

What Determines Human Trafficking? Evidence from Five Eastern European Countries.¹

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Abstract

Human trafficking and other forms of modern day slavery have received limited attention in the academic literature. This study is the first attempt to estimate the determinants of migrant exploitation using micro-level data. We argue that the main driver of exploitation and trafficking is migration pressure, combined with incomplete information. To test our argument we employ a unique dataset of 5611 households from Belarus, Moldova, Romania, Bulgaria and Ukraine and take into account economic and institutional determinants. Our key finding is that human trafficking happens where emigration happens: Households in regions with high emigration face a considerably higher risk of being trafficked. We also show that the determinants of trafficking on the household level do not differ much from the determinants of migration. Overall, the results indicate that the business of human trafficking will continue to prosper as migration pressure increases. Related policy programs should be targeted to those areas where migration rates are high or on the rise, not to remote areas with little migration.

Keywords: Human Trafficking, Migrant Exploitation, Migration Pressure, Eastern Europe
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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 Economist²

1. Introduction

The exploitation and trafficking of migrants 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).³ 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 organised crime and the third most important, exceeded only by drug and arms trade.⁴

After decades of neglect, public attention on the problem has increased considerably in recent years. Policymakers in the United Nations (UN) or in the European Union (EU) augmented their efforts to combat these forms of modern day slavery and to raise public sensitivity on the issue.⁵ Also on the national level, recent years have seen the emergence of new initiatives by governments and NGOs and a notable increase in donor funding.⁶ Yet, despite the large policy relevance, solid academic research on the topic remains scarce, especially when it comes to economics.

There is little systematic knowledge on the determinants of human trafficking. What explains the increase in trafficking over the last decades? And which households and regions are most vulnerable to it? Many policy reports and several descriptive papers have discussed the root causes of human trafficking.⁷ The factors that are regarded as important are very diverse; they commonly include economic factors such as poverty, unemployment and low wages, issues such as ethnic discrimination and armed conflicts but also institutional weaknesses such as the rule of law and corruption, or deficient implementation of international legislation.

² The Economist, March 9th 2005.

³ Compare definitions of “forced labour”, “human trafficking and “migrant smuggling” below.

⁴ See Obuah (2006).

⁵ Most prominently, the United Nations (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). In Europe, the European Council adopted the Brussels Declaration on Preventing and Combating Trafficking in Human Beings in 2003 including a catalogue of policy measures.

⁶ Laczko (2005) reports that (in 2003) the United States alone funded 190 different anti-trafficking programs in 92 countries.

⁷ See e.g. ILO (2005), IOM (2005), Omelaniuk (2005), Salt (2000), UNECE (2004), or the contributions in Laczko and Gozdzik (2005).

This paper takes a different perspective. It argues that the rising incidence of exploitation and trafficking from areas such as Eastern Europe⁸ can best be explained by the increase in migration pressure. Migration has become a mass phenomenon in many developing and transition countries, often showing self-enforcing dynamics due to the network effects and cumulative causation.⁹ The more people leave, the stronger usually the likelihood of friends and relatives to follow their example. In parallel, migration has become a multi-billion-dollar industry that can be particularly lucrative for criminals willing to use physical violence and restraint. The increasing demand for migration and the difficulties in crossing borders and finding work abroad are a breeding ground for criminal organizations, which have learned to make a profit from people's increased desire for mobility. These organised crime groups often apply the worst forms of bonded and forced labour and are very difficult to control even in rich destination countries.

In a nutshell, we believe that trafficking and exploitation are the sad but obvious consequences of a global tendency to commodify a booming field of human activity: migration. Once a criminal migrant industry is established in departure or destination areas, it is mostly a matter of "bad luck" or insufficient information that determines whether a would-be migrant ends up in the hands of exploiters and traffickers. Accordingly, we argue that the explanatory factors of trafficking should not differ markedly from the explanatory factors of migration in the first place. Some individuals, particularly young women, will be more vulnerable than others. However, it is mostly their shared wish for a better life abroad that exposes potential migrants to the risk of exploitation. Put differently, factors such as corruption, insufficient legislation and weak law enforcement are only of secondary importance to the problem of human trafficking. They can certainly exacerbate the problem but do not explain it at its core.

We test our argument using a unique micro-level survey of 5513 individuals from Belarus, Moldova, Romania, Bulgaria and Ukraine. We find that the determinants of trafficking on the household level do not differ much from the determinants of migration. Regional migration rates are the main explanatory factor of both migration *and* the incidence of migrant exploitation. As expected, it is in regions with large rates of out-migration where human trafficking is particularly prevalent. Factors such as poverty, education, crime and a series of further regional control variables are less important predictors of trafficking and exploitation.

The rest of the paper is structured as follows: Section 2 defines key concepts and some stylised facts on human trafficking with a focus on Eastern Europe. Section 3 briefly discusses the few related papers in economics. In section 4 we describe the data, the variables used in the regressions and our econometric approach. Section 5 and 6 present and discuss our results and some robustness checks. Section 7 concludes.

⁸ See e.g. Europol (2007).

⁹ Network effects and dynamics of cumulative causation are a well-established finding in the literature. See, amongst other, Bauer et al. (2007), Massey et al. (1994), Munshi (2003) or Winters et al. (2001).

