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Exposure to Transit Migration, Public Attitudes and Entrepreneurship

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Abstract

Does exposure to mass migration affect economic behavior, attitudes and beliefs of natives in transit countries? In order to answer this question, we use a unique locality-level panel from the 2010 and 2016 rounds of the Life in Transition Survey and data on the main land routes taken by migrants in 18 European countries during the refugee crisis in 2015. To capture the exogenous variation in natives' exposure to transit migration, we construct an instrument that is based on the distance of each locality to the optimal routes that minimize travelling time between the main origin and destination cities. We first show that the entrepreneurial activity of natives falls considerably in localities that are more exposed to mass transit migration, compared to those located further away. We then explore the mechanisms and find that our results are likely to be explained by a decrease in the willingness to take risks as well as in the confidence in institutions. We also document an increase in the anti-migrant sentiment while attitudes towards other minorities remained unchanged. We rule out the possibility of out-migration of natives or of trade-related shocks (potentially confounded with the mass-transit migration) affecting our results. Using locality-level luminosity data, we also rule out any effect driven by changes in economic activity. Finally, we find no statistically significant effects on other labor market outcomes, such as unemployment or labor force participation.

JEL Classification: F22, L26, D91, O15, O10

Keywords: migration, refugee crisis, entrepreneurship

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interpretations, errors, and omissions are our own.

Exposure to Transit Migration, Public Attitudes and Entrepreneurship*

Nicolás Ajzenman† Cevat Giray Aksoy‡ Sergei Guriev §

March 2021

Abstract

Does exposure to mass migration affect the attitudes and economic behavior of natives in the transit countries? In order to answer this question, we use a unique locality-level panel from the 2010 and 2016 rounds of the Life in Transition Survey and data on the main land routes taken by migrants in 18 European countries during the refugee crisis in 2015. To capture the exogenous variation in natives' exposure to transit migration, we construct an instrument that is based on each locality's distance to the optimal routes that minimize travelling time between refugees' main origins and destinations. We find that the entrepreneurial activity of native population falls considerably in localities that are more exposed to mass transit migration, compared to those located farther away. We explore potential mechanisms and find that exposure to mass transit migration results in the lower confidence in government, higher perceived political instability, and lower willingness to take risks. We also document an increase in the anti-migrant sentiment while attitudes towards other minorities remain unchanged.

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

Keywords: migrant routes, entrepreneurship, public attitudes, confidence in government

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1 Introduction

International migration is a central issue in the global policy debate. While the implications of cross-border migration for sending or receiving societies have been analyzed in many studies (see Becker and Ferrara, 2019 for a survey), there has been little empirical research on the effects of transit migration. Our paper fills this gap by providing the first large-scale analysis of the impact of exposure to mass transit migration on public attitudes and economic behaviour of natives in 18 European countries.

The impact of transit migration is likely to be different from that of the permanent migration due to the nature of intergroup contact between migrants and natives. When migrant flows pass through temporary locations, there is little opportunity for repeated social interaction and therefore for building mutual trust — the absence of which is likely to create tensions as well as political and social instability. Indeed, following the seminal work on the "contact hypothesis" by Allport et al. (1954), many studies have described the conditions under which the interactions between in-group and out-group individuals increase empathy and integration (see, for instance, Barlow et al., 2009; Berg, 2009; Pettigrew, 1998; Pettigrew and Tropp, 2006; Enos, 2014; Lowe, 2021). As Hangartner et al. (2019) summarize, the three main conditions are as follows: (i) both groups have to share status and goals, (ii) both groups need to live in a cooperative—rather than competitive—environment, and (iii) the groups should operate under a well-defined set of norms, laws and regulation.

These conditions may hold in places where refugees settle but none of them is likely to be satisfied in the case of transit refugee flows. Not surprisingly, Steinmayr (2020) shows that the anti-immigrant vote increased in Austrian municipalities that were exposed to mass transit migration, even though the opposite was true for communities where refugees actually settled. Unlike this and other papers that study the political implications of exposure to mass migration (see a survey of this research in Guriev and Papaioannou, 2021, section 7), we explore how the mass transit migration affects confidence in institutions, attitudes to risk and economic outcomes.

Focusing on the 2015 refugee crisis in European countries, we find that large transit migration resulted in stronger anti-immigration sentiment among the native population and negatively affected natives' confidence in institutions as well as willingness to take risks. We further document a strong negative effect on a key economic outcome: entrepreneurial activity.[1] Figure 1 summarizes our main result: entrepreneurship declines substantially in localities that are close to refugee routes; in the localities that that are far away from the routes the change in entrepreneurial activity is much smaller. Notwithstanding previous findings which emphasize the positive effects of immigration on innovation, knowledge creation and entrepreneur-

[1] This is in line with the literature on the relationships between entrepreneurship and quality of institutions (Baumol (1990); Dutta et al. (2013)) and between entrepreneurship and individual risk attitudes (Caliendo et al. (2009, 2010)).

ship (Hunt and Gauthier-Loiselle (2010); Bosetti et al. (2015); Bahar et al. (2020)), our findings highlight the important qualitative differences between exposure of natives to permanent versus transit migration.

We rely on two main sources of data. First, we use locality-level panel data (2010 and 2016) of the Life in Transition Survey (LiTS), which allows retrieving the exact geocodes of each locality.[2] Second, we use the data on geo-localized migration routes in Europe, provided by the International Organization for Migration (IOM). We then geographically match these two sources and construct a measure of exposure to mass transit migration for each locality (the distance from the locality to the closest transit migrant route).

As migrants and refugees may strategically choose routes (for example, to bypass unwelcoming localities), there is a risk of potential endogeneity of exposure to migration. In order to identify causal effects, we use a distance-based instrumental variable approach in the spirit of Ghani et al. (2016) and Faber (2014).[3] More specifically, we construct an instrument based on the distance from each locality in transit countries to the "optimal" migration routes. The optimal routes are those that minimize the walking time between the main origin countries (Syria, Iraq, and Afghanistan) and the main destination countries (Germany and Italy). Therefore, our instrument captures the variation in distance between each locality and the actual migration routes chosen by refugees, which was induced by ex ante—and plausibly exogenous—geographical determinants.

We find several causal effects of exposure to mass transition migration. First, consistent with previous literature, we document a strong increase in anti-migrant sentiments in the localities that are close to the migrant routes: halving the distance to migrant routes results in an increase of 4.2 percentage points in the proportion of people considering that migrants are a burden (from an average of 41 per cent in 2010), an increase of 5.4 percentage points in the proportion of people who would prefer not to have migrants as neighbors (from an average of 14 per cent in 2010), while attitudes towards other minorities remain unchanged.

Second, we document a significant decrease in the public's confidence in institutions and in its perception of political stability. Halving the distance to migrant routes causes a decrease in trust in national, regional and local governments in the range of 2.8-4.8 percentage points (from an average of 22-31 per cent in 2010), a decrease of 2.7 percentage points in the perceived law and order (from an average of 34 per cent

[2] We define localities as LiTS' Primary Sampling Units (PSUs).

[3] 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 for the location of actual routes, 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 minimization. In one case (which is most similar to ours), the author draws an "optimal route" minimizing bilateral Euclidean distances between nodal points of the actual route. Distances to actual routes are instrumented by distance to these "optimal" routes.

in 2010), a decrease of 3.2 percentage points in the perceived peace and stability in the country (from an average of 54 per cent in 2010), a decrease of 4.3 percentage points in the level of satisfaction with the political situation (from an average of 19 per cent in 2010). Consistent with these effects, we show that halving the distance to migrant routes causes a 6.1 percentage points decrease in the proportion of individuals who are willing to take risks (from an average of 29 per cent in 2010).

Finally, we document negative effects on an important economic outcome: entrepreneurship. Halving the distance to migrant routes decreases the propensity to set up a business by 2.6 percentage points and the likelihood of being self-employed by 1.4 percentage points (the respective averages of these two variables before the refugee crisis were 15 per cent and 11 per cent).[4]

In addition to the effects on institutional trust that and risk attitudes that can be interpreted as mechanisms for the relationship between exposure to mass transit migration and entrepreneurial activity, we explore and rule out several alternative explanations. We find no evidence that exposure to transit migration affects interpersonal trust (an important variable to promote development and entrepreneurship, see Knack and Keefer (1997); Bottazzi et al. (2016)) or local unemployment.[5]

We also check whether transit migration had a direct effect on the local economy which in turn could have affected entrepreneurial activity. We directly test the relationship between exposure to transit migration and local economic activity which we proxy by luminosity (that is, nighttime light density, see Henderson et al. (2011) and Henderson et al. (2012)). Using different definitions of luminosity (the median and mean of luminosity in a 10 and 20 kilometers radius of each locality) we find null effects, which suggests that proximity to a migration route did not significantly affect economic activity, at least in the short run.

We run several robustness checks and placebo tests. Using Oster's test (Oster, 2019), we show that our results are unlikely to be driven by unobservables. We also show that our results are robust to inclusion of subnational region by year fixed effects (controls for all potentially omitted variables that can vary across subnational regions and years, such as a diversion of public resources to specific regions for supporting transit migrants). Our results are also robust to using various alternative samples (for example, excluding Turkey since it is also a host country, or focusing on the full adult population instead of 25-64 year old, or excluding countries with a recent history of conflict). We also show that our results cannot be explained by out-migration or compositional changes in our sample of the native population. Furthermore, we document the absence of pre-trends in entrepreneurial activity. We find that the exposure to migration routes between

[4] The large magnitudes may be explained by the fact that we identify short-term effects that may dissipate over time. To put our findings in perspective, a recent study by a Sauer and Wilson (2016) shows that relaxation of financial wealth constraints by £1,000 results in an 8.5 per cent increase in the probability of starting a new business. Batista and Umblijs (2014) find that a medium level of willingness to take risks increases the probability of being self-employed by 8 percentage points, and having a high willingness to take risks increases the probability of being self-employed by 10 percentage points.

[5] Migration may disrupt local labor markets in different ways. For instance, it could lead to a decline in wages and to an increase in local unemployment for natives, unemployment could depress local aggregate demand and reduce economic incentives to create new businesses (Storey and Johnson (1987))

2010 and 2016 is not correlated with change in self-employment in the pre-treatment period.[6]

We also address an important potential threat to our identification strategy related to the distance between "optimal" migrant routes and main trade routes. If localities that are closer to the optimal migrant routes were also close to the main roads or important economic hubs, our results could be explained by trade-related shocks, instead of the transit migration shock. We estimate several placebo specifications using the distance to major roads and railroads (instead of distance to migrant routes) as the treatment variable. We find null effects for all of our main outcomes, which supports the validity of the exclusion restriction: our instrument does not seem to affect the outcomes through any other variable (such as proximity to trade routes) other than our endogenous variable (proximity to migration routes).

The rest of the paper is structured as follows. Section 2 reviews related literature. Section 3 provides background information on the Eastern Mediterranean migration route. Section 4 describes the conceptual framework. Section 5 introduces data sources. Section 6 outlines our empirical methodology. Section 7 presents the main results and potential mechanisms. Section 8 discusses robustness checks, placebo tests, absence of pre-trends and provides additional evidence on the exclusion restriction. Section 9 concludes.

2 Related Literature

Our paper contributes to several strands of the literature. First, there is a growing number of studies on the impact of mass migration on labor market outcomes of the natives. 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). Recently, several studies (for example, Del Carpio and Wagner, 2015; Ceritoglu et al., 2017; Tumen, 2016) have analyzed the Syrian mass migration to Turkey to examine the labor market outcomes for Turkish residents.[7] These 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, however, Fallah et al. (2019) show that a higher concentration of Syrians did not worsen natives' labor market outcomes. Our paper is complementary to this literature as we focus on a qualitatively different type of contact with migrants: the one experienced by transit countries and localities (rather than by origin or destination countries).

Second, we contribute to the literature on the relationship between migration and entrepreneurship.

[6] Questions related to entrepreneurship were not included in the 2006 wave of the LiTS (only in 2010 and 2016) and, thus, we use self-employment as a proxy to test pre-trends. Throughout the paper we use self-employment as a robustness check for entrepreneurship and we document similar results on both outcomes.

[7] Tumen (2016) also analyzed how Syrian mass migration affected price levels in the destination provinces in Turkey. Aksoy and Tumen (2021) show that good local governance practices can smooth out the refugee integration process and play a critical role in mitigating the environmental deterioration due to large-scale immigration.

Previous studies have mainly focused on migrant entrepreneurs and found that migrants are more likely to start businesses than natives.[8] 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).

