (migrants) run around freely. We cannot sleep peacefully anymore, we are constantly on alert”.

in natives' hostility toward refugees, immigrant and Muslim minorities. Similarly, [Steinmayr \(2018\)](#) shows that exposure to transiting refugees in Austrian municipalities at the German border increased the vote shares of the far-right political party. On the contrary, in municipalities where refugees settled permanently support for the far right was reduced as local authorities and NGOs in these areas facilitated contact between natives and refugees.

Our main contribution is to provide the first large-scale systematic evidence on the impact of transit migration on natives' entrepreneurship in countries that are located along the migrant routes. Entrepreneurship is an important driver of economic growth, especially in countries close to technological frontier. As the neo-Schumpeterian theory ([Aghion et al., 1998](#)) argues, such countries have to switch from adopting existing technologies to innovation and entrepreneurship. This is why promoting entrepreneurship has become an important policy objective of many European governments and international institutions.

We exploit cross-locality variation in distance to transit migrant routes. Different localities within the same country can be affected differentially by their unexpected exposure to migration flows.<sup>4</sup> We analyse the locality-level panel data from the 2010 and 2016 rounds of the Life in Transition Survey (LiTS) and geographically match the localities to the migrant routes in Europe using geo-localised routes by the International Organization for Migration. To identify a causal effect, we implement a distance-based instrumental variable approach in the spirit of [Ghani et al. \(2016\)](#) and [Faber \(2014\)](#).<sup>5</sup> More specifically, we construct an instrument based on the distance of each locality to the "optimal migration routes" (i.e. those that minimise walking time) from the main origin countries (Syria, Iraq, and Afghanistan) to the main intended destination countries (Germany and Italy). Thus, our instrument captures the variation in distance between each locality and the migration routes chosen by refugees and irregular migrants, which was induced by ex-ante geographical determinants.

We show that natives' entrepreneurship falls substantially in localities that are near to migrant routes compared to those that are located far away from the routes. We use two measures of entrepreneurial activity: the individuals' answer to the question whether they have tried to set up a business, and their

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<sup>4</sup> Localities refer to the Primary Sampling Units (PSUs), which can be expressed in geographical terms, such as municipality, district, province, depending on the country classifications. The full list of localities used in the analysis is available from the authors upon request.

<sup>5</sup> [Ghani et al. \(2016\)](#) study the impact of transportation on manufacturing activity in India, using the construction of a highway network as a shock, and proximity to the network as the main explanatory variable. To deal with endogeneity, the authors instrument the distance to the actual layout of the network, with the distance to a straight line between the nodal districts of the network. Using a similar strategy, [Faber \(2014\)](#) tests the effect of the construction of the China's National Trunk Highway System on the diffusion of industrial activity in peripheral regions. To deal with the potential endogeneity concerns, the author uses two instruments of the actual route placements, based on the "optimal" network that planners would have chosen if the only objective had been to connect all targeted city nodes on a single continuous network subject to global construction cost minimisation. In one case (which is most similar to ours), the author draws an "optimal route" based on minimizing bilateral Euclidean distances between nodal points of the actual route. Distance to actual routes are instrumented by distance to these "optimal" routes.

self-employment status. For both measures, the effects are substantial: halving the distance to migrant routes decreases the propensity to set up a business by 4.1 percentage points and the likelihood of being self-employed by 3.4 percentage points (pre-2016 averages were 14 per cent and 9 per cent, respectively).

Our analysis suggests that the main mechanisms explaining the fall in entrepreneurial activity are a reduction in trust in government, increase in perceived political instability and decline in willingness to take risks. We find no evidence that exposure to irregular migration affects interpersonal trust. We also rule out mechanisms related to selective outmigration of local population and changes in local labour market conditions. We also document a strong increase in anti-migrant sentiments in the localities that are close to the migrant routes (while attitudes to other minorities remain unchanged).

Our paper contributes to different strands of the literature. First, there is a growing literature on how mass migration affects the socio-economic outcomes of the natives.<sup>6</sup> Following Card's (1990) seminal paper, many scholars focused on the natives in Miami after the mass Cuban migration. However, there is no consensus about the direction and size of the effect; the debate is still ongoing (see Card, 2012; Borjas and Monras, 2017; Clemens and Hunt, 2019; Peri and Yasenov, 2019).<sup>7</sup> Recently, several studies have analysed the Syrian mass migration to Turkey to examine the labour market outcomes for Turkish natives (e.g. Del Carpio and Wagner, 2015; Ceritoglu et al., 2017; Tumen, 2016).<sup>8</sup> All three studies find that the effect of mass Syrian migration on the overall employment of natives in Turkey has been negative. Using data from Jordan, Fallah et al. (2019) show that a higher concentration of Syrians did not worsen natives' labour market outcomes. By contrast, our paper focuses on the transit countries (instead of destination countries) and studies the effects on natives' entrepreneurship as the crucial policy-relevant outcome.

Second, our paper contributes to the literature on the relationship between migration and entrepreneurship. Most of the empirical literature on migration and entrepreneurship has mainly focused on migrant entrepreneurs and inventors. Previous studies have found that migrants set up their own businesses

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<sup>6</sup> Focusing on the labour market effects of immigration and emigration in OECD countries, Docquier et al. (2013) find that immigration had a positive effect on the wages of less educated natives and it increased or left unchanged the average native wages. Emigration, instead, had a negative effect on the wages of less educated native workers and increased inequality within countries. Parsons and Vézina (2018) investigate the impact of mass migration on international trade, using the exodus of the Vietnamese Boat People as a natural experiment. The authors find a strong pro-trade effect of Vietnamese immigration on US exports to Vietnam.

<sup>7</sup> In addition, Hunt (1992) exploits Algerian repatriation in France; Friedberg (2001) uses mass migration to Israel to study the labour market outcomes of the natives also with inconclusive findings.

<sup>8</sup> Additionally, Balkan and Tumen (2016) analysed how Syrian mass migration affected price levels in the destination provinces in Turkey using a similar identification strategy.

more often than natives.<sup>9</sup> [Neville et al. \(2014\)](#) argues that this pattern is mostly driven by the self-selection of migrants, who are less likely to be risk-averse. Migrants are also more likely to identify opportunities for new businesses as they had already spotted the opportunity for migration ([Hart and Acs, 2011](#)). There is also a growing literature showing that return migrants are more likely to become entrepreneurs than non-migrants ([Démurger and Xu, 2011](#); [Mesnard, 2004](#); [Piracha and Vadean, 2010](#); [Wahba and Zenou, 2012](#) and others). Migrants may also help to boost entrepreneurship in their home countries by sending remittances ([Rapoport and Docquier, 2006](#); [Woodruff, 2001](#); [Woodruff and Zenteno, 2007](#) and others).

To the best of our knowledge, only two papers have explored the effect of immigrants on the entrepreneurial activity of the natives. [Fairlie and Meyer \(2003\)](#) examine the impact of immigration on self-employed natives in the United States and show that self-employed immigrants displace self-employed natives in the US. [Unel et al. \(2018\)](#) investigates the effect of migration on the entry and exit of entrepreneurs in the US. He finds that immigration has a negative effect on the entry of entrepreneurs (consistent with our results) while having no significant impact on their exits. In both cases, the analyses focused on the host country, rather than a transit country.

Our data and setting provide some unique advantages that allow us to complement prior work. We complement [Fairlie and Meyer \(2003\)](#) and [Unel et al. \(2018\)](#)'s studies by examining a direct measure of entrepreneurship, in addition to self-employment. Our analysis also offers the broadest cross-national evidence to date on the relationship between migration and entrepreneurship. Whereas previous papers have mostly looked at individual countries or smaller samples, our data cover 18 European countries. This makes it possible to investigate the heterogeneity of responses based on various country-level and individual-level characteristics.

Third, our paper contributes to the literature that studies the individual determinants of entrepreneurship (see [Djankov et al., 2005, 2006](#); [Astebro et al., 2014](#) for an overview). For example, [Cramer et al. \(2002\)](#) show that risk-averse individuals are more likely to opt for stable salaried jobs as opposed to trying to start up a business; [Caliendo et al. \(2009\)](#) and [Caliendo et al. \(2010\)](#) document a positive correlation between risk-taking attitudes and the decision to become an entrepreneur, while [Stewart Jr and Roth \(2001\)](#); [Hartog et al. \(2002\)](#) show that self-employed individuals are less likely to be risk-averse compared with regular employees. Our results are in line with their findings.

Finally, our results relate to the growing literature on the effects of exogenous shocks on risk attitudes. Several papers have shown that negative economic shocks ([Dohmen et al., 2016](#); [Gerrans et al., 2015](#);

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<sup>9</sup> Kauffman Foundation's "Start-up Activity." (available at: [link](#), last accessed 16 November 2019) provides evidence on the U.S., where immigrants represent 27.5 per cent of the country's entrepreneurs but only around 13 per cent of the population. [Hunt and Gauthier-Loiselle \(2010\)](#), [Bosetti et al. \(2015\)](#), [Miguelez \(2019\)](#), [Bahar et al. \(2019\)](#) find that migrants have a positive impact on innovation and knowledge creation.

Guiso et al., 2018), natural disasters (Chuang and Schechter, 2015) and conflict (Voors et al., 2012; Callen et al., 2014) affect risk attitudes. Our results show that risk attitudes can also be affected by sudden exposure to irregular migration flows in transit countries.

We proceed as follows. Section 2 provides background information on the Eastern Mediterranean routes and mass flow of migrants to Europe in 2015 and 2016. Section 3 provides a conceptual framework for understanding the mechanisms. Section 4 describes the data sources. Section 5 outlines the estimation strategy. Section 6 presents the results. Section 7 concludes.

## 2 Background

### 2.1 The Eastern Mediterranean Route

During the recent refugee crisis, the Eastern Mediterranean route was the primary gateway to Europe. Migrants who entered the European Union (Bulgaria or Greece) via Turkey by land or sea then travelled through Western Balkan countries – Albania, Bosnia and Herzegovina, Croatia, Former Yugoslav Republic of Macedonia,<sup>10</sup> Kosovo, Montenegro, Serbia, and Slovenia – with the aim of reaching the Western Europe (Aksoy and Poutvaara, 2019).

The migration flow through the Eastern Mediterranean land route dramatically increased in 2015. Tinti et al. (2018) provide five main reasons. First, Turkey emerged as the major migrant host and transit country due to its proximity to conflict areas, serving as a portal by land and sea. Second, Turkey’s “open door” policy towards Syrian refugees and visa-free regime with many other low-income Asian and African countries made it a key departure point for migrants. Third, worsening conditions for migrants and a confluence of geopolitical factors led to a surge in migrant departures from Turkey into Europe. Fourth, with smuggling networks emerging to facilitate the flow of Syrians from Turkey into Europe, Iraqis, Afghans, and other nationalities joined the migrant flow. Finally, Angela Merkel’s decision to waive the Dublin Regulation in August 2015 removed the critical deterrent for entering Europe via Greece or Bulgaria. More specifically, despite the long land route, reaching Western Europe from Greece became the safest and easiest option given the short sea crossing from the Turkish coast.

