# The law and economics of international sex slavery: prostitution laws and trafficking for sexual exploitation

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**Abstract** International trafficking in humans for sexual exploitation is an economic activity driven by profit motives. Laws regarding commercial sex influence the profitability of trafficking and may thus affect the inflow of trafficking to a country. Using two recent sources of European cross country data we show that trafficking of persons for commercial sexual exploitation (as proxied by the data sets we are using) is least prevalent in countries where prostitution is illegal, most prevalent in countries where prostitution is legalized, and in between in those countries where prostitution is legal but procuring illegal. Case studies of two countries (Norway and Sweden) that have criminalized buying sex support the possibility of a causal link from harsher prostitution laws to reduced trafficking. Although the data do not allow us to infer robust causal inference, the results suggest that criminalizing procuring, or going further and criminalizing buying and/or selling sex, may reduce the amount of trafficking to a country.

**Keywords** Law and economics · Prostitution · Sexual exploitation · Sex slavery · Trafficking

**JEL classification** F22 · K14

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## 1 Introduction

International human trafficking of women for commercial sexual exploitation (henceforth trafficking) has been identified as a form of modern-day slavery and it is a worldwide problem which has grown rapidly in the last decades (Bettio and Nandi 2010; Hodge and Leitz 2007). According to the European Commission (2009) trafficking in human beings is a serious crime and a gross violation of human rights and to reduce trafficking in human beings is highly prioritized in many countries.

Governments throughout the world view human trafficking as a component of organized crime and the average punishment is comparable to other types of serious transnational crimes (Morrison and Crosland 2001). It is also regarded as a crime against humanity in the statute of the International Criminal Court (Article 7.2). People are trafficked for the purpose of sexual or labour exploitation and it is estimated that 87 percent of trafficking is for sexual exploitation (UNODC 2006).[1] Trafficking in human beings for sexual purposes is intimately linked to organized crime and is considered the second main source of illicit profits for organized crime (European Commission 2009). In this study we investigate if there is a relation between national prostitution legislation and trafficking into a country.

Trafficking is an economic activity in which organizations try to make profits (Salt and Stein 1997; Salt 2000). Traffickers will only sell persons for sexual exploitation when market conditions make it profitable (UNODC 2009). Evidence suggests that human traffickers belong to organized criminal organizations and that they act as businessmen trying to maximize profits (e.g. Anderson and O'Conell Davidson 2002; Hodge and Leitz 2007; Salt 2000; UNDOC 2006; UNODC 2009). The profitability of trafficking to a given country hinges on the characteristics of that country's market for commercial sex. A crucial factor for the profitability of commercial sex is the legal framework surrounding it. Aghatise (2004) argues that it is impossible to combat trafficking where prostitution is sanctioned. This is also the position taken by several governments and it has been an explicit motivation for criminalizing the buying of sex in Norway (Ot. prp. nr. 48 2007) and Sweden (Proposition 1997/98: 55) and the US government took a strong position against legalized prostitution using this argument (US Department of State 2004). Using the fact that national prostitution legislation differs considerably between countries, the aim of this paper is to test the hypothesis that harsher legislation surrounding commercial sex reduces the amount of trafficking to a country.

The economics literature on prostitution is still sparse, although it has grown somewhat in recent years (e.g. Cameron et al. 1999; Edlund and Korn 2002; Albert et al. 2007). Available studies have mainly focused on pricing, and more precisely on pricing as a reflection of risk preferences (Cameron and Collins 2003; Rao et al. 2003; Moffat and Peters 2004; Gertler et al. 2005; Levitt and Venkatesh 2007; Raj and Shah 2008). Della Giusta (2010) further builds on the prostitution model of

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[1] The figures regarding the share of sexual exploitation should be taken with care though, since sexual exploitation is arguably more visible than forced labor (UNODC 2009).

Della Giusta et al. (2008, 2009) and incorporates the role of stigma and reputation for policy decisions. Jakobsson and Kotsadam (2011) study attitudes toward prostitution in the general population, and also investigate whether the recent criminalization of buying sex in Norway changed public attitudes (Jakobsson and Kotsadam 2010).

The economics literature on trafficking for sexual exploitation is even sparser. Della Giusta et al. (2008) use survey data from the International Organization for Migration (IOM), the Counter-Trafficking Module Database, to study victims of trafficking for sexual exploitation. Of the 5,117 females in the sample, 89 percent were trafficked for sexual exploitation. The countries of origin of these women were Eastern Europe and ex-Soviet states. Their salary before being trafficked was USD 52 per month; the amount they were being sold for was about USD 4,659 per month. Eighty-four percent were recruited via personal contacts, TV and Internet advertising accounted for seven percent, five percent were kidnapped and one percent sold by their family. Also using the IOM data, Bettio and Nandi (2010) investigate which factors influence the violation of basic rights (physical integrity, free movement, access to medical care, the use of condoms, and the exercise of choice over sexual services) among trafficked women. They find that working location and country of work are the main determinants of rights enforcement, while individual and family characteristics play a marginal role.