2. Definitions and Stylised facts

2.1. Defining Human Trafficking, Smuggling and Exploitation

It is crucial to clearly define the concepts at the heart of this paper. Publications in the press, by policymakers and in academia show that there is a lack of consensus about the meaning of the terms smuggling, trafficking, exploitation and forced labour. This paper follows the UN protocols against human trafficking, which, after years of debate, succeeded in clearly defining and distinguishing these concepts.¹⁰

The main purpose of *smuggling* is to facilitate the illegal entry of a person into another country. Often migrant are smuggled with their consent and pay 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, e.g. in agriculture or the construction sector. Exploitation, according to the UN definition, also involves other practices similar to slavery and the removal of organs. Finally, *forced labour*, according to ILO definitions, comprises two basic elements: (i) that work or service is exacted under the threat of penalty and (ii) that it is undertaken involuntarily. Forced labour is mostly extracted by private agents taking advantage of vulnerable people (ILO 2005, p. 12).

In practice, trafficking and smuggling are often interrelated. Migrants can depart voluntarily but end up being exploited. In such cases, smugglers become traffickers, i.e. they take advantage of the migrants' vulnerability during or after the journey to sell them to exploitative networks. It should also be highlighted that some people working under threat of penalty or slave-like conditions do so with partial consent. Migrants are often not tricked into inhumane working conditions but chose these working options voluntarily (Bhabha 2005). They can be keen to access so called "3D" jobs (difficult, dirty and dangerous) because they would do nearly everything just to escape a desperate situation at home. Iselan and Adams (2003), however, rightly state that any consent is eventually invalid once exploitation starts. They argue that there is nothing such as trafficking with valid consent.¹¹ Contrarily, smuggling usually occurs with complete consent by the migrant.

¹⁰ Precisely, *smuggling* is defined as "The procurement, in order to obtain, directly or indirectly a financial or other material benefit, of the illegal entry of a person into a state party of which the person is not a national or a permanent resident." *Human trafficking* is "the recruitment, transportation, transfer, harbouring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation.". Finally, the concept of *exploitation* "shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs." (see UN 2000a and UN 2000b)

¹¹ Iselan and Adams (2003) argue as follows: "No-one can consent to being enslaved or exploited in slave-like conditions. If someone ends up in a trafficked exploitative situation, then their initial consent is nullified by

2.2. The Business of Trafficking and Exploitation

The studies by Aronowitz (2001), Salt and Stein (1997) and Schloenhardt (1999) sketch a useful picture of the business of human trafficking and exploitation. Probably the most important reason for the existence of this illegal market is the restriction on legal immigration imposed by the richer, migrant-receiving countries. Just like drugs trade today or alcohol smuggling during the time of prohibition in the U.S., human trafficking and exploitation offer considerable economic opportunities for transnational criminal groups. They make a business out of the discrepancies of economic and legal conditions between countries.

The trafficking business is highly lucrative. Start-up costs are small and the risks of detection, prosecution or arrest are much lower compared to other fields of illegal activity such as drug or arms trade. Moreover, as Väyrynen (2003, p. 3) 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”. In a recent study, the ILO (2005) estimates that sexual and labour exploitation yields 32 billion USD of profits a year to the actors involved. This corresponds to an estimated 13,000 USD of yearly profits for each forced labourer. Another estimated figure is the profit of criminal gangs from smuggling victims of sexual exploitation, which is estimated at 5 to 7 billion USD a year (this takes into account the profit from smuggling only, not counting profit from exploitation).

In essence, however, the organisational structure of trafficking networks is similar to that of providers of legal services (see also Becker 1968). 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 can be trafficking victims themselves.

2.3. Trafficking and Exploitation in Eastern Europe

The exploitation of human beings has a long and sad history in Eastern Europe. In medieval times, Venetian and Genoese merchants established a massive trade with slaves from Eastern Europe. Starting from the 16th century, the large land-to-labour ratio and increasing political power of the nobility favoured the epoch of “second serfdom” in Eastern Europe which implied highly repressive forms of exploitation and persisted until the mid-19th century (Blum 1957, Domar 1970). During the 20th century, millions of Eastern Europeans were forced to work in Nazi camps and Stalin deported and exiled innumerable victims from the region to Gulags in Siberia.

the deception (the ‘improper means’ expressed in the [UN’s] Trafficking Protocol). In short, the intending migrant is not complicit.”

Today, countries of the former Eastern bloc such as Albania, Belarus, Moldova, Bulgaria, Romania, Russia, and Ukraine continue to be major origins of human trafficking and forced labour. The main destination countries are in Western Europe and North America but also in Asia and, increasingly, Russia and the Middle East (Turkey, Israel, the United Arab Emirates) (see Surtees 2005, UNODC 2006). Estimates of the scope of trafficking and forced labour in Eastern Europe vary widely. The report by the ILO (2005) estimates that a minimum of 210,000 people from Eastern Europe and Central Asia has fallen victim of forced labour, of which a very high proportion (200,000) has been trafficked prior to exploitation. Mansoor and Quillin (2006) cite estimates from the United Nations Population Fund, stating that more than 175,000 persons are trafficked annually (!) in Europe and Central Asia (ECA). On the country level, a recent report by the international Office of Migration (IOM 2006) is among the first to provide relatively accurate figures for Eastern Europe, based on the same data used in this study. It estimates that Ukraine, by far the largest country under study, had 117,000 victims of trafficking, Moldova 57,000, Romania 28,000, Belarus 14,000 and Bulgaria 9,500. Altogether these five countries alone are believed to have 225,000 victims of trafficking.

Media reports, crime statistics and reports such as the UNODC (2006) suggest that Eastern European trafficking victims are mostly young women exploited in the commercial sex industry. Certainly, a considerable share of victims from the region are females forced into prostitution. Yet, the IOM (2006) report, and recent more qualitative surveys from Russia, the Balkans and Moldova (Tyuryukanova 2005, Surtees 2005, IOM 2008) underline that those trafficked from Central and Eastern Europe are increasingly being exploited in other economic sectors such as agriculture, construction, or domestic work.

