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Crime and International Tourism

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Abstract

Using a panel data set of European countries, this paper investigates the impact of crime on international tourism. Violent crimes are negatively associated with incoming international tourists and international tourism revenue indicating that international tourists consider the risk of victimization when choosing a location to visit. This impact is smaller in magnitude in Southern European countries with a coastline which are generally more attractive tourist destinations in terms of sea tourism, suggesting that victimization risk and attractiveness of the destination may be substitutable traits.

JEL Classification Codes: L83, K42, O52

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I. Introduction

Tourism is typically regarded as a major industry in many countries, and a particularly desirable one, since it is relatively low in energy consumption and pollution. According to the World Tourism Organization, tourism generates 6% of the total worldwide exports, and about 10% of all employment.¹ For some countries, tourism is a significant source of income and foreign currency. For example tourism receipts constituted about more than 10% of the GDP in 2010 in some European countries, such as Albania, Croatia, and Cyprus. In addition, previous research have demonstrated tourism promotes economic growth (Sequeira and Nunes, 2008; Gunduz and Hatemi-J, 2005; Balaguer and Cantavella-Jorda, 2002). Because of its economic significance, several researchers attempted to estimate the determinants of tourism activity. Specifically, previous studies focused on estimating the income and price elasticities of tourism demand (for a sample of studies, see Eugenio-Martin and Campos-Soria, 2011; Vogt, 2008; Mello, Pack, and Sinclair, 2002).

A potentially important factor that may influence tourism demand is generally overlooked in the literature: safety of the destination. When individuals decide about whether to take a vacation and where to go, they would take the risk of victimization into account. Other things equal, individuals are more likely to visit safer places. In the context of international tourism, potential visitors to a country may be deterred from their visit, if the probability of victimization in that country is high. A handful of papers have shown that the events that pose a threat to the safety of individuals, such as terrorist attacks and wars, reduce tourism activity (Feridun, 2011; Smyth, Nielsen and Mishra, 2009; Fleischer and Buccola, 2002).

Besides terrorism and wars, criminal activity in the destination country may be viewed as a risk by potential tourists. If this is the case, countries with higher crime rates will receive fewer

¹ <http://mkt.unwto.org/en/publication/unwto-tourism-highlights-2013-edition>

visitors from abroad. That is, crime may create an externality in the form of a reduction in international tourism activity. This paper tests this hypothesis by estimating the effect of crime in the destination country on the number of international tourists and international tourism revenue.

Although the impact of economic activity on crime has been investigated extensively (Corman and Mocan 2000, Levitt 1998, Block and Heineke 1975), there are only a few studies that analyzed the influence of crime on economic activity. For example, Cullen and Levitt (1999) report that individuals move away from areas with high crime rates. Peri (2004) argues that organized crime is associated with low economic development. Despite its economic importance, tourism received very little attention in this context. There are only a small number of papers that investigate whether tourism activity is influenced by crime. These papers generally focus on small geographic regions. For example, Levantis and Gani (2000) find that an increase in crime is associated with less tourism activity using time-series data from South Pacific and the Caribbeans. McPheters and Stronge (1974) report that property crime is positively correlated with the number of tourists in Miami. Howsen and Jarrell (1987 and 1990) argue that an increase in the number of tourists is associated with an increase in the property crimes. However, these cross-sectional or time-series analyzes have limitations, such as the inability to control for unobservable area characteristics. Furthermore, the results from the studies that focus on one specific location may not be generalizable. Another difficulty in estimating the effect of crime on international tourism is the lack of a comparable crime measures across countries. Particularly, the definitions of crimes differ from one country to another.

Using a panel data set of European countries spanning the period between 1995 and 2003, this paper investigates the influence of crime on international tourism activity and the differential responsiveness of tourism by region. Crime data are obtained from the European

Sourcebook of Crime, which reports consistently measured crime statistics. The findings suggest that violent crimes (homicide, rape, robbery and assault) are negatively associated with incoming international tourists and with tourism revenue for an average country in Europe.

The rest of the paper is organized as the following: In Section II, I describe the data and explain empirical framework used in the paper. Section III discusses results. Conclusion is in Section IV.

II. Empirical Framework and Data

Previous research mainly focused on estimating price and income elasticities of demand for tourism. All of these papers agree that tourism is a luxury good.² These studies also underline the importance of prices in the destination country and the exchange rate in tourism activity (for example, Garin-Munoz and Amaral, 2000; Maloney and Rojas, 2005; Martin and Soria, 2011). In addition, factors that affect the attractiveness of the destination country, such as weather conditions, quality and existence of beaches, historical artifacts, are listed among the determinants of number of incoming tourists to a country (Richardson and Loomis 2004, Lyssiotou 2000; Patuelli, Mussoni and Candela, 2013). Other influential factors may include quality of the health services and economic development. As explained in the Introduction section, this paper hypothesizes that the perception of crime victimization risk is an additional determinant of the international tourism activity.