Prior to the refugee crisis, the flows through this route were small. For example, in 2013, fewer than 12 thousand people crossed the Aegean from Turkey to Greece. This number was about 50 thousand

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<sup>10</sup> The Former Yugoslav Republic of Macedonia officially adopted its new name “the Republic of North Macedonia” in February 2019. However, throughout this paper we use the Former Yugoslav Republic of Macedonia or FYR Macedonia, which were originally used in the surveys.

in 2014. In 2015, the number of arrivals via the Eastern Mediterranean route increased drastically, reaching 885 thousand people. This figure is substantial and represents more than 70 per cent of the total migrants that arrived in Western Europe in 2015 (the proportion was similar in 2016).<sup>11</sup> These numbers imply a massive unexpected shock experienced by the transit country communities located along the Eastern Mediterranean route.

## 2.2 Evidence from the Flow Monitoring Surveys

After registering in Greece, migrants began their land journey, mostly walking towards their intended destinations. For example, in July 2015, an Afghani migrant interviewed near Serbia's border reported that: "We walked most of the way here. It took us six months, and we made the almost 7,000-kilometre overland journey via Pakistan, Iran, Turkey, Greece, and Macedonia."<sup>12</sup>

With almost no need for smugglers, this "do-it-yourself" migration through the Balkans became the central model. With many transit countries implementing an "open door" policy allowing migrants to travel in their territory, thousands of migrants flowed through the Balkans in a few months (Tinti et al., 2018).

In addition to anecdotal evidence, we turn to the Flow Monitoring Surveys (FMS) conducted by the International Organization for Migration (IOM) on the transit points along the Eastern Mediterranean route to understand the main characteristics of migrants' journey (such as the number of days spent in transit, the mode of transport, and so on). FMS derive quantitative estimates of the flow of (non-European) third-country nationals who are migrating towards Europe. The FMS respondents are informed of the fact that participation does not influence their legal status in the country of the interview. The questions are posed only to those migrants who give their consent. The IOM also often uses data collectors from the same nationality as migrants or at least who speak their language. There were no incentives provided for participation and it was on a voluntary basis. However, data collectors provided a clear explanation of the purpose of the survey before asking for consent and emphasised the fact that it was anonymous. IOM also selected locations for the survey where migrants stay longer and that provide the right environment in terms of space and confidentiality. These helped migrants to feel comfortable and respond to the survey. The response rates were very high.<sup>13</sup> This alleviates concerns about selection bias in participating in the surveys (see Aksoy and Poutvaara, 2019 for the

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<sup>11</sup> The flow through the second largest route, the Central Mediterranean route, has never exceeded 170,000 migrants per year (Frontex, 2019). In 2015 and 2016, 1,030,173 migrants arrived in Europe using the Eastern Mediterranean Route; 335,278 migrants used the Central Mediterranean route; 13,400 migrants used the Western Mediterranean route (ECFR, 2017; UNHCR, 2017; Available at: [link](#) (last accessed 16 November 2019).

<sup>12</sup> The Globe and Mail (July 10, 2015): Gateway to freedom: Migrants walk thousands of kilometers for heaven of Western Europe. Available at: [link](#) (last accessed 16 November 2019).

<sup>13</sup> Interviewers approached 15,016 migrants on transit and only 286 of them did not participate the survey.

details and the sampling strategy of the survey).

We use two waves of the FMS. The first wave (October 2015 to December 2015) included interviews in Croatia, Greece, Slovenia, and FYR Macedonia. The second wave of FMS (January 2016 to November 2016) covers Bulgaria, Croatia, Greece, Hungary, FYR Macedonia, Serbia, and Slovenia. In the raw data, the two waves of FMS included 14,622 respondents.

Figure 1 presents the self-reported reasons for leaving origin countries. More than 80 per cent of respondents from Syria, Iraq, Afghanistan, Palestine, and Somalia, report leaving their countries due to conflict or persecution. At the other end of the spectrum, the vast majority of respondents from Morocco, Algeria, Bangladesh, and Pakistan cite economic conditions as the main reason for migration. Limited access to basic services (like school and health care) or lack of food or accommodation were named as the main reason by about three per cent of respondents.

Figure 2 shows descriptive statistics for the number of days spent in transit in Europe. The majority of survey respondents (59 per cent) spent fewer than 30 days in transit. Some 18 per cent of respondents spent between 30 and 59 days, and 10 per cent of respondents spent between 60 and 119 days.

Table 1 shows the main mode of transport by survey countries. The overwhelming majority of respondents walked while moving from one transit country to the next. For example, more than 85 per cent of respondents surveyed in Bulgaria, Croatia, Hungary, and FYR Macedonia reported “walking” as their primary mode of transport. The next most popular mode of the journey was land (i.e. vehicular) transport. As expected, 95 per cent of respondents arrived in Greece by boats from Turkey.

Figure 3 presents the intended destination country as reported by migrants from Afghanistan, Iraq and Syria. 62 per cent of respondents reported Germany as their main destination. Italy was a distant second (9 per cent), followed by France (5 per cent), Sweden (4 per cent), Austria (3 per cent) and the Netherlands (2 per cent).

Collectively, these findings suggest that: (i) the vast majority of migrants were seeking refuge from conflict or persecution, although there is a sizable population driven primarily by economic concerns; (ii) nearly 80 per cent of migrants spent fewer than 60 days in transit countries on their way to Europe; (iii) migrants mostly walked the long route through Greece and the Western Balkans with the ultimate aim of reaching Germany and other Western European countries; (iv) none of the countries we have in our sample was considered as the main intended destination country by migrants. LiTS only includes two Western European countries (Germany and Italy), hence by excluding these two we eliminate the top ten destination countries; at least 95 per cent of intended final destinations.<sup>14</sup>

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<sup>14</sup> Turkey serves as both transit and host country for migrants. We check the robustness of our results excluding Turkey and find that our results remain qualitatively similar.



### 3 Potential Mechanisms

In this section, we discuss potential mechanisms that can explain the relationship between exposure to irregular migration and entrepreneurship. First, this is the individual-level willingness to take risks (Caliendo et al., 2009, 2010). Second, trust in institutions and perceived political instability can affect incentives and behaviour of entrepreneurs. Third, entrepreneurship may be driven by social variables, such as trust, cultural values or beliefs (Guiso et al., 2006). Finally, labour market conditions (Blanchflower and Oswald, 1998) and credit constraints (Sauer and Wilson, 2016) can also play a role.

#### 3.1 Risk Attitudes

The first mechanism is related to risk attitudes. Individuals with higher willingness to take risks are more likely to prefer entrepreneurship to salaried employment (Cramer et al., 2002). Indeed, existing literature documents a positive correlation between willingness to take risks and the decision to become an entrepreneur (Caliendo et al., 2009, 2010). The related strand of research also shows that self-employed individuals are less likely to be risk-averse compared with regular employees (Stewart Jr and Roth, 2001; Hartog et al., 2002). Although there is no consensus in the economics literature on how malleable risk preferences are, there is growing empirical evidence showing that certain shocks – such as a financial crisis – can significantly affect risk attitudes (see, for instance, Guiso et al., 2018; or Gerrans et al., 2015). Similar to previous studies, our dataset does not allow us to differentiate risk preferences from beliefs (for instance, on potential returns from taking risks). We use a measure of “willingness to take risks”—which is a combination of both—to test this mechanism.<sup>15</sup>

#### 3.2 Interpersonal Trust

The other potential mechanism is related to social (or interpersonal) trust. A large literature in economics has shown the importance of trust for economic development and entrepreneurship (Bottazzi et al. (2016); Knack and Keefer (1997); Zak and Knack (2001)). It is seen to assist in lowering the transaction costs of commercial actions and the inherent risks in entrepreneurship (Welter (2012)) and “low trust” is found to restrict market entry and enterprise growth (Welter and Smallbone (2006)). As Guiso et al. (2006) state, in the context of potentially incomplete contracts (to which an entrepreneur is likely to be exposed), trust becomes crucial. Using data from the General Social Survey, they find

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<sup>15</sup> See Schildberg-Hörisch (2018) for a discussion of this issue. See also Falk et al. (2018) for global risk preferences measurement and its variability across individuals and regions.

a strong relationship between trust and the likelihood of becoming an entrepreneur.

An important issue regarding interpersonal trust is that the self-reported measures—such as the one we use in this paper—reflect a combination of individual preferences and beliefs (about trustworthiness of others). Although both preferences and beliefs are likely to be correlated with the propensity to become an entrepreneur, trust through beliefs is thought to be more malleable and, therefore, more likely to be affected by shocks ([Sapienza et al., 2013](#); [Ananyev and Guriev, 2019](#)).

### 3.3 Political Instability and Trust in Institutions

[Williamson \(1993\)](#) distinguishes interpersonal and institutional trust. Institutional trust refers to trust in the institutional environment, which includes formal organisations such as different levels and branches of government. Following this classification, personal trust is more related to the social/cultural variables that shape entrepreneurship, while institutional trust is more related to the institutional determinants of entrepreneurship.

[Baumol \(1990\)](#) argues that the quality of institutions can be an important determinant of the level of entrepreneurial activity. As explained in [Dutta et al. \(2013\)](#), strong institutions increase the rate of return to market entrepreneurship. Lack of sound political and institutional environment leads to greater risk and uncertainty in contracting, application of legal rules, security of property rights, and tax policies. Lower confidence in institutions and higher perceived political instability reduce incentives for entrepreneurship. We provide a formal test of this hypothesis by analysing the responses to various questions on perceptions of institutional quality and political climate.

### 3.4 Labour Market Outcomes

The fourth potential channel is related to labour market outcomes. Large-scale immigration may disrupt local labour markets in a number of ways. It could lead to a decline in wages and an increase in local unemployment for natives depending on substitutability between migrants and natives.<sup>16</sup> Unemployment could depress aggregate demand and reduce economic incentives to create new businesses ([Storey and Johnson, 1987](#)). On the other hand, the presence of migrants might generate demand for goods and services, which can then push natives into entrepreneurial activity. Similarly, construction and management of refugee processing and integration centres can generate salaried employment opportunities for natives, which, in turn, can negatively affect the entrepreneurial activity. Therefore, the direction of this relationship is unclear.

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<sup>16</sup> See for example, [Card, 1990](#); [Del Carpio and Wagner, 2015](#); [Tumen, 2016](#); [Borjas and Monras, 2017](#) and others.

## 4 Data

The data used in this paper come from the Life in Transition Surveys (2010 and 2016), International Organization for Migration, Google Maps, and the World Bank’s World Development Indicators (WDI). The analysis is at the individual level, and the details on how the dataset was constructed are provided below.

### 4.1 Migrant Routes

As discussed in Section 2, European countries witnessed an unprecedented increase in the number of migrants arriving by sea in 2015. Hundreds of thousands crossed the Mediterranean Sea and reached Europe by taking the following routes: Western Balkan, Central Mediterranean, and Eastern Mediterranean (see Figure 4).<sup>17</sup> We only focus on the Eastern Mediterranean route and its extensions in Europe (as mentioned above, the number migrants arriving via this route in 2015 substantially exceeded the respective numbers for all other routes combined).

