The Economics of Human Trafficking and Labour Migration: Micro-Evidence from Eastern Europe.[1]

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Abstract

Human trafficking is a humanitarian problem of global scale, but quantitative research on the issue barely exists. This paper is the first attempt to analyze the economics of human trafficking and labour migration based on micro data, using unique household surveys from Belarus, Bulgaria, Moldova, Romania, and Ukraine. We find that individual trafficking risks are much higher in regions with large emigration flows. The reasons are lower recruitment costs for traffickers in emigration areas and, to a lesser extent, negative self-selection into migration. Our results also indicate that illegal migration increases trafficking risks and that better information, e.g. through awareness campaigns, might be an effective strategy to reduce the crime. These findings may help policymakers to better target anti-trafficking efforts.

Keywords: Human Trafficking, Migrant Exploitation, Illegal Migration, Migration Networks, Eastern Europe

JEL classification: F22, J61, K42, O17

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"*Like many things that should have been stamped out a long time ago, slavery, it seems, is alive and well.*"

The Economist, 9 March 2005

"The trade in people is surely the most morally repugnant of all the illicit trades that flourish today. But it's deeply entrenched and interwoven with the world's ever more complex migration flows."

Moises Naim in "Illicit" (2005, p. 89)

1. Introduction

The exploitation and trafficking of men, women and children is a humanitarian problem of global scale. A recent study estimates that at least 12 million people worldwide are trapped in conditions of forced labour. Around a fifth of these are being exploited as a result of human trafficking (ILO 2005). These forms of modern day slavery have become one of the most profitable businesses in the world – and one of the most horrifying. Human trafficking is said to be the fastest growing source of income for organized crime and its third most important, exceeded only by drugs and arms trade (Obuah 2006).

After decades of neglect, public attention on the problem has increased considerably in recent years. Policymakers in international organisations and national governments all over the world as well as NGOs have augmented their efforts to combat trafficking and to raise public awareness on the issue.[3] There has also been a notable increase in donor funding, e.g. by the European Union and the US government.

Despite the policy relevance, academic research on the topic remains scarce, especially when it comes to economics. The large economic literature on organized crime and illicit activities (e.g. Fiorentini and Peltzman 1995 or Freeman 1999) has largely ignored the sizeable market of human trafficking and migrant exploitation. The same is true for the rapidly growing field on the economics of migration, which has been notably silent on the issue. As a result, and despite frequent calls for empirical research on the topic[4], there is still very little knowledge on human trafficking as an economic phenomenon. One major reason for this is the grave difficulty in gathering reliable and representative data.

This paper is the first to analyze the drivers of human trafficking with micro data and the tools and rationale of economics. Our theoretical argument is based on simple supply and

3 Most prominently, the UN issued the Protocol to Prevent, Suppress and Punish Trafficking in Persons (UN, 2000a) and the Protocol Against the Smuggling of Migrants (UN, 2000b), which entered into force in 2004 and 2003 respectively. In March 2007, the UN also formally launched a Global Initiative to Fight Human Trafficking (UN.GIFT). The work of counter-trafficking NGOs such as Free the Slaves or La Strada and pioneering books such as Bales (1999) have helped to increase awareness of the problem.

4 Gozdziak and Collett (2005, p.122) conclude that "future research needs to move beyond stating that there is a problem, to more systematic and rigorous data collection and analysis." Among others, similar calls have been made by Tyldum and Brunovskis (2005), Piper (2005) and Chand (2008).

demand considerations and rooted in the literature on the economics of crime and migration. In a nutshell, we argue that trafficking and exploitation are the sad but obvious consequence of migration pressure in a world of closed borders. The growing, but unsatisfied demand for legal migration options has created a breeding ground for criminal organisations and exploitative employers, who have learned to make a profit from people's desire to work abroad. Migration has become a multibillion-dollar industry that can be particularly lucrative for those willing to use physical violence and restraint.

Our focus on the close link between trafficking and labour migration differs from that of many recent media and policy reports.[5] Most reports point to legislation and law enforcement, poor border controls, bribery and corruption, or insufficient education as drivers of human trafficking. These factors certainly exacerbate the trafficking problem, but may not explain it at its core. We argue instead that it is first and foremost the wish for a better life abroad that puts millions of people at the risk of ending up in exploitative work conditions. Their willingness to depart and to take risks in the migration process can be easily exploited by criminal agents.

In line with the above, we expect the risk of human trafficking to be highest in areas with high rates of emigration. Simply put, "traffickers fish in the stream of migration" (Coomaraswamy 2001, p. 3), so that more people leaving means more people at risk. In addition, two channels may explain why individual trafficking risks increase with regional emigration rates.

The first channel relates to the demand side of the human trafficking market (criminal agents recruiting for employers abroad). We predict that recruitment costs for traffickers will be lower in areas of large-scale emigration. One reason is that it is easy to find potential victims, simply because so many people leave from there. The other reason is the agglomeration of shadow migration industries. Large migrant flows attract a variety of middlemen offering services such as false documents, smuggling across borders or work procurement abroad. The presence of these agents offers ample opportunities for traffickers as they can collaborate or free-ride on their reputation (Tamura 2007).

The second channel is linked to the supply side of the human trafficking market (vulnerable individuals willing to work abroad). Migrants departing from high migration areas are likely to be negatively self-selected and share characteristics that make them more vulnerable to trafficking. High-emigration areas are often disadvantaged in the first place, so that migrants from there may be more willing to take risks, and possibly even consent to hazardous working conditions abroad. It has also been shown that large-scale emigration can lower the costs of migration, thus fostering the migration of poorer, less educated workers (McKenzie and Rapoport forthcoming and Beine et al. forthcoming).

5 Compare e.g. ILO (2005), UNODC (2006), US State Department (2008).

In sum, we predict trafficking risks to be higher in high-migration areas (i) because traffickers benefit from lower recruitment costs and free-riding opportunities there and/or (ii) because those departing from high-migration areas can be more easily deceived.

To test our arguments, we use a novel and unique survey on human trafficking which covers 5513 randomly selected households from 82 regions in Belarus, Bulgaria, Moldova, Romania, and Ukraine. These Eastern European countries are among the most important source countries of human trafficking worldwide (ILO 2005). Human trafficking is defined as a situation in which an individual travelling abroad was locked and forced to work for no or little pay via means of coercion. As such, trafficking differs importantly from migrant smuggling, a commercial service that normally occurs with the consent of migrants, and from illegal migration, which does not typically involve any forms of exploitation. About 7 per cent of the migrant families (108 out of 1563 households) identified by the survey reported to have a trafficking victim among their members. This includes victims of both sexual and non-sexual forms of human trafficking, but not trafficked children.

To supplement our findings, we present an additional case study of Moldova, which has by far the highest prevalence of human trafficking among the five countries under study. The case study is based on a second dataset covering 1679 migrants from 211 localities in Moldova. Although this second survey does not explicitly focus on trafficking, it allows identifying worst forms of migrant exploitation and contains ample additional information on migrants' characteristics including their destination countries.

The key result is in line with our expectations. Individual trafficking risks increase with the size of migration flows from the region (five-country survey) or locality (Moldova case study). Migration prevalence and other proxies of migration pressure turn out to be key predictors of trafficking on the household level. Thus, we find that trafficking tends to occur where migration flows are largest, not in remote regions with no or little migration. This result holds when controlling for selection effects and a broad range of household and migrant attributes as well as characteristics of the locality, region and country. As to the potential channels explaining this finding, we find stronger evidence for demand-side than for supply-side factors. Beyond this, we can report two further main results. First, illegal migration patterns increase trafficking risks. Second, we present evidence that awareness campaigns could play a successful role in reducing trafficking risks. The incidence of trafficking is considerably lower in regions where the awareness of the phenomenon of human trafficking is high.

The rest of the paper is structured as follows: Section 2 defines the main concepts and summarizes the current state of knowledge on human trafficking. It also provides stylized facts on the patterns of migration and trafficking in Eastern Europe. Section 3 sketches our main argument. In section 4, we describe the data and our empirical strategy. Section

5 discusses the results and presents a number of robustness checks. Section 6 presents the case study on Moldova. Section 7 concludes.