A further key insight from recent studies in the region is that most of the victims of trafficking departed 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). It is only in the destination country that the typical victim becomes subject to coercion and violence. Ending up in the hands of traffickers usually implies that the passport is taken away and that victims are forced to work for no or barely any pay.

According to the ILO (2005), trustworthy social networks can lower the risks of being trafficked, while the use of middlemen increases it. A study of 644 returned migrants in Albania, Moldova, Romania and Ukraine revealed that, among forced labour victims, 35% had used an intermediary to find work abroad, compared to only 10% of those who were not trafficked. However, social networks do not assure safety from exploitation. According to the IOM study by Surtees (2005), the large majority of victims of sexual exploitation in countries like Albania, Bulgaria or Macedonia had been recruited by close friends, family members or the fiancé. Laczko and Gramegna (2003) report that in Southeast Europe 60% of victims were recruited by acquaintance or friends, mostly with the promise to find work abroad.

In sum, these stylised facts reveal that human trafficking does not necessarily imply illegal border crossings or the use of unknown middlemen who use abusive or deceptive recruitment strategies in the origin country. Instead, it appears that most trafficked victims leave voluntarily but ill-prepared. They are exploited mainly because the difficulties in getting a residence or employment permit, or other legal documents makes them vulnerable. It is in the destination country that the “circle of deception” closes (ILO, 2005).

3. Related Literature

Despite being a topic of considerable interest to policymakers around the world, the economic literature has been surprisingly silent on the issue. A few theoretical papers have explicitly modelled the context of human trafficking.¹² Tamura (2007) is most closely related to this analysis. He focuses on the interaction of human smuggling and trafficking. In the model, migrants hire a smuggler to cross borders and find work abroad. They become vulnerable once they depart from their countries of origin and are in the hands of the smuggler. Eventually, it depends on the smugglers decision and the profitability of exploitation whether the migrants end up being a victim of trafficking or not. In a different setup, Friebel and Guriev (2006) model the market of illegal migration with debt/labour contracts. As migration costs cannot be paid by most migrants, 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 by the intermediaries is ruled out. Contrary to the argument made here, the authors assume that forms of involuntary slavery are mostly unrelated to international migration.

While theory is scarce, empirical evidence is even scarcer. Literature surveys in recent years have frequently highlighted the need for rigorous empirical research in the field.¹³ Yet, we are aware of only one econometric study on migrant exploitation and human trafficking.¹⁴ Akee et al. (2007) analyse the determinants of trafficking of children and women in a cross-country setting. Relying on country-by-country reports of the US Department of State and the Protection Project they construct dummy variables for the incidence of trafficking between countries. The gravity model they estimate includes macroeconomic, labour market and demographic factors. However, the author’s focus is on the effect of legislation and law enforcement, which they proxy by coding the

¹² 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.

¹³ As an example, Gozdziaik 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.” Similarly, Tyldum and Brunovskis (2005, p. 32) state that “research on trafficking is still in its early stages, and the potential gains from systematic empirical research are large.” Piper (2005) also highlights that there is a particular need for data and empirical research on non-sexual types of trafficking.

¹⁴ Basu and Chau (2003) provide cross-country evidence on child labour in debt bondage, but do not focus on a migration or trafficking context.

ratification of international conventions, national laws on prostitution and trafficking and the size of the police force. They find that the stage of economic development and the inequality of incomes between countries are main determinants of trafficking. The effect of law enforcement and international conventions is less clear. They also find that, contrary to expectation, granting legal status to trafficked victims in host countries and banning prostitution in source countries leads to a higher likelihood of trafficking. While the paper provides some first cross-country evidence, there is no household-level study that systematically investigates the causes or consequences of human trafficking and migrant exploitation in more detail. This paper is a first attempt to fill this gap.

Before going on, one should highlight that there is a small but growing body of literature on the general migration patterns in Eastern Europe.¹⁵ The countries under study have witnessed large and often seasonal emigration flows since the breakdown of the Soviet Bloc. Altogether, the main drivers of migration from Central and Eastern Europe are poor living conditions and a lack of jobs (poverty and unemployment) as well as migration networks. Herd effects and chain migration patterns seem to be very strong in the region. There is no clear evidence for positive selection in terms of education. Most migrants work in low skill jobs abroad in sectors such as construction, agriculture or in domestic services, often under dismal conditions. As to destinations, the ease of access plays a major role. Other countries in Eastern Europe or the Commonwealth of Independent States (CIS) can often be reached with cheap train ticket and without visas. Mansoor and Quillin (2006) estimate that from 1990 to 2006 about 80% of emigrants from the former Soviet Union moved within the CIS region, predominantly towards Russia. Other main destinations are countries in the European Union, mostly Germany, France, Italy, Spain and Portugal. Among the countries in our sample, Western European countries are more important destinations for Bulgaria and Romania compared to Belarus, Moldova and Ukraine which send large number of migrants to Russia.