To the best of our knowledge, only three papers have explored the effect of immigration on the entrepreneurial activity of the natives. Unlike our study of the impact of the transit migration, these three papers focus on a destination country (United States). Fairlie and Meyer (2003) examine the impact of immigration on self-employed natives in the US and show that self-employed immigrants displace self-employed natives. Unel (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 analysis focuses on the immigrants' destination country. Duleep et al. (2021) present a theory that immigrants facilitate entrepreneurship by being willing and able to invest in new skills. In line with their theoretical predictions, they provide empirical evidence from the United States showing that areas with larger numbers of immigrants have higher entrepreneurship levels among natives.

Our data and setting provide some unique advantages that allow us to complement existing studies in several dimensions. First, whereas previous papers have mostly looked at individual countries or smaller samples, our data cover 18 European countries. Second, while other papers study the impact of immigration on innovation and entrepreneurship in destination countries, we study the effects on transit countries.

3 Background

3.1 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,[9] Kosovo, Montenegro, Serbia, and Slovenia — with the aim of reaching the Western Europe

[8] Kauffman Foundation's "Start-up Activity." (available at: https://www.kauffman.org/~/media/kauffman_org/microsites/kauffman_index/startup_activity_2016/kauffman_index_startup_activity_national_trends_2016.pdf, 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. (2020) find that migrants have a positive impact on innovation and knowledge creation.

[9] The Former Yugoslav Republic of Macedonia officially adopted its new name "the Republic of North Macedonia" in February 2019. However, throughout this paper we refer to it as "Former Yugoslav Republic of Macedonia" and "FYR Macedonia", as these were originally used in the surveys.

(Aksoy and Poutvaara, 2019).

The migration flow through the Eastern Mediterranean land route dramatically increased in 2015. Tinti and Reitano (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 to Europe. Fourth, with smuggling networks emerging to facilitate the flow of Syrians from Turkey into Europe, Iraqis, Afghanis, 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 12,000 people crossed the Aegean from Turkey to Greece. This number was about 50,000 in 2014. In 2015, the number of arrivals via the Eastern Mediterranean route increased drastically, reaching 885,000 people. This figure is substantial and represents more than 70 per cent of the total 2015 immigration in Western Europe (the proportion was similar in 2016).[10] These numbers imply a massive unexpected shock experienced by the transit countries along the Eastern Mediterranean route.

3.2 Descriptive Characteristics of the Migrant Flows

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 the Serbian border reported that: "We walked most of the way here. It took us six months, and we made the almost 7,000-kilometer overland journey via Pakistan, Iran, Turkey, Greece, and Macedonia."[11] 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 and Reitano, 2018).

We use 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

[10] 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, some 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, see http://www.unhcr.org/5943e8a34.pdf (accessed 16 November 2019).

[11] The Globe and Mail (July 10, 2015): Gateway to freedom: Migrants walk thousands of kilometers for heaven of Western Europe. Available at: https://www.theglobeandmail.com/news/world/gateway-to-freedom/article25410710/ (accessed 16 November 2019).

migrants' journey (such as the intended destination countries, the number of days spent in transit, and the mode of transport).[12]

Appendix Table A1 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.

Appendix Figure A1 presents the intended destination country as reported by migrants. 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), and Sweden (4 per cent). Importantly, none of the countries we have in our sample was considered as the main intended destination country by migrants. In other words, migrants mostly walked the long route through Greece and the Western Balkans with the ultimate aim of reaching Germany and other Western European countries.

Appendix Figure A2 presents the self-reported reasons for leaving origin countries. More than 80 per cent of respondents from Afghanistan, Iraq, Palestine, Somalia and Syria 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.

Appendix Figure A3 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 in transit.

4 Conceptual framework

In this section we discuss channels through which a sudden increase in transit migration can affect entrepreneurial activity. We focus on two interrelated factors: confidence in institutions and willingness to take risks.

Mass transit migration can potentially be very disruptive. While destination countries are normally aware of their attractiveness to migrants and refugees from around the world, a country may become a transit migration country due to a sudden shock in the sending countries. Relatedly, destination countries tend to be rich countries with high state capacity, whereas most transit countries are low- or middle-income countries which are not well prepared for handling unexpected large influxes of refugees — as was exactly the case during the 2015 refugee crisis in the eighteen countries we study.

Such large and unexpected mass transit migration shocks may therefore reduce the native population's

[12] See Aksoy and Poutvaara (2019), for the details and the sampling strategy of the survey.

confidence in institutions. It is unlikely that a refugee crisis causes a sudden decline in the actual quality of institutions but it may result in a major downward change in the public perception of their quality. In turn, the lack of institutional trust and, more generally, the lack of perception of a stable political and legal environment in which rules and laws are enforced and property rights are protected can reduce incentives for entrepreneurship.

An important implication of observing the disruption caused by a mass transit migration shock is the general decline in potential entrepreneurs' willingness to take risks. Individuals can update upwards their perception of overall uncertainty of the political and legal environment – and therefore decide that they do not need to take additional risks related to setting up a business (Cramer et al., 2002).[13]

To summarize, the exposure to mass transit migration may lead to lower confidence in institutions, to higher perceived political and legal instability, to lower willingness to take risks and, therefore, to a reduction in for entrepreneurial activity.

5 Data

The data used in this paper come from the Life in Transition Surveys 2010 and 2016 (LiTS), International Organization for Migration (IOM), Google Maps, and the World Bank's World Development Indicators (WDI).

5.1 Migrant Routes

As discussed in Section 2, in 2015 European countries witnessed an unprecedented increase in the number of refugee arrivals. Thousands crossed the Mediterranean Sea and reached Europe by taking the following routes: Western Balkan, Central Mediterranean, and Eastern Mediterranean (see Figure 2).We focus on the Eastern Mediterranean route and its extensions in Europe; as mentioned above, the number of migrants arriving via this route in 2015 greatly exceeded the respective numbers for all other routes combined.

We exploit the geographic variation produced by the distance between the 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 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 sudden and unexpected increase in the exposure of the transit countries' population to the massive influx of refugees originated

[13] The 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 salaried 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).

from a grave deterioration of security situation in their home countries (see Figure A2).

Figure 3 shows the localities used in our LiTS sample and the main land routes to Europe, as identified by IOM. This map broadly shows that many European countries serve as transit countries for refugees and irregular migrant groups. Although, we know that more than 70 per cent of the total migrants that arrived in Western Europe in 2015 (about 885,000 people) used these routes, we do not have information on the number of crossings by each individual route. This prevents us from examining the intensive margin of the treatment.[14]

Using the same base map, Figure 4 provides a zoomed-in image to better show the intra-country variation in proximity to migrant routes. In particular, we use the logarithm 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. This figure highlights that there is substantial amount of variation in the proximity of localities to migrant routes.

5.2 Life in Transition Survey

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 survey. LiTS collects information on the demographic and socio-economic characteristics of respondents, their beliefs, preferences and attitudes, labor market status and economic outcomes.

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). An important feature of these data is that they track nearly 50 localities per country in both the 2010 and 2016 rounds. A panel element was built into the survey design in 2016 by asking 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 measuring differences in outcome variables within the same localities. An-

[14] There are no data on the intensity of the migration flows. However, in Section 8, we conduct several additional analyses to show that our main finding is not likely to be affected by how we measure the exposure to transit migration.

other critical factor is that LiTS only surveys the resident population; thus we can 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 the European migrant crisis between 2010 and 2016. Overall, we analyze a panel of 778 different localities in 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).[15] Appendix Table A2 provides the number of localities and observations per country.

LiTS contains detailed information on the respondents' socio-demographic characteristics, household assets, work, and unemployment history. Importantly, it also includes several questions on attitudes towards migrants and other groups, interpersonal and institutional trust, and satisfaction with the socio-political environment. LiTS questions were answered 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 face-to-face interviews.

LiTS also includes questions on respondents' entrepreneurial activity and self-employment. Respondents 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 a measure of entrepreneurial activity. We do not observe exact time frame in the question about trying to set up a business but any measurement error arising from this concern only works against us by lowering the precision of our estimates.

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 to study individuals most likely to have completed their education; the results are robust to including those aged 18-24.

5.3 Descriptive Statistics

Table 1 (panels (a) and (b)) presents the descriptive statistics on socio-demographic characteristics from the LiTS data by year (2010 and 2016). We report the descriptive statistics separately for the PSUs which are located 25 kilometers or closer to migrant routes ("treated") and those located farther away ("control").

[15] Cyprus and Greece were covered by LiTS in 2016 only, hence they are not included in the analysis.

The data indicate that socio-demographic characteristics of respondents are similar across treated and control localities. However, there are substantial differences in attitudes and their changes over time. The respondents in treated communities already had less positive attitudes toward migrants in 2010 than their counterparts in the control communities, but the gap became much larger in 2016. Same applies to confidence in government, perceptions of political stability and law and order. The willingness to take risks—initially similar across treated and control localities—declined substantially in the treated localities but remained the same in the control ones. As we have already seen in Figure 1, the treated localities had higher entrepreneurial activity in 2010 than the control ones; however, in 2016, both measures of entrepreneurial activity in the treated communities were below those of the control ones.

6 Empirical Methodology

6.1 OLS Estimation

We first compare the same localities before and after the refugee crisis. We estimate the following equation:

$$Outcome_{ilct} = \alpha + \beta\gamma_t\left(-Distance_l\right) + \rho_l + \gamma_t + \phi_{ct} + \Lambda X_{ilct} + \epsilon_{ilt}, \tag{1}$$

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 (inverse) log of the distance of locality l to the closest migration route. The locality fixed effects, ρ_l, control for any time-invariant locality-specific factors. γ_t are the year fixed effect, which capture the impact of global shocks that affect all localities simultaneously. β is the main parameter of interest and captures the effect of exposure to mass migration on our outcomes.

We also include country by year fixed effects ϕ_{ct} that control for any relevant omitted variable specific to a given country-year. Note that this produces very conservative estimates as it eliminates all heterogeneity in our outcome variables related to country-specific time-varying factors, such as changes in the border policies, national politics or GDP per capita. Thus, the treatment only compares individuals within the same country and survey year, ensuring that these individuals face the same political institutions and economic conditions. This strategy also mitigates concerns that the results are driven by other structural differences between countries that are more exposed to transit migration (higher number of migrants) and those that are not.

In Section 8, we also directly show that our results are robust to inclusion of subnational region by year fixed effects, which control for all potentially omitted variables that can vary across subnational regions (for

example, a diversion of public resources from business or entrepreneurship activity to funding in support of transit migrants or opening of refugee camps). This further mitigates concerns that our results are driven by omitted region-specific time-varying factors. We further complement these results by using the approach of Oster (2019) to establish that our results are unlikely to be driven by unobservables.

We also control for a vector of individual-level characteristics (X_{ilct}), which includes: gender, age and age squared, and 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 having a bank account, for owning a dwelling and for owning a car.[16]

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. Our results remain virtually the same, when standard errors are corrected for spatial correlation (Conley, 1999) or when they are clustered at the subnational region-year level; these results are reported in Section 8.

6.2 Instrumental Variable Estimation

There are several potential threats to the difference-in-differences identification strategy above. First, many of the refugee routes have been there for decades, used not only by migrant smugglers but also by traffickers of various illicit goods (Tinti and Reitano, 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, because the local population is more positive towards immigrants, then our estimates would be biased downwards. Migration and entrepreneurial outcomes may also be jointly affected by omitted variables (such as changes in institutions and policies).

To address these issues, we use two-stage least squares methodology in the spirit of Faber (2014) and Ghani et al. (2016). We construct 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 idea for the instrument is as follows. 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 minimizes travel time. If the migrant decides to deviate from the "optimal" route and take an alternative one, it must be for a reason, such as presence of smuggling networks, insecurity, the likelihood of detection and deportation and so on. In this case, the distance between the European localities and the real routes chosen by the migrant would be endogenous.

[16] An extensive body of literature documents a positive relationship between wealth and entrepreneurship (Evans and Jovanovic (1989); Nykvist (2008); Fairlie and Krashinsky (2012); Sauer and Wilson (2016); Sauer and Wiesemeyer (2018) and others).

Our instrument captures the exogenous variation of localities' distances to the routes: 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. We determine these cities based on responses provided in Flow Monitoring Surveys (about 80 per cent of respondents came from Afghanistan, Iraq and Syria, while Germany and Italy were the intended destination countries for about 70 per cent of respondents). 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 minimize the walking time (see Figure 5).[17] These routes are the "optimal routes," and they are directly computed by the Google algorithm, taking into account not only the euclidean distance but also the geography of each region.

