

Brzoska, Michael; Bossong, Raphael; van Um, Eric

**Working Paper**

## Security Economics in the European Context: Implications of the EUSECON Project

Economics of Security Working Paper, No. 58

**Provided in Cooperation with:**

German Institute for Economic Research (DIW Berlin)

*Suggested Citation:* Brzoska, Michael; Bossong, Raphael; van Um, Eric (2011) : Security Economics in the European Context: Implications of the EUSECON Project, Economics of Security Working Paper, No. 58, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin

This Version is available at:

<https://hdl.handle.net/10419/119384>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

**economics-of-security.eu**

Michael Brzoska, Raphael Bossong, Eric van Um

# **Security Economics in the European Context – Implications of the EUSECON Project**

November 2011

Economics of Security Working Paper 58

*This publication is an output of EUSECON, a research project supported by the European Commission's Seventh Framework Programme.*



Economics of Security is an initiative managed by DIW Berlin

## Economics of Security Working Paper Series

Correct citation: Brzoska, M. et al. (2011). "Security economics in the European context – implications of the EUSECON project". Economics of Security Working Paper 58, Berlin: Economics of Security.

First published in 2011

© Michael Brzoska, Raphael Bossong, Eric van Um 2011  
ISSN: 1868-0488

For further information, please contact:

Economics of Security, c/o Department of Development and Security, DIW Berlin – German Institute for Economic Research, Mohrenstr. 58, 10117 Berlin, Germany.

Tel: +49 (0)30 89 789-277

Email: [eusecon@diw.de](mailto:eusecon@diw.de)

Website: [www.economics-of-security.eu](http://www.economics-of-security.eu)

# Security economics in the European context – implications of the EUSECON project<sup>1</sup>

*Michael Brzoska<sup>2</sup>, Raphael Bossong<sup>2</sup>, Eric van Um<sup>2</sup>*

*This paper presents key aspects and policy implications of a multi-annual research project on economic analyses of European security issues (EUSECON), with an emphasis on intentional threats of organised crime, piracy and terrorism. The first part argues that rational models can provide significant insights on the emergence and current patterns of terrorism and piracy. These findings could lead to new priorities or to more nuanced interventions in response to these threats. The second part focuses on the direct and indirect costs of both terrorism and organised crime. EUSECON provided new data about the scope of related illegal economic activities and explored the sensitivity of markets, societies and polities in the aftermath of terrorist attacks. It emerges that political actors are at greatest risk of over-responding, whereas mature economies display a high degree of resilience. Finally, the third part discusses economic approaches to policy evaluation. EUSECON clarified the benefits of transnational security cooperation, but also highlights the difficulties of rigorous cost-effectiveness and cost-benefit calculations. Therefore, a more evidence-based approach to security policy-making, which is increasingly touted by EU decision-makers, remains elusive. In conclusion, European security policy needs further scrutiny from an economic perspective, in order to answer the increasing complexity of security challenges under the increasing financial or political constraints.*

## 1 Introduction

Economists have endeavoured to apply economic instruments and methods to a wide variety of social and political problems. While some research traditions, such as on collective action and defence expenditure reach back several decades, the literature on terrorism has grown exponentially since the events of September 11. In this context EUSECON took stock of, and advanced research on security economics (Brück et al., 2008; Schneider et al., 2011a; Schneider et al., 2011b). In line with the breadth and scope of research activities, Brück et al. (2008: 8) broadly define the field as such: “Security economics is understood as those activities affected by, preventing, and mitigating insecurity including terrorism, in the economy”.

The EUSECON project focused specifically on the European context, where there is a growing demand for rigorous and scientific analysis of security issues. Heller (2009) shows how notions of security have undergone dynamic change within the EU. While in the late

---

<sup>1</sup> The EUSECON project has been supported by the European Union Seventh Framework Programme under grant agreement n°218105.

<sup>2</sup> Institute for Peace Research and Security Policy at the University of Hamburg (IFSH), Beim Schlump 83, 20144 Hamburg, Germany. Corresponding author: Raphael Bossong (bossong@ifsh.de).

1990s most attention was paid to organised crime, 9/11 catapulted terrorism to the top of the political agenda. Heller also shows how EU policy makers have developed increasingly sophisticated and interrelated security notions, whereby terrorism and organised crime are seen as networked threats.

The EUSECON project broadly followed this emphasis, but also touched on other forms of security threats. For instance, research by Brück et al. (2008) takes the wider costs of violent conflicts in non-European settings into account, while other contributions (Ramseger et al., 2009) have focused on the possible effects of disasters caused by weapons of mass destruction. Most recently, the resurgent concern with piracy added to the mix of transnational threats. This has also been swiftly reflected in EUSECON research (De Groot and Shortland, 2010; de Groot et al., 2011; Shortland and Vothknecht, 2011).

