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The Law and Economics of International Sex Slavery: Prostitution laws and trafficking for sexual exploitation

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Abstract

Trafficking in humans for sexual exploitation is an economic activity driven by profit motives. Laws regarding commercial sex influence the profitability of trafficking. Using cross country data we show that 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. Case studies of countries that have changed legal framework support the claims on the direction of causality as well as the causal mechanisms. The results suggest that 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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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 forthcoming; Hodge and Leitz 2007). Up to 4 000 000 people are estimated to be exploited by human traffickers each year (UNHCR 2006). 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 for trafficking of humans 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 % of the trafficking is for sexual exploitation (UNODC 2006).[1] Trafficking in human beings for sexual purposes is intimately linked to organised crime and is considered the second source of illicit profits for organised 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 2000; Salt and Stein 1997). Traffickers will only sell persons for sexual exploitation when the 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; UNODC 2006; UNODC 2009). The profitability of trafficking to a given country hinges on the characteristics of the national 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 criminalization of buying sex in Norway (Ot.prp. nr.48) and Sweden (Proposition

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

1997/98:55) and the U.S. Government took a strong position against legalized prostitution using this argument (U.S. 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 on commercial sex reduces the amount of trafficking to a country.

The economics literature on prostitution is still sparse, although it has grown some in recent years (e.g. Cameron et al. 1999; Edlund and Korn 2002; and Albert et al. 2007). Available studies have mainly focused on pricing, and more exactly 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; and Raj and Shah 2008). Della Giusta (forthcoming) further builds on the prostitution model of Della Giusta et al. (2008 and 2009) and incorporates the role of stigma and reputation for policy decisions as well. Jakobsson and Kotsadam (2010a) study attitudes toward prostitution in the general population, and also investigate if a recent criminalization of buying sex in Norway changed public attitudes (Jakobsson and Kotsadam 2010b).

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 5117 females in the sample, 89 percent was 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 4659 per month. 84 percent were recruited via personal contacts, TV and internet advertising accounted for 7 percent, 5 percent were kidnapped and 1 percent sold by their family. Also using the IOM data, Bettio and Nandi (forthcoming) investigate which factors influence the violation of basic rights (physical integrity, to move freely, to have access to medical care, to use condoms, and to exercise 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.

There is one former study trying to evaluate the effect of national prostitution legislation on trafficking (Di Nicola et al. 2005). Studying official victim data from eleven EU countries they argue that leaner 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 Besler (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 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. We then proceed to investigate two cases of legal change and its effect on trafficking. The hypothesis of reduced trafficking from harsher laws is confirmed as well as the theoretical mechanisms.

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.

Human trafficking for sexual exploitation and prostitution

Up to 4 000 000 people are estimated to be exploited by human traffickers each year (UNHCR 2006). Trafficking is intimately linked to organized crime and the United Nations estimate that criminal groups earn approximately 7 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 the year 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 Guista 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 is liable to penalties. Regulation refers to where prostitution is legal with state intervention in the running of prostitution. 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). This classification is the one we are using when constructing our measure of national prostitution legislation.

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 positions within the feminist debate on prostitution as one that views prostitution as "sexual domination and the essence of women's oppression" and one ("the sex-work position") that views it as work (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

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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.

debate on the links between prostitution and trafficking. Those favoring the "sex-work view", whom 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 direct positions can be drawn from the philosophical standpoints on the degree of choice, the two opposing views almost always end up in 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 as done with 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 the lack of empirical facts on which the two strands base their arguments.

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 a victim in a country of origin and sells it to a brothel owner in a destination country. To ease the presentation of the mechanisms we assume vertical integration so that the 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; UNODC 2006; UNODC 2009). Organized crime has as its major goal to maximize profits and its success depends on there being exploitable markets (Morrison and Crosland 2001). We therefore argue that the decision made by a trafficker depend 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 in 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 he will traffic a woman to a country. We focus on "demand" in destination countries, or expressed another way, inflow of trafficking victims. That is, 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 lower the cost of trafficking women to that country. However, as argued by Danailova-Trainor and Belser (2006), with more legal migration possibilities trafficking may actually decrease since the migrants may be less forced to deal with traffickers.