Furthermore, this paper relates to the broad literature on the economics of crime pioneered by Becker (1968). By prohibiting the market for a good the government raises the cost for suppliers and thus raises the price and lowers the quantity consumed (Becker et al. 2006). This is not always the case, however, and Miron (2003) describes some of the mechanisms that may weaken this effect—namely, no regulation, no tax, no legal disputes etc. Miron and Zwiebel (1995) argue that, in the case of drugs, prohibition may lead to a significant decrease in drug consumption, but that it may also lead to increased violence, the establishment of black market cartels, and lower quality of the drugs supplied. Thus, the welfare effects of a prohibition policy are ambiguous when the quantity consumed decreases. This reasoning can also be applied to the case of prostitution and trafficking. That is, establishing what happens to the quantity of trafficking is not sufficient for evaluating the welfare consequences of a prohibition of prostitution. Hence, it should be clear that the aim of this paper is not to evaluate the total welfare effects of prostitution laws.

There is one existing study which tries to evaluate the effect of national prostitution legislation on trafficking (Di Nicola et al. 2005). Examining official victim data from eleven EU countries, it argues that less harsh prostitution legislation may cause more trafficking victims. This conclusion is, however, drawn from a very small sample (11 countries) and from descriptive statistics. Danailova-Trainor and Belser (2006) study what determines trafficking flows. Using country-level estimates of trafficking victim data they find that countries that are more open to globalization and countries with more prostitution are more likely to be destination places for trafficking victims.

Using both the trafficking database constructed by the United Nations Office on Drugs and Crime and data from the ILO, as well as information about national

prostitution legislation, we investigate if there is a relation between prostitution legislation and the prevalence of trafficking to a country. In accordance with our theoretical predictions we find that the trafficking of women for commercial sexual exploitation is least prevalent in countries where prostitution is illegal, most prevalent in countries where prostitution is legalized, and in between in those countries where prostitution is legal but procuring illegal. However, these results should be regarded with care since the data is problematic in several ways (this is discussed thoroughly in later sections). To supplement the quantitative analysis we also investigate two cases of legal change and its effect on trafficking. The hypothesis of reduced trafficking from harsher laws is largely supported in these cases.

The remainder of the paper is organized as follows. Section 2 discusses human trafficking and prostitution. Section 3 presents the theoretical mechanisms. Section 4 describes the data and descriptive statistics, while Section 5 considers the empirical framework and results. Section 6 includes the case studies, and Section 7 concludes.

## 2 Human trafficking for sexual exploitation and prostitution

Trafficking is intimately linked to organized crime and the United Nations estimate that criminal groups earn approximately seven billion US dollars a year on trade with people. According to the European Commission (2009), trafficking in human beings is a serious crime and a gross violation of human rights and combating it is a priority for many countries. It has been difficult to reach a consensus on how to define trafficking and it was not until 2000 that the UN General Assembly adopted a common definition, referred to as the Palermo Protocol, which defines trafficking as: "'Trafficking in persons' shall mean 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."[2] In this paper we only consider trafficking for sexual exploitation and we link it to different policies on prostitution.

Outshoorn (2004) created a typology for prostitution regimes which has been very influential in prostitution research (e.g. Della Giusta et al. 2008). Abolitionism, prohibitionism, and regulation are identified as the three different policy regimes in connection to prostitution. Abolitionism refers to the position that prostitution should be banned by criminalizing third parties. Prohibitionism makes prostitution illegal and also the prostitute liable to penalties. Regulation refers to where prostitution is legal, with state intervention in the running of prostitution. This classification is the one we are using when constructing our measure of national

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[2] Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime.

prostitution legislation. A fourth regime, neo-abolitionism, in which only the buyer is criminalized (as in Sweden, Norway, and Iceland), has been added to the typology (Iceland Ministry of Justice and Ecclesiastical Affairs 2009).

Within feminist scholarship there is a division between those who see prostitution as harmful for a woman since she thereby contracts away freedom and sexuality, and those who see it as harmful because society generates a stigma via the double standards of sexual morality (Shrange 2007). These two positions render different normative conclusions on the legal framework surrounding prostitution, where the second one may imply that criminalization further stigmatizes sellers. Outshoorn (2004) identifies the two major opposing position within this feminist debate, one viewing prostitution as "sexual domination and the essence of women's oppression" and the other viewing it as work—"the sex-work position" (Outshoorn 2004: 9). These two positions are thought to lead to opposing policy aims; i.e., the first position wants criminalization of the third parties profiting from prostitution (prostitutes are seen as victims and thereby not liable), while the second calls for decriminalization. There are clear differences among countries in terms of the weights of these two positions in the prostitution discourse. In Europe, feminists in Germany and the Netherlands clearly favor the sex-work view, whereas Swedish feminists are generally found at the other end of the spectrum (Östergren 2006).

Abolitionists and prohibitionists often dismiss claims of a distinction between "free" and "forced" prostitution and, since they view all prostitution as harmful, they have no special position in the debate on the links between prostitution and trafficking. Those favoring the sex-work view, who make a stark distinction on the basis of the degree of "choice" in prostitution, see criminalization of prostitution as bad but condemn trafficking. Although no position can be directly based on philosophical standpoints regarding the degree of choice, the two opposing views almost always end up arguing for different mechanisms in the trafficking chain and for different policy conclusions. The sex-work feminists argue that the lack of protection for sex sellers, induced by criminalization, leads to all kinds of exploitation, including trafficking. The solution, as they see it, is to regulate the sex market just like other markets. Prohibitionists, on the other hand, argue that measures against commercial sex are also measures against trafficking (Anderson and O'Conell Davidson 2002). This paper aims to fill in the gaps in the empirical evidence on which the two strands base their arguments.