Against this background, three reasons motivate the application of economic approaches and methods to European security policy. First, economic methods and approaches have long played a role in the explanation of organised crime. Carrying the analysis of rational action into other security areas such as terrorism may improve measures to counter such threats. Second, organised crime, terrorism and disasters cause economic and social damage that needs to be assessed. Improved risk assessments as well as better pricing and costing of possible damages should inform public threat communication and orientate decision-makers' priorities. Third, the rapid growth of security measures after 9/11 and the current climate of financial austerity raise the question which kind of security policies are effective and efficient. Economic policy analysis could help in answering these concerns and lead to more sustainable security policies.

The EUSECON project has contributed in all three respects. Research has covered the causes and drivers of violence but also the economic and political impact of terrorism and organised crime. Research has also addressed policy oriented issues and evaluated existing security policies. A structured overview of the EUSECON research is provided in the Annex (Fig. 3).

The present paper illustrates how the EUSECON project contributed to a better understanding of the drivers of insecurity and provided new insights with regard to costs and benefits of security policies. First, research within EUSECON corroborates that economic incentives and rational models can usefully be applied to threats beyond organised crime. For instance, new

insights into the rational incentives of pirates should affect policy-makers' perceptions about the risks and benefits of addressing state failure.

Second, the project provided a clearer picture of the likely impact of terrorism and other serious forms of crime, even if significant limitations with regard to data and indirect costs continue to apply. It is shown that terrorism and serious crime have significant negative effects that reach beyond the immediate impact of attacks or criminal acts, but that mature European economies are also surprisingly resistant or recover quickly. In contrast, political systems are more vulnerable to over-invest in long-term security measures in the immediate aftermath of attacks. Politicians should aim to resist these dynamics and take confidence in the resilience of society.

Third, models of rational action can illuminate a number of collective action problems and the benefits of transnational security cooperation. This underlines the possible added value of EU security policy-making. However, rigorous cost-effectiveness and cost-benefit analyses of counter-terrorism and security policies either face high methodological obstacles or mostly point towards limited utility and high social, economic or political costs. A decade after 9/11, security economics thus supports more critical or sceptical assessments of the long-term benefits of many security measures.

## **2 The insights and methods of threat analysis [in and for Europe]**

This section discusses how economic approaches can shed new light on different security threats. It argues for a more consistent treatment of these threats on the basis of rational actor models, which contrasts with political discourses on “mad” terrorists. Furthermore, it is shown that structural conditions of development and governance can be systematically related to patterns of terrorism and piracy. These relationships as well as the rational calculations of threatening actors are complex and non-linear, however.

### **2.1 Causes of violence: terrorism and crime reconsidered**

In order to effectively fight (the emergence of) terrorism and other forms of serious crime, more needs to be known about the underlying causes and motives that drive people to turn to violence. On the structural level, a large number of factors have been cited as possible causes,

including but not limited to the political system (democratic or autocratic regime), demographics, cultural and economic factors. In the European context, economic deprivation has long been cited as one of the perceived key factors that drive terrorism, deviance and political violence. More recent research on terrorism then cast doubt on this view, as many terrorists were not found to be poor or uneducated. As a result, it has been argued that political repression is the most significant determinant for terrorist violence.

Yet overall, the rapidly growing literature on the causes of terrorism has remained highly ambivalent and inconclusive (Meierrieks and Krieger, 2009). EUSECON advanced this important debate on the factors that are conducive to terrorism. To start with, Drakos (2009a) makes clear that we actually know very little both about terrorist incidents and terrorist groups. Existing datasets have a different understanding of terrorism which limits comparability. With respect to terrorist groups, we have only very limited information about demographics, linkages, financing and recruitment of these. Neither have we very well understood the operating methods of terrorists so far. The great demand that security economics has generated for more and better data has so far not sufficiently been met.

Despite these limitations Freytag et al. (2010a) provide substantive evidence that social and economic conditions in the country of origin of terrorist attacks are positively correlated with the occurrence of terrorism. The distinction of countries of origin is important, as transnational terrorists frequently attack prosperous and liberal Western societies. This relationship seems to be non-linear, however, as improving economic performance is found to encourage terror in poor countries and to reduce terror in richer countries. A threshold exists with respect to macroeconomic performance that determines whether economic growth reduces or increases terror. Similarly, Freytag et al. (2010b) report that terrorist violence seems to be dependent upon socio-economic strength and stability of a political system.

From a more conceptual perspective, Murshed (2009a, 2009b; Murshed and Pavan, 2009) argues that Muslims in Europe, victim to real and perceived discrimination adopt a sense of collective identity and turn to their in-groups as a source of identification. For individuals, it would then not only be the *own* economic and political situation but the (endangered) well-being of their group they identify with that shapes their behaviour and possibly makes them turn to violence. Murshed et al. (ibid.) maintain that such a sense of discrimination is deeply embedded among European Muslims, both with regard to their current political and economic

position in different European countries as well as with regard to their wider social and historical identity. In short, European Muslims are found to be systematically poorer, to suffer from greater unemployment and to lack representation in public life. At the same time, anti-immigrant and anti-Muslim parties in Denmark, the Netherlands, and elsewhere have been on the rise, which accentuated the potential for violence.