2. What Do We Know About Human Trafficking?

2.1 Definitions

It is crucial to clearly define the concepts that lie at the core of this paper. We follow the UN protocols against human trafficking, which, after years of debate, succeeded in clearly defining and distinguishing these concepts.[6] In accordance with the UN definition, the main purpose of *smuggling* is to facilitate the illegal entry of a person into another country. Typically, migrants are smuggled with their consent, paying the smuggler for his service. The smuggler gains a material benefit, but does not necessarily exploit the migrant. In contrast, *trafficking* always involves the violation of human rights and severe forms of exploitation. Victims of trafficking are recruited, transported and forced to work by means of coercion. The main purpose of trafficking is *exploitation*, either sexual exploitation or other forms of economic exploitation. While these definitions are helpful from a legal perspective, trafficking, exploitation and smuggling are often interrelated.[7] Some migrants using smuggling services may depart voluntarily, but end up being exploited. In such cases, smugglers become traffickers.

2.2 Determinants of Human Trafficking

A fundamental breeding ground for trafficking and exploitation is the economic situation of people in poorer regions of the world, pushing vulnerable people to emigrate and seek better opportunities abroad (Bruckert and Parent 2002, Chand 2008). The large potential gains from migration[8], joint with network and herd effects have generated an unprecedented demand for legal migration to richer countries (World Bank 2005). However, with most middle and high-income country labour markets shut off, there is only very limited supply of legal employment opportunities abroad. At the same time, there is a constant demand for cheap manual workers and prostitutes in both developed and developing countries.

This situation has fostered the emergence of shadow migration industries offering services such as border crossings and the procurement of illegal work abroad (Orrenius 1999, Stalker 2000, Gathmann 2008). These activities, including its worst forms such as human trafficking, offer large monetary rewards and have to be seen in parallel to other fields of criminal intermediation, e.g. drugs and arms trade. Aronowitz (2001), Salt and Stein (1997) and Schloenhardt (1999) provide a detailed analysis of the business of

6 The exact definitions are given in UN (2000a) and UN (2000b).

7 In this paper, we use the terms "trafficking" and "exploitation" interchangeably.

8 For an individual, emigration can be the single most effective strategy to improve economic opportunities and increase income, often by a multiple. The large "place premium" in wages between sending and receiving countries is carefully documented in a recent paper by Clemens et al. (2008).

trafficking and exploitation. In essence, the organisational structure of trafficking networks is similar to that of providers of legal services. Trafficking organisations find and attract people willing to work abroad via advertisements in newspapers, the internet or through employment agencies. They also contact people on an individual basis, often via dispersed recruiters who may have even been trafficking victims themselves.

All available evidence indicates that human trafficking is an exceptionally lucrative business for criminal groups. In a recent study, the ILO (2005) estimates that sexual and labour exploitation yields US$ 32 billion of profits a year to the actors involved. This corresponds to an estimated US$ 13,000 of yearly profits for each forced labourer. Another estimated figure is the profit of criminal gangs from sex trafficking alone, which is conservatively estimated at US$ 5 to 7 billion a year, with Interpol giving a higher estimate of US$ 19 billion annually (ILO 2005, US State Department 2008).

The business can be highly attractive for criminal actors. Start-up costs are small and as Väyrynen (2005) harshly puts it, "people are a good commodity as they do not easily perish, but they can be transported over long distances and can be re-used and re-sold". Moreover, the risks of detection, prosecution or arrest are much lower compared to other fields of illegal activity such as drug or arms trade. Exploited victims often feel discouraged to denounce their traffickers, as they face the risk of deportation and other legal consequences when contacting authorities in receiving countries (Langberg 2005, Surtees 2005). And even if traffickers are arrested, penalties are relatively low compared to other illicit activities (LexisNexis 2008).

In economic research, two recent theoretical papers have shed some light on the link between migration and its dark side in the form of trafficking or forced labour.[9] Tamura (2007) focuses on the interaction of human smuggling and trafficking. In his model, migrants hire a smuggler to cross borders and find work abroad. Once migrants depart, it depends on the smuggler's decision and the profitability of exploitation whether they end up being trafficked or not. In a different setup, Friebel and Guriev (2006) model the market of illegal migration with debt/labour contracts. As most migrants cannot pay for migration costs in advance, criminal intermediaries and smugglers offer loans to potential migrants, which they have to pay back in the destination country. The contracts between migrants and intermediaries can only be enforced in the illegal sector, not in the legal one. Although the enforcement of such contracts can take place through coercion and punishment, the possible risk of exploitation and trafficking by the intermediaries is ruled out.

9 In a further paper, Dessy and Pallage (2006) focus on the trade off between trafficking and child labour. In their model, the risk of trafficking acts as a deterrent to sending children to work. They come to the conclusion that successful policy measures against trafficking may lead to an increase in child labour, because parents will be less afraid of letting their children work.

While theory is scarce, empirical evidence is even scarcer. There is very little systematic knowledge about which households and regions are most vulnerable to exploitation and human trafficking. We are aware of only one econometric study on human trafficking.[10] Akee et al. (2007) analyze the determinants of trafficking of children and women in a cross-section of countries. A main result is that the stage of economic development and inequality of incomes between countries are major determinants of trafficking. Contrary to expectations, they find that granting legal status to trafficked victims in host countries and banning prostitution in source countries leads to a higher, not lower, likelihood of trafficking. Despite this pioneering study, much remains to be done to uncover the drivers and mechanisms of human trafficking, particularly on the micro level.

2.3 Human Trafficking and Labour Migration in Eastern Europe

There is a small but growing body of literature on the general migration patterns in Eastern Europe.[11] The countries under study have witnessed large and often seasonal migration flows since the breakdown of the Soviet Union. The main drivers of migration in the area are poor living conditions and a lack of jobs as well as migration networks. There is little evidence for positive self-selection, as most migrants work in low-skilled jobs in sectors such as construction, agriculture or in domestic services, often under dismal conditions. As to destinations, Mansoor and Quillin (2006) estimate that from 1990 to 2006 about 80 per cent of emigrants from the former Soviet Union moved within the CIS region, predominantly towards Russia, which is now the second largest recipient of international migrants worldwide. Other main destinations, particular for migrants from Bulgaria and Romania, are countries in the European Union.

Countries of the former Eastern bloc have also become major origins of forced labour and human trafficking in the last two decades. The exploitation of human beings has a long and sad history in the region. In medieval times, Venetian and Genoese merchants established a massive trade with slaves from Eastern Europe and the epoch of "second serfdom" implied highly repressive forms of exploitation (Blum 1957, Domar 1970). Today, the main destinations of trafficking victims are Western Europe and Russia, but they also include North America, Asia and increasingly the Middle East, in particular Turkey, Israel, Lebanon and the United Arab Emirates (Surtees 2005, UNODC 2006). Estimates of the extent of trafficking and forced labour in Eastern Europe vary widely. The report by the ILO (2005) estimates that a minimum of 200,000 people from Eastern Europe and Central Asia have fallen victim to trafficking, while Mansoor and Quillin (2006) cite estimates from the United Nations Population Fund that more than 175,000 persons are trafficked *annually* in Europe and Central Asia.

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10 Basu and Chau (2003) provide cross-country evidence on child labour in debt bondage, but do not place their analysis in a migration or trafficking context.

11 The following stylized facts are based on Bauer and Zimmermann (1999), Kraler and Iglicka (2002), Mansoor and Quillin (2006) and Görlich and Trebesch (2008).

Media coverage and reports such as UNODC (2006) suggest that Eastern European trafficking victims are mostly young women who are exploited in the commercial sex industry. It is certain that many victims from the region are females forced into prostitution. Yet, the IOM (2006) report and recent more qualitative surveys from Russia and South-eastern Europe (Tyuryukanova 2005, Surtees 2005) underline the dominant but neglected issue of male exploitation.[12] According to these sources, a large share of those trafficked from Central and Eastern Europe are men being exploited in agriculture, construction, or warehouse work.