## 3 Theoretical mechanisms

Following Danailova-Trainor and Belser (2006), we view trafficking as an exchange between recruiters and exploiters in an illicit market. A recruiter abducts (or recruits) a victim in a country of origin and sells her to a brothel owner in a destination country. To ease the presentation of the mechanisms we assume vertical integration so that recruiters and brothel owners operate within the same business. Evidence suggests that human traffickers belong to organized criminal organizations and that they act as businessmen trying to maximize profits (e.g. Salt 2000; UNDOC 2006; UNODC 2009). Organized crime has as its major goal the maximization of

profits and its success depends on there being exploitable markets (Morrison and Crosland 2001). We therefore argue that the decision made by a trafficker depends on the profit potential. The more profit that can be made in a specific country, the higher is the likelihood that a person will be trafficked to that country. As always, the profit is a function of revenues and costs. The revenues are a function of the price and the quantity sold and should therefore depend positively on the size of the market and the per capita income in the destination country. The costs for the trafficker can be divided into costs for entering a country, such as travel and smuggling costs, and costs for running the business once in the country, such as costly discretion etc. If the trafficker finds that the benefit exceeds the costs then trafficking to a country will take place. We focus on "demand" in destination countries, or, expressed another way, inflow of trafficking victims. We are interested in what determines which countries have high trafficking-victim prevalence. Why does demand differ among destination countries?

Important factors for the traffickers' revenues are the purchasing power and the size of the population in countries of destination. Large markets and customers with a high willingness to pay make it more profitable to exploit women in high income countries than in low income countries.

Since deception of migrants is common and since there are fixed costs in establishing migration routes, we argue that increased immigration to a country reduces the costs of trafficking. With more immigration to a country, illegal activities are detected less frequently and the cost of trafficking women to that country is lower. However, as argued by Danailova-Trainor and Belser (2006), with more legal migration possibilities trafficking may actually decrease since those wishing to migrate may feel less compelled to deal with traffickers.

Another important factor determining the costs is the ease or difficulty of setting up and running organized criminal activity. The legal framework surrounding prostitution is crucial since it affects the profit function. It is likely to affect the supply of trafficked women directly by increasing costs of the day-to-day prostitution since street prostitution is not viable. Laws criminalizing prostitution are likely to affect the demand for prostitution as well, especially if buying sex is illegal. A direct effect would be that people refrain from buying sex since they are afraid of getting caught. There might also be an important indirect effect working through the normative function of the law (Jakobsson and Kotsadam 2010, 2011). Prostitution laws affect the stigmatization of buying and selling sex, which influences the profit function. Della Giusta (2010) and Della Giusta et al. (2008) argue that policies that reduce the stigma associated with supplying sex would increase the marginal net gain of supplying prostitution and the marginal willingness to pay for it would rise. Policies that increase stigmatization of clients are expected to reduce the marginal willingness to pay, the quantity sold, and the equilibrium price. This framework leads us to expect that slacker prostitution laws lead to more trafficking for sexual exploitation. More specifically, we expect most trafficking to countries where prostitution is legal and regulated, least in the countries where buying and/or selling sex is illegal, and flows in between in countries where it is legal to buy and sell but illegal to profit as a third party (pimps or brothel owners).

## 4 Data and descriptive statistics

The available data on trafficking is limited and unsatisfactory in many ways and we strongly encourage efforts to collect better data. To overcome some of the problems we use two different datasets with different merits and weaknesses. In this section we describe the datasets used as well as their limitations. We then proceed to describe our independent variables and how they relate to our trafficking measures.

Our first dependent variable (*Trafficking*) captures the amount of trafficking to a country. It ranges from 1 for countries with a low inflow of trafficking to 5 for countries with a high inflow of trafficking. The data was constructed by the United Nations Office on Drugs and Crime and includes information from 113 institutions providing human trafficking information in 161 countries from 1996 to 2003 (UNDOC 2006). The institutions consist of governments, national criminal justice organizations, international police organizations, non-governmental organizations, research institutes, universities, news agencies, and newspapers. Twenty-four percent of these institutions were international, 26 percent were Western European, 14 percent North American, 13 percent Asian, while the rest came from other parts of the world. One of the main objectives of the database was to gather comparable data (Kangaspunta 2003).

A content analysis of the publications by these institutions was made and 4,950 accounts of trafficking were found. If a country was referred to as a transit, origin or destination country, it was recorded in the database and in this paper we focus on destination countries. If one organization referred to the same occasion several times it was only counted once. To minimize the problem of different organizations referring to the same instance of trafficking, efforts were made to refer to the primary source only. It is important to emphasize once again that the dataset counts occasions and not victims, so that a document finding one trafficking victim results in one citation in the database, as does a document that finds 300 victims. The citations for destination countries range between 0 and 40. If a country got one (1) citation as destination country, it got the score *Very low*, 2–3 citations was recorded as *Low*, 4–10 *Medium*, 11–24 *High*, and 25–40 *Very high*. Thirty-nine European countries are included. Three countries score *Very low*, 4 *Low*, 16 *Medium*, 10 *High*, and 6 *Very high*. The countries are listed in Table 6 in the appendix.