Other political conditions remain at least as important as real or imagined patterns of discrimination. Malečková and Stanišić (2010) use data on public opinion from the Pew Global Attitudes Project<sup>3</sup> and study 16 countries in the Middle East, Africa and Asia with a large Muslim population. The study tests for a link between public opinion and patterns of terrorism. For that purpose, the study looks at two dimensions: the public opinion of regional powers<sup>4</sup> and the acceptance or rejection of suicide terrorism. The results confirm the relevance of public opinion for terrorism, although acceptance of suicide terrorism and the opinion of a regional power vary widely among the countries considered. In countries where suicide bombings were justified by wide parts of the population, terrorist levels were higher. Similarly, in countries where an unfavourable opinion was prevalent towards the regional power, high levels of terrorist attacks from the source country against the target country took place.

As a policy recommendation, one needs to underline the role of the welfare state when it comes to attenuating social and economic discrimination and fostering peaceful attitudes of Muslim minorities. Conversely, security policies may backfire, if they harden the sense of discrimination of minorities.<sup>5</sup> Van Um (2009) similarly argues that deterrence is likely to fail with regard to militants that have joined a group to develop and intensify social linkages. Finally, when turning to third states that either suffer from terrorism, or “send” terrorism to Europe, one should focus on those cases where regional powers are disliked and suicide terrorism is accepted.

EUSECON has also conducted research on the drivers of piracy and (to a lesser degree) in the field of organised crime. Results are equally country or region specific and show that the

---

<sup>3</sup> The Pew Global Attitudes Project, *Rising Environmental Concern in 47 – Nation Survey, Global Unease with Major World Powers*. [www.pewglobal.org/datasets/](http://www.pewglobal.org/datasets/).

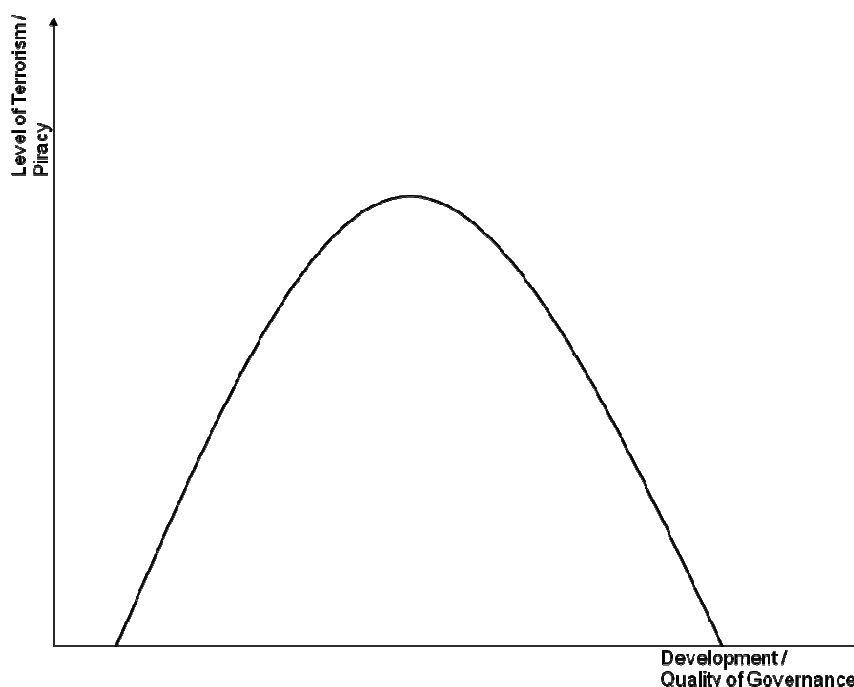
<sup>4</sup> These include the United States, the Russian Federation, Iran, India, the European Union, China, Egypt, Japan and Saudi Arabia.

<sup>5</sup> Such as random “stop-and-search” operations that mainly target non-white citizens or residents (Bowling and Phillips, 2007).



emergence of piracy seems to be dependent on differing levels of governance. Shortland and de Groot (2010) find that the most “serious” forms of piracy occur under specific “mid-level” conditions of governance, that is when pirates can draw on functioning markets and basic security, but exploit opportunities for illegal activities and corruption.<sup>6</sup> This argument also applies to seemingly countervailing cases such as Somalia, as “failed states” can readily incorporate areas or pockets of relative stability that are more conducive to sustained and accumulative criminal activities.<sup>7</sup> The (non-linear) relationship between key economic/political indicators and levels of violence which was established in EUSECON research is illustrated in figure 1.

Fig. 1 Relationship of economic and governance indicators and levels of violence



*Source: Relationship between economic growth and terrorism as indicated by Freytag et al. (2010a). Relationship between quality of governance and piracy as indicated by De Groot and Shortland (2010).*

Priorities in combating piracy should therefore be placed on those states that already are close to that turning point rather than on complete (state) failures. The fight against corruption is of particular importance in this respect, as it is a critical instrument of criminals to take

<sup>6</sup> The authors present an innovation with regard to the use of data. Noting that official crime reports are unavailable or notoriously unreliable for the weakest and most vulnerable states, they resort to event data that is directly collected by affected “victims” of piracy for the international maritime bureau. This much more neutral and complete data on one form of serious or organised crime allows more accurate testing of theoretical propositions than state-generated data.