Another important factor determining the costs is how easy it is to set up and run 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 which imposes costly discretion. Laws criminalizing prostitution are likely to affect the demand for prostitution as well, especially if buying sex is illegal, which influences the profitability of trafficking. 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 (Kotsadam and Jakobsson 2010a, 2010b). Prostitution laws affect the stigmatization of buying and selling sex which influences the profit function. Della Giusta (forthcoming) 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).

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. 24 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 4950 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 just counted once. To minimize the problem that different organizations were referring to the same instance of trafficking efforts were made to refer to the primary source only. It is important to highlight 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 do a document that find 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*. 39 European countries are included. 3 countries score *Very low*, 4 *Low*, 16 *Medium*, 10 *High*, and 6 *Very high*. The countries are listed in Table A1 in the appendix.

That a broad range of institutions were used as sources improves the data quality. 32 percent of the data comes from international organizations, 27 percent from governmental organizations, and 18 percent from research institutions. We choose this data as our main one instead of 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 system 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 a law, the law enforcement must care enough to act on the problem and be capable of doing so, there must then also be a system of data collection, and a willingness to provide the data to international organisations. 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 confident in that we capture the main trends in trafficking flows across countries. There are some additional problems with the data. It uses only 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 are quite similar in these countries so that using the classifications of legal regulation are 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 2092 reports from open sources that contain quantitative information on trafficking during the 1995-2004. Country-level estimates on trafficking victims and 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 be a problem here. Due to the limits in all existing data on trafficking

we include this dataset as a complement and we argue that the results are much 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 but 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, as well as pimping and owning 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 8 of the countries both prostitution and procuring is legal. In Table A1 in Appendix 1 these countries are listed. The categorization was constructed using the 2003 Country Reports on Human Rights Practices from the Bureau of Democracy, Human Rights, and Labor. The countries are listed in Table A2 in the appendix. It should be noted that this categorization does not take law enforcement into account, nor that the severity of the punishment differs between countries in the same category.

To take into account that laws are followed to different degrees in different states 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 of people and narcotics (Schloenhardt 2001). Our rule of law measure is from the World Bank Aggregate Governance Indicators. 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 2007). We use the data for heroin seizures.

To take into consideration market characteristics likely to influence revenues 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 OECD World Development Indicators (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 leaner 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 leaner 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.

(Table 1 here)
(Table 2 here)

In line with our hypothesis the descriptive statistics clearly 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 1 score *High* on trafficking prevalence (Bosnia and Herzegovina), and no country in this group score *Very high*. In the group of 18 countries where prostitution is legal but procuring is illegal, 7 countries score *High* and 2 countries score *Very high*. Where both prostitution and procuring is legal (7 countries) 2 score *High* and 4 score *Very high* on trafficking prevalence. Although this give indicative evidence that supports the hypothesis the rest of this section is devoted to results from ordered logit regressions.

(Table 3 here)

Empirical framework and results

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

$$Trafficking_i^* = \beta_0 Law_i + \beta_1 \mathbf{X}_i + \varepsilon_i$$

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 $\mathbf{X}_i$ 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). ε_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 μ_{k-1} and μ_k.

$$\Pr ob(Trafficking_i = k) = \Pr ob(\mu_{k-1} < \beta_0 Law_i + \beta_1 \mathbf{X}_i \leq \mu_{k-1}), k = 1,...,5.$$

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 explaining 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 leaner prostitution legislation implies a higher score on the *Trafficking* index. Although this is illuminating we include control variables (Column 2) to see if the relation holds also when controlling for other variables that may affect trafficking. Also now the *Law* variable has a clearly negative relation with *Trafficking*. We also note that all the control variables are statistically insignificant. 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.

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[3] The significance levels and size of effects are robust to exclusion of Denmark and Sweden who changed their prostitution laws considerably during the investigated period (see Appendix 2).