We exploit the geographic variation produced by the distance between these migrant routes into Europe and the different localities surveyed in the Life in Transition Survey to identify the effect of exposure to mass migration on the change of native entrepreneurship in transit countries. Relevant for the internal validity of this study, we argue that migrants fled from their home countries for conflict-related reasons: the discontinuous increase in the exposure of the local population to the massive influx of migrants originated from a sudden and unexpected expulsion from their home countries (see Figure 1).

Figure 5 shows the localities used in our LiTS sample and the main land routes to Europe, as projected by IOM. This map broadly shows that many European countries serve as transit countries for refugees and irregular migrant groups. Using the same base map, Figure 6 provides a zoomed-in image to better show the within-country variation in proximity to migrant routes. In particular, we use the log of the distance of each locality to the closest route in our main specification to capture the exposure to migration. In addition, we define alternative measures of treatment based on the distance of every locality in our sample to its closest migration route. We use four distance thresholds considering localities as “treated” if the distance to the closest route is within 25, 50, 75 and 90 kilometres. This figure highlights that there is substantial amount of variation in the proximity of localities to migrant routes.

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<sup>17</sup> Frontex (2019) categorises four other irregular migrant routes (Eastern borders, circular route from Albania to Greece, Western Africa, and Western Mediterranean) into the EU. Available at: [link](#) (last accessed 16 November 2019).

## 4.2 Life in Transition Survey (LiTS)

The Life in Transition Survey (carried out by the European Bank for Reconstruction and Development in collaboration with World Bank) is a nationally representative household and attitudinal survey. LiTS collects information on the demographic and socio-economic characteristics of respondents and interviews individuals on a wide range of topics. In this paper, we use the locality panel data from LiTS II (2010) and LiTS III (2016). 2010 round (approximately 750 households per country) was conducted in 29 transition countries, the Czech Republic and five Western European comparator countries (France, Germany, Italy, Sweden, and the United Kingdom). The 2016 round (approximately 1,500 households per country) was conducted between the end of 2015 and the beginning of 2016 in 34 countries, comprising 29 transition countries, the Czech Republic and two Western European comparator countries (Germany and Italy).<sup>18</sup> An important feature of these data is that they track nearly 50 localities per country in both 2010 and 2016 rounds. A panel element was built into the survey design by requesting interviewers to revisit the localities that were sampled during the second round of the survey in 2010. A mapping exercise preceding the sampling was carried out to match the borders of the 2010 localities to the current ones. Within the localities, households were randomly selected; therefore the households that participated in the 2016 wave are not (necessarily) the ones included in the 2010 wave.

This panel structure allows us to measure differences in outcome variables within the same localities. Another critical factor is that LiTS only surveys the native population, which allows us to directly assess how exposure to migration affects natives' entrepreneurship. Our analysis is restricted to the localities for which we have data in both years and on the countries directly or indirectly affected by European migrant crisis between 2010 and 2016. Overall, we analyse a panel of 822 different localities, in 236 different subnational regions (NUTS-2) of 18 different countries (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, FYR Macedonia, Hungary, Kosovo, Latvia, Lithuania, Montenegro, Poland, Romania, Serbia, Slovak Republic, Slovenia, and Turkey).

LiTS provides detailed information on the respondents' socio-demographic characteristics, household assets, work, unemployment history. Importantly, it also includes several questions on attitudes towards migrants and other population groups, interpersonal and institutional trust, and satisfaction with the socio-political environment. These questions were completed by the head of the household or any other household member who was knowledgeable about household characteristics and finances at the time of the interview. LiTS only included a face-to-face interviews.

LiTS also includes questions on respondents' entrepreneurial activity and self-employment. Respon-

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<sup>18</sup> Cyprus and Greece were covered in 2016 only, hence they are not included in the analysis.

dents were asked, “Have you ever tried to set up a business?”. They were then asked to choose one of the following answers: 1. “Yes, I have set up my current business”; 2. “Yes, I set up a business in the past but I am no longer involved in it, or it is no longer operational”; 3. “Yes, I tried to set up a business and did not succeed (in setting it up)”; 4. “No”. We create a logically defined outcome variable based on the responses 1, 2, and 3: “Tried to set up a business” as an entrepreneurial activity measure.

Respondents were also asked “What type of job do you have in your primary occupation?” with the following options: 1. “Wage employee”; 2. “Paid intern/apprentice”; 3. “Unpaid intern/apprentice”; 4. “Employer”; 5. “Self-employed”; 6. “Unpaid worker in household business/enterprise.” We use the “self-employment” option as our second measure of entrepreneurship.

Throughout the paper, we focus on individuals aged 25-64; the results are robust to including 18-24-year-olds.

### 4.3 Descriptive Statistics

Table 2 (panels (a) and (b)) present the descriptive statistics on socio-demographic characteristics from the LiTS data by year (2010 and 2016) and based on a 15 km threshold for distance to migrant routes. The data indicate that respondents who live close to the migrant routes in 2016 (in comparison to 2010) are on average slightly older, better educated, more likely to be married, more likely to have children in the household, more likely to be unemployed, more likely to have a bank account and own a car. They are also less likely to report that they tried to set up a business (and be self-employed) and more likely to report that they do not prefer migrants as neighbours in 2016 relative to 2010.

Among those who live in localities further away from the refugee routes, Table 2 (panels (a) and (b)) show that respondents who live in control localities in 2016 (in comparison to 2010), are on average older, more likely to be male, more likely to be married, more likely to have children in the household, less likely to be unemployed, more likely to have a bank account. There are no significant differences when it comes to reporting to have tried to set up a business or to be self-employed. Respondents are also more likely to report that they do not prefer migrants as neighbours in 2016. These broad patterns are also documented for other distance thresholds (not reported here).<sup>19</sup>

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<sup>19</sup> There are 205, 267, 304, 336 treatment PSUs and 617, 555, 518 and 486 control PSUs for the thresholds of 25, 50, 75 and 90 kilometres, respectively.

## 5 Empirical Methodology

### 5.1 OLS Estimation

We first use the variation generated by the large migration flow between the two waves of our survey data (2010 and 2016) across different localities. By comparing the same areas before and after the mass migration episode, we account for the potential source of endogeneity generated by locality-specific time-invariant characteristics. More specifically, we estimate the following equation:

$$Outcome_{ilct} = \alpha + \beta Distance_l * \gamma_t + \gamma_t + \Lambda X_{ilct} + \Phi C_{ct} + \rho_l + \epsilon_{ilt} \quad (1)$$

where  $i$ ,  $l$ ,  $c$  and,  $t$  index individuals, localities, countries, and years (2010 or 2016), respectively.

$Outcome_{ilct}$  takes the value of 1 if a respondent  $i$  in locality  $l$  in country  $c$  reported having tried setting up a business or being self-employed in year  $t$  and 0 otherwise.  $Distance_l$  is the log of the distance of locality  $l$  to the closest route. The locality fixed effects,  $\rho_l$ , control for any time-invariant difference in unobserved factors that vary across localities.  $\gamma_t$  is a year fixed effect, which captures the impact of global shocks that affect all countries simultaneously.  $\beta$  is the main parameter of interest and captures the effect of exposure to mass migration on our outcomes.

We also control for a vector of individual-level ( $X_{ilct}$ ) and country-level ( $C_{ct}$ ) characteristics. More specifically, ( $X_{ilct}$ ) includes: gender, age and age squared, an dummy variables for marital status (married, widowed and divorced/separated) and for educational attainment (no degree, primary, lower secondary, and upper secondary). We also include dummy variables for owning a bank account, for owning a dwelling and for owning a car.<sup>20</sup> Time-varying country characteristics are PPP-adjusted GDP per capita and the log of country population. We cluster robust standard errors at the level of locality (primary sampling unit, PSU) to account for the potential correlation existing in the errors within the same PSU.

### 5.2 Instrumental Variable Estimation

There are several potential threats to our identification strategy. First, many of the routes used today have been there for decades, used not only by migrant smugglers but also by traffickers of various

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<sup>20</sup> An extensive body of literature documents a positive relationship between wealth and entrepreneurship, which supports the liquidity constraints hypothesis (Evans and Jovanovic (1989); Nykvist (2008); Fairlie and Krashinsky (2012); Sauer and Wilson (2016); Sauer and Wiesemeyer (2018) and others).

types of illicit substances (Tinti et al., 2018). Second, if migrants decided to go through a specific route not because it provides a shorter path to their intended destination, but, for example, the local population is more hospitable to immigrants, then our estimates would be biased downwards. Migration and entrepreneurial outcomes may also be jointly affected by omitted variables (such as a change in institutions and policies).

To tackle these issues, we use two-stage least squares (2SLS) methodology in the spirit of Ghani et al. (2016) and Faber (2014), to instrument our potentially endogenous independent variable in (1). We use an instrument that affects the distance to migrant routes but is not directly related to our outcomes. We focus on the exogenous determinants of migrant routes that are based on geographical characteristics. The insight for our instrument is the following: let us assume that migrants need to go from their origin (for example, Damascus) to their intended destination (for example, Berlin). If the decision were completely determined by exogenous factors, the migrant would likely take the “optimal route” – the route from Damascus to Berlin that minimises travel time, which is determined by geographical and historical factors. If the migrant decides to deviate from the “optimal route” and take an alternative one (which comes at a price in terms of time), it must be for a reason, such as presence of smuggling networks, insecurity, the likelihood of detection by armed forces and so on. In this case, the distance between the European localities and the real routes chosen by the migrant would be endogenous.

Our instrument captures the exogenous variation of that distance: we define our instrument as the minimum driving time between each locality and the closest “optimal route,” considering all the possible combinations of routes between the main origin and destination cities between Asia and Europe. We determined these cities based on responses provided in Flow Monitoring Surveys (we use the fact that about 80 per cent of respondents came from Afghanistan, Iraq and Syria and Germany was the main intended destination country reported by migrants, followed by Italy). More specifically, we carry out the following steps:

(i) Using Google Maps, we identify all the walking routes from the three main origin points (Damascus, Baghdad, and Kabul) to the two main destination points (Berlin and Rome) that minimise the walking time (see Figure 7). These routes are the “optimal routes.”<sup>21</sup>

(ii) For each locality, we identified the closest point within the closest routes as defined in (i). For instance, in Figure 7, we show a straight line that goes from the locality “Sanpetru de Campie, RO” to one of the “optimal routes” (in this case, the one that goes from Kabul to Berlin, the zoomed-in image can be seen in Figure 8). This line represents the shortest distance to the closest route for that locality.

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<sup>21</sup> Using walking time instead of driving time produced qualitatively identical results.

Once that point is identified, we calculate our instrument as the minimum driving time between the locality and the route using Google Maps.

In the first stage, we show that the driving time between a locality  $l$  and the closest “optimal route” is significantly correlated with the distance between the same locality  $l$  and the closest actual route taken by migrants. Our main identification assumption is that, the distance between the locality  $l$  and the closest “optimal route” did not affect the change entrepreneurial activity between 2010 and 2016 by any other channel except for exposure to migrants passing on their chosen routes. Since “optimal routes” are determined by geography and historical factors, this is a reasonable assumption.