(ii) For each locality, we identify the closest point on the closest optimal route. For instance, in Figure 5, 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 6). This line represents the shortest distance to the closest route for that locality. 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 (see Table 5 and Figure 7).

Our main identification assumption is as follows: the distance between the locality l and the "optimal route" did not affect the change in entrepreneurial activity between 2010 and 2016 by any other channel except for exposure to refugees in 2015. Since "optimal routes" are determined by geography and historical factors, this is a reasonable assumption.

7 Main Results

7.1 OLS Results

We start by analyzing 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. Table 3 presents the results for the outcome variable "Tried to set up a business" in the top panel and "Self-employment" in the bottom

[17] Using the driving time time instead of the walking time produced qualitatively identical results.

panel. Each column reports β from equation (1), the coefficient on the exposure to transit migration 2016*(-log distance) (the interaction term between year dummy for 2016 and the minus 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 by year fixed effects; Column 3 adds individual-level demographic characteristics; Column 4 also includes controls 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 2.1*log(2)=1.5 percentage points for natives in Column 1. This effect remains similar after adding country by year fixed effects (Column 2) and various individual controls (Columns 3 and 4). In terms of magnitude, the effect is sizable, given that the average level of entrepreneurial activity in 2016 is 15 per cent.

In the bottom panel of Table 3, we find similar results for our second measure of entrepreneurship, self-employment. A twofold decrease in the distance to the migrant routes reduces the likelihood of reporting to be self-employed by 1*log(2)=0.7 percentage points (Column 4). This is also a sizable effect since the average self-employment rate is 10 per cent in 2016. Collectively, these estimates suggest that proximity to migrant routes is statistically significantly associated with the entrepreneurial activity of the native population.

In Table 4 we present the results for an alternative definition of treatment. Instead of a continuous measure of distance to the routes we use categorical variables: dummy for the the distance to the closest route below 25 and dummy for the distance being between 25 and 100 kilometres.[18] We find that the effect of exposure to migration is concentrated in the proximity of localities to the refugee routes (25 km); its magnitude and significance declines when we consider a larger radius (25-100 km).

7.2 IV Results

In this subsection, we present the Instrumental Variable (IV) results. Table 5 presents the first stage estimates of our instrument. Overall, the instrument (distance to the closest optimal route) is highly correlated with the potentially endogenous treatment variable (distance to the closest actual migrant route). The F-statistics shows that the first stage is strong. The first-stage relationship is robust to the inclusion of country and year fixed effects, individual-level covariates as well as country by year fixed effects.

Table 6 presents the second-stage estimates. As in Table 3, 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 3.7*log(2)=2.5 percentage

[18] There are 175 PSUs in the "25 km or closer" category and 158 PSUs in the "25-100 km" category. 452 PSUs have the distance to the routes above 100 km.

points (top panel) and the likelihood of reporting to be self-employed by 2.0*log(2)=1.4 percentage points (bottom panel). Table 7 shows the reduced form results using the proposed instrument as the explanatory variable.

The estimates for IV are larger than the OLS ones. This can be explained by the likelihood that migrants choose the best routes where natives are likely to be friendlier and better prepared. If there is endogenous selection of migrants into routes, OLS estimates are likely to be smaller than IV estimates.

7.3 Attitudes Towards Migrants

In order to check that it is the exposure to mass transit migration that affects the entrepreneurial activity, we study the impact of the proximity to refugee routes on attitudes and views towards migrants. Table 8 shows that attitudes towards migrants have indeed become more negative in localities that are closer to the refugee routes. We find significant results for three different outcome variables: the respondents' views on whether (i) "immigrants are a burden for the national social protection system"; (ii) "prefer not to have migrants as neighbors"; (iii) "prefer not to have people who speak a different language as neighbors."[19]

We also check whether proximity to refugee routes affects attitudes to other minority groups such as homosexuals, people of a different race, and Roma people. We find no effects.[20] These results suggest that proximity to the refugee transit routes only leads to negative attitudes towards migrants and has no impact on attitudes towards other minorities.

LiTS also includes questions on trust in foreigners and foreign investors. We find that localities closer to the migration routes are more likely to have lower trust in foreigners. At the same time, there is no effect on trust in foreign investors; therefore, the negative attitudes towards foreigners are more likely to be driven by distrust of migrants rather than foreign investors.

7.4 Exploring the Mechanisms

In this section, we explore potential mechanisms underlying our main result. First, we focus on the confidence in government institutions and perceptions of political stability, as these can affect incentives and behavior of entrepreneurs. Second, we consider individual-level willingness to take risks. In each case we use our fully-saturated IV specification, including all the controls.

[19] These results are consistent with the recent research that finds that immigration attitudes are shaped by economic and sociotropic concerns (Hainmueller and Hopkins, 2015; Grigorieff et al., 2020; Alesina et al., 2019).

[20] We have also found no results for attitudes towards families with children, drug addicts, elderly people, poor people, heavy drinkers, and unmarried couples living together. The results that are available upon request.

7.4.1 Confidence in Institutions, Law and Order, and Perceived Political Stability

The first potential mechanism is related to the confidence in institutions and perceived political stability. In Table 9, we use several institutional trust and perceived stability related outcomes and find that the respondents are less (more) likely to trust their regional and local governments and be happy with the political situation as the distance to migrant routes decreases (increases). Looking at other variables, we find no statistically significant relationship between exposure to transit migration and trust in the armed forces, life satisfaction, job satisfaction, optimism, willingness to pay extra tax or satisfaction with economic or financial situation.[21] The null effects on satisfaction with financial situation also implies that nearby localities were not differentially affected by the 2008 financial crisis.

Taken together, the results suggest that exposure to mass transit migration does reduce confidence in political institutions and perceived political instability and rule of law.

7.4.2 Risk Attitudes

We explore the impact of exposure to mass transit migration on a perception-based measure "Willingness to take risks." 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 and means that you are very much willing to take risks."

As shown in Table 9, natives' willingness to take risks substantially decreases in localities that are closer to migrant routes.

7.5 Ruling Out Alternative Mechanisms

In this section we explore and rule out plausible alternative mechanisms that could explain the effect of exposure to transit migration on entrepreneurial activity.

7.5.1 Are the Results Driven by Changes in Interpersonal Trust?

A potential alternative 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). Interpersonal trust can reduce the transaction costs of commercial actions and the inherent risks in entrepreneurship (Welter, 2012). Low trust is found to restrict market entry and enterprise growth (Welter and Smallbone, 2006). Guiso et al. (2006) argue that in the

[21] All satisfaction-related questions take a value of one if the respondent answers "agree" or "strongly agree". The variable "Willingness to pay extra taxes" 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.

context of potentially incomplete contracts (to which an entrepreneur is likely to be exposed) trust becomes crucial — and find a strong relationship between trust and the likelihood of becoming an entrepreneur.[22]

As shown in Table 9, we find no effects for interpersonal trust, nor for the belief that a lost wallet is likely to be returned.[23]

7.5.2 Are the Results Driven by Changes in Local Economic Activity?

Another alternative explanation could be related to a shock in economic activity caused by the influx of refugees. If this were the case, the effect on entrepreneurship would have been explained—at least partially—by changes in the economic conditions (which could have affected the demand for salaried workers, for instance) of the localities close to the migration routes (instead of being explained by changes in risk attitudes or confidence in institutions).

We directly test this hypothesis by estimating our main model using local economic activity as an outcome. Given that our unit of observation is the locality and official measures of economic activity at such granular level do not exist, we follow Henderson et al. (2011) and Henderson et al. (2012) and proxy economic activity by high-resolution data on nighttime light density (that is, luminosity). The data on nighttime light density come from DMSP-OLS and VIIRS[24]. The DMSP-OLS data span until 2013. The VIIRS data are available for 2015-2016. As the nighttime light density data in 2010 and 2016 come from different sources (and thus are not directly comparable), we normalize each value to 0-1 range within each year. For robustness, we define four variables to proxy economic activity: the median and mean of luminosity in a 10-kilometer and 20-kilometer radius of each locality (all of them normalized, as explained above).

The results are presented in Table 10. In every specification we find no significant effects, suggesting that proximity to a migration route does not directly affect economic activity.

7.5.3 Are the Results Driven by Changes in Local Labor Markets?

Large-scale migration may disrupt local labor markets in a number of ways. It could lead to a decline in wages and to an increase in local unemployment for natives — depending on substitutability between migrants and natives.[25] Construction and management of refugee processing and integration centers can

[22] An important issue regarding interpersonal trust is that the self-reported measures may 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, these are the beliefs that are more malleable and, therefore, more likely to be affected by shocks (Sapienza et al., 2013; Ananyev and Guriev, 2019).

[23] All trust-related questions take a value of one if the respondent answers "some trust" or "complete trust".

[24] See https://ngdc.noaa.gov/eog/dmsp/downloadV4composites.html and https://ngdc.noaa.gov/eog/viirs/download_dnb_composites.html.

[25] See for example, Card, 1990; Del Carpio and Wagner, 2015; Tumen, 2016; Borjas and Monras, 2017.

create public jobs for natives, which can negatively affect the entrepreneurial activity.

In Table 11, we present results for four local labor market outcomes: self-employment (included again in Column 1 for comparison purposes); wage employment (Column 2); unemployment (Column 3); and not in labor force (Column 4). By definition, the the coefficients in the four columns should add up to zero. We find that proximity to migrant routes has no statistically significant effects on wage employment or unemployment but has a negative effect on labour force participation.[26] The reduction in entrepreneurial activity does not result in an increase in salaried employment or unemployment; the disillusioned entrepreneurs leave the labor force.

8 Robustness, Exclusion Restriction, and Placebo Tests

In this section we present several robustness checks and document the absence of pre-trends.

8.1 Robustness to Alternative Sample Definitions

In Appendix Table A3, 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) extending our sample to include all working-age population by adding 18-24 year old (Column 3). Our findings also do not change, when we exclude: (i) circular migration countries Albania and Kosovo and (ii) Balkan countries that are not EU members.[27]

8.2 Robustness to Controlling for Subnational-Region-Year Fixed Effects

In Appendix Table A4, we show that our results are robust to controlling for subnational region-year fixed effects, which account for all potentially omitted variables that can vary across sub-regions and years (such as a diversion of public resources to specific regions for supporting local economies or refugee reception center openings).[28]

8.3 Robustness to Omitted Variables Bias

In order to explore the potential importance of unobservables, we follow the methodology proposed by Oster (2019). We present the results in Appendix Table A5. Column 1 reports the results from the fully-saturated OLS model, Column 2 reports the bounds on the treatment effect, and Column 3 reports the Oster's delta,

[26] These results are also robust to controlling for the labor market outcomes of respondents' partners.
[27] These results are available upon request.
[28] In total, we have 47 NUTS-1 level subnational regions or equivalents.

which indicates the degree of selection on unobservables relative to observables that would be needed to fully explain our results by the omitted variable bias.

The results are reassuring. Given the wide range of controls we include in our models, it seems implausible that unobserved factors are 79 to 194 times more important than the observables included in our preferred specification.Our results are therefore unlikely to be explained by the omitted variables bias.

8.4 Exclusion Restriction: Are the Results Driven by Proximity to Trade Routes?

A potential threat to our identification strategy could arise if localities that are closer to the "optimal" migrant routes are also closer to the main trade roads or economic hubs. For example, one may argue that our results could potentially be explained by trade-related shocks instead of the transit migration shock. For example, an economic downturn triggered by the Greek crisis which intensified between 2011 and 2015 or disruption of trade links due to the mass refugee migration could disproportionally affect localities that are close to trade routes. However, this would only be a problem if proximity to main roads had a direct effect on our outcomes, thus affecting the validity of our exclusion restriction. If that were the case, it would be possible to claim that the instrument (distance to the optimal migration routes) affected the outcomes through a third variable (distance to trade routes), different from the instrumented variable (distance to the actual migration routes).

To address these concerns, we estimate several placebo models using the distance to major roads and to major railroads (instead of distance to "optimal migration routes") as the treatment variable. We use harmonized data on routes and railroads for each country from the Digital Chart of the World (DCW).[29] The DCW was originally developed by the US Defense Mapping Agency and is the most comprehensive source of geolocalized data on railroads and roads, covering virtually the whole planet. For each locality we calculate the minimum distance to a road or a railroad. We then estimate equation 1 replacing $Distance_l$ with the distance to the closest primary road or railroad.