(Table 4 here)

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, show 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 and countries where only procuring is illegal is small and statistically insignificant.[4]

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). As opposed to before also population has a positive effect on the number of trafficking victims. We use the total number of victims since that is what we are interested in, and this can be compared to our previous results. It should though be noted 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.[5]

(Table 5 here)

Case studies

So far we have shown that our theoretical predictions gain 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 also when controlling for other relevant factors. Unfortunately, there exist no longitudinal data on trafficking flows but in this section we will strengthen the causal claims by looking at two European cases where the prostitution law has been made harsher (Sweden and Norway). Furthermore, Norway and Sweden are two similar countries which had different laws during 10 years. This fact is exploited here as well. If our theoretical predictions are correct, trafficking should be reduced after the criminalization of buying sex.

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[4] These results are available upon request.
[5] These results are available upon request.

Sweden

In Sweden, it has been illegal to buy sex, but not to sell, since 1999. According to the Swedish government trafficking was reduced following this criminalization (Friesendorf 2007). Ekberg (2006) 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 % since the law was passed until she wrote her article in 2006. The number of buyers is said to have decreased by as much as 75 % to 80 % and the number of women in street prostitution is said to be only 500 in Sweden, whereas in Denmark, where prostitution is legal, it is up to 7800 (and Denmark has only half of the Swedish population). Ekberg (2006) 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 like in other countries. Based on this it is very plausible that the quantity of prostitution has decreased in Sweden, but what about trafficking?

The prostitution group in Stockholm argue in their evaluation that there are 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 2006). In 2004 it was estimated that between 400 and 600 women are trafficked to Sweden every year (The Swedish National Council for Crime Prevention 2008). Comparing these figures to those in neighbouring Scandinavian countries, which are similar to Sweden but where buying sex is legal, the law clearly seems to have reduced trafficking. In Denmark at least half of the prostitutes (between 5500 and 7800) are said to be victims of trafficking and Finnish criminal intelligence estimate that between 10 000 and 15 000 women are trafficked there each year. While these countries have experienced an increasing trend in the number of trafficked women, Sweden has not.

The Swedish case thus seems to confirm the causal link from law to reduced trafficking. Furthermore, the causal mechanisms are also confirmed. There are indications of that traffickers consider the legal rules surrounding prostitution when choosing destination country. For instance, Swedish police investigations with taped phone conversations show that traffickers have problems due to the Swedish law which criminalizes buying sex since; i) Time is lost since street prostitution is

not viable. ii) Swedish men express fear of 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 2006).

Norway

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 first six months after the implementation of the law. Also escort internet advertising decreased and no new public arenas for prostitution were found. Regarding trafficking there was a national increase in errands to the national ROSA project concerning forced labor, but a decrease in errands concerning trafficking for sexual exploitation (Bergen kommune 2010).

Using longitudinal survey data, collected before and after the passage of the Norwegian law, we are able to show a decrease in the quantity of reported prostitution in Norway as an effect of the law applying a difference in difference methodology. The dependent variable is the change in the answer to: "Do you know of any acquaintances that has bought sex during the last six months?". During the investigated period, Norway, but not Sweden, changed its legal framework surrounding prostitution. This allows us to evaluate the effects of the law using a difference-in-differences methodology, comparing changes in reported prostitution between the two countries. Apart from issues linked directly to prostitution, the data also contains information on age, gender, income, cohabitation status, education, region of residence, as well as attitudes on issues linked to equality between the sexes, immigration, sexual liberalism, religious activities, and political views. The data is thoroughly

described in Jakobsson and Kotsadam (2010a; 2010b). As Table 6 shows that there is a clear effect of lower reported prostitution in Norway after the criminalization.

(Table 6 here)

Hence, the Norwegian case study indicates that prostitution has diminished in Norway. Thereby the profitability of trafficking to Norway should be reduced.

Discussion and conclusion

Acknowledging that trafficking for sexual exploitation is an economic activity driven by profit motives and that state action and 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 investigate the causal claims. We look at Sweden and Norway who have introduced harsher laws. As predicted trafficking was reduced in these countries. The case studies also support the proposed causal mechanisms. This suggests that harsher prostitution legislation may reduce the amount of trafficking to a country.

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 flee, that immigration is not free, and racist politics in building a fortress around Europe probably also facilitate the existence of profiteers from trafficking. Until these factors are resolved we argue that attacking the market for prostitution is sensible.