## 6 Results

This section presents four sets of results. First, we show the OLS estimates. Second, we present the IV results following the methodology introduced in section 5.2 and examine heterogeneity by socioeconomic subgroups. Third, we investigate the underlying mechanisms using our baseline IV specification. Finally, we present a set of robustness checks.

### 6.1 OLS Results

We start by analysing entrepreneurial activity in localities that are close to the migrant routes relative to those located far away from the migrant routes as described in Section 5.1. Specifically, we estimate models based on the geographical distance to migrant routes in Table 3. We present results for the outcome variable “Tried to set up a business” in the top panel and “Self-employment” in the bottom panel. Each column shows coefficient on the migration effect: 2016\*log distance (the interaction term between year dummy for 2016 and logarithm of distance to the closest route), which we interpret as the effect of proximity to migrant routes on the change in natives’ entrepreneurial activity. Column 1 reports the estimation with locality and year fixed effects; Column 2 adds country-level controls, Column 3 adds individual-level demographic characteristics and, finally, Column 4 adds control variables for individual-level wealth and assets.

In the top panel of Table 3, we find a significant effect of distance on entrepreneurial activity. Cutting the distance to the migrant routes by half decreases the propensity to start a business by  $1.6 \cdot \ln(2) = 1.1$  percentage points for natives in Column 1. This effect does not change after adding various individual- and country-level controls (Columns 2 to 4). The magnitude is substantial, given that the average level of entrepreneurial activity in 2016 is 11 per cent (see Table 2).



In the bottom panel of Table 2, we define our outcome variable as self-employment. We find that a twofold decrease in the distance to the migrant routes reduces the likelihood of reporting to be self-employed by 0.5 percentage points (Column 4). This is also a substantial effect since the average self-employment rate is 5 per cent in treated localities in 2016 (Table 2). Collectively, these estimates suggest that proximity to migrant routes and exposure to mass migration are statistically significantly associated with the entrepreneurial activity of natives.

## 6.2 Instrumental Variables Results

In this subsection, we present the Instrumental Variable (IV) estimates of the relationship between the proximity to migrant routes and natives' entrepreneurship. Table 4 presents the first stage estimates of our instrument. Overall, the instrument is highly correlated with the potentially endogenous treatment variable (the distance to migrant routes). The results for the first stage F-test show that the first-stage relationship is very strong. This relationship is robust to the inclusion of fixed effects, individual-level covariates as well as country-level controls.

Table 5 present the second-stage estimates. As with Table 3, in each column, we show coefficients on the main variable of interest, adding successively more controls. The estimate from the fully saturated model indicates that halving the distance to migrant routes decreases the propensity to set up a business by 4.1 percentage points (top panel) and the likelihood of reporting to be self-employed by 3.4 percentage points (bottom panel). Table 6 shows the reduced form results using the proposed instrument as the explanatory variable. The results remain significant in each of the columns, adding different controls.

The estimates for IV are larger than the OLS ones. There are two potential explanations. First, it is likely that there is a negative correlation between the errors in the outcome variables and distance equation. That is, the IV specification accounts for problems associated with the initial selection of entrepreneurs into different localities based on proximity to migrant routes. Second, in the absence of controls for differences in unobserved characteristics between "treated" and "non-treated" localities, there would be a tendency to underestimate the impact of the migrant flows on entrepreneurial activity.

In Appendix Tables A1 and A2, we estimate models with dummies for proximity to migrant routes (rather than continuous distance). We present results for four different thresholds: dummy for less than 25 km to the route in the top panel, for less than 50 km in the second panel, for less than 75 km in the third panel and for less than 90 km in the bottom panel. In the top row of the top panel of Appendix Table A1 in which we define our treatment localities within a 25 km threshold of migrant routes, we find that migrant influx to the treatment localities decreases the likelihood of reporting to have tried to

set up a business by 18.8 percentage points for natives compared to those in the control localities. The respective impact on the probability of being self-employed (Table (A2)) is 15.1 percentage points. Intuitively, the point estimates on the migration effect variable decrease as we extend the range of our treatment localities further away from the migrant routes: coefficients for the 75 km threshold are smaller than those for 50 km which in turn are smaller than those for 25 km. Finally, when we define our treatment as a 90 km neighbourhood of migrant routes (the bottom panels of Appendix Tables A1 and A2), we find that point estimates get smaller in magnitude and statistically insignificant. Collectively, these estimates further confirm that proximity to migrant routes and exposures to mass migration significantly affect the entrepreneurial activity of natives.

To understand the individual-level heterogeneity of the effects, we consider the IV estimations for various demographic characteristics in Tables 7 and 8.<sup>22</sup> First-stage F statistics for heterogeneity estimates are above 10 in all models. Each row reflects a separate regression that is fully saturated with controls for individual and country characteristics, locality and year fixed effects. The format of Tables 7 and 8 follows Table 5: we present results for the outcome variable “Tried to set up a business” in the top panel and “Self-employment” in the bottom panel.

The heterogeneity analysis reveals a notable gender difference: men are significantly more likely to be negatively affected than women (Table 7). There is also a substantial age and place of residence effect (Table 8): younger individuals (ages 25-44) and those who live in rural areas are affected more. The differences in the magnitude of the coefficients across gender, age, and rural/urban subsamples are statistically significant at the five per cent level.

### 6.3 Discussion of Mechanisms

In this section, we test the mechanisms outlined in Section 3. Each model is based on our fully saturated IV specification.

#### 6.3.1 *Changes in Willingness to Take Risks*

We first check whether risk attitudes (potentially related to the propensity to start new business) were affected. We use a perception-based measure, as shown in Table 9. The outcome variable is “Willingness to take risks” (Column 1 of top panel).<sup>23</sup> We show that natives’ willingness to take risks

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<sup>22</sup> In results not reported we also considered heterogeneity across country characteristics and found weaker evidence of heterogeneity by EU-membership status and GDP per capita.

<sup>23</sup> This variable takes a value of one if the individual’s answer is greater than or equal to seven to the question “Please, rate your willingness to take risks, in general, on a scale from 1 to 10, where 1 means that you are not willing to take risks at all, and 10 means that you are very much willing to take risks.”

decreases in localities that are closer to migrant routes.

### **6.3.2 *Changes in Perceived Political Instability***

We next analyse whether perceptions of political stability were affected by exposure to mass migration. In order to investigate this mechanism, we use several perception-based measures. The results are presented in Table 9. The outcomes across the columns in the top panel are as follows: “Law and order exist in the country” (Column 2); “Peace and stability exist in the country” (Column 3); “Happy with the political situation” (Column 4); and “Happy with the economic situation” (Column 5). The outcomes in the bottom panel are as follows: “Willingness to pay extra taxes” (Column 1),<sup>24</sup> “Life satisfaction” (Column 2); “Job satisfaction” (Column 3); “Satisfaction with financial situation” (Column 4); and “Children have a better life” (Column 5).<sup>25</sup>

The results indicate that the decrease in confidence in political stability and satisfaction with the political and economic situation is larger in localities closer to migrant routes. In these localities, there is also a larger decline in willingness to pay taxes. We also find that exposure to migration routes has a negative effect on job and life satisfaction. The finding that satisfaction with financial situation does not change suggests that nearby localities were not differentially affected by the financial crisis.

### **6.3.3 *Changes in Institutional Trust***

To investigate whether a fall in institutional and inter-personal trust can also explain our results, we use a wide range of questions from LiTS. Results are reported in Table 10. The outcome variables across the columns in the top panel are as follows: “Trust in national government” (Column 1); “Trust in regional government” (Column 2); “Trust in local government” (Column 3); and “Trust in armed forces” (Column 4). The outcome variables in the bottom panel are as follows: “Trust in foreign investors” (Column 1); “Trust in foreigners” (Column 2); “Trust in other people” (Column 3); and “Lost wallet likely to be returned” (Column 4).<sup>26</sup>

The results in Columns 1-3 of Table 10 show that the respondents are more likely to trust national, regional and local government as the distance to migrant routes increases, while there is no effect on trust in the armed forces in Column 4. As with trust in government, trust in foreigners also increases with distance. At the same time, there is no effect on trust in foreign investors; therefore, the negative

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<sup>24</sup> This variable takes a value of one if the respondent’s answer to “Would you be willing to give part of your income or pay more taxes, if you were sure that the extra money was used to...” is “yes” to any of the following categories: improve public education, improve the public health system, combat climate change or help the needy.

<sup>25</sup> All satisfaction-related questions take a value of one if the respondent answers “agree” or “strongly agree”.

<sup>26</sup> All trust-related questions take a value of one if the respondent answers “some trust” or “complete trust”.

attitudes towards foreigners are more likely to be driven by distrust of foreign workers rather than foreign investors.

#### **6.3.4 *Changes in Interpersonal Trust***

In the last two columns Table 10 we explore the impact of distance to migrant routes on general trust. We find no effect for trust in other people and the beliefs that a lost wallet likely to be returned.

#### **6.3.5 *Changes in Local Labour Markets***

Finally, we examine whether the reduction of entrepreneurship is driven by changes in local labour markets. In Table 11, we present evidence using four outcome variables: self-employment (presented again in column 1 for comparison purposes); wage employment (column 2); unemployment (column 3); and not in labour force (column 4). The results provide direct evidence that proximity to migrant routes has no statistically significant effects on employment, unemployment or labour force participation. These results are also robust to controlling for respondents' partner's labour market characteristics.

In summary, our results suggest that exposure to mass migration led to an increase in perceived political instability, decrease in institutional trust and a decline in the willingness to take risks.

### **6.4 Placebo and Robustness Checks**

In Table 12, we check whether the relationship between proximity to migrant routes and the decline in natives' entrepreneurial activity is driven by the change in attitudes to migrants.

First, we show that attitudes toward migrants have indeed become more negative in localities that are closer to the migrant routes. We use three different outcome variables: the respondents' views on whether (i) "immigrants make a valuable contribution to the national economy of our country"; (ii) "immigrants are a burden for the national social protection system"; and (iii) "prefer not to have migrants as neighbours."

Second, we estimate similar models where we consider other outcome variables related to attitudes to non-migrant groups such as homosexuals, people of a different race, people who speak a different

language, and Roma people. We find no effect in any of these specifications.<sup>27</sup> These results suggest that proximity to the transit routes only leads to negative attitudes towards migrants and has no impact on attitudes towards other minorities.

We conduct additional robustness checks in Table 13. We show that our results are robust to: (i) excluding countries with conflict history Bosnia, Croatia, FYR Macedonia, Kosovo, Montenegro, and Slovenia (Column 1); (ii) excluding Turkey which may be considered as both transit and host country (Column 2); (iii) restricting our sample to working-age population, 18-64 (Column 3). Our findings also do not change, when we exclude: (i) circular migration countries Albania and Kosovo and (ii) non-EU member Balkan countries.<sup>28</sup>

We also check whether our results are driven by selective migration of natives (i.e. moving in and out of localities that are located by migrant routes). In Table 14, we check whether demographic composition of the treatment localities changed between 2010 and 2016. We find no evidence of demographic compositional changes. We therefore rule out the possibility that our results are driven by a high- (or low-) entrepreneurial demographic group disproportionately moving into (or out of) localities closer to migrant routes. We also show that the population composition remained stable in our sample. We also reproduce our main results in the subsample of respondents who did not leave their locality of residence at least in the last 10 years. The results remain qualitatively the same.<sup>29</sup>

One might be concerned that localities that are closer to migrant routes might also be closer to the main roads. For example, this could potentially suggest that our results can be explained by trade-related shocks. In Table 15, we control for distance of each locality to major highways. We find that our results do not change.