4. Data and Econometric Approach

Our analysis is based on a novel dataset on human trafficking in Eastern European countries. The survey includes 5611 individuals from Belarus, Bulgaria, Moldova, Ukraine and Romania. At least 1000 individuals per country were interviewed, with Ukraine and Bulgaria having slightly larger samples. The fieldwork was commissioned by the IOM and conducted during August and September 2006 by GfK Bulgaria, GfK Romania, GfK Ukraine, NOVAK in Belarus and by CAISPP CIVIS in Moldova. A standardised questionnaire was used in all countries. The survey covers urban and rural areas and sampled households in all regions in the sample countries. In each region, interviews were proportionally distributed according to the size of settlement. Within each group, settlements were randomly selected applying probabilities proportional to size. Furthermore, the routes within each city of village were selected randomly from an

¹⁵ See e.g. Bauer and Zimmermann (1999), Danzer and Dietz (2008), Görlich and Trebesch (2008), Kraler and Iglicka (2002), Kule et al. (1999), Mansoor and Quillin (2006).

alphabetical list. The interview was then conducted with that person whose birthday was last among the rest of dwellers.

The dataset includes information on household migration experience, individual migration intentions and standard characteristics like locality, household size, financial status, marital and employment status, education, and age of the interviewed person. The largest module in the survey is dedicated to human trafficking across borders. People were asked if they had heard of the phenomenon, whether they perceive it as a small or large problem and which factors they believed to explain human trafficking. Most importantly, individuals were asked whether they knew a person that was trafficked or exploited in their family or in their surroundings (other relatives, friends and neighbours), or whether they did not personally know any trafficked victim.

We aim to estimate the determinants of human trafficking using binary response models. A potential problem here is that human trafficking, although affecting millions of people, is a relatively rare event on the individual level. Given its rare occurrence, standard procedures such as probit and logit models might yield inaccurate estimates. King and Zeng (2001) show that the maximum likelihood estimator of the standard logit model is biased in rare events data in finite samples because the probability of the rare event is underestimated. We therefore rely on the rare events logit model suggested by King and Zeng (2001) and Tomz, King and Zeng (1999). The model computes bias-corrected coefficients for datasets in which the number of events (ones) is many times fewer than “nonevents” (zeros).

Our main dependent variable is “*traff_close*“. It takes the value of one if the interviewed had a close relative or a close friend or any household member that travelled abroad and became a victim of human trafficking. Given the relatively small number of individuals with trafficking in their close surroundings, we combine sexual exploitation and other forms of exploitation. Specifically, we combine the three main answer categories (i) “were offered a domestic or nursing job, but were locked and forced to work for no pay”, (ii) “were offered a job, but were locked and forced to work at an enterprise, on a construction site, or in agriculture for no or little pay” (iii) “were offered employment, but upon arrival to a country of destination their passport was taken away and they were forced to work in sex business”. To check the validity of the results, we also construct the variable “*traff_hh*” for individuals that had a close family member (parent, child, husband, wife, brother or sister) that was trafficked as well as the variable “*traff_none*”, capturing those that did not personally know any trafficking victim, not even among distant acquaintances or distant relatives. In a further exercise, we investigate the determinants of migration, for which the variable “*mig_hh*” is the dependent variable, indicating if a household had a member who migrated in the last 3 years.

The overall sample contains 289 individuals with a trafficking victim among close friends and relatives. The prevalence is by far the highest in Moldova (153 out of 1053) and lowest in Romania (22 out of 1087) and Belarus (29 out of 1045). In contrast, the overall

sample includes only 110 individuals with trafficking on the family level, of which about half came again from Moldova. A very large share of people had not experienced trafficking in their surrounding. Among all 5611 surveyed, 4981 did not personally know any trafficking victim.

It should be pointed out that the data is likely to suffer from some degree of reporting bias, particularly with regard to sexual forms of exploitation. First, trafficking victims and their relatives might be unwilling to report their experiences because they fear stigmatisation or problems with authorities at home or abroad. This is especially the case for sexual exploitation, which is a highly sensible issue (see Laczko 2005). Second, the survey did not put a focus on marginal social groups, among whom trafficking prevalence rates could be higher. Despite these concerns, we believe that the potential reporting bias will not invalidate our findings. The main problem here is that the number of victims may actually be too low, i.e. a problem of under-reporting. However, there is no reason to assume that there are systematic regional differences in reporting behaviour. Moreover, we would certainly have a more serious problem if the bias were upwards, i.e. if there was a potential problem of over-reporting.¹⁶ Taken together, and despite the unavoidable drawbacks, we believe that the dataset at hand is well suitable for the purpose of our analysis. Since households were randomly selected for the interview, the severe selection bias suffered by other existing 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 large sample and the survey design make it the most representative micro-level survey on trafficking that is available worldwide.

Turning to the explanatory variables used, we first use a set of individual and household level variables. These include age, gender, level of education and the employment status of the respondent. On the household level, we use household size, the number of children below the age of 17¹⁷, a dummy for households living in rural areas and two measures of financial status. The status variables “poor financial status” and “medium financial status” are constructed from subjective perception measures.¹⁸ Unfortunately, however, financial status and household size is not available for Romania and Bulgaria. To capture access to public information and news, we also use a dummy for households with television. It takes the value one if the respondent stated that he/she watched TV to get information on social and political issues. We expect household size, the number of children and poverty to increase the likelihood of human trafficking. Contrarily, TV use can be seen as a proxy for

¹⁶ This is unlikely to be the case, as there are no incentives for misreporting. Only people that have been affected by trafficking (directly or indirectly) would report so.

¹⁷ Due to a modification of the respective question, the number of children in Romania is defined as “14 or younger” instead of “16 or younger”.

¹⁸ More precisely, those indicating that they even “have to save money for the basic necessity (food, clothing, footwear)” are coded as poor, while those indicating that they “have enough money for bare necessities (food, clothing, footwear)” are coded as middle income households. For a discussion on the advantages and disadvantages of using subjective poverty measures see Pradhan and Ravallion (2000), Bertrand and Mullainathan (2001) and Kahneman and Krueger (2006).

high quality and rather objective information and is expected to raise awareness of trafficking risks, thus lowering the trafficking likelihood.