A further key insight from recent studies in the region is that most of the victims of trafficking depart on a voluntary basis (ILO 2005, Tyuryukanova 2005). They often enter the destination countries at legal border crossings and with legal documents (Surtees 2005, ILO 2005). Typically, victims become subject to coercion and violence only after arrival at the destination, where their life in the shadows and a new environment makes them prone to be lured into seemingly attractive jobs by traffickers. The role of middlemen in the Eastern European trafficking business has also been documented in a small number of studies. According to the ILO (2005), trustworthy social networks can lower the risks of being trafficked, while the use of middlemen increases it. However, it is important to underline that social networks do not assure safety from trafficking. The IOM study by Surtees (2005) illustrates that many victims of sexual exploitation in countries like Albania, Bulgaria, or Macedonia were recruited by friends. Similarly, Laczko and Gramegna (2003) report that in South-eastern Europe 60 per cent of victims are recruited by acquaintances, mostly with the promise to find them a job abroad.

In sum, these stylized facts show that the human trafficking flows from the region run in parallel to the general migration flows in Eastern Europe and trafficking affects men and women alike. It also appears that many trafficked victims leave voluntarily, but ill-prepared.

3. Human Trafficking as a Side Effect of International Labour Flows

This section discusses our theoretical argument and the related channels at work. In line with the above, we argue that human trafficking is an unavoidable side effect of migration in a world with large income disparities but closed borders. We therefore predict that large migrant outflows will increase the incidence of trafficking in a region. Simply put, more people departing means more people at risk. Assuming a fixed (low) probability that a departing migrant ends up being trafficked, it is straightforward to expect a larger number of trafficking victims to come from regions with more emigration.

12 Piper (2005) highlights that there is a particular need for data and empirical research on non-sexual forms of trafficking.

Our argument, however, goes beyond this purely mechanical effect. We predict that *individual* trafficking risks increase with the scale of regional emigration. Two channels can explain this. The first channel is linked to the demand side of the human trafficking market, as mass emigration can lower recruitment costs of traffickers. The second channel relates to the supply side of the trafficking market, as those departing from high-emigration regions may share characteristics that make them more prone to be trafficked.

On the demand side, large-scale emigration may create agglomeration and free-riding opportunities for traffickers. Just like legal businesses, criminal activities tend to agglomerate in larger markets. This is true for drug gang concentration in cities (Glaeser and Sacerdote 1997) and applies to many other crime industries that concentrate geographically (Freeman et al. 1996, Zenou 2003). In the context of trafficking, markets will be larger and more attractive in areas of mass emigration which offer high economies of scale. Most importantly, these regions feature a continuous supply of potential victims, which can considerably ease recruitment. Additionally, traffickers can benefit from the existence of a local shadow migrant industry, in which private agents offer all kinds of work procurement or travel services to emigrants. Related industries have thrived in Northern Africa or at the US-Mexican border, but also in many emigration regions of Eastern Europe. In such settings, traffickers can take advantage of agglomeration effects by collaborating with, or free-riding on, other agents such as people smugglers or travel agencies (see Tamura 2007).[13] The result will be a higher concentration of traffickers and, in turn, higher trafficking risks in such regions.

On the supply side, it is mostly negative self-selection that could explain higher risks in emigration areas. Localities witnessing large-scale out-migration may be particularly disadvantaged in the first place, often suffering from poor economic development and weak institutions. In deprived areas, migration may be the only strategy available to increase economic opportunities and start a better life. This will have implications for the preference set of those departing, as they may be more prone to take risks in the migration process, such as crossing borders illegally or accepting jobs in the informal sector abroad. In extreme cases, migrants from particularly disadvantaged regions may even consent to exploitative working conditions. They may be keen to access so-called "3D" jobs (difficult, dirty, dangerous) because they would do nearly everything just to escape their dismal living conditions at home (Bhabha 2005). Besides such risk-taking behavior, skills and education may also play a role. The issue of negative or positive self-selection into migration is highly controversial.[14] However, recent studies agree in that

13 Recent research indicates that the markets of migrant smuggling, work procurement and human trafficking/exploitation are indeed closely intertwined (e.g. Leman and Janssens 2007, Väyrynen 2005, Aronowitz 2001, Ruggiero 1997).

14 Recent years have seen evidence for positive, intermediate and negative self-selection into migration, depending on the data and country investigated. Chiquiar and Hanson (2005), Mora and Taylor (2005), Taylor et al. (2003), or Adams (2005) find years of schooling and other human capital variables to have a

larger migration flows can foster negative self-selection (Beine et al. forthcoming, Chiquiar and Hanson 2005 and McKenzie and Rapoport, forthcoming). Larger networks and an established migration infrastructure lower the costs of migration, thereby increasing the likelihood that more people from lower social classes start to emigrate. These less-qualified late-comers in the migration wave may be more vulnerable to deception schemes and less able or willing to thoroughly prepare their journey. On the supply side we therefore predict trafficking risks to be higher in high-migration areas because those departing from there may be more desperate or simply less qualified to handle the many perils of the migration process.

Stretching even further, one could imagine the first and second channel to mutually reinforce each other. Negative self-selection may be beneficial for traffickers, and pose an additional incentive to agglomerate in regions of mass emigration and large networks. The reason is that negative self-selection may have relevant feedback effects on network composition or network quality. The more low-skilled workers depart, the worse the migrant network might become with regard to information filtering and transmission and in safeguarding from exploitation. As a result, larger, and thereby less-skilled, regional migrant networks might facilitate recruitment.

In conclusion, both supply and demand-side channels predict individual trafficking risks to be higher in areas of large-scale emigration. Note, however, that this reasoning stands in contrast to some of the migration literature. Most authors in the field suggest that risks should be lower in areas of mass emigration, mainly because of the protective role of migrant networks (see e.g. Carrington et al. 1996, Winters et al. 2001, Munshi 2003, Bauer et al. 2007). Community-level networks are often assumed to decrease information asymmetries and facilitate the arrival at the destination abroad, thereby reducing risks. We argue, however, that the role of networks may be ambiguous, especially when external agents learn to misuse them. This view is in line with some recent sociological research showing how exploitative employers learn to take advantage of migrant networks. One example is the study on "Networks of Exploitation" (Cranford 2005) which shows that employers in the Los Angeles janitorial industry rewarded Mexican supervisors to recruit vulnerable workers from their home communities into dismal jobs. Migrant networks were systematically misused to replace unionized workforce with immigrants, who would earn much less and could be more easily exploited. Further studies with related arguments and evidence are Martin et al. (2007) who study the exploitation of immigrants' arriving in the Chicago South Side, and Zhang and Shin (2002) who track the decisive role of networks in Chinese human smuggling. Thus, it seems that networks on the regional or local level do not necessarily shield from the (low) risk of being trafficked.

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significant *positive* impact on the decision to migrate. Orrenius and Zavodny (2005) find evidence for *intermediate* selection in Mexican migration to the U.S., while Borjas (1987) predicts *negative* self-selection from countries with high earnings inequality such as Mexico.

4. Data and Empirical Strategy

4.1 Data

The main body of analysis uses a unique household survey which was commissioned by the International Organization for Migration and covers five Eastern European countries. In addition, we also employ a second household survey from Moldova to check the robustness of our results and provide supplementary evidence. This survey is described in section 6.

Fieldwork for the five-country survey was conducted in Belarus, Bulgaria, Moldova, Romania and Ukraine between August and September 2006. To arrive at nationally representative estimates, the survey relied on a multi-stage stratified sampling scheme.[15] Accordingly, the survey covers both urban and rural areas and sampled households of all regions in the five countries.[16] In each country, at least 1000 individuals were interviewed, with slightly larger samples in Bulgaria and Ukraine, resulting in a total sample of 5513 households. The interviews were conducted with the person whose birthday was last among the rest of dwellers.

The largest module in the survey was dedicated to human trafficking across borders. Most importantly, interviewed persons were asked whether persons in their close surroundings (relatives, friends and neighbours), in their close family[17], or they themselves had experienced situations which would be classified as trafficking according to the definition above. Since households were randomly selected for the interview, selection bias suffered by other datasets that are based on the number of assisted victims or the number of border apprehensions (Tyldum and Brunovskis 2005) is avoided here. To the best of our knowledge, the relatively large sample and the survey design make it the most comprehensive and representative micro-level survey on human trafficking available worldwide.