## 7 Concluding Remarks

The mass influx of refugees and irregular migrants has been a major concern for many European countries, particularly for those in Central and Eastern Europe. In 2015 alone, 885,386 migrants arrived in the EU via the Eastern Mediterranean route – 17 times as many as in 2014. In this paper, we carry out the first large-scale analysis of the impact of this mass inflow of refugees on the transit countries. Analysing data from 18 European countries in 2010 and 2016, we show that exposure to transit refugee flows had a significant and substantial negative effect on entrepreneurial activity of

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<sup>27</sup> In results available upon request, we also considered placebo outcomes for other population groups (families with children, drug addicts, elderly people, poor people, heavy drinkers, unmarried couples living together) and again found that the effect we identified is limited to the anti-migration attitudes.

<sup>28</sup> These results are available upon request.

<sup>29</sup> These results are not reported but are available upon request.

the natives. We explore potential mechanisms and find that the evidence is consistent with decline in entrepreneurship due to a decrease in the willingness to take risks, institutional trust and perceived political stability. Finally, we document a major rise in negative attitudes towards migrants, while finding no effect on attitudes towards any other minority.

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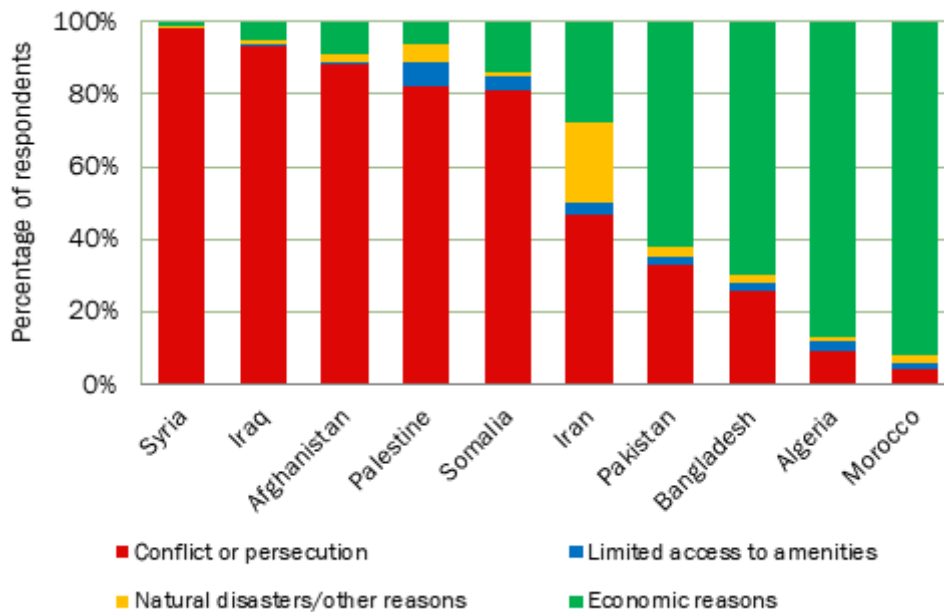
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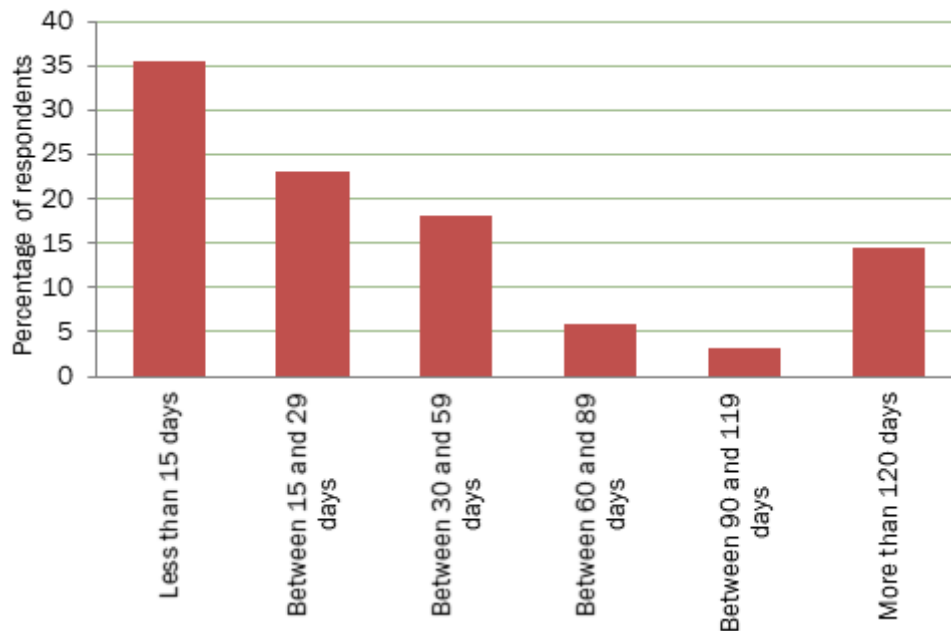
## Figures

**Figure 1: Reasons for Leaving by Main Source Countries**



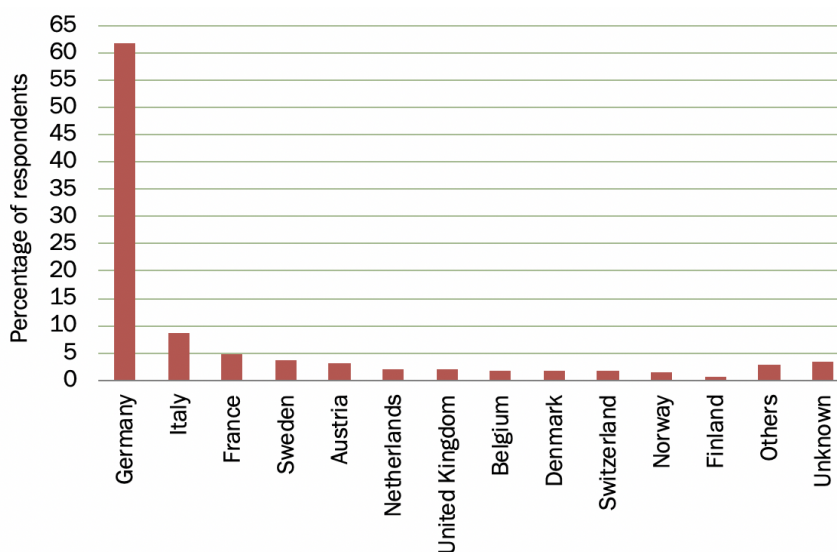
Source: Flow Monitoring Surveys, 2015 and 2016.

**Figure 2: Number of Days Spent in Transit**



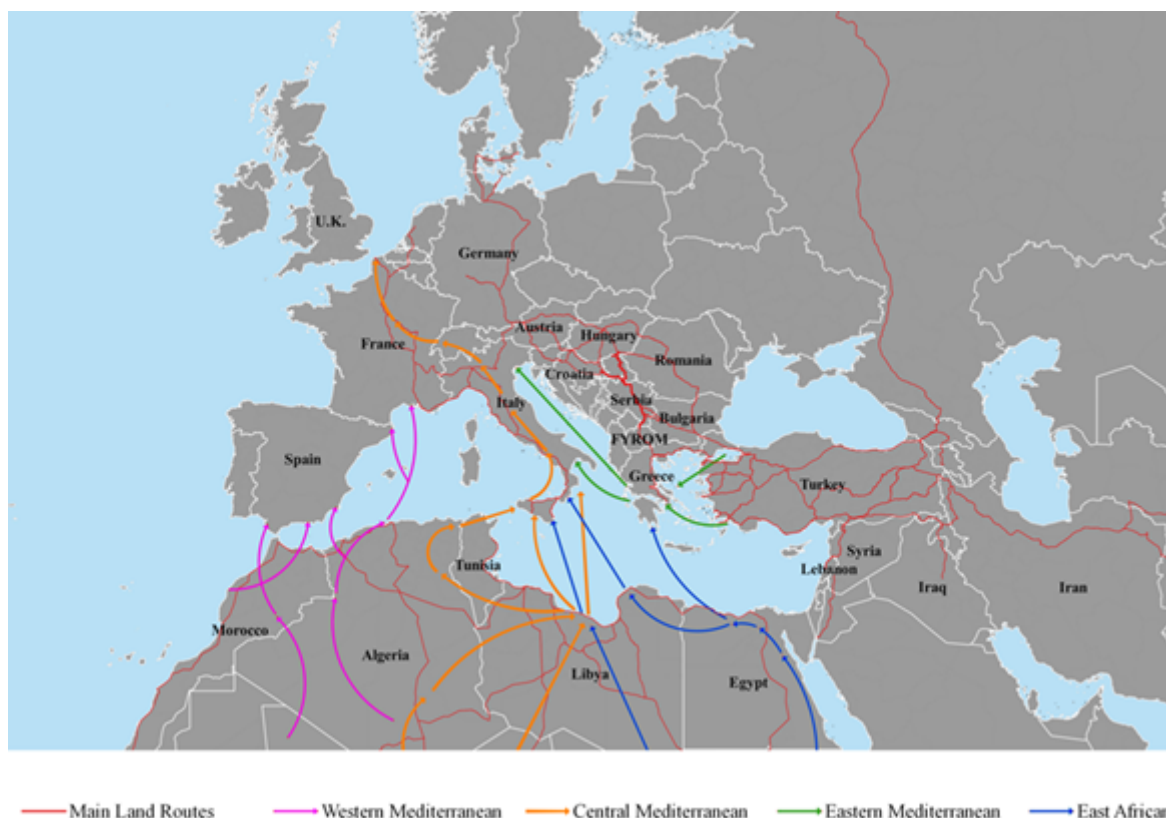
Source: Flow Monitoring Surveys, 2015 and 2016.