It should though be noted that the data quality is far from perfect and we strongly recommend more data collection. We argue, however, that since both our cross-country analyses with different data as

well as the case studies point in the same direction, and since the results are supported by theoretical reasoning and the mechanisms are found in the case studies, the results should be taken seriously.

Acknowledgements

References

Aghatise, Esohe. (2004). "Trafficking for Prostitution in Italy: Possible Effects of Government Proposals for Legalization of Brothels." *Violence Against Women*, 10(10): 1126-1155.

Albert, Rocio, Fernando Gomez, and Yanna Gutierrez Franco. 2007. "Regulating Prostitution: A Comparative Law and Economics Approach." FEDEA Working papers 2007(30).

Anderson, Bridget. and O'Conell Davidson, Julia. (2002). "Trafficking: A Demand Led Problem? A Multi-country Pilot Study." Save the Children. Available online: http://www.jagori.org/wp-content/uploads/2006/03/The%20Demand%20Side.pdf.

Bettio, Francesca. and Nandi, Tushar K. (forthcoming). "Evidence on Women Trafficked for Sexual Exploitation: A Rights Based Analysis." *European Journal of Law and Economics*, DOI 10.1007/s10657-009-9106-x.

Bergen kommune. (2010). "Kriminalisering av sexkjøp - En foreløpig kartleggingsrapport om: Kortsiktige effekter for kvinnene, markedet og lokalsamfunnet i Bergen." Available online: www.bergen.kommune.no/bk/multimedia/archive/00056/F_rebels_kartlegging_56990a.pdf.

Cameron, Samuel, and Alan Collins. 2003. "Estimates of a Model of Male Participation in the Market for Female Heterosexual Prostitution Services." European Journal of Law and Economics 16(3): 271-288.

Cameron, Samuel, Alan Collins and Neill Thew. 1999. "Prostitution Services: An Exploratory Empirical Analysis." *Applied Economics* 31(12): 1523-1529.

Danailova-Trainor, Gergana and Belser, Patrick. (2006). "Globalization and the illicit market for human trafficking: an empirical analysis of supply and demand." International Labour Office, Working paper 53.

Della Giusta, Marina., Maria Laura Di Tommaso, and Steinar Strøm. 2008. *Sex Markets: A Denied Industry*. London and New York: Routledge.

Della Giusta, Marina., Maria Laura Di Tommaso, and Steinar Strøm. (2009). "Who is watching? The Market for Prostitution Services." *Journal of Population Economics* 22(2): 501-516.

Della Giusta, Marina. (forthcoming). "Simulating the Impact of Regulation Changes on the Market for Prostitution Services." Forthcoming in European Journal of Law and Economics. Published online: 26 May 2009.

Di Nicola, Andrea.,Orfano, Isabella., Caudro, Andrea. And Conci, Nicoletta. (2005). "Study on National Legislation on Prostitution and the Trafficking in Women and Children." European Parliament. Available online:

http://transcrime.cs.unitn.it/tc/fso/Altre%20pubblicazioni/legislation_on_prostitution_english.pdf.

Edlund, Lena, and Evelyn Korn. 2002. "A Theory of Prostitution." *Journal of Political Economy* 110(1): 181-214.

Ekberg, Gunilla. (2004). "The Swedish Law that Prohibits the Purchase of Sexual Services: Best Practices for Prevention of Prostitution and Trafficking in Human Beings." *Violence Against Women*, 10(10): 1187-1218.

European Commission. (2009). "EU action against trafficking in human beings." Available online: http://ec.europa.eu/justice_home/fsj/crime/trafficking/fsj_crime_human_trafficking_en.htm#part_1.

Freeman, Richard B. (2006). "People Flows in Globalization." *Journal of economic perspectives*, 20,(2): 145-170.

Friesendorf, Cornelius. (2007). "Pathologies of Security Governance: Efforts Against Human Trafficking in Europe." *Security Dialogue*, 38(3): 379-402.

Gertler Paul, Manisha Shah, and Stefano M. Bertozzi. 2005. "Risky Business: The Market for Unprotected Commercial Sex." *Journal of Political Economy* 113(3): 518-550.