Both Appendix Figures A4 (roads) and A5 (railroads) show null effects. The fact that proximity to the major roads (a proxy for proximity to trade routes) did not directly affect the outcomes supports the validity of the exclusion restriction of our IV.

8.5 Are the Results Driven by Demographic Changes or Selective Outmigration?

A potential threat to our identification strategy would arise if there was a substantial change in the demographic composition between 2010 and 2016 that differentially affected localities close to or far from the migration routes. This could be a plausible concern if there were selective migration of natives (that is,

[29] See https://worldmap.harvard.edu/data/geonode:Digital_Chart_of_the_World.
All shapefiles are available at https://www.diva-gis.org/

moving in and out of localities that are located near migrant routes). If this were the case, then our estimates would be picking up the effect of the compositional change (for example, only risk averse individuals stayed in the localities close to the migrant routes). To rule out this possibility, in Appendix Table A6, we analyze the change in demographic composition as a function of the distance to migration routes. We find no evidence of such changes. We therefore rule out the possibility that our results are driven by groups with high (or low) entrepreneurial activity disproportionately moving out of (or into) localities closer to migrant routes.[30]

8.6 Absence of Pre-Trends

In Table A7, we report the result of a placebo test for pre-2010 trends in self-employment using our fully saturated OLS and IV models. Before 2010, there was only one wave of LiTS administered in 2006. The 2006 wave does not include the "tried to set up a business" variable and, hence, we carry out the analysis for the self-employment status only.

Table A7 shows that the exposure to migration routes between 2010 and 2016 did not affect the self-employment between 2006 and 2010, a pre-treatment period.

8.7 Heterogeneity Analysis

Table A8 presents the IV results for subsamples based on various demographic characteristics.[31] 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 characteristics, locality, year and country by year fixed effects.

The heterogeneity analysis reveals no significant gender difference when consider the outcome "tried to set up a business" but we observe heterogeneity with respect to educational attainment and age: younger individuals (ages 25-44) and those with less than tertiary education are less likely to report to have tried to set up a business. These differences in the magnitude of the pair estimates are statistically significant at the five per cent level. The heterogeneity patterns are less clear when the outcome is self-employment.

8.8 Robustness to Alternative Clustering

In our main specification, we cluster standard errors at the locality level. Appendix Table A9 shows that our results are robust to using alternative assumptions about the variance-covariance matrix: to clustering at the

[30] We have also reproduced our main results in the subsample of respondents who had not left their locality of residence at least in the last 10 years, and found virtually identical results. These results are available upon request.

[31] In results not reported we also considered heterogeneity across country characteristics and found weaker evidence (with point estimates being negative similar to our main findings) of heterogeneity by EU-membership status and GDP per capita.

subnational-region-year level (assuming that residuals comove within these units) as well as to correcting for spatial correlation following Conley (1999).

9 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 this paper, we carry out the first large-scale analysis of the impact of this mass inflow of refugees on the transit countries. Analyzing data from 18 European countries in 2010 and 2016, we show that exposure to transit refugee flows had a significant negative effect on entrepreneurial activity of the natives. We also find that the exposure to mass transit migration has a major negative impact on confidence in institutions, on perceived political and legal stability, and on willingness to take risks; these findings point to potential channels explaining the relationship between exposure to mass transit migration and entrepreneurship. We also document a sizable increase in negative attitudes to migrants, while finding no effect on attitudes towards any other minority.

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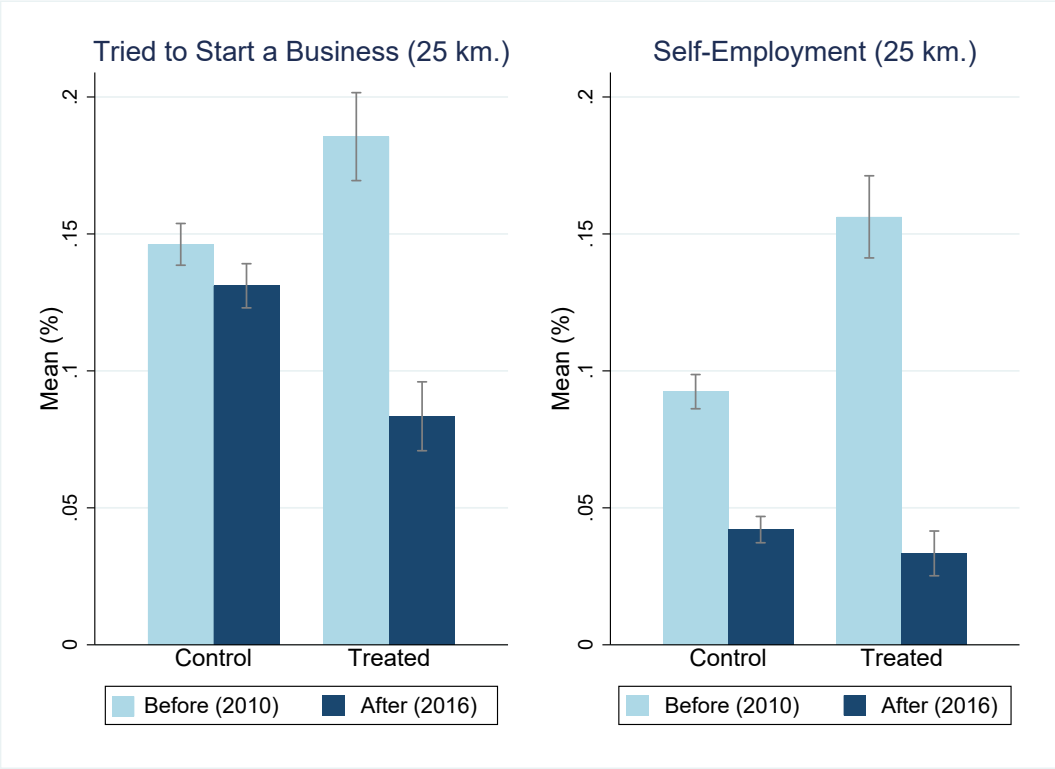
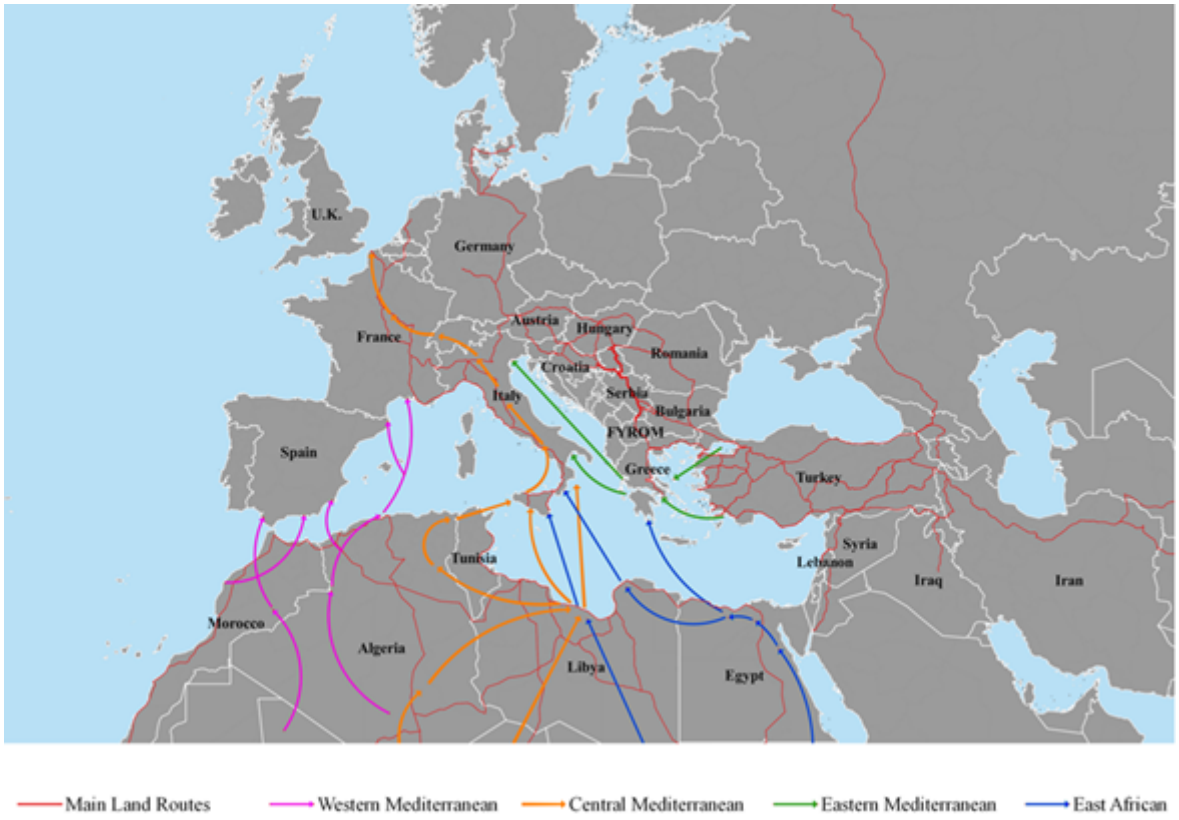
Figures

Figure 1: Exposure to transition migration routes and entrepreneurship



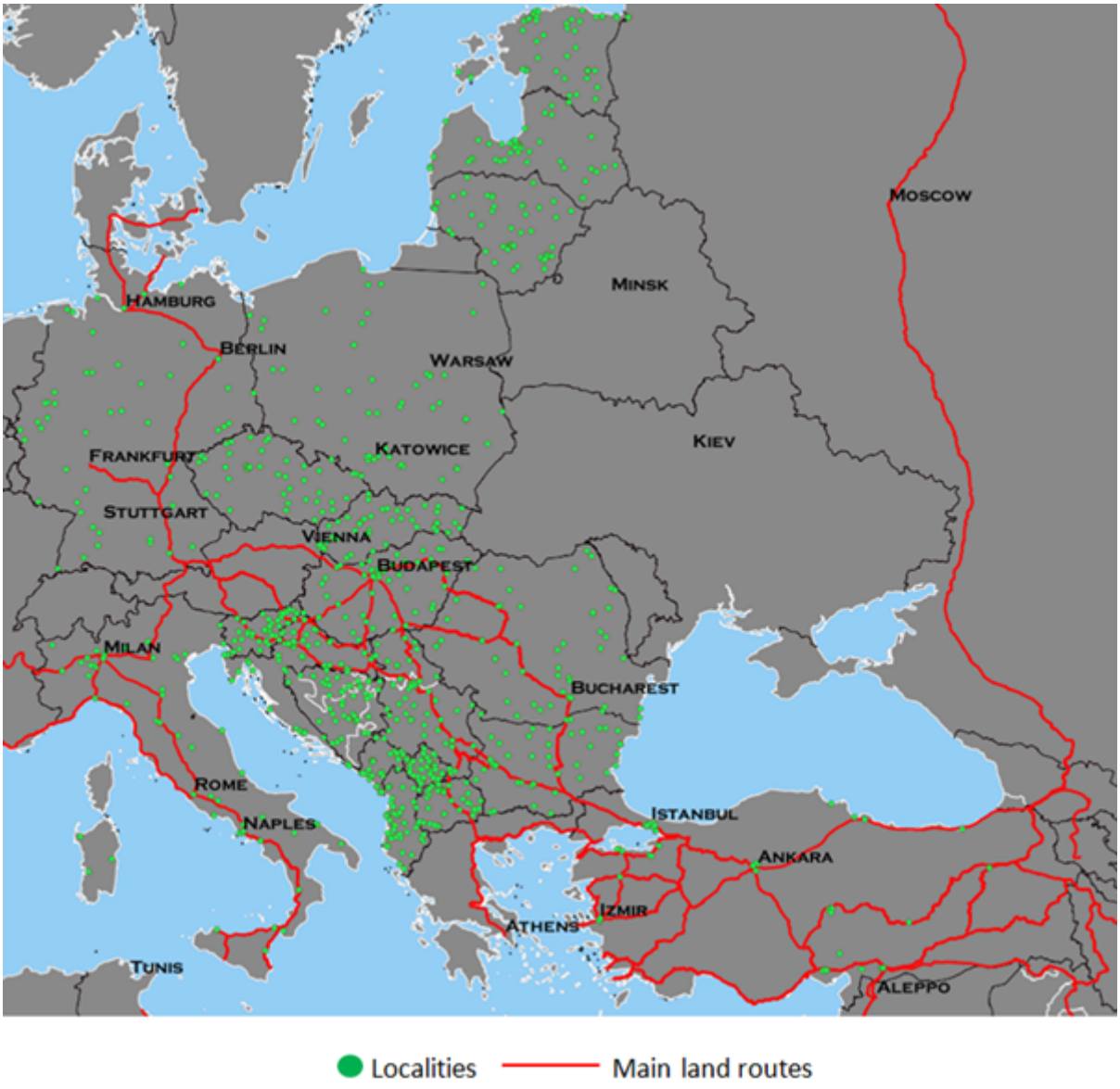
Notes: 'Tried to start a business' takes a value of one if the individual answered positively to the question "Have you ever tried to set up a business?" and zero otherwise. 'Self-employment' takes a value of one if the individual declared themselves self-employed at the moment the survey was conducted and zero otherwise. The charts show the percentages of positive responses. In both charts, 'Before' refers to 2010 and 'After' to 2016. 'Treated' are localities within a radius of 25 km from the closest migration route (175 localities); the remaining 603 localities are 'Control'. The chart shows 95% confidence intervals.