**Figure 3: Intended Destination Countries**



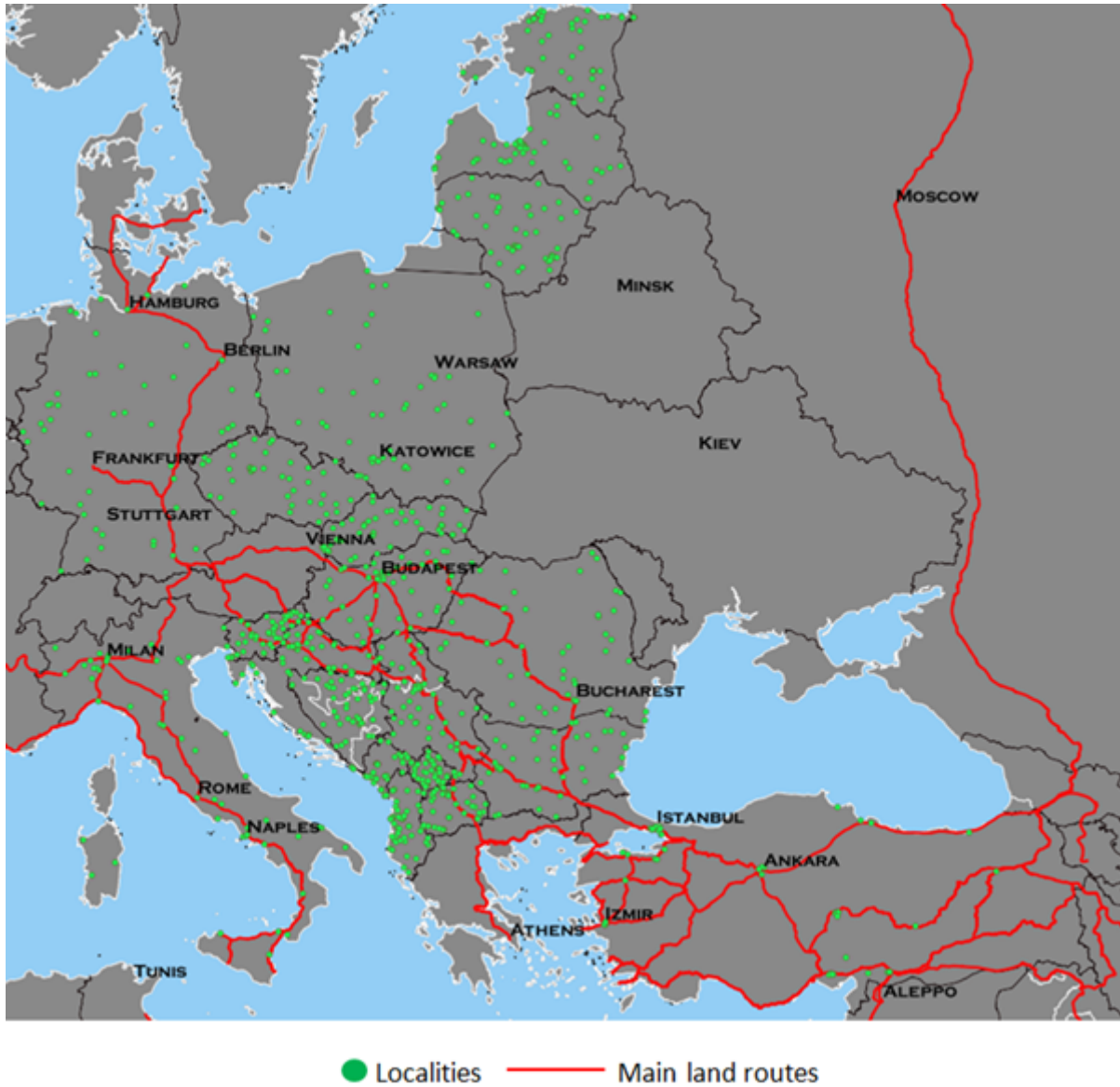
Source: Flow Monitoring Surveys, 2015 and 2016. Intended destination countries of respondents from Afghanistan, Iraq and Syria.

**Figure 4: Mediterranean Sea Routes and Main Land Routes**



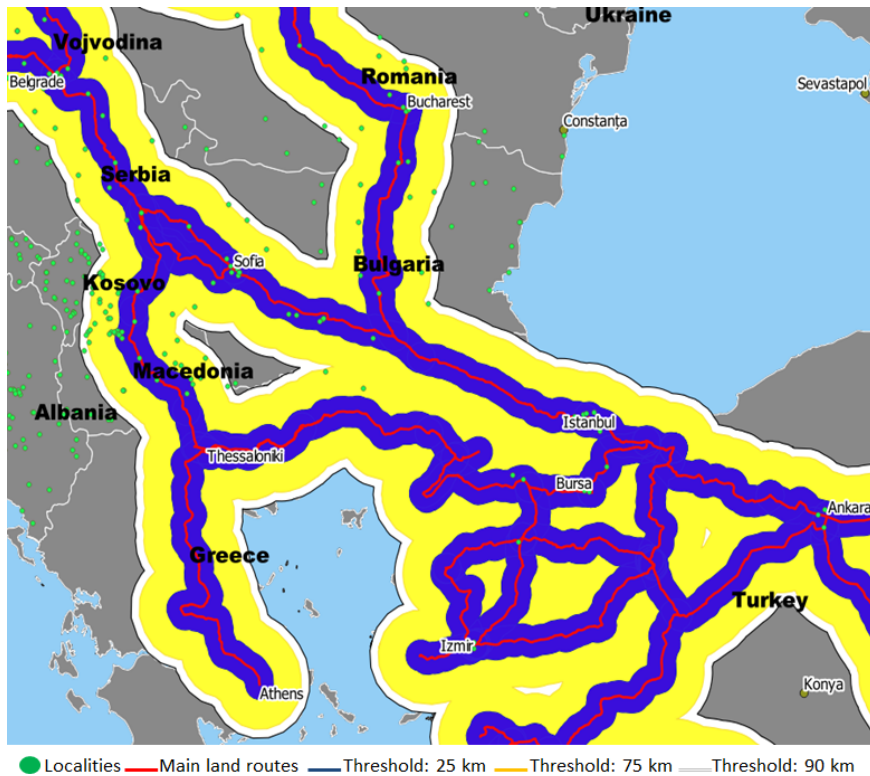
Source: IOM and authors' calculations. The map is for illustration purposes only. Names and boundaries do not imply official endorsement or acceptance by the EBRD or IOM.

**Figure 5:** *Life in Transition Survey Localities*



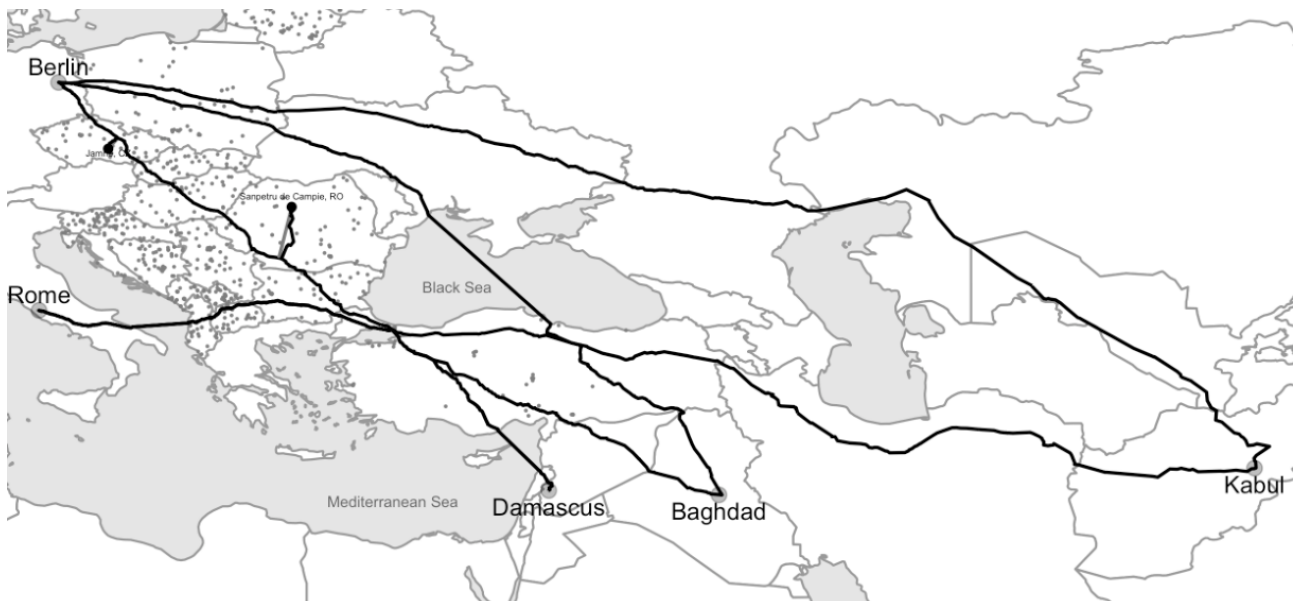
*Source:* *Life in Transition Survey* and IOM. Notes: The map illustrates all localities used in the sample. Names and boundaries do not imply official endorsement or acceptance by EBRD or IOM.

**Figure 6: Zoomed Image for Treatment and Control Localities**



Source: *Life in Transition Survey* and IOM. Notes: The map provides a zoomed image for treatment and control localities based on alternative distances to migrant routes. Names and boundaries do not imply official endorsement or acceptance by EBRD or IOM.

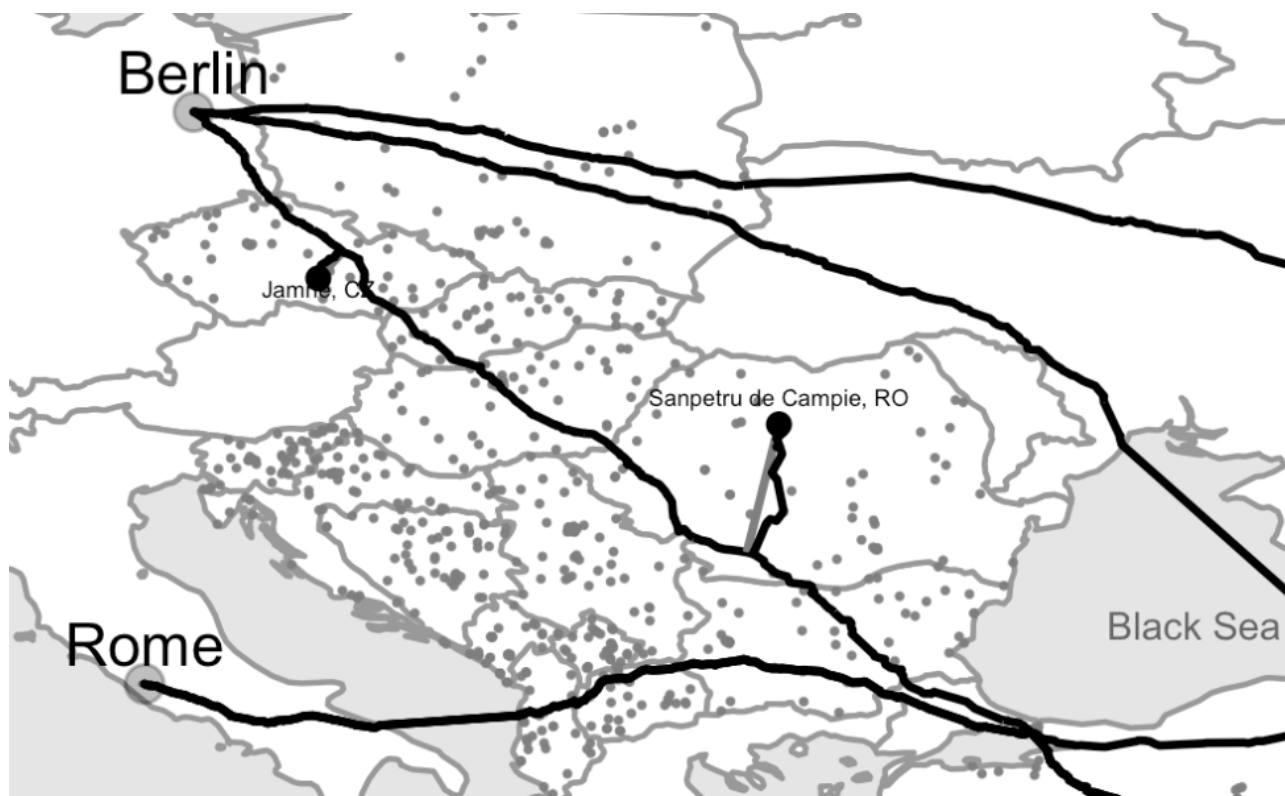
**Figure 7: IV Explanation Map – Routes that Minimise Walking Time**



Source: Google Maps, *Life in Transition Survey*, IOM. Names and boundaries do not imply official endorsement or acceptance by EBRD or IOM.