Hodge, D. and Leitz, C. (2007), "The International Sexual Trafficking of Women and Children: A Review of the Literature", *Affilia*, 22: 163-174.

Iceland Ministry of Justice and Ecclesiastical Affairs. (2009). "Excerpts from the General Penal Code, No. 19/1940, with subsequent amendments. Chapter XXII - Sexual Offences and Chapter XXIII - Homicide and Bodily Harm." Available online: http://eng.domsmalaraduneyti.is/laws-and-regulations/nr/119.

Jakobsson, N. and Kotsadam, A. (2010a). "What explains attitudes towards prostitution?" forthcoming in *Feminist Economics*.

Jakobsson, N. and Kotsadam, A. (2010b). "Do laws affect attitudes?" mimeo, University of Gothenburg.

Kangaspunta, K. (2003) "Mapping the inhuman trade: Preliminary findings of the database on trafficking in human beings." *Forum on Crime and Society*, 3(1 and 2): 81-103.

Kavemann, Barbara. and Rabe, Heike. (2007). " The Act Regulating the Legal Situation of Prostitutes – implementation, impact, current developments. Findings of a study on the impact of the German Prostitution Act." Sozialwissenschaftliches FrauenForschungs Institut an der Evangelischen

Fachhochschule Freiburg. Available online: http://www.cahrv.uni-osnabrueck.de/reddot/BroschuereProstGenglisch.pdf.

Levitt, Steven D., and Sudhir Alladi Venkatesh. 2007. "An Empirical Analysis of Street-Level Prostitution." Mimeo.

Moffat, Peter G., and Simon A. Peters. 2004. "Pricing Personal Services: An Empirical Study of Earnings in the UK Prostitution Industry." *Scottish Journal of Political Economy* 51(5): 675-690.

Morrison, John. and Crosland, Beth. (2001). "The trafficking and smuggling of refugees – the end game in European asylum policy?" Working Paper No. 39, UNHCR, New Issues in Refugee Research.

Ot.prp. nr. 48 (2007–2008). Om lov om endring i straffeloven 1902 og straf-feprosessloven (kriminalisering av kjøp av seksuell omgang eller handling mv.).

Outshoorn, Joyce. 2004. "Introduction: Prostitution, Women's Movements and Democratic Politics," in Joyce Outshoorn, eds. *The Politics of Prostitution - Women's Movements, Democratic States and the Globalisation of Sex Commerce*, pp. 1-20. Cambridge: Cambridge University Press.

Raj Arunachalam, and Manisha Shah. 2008. "Prostitution and Brides?" *American Economic Review* 98(2): 516-522.

Raymond, Janice G. (2004). "Ten Reasons for Not Legalizing Prostitution and a Legal Response to the Demand for Prostitution." *Journal of Trauma Practice*, 2(3): 315-332.

Ruggiero, V. (1997), "Trafficking in Human Beings: Slaves in Contemporary Europe", International Journal of the Sociology of Law, 1997, 25, pp. 231-244.

Kaufmann, Daniel., Kraay, Aart. and Mastruzzi, Massimo. (2009). "Governance Matters VIII: Aggregate and Individual Governance Indicators 1996–2008." The World Bank Development Research Group Macroeconomics and Growth Team. Working Paper 4978.

Rao, Vijayendra, Indrani Gupta, Michael Lokshin, and Smarajit Jana. 2003. "Sex Workers and the Cost of Safe Sex: The Compensating Differential for Condom Use Among Calcutta Sex Workers." *Journal of Development Economics* 71(2): 585-603.

Salt, John. (2000). "Trafficking and Human Smuggling: A European Perspective." *International Migration*, 38(3): 31-56.

Salt, John. and Stein, Jeremy. (1997). "Migration as a Business: the Case of Trafficking." *International Migration*, 35(4): 467-489.

Schloenhardt, A. (2001), "Trafficking in Migrants: Illegal Migration and Organized Crime in Australia and the Asia Pacific Region." *International Journal of the Sociology of Law*, 29: 331-378.