Figure 2: Mediterranean Sea Routes and Main Land Routes



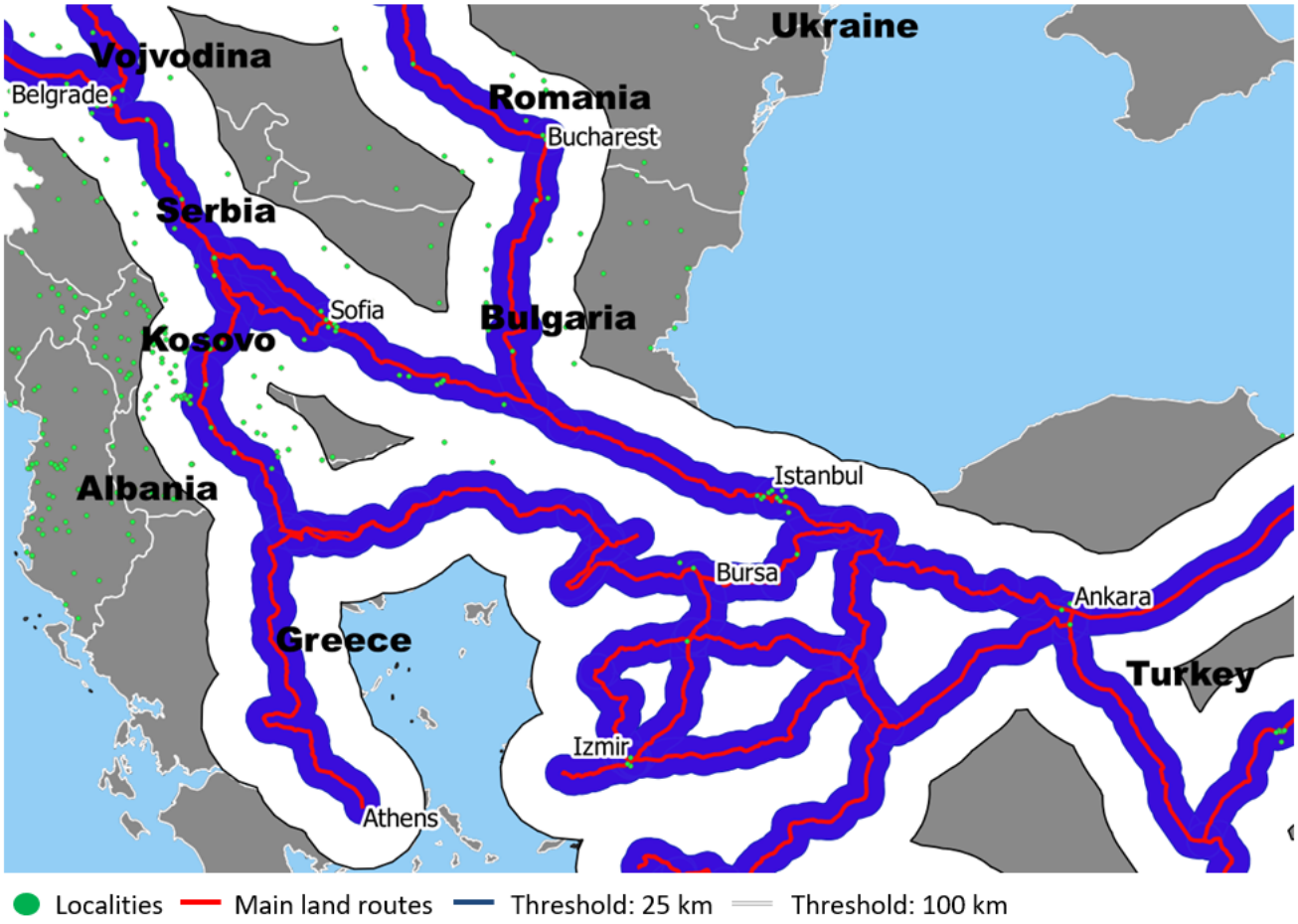
Source: IOM and authors' calculations. The map is for illustration purposes only. Names and boundaries do not imply official endorsement or acceptance by the EBRD or IOM.

Figure 3: *Life in Transition Survey* Localities



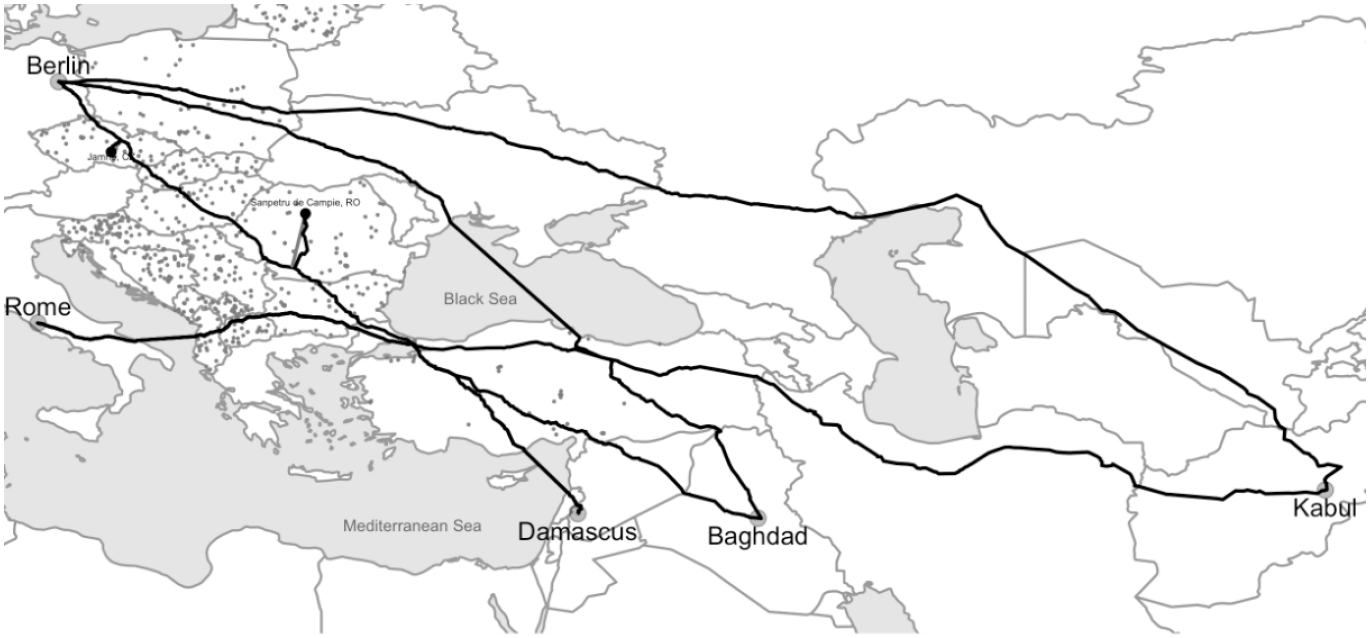
Source: *Life in Transition Survey* and IOM. Notes: The map illustrates all localities used in the sample. Names and boundaries do not imply official endorsement or acceptance by the EBRD or IOM.

Figure 4: Zoomed Image for Treatment and Control Localities



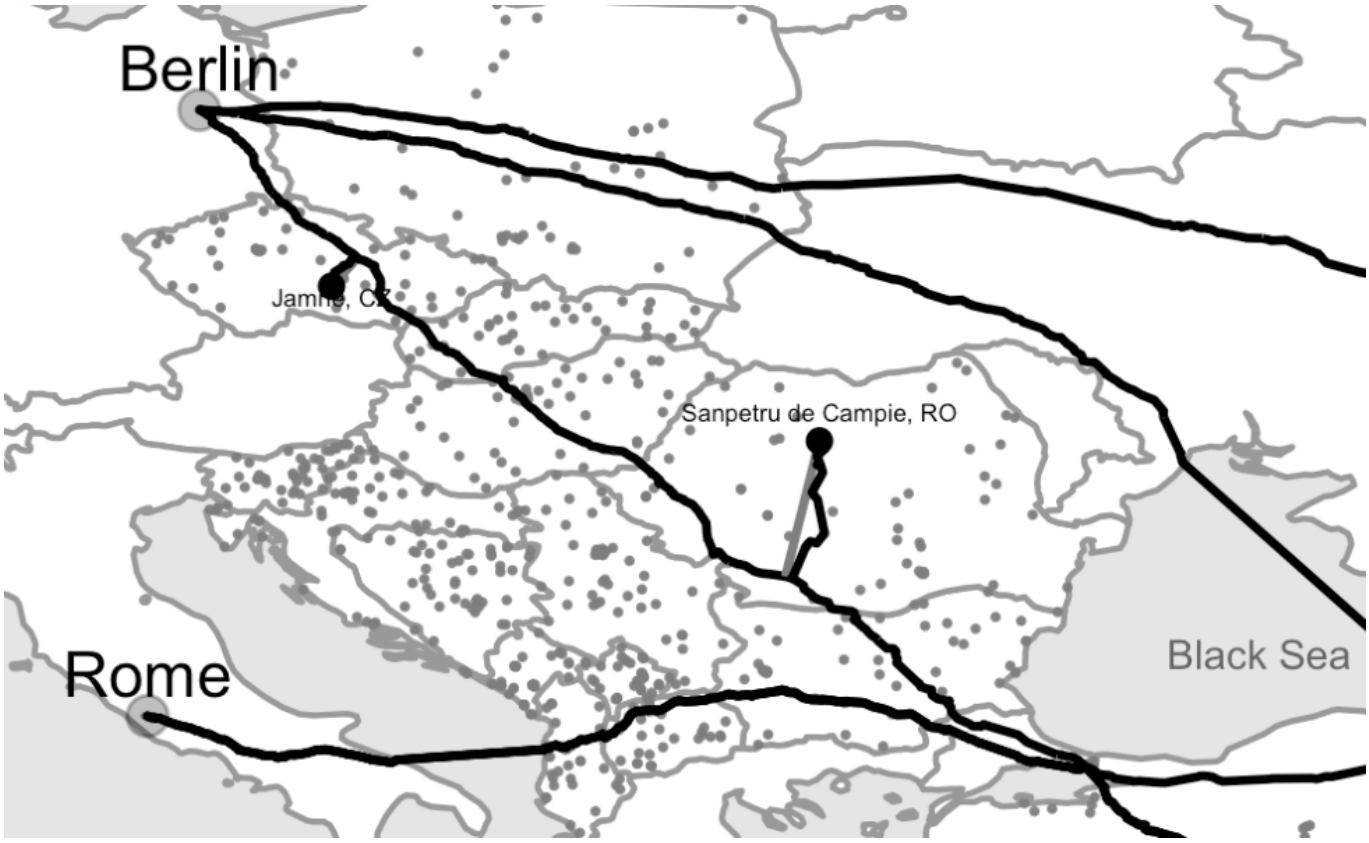
Source: Life in Transition Survey and IOM. Notes: The map provides a zoomed image for treatment and control localities based on alternative distances to migrant routes. Names and boundaries do not imply official endorsement or acceptance by the EBRD or IOM.