<sup>7</sup> A similar argument about necessary pockets of orders could be made for terrorist “safe havens”, such as the tribal areas of Northern Pakistan or the Al-Shahab controlled territories in Somalia, but could not yet be systematically corroborated by data.

advantage of state and market structures for their own purposes. This contrasts with actions against more “symbolic” or politically visible problems of hostage taking, which clearly presents a grave threat to ship crew, but may not significantly affect the structural causes, or conditions conducive to the development of, piracy. Thus, eradicating corruption in countries such as Indonesia may reap a higher benefit than the costly maritime intervention before the coast of Somalia. Alternatively, interventions aimed at Somalia should focus on particular locations or areas that display relative levels of stability (on land), rather than attempt to suppress operational piracy in truly ungoverned spaces, i.e. off-shore.

## **2.2 Rationality of terrorists and criminals**

Moving beyond structural causes or factors that promote different kinds of transnational violence, one also needs to understand the motivations and behavioural patterns of terrorists. This is a significant foundation for devising effective strategies to deal with existing threats. In this context, security economics can draw on a highly sophisticated body of reasoning about rationality which builds on Rational Choice Theory.<sup>8</sup>

From this perspective, terrorism is typically understood as a tactic or strategy to pursue short-run or long-run goals, where the short-run goals are a destabilisation of attacked economies and polities as well as publicity (e.g., Tavares, 2004) and the long-run goal is a redistribution of power and wealth not enforceable through the ordinary political process (Frey and Luechinger, 2003). Ultimately, terror is chosen as a tool to reach political objectives as long as terrorists’ marginal expected benefits exceed marginal costs (Frey and Luechinger, 2003; Harrison, 2006). More loose concepts of rationality (such as the concept of *bounded rationality* by Simon (1955)) have argued that such cost-benefit calculations necessarily remain limited due to a lack of information, misperceptions and cognitive biases (see for instance Berrebi, 2009). Other than taking all or even most of the costs and benefits of the available options into consideration, concepts of *bounded rationality* suggest that individuals in reality use heuristics (which sometimes may, but often will not come close to a comprehensive cost-benefit analysis) before choosing a certain option.

---

<sup>8</sup> It should be noted that Rational Choice models are not limited to explaining terrorist behaviour. Organised criminals seek to take advantage of globalised markets and exploit the gap between demand for illicit goods and services (e.g. drugs, prostitution) and their risky supply. As this “profit-maximising” orientation of organised criminals is readily evident and politically uncontested, however, it has not been dealt with in greater depth in the EUSECON project. As set out in this section, this is clearly different with regard to terrorism.

A related question concerns the effectiveness of terrorist behaviour. Economic analyses of terrorism would consider it as a “rational” activity in so far as it regularly helps to achieve political objectives. Researchers in this field (Abrahms, 2006, 2008; Cronin, 2009; Gupta, 2008; Merari, 1993; Jenkins, 2006) have come to conclude that terrorism by and large has failed to reach any strategic (political) objective and – building on the premise of rational expectations - could thus not be considered rational. Other scholars (Dershowitz, 2002; Gunaratna, 2002; Kydd and Walter 2006; Lake, 2002; Oberschall, 2004; Victoroff, 2005), however, indicate that terrorists may actually at least sometimes succeed and reach their stated objectives.

EUSECON engaged with both questions, namely whether terrorists can be considered rational and effective. As already discussed above, Freytag et al. (2010a) go beyond one of the standard assumptions of Rational Choice Theory – i.e. narrow self-interest (Schneider et al., 2011a: 13-14, Caplan, 2006: 94) – and posit an extended form of social rationality, whereby suicide attackers can act rationally for group benefit or intangible rewards, such as rewards in afterlife. This move is critical to account for otherwise seemingly irrational behaviour of individuals, i.e. suicide attacks.<sup>9</sup>

Other EUSECON’s contributions have supported the idea that terrorists largely behave in a rational manner, usually within the limits of bounded rationality and partially even as instrumentally rational actors. Butler and Gates (2010) elaborate on militants’ choice not only of terrorist tactics but also on the selection of guerrilla warfare or terrorism as a strategy. The authors argue that militants’ violence can be understood in a strategic framework and that the choice of violence is very much based on rational considerations. Butler and Gates develop a conceptual argument why during situations of unconventional warfare some groups intentionally target civilians and chose terrorist tactics, while others resort to guerrilla violence. The authors conclude that the choice of tactics is very much determined by levels of power asymmetry. If the cost of conventional warfare were too high, groups would fall back on tactics of guerrilla warfare. Given extreme (power) asymmetry, the cost of guerrilla warfare might also be too high so that groups would fall back on terrorism. The findings indicate that violent groups weigh carefully costs and benefits associated with certain options.

---

<sup>9</sup> For a recent rational analysis of suicide bombings, see Ayers (2008).