**Figure 8: IV Explanation Map - Zoomed-in Image**



Source: Google Maps, *Life in Transition Survey*, IOM. Names and boundaries do not imply official endorsement or acceptance by EBRD or IOM.

## Tables

**Table 1: Mode of Transport by Survey Country**

	(1)	(2)	(3)	(4)
	Walk	Land (vehicle, bus or train)	Boat	Air
<i>Survey country</i>				
Bulgaria	0.91	0.08	0.05	0.05
Croatia	0.91	0.07	0.02	0.00
FYR Macedonia	0.86	0.12	0.02	0.00
Greece	0.02	0.02	0.95	0.05
Hungary	0.88	0.10	0.01	0.01
Serbia	0.61	0.38	0.00	0.01
Slovenia	0.09	0.68	0.23	0.00

*Source:* Flow Monitoring Surveys. Notes: Shares of the mode of transport by survey country.

**Table 2: (a) Descriptive Characteristics**

	(Localities that are nearby migrant routes, threshold: 15 km or less)		(Localities that are further away from migrant routes, threshold: more than 15 km)	
	Pre-treatment (2010)	Post-treatment (2016)	Pre-treatment (2010)	Post-treatment (2016)
<i>Main Outcome Variables</i>				
Tried to set up a business	0.18 (0.38)	0.11 (0.31)	0.15 (0.36)	0.15 (0.35)
Self-employment rate	0.10 (0.30)	0.06 (0.23)	0.10 (0.30)	0.10 (0.29)
Employment rate (exc. Self-employment)	0.45 (0.50)	0.55 (0.50)	0.49 (0.50)	0.57 (0.50)
Unemployment rate	0.07 (0.26)	0.05 (0.21)	0.11 (0.31)	0.09 (0.28)
<i>Control Variables</i>				
Age	43.71 (11.40)	42.95 (11.33)	43.45 (11.51)	45.11 (11.60)
Male	0.41 (0.49)	0.47 (0.50)	0.41 (0.49)	0.46 (0.50)
No degree	0.03 (0.18)	0.01 (0.09)	0.03 (0.17)	0.01 (0.09)
Primary education	0.20 (0.40)	0.13 (0.33)	0.13 (0.33)	0.09 (0.29)
Lower secondary education	0.14 (0.35)	0.15 (0.35)	0.18 (0.38)	0.16 (0.36)
Higher secondary education (<15 years)	0.32 (0.47)	0.39 (0.49)	0.36 (0.48)	0.37 (0.48)
Married (<15 years)	0.65 (0.48)	0.70 (0.46)	0.69 (0.46)	0.60 (0.49)
Urban (<15 years)	0.82 (0.38)	0.81 (0.39)	0.57 (0.49)	0.57 (0.49)
Have a bank account	0.60 (0.49)	0.74 (0.44)	0.65 (0.48)	0.80 (0.40)
Household owns a house	0.79 (0.41)	0.71 (0.45)	0.87 (0.34)	0.82 (0.38)
Household owns a car	0.55 (0.50)	0.63 (0.48)	0.63 (0.48)	0.67 (0.47)
Number of Observations	2,318	2,444	8,882	9,786

*Notes:* Means (standard deviations). Source: Life in Transition Survey, 2010 and 2016.

**Table 2: (b) Descriptive Characteristics**

	(Localities that are nearby migrant routes, threshold: 15 km or less)		(Localities that are further away from migrant routes, threshold: more than 15 km)	
	Pre-treatment (2010)	Post-treatment (2016)	Pre-treatment (2010)	Post-treatment (2016)
<i>Outcomes for mechanisms</i>				
Willingness to take risk	0.05 (0.22)	0.04 (0.21)	0.05 (0.22)	0.06 (0.25)
Law and order exist in the country	0.41 (0.49)	0.34 (0.47)	0.32 (0.47)	0.37 (0.48)
Peace and stability exist in the country	0.55 (0.50)	0.52 (0.50)	0.53 (0.50)	0.56 (0.49)
Happy with the political situation	0.25 (0.43)	0.22 (0.41)	0.17 (0.38)	0.25 (0.43)
Happy with the economic situation	0.21 (0.41)	0.26 (0.44)	0.13 (0.34)	0.25 (0.43)
Willingness to pay extra tax	0.67 (0.47)	0.60 (0.49)	0.62 (0.48)	0.59 (0.49)
Life satisfaction	0.40 (0.49)	0.46 (0.50)	0.39 (0.49)	0.50 (0.50)
Job satisfaction	0.52 (0.50)	0.49 (0.50)	0.55 (0.50)	0.55 (0.50)
Satisfaction with financial situation	0.28 (0.45)	0.37 (0.48)	0.25 (0.43)	0.36 (0.48)
Children will have a better life	0.35 (0.48)	0.37 (0.48)	0.47 (0.50)	0.46 (0.50)
Trust in national government	0.51 (0.50)	0.46 (0.50)	0.41 (0.49)	0.43 (0.49)
Trust in regional government	0.41 (0.49)	0.34 (0.47)	0.32 (0.47)	0.37 (0.48)
Trust in local government	0.44 (0.50)	0.31 (0.46)	0.40 (0.49)	0.35 (0.48)
Trust in armed forces	0.30 (0.46)	0.26 (0.44)	0.31 (0.46)	0.30 (0.46)
Trust in foreign investors	0.18 (0.38)	0.21 (0.40)	0.16 (0.36)	0.23 (0.42)
Trust in foreigners	0.52 (0.50)	0.48 (0.50)	0.55 (0.50)	0.55 (0.50)
Trust in other people	0.24 (0.43)	0.28 (0.50)	0.33 (0.47)	0.31 (0.46)
Lost wallet likely to be returned	0.31 (0.47)	0.40 (0.49)	0.33 (0.47)	0.38 (0.49)
<i>Attitudes towards migrants</i>				
Immigrants make a valuable contribution	0.21 (0.41)	0.12 (0.32)	0.24 (0.43)	0.17 (0.37)
Immigrants are a burden	0.51 (0.50)	0.71 (0.45)	0.38 (0.48)	0.59 (0.49)
<i>Prefer not to have ... as neighbours</i>				
... Migrants	0.18 (0.38)	0.39 (0.49)	0.13 (0.34)	0.25 (0.44)
... Homosexuals	0.56 (0.49)	0.44(0.50)	0.55 (0.50)	0.45 (0.50)
... People of a different race	0.15 (0.35)	0.11 (0.31)	0.12 (0.33)	0.12 (0.32)
... People who speak a different language	0.09 (0.29)	0.04 (0.20)	0.05 (0.22)	0.03 (0.17)
... Roma people	0.42 (0.49)	0.34 (0.47)	0.41 (0.49)	0.39 (0.48)

*Notes:* Means (standard deviations). Source: Life in Transition Survey, 2010 and 2016. The sample sizes for some variables are different due to missing data.

**Table 3: OLS Estimates**

	(1)	(2)	(3)	(4)
	OLS	OLS	OLS	OLS
<i>Outcome: Tried to set up a business</i>				
<b>Migration effect: 2016*log distance</b>	0.016*** (0.003)	0.018*** (0.004)	0.018*** (0.004)	0.017*** (0.004)
R-squared	0.075	0.075	0.1	0.109
<i>Outcome: Self-employment</i>				
<b>Migration effect: 2016*log distance</b>	0.013*** (0.003)	0.007** (0.003)	0.007** (0.003)	0.007** (0.003)
R-squared	0.091	0.091	0.107	0.112
N	23501	23501	23430	23430
Fixed effects (locality and year)	Yes	Yes	Yes	Yes
Country level controls	No	Yes	Yes	Yes
Demographic characteristics	No	No	Yes	Yes
Individual wealth and assets	No	No	No	Yes

*Notes:* \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Country characteristics include: the log of country population and the log of GDP per capita. Demographic characteristics include: a male dummy, age and its square, an urban dummy, dummy variables for marital status (married, widowed and divorced/separated), dummy variables for educational attainment (no degree, primary, lower secondary, and upper secondary). Individual wealth and assets include: dummy variables for having a bank account, owning any dwellings, and owning a car. Robust standard errors are clustered at the locality level.

**Table 4: IV First-stage Estimates**

	(1)	(2)	(3)	(4)
	IV - First Stage	IV - First Stage	IV - First Stage	IV - First Stage
<i>Outcome: 2016*Log distance to actual route</i>				
<b>Instrument: 2016*Log Distance to optimal route</b>	0.900*** (0.031)	0.702*** (0.037)	0.704*** (0.037)	0.705*** (0.037)
First-stage F statistics	825.7	367.33	367.65	370.3
N	23,501	23,501	23,425	23,425
Fixed effects (locality and year)	Yes	Yes	Yes	Yes
Country level controls	No	Yes	Yes	Yes
Demographic characteristics	No	No	Yes	Yes
Individual wealth and assets	No	No	No	Yes

*Notes:* \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Country characteristics include: the log of country population and the log of GDP per capita. Demographic characteristics include: a male dummy, age and its square, an urban dummy, dummy variables for marital status (married, widowed and divorced/separated), dummy variables for educational attainment (no degree, primary, lower secondary, and upper secondary). Individual wealth and assets include: dummy variables for having a bank account, owning any dwellings, and owning a car. Robust standard errors are clustered at the locality level.

**Table 5: IV Estimates**

	(1)	(2)	(3)	(4)
	IV	IV	IV	IV
<i>Outcome: Tried to set up a business</i>				
<b>Migration effect: 2016*Log distance</b>	0.024*** (0.004)	0.037*** (0.007)	0.041*** (0.007)	0.041*** (0.007)
<i>Outcome: Self-employment</i>				
<b>Migration effect: 2016*Log distance</b>	0.026*** (0.004)	0.030*** (0.006)	0.034*** (0.006)	0.034*** -0.006
N	23,501	23,501	23,430	23,430
First-stage F statistics	825.7	367.33	367.65	370.3
Fixed effects (locality and year)	Yes	Yes	Yes	Yes
Country level controls	No	Yes	Yes	Yes
Demographic characteristics	No	No	Yes	Yes
Individual wealth and assets	No	No	No	Yes

*Notes:* \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Country characteristics include: the log of country population and the log of GDP per capita. Demographic characteristics include: a male dummy, age and its square, an urban dummy, dummy variables for marital status (married, widowed and divorced/separated), dummy variables for educational attainment (no degree, primary, lower secondary, and upper secondary). Individual wealth and assets include: dummy variables for having a bank account, owning any dwellings, and owning a car. Robust standard errors are clustered at the locality level.