Figure 5: Construction of the Instrument: Routes that Minimize Walking Time



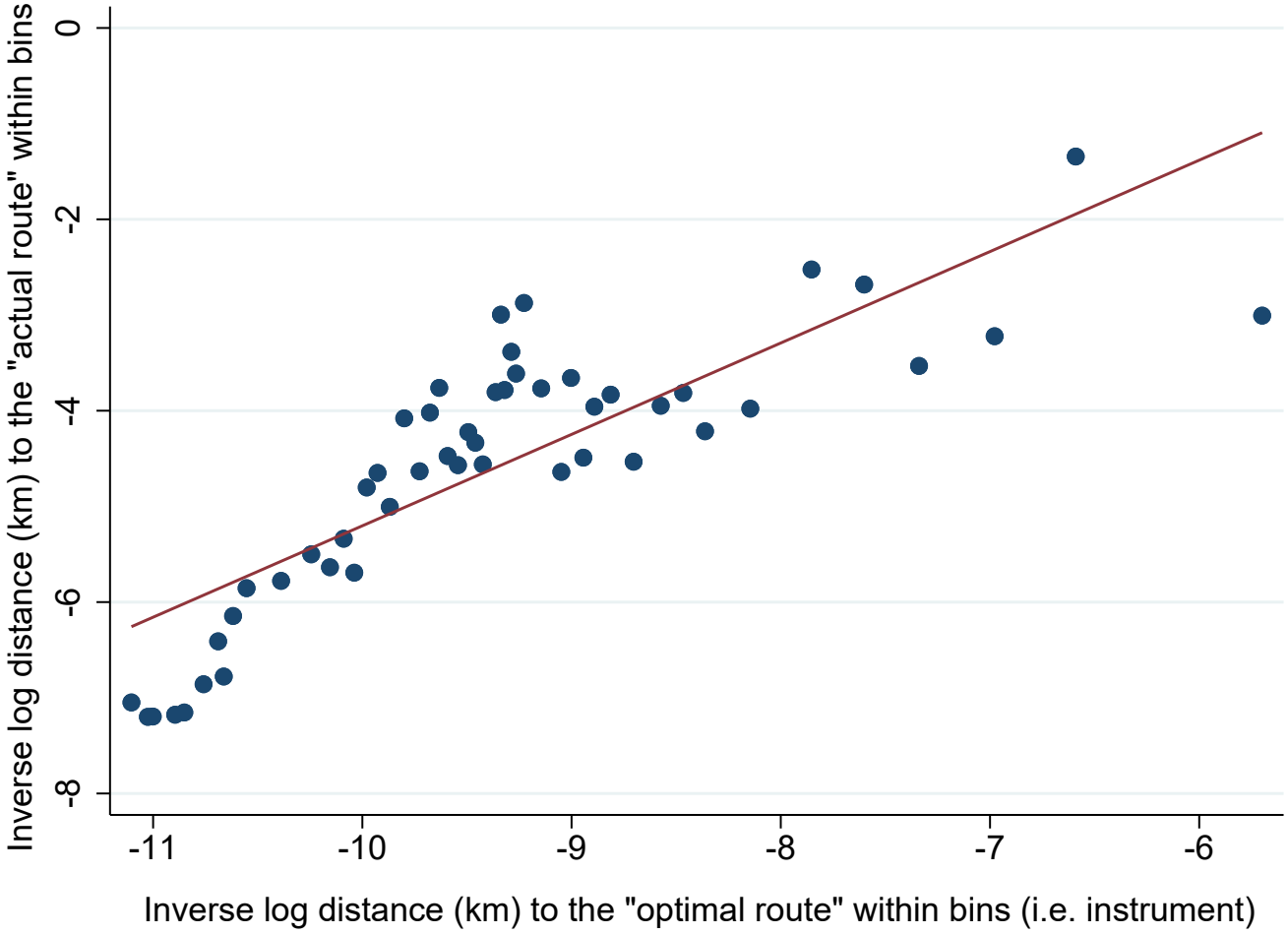
Source: Google Maps, *Life in Transition Survey*, IOM. Names and boundaries do not imply official endorsement or acceptance by the EBRD or IOM.

Figure 6: Construction of the Instrument: Zoomed-In Image



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

Figure 7: IV First Stage



Notes: PSU-level observations are aggregated into 50 equal-sized bins.
Source: Google Maps, Life in Transition Survey.

Tables

Table 1: (a) Summary statistics: outcomes and and socio-demographic characteristics

	(Localities that are nearby migrant routes, threshold: 25 km or less)		(Localities that are further away from migrant routes, threshold: more than 25 km)	
	Pre-treatment (2010)	Post-treatment (2016)	Pre-treatment (2010)	Post-treatment (2016)
Main Outcome Variables				
Tried to set up a business	0.19 (0.39)	0.08 (0.28)	0.15 (0.35)	0.13 (0.34)
Self-employment rate	0.16 (0.36)	0.03 (0.18)	0.09 (0.29)	0.04 (0.20)
Employment rate (exc. Self-employment)	0.63 (0.48)	0.59 (0.49)	0.49 (0.50)	0.53 (0.50)
Unemployment rate	0.05 (0.22)	0.06 (0.23)	0.05 (0.21)	0.09 (0.29)
Control Variables				
Age	44.19 (11.42)	44.35 (11.25)	43.44 (11.53)	44.79 (11.09)
Male	0.44 (0.50)	0.49 (0.50)	0.41 (0.49)	0.50 (0.50)
No degree	0.03 (0.16)	0.01 (0.08)	0.03 (0.17)	0.01 (0.12)
Primary education	0.11 (0.32)	0.13 (0.33)	0.14 (0.34)	0.10 (0.30)
Lower secondary education	0.52 (0.50)	0.56 (0.37)	0.52 (0.49)	0.55 (0.35)
Higher secondary education (<15 years)	0.13 (0.34)	0.16 (0.36)	0.13 (0.33)	0.15 (0.35)
Married (<15 years)	0.65 (0.48)	0.78 (0.41)	0.68 (0.47)	0.74 (0.44)
Have a bank account	0.67 (0.47)	0.79 (0.41)	0.64 (0.48)	0.77 (0.42)
Household owns a house	0.84 (0.38)	0.79 (0.41)	0.85 (0.36)	0.84 (0.37)
Household owns a car	0.63 (0.48)	0.74 (0.44)	0.62 (0.49)	0.75 (0.43)
Number of Observations	2,253	1,858	8,256	6,729

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

Table 2: (b) Summary statistics: preferences, beliefs and attitudes

	(Localities that are nearby migrant routes, threshold: 25 km or less)		(Localities that are further away from migrant routes, threshold: more than 25 km)	
	Pre-treatment (2010)	Post-treatment (2016)	Pre-treatment (2010)	Post-treatment (2016)
Willingness to take risk	0.09 (0.28)	0.04 (0.19)	0.08 (0.28)	0.08 (0.27)
Law and order exist in the country	0.30 (0.46)	0.13 (0.34)	0.35 (0.48)	0.27 (0.44)
Peace and stability exist in the country	0.49 (0.50)	0.17 (0.37)	0.56 (0.50)	0.34 (0.47)
Happy with the political situation	0.2 (0.40)	0.26 (0.44)	0.18 (0.38)	0.34 (0.48)
Happy with the economic situation	0.14 (0.35)	0.22 (0.41)	0.15 (0.35)	0.27 (0.44)
Willingness to pay extra tax	0.62 (0.48)	0.60 (0.49)	0.63 (0.48)	0.62 (0.48)
Life satisfaction	0.37 (0.48)	0.42 (0.49)	0.4 (0.49)	0.53 (0.50)
Job satisfaction	0.5 (0.50)	0.49 (0.50)	0.56 (0.50)	0.54 (0.50)
Satisfaction with financial situation	0.22 (0.41)	0.33 (0.47)	0.26 (0.44)	0.38 (0.48)
Children will have a better life	0.34 (0.47)	0.36 (0.48)	0.46 (0.50)	0.47 (0.50)
Trust in national government	0.21 (0.40)	0.17 (0.37)	0.23 (0.42)	0.23 (0.44)
Trust in regional government	0.23 (0.42)	0.22 (0.42)	0.26 (0.44)	0.27 (0.44)
Trust in local government	0.26 (0.44)	0.27 (0.44)	0.32 (0.47)	0.34 (0.47)
Trust in armed forces	0.42 (0.49)	0.55 (0.50)	0.49 (0.50)	0.60 (0.49)
Trust in foreign investors	0.21 (0.41)	0.25 (0.43)	0.27 (0.44)	0.28 (0.45)
Trust in foreigners	0.39 (0.49)	0.18 (0.39)	0.34 (0.47)	0.18 (0.38)
Trust in other people	0.27 (0.44)	0.25 (0.44)	0.32 (0.47)	0.31 (0.46)
Lost wallet likely to be returned	0.3 (0.46)	0.33 (0.47)	0.33 (0.47)	0.40 (0.49)
Attitudes towards migrants				
Immigrants make a valuable contribution	0.19 (0.39)	0.06 (0.23)	0.23 (0.42)	0.18 (0.38)
Immigrants are a burden	0.49 (0.50)	0.80 (0.40)	0.39 (0.49)	0.58 (0.49)
Prefer not to have ... as neighbours				
... Migrants	0.15 (0.36)	0.48 (0.50)	0.14 (0.35)	0.25 (0.43)
... Homosexuals	0.54 (0.50)	0.47 (0.50)	0.56 (0.50)	0.47 (0.50)
... People of a different race	0.12 (0.33)	0.11 (0.31)	0.15 (0.34)	0.11 (0.32)
... People who speak a different language	0.05 (0.22)	0.04 (0.20)	0.06 (0.24)	0.03 (0.18)
... Roma people	0.41 (0.49)	0.36 (0.48)	0.42 (0.49)	0.37 (0.48)

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

Table 3: OLS Estimates

	(1) OLS	(2) OLS	(3) OLS	(4) OLS
Outcome: Tried to set up a business				
Migration effect: 2016*(-log distance)	-0.021***	-0.018***	-0.018***	-0.018***
	(0.003)	(0.005)	(0.005)	(0.005)
R-squared	0.080	0.082	0.092	0.099
Outcome: Self-employment				
Migration effect: 2016*(-log distance)	-0.018***	-0.011**	-0.011**	-0.010**
	(0.003)	(0.005)	(0.005)	(0.005)
R-squared	0.123	0.141	0.145	0.147
N	19,096	19,096	19,096	19,096
Locality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Country by year fixed effects	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. 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: OLS Estimates by Thresholds

	Tried to set up a business	Self-employment
Treatment: 2016*(Dummy for 0-25 km)	-0.09***	-0.08***
	(0.016)	(0.017)
Treatment: 2016*(Dummy for 25-100 km)	-0.020	-0.029*
	(0.016)	(0.016)
N	19,096	19,096
Locality fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Country by year fixed effects	Yes	Yes
Demographic characteristics	Yes	Yes
Individual wealth and assets	Yes	Yes

Notes: * significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent. 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. *Treatment: 2016*(Dummy for 100 km and above)* is the reference category in all models.