That a broad range of institutions was used as sources improves the data quality. Thirty-two percent of the data comes from international organizations, 27 percent from governmental organizations, and 18 percent from research institutions. We avoid using only official victim data. There are several problems with victim data, the most obvious being that countries with a lot of resources and good legal systems may detect a lot of trafficking even though the problem is not as severe as in other countries. For criminal data to be existent there must be law, the law enforcement agencies must care enough to act on the problem and be capable of doing so, there must then be a system of data collection and a willingness to provide the data to international organizations. Also, the legal definition of trafficking varies between countries; this may result in large differences in official records.

We do not entirely overcome the bias existing in official data but it is somewhat alleviated by relying on several sources. Furthermore, by controlling for rule of law,

GDP, and drug trafficking (for which data is more reliable) we are at least more confident that we capture the main trends in trafficking flows across countries. There are some additional problems with the data. It only uses sources in English, French, Spanish and German and 40 percent of the source institutions are in Western Europe or North America, which may create a bias. As argued in UNDOC (2006), the emphasis on Western source organizations may lead to a geographical bias. For this reason the analysis will be of European countries. In our European sample it is not necessary to control for laws against trafficking since such laws are in force in all countries but Estonia. Estonia, however, criminalized aspects of trafficking via related offences (UNODC 2009). It can also be argued that law enforcement is quite similar in these countries, so that using the classification of legal regulation is actually meaningful for this sample.

As a complement to the UNDOC data we also use a dataset constructed by Danailova-Trainor and Belser (2006) from ILO (International Labour Office) data. The database is constructed from 2,092 reports containing quantitative information on trafficking during 1995–2004. Country-level estimates on trafficking victims for sexual exploitation are created by using the average of the available estimates in the ILO database. As they themselves argue, this data is not ideal since the underlying data may be of bad quality and contain similar problems as pure official statistics on trafficking. This variable only contains data from 31 European countries so missing data may also be a problem. Due to the limits in all existing data on trafficking we include this dataset as a complement and argue that the results are more robust if they hold for both datasets.

Our independent variable of main interest is *Law,* which measures the degree of slackness in the prostitution legislation. It is a categorical variable ranging from 1 to 3. The classification is done according to the well-known prostitution policy regimes outlined above whereby we group neo-abolitionist countries together with prohibitionist countries. Countries where buying and/or selling sex is illegal are coded as 1. Countries where it is legal to buy and sell sex but where procuring (e.g. pimping and running a brothel) is illegal are coded as 2. Countries where it is legal to buy and sell sex, pimp or own a brothel are coded as 3. We have legal data on 46 European countries; in 18 of these prostitution is illegal, in 20 countries prostitution is legal but procuring is illegal, and in eight of the countries both prostitution and procuring are legal. In Table 6 in Appendix 1 these countries are listed. The categorization was constructed mainly using the 2003 Country Reports on Human Rights Practices from the Bureau of Democracy, Human Rights, and Labor. The countries are listed in Table 7 in the appendix. It should be noted that this categorization does not take law enforcement into account, nor the fact that the severity of the punishment differs between countries in the same category.

To take into account the fact that laws are followed to different degrees in different countries and to control for how easy it is to be engaged in organized crime we include rule of law and heroin smuggling as controls. It has been demonstrated that organized crime groups often use the same routes and similar methods for trafficking people and narcotics (Schloenhardt 2001). Our rule of law measure is from the World Bank Aggregate and Individual Governance Indicators (Kaufmann et al. 2009). It is measured in units ranging from $-2.5$ to $2.5$, with higher values corresponding to better

rule of law outcomes. It includes several indicators which measure if agents have confidence in the rules of society. These include perceptions of the incidence of crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts. Together, these indicators measure the success of a society in developing an environment in which fair and predictable rules form the basis for economic and social interactions and the extent to which property rights are protected. The data is an average of the indicator for the years 1996–2003. Data on drug seizures are from UNDOC. The data is mainly drawn from the Annual Reports Questionnaire and supplemented with Interpol and UNDOC Field Offices reports. Data is presented in kilogram equivalents (see UNDOC 2008). We use the data for heroin seizures.

To take into consideration market characteristics likely to influence the profitability of trafficking we also control for GDP per capita and population. For GDP per capita and population we use the average for the 1996–2003 periods from the World Development Indicators (World Bank 2006). The link between migration and trafficking has been argued to be important (e.g. UNODC 2009) and we include immigrant share (UN 2006) in order to control for this.

Table 1 presents the summary statistics for the variables of interest and Table 2 presents the pair-wise correlations between the variables. The pair-wise correlations show that countries scoring higher on the trafficking index as well as on the estimated number of victims variable tend to have less harsh prostitution legislation. As expected, a large population is positively related to trafficking prevalence; this is also true for GDP per capita, although not statistically significantly. Surprisingly a higher score on the rule of law index is positively correlated with trafficking. Immigrant share is somewhat surprisingly negatively related with trafficking, while heroin smuggling is positively related to trafficking. We also see that the countries having less harsh prostitution laws are richer and that they tend to have more heroin smuggling and better rule of law. The high bivariate correlation between GDP per capita and rule of law should also be noted.