4.2 Dependent Variable and Econometric Model

Our dependent variable is a dummy denoting whether the interviewed person reported a victim of human trafficking among close family members.[18] Given the relatively small number of individuals with trafficking in their close family, we combine sexual exploitation and other forms of exploitation. More specifically, the dummy takes the value of one if a close family member had travelled abroad and experienced one of the

15 See IOM (2006) for more details.

16 Overall, the analysis covers 82 regions.

17 The term "close family" is defined as only including parents, children, husband/wife, brothers and sisters of the interviewed person. The survey generally refers to households as identified by close family ties with respect to the interviewee and not by residency.

18 As the interviewee is by definition part of the close family, we make sure that our dependent variable also includes the case when the interviewed person was a victim of human trafficking him- or herself.

following situations: (i) "was offered a domestic or nursing job, but was locked and forced to work for no pay", (ii) "was offered a job at an enterprise, on a construction site, or in agriculture, but was locked and forced to work for no or little pay" (iii) "was offered employment, but the passport was taken away upon arrival to the destination country and was forced to work in the sex business". In line with the UN definition of human trafficking given above, these three situations have in common that the individual was forced to work by means of coercion.

Overall, 108 individuals indicate a victim of human trafficking in their close family. Out of these, there are 22 reported cases of members being forced to work in the sex business, while 86 cases were associated with non-sexual forms of exploitation. In our sample, most trafficked cases come from Moldova (56 out of 1073). The rest is found in Bulgaria (18 out of 1007), Ukraine (15 out of 1345), Belarus (11 out of 1071), and Romania (8 out of 1017). A very large number of interviewed people had not heard about any case of trafficking among the people they knew (4905 out of 5513).

Our data are likely to suffer from some degree of reporting bias. Victims of human trafficking and their relatives might be reluctant to share their experiences, being afraid of stigmatisation or problems with authorities at home or abroad. This is especially true for the case of sexual exploitation, which is a highly sensitive issue (Laczko 2005). To minimize the degree of underreporting, the survey instrument used various ways of reducing the stigma associated with human trafficking. First, instead of asking directly whether a family member had been "trafficked", the questionnaire rather referred to typical situations of coerced labour. Second, the respondent did not have to reveal the identity of a trafficked family member. Third, if there was a case of sexual exploitation in the family, the interviewed person could still "hide" this experience in a more general answer category of exploitation. Based on these considerations, we believe that the potential under-reporting bias should not seriously invalidate our findings.[19]

We estimate the determinants of human trafficking on the household level with binary response models. A potential problem in this regard is that human trafficking, although affecting millions of people, is a relatively rare event on the household level. King and Zeng (2001) show that the maximum likelihood estimator of standard logit or probit models is biased when the number of non-events (zeros) is multiple times higher than the number of events (ones). They illustrate that standard binary models underestimate the probability of rare events and do increasingly so as the event gets rarer. As a baseline method, we therefore rely on the rare event logit model suggested by King and Zeng (2001). In essence, their model is based on the basic logit model, but uses a bias-corrected

19 An unavoidable bias in any database on human trafficking or migrant exploitation is that it only provides information on victims with known whereabouts or those returned. Another problem might be that the survey did not put a focus on marginal social groups, such as Sinti and Roma, among whom trafficking rates could be higher.

estimator for rare events that generates a lower mean square error for coefficients. Note that this approach is particularly popular in political science (e.g. Fearon and Laitin 2003, Harff 2003, Collier and Hoeffler 2004) but is also increasingly used in research on economic issues (e.g. Hausmann et al. 2005, Leblang and Satyanath 2008). To test the robustness of our results, standard logit models are also applied.[20]

4.3 Identifying the Channels at Work

Our empirical approach follows the theoretical arguments above. We first test the general mechanical prediction that trafficking is more likely to occur in regions of large-scale emigration. We then focus on the subsample of migrant households to establish whether the *individual* likelihood of being trafficked increases with regional migration prevalence. In a final step, we investigate the channels behind our finding on the link between trafficking and migration flows. More specifically, we use proxies of regional recruitment conditions (demand-side factors) and proxies indicating the skill level or desperation of those departing (supply-side factors) and interact them with regional emigration rates. This will provide some indication on whether mass emigration reinforces the demand and supply-side channels described above.

Our key variable of interest is the regional migration prevalence rate. It is constructed by taking the share of surveyed households in each region that reported to have had a member of the close family abroad in the last 3 years. As an alternative, we employ a proxy of low migration pressure. Concretely, we construct a regional variable capturing the share of interviewed individuals who stated that they could never imagine working abroad ("share of stayers").[21] Following our argument, our main proposition is that an increase in migration prevalence in the region should increase the risk of trafficking, while a higher share of stayers (lower migration pressure) should decrease trafficking risks.

On the supply side, one proxy for recruitment conditions in the region is the scale of illegal migration. The indicator used captures the regional proportion of migrants who work illegally abroad. Illegal migration is likely to foster the activities of people smugglers or agents procuring false travel documents, with which traffickers can collaborate. And because shadow migration industries will tend to be larger the more people depart, the recruitment of illegal migrants may be particularly easy in emigration areas. We therefore expect the adverse effect of illegal migration to depend on migration prevalence rates, so that that the interaction term of regional migration and illegality should be positively signed. The same intuition applies when using a dummy variable for illegal migration

20 In light of the large economic and institutional differences between the countries under consideration, we cluster standard errors on the country level throughout the analysis. However, our main results are not affected when clustering on regions.

21 Since this variable could potentially be subject to reverse causality, the share is calculated excluding households with a trafficking case in their close or distant family. Note that the share of people not wanting to leave is negatively correlated with regional migration prevalence rates, at a coefficient of -0.30.

experience on the household level, which we also interact with migration prevalence. As a second demand-side proxy, we include a variable measuring the level of criminal activity (reported crimes per 10,000 inhabitants in a region) which we take from the Statistical Yearbooks of the respective countries and which we also interact with migration rates. We assume that trafficking will be easier the more criminal a region, especially if this region has large emigration flows. This would predict positive coefficients of both the crime rate variable and its interaction with regional migration prevalence.

Turning to the supply side of the human trafficking market, our focus lays on indicators of desperation and negative self-selection into migration. Because the survey intentionally omitted questions on trafficked family members, it is not possible to rely on education-based measures of selection. Likewise, we cannot construct a measure of network composition. However, the survey allows proxying the degree of desperation-led migration with the share of persons in the region who state that they would do "any kind of work" abroad.[22] Economic deprivation can cause negative self-selection on its own, but this effect will be exacerbated in areas with high emigration and larger networks (McKenzie and Rapoport forthcoming). To test this prior we interact the desperation proxy with migration prevalence and expect a positive coefficient. Our intuition is that migrant networks will allow an even higher share of low-skilled and vulnerable workers to depart from deprived areas, resulting in more trafficking. In a similar vein, we interact a dummy capturing a household's "poor financial status" with migration prevalence rates.[23] We expect poorer workers, who might not have migrated in the absence of large migrant networks, to be more prone to fall victim to traffickers.

4.4 Other Explanatory Variables

Two variables are used to assess the role of information asymmetries and access to information. First, we code a dummy for households that use the TV, as opposed to other media and social contacts, to get informed about social and political issues. TV use can be seen as a source of relatively objective and high-quality information and a potential channel for anti-trafficking awareness campaigns. We therefore expect a negative coefficient of the TV dummy. Second, we include a regional risk-awareness measure by taking the share of respondents who stated that they had heard of the phenomenon of

22 The question allowed for ten other answer categories. One can thus reasonably interpret the choice of "any kind of work" as a strong signal of desperation. To avoid endogeneity, this share is calculated excluding persons who live in migrant households or know victims of human trafficking.

23 More precisely, households indicating that they "have to save money for the basic necessities (food, clothing, footwear)" are coded as poor. Unfortunately, this information is unavailable for households interviewed in Bulgaria and Romania.

human trafficking before.[24] Intuitively, risk awareness is likely to reduce the likelihood of trafficking, which again predicts a negative coefficient of this variable.