A similar result is reported by Freytag et al. (2010b). In a statistical test of cross-sectional time-series data for 103 countries for the period of 1992 to 2004, it is shown that socio-economic strength and stability is positively related to the likelihood of terrorism but negatively to incidences of more violent forms of violent opposition. This result implies that while civil war can be prevented through improvement of socio-economic conditions and increases in political stability, this may make terrorism more likely.

In short, EUSECON supported the view that rational models can help to better understand which form of violence is chosen. This is not to say that violent actors always and necessarily act rationally, or even in a more or less bounded rational manner. In certain contexts, violence may also be better understood from a perspective that underlines expressive or emotive drives for violence. Harrison (2009) discusses counter-terrorism in the Soviet Union and conjectures about the motivations of Armenian terrorists who could not expect to attain significant public recognition or even a modicum of political change in the Soviet Union.<sup>10</sup> From a fundamental perspective, Van Um (2009) discusses the explanatory power of concepts of rationality for terrorism and argues that empirically, terrorists often seem to deviate from instrumentally rational behaviour and to be motivated by other than political reasons. The author also points out that levels of rationality may vary within a terrorist group, complicating efforts to combat terrorist groups as a whole. In this regard, previous research has tried to distinguish different players of terror organisations and has repeatedly referred to terrorist leaders, recruits, and support groups all of which are likely to have different motivations (Schneider et al., 2011b: 13).

With these qualifications in mind, EUSECON research has found that terrorist groups occasionally achieve their desired objectives, which speaks to the question of long-term effectiveness raised above. Klor and Gould (2009) use a large sample of terror attacks over time and across locations in Israel from 1984 to 2006 to study the impact on Israeli political views. They find that terrorism seems to be successful in having a significant impact on these political views by shifting the political landscape in Israel to the left. Israeli citizens were more willing to support a Palestinian state after terror attacks which can be seen as a success of Palestinian terror. The study also shows that terror is not always an effective tool but that

---

<sup>10</sup> While security services and officials in the Communist state had to step up security measures in response to these bombings, this could not be credibly regarded as a rational strategy by the Armenian terrorist group. Arguably, even a bounded rational actor should have realised that it would require considerably more violence and prospects for popular support before the repressive Soviet state would be forced to respond to any political or social demands.

the effectiveness is of a non-linear nature. While terrorism up to a certain level would make Israelis more willing to accept Palestinian demands, Israelis would move away from this position and become less willing to grant any concessions beyond a certain threshold of violence. The work by Gould and Klor indicates that Palestinian violence has been rationally spread so that it rarely reached this critical threshold in a specific location.

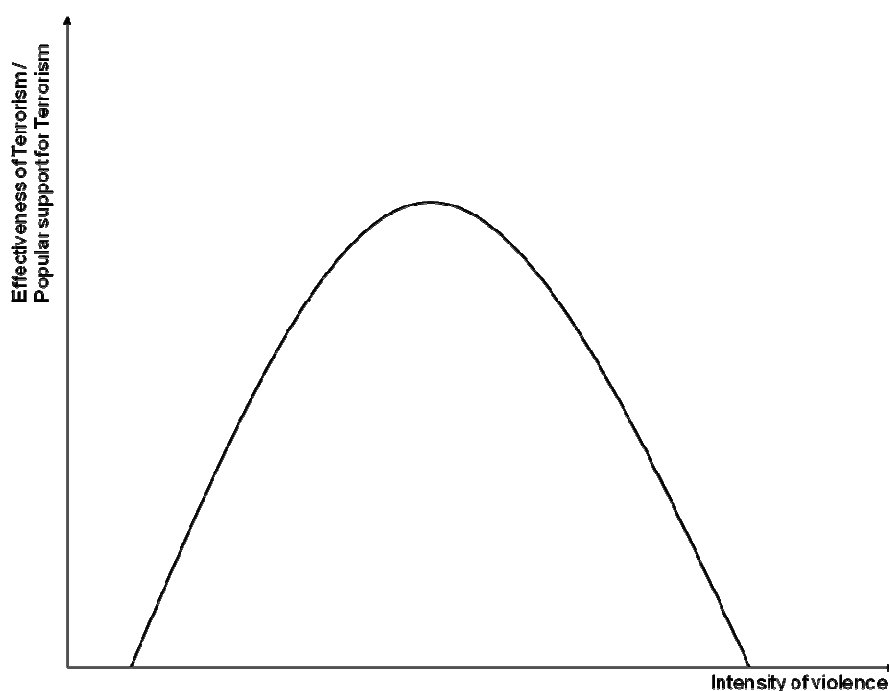
This relationship can furthermore be supported by linking it to the issue of public support raised in the previous section on the possible causes of terrorism. Butler and Gates (2010) stress that loss of public support may become a matter of survival for terrorist groups, if this support shifts away from the groups.