Table 5: IV First-stage Estimates

	(1)	(2)	(3)	(4)
	IV - First Stage	IV - First Stage	IV - First Stage	IV - First Stage
Outcome: 2016(-log distance to actual route)*				
Instrument: 2016*(-log distance to optimal route)	0.984***	0.679***	0.679***	0.679***
	(0.097)	(0.157)	(0.156)	(0.156)
First-stage F statistics	102.06	18.82	18.84	18.90
N	19,096	19,096	19,096	19,096
Locality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Country by year fixed effects	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. 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: IV Second Stage Estimates

	(1)	(2)	(3)	(4)
	IV	IV	IV	IV
Outcome: Tried to set up a business				
Migration effect: 2016*(-log distance)	-0.031***	-0.039***	-0.039***	-0.037***
	(0.005)	(0.013)	(0.013)	(0.013)
Outcome: Self-employment				
Migration effect: 2016*(-log distance)	-0.033***	-0.021**	-0.021**	-0.020*
	(0.005)	(0.010)	(0.010)	(0.010)
N	19,096	19,096	19,096	19,096
First-stage F statistics	102.06	18.82	18.84	18.90
Locality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Country by year fixed effects	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. 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: Reduced Form Estimates

	(1)	(2)	(3)	(4)
	Reduced Form	Reduced Form	Reduced Form	Reduced Form
Outcome: Tried to set up a business				
Instrument: 2016*(-log distance to optimal route)	-0.031***	-0.027***	-0.027***	-0.026***
	(0.005)	(0.009)	(0.009)	(0.009)
Outcome: Self-employment				
Instrument: 2016*(-log distance to optimal route)	-0.033***	-0.014*	-0.014*	-0.014
	(0.005)	(0.008)	(0.008)	(0.008)
N	19,124	19,124	19,124	19,124
Locality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Country by year fixed effects	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. 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 8: IV Estimates – Attitudes towards Migrants and Placebo Outcomes

	(1)	(2)	(3)
Outcomes	Coefficient on Migration effect: 2016*(-log distance) (standard error)	First-stage F statistics	N
Immigrants are a burden for the national social protection system	0.061*	22.04	17,017
	(0.032)		
Prefer not to have migrants as neighbors	0.079***	18.94	19,071
	(0.028)		
Prefer not to have people who speak a different language as neighbors	0.042***	18.94	19,071
	(0.013)		
Prefer not to have homosexuals as neighbors	-0.060	18.94	19,071
	(0.037)		
Prefer not to have people of a different race as neighbors	0.022	18.94	19,071
	(0.018)		
Prefer not to have Roma people as neighbors	0.013	18.94	19,071
	(0.025)		
Trust in Foreigners	-0.061**	16.94	17,951
	(0.028)		
Trust in Foreign Investors	-0.025	16.69	17,204
	(0.021)		

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

Table 9: IV Estimates: Institutional Trust, Perceived Instability, Risk Attitudes and Interpersonal Trust

	IV	IV	IV	IV
Outcome is ⇒	Trust in national government	Trust in regional government	Trust in local government	Trust in armed forces
Migration effect: 2016*(-log distance)	-0.040*	-0.069***	-0.052**	0.007
	(0.024)	(0.023)	(0.024)	(0.023)
N	18,588	13,557	18,527	18,207
First-stage F statistics	18.05	13.30	17.81	17.81
Outcome is ⇒	Law and order exist in the country	Peace and stability exist in the country	Happy with the political situation	Happy with the economic situation
Migration effect: 2016*(-log distance)	-0.039*	-0.047*	-0.062**	-0.023
	(0.021)	(0.028)	(0.025)	(0.021)
N	17,415	18,685	18,484	18,711
First-stage F statistics	17.62	18.31	17.96	18.89
Outcome is ⇒	Life satisfaction	Job satisfaction	Satisfaction with financial situation	Children will have a better life
Migration effect: 2016*(-log distance)	-0.015	0.015	-0.019	0.028
	(0.022)	(0.022)	(0.020)	(0.040)
N	18,907	13,252	18,794	17,655
First-stage F statistics	18.52	16.22	18.44	16.84
Outcome is ⇒	Willingness to pay extra tax	Willingness to take risk	Lost wallet likely to be returned	Trust in other people
Migration effect: 2016*(-log distance)	0.000	-0.089***	-0.018	-0.008
	(0.028)	(0.020)	(0.025)	(0.029)
N	19,124	18,752	19,085	18,158
First-stage F statistics	18.93	18.53	18.80	17.29

Notes: * significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent. Specification is Column 4 of Table 6. For details on control variables, see notes to Table 6.

Table 10: IV Estimates: Luminosity

	(1)	(2)
Outcome is ⇒	Mean Luminosity (10 km)	Median Luminosity (10 km)
Migration effect: 2016*(-log distance)	0.069	0.050
	(0.058)	(0.105)
First-stage F statistics	18.86	18.86
N	19,124	19,124
Mean	0.089	0.072
Outcome is ⇒	Mean Luminosity (20 km)	Median Luminosity (20 km)
Migration effect: 2016*(-log distance)	0.086	0.038
	(0.059)	(0.072)
First-stage F statistics	18.86	18.86
N	19,124	19,124
Mean	0.067	0.031

Notes: * significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent. All models include locality, year and country by year fixed effects.

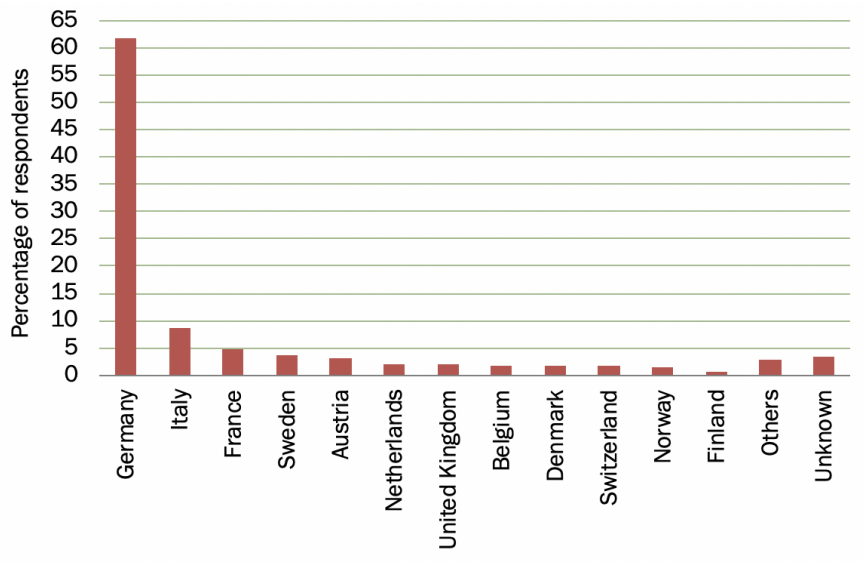
Table 11: IV Estimates: Changes in Labor Market Outcomes

	(1)	(2)	(3)	(4)
	IV	IV	IV	IV
	Self-employment	Wage employee	Unemployed	Out of labor force
Migration effect: 2016*(-log distance)	-0.020*	-0.012	-0.012	0.044***
	(0.010)	(0.017)	(0.008)	(0.017)
N	19,096	19,096	19,096	19,096
First-stage F statistics	18.90	18.90	18.90	18.90

Notes: Specification is Column 4 of Table 6. For details on control variables, see notes to Table 6.

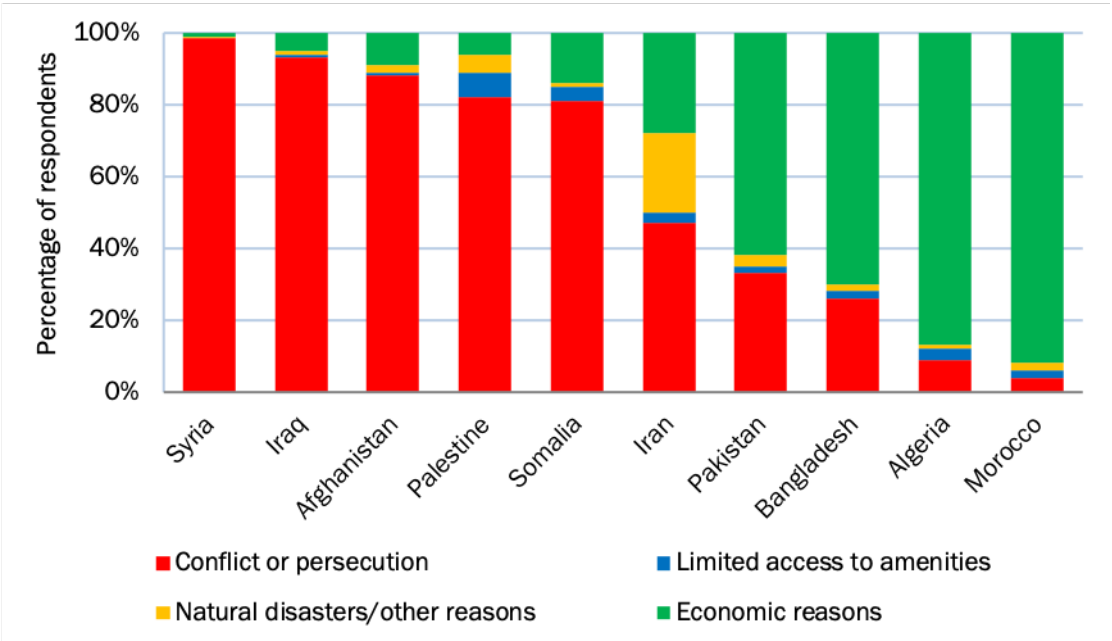
A Appendix Figures and Tables

Figure A1: Intended Destination Countries



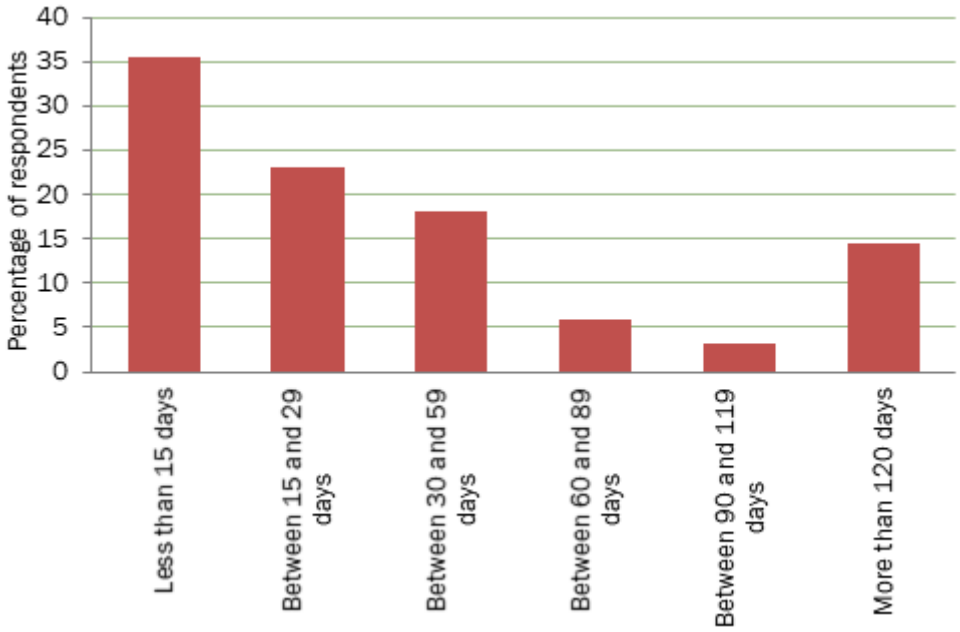
Source: Flow Monitoring Surveys, 2015 and 2016. Intended destination countries of respondents from Afghanistan, Iraq and Syria.

Figure A2: Reasons for Leaving by Main Source Countries



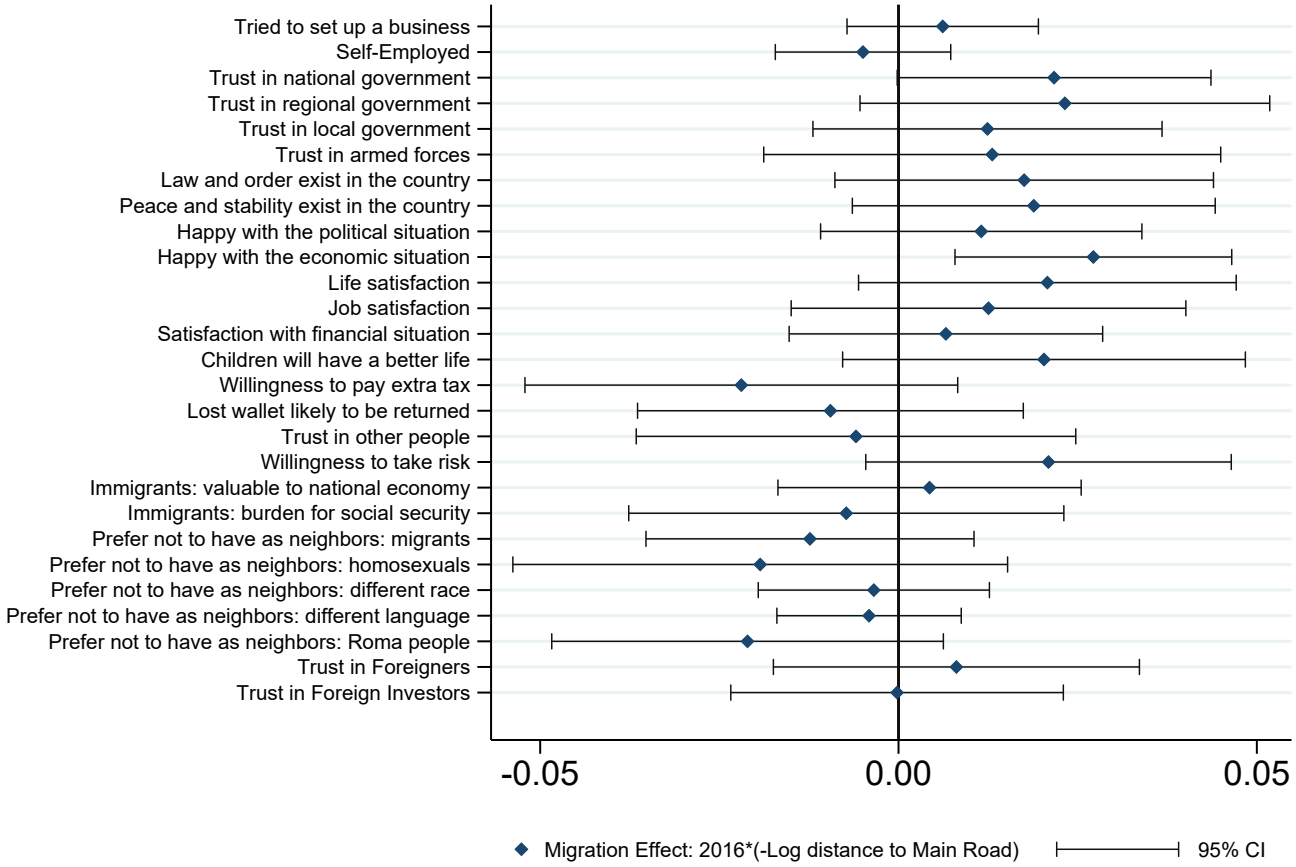
Source: Flow Monitoring Surveys, 2015 and 2016.