In line with our hypothesis, the descriptive statistics show that countries with harsher prostitution laws are less subjected to trafficking. In Table 3, each of the 39 countries are listed according to the combinations of legal regulation of prostitution and prevalence of trafficking (*Trafficking*). Among the 13 countries where prostitution is illegal, only one scores *High* on trafficking prevalence (Bosnia and

**Table 1** Descriptive statistics

| Variable | Mean | St. Err | Min | Max | Obs. |
|---|---|---|---|---|---|
| Trafficking | 3.308 | 1.104 | 1 | 5 | 39 |
| Trafficking victim | 4195.476 | 7647.392 | 0 | 32833.330 | 31 |
| Law | 1.872 | 0.695 | 1 | 3 | 39 |
| Population (million) | 20.203 | 30.090 | 0.278 | 146.300 | 39 |
| GDP per capita (thousands) | 17.241 | 11.172 | 1.383 | 51.444 | 38 |
| Rule of law | 0.709 | 1.008 | −1.139 | 1.960 | 39 |
| Immigrant share | 9.026 | 7.089 | 0.6 | 37.4 | 39 |
| Heroin (kilos) | 429.013 | 1060.085 | 0.001 | 6160.257 | 39 |

**Table 2** Pair-wise correlations

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 1 Trafficking | 1.000 | | | | | | | |
| 2 Trafficking victim | 0.573*** | 1.000 | | | | | | |
| 3 Law | 0.499*** | 0.520*** | 1.000 | | | | | |
| 4 Population | 0.333** | 0.360** | 0.054 | 1.000 | | | | |
| 5 GDP per capita | 0.266 | 0.322* | 0.431*** | −0.081 | 1.000 | | | |
| 6 Rule of law | 0.350** | 0.317* | 0.557*** | −0.124 | 0.892*** | 1.000 | | |
| 7 Immigrant share | −0.059 | 0.147 | −0.100 | −0.180 | 0.540*** | 0.260* | 1.000 | |
| 8 Heroin | 0.403** | 0.161 | 0.336** | 0.495*** | −0.073 | −0.036 | 0.247 | 1.000 |

* Significant at 10%; ** significant at 5%; *** significant at 1%

**Table 3** Legal framework and trafficking prevalence

|  | Prostitution illegal | Only procuring illegal | Prostitution legal and regulated |
|---|---|---|---|
| Very low | 1 | 2 | 0 |
| Low | 2 | 2 | 0 |
| Medium | 8 | 7 | 1 |
| High | 1 | 7 | 2 |
| Very high | 0 | 2 | 4 |

Number of countries with each combination of legal framework and trafficking prevalence

Herzegovina), and no country in this group scores *Very high*. In the group of 18 countries where prostitution is legal but procuring is illegal, seven countries score *High* and two countries score *Very high*. Where both prostitution and procuring is legal (seven countries) two score *High* and four score *Very high* on trafficking prevalence. Although this give indicative evidence that supports the hypothesis there may be other factors correlated with both national legislation and trafficking, such as rule of law etc. as described above, and the rest of this section is therefore devoted to results from regression analyses whereby we control for such factors.

## 5 Empirical framework and results

Since our main dependent variable (*Trafficking*) is discrete and ordered, the estimations are preformed using ordered logit regressions:

$$\text{Trafficking}_i^* = \beta_0 \text{Law}_i + \beta_1 X_i + \varepsilon_i$$

Trafficking$_i$* gives the unobserved prevalence of trafficking to country $i$. Law$_i$ is a categorical variable ranging from 1 to 3 with higher values indicating slacker

prostitution legislation, and $X_i$ is a vector of control variables including population size, GDP per capita, migration share, heroin seizures, and a measure of rule of law (see above). $\varepsilon_i$ is a normally distributed error term. The probability that country $i$ get ranked as trafficking rank $k$ is the probability that the unobserved prevalence of trafficking fall in between the cut-points $\mu_{k-1}$ and $\mu_k$.

$$\text{Prob}(\text{Trafficking}_i = k) = \text{Prob}(\mu_{k-1} < \beta_0\text{Law}_i + \beta_1 X_i \leq \mu_k), \quad k = 1,\ldots 5.$$

The sign of the coefficients reveal the average direction of change in the value of the outcome caused by a positive change in an independent variable. For the Trafficking victim variable we run ordinary least squares regressions with the same explanatory variables as in the former case.

In Table 4, Column 1, we see that *Law* is clearly related to *Trafficking* when we do not control for other factors.[3] The coefficient implies that less harsh prostitution legislation implies a higher score on the *Trafficking* index. Although this is illuminating, we include control variables to see if the relation holds also when controlling for other variables that may affect trafficking. To increase transparency, we introduce the control variables in a stepwise fashion, starting with population (in column 2)—which may be an important confounding variable since it could be the case that larger countries attract larger groups of trafficked prostitutes.[4] Since larger groups tend to be more visible it may also be the case that trafficking is easier to detect in large countries. As we saw in the pair-wise correlations (Table 2) however, while trafficking is correlated with population size, population size is not statistically significantly correlated with the legal framework. Hence, when we only control for population in column 2 it is statistically significant and points in the expected direction but it does not alter the results of the law variable. The following columns show that, among the control variables, only population is statistically significant but that also this variable loses its statistical significance in the full model (column 6). Most notably, the *Law* variable retains its statistical significance in all specifications and its magnitude does not change significantly, implying that the relationship observed in the descriptive statistics is robust to the inclusion of possibly confounding variables. We now turn to the size of the effects. If a country goes from a situation where buying and/or selling sex is illegal to a situation where prostitution is legal and regulated (from 1 to 3 on the *Law* variable), the probability that it will score *High* or *Very high* on the trafficking index increases by 68 percent (62 percent in Specification 2). Thus, the empirical analysis clearly supports our theoretical predictions.