**Table 6: Reduced Form Estimates**

	(1)	(2)	(3)	(4)
	Reduced Form	Reduced Form	Reduced Form	Reduced Form
<i>Outcome: Tried to set up a business</i>				
<b>Instrument</b>	0.022*** (0.004)	0.026*** (0.005)	0.028*** (0.005)	0.029*** (0.005)
<i>Outcome: Self-employment</i>				
<b>Instrument</b>	0.024*** (0.004)	0.021*** (0.004)	0.024*** (0.004)	0.024*** 0.004
N	23,501	23,501	23,430	23,430
Fixed effects (locality and year)	Yes	Yes	Yes	Yes
Country level controls	No	Yes	Yes	Yes
Demographic characteristics	No	No	Yes	Yes
Individual wealth and assets	No	No	No	Yes

*Notes:* \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Country characteristics include: the log of country population and the log of GDP per capita. Demographic characteristics include: a male dummy, age and its square, an urban dummy, dummy variables for marital status (married, widowed and divorced/separated), dummy variables for educational attainment (no degree, primary, lower secondary, and upper secondary). Individual wealth and assets include: dummy variables for having a bank account, owning any dwellings, and owning a car. Robust standard errors are clustered at the locality level.



**Table 7: IV Estimates – Heterogeneity by Demographic Characteristics**

	(1)	(2)	(3)	(4)
	IV	IV	IV	IV
Sample is ⇒	Male	Female	Less than tertiary educ.	Tertiary educ. or more
<i>Outcome: Tried to set up a business</i>				
<b>Migration effect: 2016*log distance</b>	0.061*** (0.013)	0.029*** (0.007)	0.043*** (0.008)	0.030* (0.017)
N	10,269	13,156	18,411	5,019
<i>Outcome: Self-employment</i>				
<b>Migration effect: 2016*log distance</b>	0.061*** (0.011)	0.019*** (0.006)	0.037*** (0.007)	0.023* (0.012)
N	10,274	13,156	18,411	5,019
First-stage F statistics	263.47	370.31	385.79	114.17

*Notes:* \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Specification is Column 4 of Table 4. For details on control variables, see notes to Table 4.

**Table 8:** IV Estimates – Heterogeneity by Demographic Characteristics

	(1)	(2)	(3)	(4)
	IV	IV	IV	IV
Sample is $\Rightarrow$	25-44	45-64	Urban	Rural
<i>Outcome: Tried to set up a business</i>				
<b>Migration effect: 2016*log distance</b>	0.047*** (0.008)	0.028*** (0.011)	0.035*** (0.008)	0.087*** (0.033)
N	11,960	11,470	14,583	8,847
<i>Outcome: Self-employment</i>				
<b>Migration effect: 2016*log distance</b>	0.043*** (0.008)	0.021*** (0.008)	0.032*** (0.006)	0.058* (0.032)
N	11,960	11,470	14,583	8,847
First-stage F statistics	324.39	288.55	285.52	34.85

Notes: \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Specification is Column 4 of Table 4. For details on control variables, see notes to Table 4.

**Table 9: IV Estimates – Mechanism, Changes in Willingness to Take Risks and Perceived Instability**

	(1)	(2)	(3)	(4)	(5)
	IV	IV	IV	IV	IV
Outcome is ⇒	Willingness to take risk	Law and order exist in the country	Peace and stability exist in the country	Happy with the political situation	Happy with the economic situation
<b>Migration effect: 2016*log distance</b>	0.011*** (0.004)	0.045*** (0.014)	0.052*** (0.015)	0.021*** (0.0120)	0.045*** (0.013)
N	22,845	22,929	22,949	22,559	22,092

Outcome is ⇒	Willingness to pay extra tax	Life satisfaction	Job satisfaction	Satisfaction with financial situation	Children will have a better life
<b>Migration effect: 2016*log distance</b>	0.025*** (0.01)	0.022* (0.013)	0.034*** (0.014)	0.007 (0.011)	-0.005 (0.014)
N	23,430	23,154	23,154	23,059	21,660
First-stage F statistics	823.26	371.04	290.85	375.17	374.37

*Notes:* \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Specification is Column 4 of Table 4. For details on control variables, see notes to Table 4.

**Table 10: IV Estimates – Mechanism, Changes in Institutional and Interpersonal Trust**

	(1)	(2)	(3)	(4)
	IV	IV	IV	IV
Outcome is ⇒	Trust in national government	Trust in regional government	Trust in local government	Trust in armed forces
<b>Migration effect: 2016*log distance</b>	0.034** (0.014)	0.045*** (0.014)	0.037** (0.015)	-0.017 (0.012)
N	22,691	22,929	22,133	20,975
First-stage F statistics	372.6	369.89	378.05	362.58

	Trust in foreign investors	Trust in foreigners	Trust in other people	Lost wallet likely to be returned
<b>Migration effect: 2016*log distance</b>	0.005 (0.01)	0.034** (0.014)	-0.019 (0.014)	0.015 (0.014)
N	22,947	16,854	22,216	23,365
First-stage F statistics	372.22	290.85	363.71	370.13

Notes: \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Specification is Column 4 of Table 4. For details on control variables, see notes to Table 4.

**Table 11: IV Estimates – Mechanism, Changes in Labour Market Outcomes**

	(1)	(2)	(3)	(4)
	IV	IV	IV	IV
Outcome is ⇒	Self-employment	Wage employee	Unemployed	Out of labour force
<b>Migration effect: 2016*log distance</b>	0.034*** (0.006)	-0.013 (0.009)	-0.008 (0.005)	-0.011 (0.008)
N	23,430	23,430	23,430	23,430
First-stage F statistics	370.31	370.31	370.31	370.31

Notes: \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Specification is Column 4 of Table 4. For details on control variables, see notes to Table 4.

**Table 12: IV Estimates – Attitudes towards Migrants and Placebo Outcomes**

<i>Outcomes</i>	(1)	(2)	(3)
	Coefficient on Migration effect:		N
	2016*log distance (standard error)	First-stage F statistics	
Immigrants make a valuable contribution to the national economy of our country	0.027** (0.011)	362.67	20,984
Immigrants are a burden for the national social protection system	-0.026* (0.016)	366.6	21,022
Prefer not to have migrants as neighbours	-0.035*** (0.013)	370.05	23,376
Prefer not to have homosexuals as neighbours	0.013 (0.016)	370.05	23,376
Prefer not to have people of a different race as neighbours	0.017 (0.011)	370.05	23,376
Prefer not to have people who speak a different language as neighbours	0.005 (0.008)	370.05	23,376
Prefer not to have Gypsies as neighbours	0.024 (0.014)	370.05	23,376

*Notes:* \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Specification is Column 4 of Table 4. For details on control variables, see notes to Table 4.

**Table 13: IV Estimates – Robustness Checks**

	(1)	(2)	(3)
	IV	IV	IV
Excludes countries with conflict history (Bosnia, Croatia, Macedonia, Kosovo, Montenegro and Slovenia)			
Excluding Turkey			
Working age population, 18-64			
<i>Outcome: Tried to set up a business</i>			
<b>Migration effect: 2016*log distance</b>	0.038*** (0.008)	0.044*** (0.014)	0.042*** (0.007)
<i>Outcome: Self-employment</i>			
<b>Migration effect: 2016*log distance</b>	0.026*** (0.0070)	0.038*** (0.011)	0.034*** (0.006)
N	15,420	21,890	26,268
First-stage F statistics	341.41	116.98	378.46

*Notes:* \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Specification is Column 4 of Table 4. For details on control variables, see notes to Table 4.

**Table 14: IV Estimates – Out Migration and Compositional Changes**

	(1)	(2)	(3)
Outcome is $\Rightarrow$	Tertiary	Less than tertiary	Single
Migration effect: 2016*log distance	-0.008 (0.007)	0.008 (0.007)	0.000 (0.000)
First-stage F statistics	370.31	370.31	370.31
N	23,430	23,430	23,430
Outcome is $\Rightarrow$	Married	Urban	Rural
Migration effect: 2016*log distance	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
First-stage F statistics	370.31	370.31	370.31
N	23,430	23,430	23,430
Outcome is $\Rightarrow$	Ages 25-44	Ages 45-64	Have lived in the same locality at least for 10 years
Migration effect: 2016*log distance	0.011 (0.005)	-0.011 (0.005)	-0.041*** (0.008)
First-stage F statistics	370.31	370.31	370.57
N	23,430	23,430	23,245

Notes: \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Specification is Column 4 of Table 4. For details on control variables, see notes to Table 4.

**Table 15: IV Estimates – Controlling for Distance to Main Trade Routes**

	(1)
	IV
<i>Outcome: Tried to set up a business</i>	
<b>Migration effect: 2016*log distance</b>	0.040*** (0.007)
2016*distance to main trade route (log)	0.008 (-0.008)
<i>Outcome: Self-employment</i>	
<b>Migration effect: 2016*log distance</b>	0.032*** (0.006)
2016*distance to main trade route (log)	0.009 (0.01)
N	23,430
First-stage F statistics	370.3
Fixed effects (locality and year)	Yes
Country level controls	Yes
Demographic characteristics	Yes
Individual wealth and assets	Yes

*Notes:* \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Specification is Column 4 of Table 4. For details on control variables, see notes to Table 4.



## Appendix

**Table A1: IV Estimates by Thresholds**

<i>Outcome: Tried to set up a business</i>		(1)
<b>Treatment: 25 km – migration effect</b>	-0.188***	(0.000)
First stage F-Statistics	371.12	
N	23,430	
<b>Treatment: 50 km – migration effect</b>	-0.123***	(0.033)
First stage F- Statistics	386.56	
N	23,430	
<b>Treatment: 75 km – migration effect</b>	-0.107***	(0.038)
First stage F- Statistics	304.29	
N	23,430	
<b>Treatment: 90 km – migration effect</b>	-0.059	(0.034)
First stage F- Statistics	356.31	
N	23,430	

*Notes:* \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Specification is Column 4 of Table 4. For details on control variables, see notes to Table 4.

**Table A2: IV Estimates by Thresholds**

<i>Outcome: Self-employment</i>	
	(1)
<b>Treatment: 25 km – migration effect</b>	-0.151*** (0.000)
First stage F-Statistics	371.12
N	23,430
<b>Treatment: 50 km – migration effect</b>	-0.108*** (0.028)
First stage F- Statistics	386.56
N	23,430
<b>Treatment: 75 km – migration effect</b>	-0.075** (0.033)
First stage F- Statistics	304.29
N	23,430
<b>Treatment: 90 km – migration effect</b>	-0.029 (0.044)
First stage F- Statistics	356.31
N	23,430

*Notes:* \* significant at 10 per cent; \*\* significant at 5 per cent; \*\*\* significant at 1 per cent. Specification is Column 4 of Table 4. For details on control variables, see notes to Table 4.