Following the guidelines described above, I estimate the equation depicted below:

$$(1) \quad T_{c,t} = \alpha + \beta Crime_{c,t-1} + \gamma S_{c,t} + \mu_c + \tau_t + \varepsilon_{c,t}$$

² For example, using data from Caribbean, Maloney and Rojas (2005) find that income elasticity of tourism demand is 4.9. Vogt (2008) reports an elasticity of 2.7 for US tourism.

where $T_{c,t}$ stands for the number of international tourists visiting country c in year t per 10 residents, or real international tourism revenue per 10 residents. Both variables are obtained from World Development Indicators. An average European country earns about \$4,700 annually from international tourism per 10 residents from about 7 incoming tourists (See Table 1).

$Crime_{c,t-1}$ is the variable of interest in the estimation equation above. It denotes the number of crimes per 100,000 residents in country c in year $t-1$. Crime data are obtained from European Sourcebook of Crime and Criminal Justice. The summary statistics are provided in Table 1. Crime rate is used as a proxy for victimization risk in the empirical analysis. Although potential tourists do not have a true measure of crime victimization risk in the destination country, they have a perception about it. This ex-ante expectation about being victimized in the destination country can be formed by obtaining information through various channels, such as print or electronic media or word-of-mouth³. Regardless of the source of the information, the higher the actual crime rate in the possible destination country is, the greater the perceived risk of being victimized will be.

In this paper, only violent crimes (homicides, assaults, rapes, robberies) are analyzed. This is because of two reasons. First, property crimes may be measured with an error as they crimes may be underreported. Violent crimes, compared to crimes against property (such as theft), pose greater threats to the well-being of an individual. Consequences of violent crimes (such as death or injuries) are more costly to the victim. As a result, violent crimes are less likely to be underreported. Because property crimes are more likely to be measured with an error, their estimated impact may be biased towards zero. Secondly, some property crimes may not be relevant to the potential tourists' decision when they are deciding to visit a country. For example,

³ Regarding the impact of word-of-mouth information on behavior, see Rincke and Traxler (2009).

by definition, a burglary involves a break-in into a property. Since the tourists mostly do not have any property in the destination country, burglary victimization should not be relevant to their decisions. Similar arguments can be made for other property crimes, such as motor vehicle theft, arson or other property damage.

In the regressions, the lagged crime rate rather than the current crime rate is employed for two reasons. First, it may take some time for the potential tourists to update their expectations about victimization. In addition, including the current crime rate in the estimation equation could generate an endogeneity problem. Specifically, the current crime rate in a country can be affected by the tourism activity. For example, a resident of the destination country may be more likely to commit a crime when more tourists visit that country. This is because, tourists who visit a country are presumably wealthy.⁴ Consequently, their presence in the country may increase the returns to crime, and therefore the crime rate.⁵ In fact, McPheters and Stronge (1974) and Howsen and Jarrell (1987 and 1990) argue that an increase in the number of tourists increases property crimes.⁶ However, current tourism activity cannot influence past crime. Faced with similar potential reverse causality problems, Corman and Mocan (2000) and Levitt (1998) employed lagged variables in their estimations.⁷

The vector $S_{c,t}$, in the estimation equation, includes control variables for the destination country characteristics. Specifically, the GDP per capita and urbanization rate (percentage of

⁴ Maloney and Rojas (2005) and Vogt (2008) reports that the income elasticity of international tourism demand is greater than 2.

⁵ This holds true even for the violent crimes. Some violent crimes, such as robberies, involve monetary returns. In addition, violent crimes may occur due to a property crime. For example, a pocket lifter may use their weapon to force the victim to surrender, if the victim notices their wallet/purse is being stolen.

⁶ These authors do not find a relationship between tourism activity and violent crime. This may be because, when tourists (who are presumably wealthy) visit a country, the expected return to criminal activities such as theft and burglary goes up, since incoming tourists may increase the number of targets from whom valuable assets can be stolen by the potential criminals. However, there are no direct incentives for committing a violent crime, such as murder or rape. Therefore, the link from tourism to violent crime is expected to be much weaker.

⁷ Specifically, these authors use one period lagged arrest rates to explain the variation in crime.

population living in urban areas) are proxies for economic development. To control for the extent of affordability of a visit to the destination country, the exchange rate (amount of local currency in the destination country per dollar) and the consumer price index are included in the estimation equation. Finally, to capture the effect of health service conditions in the destination, number of hospital beds per 1,000 people is used in the regressions as a control variable. All of these variables are obtained from the World Development Indicators. Their summary statistics are reported in Table 1. The effect of factors that influence the tourism attractiveness of the country such as a country's historical artifacts, or sea tourism opportunities is captured by country fixed effects (μ_c). Such factors are time invariant. Regressions also include time dummies represented by τ_t in the estimation equation above.