Allowing for nonlinear effects from the *Law* variable by including dummies indicating if prostitution is fully legal and regulated and if it is illegal as compared to the situation where procuring is illegal, shows that in countries where prostitution is legal and regulated, trafficking is much more prevalent than in countries where procuring is illegal. The difference between countries where prostitution is illegal

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[3] The significance levels and size of effects are robust to the exclusion of countries that changed legislation during our period of study (Hungary, the Netherlands, Germany, Denmark, and Sweden, see Appendix 2).

[4] We are grateful to an anonymous referee for pointing out this possibility.

**Table 4** Ordered logit. Trafficking as dependent variable

| | (1) No controls | (2) Population | (3) GDP | (4) Rule of law | (5) Heroin | (6) Full model |
|---|---|---|---|---|---|---|
| Law | 1.660*** (0.501) | 1.794*** (0.527) | 1.758*** (0.591) | 1.564** (0.615) | 1.687*** (0.640) | 1.456** (0.680) |
| Population | | 0.0250** (0.0117) | 0.0253** (0.0117) | 0.0291** (0.0119) | 0.0270** (0.0119) | 0.0193 (0.0136) |
| GDP | | | 0.00834 (0.0348) | −0.0596 (0.0607) | −0.00370 (0.0747) | −0.00940 (0.0748) |
| Rule of law | | | | 0.967 (0.791) | 0.519 (0.863) | 0.590 (0.871) |
| Immigrant share | | | | | −0.0678 (0.0579) | −0.0544 (0.0587) |
| Heroin | | | | | | 0.000635 (0.000699) |
| Observations | 39 | 39 | 38 | 38 | 38 | 38 |

Standard errors in parentheses

* Significant at 10%; ** significant at 5%; *** significant at 1%

and countries where only procuring is illegal is small and statistically insignificant.[5] This indicates that it is not the move to criminalize buying and/or selling that is crucial for lowering trafficking to a country, but the decision to make procuring illegal.

Running OLS regressions with the same specifications as above but instead using the *Trafficking victim* variable as the dependent variable, we see that the results are similar (Table 5). In contrast to before, population now also has a statistically significant positive effect on the number of trafficking victims in the full model (column 6). We use the total number of victims since that this what we are interested in and it allows comparison with our previous results. It should be noted, though, that when the number of trafficked victims are expressed as a fraction of total population and population is not used as an explanatory variable, the result is only statistically significant at the 12 percent level.[6] In sum, these results point in the direction of that harsher prostitution legislation is correlated with lower levels of trafficking. However, as we have discussed in previous sections, the data is problematic in several ways so we must be careful in interpreting these findings.

## 6 Case studies

So far we have shown that our theoretical predictions have empirical support. Since the data is cross-sectional, however, we are not able to conclude that changes in laws cause changes in trafficking flows, merely that they are statistically correlated when controlling for other relevant factors. Unfortunately, no longitudinal data exist on trafficking flows, but in this section we will strengthen the possibility of a causal relationship by looking at two European cases where prostitution law has been made harsher (Sweden and Norway). If our theoretical predictions are correct, trafficking should be reduced after the criminalization of buying sex.

In Sweden, it has been illegal to buy sex, but not to sell it, since 1999. According to the Swedish government, trafficking was reduced following this criminalization (Friesendorf 2007). Ekberg (2004) argues that the Swedish law decreased the demand for buying sex and thereby made the Swedish market less lucrative for traffickers. She has interviewed, among others, the Director for the anti-trafficking group at the Swedish Police and leading Swedish scholars and concludes that the number of women involved in street prostitution has declined by between 30 and 50 percent and the number of buyers decreased by as much as 75–80 percent between the year the law was passed and 2006 when she wrote her article. In a recent survey, Kousmanen (2010) find that some Swedish sex buyers claim that they have stopped buying sex or reduced the amount bought as a result of the criminalization.

Ekberg (2004) also refers to police reports and to the NetSex project at the University of Gothenburg, arguing that the number of people selling sex on the Internet is a stable figure and that it has not increased as in other countries. Danna (2007), however, notes that there has been an increase in the number of people

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[5] These results are available upon request.

[6] These results are available upon request.

**Table 5** OLS regressions

| | (1) No controls | (2) Population | (3) GDP | (4) Rule of law | (5) Heroin | (6) Full model |
|---|---|---|---|---|---|---|
| Law | 5.410*** (1.651) | 5.144*** (1.563) | 4.589** (1.969) | 4.562** (2.114) | 4.573** (2.164) | 6.092** (2.432) |
| Population | | 75.32** (35.29) | 78.26** (36.69) | 78.87* (40.37) | 78.83* (41.20) | 107.6*** (46.23) |
| GDP | | | 86.91 (150.6) | 70.90 (426.2) | 75.24 (440.9) | −14.83 (440.1) |
| Rule of law | | | | 181.2 (4.496) | 164.2 (4.597) | 545.6 (4.542) |
| Immigrant share | | | | | −14.26 (237.1) | −103.0 (243.5) |
| Heroin | | | | | | −1.823 (1.400) |
| Constant | −5.753* (3.262) | −7.092** (3.142) | −7.631** (3.418) | −7.462 (5.455) | −7.423 (5.604) | −8.031 (5.544) |
| Observations | 31 | 31 | 30 | 30 | 30 | 30 |
| R-squared | 0.270 | 0.372 | 0.375 | 0.375 | 0.375 | 0.418 |

Trafficking victim as dependent variable

Standard errors in parentheses

* Significant at 10%; ** significant at 5%; *** significant at 1%

selling sex on the Internet: in 2003 the figure was 80–100 persons; in 2005 the figure was 200–250 persons. This increase took place, though, several years after the passing of the Swedish law and it is hard to assess these numbers without comparison with other countries, as an upward trend in sex advertising on the Internet could be expected in most developed countries as a result of increased Internet traffic in general. Furthermore, Danna (2007) cites findings indicating considerable decreases in Stockholm street prostitution from the year before the reform to the year after—a decrease from 280 in 1998 to 170 in 1999—and this number has been stable since. Based on this it is highly plausible that the quantity of prostitution decreased in Sweden in the years after the passing of the law, but there seems to have been a later increase in the amount of Internet sex advertising.