This reflects findings within previous research, according to which groups have repeatedly ceased to exist due to a loss of public support which often resulted from overly brutal terrorist attacks and a miscalculation of the effects of such violence on the public opinion (Cf. Cronin, 2007, 2009; Gvineria, 2009). In other words, low-levels of violence put the capacity of the terrorist organisation into question, whereas excessive violence can alienate also supporters. Beyond the case of Israel that is discussed by Klor, one can point to parallel examples from the European history in the fight against terrorism. The most important political concessions were won by separatist groups in Northern Ireland and the Basque country which, for the most part, could largely control and sustain a medium-level of violence. In contrast, Al Qaeda has already lost much of its public support in Third World countries, but also among possible sympathisers in Western Europe, due to the indiscriminate and excessive use of violence. So although spectacular acts of violence attract a large amount of public and media attention, they rarely pose a significant political challenge – at least as long as levels of violence do not cross a threshold level after which the targeted state or population may be seriously destabilised (descent into civil war) or blackmailed (e.g. by the threat of attacks with weapons of mass destruction as in a regular inter-state deterrence scenario).

In sum, the intensity of terrorist violence seems to have a direct influence both on the effectiveness of terrorist campaigns and on levels of support for terrorists' causes. This relationship as indicated in EUSECON research is illustrated in figure 2.

Fig. 2

Relationship of intensity of violence and effectiveness of / popular support for terrorism



*Source: Relationship between intensity of violence and effectiveness of terrorism as indicated by Gould and Klor (2009). Relationship between intensity of violence and popular support for terrorism as indicated by Butler and Gates (2010).*

In short, terrorists should neither be considered mad ideologies or perfectly rational strategic actors. Still, their behaviour frequently seems to be in line with at least a broad understanding of rational behaviour. This also means that terrorists generally will react to incentives and disincentives (for instance through counter-terrorism measures). Policy-makers need to investigate carefully whether a specific terrorist group (or which actors within a group) can be considered strategically rational, since certain counter-terrorism policies are only supposed to work under these circumstances.

Second, the various non-linear relations outlined means that dosage and prioritisation of security measures is important. For instance, the use of violence by governments can undercut terrorist campaigns, but it can also stimulate violent action and increase discrimination. Moreover, while reducing the likelihood of very deadly terrorist attacks is obviously a political priority, policy-makers must ensure that more restrained, but sustained, terrorist campaigns cannot take hold either. As outlined above, such campaigns are more likely to attract wider political support and/or extract considerable political concessions over time. Similarly, even though the complete absence of state structures captures most media and political attention, operations against piracy should prioritise locations where existing governance structures offer opportunities for sustained and profitable illegal business.

### 3 Impact of Terrorism and Organised Crime

The direct as well as indirect costs of terrorism and organised crime have become increasingly salient in recent years (Enders and Oslon, Forthcoming, Rose, 2009). This is most evident if one counts the US wars in Afghanistan and Iraq as results of the attacks of September 11. But also the European fight against international terrorism has imposed serious political and economic costs (Schäfer, 2011). Therefore, Schneider et al. (2011a, 2011b) argue that “impacts resulting from security responses of economic agents could incur more significant economic repercussions than the direct impacts of a terror attack” (Schneider et al., 2011b: 49).

EUSECON has added new insight in three related issue areas. The first is on the economic analysis of income from organised crime fed into the financial sector. While this is only one element of the costs of organised crime (for estimates of the costs of crime see e.g. Lynch, 2010), the analysis shows that income from crime measured this way is substantial, even in terms of world income. Terrorism, while only a small part of the total amount of illicit money in the financial system warrants particular attention, as cutting of financing is often seen as an important instrument in counter-terrorism. Work within EUSECON on the effectiveness of counterfinancing as a policy instrument indicates that this has likely been effective in suppressing international financing of terrorism, albeit with some side-effects (Brzoska, 2011).

A second contribution from EUSECON has been additional work on the impact and costs of terrorism in particular areas of the economy. The contributions made by EUSECON are reported here in two sections, one focusing on stock market effects, and the other on relations between terrorism and other sectors.<sup>11</sup> These sections show that markets and societies display a relatively high degree of stability, in face of terrorist attacks, even though there is also clear evidence for temporary strong, potentially “irrational”, reactions.

A third contribution is the integration of research on political costs of terrorism into the economics of security. Public opinion as well as voter behaviour show considerable sensitivity to terror attacks. Even though the effects, like those on markets, often are short-

---

<sup>11</sup> While much of the existing research focused on the impact of terrorism on the tourism sector, EUSECON put more emphasis on other sectors, such as stock and commodity markets, as outlined below.

lived, they are substantial immediately after attacks. This means politicians may be instigated by their interest in the maximisation of political support to meet the demand for action at the peaks of public attention, and not at average levels of concern.

### **3.1 Financing of organised crime and transnational terrorism**

Cash is the preferred initial currency in many crimes. However, it is often converted into financial assets and passed through the financial system, mostly with the objective to hide its origins. In a series of Working Papers (Schneider and Windischbauer, 2010; Schneider, 2010; Schneider and Caruso, 2011; Schneider, 2011), the well known specialist on black markets Schneider (and his co-authors) present and discuss sources of criminal finance and the volume of money laundering. Schneider's own estimation method, MIMIC reflects these linkages between legitimate and illegitimate business activities.