Given the heterogeneity across regions and households, it is necessary to control for additional factors that might influence trafficking risks.[25] We proxy the level of socio-economic development with regional infant mortality rates (per 1000 live births) and the number of physicians (per 10,000 inhabitants). The remoteness of a region is captured by the share of people living in rural localities. On the household level, we use the number of children aged 16 or younger[26], a dummy for households living in rural areas and another dummy indicating whether households live in the district around their respective capital city. We also include age, gender, marital status, and educational level of the respondent, but only to control for systematic reporting biases along these dimensions. Descriptive statistics of all variables are presented in Table A1 in the appendix.

5. Results

5.1 Main Results

Table 1 displays our main estimation results for the whole sample.[27] First, and most importantly, we find migration prevalence to be the key predictor of human trafficking (column 1). Compared to other explanatory variables, it has a large marginal effect.[28] A one percentage point increase in the share of migrant households in a region raises the likelihood of having a trafficked family member by 0.056 percentage points. This may appear small, but one has to keep in mind that trafficking is a rare event. A one percentage point increase in migration prevalence effectively translates into a five *percent* increase in the predicted probability of human trafficking on the household level. Or, when increasing the regional share of migrant households by one standard deviation (from 0.20 to 0.37), the risk of trafficking more than doubles. This finding is confirmed when we use our proxy for low migration pressure, the regional share of people who could never imagine working abroad ("share of stayers"), see column 2. The incidence of trafficking appears to be significantly lower in regions where fewer people intend to leave.

A further main result is on the role of risk perceptions and trafficking. Households in regions with higher awareness of the phenomenon of human trafficking are less likely to

24 We try to most closely resemble a migrant's knowledge status before departure and reduce potential endogeneity by excluding respondents who knew a victim of human trafficking or lived in a migrant household when calculating this share.

25 These variables were coded from the Statistical Yearbooks of each of the five countries. Given that our dependent variables are retrospective and in order to minimize potential endogeneity problems, all variables from the Statistical Yearbooks were coded for the year 2004.

26 Due to a modification of the question, the number of children is defined as 14 or younger in Romania.

27 All of our main findings hold when standard logit procedures are employed. For reasons of brevity, however, these results are not reported.

28 With the exception of dummy variables, all marginal effects are evaluated at the mean of the independent variables.

have a trafficked family member. The same is true for households which use the TV as main source of information on social and political issues.[29] These findings, although not fully robust, underline the potential benefits of public awareness campaigns to counter human trafficking.

To some surprise, we find that many regional control variables seem to play no role. Living in a region with a large share of rural population, a high rate of infant mortality, or low density of physicians does not increase the likelihood of trafficking. If at all, there is weak evidence that households in regions with higher infant mortality are less likely to report a trafficked family member.

The second part of Table 1 shows our main results for the subsample of 1560 migrant households. The analysis for this subsample is of particular relevance, as it allows testing our hypothesis that *individual* trafficking risks rise with regional migration rates. As can be seen, we find that all of our key results hold in this migrant subsample. In particular, columns 3 and 4, show that the regional scale of emigration remains a key predictor of trafficking. Migration prevalence has a positive and significant coefficient, indicating that trafficking risks increase more than proportionally with emigration rates. We also find that our proxy for low migration pressure ("share of stayers") keeps its significantly negative coefficient.

5.2 Results on the Channels at Work

We have demonstrated that regional migration flows are associated with a higher individual likelihood of being trafficked. This section presents evidence on the channels at work. As our empirical strategy in this part of the analysis relies on interaction terms, we follow McKenzie and Rapoport (forthcoming) and use linear regression models (OLS) for estimation. The main purpose is to facilitate interpretation of the interaction term coefficients, which is problematic in the non-linear models typically used for binary outcomes, such as logit or probit models (Ai and Norton, 2003).

The left side of Table 2 presents results on demand-side effects. The marginal effect of illegal migration in the region significantly increases with migration prevalence (column 1).[30] The interaction with illegal migration experience in the household is also significantly positive (column 2). Both results indicate that illegality has a particular risk-increasing effect in high-migration areas. In line with our arguments above, traffickers seem to take advantage of larger shadow migration industries and illegal migration patterns. However, we do not find any evidence that crime facilitates trafficking in regions with high rates of out-migration. Column 3 shows that the interaction of reported crimes and migration

29 Arguably, TV use may also be a proxy for household wealth. Note, however, that this result remains unaffected when controlling for a household's financial status (column 5 of Table 2).

30 One must not interpret the coefficients of the two constitutive variables of an interaction (in this case proportion of illegal migration and regional migration prevalence) as the unconditional effects of these variables. Instead, the marginal effect of each variable depends on the level of the other variable.

rates in the region is insignificant and negatively signed. This non-finding might be due to measurement error and difficulties in comparing crime statistics across the five countries under investigation. Moreover, we lack alternative measures, such as the share of people convicted or the number of homicides in a region, which might provide a better indicator for relevant criminal activities. As to potential supply-side factors, the results are displayed in columns 4 and 5. We find that our proxy for negative self-selection in the region (the share of people who would do any kind of job abroad), positively depends on migration prevalence. This is consistent with our hypothesis that migrant networks may foster the departure of more vulnerable types of migrants, particularly in deprived regions. Note, however, that the coefficient of the interaction term is significant only at the 10 per cent level and not fully robust to specification changes. On the household level, we find no evidence for negative self-selection effects. The dummy on poor financial status and the interaction is insignificant. It should be kept in mind, however, that the survey does not report any pre-migration assessments of living standards. But one should also recall that other proxies of regional development, such as remoteness, child mortality or the availability of physicians also turned out to be of no importance. Overall, we thus find remarkably little evidence for supply-side factors.

5.3 Robustness Checks

To test the robustness of the results presented above, this section conducts a series of additional checks. In a first step, we explicitly account for the fact that human trafficking should only be observable for migrant households. To econometrically allow for this we estimate a probit sample selection model with a dummy for migrant households as dependent variable in the selection equation and a dummy for households with a trafficked family member in the outcome equation. One way to identify this model is to find a variable that is a significant predictor in the selection equation, but excludable from the outcome equation. Our dataset offers only a limited choice of such instruments. Arguably, the most credible variable is a dummy indicating whether the household has an employed member at home. Our identifying assumption is that having a domestically employed household member relieves the household's migration pressure, but does not directly affect the risk of being trafficked. Having an employed household member turns out to be a highly significant and negative predictor of having a family member abroad.[31] The results of the probit selection model (columns 1 and 2 of Table 3) closely resemble those of the rare events logit estimation. In addition, our estimates do not appear to be biased due to sample selection. The Likelihood Ratio test of independent equations cannot reject the null hypothesis of no correlation between the error terms (p-value 0.56).

31 Most evidence on migration in the region indicates that households first try to place a member in the domestic labour market and send a migrant only if this is unsuccessful. Generally, migration in the region is overwhelmingly motivated by the lack of income or job opportunities (88 percent of respondents in the survey state so). In Moldova, for example, only about a third of those migrating (36%) were active in the labour market before their departure (Omar Mahmoud and Trebesch, 2009).

We are aware that identification may not be fully warranted with this approach. We implicitly assume negative self-selection into migration, as households with unemployed members are more likely to send a migrant. As discussed above, such negative self-selection effects might also affect trafficking risks, especially in high-emigration regions, which raises concerns on whether our instrument is strictly excludable. However, we show that instrument choice does not affect the results in the Moldova case study (see section 6). Moreover, an alternative form of identification through functional form, thus relying on the non-linearity of the model. Re-estimating the regressions without an instrument yields similar results, with migration prevalence remaining a significant and substantial determinant of trafficking risks (not reported). We thus conclude that it is sufficient to separate the sample selection model and focus on the outcome equation as done in Tables 1 and 2.

Another issue of concern is the role of migrant destinations. It is possible that high migration flows correlate with migration to destinations with poorer law enforcement or weaker anti-trafficking laws, e.g. Russia or Turkey. While the survey does not contain information on migrant destinations, we take advantage of well-known migration patterns across countries to conduct a simple robustness check. Specifically, we divide the sample into sending countries with predominantly "Western" destinations (Romania and Bulgaria) and countries with more "Eastern"-oriented migration flows (Belarus, Moldova, Ukraine). We find that in both groups of countries regional migration prevalence remains a highly significant predictor of human trafficking risks (columns 3 and 4).