To investigate the possibility of differential responsiveness of incoming international tourists to crime by attractiveness of the country, I categorized the countries in my sample in two groups. The *Sea Tourism Available* sample is composed of countries that are located to the south of the latitude 50 North and have a coastline to either the Mediterranean or the Black Sea.⁸ The countries that are landlocked or are located to the north of the latitude 50 North make up the *No Sea Tourism Opportunity* sample. These countries are depicted on a Europe map in Figure 1. Very dark and medium dark gray countries are in the *No Sea Tourism Opportunity* and *Sea Tourism Available* samples, respectively. The very light gray countries are not in any estimation sample. The solid line approximately represents the latitude 50 North. The list of countries in both samples is in Table 2. Table 2 also presents the locations of the countries (approximated by the latitude of their capital city) and the lengths of their coastlines. The classification of countries according their tourism attractiveness is discussed in more detail in Section III below.

⁸ Russia is an exception. This is because, the majority of Russian territory is located in the Northern Europe where the climate does not permit sea tourism.

III. Results

Effect of Crime on International Tourism Activity

Table 3 presents the results from the specification where the number of international tourism revenue per 10 residents is the dependent variable. Each column presents the output of the regression where the crime rate listed at the top is included as an independent variable. Numbers of observations in regressions differ because of the availability of crime rate data. Last two rows in the table provide the sample means of the dependent variable and the crime included in that regression. In addition to the variables reported in the table, regressions include country and year dummies and an indicator variable for countries that use the currency Euro. Coefficients of these variables are not reported. Standard errors are clustered at the country level.

Total violent crime rate (which consists of homicide, rape, robbery and assault) have a significant negative impact on receipts from international tourists. All of the components of violent crime are also negatively associated with tourism revenue separately. The impact of total violent crimes, homicides and assaults are statistically significant at conventional levels. Elasticity estimates of international tourism revenue per 10 residents in the host country with respect to aggregate violent crime, homicide and assault rates are -0.12, -0.01, and -0.10, respectively. Coefficients of the control variables mostly have expected signs. For example, when the exchange rate depreciates (when the amount of domestic currency required to buy one dollar goes up), the country earns more tourism revenue. This is presumably because, goods and services in the destination country (including the tourism services) gets cheaper. Consequently, a vacation in that country becomes more affordable to international tourists. Similarly, an increase in the price level in the destination country leads to a decrease in tourism revenue.

Similar results, which are displayed in Table 4, are obtained from the specification where the number of international tourists per 10 residents in the host country is the dependent variable. Total violent crime rate has a negative influence on the number of tourists and this effect is statistically different from zero. For this specification, among the components of violent crimes, only the assault rate has a significant effect on the number of tourists. Elasticities of international tourists per 10 residents with respect to aggregate violent crime and assault are both -0.09.

Responsiveness of Tourism Activity to Crime by Attractiveness of the Country

Crime's impact on international tourism may differ between countries. Similar to the trade-off between risk and return (Fama and MacBeth 1973), if international tourists are highly attracted to a country's touristic prospects, the crime rate in that country may not be a significant deterrent for international tourists. In other words, the attractiveness of a country may partly compensate for the probability of victimization.

Ideally, to estimate the differential responsiveness of tourism to crime, a measure of attractiveness of the country together with its interaction with the crime rate should be included in the regressions. However, this is a challenging task for two reasons. Firstly, the factors that determine the attractiveness of a country are time invariant. Specifically, there is not much variation in the amount of opportunities a country offers for tourism over time. For example, Colosseum (the largest amphitheater built by the Romans in Rome) has always been located in Italy, and Turkey has always had beaches very suitable for sea tourism. The effect of such time invariant factors cannot be estimated when country fixed effects are included in the regressions. But fixed effects must be included in the regressions, as there could be other unobserved factors that influence tourism activity and crime. For this reason, I, instead, divide the countries in the

estimation sample into two groups according to their attractiveness, and estimate equation (1) over these samples separately.