Our main proxy of migration pressure, the key variable of interest, is the migration prevalence ratio on the regional level.¹⁹ This variable allows us to identify “hot spots” of migration, where individuals had a significantly higher propensity to migrate compared to other regions. Areas with high out-migration are also likely to witness strong herd and network effects, which have been shown to be a main driver of migration in Eastern Europe (Bauer and Zimmermann 1999, Danzer and Dietz 2008, Drinkwater 2003, Görlich and Trebesch 2008) and other world regions (Bauer et al 2007, Munshi 2003).²⁰ To strengthen our argument, we use a second proxy for migration pressure, namely the share of individuals in the region who stated that they could not imagine to ever work abroad.

Two regional variables proxy information asymmetries. First, we include a regional risk awareness measure, corresponding to the share of respondents stating that they had never heard of the phenomenon of human trafficking before. To avoid endogeneity, migrant households and respondents who knew a trafficking victim were excluded in calculating this regional awareness share. Similarly, the regional dispersion of information technology is proxied with the share of respondents per region that used the internet to get informed on social and political issues.

We also use two measures to account for the rule of law and illegal activities on the regional level. As proxy for the rule of law we take the number of reported crimes per 10,000 inhabitants in the region, which we coded from the Statistical Yearbooks of each of the countries. Second, we include a measure on the relative importance of illegal migration in the region. It is captured by the share of migrant households that had experience with illegal migration, i.e. dividing the number of households with migrants that had worked illegally abroad in the last 3 years by the total number of migrant households. As can be seen from the standard deviations in Table 1 there are sizable differences both in crime rates and the relative role of illegal migration among the regions under consideration.

Further regional control variables are included to account for the quality of public services, socioeconomic development and remoteness.²¹ Concretely, we use the number of

¹⁹ Migration prevalence is constructed by taking the share of surveyed households in each region that reported to have had a migrant in the last 3 years. A census-based measure of migration prevalence would obviously be a more precise proxy, but census-data is only available for Moldova. For that country, the correlation between our measure and the census-based measure is 0.53, indicating that we do indeed have a valid proxy.

²⁰ Of course, migration prevalence ratios can also be regarded as a valid proxy for migration networks that lower the costs and risk of migration through improved access to information flows. If such effects were present at the regional level this would strengthen the validity of our measure as a proxy for migration pressure.

²¹ All of these are coded from the Statistical Yearbooks of the countries. Given that our dependent variables are retrospective, i.e. backward looking, and in order to minimise possible endogeneity problems, all variables from the Statistical Yearbooks were coded for the year 2004. Note, generally, that the number of regional level variables contained in the Statistical Yearbooks and other statistical publications is rather constrained for the countries under consideration. For this reason, we cannot draw on potentially important variables such as

physicians per 10,000 inhabitants, the infant mortality rate per 1000 live births, and the share of the population living in rural localities. We also include a measure capturing wage differences across regions. Given the potential problems in comparing the statistical data on average wages across countries, we decided to use the relative wage gap between a given region and the country's capital region instead of data on absolute wage levels.

5. Results

Table 2 in the appendix reports our main estimation results. Migration pressure, as measured by migration prevalence, turns out to be a robust and highly significant predictor of human trafficking both within the household and among close friends and relatives. This is true for different specifications and subsamples. The migration prevalence ratio also has a sizable marginal effect compared to other explanatory factors. If the share of migrants in a region is increased by one standard deviation from the mean (i.e. an increase of 17 percentage points), the likelihood of trafficking on the household level raises by about 4%. Keeping in mind that trafficking is a rare event, the size of this effect is quite remarkable.

Interestingly, we find a (weakly) significant link between risk perception and trafficking. In regions where more people are aware of the phenomenon of human trafficking, the likelihood of trafficking is lower. This finding, although not fully robust, underlines the potential benefit of awareness campaigns to counter human trafficking. A further interesting finding is that the role of illegal migration plays a significant role. In areas where a larger share among the emigrants worked abroad illegally, trafficking risks are higher. This is very much in line with common belief and confirms the intuition of existing theoretical models that close connections to people acting in the illegal sector increases the risk of exploitation.

Contrary to what we expected, weak rule of law in the home region (as proxied by high crime rates) does not appear to increase the likelihood of trafficking abroad. The variable of regional crime rates has a negative sign and is only weakly significant for some specifications. A similarly surprising finding is that the dispersion of information technology as measured by the share of internet users in the region does not lower the risk of trafficking. On the contrary, internet use on the regional level appears to significantly increase its likelihood. Access to television news, however, seems to lower trafficking risks, although this finding is not very robust.

Generally, remoteness and low socioeconomic development do not appear to matter much for trafficking risks. A lower quality of public services as measured by low density of physicians and high infant mortality rates, the household's locality (rural or urban), and low wages compared to the capital town do not increase the likelihood of trafficking in a

regional murder rates, average levels of education or regional economic measures such as poverty, industrial production, income or unemployment.

certain region. Likewise, the share of the rural population, although positively related to trafficking, is only significant in some cases.

On the household level, the number of children appears to increase the risk of trafficking, while household size does not matter.²² As we are not able to control for household composition in more detail, the interpretation of this effect warrants caution. It may well be the number of children is a good proxy for the presence of prime-age individuals, who are typically most likely to migrate. Age also appears to be an explanatory factor, which is very much in line with the stylised facts. In households with a young respondent, the risk of trafficking is much higher. While we do not have any information on the age of the trafficked friend or relative, it is reasonable to assume that young respondents know more people of their own age. Hence, one can infer that being young increases the likelihood that you know a trafficking victim, because trafficking mostly happens to young people. Income and financial status, which we can only assess for the sample of Belarus, Moldova and Ukraine, appears to play no role. Apparently, poorer households are not exposed to higher risks of trafficking than richer ones.