The Swedish National Council for Crime Prevention. (2008). "The Organisation of Human Trafficking: A Study of Criminal Involvement in Sexual Exploitation in Sweden, Finland and Estonia." Report 2008:21. Available online: http://www.bra.se/extra/measurepoint/?module_instance=4&name=00_afficking_eng_webbanp assad.pdf&url=/dynamaster/file_archive/081212/fa94c514133100cd11428ac55382c7a9/00%255f afficking%255feng%255fwebbanpassad.pdf.

Shrange, Laurie. 2007. "Feminist Perspectives on Sex Markets." Stanford Encyclopedia of Philosophy. http://plato.stanford.edu/entries/feminist-sex-markets/ 2007 (accessed January 2009).

Strøm, A. (2009). "A glimpse into 30 years of struggle against prostitution by the women's liberation movement in Norway", Reproductive *Health Matters* 17(34) pp. 29-37.

http://www.unodc.org/documents/Global_Report_on_TIP.pdf.

UNDOC. (2006). "Trafficking in Persons: Global Patterns." Available online: http://www.unodc.org/documents/human-trafficking/HT-globalpatterns-en.pdf.

UNDOC. (2008). Illicit Drug Seizure Reports. Available online: http://www.unodc.org/unodc/en/data-and-analysis/Research-Database.html?ref=menuside.

UNODC. (2009). "Global report on trafficking in persons." Available online:

U.S. Department of State (2004), "The Link Between Prostitution and Sex Trafficking" , U.S. Department of State, Bureau of Public Affairs.

World Development Indicators, WDI (2006). OECD.

Proposition 1997/98:55. *Kvinnofrid.* Swedish Government. http://www.regeringen.se/content/1/c4/22/66/5406e038.pdf (accessed November 2008).

Östergren, Petra. 2006. *Porr, Horor och Feminister.* Stockholm: Natur & Kultur.

Tables

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)	20.151	30.111	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.

Table 4. Ordered logit. Trafficking as dependent variable, European sample

	(1)	(2)
Law	1.660***	1.456**
	(0.500)	(0.680)
Population		0.019
		(0.014)
GDP		-0.009
		(0.075)
Rule of law		0.590
		(0.871)
Immigrant share		-0.054
		(0.059)
Heroin		0.001
		(0.001)
Observations	39	38

Standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 5. OLS regressions. Trafficking victim as dependent variable, European sample

	(1)	(2)
Law	5410.491***	6091.528**
	(1651.236)	(2431.995)
Population		107.576**
		(46.232)
GDP		-14.825
		(440.136)
Rule of law		545.562
		(4541.823)
Immigrant share		-103.041
		(243.495)
Heroin		-1.823
		(5544.207)
Constant	-5752.846*	-8031.163
	(3262.279)	(5544.207)
Observations	31	30

Standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 6. Coefficients after ordered probit regression. Reporting bought sex dependent variable

Norway	-0.205**
	(0.086)
Male	0.001
	(0.083)
Age	0.002
	(0.003)
High education	-0.074
	(0.181)
Low education	-0.086
	(0.139)
High income	-0.068
	(0.181)
Low income	-0.037
	(0.098)
Capital	-0.057
	(0.111)
Cohabit	0.006
	(0.090)
Observations	2101

Standard errors in parentheses

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

Appendix 1

Table A1. 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 A2. Prostitution legislation in European countries,ny

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 A3. 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.	ILO (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.	WDI (2006)
GDP	GDP per capita in thousands, PPP (constant 2000 US$). Average from 1996-2003.	WDI (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.	AGI (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 (2007)

Appendix 2

The *Law* variable was constructed mainly using the 1996 to 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, Macedonia and Romania). For these countries the report from 2007 was used instead.

Some of the countries also changed their legislation during the investigated period (1996-2003). In Hungary prostitution became legalized and regulated in 2000, but already since 1993 prostitution was not seen as a crime (European Parliament 2005). In Denmark prostitution became legal (but not procuring) in 1999 (European Parliament 2005). 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 2005). In Germany prostitution became a legitimate job in 2002, but it had been legalized (and only somewhat restricted) in several years before (Raymond 2004).