Secondly, touristic attractiveness of a country is hard to measure. This is because, such a measure must be based on the country's tourism outcomes. In other words, the best measure of a country's attractiveness is the number of tourists who visit that country. In order not to base my classification on the outcome variables in my analysis, I, instead, use proxies of attractiveness. According to the World Tourism Organization, more than 50% of all international tourists visit a foreign country for leisure and recreation.⁹ A major leisure activity may be going to the beaches in summer. Therefore, countries with sea tourism opportunities are more attractive than landlocked countries, other things equal. The other measure I employ is based on the cultural or historical artifacts in a country. Potential tourists could decide to travel to a country in order to visit its historical/cultural artifacts. For example, other things equal, France must be more attractive to a tourist as the Eifel Tower is located in France; or Germany could be more attractive to visitors who wish to see the historical artifacts such as the remainders of the Berlin Wall.

Sea tourism requires a coastline and a warm climate. Countries that are located in the Southern Europe and have a coastline satisfy both of these requirements. These countries are closer to the equator and consequently have warmer climates. I grouped the countries that have a coastline to Mediterranean or the Black Sea in the *Sea Tourism Available* sample.¹⁰ The majority of the territories of these countries are located to the south of the latitude 50 North. The remaining countries are grouped into *No Sea Tourism Opportunity* sample. These countries are either landlocked (for example, Hungary or Luxembourg), or located to the north of the latitude

⁹ <http://mkt.unwto.org/en/publication/unwto-tourism-highlights-2013-edition>

¹⁰ Russia is an exception. I excluded Russia from the *Sea Tourism Available* sample, because the majority of Russian territory is located in Northern Europe where the weather conditions are not suitable for sea tourism.

50 North, therefore the weather conditions do not permit sea tourism even though they have a coastline (for example, Norway and Iceland). A visual presentation of the countries in these samples is provided in Figure 1. In the figure, the countries that are colored with medium gray are in the *Sea Tourism Available* sample, and the dark gray countries constitute the *No Sea Tourism Opportunity* sample. The very light gray countries are not in any estimation sample. The solid line represents the latitude 50 North.

To classify the countries according to their cultural tourism attractiveness, I use the UNESCO's World Heritage Sites list. To make it to the UNESCO's list, a site has to satisfy certain selection criteria, such as being unique, aesthetically important or significant to the human history.¹¹ I use the number of natural and cultural historical heritage sites in a country in the UNESCO's list as the measure of cultural tourism attractiveness. The distribution of the heritage sites by country is presented in Table 2. Every country in the estimation sample has at least one heritage site. The average numbers of heritage sites in the *No Sea Tourism Opportunity* and *Sea Tourism Available* samples are about 5 and 8, respectively. Although the number of heritage sites is not the perfect measure, the comparison of sample means suggests that countries with sea tourism opportunities are at least as (if not more) attractive culturally to tourists as the countries in the *No Sea Tourism Opportunity* sample. As a result, I estimate equation (1) over samples that are distinguished by the availability of sea tourism.

Estimation of the equation (1) over the *No Sea Tourism Opportunity* and *Sea Tourism Available* samples produces results reported in Table 5. The layout of Table 5 is same as Tables 3 and 4, except the odd (even) numbered columns report the results obtained from the *No Sea Tourism Opportunity* (*Sea Tourism Available*) sample. The results show that the effect of crime on international tourism revenue is mostly due to the responsiveness of tourism to crime in the

¹¹ <http://whc.unesco.org/en/criteria/>

attractive countries. Total violent crime and assault rates are negative and statistically significant only in the *No Sea Tourism Opportunity* sample. Homicide rate is statistically significant in both samples. However, the estimate of elasticity of tourism revenue with respect to homicides in the *No Sea Tourism Opportunity* sample is much larger than it is in the *Sea Tourism Available* sample (-0.11 and -0.02, respectively).¹²

Table 6 displays results obtained from estimation of equation (1) where number of incoming international tourists per 10 residents is the dependent variable. Total violent crime and homicide rates are negative and statistically significant only in the sample of countries where there is *No Sea Tourism Opportunity*. In this sample, the elasticities of international tourists per 10 residents are -0.08 and -0.30 for violent crimes and homicides, respectively. Assault rate is negative and statistically significant regardless of whether the country is attractive. The elasticity of number of tourists with respect to assault rate is -0.09 and -0.14 in *No Sea Tourism Opportunity* and *Sea Tourism Available* samples, respectively. In contrast, robbery rate has a significant influence on tourists in attractive countries, but not in the unattractive countries.

IV. Conclusion

Using a panel data set of European countries, this paper investigates the impact of crime on international tourism activity. Violent crimes are negatively associated with incoming international tourists and international tourism revenue. The results suggest that tourists evaluate the risk of victimization when choosing a destination. Further, the analysis shows that the international tourism activity is more responsive to total violent crimes and homicides in

¹² Although the coefficient of the homicide rate in the *No Sea Tourism Opportunity* sample is much larger than it is in the *Sea Tourism Available* sample, the mean of tourism revenue in the *No Sea Tourism* sample is larger as well. In addition, the mean of the homicide rate in the *No Sea Tourism* sample is smaller. As a result, the elasticity estimates are comparable.

countries that are more attractive. Especially, a country's sea tourism attractiveness may be a factor offsetting the effect of the risk of being victimized for potential tourists. This finding may be evidence for the hypothesis that the risk of victimization borne by the tourists is (partly) compensated by the touristic attractiveness of the country.