Lastly, it is worth comparing the determinants of migration to the determinants of trafficking. As shown in Table 2, there is surprisingly little difference between the estimation results. The fact that the same factors appear to influence migration and trafficking prevalence strengthens our argument and exemplifies the close causal link between the two phenomena. In particular, we find that regional migration prevalence is the main predictor of migration on the household level, although the marginal effect is much higher than the effect for trafficking. Moreover, one should underline that the migration probability seems to be lower in regions where more people are aware of human trafficking. Yet, this result only holds for the subsample of Belarus, Moldova and Ukraine. One could argue that the risk of being trafficked is a deterrent for migration, which would be in line with Dessy and Pallage (2006) who assume that the risk of trafficking deters parents to send their children to work.

6. Robustness Checks

To check the validity of our results, we conduct a series of robustness checks (see Table 3). We first check whether the results remain robust when running regressions for each country individually. We also check whether Moldova, the country which has by far the highest prevalence of migration and trafficking among the five study countries, biases the results in a certain direction. Overall, the results are surprisingly stable for each country sample and for the pooled sample that excludes Moldova. In particular, migration prevalence remains significantly and positively associated with trafficking in each case.

²² There is potential problem of collinearity when including both household size and the number of children. However, the finding holds if one includes the share of children in the household instead of its absolute number.

Second, one could argue that our proxy of migration pressure is unsatisfactory. We therefore rerun the regressions including our second proxy, namely the share of people per region stating they had no intentions to migrate whatsoever (share of “stayers”). Interestingly, the variable turns out to be significant but negatively related. Thus, the incidence of trafficking appears to be lower when living in a region where fewer people intend to leave or, in other words, migration pressure is lower. We further checked the results with a more reliable census-based measure of migration prevalence for Moldova. Again, migration prevalence is significantly and positively related to trafficking, suggesting that our result is not invalidated due to potential measurement errors. As an additional exercise, we disentangle illegal migration from legal migration by constructing two additional prevalence ratios: the regional share of households with legal migration experience and the share of households with illegal migration experience. We do this to check whether illegal migration drives most of the result, while legal migration has no effect on trafficking risks. However, the effect of legal and illegal migration prevalence is essentially the same.

Finally, we checked whether our results are affected when considering migrant households only. It turns out that constraining the sample to the 1560 migrant households yields quite similar results. Regional migration pressure remains the most important predictor of trafficking. This result even holds if we run a Heckman selection model with household migration as dependent variable in the selection equation and trafficking on the household level as dependent variable in the outcome equation.²³

7. Conclusions

This paper has analysed the determinants of human trafficking on a micro level. The results strongly underline our main argument: migration pressure is the key driver of human trafficking. Moreover, the determinants of migration do not differ much from the determinants of trafficking. While this finding might seem intuitive and self-evident at first, some of the existing literature, and several recent press articles and policy reports have largely ignored the close link between migration and human trafficking. Instead, they have often focussed on factors such as legislation, law enforcement, ethnic discrimination, poverty or insufficient education that put people at risk. While these factors certainly do play a role, we believe that on the whole they are of secondary importance. The profitability of the business combined with the notorious vulnerability of emigrants is a large incentive for criminal groups to continue their exploitative activities even if law enforcement and legislation improved.

Our estimation results for Eastern Europe suggest that it is difficult to identify other socio-economic drivers of human trafficking other than migration prevalence. Victims of human trafficking appear to be a relatively heterogeneous group coming from both urban and rural

²³ We find no indication of selection effects. The null hypothesis of no correlation between the error terms of the two equations cannot be rejected.

areas that can be rich or poor. The same seems to be true for other world regions as well (Omelaniuk 2005, Schloenhardt 1999). We find that poverty on the household level, regional crime levels and several other regional development and remoteness indicators do not play a significant role. What appears to matter, however, are risk perceptions and the relative role of illegal migration. In regions where less people are aware of human trafficking risks and in areas where migration is predominantly illegal, the probability of trafficking is significantly higher. Moreover, families with many children and younger individuals appear to face a higher likelihood of being trafficked.

Several conclusions can be drawn from our findings. First, policy measures to counter human trafficking and related awareness campaigns should mainly be targeted to those areas where migration rates are high or on the rise. Second, it seems quite probable that the market of human trafficking and the number of victims will continue to grow as long as migration pressure remains high. Restrictive immigration policies of many migrant-receiving countries exacerbate the problem by pushing immigrants into illegality, which increases the vulnerability of migrants to smugglers and employers. One could thus conclude that governments on both the sending and receiving side should increase the accessibility to legal migration, e.g. by extending bilateral programs for seasonal and short-term migration.

Our findings on the role of information asymmetries indicate that increased transparency and better dissemination of high-quality information are a promising way to reduce trafficking risks. 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. Another measure would be the establishment of a monitoring system for private recruitment and employment agencies. Such supervisory bodies could hand out certificates to reliable agencies that procure legal employment abroad and publish blacklists of agencies and middlemen with links to trafficking networks.