Figure A3: Number of Days Spent in Transit



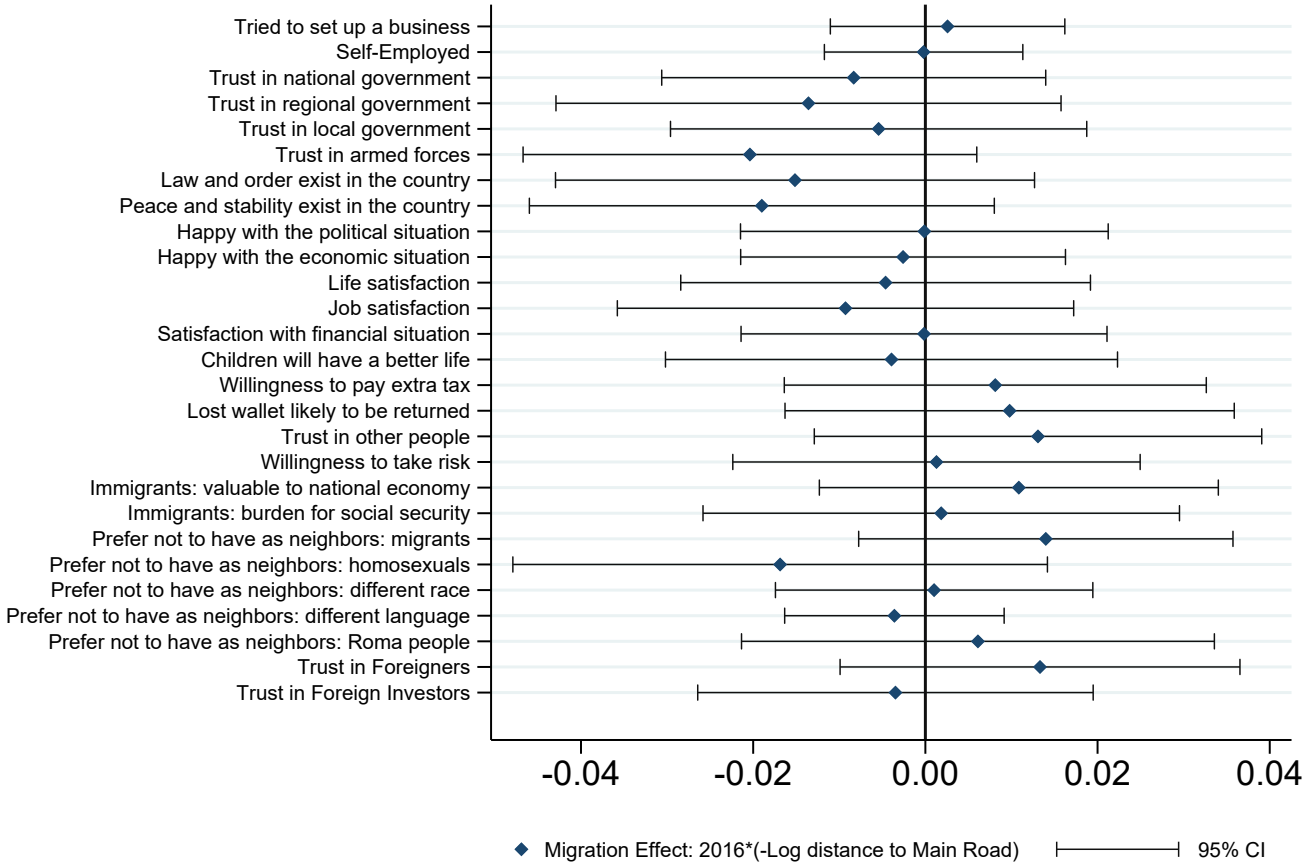
Source: Flow Monitoring Surveys, 2015 and 2016.

Figure A4: Placebo Estimates: Main Roads



Notes: Specification is Column 4 of Table 6. For details on control variables, see notes to Table 6.

Figure A5: Placebo Estimates: Main Railroads



Notes: Specification is Column 4 of Table 6. For details on control variables, see notes to Table 6.

Table A1: Mode of Transport by Survey Country

	(1) Walk	(2) Land (vehicle, bus or train)	(3) Boat	(4) Air
Survey				
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 A2: Number of Localities and Observations by Country

Country	Number of Localities	Number of observations
Albania	39	1,165
Bosnia and Herzegovina	50	1,339
Bulgaria	47	1,127
Croatia	50	1,272
Czech Republic	45	571
Estonia	13	1,029
FYR Macedonia	35	946
Hungary	49	1,071
Kosovo	33	1,180
Latvia	50	1,007
Lithuania	49	990
Montenegro	42	1,025
Poland	45	1,027
Romania	49	1,050
Serbia	48	1,237
Slovak Republic	40	800
Slovenia	50	827
Turkey	44	1,461
Total	778	19,124

Notes: This table show the number of observations and localities included in the estimation sample used in the analyses. Source: Life in Transition Survey, 2010 and 2016.

Table A3: IV Estimates: Robustness Checks

	(1)	(2)	(3)
	IV	IV	IV
	Excl. countries with conflict history (Bosnia, Croatia, FYR Macedonia, Kosovo, Montenegro and Slovenia)	Excluding Turkey	Working age population, 18-64
Outcome: Tried to set up a business			
Migration effect: 2016*(-log distance)	-0.048***	-0.037***	-0.035***
	(0.016)	(0.013)	(0.012)
N	12,535	17,663	21,293
Outcome: Self-employment			
Migration effect: 2016*(-log distance)	-0.021	-0.029***	-0.020**
	(0.013)	(0.010)	(0.010)
N	12,514	17,636	21,265
First-stage F statistics	14.23	14.83	21.38

Notes: * significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent. Specification is Column 4 of Table 6. For details on control variables, see notes to Table 6.

Table A4: IV Estimates: Controlling for Sub-region by Year Fixed Effects

	(1)
	IV
Outcome: Tried to set up business	
Migration effect: 2016*(-log distance)	-0.057***
	(0.021)
First-stage F statistics	7.44
N	19,096
Outcome: Self-Employment	
Migration effect: 2016*(-log distance)	-0.039**
	(0.019)
First-stage F statistics	7.44
N	19,124
Locality fixed effects	Yes
Year fixed effects	Yes
Sub-region by year fixed effects	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. Sub-region refers to NUTS-1 sub-region or equivalent. For details on control variables, see notes to Table 6.

Table A5: OLS Estimates: Robustness to Omitted Variables Bias

	(1)	(2)	(3)
	IV	Bounds on the Treatment Effect	Delta
		($\delta = 1$, $R_{max} = 1.3 * R$)	($\delta = 1$, $R_{max} = 1.3 * R$)
Outcome: Tried to set up business			
Migration effect: 2016*(-log distance)	-0.018***	(-0.0177, -0.0180)	194.15
	(0.005)		
R-squared	0.099		
N	19,096		
Outcome: Self-Employment			
Migration effect: 2016*(-log distance)	-0.0104**	(-0.0104, -0.0107)	79.00
	(0.005)		
R-squared	0.147		
N	19,096		

Notes: Notes: * significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent. Specification is Column 4 of Table 6. Bounds on the Migration effect: 2016*(-log distance) effect are calculated using Stata code psacalc, which calculates estimates of treatment effects and relative degree of selection in linear models as proposed in Oster (2019). δ is an estimate of the proportional degree of selection given a maximum value of the R-squared. δ is assumed to be 1 in the analysis, which means that the observed and the unobserved factors have an equally important effect on the coefficient of interest and higher delta values indicate (i.e., $\delta > 1$) less concerns about omitted variables bias. R_{max} specifies the maximum R-squared which would result if all unobservables were included in the regression. We define R_{max} upper bound as 1.3 times the R-squared (as recommended by Oster, 2019)) from the main specification that controls for all observables.

Table A6: IV Estimates – Out-Migration and Compositional Changes

	(1)	(2)	(3)
Outcome is ⇒	Tertiary	Less than tertiary	Single
Migration effect: 2016*(-log distance)	0.028	-0.028	-0.006
	(0.017)	(0.017)	(0.012)
First-stage F statistics	18.95	18.95	18.95
N	19,197	19,197	19,197
Outcome is ⇒	Ages 25-44	Ages 45-64	Resides in the same locality at least for 10 years
Migration effect: 2016*(-log distance)	-0.000	0.000	0.014
	(0.023)	(0.023)	(0.011)
First-stage F statistics	18.95	18.95	18.60
N	19,197	19,197	19,054

Notes: * significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent. All models control for locality, year, country by year fixed effects as well as individual wealth and assets.

Table A7: OLS and IV Estimates for LiTS I (2006) and LiTS II (2010)

	(1)	(2)	(3)	(4)
	OLS	OLS	OLS	OLS
Outcome: Self-employment				
Migration effect: 2010*(-log distance)	-0.005	-0.003	-0.004	-0.004
	(0.003)	(0.005)	(0.005)	(0.005)
	IV	IV	IV	IV
Outcome: Self-employment				
Migration effect: 2010*(-log distance)	-0.009	-0.008	-0.007	-0.007
	(0.007)	(0.009)	(0.008)	(0.008)
N	20207	20207	20207	20207
Locality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Country by year fixed effects	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. 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 A8: IV Estimates: Heterogeneity by Demographic Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)
	IV	IV	IV	IV	IV	IV
Sample is ⇒	Male	Female	Less than tertiary educ.	Tertiary educ. or more	Ages 25-44	Ages 45-64
Outcome: Tried to set up a business						
Migration Effect: 2016*(-log distance)	-0.035**	-0.031*	-0.049***	-0.033	-0.044***	-0.031*
	(0.016)	(0.018)	(0.015)	(0.026)	(0.014)	(0.017)
N	8,605	10,519	14,193	4,931	9,734	9,390
Outcome: Self-employment						
Migration Effect: 2016*(-log distance)	-0.014	-0.019	-0.019	-0.049*	-0.006	-0.057***
	(0.013)	(0.013)	(0.015)	(0.025)	(0.011)	(0.015)
N	8,592	10,504	14,169	4,927	9,719	9,377
First-stage F statistics	15.11	19.22	15.15	19.84	50.38	12.69

Notes: * significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent. Specification is Column 4 of Table 6. For details on control variables, see notes to Table 6.

Table A9: IV Second Stage Estimates – Robustness to Alternative Ways of Clustering

	(1) IV Conley Standard Errors	(2) IV Clustering at the sub-region and year level
Outcome: Tried to set up business		
Migration effect: 2016*(-log distance)	-0.037***	-0.037***
	(0.012)	(0.010)
Outcome: Self-Employment		
Migration effect: 2016*(-log distance)	-0.020*	-0.020**
	(0.011)	(0.010)
N	19,096	19,096
Locality fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Country by year fixed effects	Yes	Yes
Demographic characteristics	Yes	Yes
Individual wealth and assets	Yes	Yes

Notes: Notes: * significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent. 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. Sub-region refers to NUTS-1 sub-region or equivalent. Conley standard levels are corrected for arbitrary cluster correlation in spatial settings (using *acreg* command in STATA with the cut-off window of 100 km).