Results suggest that the decrease in the tourism revenue due to violent crimes is mainly driven by the responsiveness of the number of tourists to crime, not by that of the average spending of the tourists. This is because, the elasticity of tourism revenue can be approximated by the sum of two elasticities: the elasticity of the number of tourists with respect to crime and the elasticity of spending per tourist with respect to crime. The fact that the elasticity of tourism revenue and the elasticity of number of tourists are about same (around -0.1) implies that although tourists avoid countries with higher crime rates, once they decide to travel to a country, they do not alter their spending (e.g. they do not shorten their visit) in that country based on the crime rate.

The impact of crime on tourism is economically significant. For example, for an average country with a population of 25 million, a 10% increase in aggregate violent crime rate leads to about \$140 million (in 2000 dollars) decline in international tourism revenue. Using Siegfried and Zimbalist (2000)'s locally-owned entertainment venue multiplier of 1.5 as a lower bound, the economic impact of such an increase in violent crime rate is estimated to be at least \$200 million.

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Table 1: Summary Statistics

Variable	N	Mean	Std. Dev.
Tourism Revenue per 10 residents	239	4,700.99	6,435.02
Tourists per 10 residents	248	7.38	7.37
Violent crime rate*	249	212.70	215.74
Homicide rate*	212	3.39	4.32
Rape rate*	257	7.05	5.81
Robbery rate*	257	70.16	70.43
Assault rate*	253	130.62	183.05
Share of population in urban areas	258	67.26	11.46
Hospital beds per 1,000 residents	258	6.71	2.26
GDP per capita	258	19,879.49	17,983.94
Exchange Rate	258	67.10	205.17
Consumer price index	258	79.19	19.93

Summary statistics pertain to 35 European countries for the time period between 1996 and 2003. Countries are listed in Table 2. The table presents summary statistics of observations (country-years) that enter into the regressions at least once. The means of the variables of interest for the relevant sample are provided for each regression in the output tables.

* Definitions of crimes: All crime rates are per 100,000 residents of a country. Homicide: intentionally killing of a person; Rape: sexual intercourse with a person against their will; Robbery: stealing with (threat of) force; Assault: inflicting bodily injury to another person. Violent crime rate is the sum of homicide, rape, robbery and assault rates.

Table 2: Tourism Attractiveness in the European Countries

Country	Latitude	Coastline Length	Sea Tourism	Natural World Heritage Sites	Cultural World Heritage Sites
Albania	41	648.7	Yes	0	2
Armenia	40	0	No	0	3
Austria	47.2	0	No	0	9
Belgium	50.5	76.2	No	0	11
Bulgaria	43	456.8	Yes	2	7
Croatia	45.1	5663.5	Yes	1	6
Cyprus	35	671.3	Yes	0	3
Czech Republic	49.45	0	No	0	12
Denmark	56	5316.2	No	1	3
Estonia	59	2956	No	0	2
Finland	64	31119.1	No	1	6
France	46	7329.8	Yes	4	34
Georgia	42	376	Yes	0	3
Germany	51	3623.7	No	3	35
Greece	39	15146.7	Yes	2	15
Hungary	47	0	No	1	7
Iceland	65	8505.8	No	1	1
Ireland	53	6437.1	No	0	1
Italy	42.5	9225.8	Yes	4	45
Latvia	57	565.5	No	0	2
Lithuania	56	257.7	No	0	4
Luxembourg	49.45	0	No	0	1
Moldova	47	0	No	0	1
Netherlands	52.3	1913.8	No	1	8
Norway	62	53198.6	No	1	6
Poland	52	1032.3	No	1	13
Romania	46	695.5	Yes	1	6
Russian Federation	60	110310	No	10	15
Slovak Republic	48.4	0	No	2	5
Slovenia	46.07	41.2	Yes	1	2
Spain	40	7268.1	Yes	5	39
Switzerland	47	0	No	3	8
Turkey	39	8139.6	Yes	2	9
Ukraine	49	4953	Yes	1	6
United Kingdom	54	19716.6	No	5	23