In a next step, we restrict our sample to rural households. The rationale for this is that networks are typically thought to have stronger effects in rural areas. However, as shown in column 5, the results remain largely the same. We also find little changes when explicitly controlling for proxies of regional institutions. More specifically, we use the share of respondents answering that trafficking in the region mainly occurs (i) because of weak laws and poor law enforcement or (ii) because of corruption. As can be seen in column 6, we find these two proxies to be insignificant.

Finally, we analyze the differing effects of family networks (strong ties) versus community networks (weak ties). Many of the arguments on networks made so far would apply to weak-tie networks, but not to family networks, which are likely to be more protective when it comes to human trafficking. The family network variable available to us simply captures the number of other members in the households that have migrated in the last three years. Family networks appear to play a protective role. Their effect, however, is far from being statistically significant (column 7). The same is true if we include regional fixed effects (not reported). However, a more in-depth analysis with better data on family migration patterns is needed to strengthen this conclusion.

6. Moldova Case Study

To supplement the analysis and address some limitations of the five-country survey, this section presents a detailed case study of Moldova, the Eastern European country which is most affected by human trafficking. A main difference to the five-country study presented above is the range of available data for Moldova, allowing us to conduct the analysis at less aggregated levels. First, we have access to a household survey with very detailed information on migrant characteristics and their migration patterns including the country of destination. Second, the Ministry of Economy and Trade provides a rich database on socio-economic characteristics of every community in Moldova. We can therefore investigate the drivers of human trafficking on the individual, not household level and include locality-specific migration prevalence rates and control variables.

Individual data come from a specialized household survey on migration and remittances, capturing 3916 households. The survey was commissioned by IOM and executed by the CBSAXA opinion research firm in summer 2008 (see Lücke et al. 2008 for further details). The impressive scale of emigration from Moldova is reflected by the fact that 1127 households in the survey (29 per cent) had at least one member abroad. Although the survey instrument does not explicitly focus on trafficking and exploitation, we can take advantage of one question on problems confronted abroad. This question was answered by almost all respondents and allows identifying the worst forms of migrant exploitation analogous to the definition used so far. Specifically, we code migrants as trafficked if (i) they were locked by their employer abroad, (ii) their passport was taken away and/or (iii) they were subject to sexual exploitation. 31 migrants in our sample meet these criteria. This share is notably smaller than in the five-country survey, a fact that can be attributed to survey design, in particular to the way trafficking-related questions were asked, but also to the degree of retrospectiveness, as the question only referred to the survey year and the preceding one (2007 and 2008).

To assure comparability, the Moldovan case study follows the five-country analysis as closely as possible. Some minor differences in the construction of variables are worth mentioning. Above all, instead of controlling for the characteristics of the respondent, we include migrants' personal traits directly. Community migration prevalence is proxied by the share of people who are temporarily absent from a locality. The Moldovan Labour Force Survey shows that this is a meaningful proxy as labour migrants represent more than 80 per cent of those temporarily absent (Görlich et al. 2007). A major advantage of this variable is its representativity at the local level, as it is derived from administrative statistics and not survey-based. In addition to these changes, availability of doctors is now expressed as the distance to the next doctor and crime rates are replaced by perceived levels of personal security.

Taken together, the baseline results for the Moldovan migrant sample are nearly identical to the ones for the five-country study (column 1 of Table 4). This strongly supports our argument and findings from above. Migration prevalence remains by far the most important determinant of trafficking risks. This result holds when using fixed effects for the 35 regions in Moldova, restricting the sample to rural areas (not reported), or including dummies for migrant destinations (column 2). Quite remarkably, migrants' personal characteristics, such as age, sex and education, do not appear to matter. The same is true for destinations. Neither is migration to Russia or Italy, which together host about 80 per cent of Moldovan migrants, associated with increased trafficking risks.

Again, we also investigate the differing role of family and community networks. The Moldovan survey data allow for a better measurement of family networks, as it contains information on the number of family members that migrated prior to the migrant him- or herself. As can be seen in column 3, we now find the family network variable to be significant and negative, indicating that previous migration experience of other household members can help lowering the risk of trafficking and exploitation. This supports the view that our arguments may only apply to weak-tie, but not strong-tie networks.

Robustness of the probit selection model is tested by using an alternative instrument. Specifically, we use occupational information on whether surveyed individuals are employed as construction workers in Moldova or were so prior to departure. Given the building boom in Moldova's main destination countries until 2008 and the resulting demand for cheap construction labour, construction workers have a much higher probability to emigrate (compare Omar Mahmoud and Trebesch 2009). At the same time, there is no reason to expect construction workers to face a higher (or lower) risk of trafficking, an intuition that is confirmed by the data. Using this identification approach, we find the key result to hold in the sample selection model (not reported). As before, our estimates do not appear to be biased due to sample selection.

The remaining columns of Table 4 presents evidence on why trafficking risks increase with migration prevalence. To test for demand-side forces, we rely on indicators of illegal migration and crime. This time, however, we can use the proportion of migrants who crossed borders illegally as proxy for the extent of illegal migration. Illegal border crossing is arguably a more exogenous indicator than illegal work abroad and might also capture the size of the regional shadow migration industry more accurately. In line with our previous evidence, our results point to the existence of agglomeration effects, as the impact of illegality increases with emigration rates (columns 4 and 5). Again, the existence of criminal activities does not appear to increase the likelihood of trafficking in high-migration areas (not reported). As regards factors on the supply side, the availability of migrants' educational attainment allows for alternative identification of negative self-selection and the possibility to analyze the effect of network composition. We do not find that larger networks induce particularly vulnerable migrants to leave (column 6).

However, network composition, measured as the proportion of migrants with higher education, seems to play a role. Migrants from regions with high fractions of low-skilled migrants face a particularly high risk when networks are large (column 7). This lends some credence to the hypothesis that network quality may decrease with network size and the degree of negative self-selection. However, more research with better data is needed to validate this point. Overall, our findings for Moldova are very similar to the ones of the five-country study and more in favour of demand-side channels.

7. Concluding Remarks

Our results for the Eastern European context have several implications. First, policymakers concerned about human trafficking should acknowledge the important role of migration. We find strong indication that traffickers and exploitative employers are more prone to recruit victims from regions with large-scale emigration flows. For this reason, we propose to target awareness campaigns and other anti-trafficking policies to areas where migration flows are high or on the rise, not to remote areas with no or little migration.

Second, our indicative findings on the role of risk awareness and information use may provide some orientation for policy initiatives facing cost-benefit trade-offs. In fact, the results give some reason for optimism that anti-trafficking campaigns and measures to reduce information asymmetries in the migration process can indeed be a promising way to reduce the crime. Besides awareness campaigns, the ILO (2005) suggests to set up labour market information systems on jobs at home and abroad and the general use of model employment contracts.

Third, our results document the close link between illegal migration patterns and trafficking. Migrants who cross borders illegally and who depart from regions with more illegal emigrants face significantly higher risks. One can argue that restrictive immigration policies exacerbate the problem, pushing would-be immigrants into illegality and fostering the emergence of shadow migration industries. However, a moderate increase of legal migration opportunities is unlikely to solve the problem given the magnitude of global migration pressure (Amin and Mattoo 2006). In addition, traffickers' incentives would remain unchanged through such measures.

Finally, we find some indication that large community migration networks increase risks and may thus have ambiguous effects. This stands in some contrast to the existing migration literature, which generally advocates a risk-reducing role of networks. However, more research is needed to better understand the role of social networks for migration and trafficking.

As a general conclusion, it seems likely that the market of human trafficking and the number of victims will continue to grow as long as migration pressure remains high.