According to this pioneering model, criminal financing is channelled through formal and informal systems and comes from a variety of origins, of which the most important are (Schneider and Caruso, 2011: 12):

- (1) International and domestic criminal activities, such as blackmailing and corruption;
- (2) Protection rackets, including from diaspora-migrant communities;
- (3) High level transnational crime: fraud, illegal production and smuggling of drugs, kidnapping, armed robbery, trafficking in human beings; and
- (4) Investments in legitimate business of earlier criminal income.

Based on this model, Schneider et al. develop estimates of the overall share of criminal activities in global production. Various academics and international organisations have previously estimated the share of finance from illegal sources at two to five per cent of global income, with most of it coming from drug-trafficking. The drug trade, followed by illegal trade in arms and economic crime are the most important sources of money laundering which has been estimated to have an annual volume of somewhere between 400 billion to 2.85 trillion USD. Schneider's own estimate according to the MIMIC model is 790 billion USD in 2006. In this estimation procedure, the amount of money laundered is treated as a latent (i.e. unobservable) variable, whose relation to a number of determining factors, such as sources for illegal finance (i.e. various criminal activities) and indicators for its volume (confiscated money, prosecuted, persons, etc.) is estimated. In a second stage, a calibration procedure is used to translate the relative values from the MIMIC estimation into an absolute estimate.



Terrorist organisations command considerably smaller amounts of finance. For the period 1999-2004, using the MIMIC procedure Schneider (with Caruso) estimates the annual financial flows (i.e. the budget) of Al Qaeda at between 20 to 50 million USD per year. For all terrorist organisation in the sample of his study, he estimates that donations from governments, wealthy individuals and religious groups account for 35-50%; followed by involvement in the drug business (30-35%) and classical crime activities (such as blackmailing and mostly kidnapping) (Schneider and Caruso, 2011: 21-24).

Even though income is quite small (compared to that made in organised crime), it proved to be sufficient for maintaining international terrorist organisations, including the promotion of ideological material and the execution of serious or repeated attacks. Therefore, major efforts have been made to suppress transnational criminal financing. An extensive international regime to counter money laundering and terrorist financing internationally lead and coordinated by the Financial Action Task Force, has been established. Brzoska (2011) argues that this regime has been quite effective in reducing transnational terrorist financing. However, it has also had major costs, both in terms of tangible costs for banks, other financial actors, and, in the end, customers of formal and informal financial systems, and intangible costs in terms of confidentiality in financial data. This tradeoff will be returned to in more detail further below.

### **3.2 Financial (stock market) effects**

EUSECON researchers found strong evidence for short-term market volatility as a result of the threat or of acts of terrorism, but also found that long-term effects remain limited in mature European markets.

Christofis et al. (2010) study terrorism in Turkey and particularly the impact of the bombings in 1999, 2003, and 2008 on the Turkish financial markets. The study covers the period from 1997 to 2009 and determines the returns of specific indices from Banks, Trade and Industry. Abnormal returns are taken as proof for the economic impact of terrorism on the financial sector. Evidence is found for a significant impact (in terms of an abnormal return) of the terrorist attacks for the bombings of 1999 and 2003 in particular. In 1999, the Tourism and Industry sector was particularly hit. In 2003, indices of Banks and Tourism fell by 11%. The

impact of the bombings in Turkey on the financial markets was only short-lived and the indices rebounded very quickly, however.

Drakos (2009b) shows<sup>12</sup> for 22 countries for the period 1994-2004 that terrorist incidents with minor psychosocial impact<sup>13</sup> on average reduced stock market returns only slightly by approximately 0.07 percent while the reduction in the occurrence of incidents with major psychosocial impact is estimated as being approximately 0.60. This indicates that investor mood, which is likely to be more affected by attacks with major psychosocial impact, is important in determining the size of the stock market effect of terrorist attacks. This is also confirmed by Kollias et al. (2010), in a study of the terrorist attacks on the major local stock markets in the UK and Greece for the period 1990-2009. Attacks with particular political significance have larger stock market effects. The study particularly addresses the question whether there has been a change in stock market reactions over time in the two cases studied. While the result of the empirical investigation, using both GARCH and EGARCH<sup>14</sup> models is not unequivocal, resilience to such incidents seems to have grown over time.

EUSECON research could also find support for previous findings according to which the economic costs of terrorism may not only unfold in the targeted state. Rather, through the international linkages of the financial markets, spill-over effects of major events in particular have caused serious economic damage in remote countries. Drakos (2009d) provides an assessment of the various potential channels through which terrorist activity can exert systematic effects on foreign stock markets. Using a pooled panel for the effects of two major terrorist events (the Madrid attack on March 11, 2004 and the London attack on July 7, 2005) in 68 stock markets, he finds that bilateral trade linkages with the immediately affected country are the most significant determinants of stock market reaction. Alternative channels, such as degree of globalisation and stock market capitalisation in the country in question are also, but less important, factors in shaping the ripple effects of major terrorist attacks. In a parallel paper, Drakos (2009c) separately investigates differences in the effects between countries with higher and lower terrorism risks. In line with general investment theory, he finds that stock market reactions are greater in countries which are themselves subject to

---

<sup>12</sup> On the basis of a Pooled GARCH Panel. GARCH stands for “Generalised autoregressive conditionally heteroscedastic” and refers to models that primarily aim to model volatility in financial time series.