Table 3: Effect of Crime on Tourism Revenue

Dependent Variable: <i>Tourism Revenue per 10 Residents</i>					
	(1)	(2)	(3)	(4)	(5)
<i>Crime category as an independent variable</i>					
	Violent Crime	Homicide	Rape	Robbery	Assault
Crime Listed (t-1)	-2.61*** (0.76)	-15.42* (9.02)	-55.75 (36.52)	-0.85 (2.63)	-3.56*** (0.99)
Urban population (%)	146.93 (133.47)	179.90* (98.04)	124.73 (150.96)	118.55 (152.61)	124.68 (140.90)
Hospital beds per 1,000	67.24 (111.89)	88.29 (120.78)	42.65 (102.10)	49.81 (102.87)	66.14 (112.66)
GDP per capita	0.24*** (0.08)	0.13 (0.12)	0.17* (0.09)	0.18 (0.11)	0.29*** (0.09)
Exchange rate	0.59*** (0.18)	0.75*** (0.24)	0.67*** (0.18)	0.69*** (0.20)	0.65*** (0.15)
Consumer Price Index	-10.20 (11.26)	2.30 (11.30)	-10.56 (10.60)	-6.54 (11.43)	-8.05 (10.55)
Observations	230	200	238	238	234
<i>Means in the regressions</i>					
Tourism Rev. per 10 Res.	4712.68	5292.51	4694.37	4699.16	4726.37
Crime listed	218.18	3.52	7.24	73.29	132.71

The outcome variable is the *tourism revenue per 10 residents*. Each column presents the output of the regression where the lagged crime rate (number of crimes per 100,000 residents in the country) pertaining to the crime listed at the top is included. Last two rows provide the sample means of the dependent variable and the crime included in that regression. Coefficients of country and year indicators and a dummy variable for countries that use currency Euro are not reported. Standard errors are clustered at the country level. *, **, and *** indicate statistical significance at 10%, 5% and 1%, respectively.

Table 4: Effect of Crime on Tourists

Dependent Variable: <i>Number of Tourists per 10 Residents</i>					
	(1)	(2)	(3)	(4)	(5)
<i>Crime category as an independent variable</i>					
	Violent Crime	Homicide	Rape	Robbery	Assault
Crime Listed (t-1)	-0.003** (0.001)	-0.015 (0.028)	-0.010 (0.065)	0.000 (0.007)	-0.005*** (0.001)
Urban population (%)	0.002 (0.191)	-0.115 (0.228)	-0.051 (0.176)	-0.042 (0.176)	-0.012 (0.182)
Hospital beds per 1,000	0.266 (0.166)	0.309 (0.222)	0.237 (0.162)	0.249 (0.157)	0.276 (0.165)
GDP per capita	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Exchange rate	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Consumer Price Index	-0.030* (0.015)	-0.009 (0.019)	-0.023 (0.014)	-0.021 (0.015)	-0.028* (0.014)
Observations	239	202	247	247	243
<i>Means in the regressions</i>					
No. Tourists per 10 Res.	7.42	8.09	7.37	7.36	7.39
Crime listed	212.48	3.43	7.16	71.67	128.77

The outcome variable is the *number of tourists per 10 residents*. Each column presents the output of the regression where the lagged crime rate (number of crimes per 100,000 residents in the country) pertaining to the crime listed at the top is included. Last two rows provide the sample means of the dependent variable and the crime included in that regression. Coefficients of country and year indicators and a dummy variable for countries that use currency Euro are not reported. Standard errors are clustered at the country level. *, **, and *** indicate statistical significance at 10%, 5% and 1%, respectively.

Table 5: Differential Responsiveness of International Tourism Revenue to Crime by Availability of Sea Tourism