The prostitution group in Stockholm argues in their evaluation that there were almost no foreign women seen in street prostitution in 2001 and the National Rapporteur for Trafficking in Women in Sweden writes in her reports from 2003 and 2004 that it is clear that the law has limited the amount of trafficking to Sweden (Ekberg 2004).

The Swedish case thus seems to support the claim of a causal link from law to reduced trafficking. Furthermore, there are indications that traffickers consider the legal rules surrounding prostitution when choosing destination countries. For instance, Swedish police investigations using taped phone conversations show that traffickers have problems due to the Swedish law which criminalizes buying sex since; (i) time is lost because street prostitution is not viable; (ii) Swedish men fear being arrested which requires a lot of (costly) discretion; (iii) to avoid detection, several apartment brothels have to be used; this is costly and often requires more local contacts. Furthermore, victim testimonies have shown that traffickers prefer to operate in countries where prostitution is tolerated or legalized and the Latvian police have concluded that Latvian traffickers avoid Sweden due to the effect the Swedish law has on the profitability of their business (Ekberg 2004).

In 2009, Norway followed the example of its Nordic neighbor and went from a situation where it was legal to both buy and sell sex to making buying illegal. Our theoretical prediction implies that trafficking should be reduced by this and we would expect the same mechanisms as in Sweden. Since the passage of the Norwegian law, street prostitution has declined, especially in Oslo and there has not been a reported increase in the indoor market (Strøm 2009).

In a recent evaluation of the Norwegian criminalization of buying sex in the second largest Norwegian municipality (Bergen), the prevalence of street prostitution decreased considerably during the 6 months after the implementation of the law. In addition, escort Internet advertising decreased and no new public arenas for prostitution were found. Regarding trafficking, there was an increase in cases for the national ROSA project concerning forced labor, but a decrease in cases concerning trafficking for sexual exploitation (Bergen kommune 2010). Hence, the Norwegian case study indicates that prostitution has diminished in Norway. Thereby the profitability of trafficking to Norway should be reduced.

These two case studies point in the same direction as the quantitative analysis: countries that implement harsher laws regarding prostitution seem to get a lower prevalence of trafficking.

## 7 Discussion and conclusion

Acknowledging that trafficking for sexual exploitation is an economic activity driven by profit motives and that state action or inaction is decisive for structuring profit possibilities, we develop theoretical predictions. Most importantly, we propose that slacker prostitution laws make it more profitable to traffic persons to a country and that the amount of trafficking will rise accordingly. Using cross country data we find clear support for our theoretical predictions: trafficking of persons for commercial sexual exploitation is least prevalent in countries where prostitution is illegal, most prevalent in countries where prostitution is legalized, and in between in those countries where prostitution is legal but procuring illegal. We then proceed to look at case studies of countries that have changed prostitution laws in order to shed light on the possible causal mechanisms. More specifically, we look at Sweden and Norway, which have both introduced harsher laws, and, as predicted, trafficking seems to have been reduced in these countries. This study thus suggests that harsher prostitution legislation may reduce the amount of trafficking to a country. It should though be noted that we investigate the quantity of trafficking (as expressed by imperfect data) and not the total welfare consequences of the law. As suggested in the introduction, harsher prostitution laws may not only lead to decreased quantities but also to increased violence and other related criminality, as well as increased stigmatization for women working in these markets. When considering the best legal structure surrounding the market for prostitution and trafficking, all these aspects should be taken into account. We strongly urge future research to investigate these issues further.

Another important step would be to investigate the mechanisms in the sending countries of this market which would enlighten the ongoing debate and policy process in the attempts to reduce human trafficking for commercial sexual exploitation. It is likely that factors such as poverty, inequality, and the social and economic marginalization of women play a significant role. That people have to escape and that immigration is not free probably also facilitate the existence of profiteers from trafficking.

Finally, it should be noted once again that the data quality on international human trafficking is far from perfect and we strongly recommend more data collection. We argue, however, that since both our cross-country analyses with different data sets and the case studies point in the same direction, and since the results are supported by theoretical reasoning and the mechanisms found in the case studies, the results presented in this paper should be taken seriously.