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Table 1: Summary statistics

Variable	Mean	Std. dev.	Minimum	Maximum
Human trafficking in close surrounding	0.052	0.221	0	1
Human trafficking in hh	0.020	0.139	0	1
Migration in hh	0.286	0.452	0	1
Age	43.773	17.669	15	88
Male	0.450	0.498	0	1
Primary education or lower	0.288	0.453	0	1
Secondary education	0.430	0.495	0	1
Employed	0.456	0.498	0	1
TV user	0.828	0.377	0	1
No of children (0-16)	0.465	0.755	0	11
Rural	0.393	0.488	0	1
Rural population in region (%)	38.734	22.397	0.000	86.577
Regional wage gap to capital (%)	0.298	0.158	0.000	0.552
Physicians per 10,000 in region	35.268	16.197	10.147	86.854
Regional crime rate (per 10,000 inhabitants)	159.998	107.545	47.000	477.404
Internet users in region (%)	0.100	0.078	0.000	0.321
Regional prevalence of migration (%)	0.286	0.174	0	1
Regional awareness of human trafficking (%)	0.790	0.141	0.333	1.000
Belarus	0.193	0.395	0	1
Bulgaria	0.181	0.385	0	1
Romania	0.192	0.394	0	1
Ukraine	0.242	0.428	0	1
Share of illegal migrants among all migrants (% per region)	0.332	0.189	0	1
Poor financial status	0.412	0.492	0	1
Medium financial status	0.369	0.483	0	1
Household size	3.090	1.352	1.000	15.000
Regional share of people not wanting to migrate (%)	0.510	0.119	0.000	0.900
Regional prevalence of migration, census-based (%)	0.081	0.024	0.038	0.109
Regional prevalence of legal migration (%)	0.209	0.136	0.000	0.704
Regional prevalence of illegal migration (%)	0.102	0.096	0.000	0.615

Table 2: Main results

	Human trafficking in close surrounding			Human trafficking in household			Migration in household	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	basic	with financial status and household size	with role of illegal migration	basic	with financial status and household size	with role of illegal migration	basic	with financial status and household size
Age	-0.010** (0.004)	-0.011** (0.005)	-0.010*** (0.004)	-0.005 (0.007)	-0.006 (0.009)	-0.006 (0.007)	-0.009*** (0.002)	-0.010*** (0.003)
Male	0.037 (0.131)	0.072 (0.141)	0.038 (0.129)	0.172 (0.164)	0.261** (0.130)	0.173 (0.163)	0.053 (0.071)	0.175* (0.098)
Primary education or lower	-0.086 (0.175)	0.123 (0.221)	-0.070 (0.178)	-0.250 (0.241)	-0.010 (0.279)	-0.242 (0.241)	-0.311*** (0.086)	-0.348*** (0.111)
Secondary education	0.162 (0.194)	0.277 (0.260)	0.175 (0.195)	-0.006 (0.250)	0.192 (0.278)	0.000 (0.250)	-0.069 (0.068)	-0.109 (0.082)
Employed	0.347*** (0.121)	0.454*** (0.112)	0.341*** (0.123)	0.299 (0.233)	0.541** (0.232)	0.297 (0.232)	-0.161** (0.072)	-0.238** (0.092)
TV user	-0.317* (0.168)	-0.272 (0.179)	-0.304* (0.168)	-0.322 (0.215)	-0.347 (0.247)	-0.314 (0.213)	0.103 (0.105)	0.292** (0.143)
No of children (0-16)	0.140** (0.068)	0.162* (0.095)	0.142** (0.068)	0.103 (0.072)	-0.063 (0.133)	0.103 (0.071)	0.130*** (0.043)	0.163** (0.068)
Rural	0.155 (0.240)	0.233 (0.307)	0.172 (0.236)	0.196 (0.388)	0.214 (0.454)	0.204 (0.385)	0.207 (0.128)	0.126 (0.157)
Rural population in region (%)	0.021* (0.011)	0.024 (0.015)	0.020* (0.011)	0.023* (0.014)	0.014 (0.017)	0.023 (0.014)	0.001 (0.003)	-0.003 (0.004)
Regional wage gap to capital (%)	-3.043* (1.770)	-2.278 (2.219)	-3.181* (1.731)	-4.696** (2.345)	-4.734 (3.715)	-4.685** (2.302)	0.115 (0.451)	0.382 (0.532)
Physicians per 10,000 in region	0.005 (0.015)	0.018 (0.025)	0.004 (0.013)	-0.005 (0.020)	-0.008 (0.035)	-0.005 (0.019)	-0.002 (0.003)	-0.000 (0.004)
Regional crime rate (per 10,000 inhabitants)	-0.002 (0.001)	-0.002* (0.001)	-0.002** (0.001)	-0.001 (0.002)	-0.002 (0.002)	-0.001 (0.002)	-0.001** (0.001)	-0.001** (0.001)
Internet users in region (%)	3.802** (1.660)	6.576 (4.836)	4.962** (2.059)	3.910** (1.932)	1.976 (4.224)	4.464* (2.347)	0.020 (0.249)	-0.182 (0.658)
Regional prevalence of migration (%)	5.168*** (1.167)	4.198** (1.759)	4.910*** (1.067)	4.290*** (1.587)	4.535 (3.022)	4.072*** (1.563)	3.096*** (0.376)	3.783*** (0.555)
Regional awareness of human trafficking (%)	-1.137* (0.623)	-1.726* (0.929)	-0.708 (0.534)	-1.436* (0.843)	-1.647** (0.776)	-1.262 (0.833)	-0.112 (0.150)	-0.331** (0.163)
Belarus	-0.003 (0.540)	-0.606 (0.837)	-0.211 (0.476)	-0.137 (0.680)	-0.147 (1.375)	-0.260 (0.714)	-0.323** (0.126)	-0.190 (0.162)
Bulgaria	0.758 (0.471)		0.852** (0.414)	0.907 (0.719)		0.957 (0.675)	-0.282** (0.139)	
Romania	-1.505*** (0.315)		-1.633*** (0.332)	-1.571*** (0.422)		-1.617*** (0.431)	-0.010 (0.100)	
Ukraine	1.288 (0.815)	0.873 (1.044)	1.378* (0.721)	1.366 (1.250)	1.227 (1.993)	1.373 (1.194)	-0.370* (0.224)	-0.318 (0.214)
Poor financial status		-0.190 (0.327)			-0.032 (0.381)			-0.176 (0.112)
Medium financial status		-0.210 (0.233)			-0.259 (0.397)			-0.279** (0.118)
Household size		0.010 (0.062)			0.185** (0.094)			-0.056 (0.041)
Share of illegal migrants among all migrants (% per region)			1.244** (0.626)			0.575 (0.769)		
Constant	-3.958*** (1.120)	-4.084*** (1.407)	-4.581*** (1.140)	-3.830*** (1.326)	-3.610** (1.494)	-4.073*** (1.450)	-1.107*** (0.338)	-0.930** (0.424)
Number of observations	5,513	3,369	5,495	5,513	3,369	5,495	5,513	3,369