Dependent Variable: <i>Tourism Revenue per 10 Residents</i>										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Crime category as an independent variable</i>										
	Violent Crime		Homicide		Rape		Robbery		Assault	
	No Sea Tourism Opportunity	Sea Tourism Available	No Sea Tourism Opportunity	Sea Tourism Available	No Sea Tourism Opportunity	Sea Tourism Available	No Sea Tourism Opportunity	Sea Tourism Available	No Sea Tourism Opportunity	Sea Tourism Available
Crime Listed (t-1)	-2.30*** (0.79)	-2.74 (2.37)	-218.34*** (50.12)	-15.38* (8.08)	-45.59 (40.74)	8.07 (101.26)	0.80 (3.29)	-1.84 (4.66)	-3.24*** (0.74)	-5.39 (5.28)
Urban population (%)	-299.58*** (56.87)	145.07 (174.38)	16.68 (130.53)	-56.28 (241.70)	-317.570*** (93.20)	141.23 (148.90)	-335.38** (118.89)	151.22 (151.95)	-347.84*** (52.17)	160.86 (161.33)
Hospital beds per 1,000	66.69 (86.60)	6.11 (187.15)	48.56 (132.63)	235.59 (302.35)	25.47 (78.39)	-8.62 (194.09)	22.14 (75.38)	-14.98 (180.30)	67.19 (84.90)	-1.28 (182.16)
GDP per capita	0.45*** (0.06)	0.31 (0.43)	0.34** (0.12)	-0.14 (0.45)	0.39*** (0.10)	0.35 (0.38)	0.42*** (0.13)	0.36 (0.39)	0.51*** (0.07)	0.34 (0.42)
Exchange rate	2.97 (2.55)	1.06*** (0.22)	5.58* (2.74)	1.40*** (0.40)	2.78 (2.61)	1.05*** (0.26)	3.62 (2.48)	1.04*** (0.25)	3.64 (2.23)	1.10*** (0.19)
Consumer Price Index	-6.70 (10.38)	-22.69 (21.01)	-5.14 (24.49)	-6.04 (19.39)	-3.37 (8.66)	-21.47 (20.27)	4.16 (11.27)	-22.47 (20.62)	-4.03 (8.58)	-21.51 (20.98)
Observations	147	83	127	73	151	87	150	88	150	84
<i>Means in the regressions</i>										
Tourism Rev. per 10 Res.	5329.24	3620.70	6108.62	3872.71	5366.77	3527.35	5368.31	3558.58	5368.31	3580.04
Crime listed	275.03	117.50	3.16	4.13	8.61	4.86	78.68	64.10	183.00	42.92

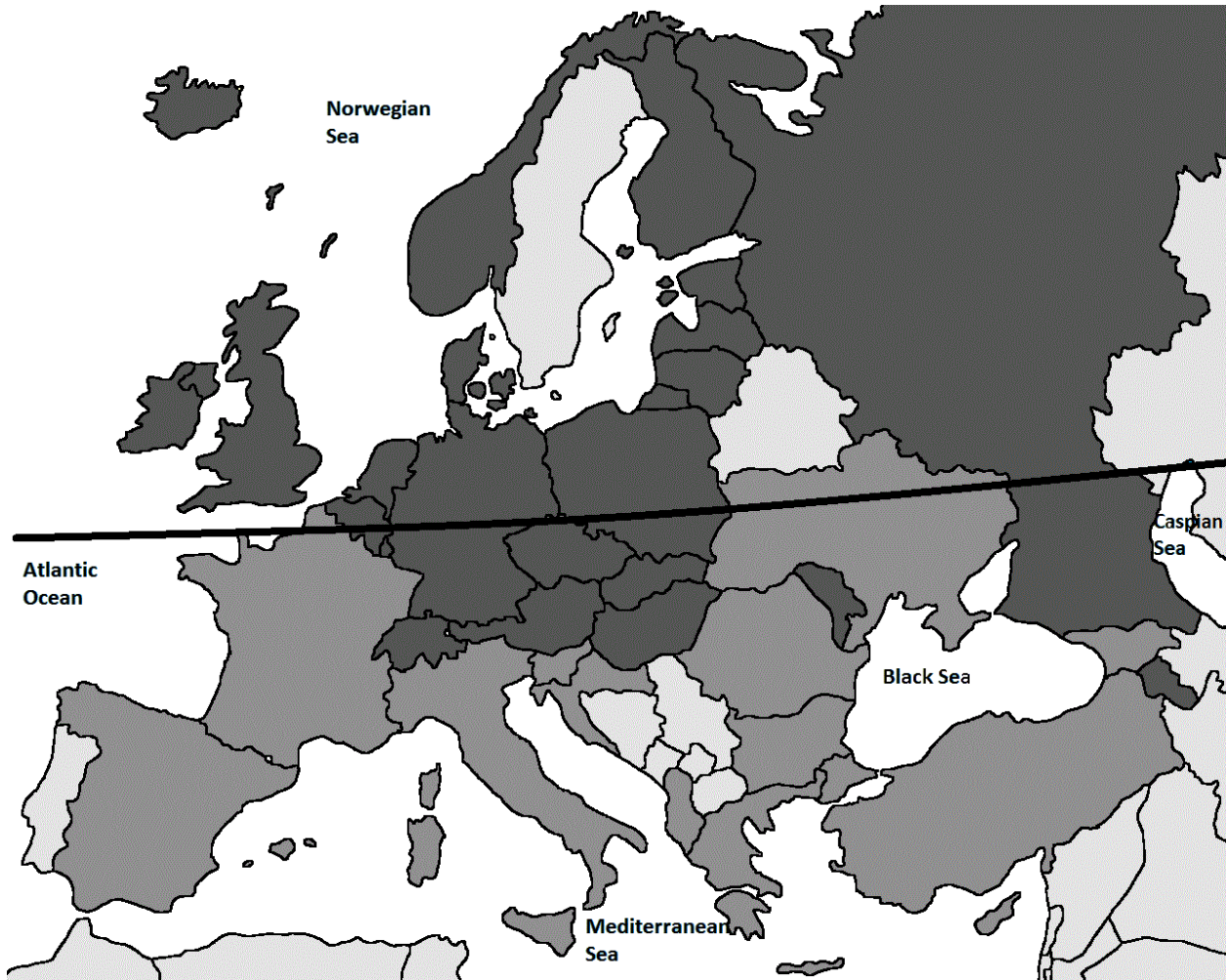
The outcome variable is the *international tourism revenue per 10 residents*. Odd-numbered (even-numbered) columns present results for the sample of countries that are located above the latitude 50 North or have no coastline (below latitude 50 North and have a coastline). Each column presents the output of the regression where the lagged crime rate (number of crimes per 100,000 residents in the country) pertaining to the crime listed at the top is included. Last two rows provide the sample means of the dependent variable and the crime included in that regression. Coefficients of country and year indicators and a dummy variable for countries that use currency Euro are not reported. Standard errors are clustered at the country level. *, **, and *** indicate statistical significance at 10%, 5% and 1%, respectively.