Even though the data is problematic, as long as there is no systematic bias, measurement error only biases the coefficients toward zero, implying that it should be even harder to find an effect. We have argued that the UNDOC data on occasions of trafficking cases may be systematically biased since larger countries may attract larger groups of trafficked women and, hence, they may be easier to detect. On the other hand, since the UNDOC data does not contain the number of victims, the degree of trafficking to larger countries may be underestimated if there are larger groups in those countries. We have noted that population size is indeed correlated with trafficking but not with the legal framework surrounding prostitution, and

controlling for population in a regression framework does not alter the effect of the *Law* variable. Using the Trafficking Victims data from the ILO and taking the trafficking victims per capita as dependent variable, however, reduces the statistical significance of the *Law* variable. A possible explanation for this finding may be that larger countries have more trafficking victims but not more trafficking victims per capita. Again, future research should investigate this hypothesis further. Another systematic bias could be that trafficking becomes harder to detect if prostitution becomes less visible due to legal changes. Even though we find no indications of an upsurge of hidden prostitution in our case studies, the very fact that it may be (very well) hidden so that it is not detected by anyone except the potential buyers implies that we cannot rule out this possibility. Our theoretical point is simply that traffickers would not choose to operate in such a setting when other settings are available and that increased costs reduce the quantity sold. Further research is definitely needed for robust causal inference, but the results in this paper point in the direction of less trafficking in countries with harsher prostitution laws.

## Appendix 1

See Tables 6, 7 and 8.

**Table 6** Trafficking inflow to European countries

| Very low | Low | Medium | High | Very high |
|---|---|---|---|---|
| Georgia | Ireland | Albania | Austria | Belgium |
| Moldova | Luxembourg | Bulgaria | Bosnia and Herzegovina | Germany |
| Slovakia | Romania | Croatia | Cyprus | Greece |
| | Slovenia | Estonia | Czech Republic | Italy |
| | | Finland | Denmark | Netherlands |
| | | Hungary | France | Turkey |
| | | Iceland | Poland | |
| | | Latvia | Spain | |
| | | Lithuania | Switzerland | |
| | | Macedonia | United Kingdom | |
| | | Norway | | |
| | | Portugal | | |
| | | Russia | | |
| | | Serbia and Montenegro | | |
| | | Sweden | | |
| | | Ukraine | | |

*Source* UNDOC (2006)

**Table 7** Prostitution legislation in European countries

| Illegal | Procuring illegal | Legal and regulated |
|---|---|---|
| Albania | Armenia | Austria |
| Andorra | Azerbaijan | Germany |
| Bosnia and Herzegovina | Belgium | Greece |
| Belarus | Bulgaria | Hungary |
| Croatia | Cyprus | Netherlands |
| Liechtenstein | Czech Republic | Switzerland |
| Lithuania | Denmark | Turkey |
| Macedonia | Estonia | |
| Malta | Finland | |
| Moldova | France | |
| Romania | Georgia | |
| Russia | Iceland | |
| Serbia and Montenegro | Ireland | |
| Slovenia | Italy | |
| Sweden | Latvia | |
| Ukraine | Luxembourg | |
| | Monaco | |
| | Norway | |
| | Poland | |
| | Portugal | |
| | Slovakia | |
| | Spain | |
| | United Kingdom | |

*Source* Bureau of Democracy, Human Rights, and Labor (1996–2007)

**Table 8** Variable description

| Variable | Description | Source |
|---|---|---|
| Trafficking | Categorical variable that ranges from 1 for *Very low* to 5 for *Very high*. The latter implies a high prevalence of trafficking to the country | UNDOC (2006) |
| Trafficking victim | Estimation of number of trafficking victims into a country | Danailova-Trainor and Belser (2006) |
| Law | Categorical variable where 1 implies it is illegal to buy and/or sell sex; 2 that prostitution is legal but procuring is illegal; and 3 that prostitution and procuring is legal | See Appendix 2 |
| Population | Population in thousands. Average from 1996–2003 | World Bank (2006) |
| GDP | GDP per capita in thousands. PPP (constant 2000 US$). Average from 1996–2003 | World Bank (2006) |
| Rule of law | Ranging from −2.5 to 2.5, with higher values corresponding to better rule of law outcomes. Average from 1996–2003 | Kaufmann et al. (2009) |
| Immigrant share | The migrant stock as share of total population in 2005 | UN (2006) |
| Heroin | Number of kilograms heroin seizures on average per year 2000–2005 | UNDOC (2008) |

## Appendix 2

The *Law* variable was constructed mainly using the 1996–2003 Country Reports on Human Rights Practices from the Bureau of Democracy, Human Rights, and Labor. For a few countries the report from 2003 did not include information on prostitution legislation (Andorra, Belarus, Estonia, Finland, Hungary, Luxemburg, and Macedonia). For these countries the report from 2007 was used instead. Since this information is from 4 years after the period we are interested in we complemented this information with other sources. For Andorra we used the 2005 report and found no information in other sources of a legal change in the years from 1996 to 2003. For Belarus, Estonia, Finland, and Macedonia, (Ditmore 2006) confirms the former finding; this is also true for Luxemburg (European Parliament 2004).

Some of the countries also changed their legislation during the investigated period (1996–2003). In Hungary, prostitution became legalized and regulated in 2000, but prostitution had not been seen as a crime since 1993 (Gorondi 2007). In Denmark, prostitution (but not procuring) became legal in 1999 (European Parliament 2004). In Sweden it became a criminal offence to buy, but not to sell, sex in 1999 (Proposition 1997/98:55). Before 1999, Sweden belonged to the category where procuring is illegal. In 2000 the Netherlands legalized prostitution; before this, procuring was generally illegal but many municipalities adopted a regulatory policy even before 2000 (European Parliament 2004). In Germany, prostitution became a legitimate form of employment in 2002, but it had been legalized (and only somewhat restricted) several years before (Raymond 2004).

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