Note: standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
Robust standard errors clustered by region

Table 3: Robustness checks (only human trafficking in close surroundings)

	(1)	(2)	(3)	(4)	(5)	(6)
	with regional share of "stayers" (those not intending to migrate)	Moldova only (census data on migration prevalence)	with legal migration prevalence ratio	with illegal migration prevalence ratio	all countries but Moldova	sample of migrant hhs only
Age	-0.010** (0.004)	-0.016** (0.006)	-0.010** (0.004)	-0.011*** (0.004)	-0.005 (0.006)	-0.011** (0.005)
Male	0.043 (0.126)	-0.106 (0.194)	0.041 (0.128)	0.053 (0.124)	0.125 (0.172)	-0.063 (0.174)
Primary education or lower	-0.065 (0.177)	-0.049 (0.275)	-0.075 (0.176)	-0.035 (0.188)	-0.121 (0.318)	0.202 (0.296)
Secondary education	0.210 (0.188)	0.057 (0.243)	0.176 (0.191)	0.215 (0.193)	0.306 (0.247)	0.320 (0.303)
Employed	0.332*** (0.123)	0.462** (0.195)	0.350*** (0.120)	0.324** (0.128)	0.215 (0.200)	0.378** (0.172)
TV user	-0.310* (0.166)	-0.275 (0.273)	-0.322* (0.167)	-0.298* (0.165)	-0.409 (0.260)	-0.648*** (0.195)
No of children (0-16)	0.151** (0.069)	0.072 (0.127)	0.139** (0.068)	0.150** (0.068)	0.229** (0.104)	0.124 (0.089)
Rural	0.186 (0.240)	0.456* (0.263)	0.157 (0.237)	0.197 (0.233)	0.113 (0.275)	0.157 (0.362)
Rural population in region (%)	0.038*** (0.013)	0.216** (0.088)	0.030*** (0.011)	0.028** (0.013)	0.054** (0.021)	0.016 (0.012)
Regional wage gap to capital (%)	-3.781* (2.240)	-30.606** (14.119)	-2.778 (1.804)	-3.303 (2.072)	-2.831 (2.213)	-2.446 (1.857)
Physicians per 10,000 in region	0.008 (0.014)	0.482*** (0.182)	0.014 (0.015)	-0.000 (0.012)	0.020 (0.016)	0.008 (0.021)
Regional crime rate (per 10,000 inhabitants)	-0.004* (0.002)	-0.087*** (0.034)	-0.003 (0.002)	-0.004** (0.002)	0.002 (0.002)	-0.001 (0.002)
Internet users in region (%)	3.142* (1.763)	20.267*** (7.037)	3.331* (1.830)	6.368*** (2.335)	2.458 (2.045)	3.922** (1.685)
Regional awareness of trafficking (%)	-1.337** (0.580)	1.978 (2.167)	-1.628** (0.721)	-0.008 (0.628)	-0.232 (1.082)	-2.313*** (0.650)
Belarus	-1.044** (0.516)		-0.739 (0.519)	-0.775* (0.402)		0.738 (0.569)
Bulgaria	-0.175 (0.459)		0.084 (0.436)	0.285 (0.430)	0.539 (0.362)	0.954* (0.555)
Romania	-2.151*** (0.328)		-1.713*** (0.356)	-2.033*** (0.393)	-1.685*** (0.607)	-0.981*** (0.336)
Ukraine	0.571 (0.988)		0.378 (0.841)	1.054 (0.817)	0.583 (0.612)	1.681** (0.844)
Regional prevalence of migration (%)					5.449*** (1.775)	4.790*** (1.147)
Regional share of people not wanting to migrate (%)	-2.582** (1.185)					
Regional prevalence of migration, census-based (%)		104.486* (56.387)				
Regional prevalence of legal migration (%)			3.025** (1.176)			
Regional prevalence of illegal migration (%)				5.346*** (1.296)		
Poor financial status		0.114 (0.296)				
Medium financial status		0.108 (0.288)				
Household size		0.014 (0.079)				
Constants	-0.464 (1.181)	-19.420** (9.049)	-2.767** (1.133)	-3.538*** (1.301)	-6.923*** (1.926)	-2.487* (1.340)
Number of observations	5,513	1,055	5,513	5,513	4,440	1,560

Note: standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
Robust standard errors clustered by region