Table 6: Differential Responsiveness of International Tourists to Crime by Availability of Sea Tourism

Dependent Variable: <i>Number of Tourists per 10 Residents</i>										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Crime category as an independent variable</i>										
	Violent Crime		Homicide		Rape		Robbery		Assault	
	No Sea Tourism Opportunity	Sea Tourism Available	No Sea Tourism Opportunity	Sea Tourism Available	No Sea Tourism Opportunity	Sea Tourism Available	No Sea Tourism Opportunity	Sea Tourism Available	No Sea Tourism Opportunity	Sea Tourism Available
Crime Listed (t-1)	-0.002*	-0.008	-0.703***	0.007	0.008	-0.146	0.004	-0.011**	-0.003**	-0.029**
	(0.001)	(0.005)	(0.173)	(0.013)	(0.054)	(0.119)	(0.009)	(0.005)	(0.001)	(0.010)
Urban population (%)	0.069	-0.288	0.043	-0.471	-0.016	-0.305	0.001	-0.274	0.050	-0.232
	(0.111)	(0.275)	(0.150)	(0.397)	(0.120)	(0.273)	(0.117)	(0.260)	(0.101)	(0.290)
Hospital beds per 1,000	0.082	0.231	0.005	0.510	0.044	0.268	0.035	0.206	0.091	0.294
	(0.147)	(0.319)	(0.189)	(0.523)	(0.156)	(0.346)	(0.135)	(0.313)	(0.151)	(0.299)
GDP per capita	0.000	0.001	0.000**	0.000	0.000	0.001	0.000	0.001	0.000	0.001
	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)
Exchange rate	-0.003	0.000	0.001	0.000	-0.003	0.000	-0.001	0.000	-0.003	0.001**
	(0.005)	(0.000)	(0.005)	(0.001)	(0.006)	(0.000)	(0.004)	(0.000)	(0.005)	(0.000)
Consumer Price Index	-0.015	-0.040	-0.001	-0.031	-0.006	-0.044	-0.001	-0.043	-0.015	-0.037
	(0.012)	(0.030)	(0.038)	(0.028)	(0.014)	(0.030)	(0.019)	(0.030)	(0.011)	(0.029)
Observations	144	95	120	82	148	99	147	100	147	96
<i>Means in the regressions</i>										
No. Tourists per 10 Res.	6.94	8.16	7.52	8.92	6.95	7.99	6.92	8.01	6.92	8.10
Crime listed	281.34	108.09	3.16	3.82	8.85	4.62	81.22	57.63	186.09	40.99

The outcome variable is the *international tourists per 10 residents*. Odd-numbered (even-numbered) columns present results for the sample of countries that are located above the latitude 50 North or have no coastline (below latitude 50 North and have a coastline). Each column presents the output of the regression where the lagged crime rate (number of crimes per 100,000 residents in the country) pertaining to the crime listed at the top is included. Last two rows provide the sample means of the dependent variable and the crime included in that regression. Coefficients of country and year indicators and a dummy variable for countries that use currency Euro are not reported. Standard errors are clustered at the country level. *, **, and *** indicate statistical significance at 10%, 5% and 1%, respectively.

Figure 1: Countries in the Estimation Sample



The solid black line approximately indicates the latitude 50 North. Dark gray countries, which are either located to north of latitude 50 North or have no coastline, are in the *No Sea Tourism Opportunity* sample. Medium gray countries, which are located to the south of the latitude 50 North and have a coastline, are in the *Sea Tourism Available* sample. Very light gray countries are not in the estimation sample. Europe map is obtained from www.youreuropemap.com in its blank form.