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Table A1: Summary statistics for households with and without trafficked members

	All households (n=5,513)				Migrant households only (n=1,560)			
	No trafficked member		With trafficked member		No trafficked member		With trafficked member	
	Mean	Std.Dev.	Mean	Std.Dev.	Mean	Std.Dev.	Mean	Std.Dev.
Regional characteristics								
Rural locality	0.48	0.50	0.56	0.50	0.55	0.50	0.61	0.49
Capital district	0.18	0.38	0.21	0.41	0.14	0.34	0.10	0.30
Share of rural population	0.38	0.22	0.51	0.26	0.48	0.24	0.58	0.23
Infant mortality	10.93	3.75	11.08	2.57	11.87	3.72	11.39	2.56
Density of physicians (per 10,000 inh.)	35.40	16.24	28.84	12.51	29.41	15.43	27.09	12.25
Crime rate (crimes per 10,000 inh.)	160.92	107.93	115.89	77.72	122.28	80.46	104.41	65.21
Migration prevalence	0.28	0.17	0.42	0.19	0.37	0.18	0.46	0.20
Share of illegal migrants	0.28	0.17	0.31	0.17	0.30	0.17	0.35	0.17
Share of stayers	0.51	0.12	0.48	0.11	0.49	0.12	0.46	0.11
Awareness of trafficking	0.79	0.14	0.75	0.18	0.79	0.15	0.70	0.19
Share willing to do any job abroad	0.05	0.05	0.07	0.05	0.06	0.05	0.08	0.05
Rule of law (perception-based)	0.27	0.14	0.24	0.12	0.27	0.15	0.24	0.12
Corruption (perception-based)	0.20	0.14	0.22	0.13	0.23	0.14	0.21	0.13
Household characteristics								
Family network (other migrants in hh)	0.25	0.92	0.86	1.85	0.90	1.58	1.30	2.14
Illegal migration experience	0.09	0.29	0.40	0.49	0.34	0.47	0.60	0.49
Number of children (0-16)	0.46	0.75	0.63	0.84	0.55	0.83	0.76	0.91
TV use	0.83	0.38	0.78	0.42	0.85	0.35	0.79	0.41
Poor financial status	0.41	0.49	0.48	0.50	0.45	0.50	0.48	0.50
Employed hh member (dummy)	0.46	0.50	0.49	0.50	0.41	0.49	0.50	0.50
Respondent's characteristics								
Age	43.86	17.71	41.50	16.04	42.32	17.14	39.99	16.38
Male	0.45	0.50	0.47	0.50	0.44	0.50	0.49	0.50
No or primary education	0.29	0.45	0.27	0.45	0.29	0.46	0.31	0.46
Secondary education	0.43	0.50	0.46	0.50	0.41	0.49	0.46	0.50
Higher education	0.28	0.45	0.27	0.45	0.30	0.46	0.24	0.43
Married	0.60	0.49	0.67	0.47	0.63	0.48	0.67	0.47

Table 1: Baseline Regressions

	(1)		(2)		(3)		(4)	
	All households (n=5513)				**Migrant households (n=1560)**			
	Baseline		**With regional share of stayers**		**Baseline**		**With regional share of stayers**	
	coef/se	**marginal effect**	**coef/se**	**marginal effect**	**coef/se**	**marginal effect**	**coef/se**	**marginal effect**
Migration prevalence	4.726***	0.056			5.108***	0.158		
	(1.013)				(0.784)			
Share of stayers			-1.391**	-0.006			-1.711*	0.004
			(0.686)				(0.947)	
Awareness of trafficking	-1.535*	-0.018	-1.857*	-0.017	-2.674***	-0.083	-2.932***	-0.055
	(0.889)		(1.081)		(0.921)		(1.089)	
TV use	-0.381**	-0.005	-0.372**	-0.005	-0.562**	-0.020	-0.522*	-0.020
	(0.157)		(0.155)		(0.237)		(0.285)	
Number of children (0-16)	0.063	0.001	0.071	0.001	0.161	0.004	0.181*	0.005
	(0.071)		(0.070)		(0.114)		(0.108)	
Rural	0.165	0.002	0.204	0.003	-0.032	-0.001	-0.014	0.000
	(0.206)		(0.203)		(0.264)		(0.280)	
Capital district	1.265**	0.024	1.394**	0.029	0.504	0.017	0.699	0.027
	(0.616)		(0.665)		(0.651)		(0.713)	
Share of rural polulation	0.599	0.007	1.869	0.024	0.813	0.026	2.557**	0.086
	(1.189)		(1.186)		(1.056)		(1.067)	
Infant mortality	-0.071***	-0.001	-0.040	-0.001	-0.113***	-0.004	-0.083**	-0.003
	(0.021)		(0.030)		(0.028)		(0.035)	
Density of physicians	-0.010	0.000	-0.005	0.000	0.004	0.000	0.014	0.000
	(0.011)		(0.011)		(0.021)		(0.019)	
Crime rate	0.000	0.000	-0.001	0.000	0.002	0.000	0.000	0.000
	(0.001)		(0.001)		(0.002)		(0.002)	
Belarus	-0.208	-0.003	-1.194***	-0.023	0.937**	0.041	-0.223	-0.097
	(0.286)		(0.273)		(0.435)		(0.437)	
Bulgaria	0.767	0.011	-0.250	-0.011	1.465***	0.079	0.402	-0.007
	(0.467)		(0.375)		(0.467)		(0.431)	
Romania	-0.768**	-0.008	-1.313***	-0.003	-0.050	-0.003	-0.518*	0.014
	(0.321)		(0.232)		(0.377)		(0.304)	
Ukraine	0.436	0.006	-0.474	-0.012	0.985***	0.045	0.112	-0.017
	(0.424)		(0.488)		(0.332)		(0.455)	
Age (respondent)	-0.009*	0.000	-0.009*	0.000	-0.007	0.000	-0.008	0.000
	(0.005)		(0.006)		(0.006)		(0.005)	
Male (respondent)	0.185	0.002	0.192*	0.002	0.153	0.005	0.182	0.006
	(0.116)		(0.116)		(0.243)		(0.245)	
No or primary education (respondent)	-0.352*	-0.004	-0.334	-0.004	-0.126	-0.004	-0.067	-0.002
	(0.212)		(0.207)		(0.290)		(0.283)	
Secondary education (respondent)	-0.079	-0.001	-0.030	0.000	0.006	0.000	0.066	0.002
	(0.186)		(0.182)		(0.310)		(0.325)	
Married (respondent)	0.289**	0.003	0.302**	0.004	0.138	0.005	0.186	0.007
	(0.115)		(0.120)		(0.207)		(0.202)	
Observations	5,513		5,513		1,560		1,560	

Results of rare events logit estimation. The dependent variable is a dummy for human trafficking incidence on the household level. ***/**/* denote significance at a 1/5/10 per cent level respectively. Country-clustered standard errors in parentheses.

Table 2: Results on the Channels at Work

	(1)	(2)	(3)	(4)	(5)
	Demand-side Effects			**Supply-side Effects**	
	Illegal Migration (Region)	**Illegal Migration (Household)**	**Criminal Activity (Region)**	**Desperation-led migration (Region)**	**Poverty (Household)**
	OLS coef/se	**OLS coef/se**	**OLS coef/se**	**OLS coef/se**	**OLS coef/se**
Share of illegal migration in region	-0.119				
	(0.077)				
Illegal migr. share * migration prevalence	0.348*				
	(0.195)				
Illegal migration (household)		-0.030			
		(0.023)			
Illegal hh migration * migration prevalence		0.176***			
		(0.058)			
Crime rate in region * migration prevalence			-0.001		
			(0.001)		
Despertion-led migr. (% willing to do any job				-0.208	
				(0.196)	
Despertion-led migration * migration prevalence				1.223*	
				(0.717)	
Poor financial status of household					0.008
					(0.051)
Household poverty * migration prevalence					-0.008
					(0.088)
Migration prevalence	0.099	0.144***	0.260**	0.137***	0.259***
	(0.066)	(0.049)	(0.105)	(0.040)	(0.032)
Awareness of trafficking	-0.118**	-0.113**	-0.142*	-0.119**	-0.233***
	(0.055)	(0.058)	(0.073)	(0.055)	(0.047)
TV use	-0.024	-0.021	-0.024*	-0.024*	-0.039***
	(0.015)	(0.015)	(0.014)	(0.015)	(0.011)
Number of children (0-16)	0.009	0.008	0.009	0.009	0.015*
	(0.006)	(0.006)	(0.008)	(0.008)	(0.008)
Rural	-0.004	-0.006	-0.005	-0.003	-0.001
	(0.018)	(0.017)	(0.012)	(0.012)	(0.020)
Capital district	0.018	0.021	0.024	0.025	0.016
	(0.024)	(0.024)	(0.027)	(0.024)	(0.027)
Share of rural polulation	0.035	0.037	0.036	0.033	0.029
	(0.052)	(0.050)	(0.053)	(0.044)	(0.024)
Infant mortality	-0.003	-0.003	-0.003	-0.003	-0.003**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Density of physicians	0.000	0.000	0.000	0.000	0.001*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Crime rate	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Country dummies	yes	yes	yes	yes	yes
Control for respondent's characteristics	yes	yes	yes	yes	yes
Observations	1,560	1,560	1,560	1,560	987

Results of ordinary least squares estimation. The dependent variable is a dummy for human trafficking incidence on the household level. ***/**/* denote significance at a 1/5/10 per cent level respectively. Country-clustered standard errors in parentheses.

Table 3: Robustness Checks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Heckman Probit Selection Model		**Bulgaria and Romania**	**Belarus, Moldova, Ukraine**	**Rural Households Only**	**With Regional Institution**	**With Family Network**
Dependent Variable	Trafficking	Migration	Trafficking	Trafficking	Trafficking	Trafficking	Trafficking
	coef/se	**coef/se**	**coef/se**	**coef/se**	**coef/se**	**coef/se**	**coef/se**
Migration prevalence	2.744***	1.847***	3.870***	4.842**	5.788***	5.261***	5.278***
	(0.758)	(0.213)	(0.569)	(2.352)	(0.466)	(1.495)	(0.786)
Weak laws and law enforcement						-0.239	
						(1.992)	
Corruption						-0.126	
						(1.191)	
Family network							0.039
							(0.041)
Awareness of trafficking	-1.180***	-0.081	-0.409	-3.302***	-2.566***	-2.533*	-2.647***
	(0.430)	(0.152)	(2.279)	(1.152)	(0.768)	(1.302)	(0.860)
TV use	-0.231	0.055	-0.087	-0.864***	-1.065***	-0.568**	-0.632***
	(0.170)	(0.054)	(0.442)	(0.175)	(0.216)	(0.237)	(0.185)
Number of children (0-16)	0.089	0.061**	0.139***	0.209*	0.168	0.157	0.136
	(0.064)	(0.026)	(0.023)	(0.111)	(0.175)	(0.117)	(0.136)
Rural	0.014	0.099**	-0.052	-0.086		-0.027	-0.040
	(0.133)	(0.043)	(0.345)	(0.368)		(0.274)	(0.267)
Capital district	0.193	-0.021	1.040**	0.374	0.931	0.490	0.577
	(0.253)	(0.077)	(0.524)	(0.779)	(1.041)	(0.645)	(0.742)
Share of rural polulation	0.375	0.081	4.079*	0.138	-1.754	0.763	0.759
	(0.634)	(0.199)	(2.315)	(0.570)	(1.448)	(1.014)	(1.078)
Infant mortality	-0.048	0.010	-0.169*	-0.069	-0.166***	-0.114***	-0.113***
	(0.029)	(0.007)	(0.096)	(0.105)	(0.032)	(0.031)	(0.027)
Density of physicians	0.000	0.000	-0.010	0.011	-0.037	0.003	0.000
	(0.010)	(0.003)	(0.045)	(0.025)	(0.028)	(0.021)	(0.021)
Crime rate	0.001	-0.001**	0.013***	0.000	0.003	0.002	0.002
	(0.001)	(0.000)	(0.001)	(0.000)	(0.004)	(0.002)	(0.002)
Country dummies	yes	yes	yes	yes	yes	yes	yes
Control for respondent's characteristics	yes	yes	yes	yes	yes	yes	yes
Employed		-0.115***					
		(0.043)					
Rho	0.471						
	(0.864)						
Observations	5,513		552	1,008	864	1,560	1,550

Results of rare events logit and Heckman probit selection estimation. The dependent variable in columns 1 and 3-7 is a dummy for human trafficking incidence on the household level. ***/**/* denote significance at a 1/5/10 per cent level respectively. Country-clustered s.e. in parentheses.

Table 4: Results for Moldova Case Study

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Main Results			**Demand-side Effects**		**Supply-side Effects**	
	Baseline	**With destinations**	**With family network**	**Illegal Migration (Regional Share)**	**Illegal Migration (Household)**	**Migrant education**	**Network composition**
	coef/se	**coef/se**	**coef/se**	**OLS coef/se**	**OLS coef/se**	**OLS coef/se**	**OLS coef/se**
Migration prevalence	7.519***	7.357***	7.633***	-0.259**	0.017	0.199	0.662***
	(2.507)	(2.612)	(2.575)	(0.123)	(0.045)	(0.168)	(0.137)
Destination Russia		0.008					
		(0.753)					
Destination Italy		-0.590					
		(1.047)					
Destination other CIS countries		-0.063					
		(0.977)					
Other EU countries		0.736					
		(0.712)					
Family network			-0.931*				
			(0.542)				
Share of illegal migration (% in region)				-0.040			
				(0.060)			
Illegal migr. share * migration prevalence				1.556***			
				(0.589)			
Illegal migration (migrant)					0.003		
					(0.018)		
Illegal migration (migrant) * migration prevalence					0.460**		
					(0.209)		
Higher education (migrant) * migration prevalence						0.115	
						(0.166)	
Network composition (% highly-educated migr.)							0.121**
							(0.051)
Network composition * migration prevalence							-1.818***
							(0.528)
Age (migrant)	0.011	0.015	0.002	0.000	0.000	0.000	0.000
	(0.025)	(0.025)	(0.026)	(0.000)	(0.000)	(0.000)	(0.000)
Male (migrant)	-0.041	-0.170	-0.148	-0.001	0.001	0.000	-0.001
	(0.390)	(0.394)	(0.410)	(0.006)	(0.006)	(0.006)	(0.006)
Secondary education (migrant)	-0.016	0.035	0.008	0.001	0.001		0.001
	(0.587)	(0.597)	(0.593)	(0.008)	(0.010)		(0.010)
Higher education (migrant)	0.263	0.272	0.255	0.006	0.007	-0.003	0.005
	(0.716)	(0.683)	(0.738)	(0.011)	(0.010)	(0.009)	(0.011)
Married (migrant)	-0.370	-0.459	-0.387	-0.008	-0.006	-0.005	-0.005
	(0.495)	(0.480)	(0.474)	(0.008)	(0.008)	(0.008)	(0.007)
Number of children (0-16)	0.027	0.041	0.028	0.001	0.002	-0.000	0.000
	(0.247)	(0.241)	(0.247)	(0.004)	(0.004)	(0.004)	(0.003)
Rural	0.143	0.200	0.175	0.006	0.003	0.005	0.001
	(0.553)	(0.550)	(0.563)	(0.007)	(0.005)	(0.008)	(0.009)
Capital district	-0.228	-0.353	-0.204	-0.007	-0.004	-0.001	-0.002
	(1.016)	(1.078)	(1.051)	(0.011)	(0.013)	(0.009)	(0.019)
Share of rural polulation	0.000	-0.000	0.000	-0.000	-0.000	-0.000	0.000
	(0.014)	(0.015)	(0.014)	(0.000)	(0.000)	(0.000)	(0.000)
Infant mortality	0.000	0.000	0.000	-0.000	-0.000	-0.000	-0.000
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Distance to doctor	0.049	0.046	0.049	0.000	0.000	0.000	0.000
	(0.054)	(0.053)	(0.054)	(0.001)	(0.001)	(0.001)	(0.001)
Crime in locality	-0.321	-0.293	-0.335	-0.002	-0.005	-0.007	-0.002
	(0.435)	(0.440)	(0.432)	(0.007)	(0.006)	(0.008)	(0.007)
Observations	1,679	1,679	1,679	1,679	1,679	1,679	1,679

Results of rare events logit and OLS estimation in a sample of 1679 migrants. The dependent variable indicates if a migrant has been trafficked or not. ***/**/* denote significance at a 1/5/10 per cent level respectively. Locality-clustered standard errors in parentheses.