<sup>13</sup> Data on psychosocial impact is taken from the Global Terrorism Database (*GTD*) developed at the University of Maryland.

<sup>14</sup> EGARCH („exponential general autoregressive conditional heteroskedastic”) is a specific form of the GARCH model.

terrorist attacks. Investor sentiment, which can be surmised to be stronger in countries with higher terrorist risks, is another factor shaping the ripple effect in stock markets from terrorist attacks.

Added value of EUSECON research is provided by the finding that even remote and minor terrorist incidents may unfold significant repercussions on the US and European markets also driven by perceptions of insecurity. Marvins and Garvey (2010) find evidence that the bombing of the UN headquarter in Iraq in 2003 had a significant impact on trading patterns in the US financial market. The researchers argue that this was still related to the 9/11 attacks which had caused a persistent general feeling of insecurity.

The importance of psychological factors on the stock market effects of terrorist attacks also comes out in other EUSECON research. Garvey and Mullins (2009) highlight the significant impact in economic terms of transnational terrorism by studying the impact of the Madrid bombings in 2004. The researchers find that feelings of insecurity have a dramatic impact on the financial market. As it became clear at that time that it had not been the Basque group ETA who had committed the attacks but Islamic terrorists, the markets showed a strong negative reaction. In this sense, novel and unexpected terrorism seems to have a deep effect in the feeling of insecurity and to trigger an acute market response.

In sum, mature (European) markets have shown a surprising resilience and recovered from terrorist attacks quickly. On the other hand, EUSECON highlights that while the size of effects on financial markets has been dependent on the political, social and psychological significance of an attack, stock markets are sensitive even to minor and remote acts of terrorism. An important condition shaping the effects is a general feeling of insecurity. Psychological factors, always important for stock markets, are also important in the case of terrorism. While market participants will not be oblivious to direct economic costs, such as those of the attacks on September 11, 2001, heightened feelings of insecurity are shown, in research, to amplify stock market effects.

### **3.3 Other economic costs of terrorism**

EUSECON adds further value to the research on impact and costs of terrorism by studying the impact on sectors that have so far been widely neglected. First, research has been conducted on the impact on the labour markets of Muslims in the US and the UK in the aftermath of terrorist attacks. Rabby and Rodgers (2010) show that young UK Muslims experienced a

decline in employment rates after the London bombings. Specifically, the employment rate decreased by 10% compared to non-Muslim migrants, with the effect being most pronounced for very young Muslims with low qualifications. This discrimination is particularly important as UK Muslims are on average significantly younger, and face high obstacles of integration into the regular labour market. Similarly, Rabby and Rodgers (2009) highlight that the 9/11 terrorist attacks had a negative impact on the status of employment of individuals from the Middle East, Iran and Afghanistan, i.e. of individuals that share similar nativity profiles with the terrorists. While this result may not make a significant impact on overall economic performance and is of a temporary nature, this impact of terrorist attacks should attract more attention from policy-makers, as it indicates specific and subtle patterns of discrimination. New terrorist attacks would lead to repeated and new obstacles to improving this integration, while public opinion may feel reinforced in drawing, and thus actually creating, a link between Muslim religion and economic underperformance.

Another innovative take on the economic costs of terrorism and other forms of extreme events is performed by Brück et al. (2010b). They show that entrepreneurial activity is not necessarily decreasing after terrorist attacks, which mitigates the long-term economic repercussions of such events. The critical insight is that while the overall economic impact of terrorist attacks may be negative, new business opportunities (mostly for smaller and more flexible new firms) could counterbalance or off-set the initial damage. This could serve as a foundation for more policy recommendations to stimulate entrepreneurial activity in the aftermath of crises. In other words, policy-makers should not only focus on supporting established companies that are hit by terrorist attacks (such as airlines), but also facilitate the creation of new enterprise (e.g. by providing a stable framework for investments and by easing access to capital).

### **3.4 Wider political impact and public opinion**

The direct impact of terrorism with regard to specific political demands, as expected by rational actor models, has already been discussed above. This section delves further into the wider effects and largely uncontrolled or unspecific effects of terrorist, which are at least as important to account for as the direct physical effects of terrorist attacks.

Bozzoli and Müller (2009) document statistically that terrorism has a direct impact on public opinion and also on the acceptance of security measures at the expense of civil liberties.

This has often been reported in qualitative studies on the fight against terrorism, but rarely corroborated in a systematic manner. By studying the case of the London bombings in 2004, support for this effect has been found for the entire population and has not been limited to certain groups of the general public. This provides the basis for expanded security policy-making in the aftermath of attacks. Similarly, Drakos and Konstantinou (2011) show that public spending generally goes up after terrorist attacks and serious crime, even though this does not have a clear or measurable impact on the subsequent rate of terrorism and crime. This simple, yet striking macro-economic analysis demonstrates the prevalence of political overreactions, or ill-focused policy-making, in the aftermath of terrorist attacks.

In electoral terms, Gardeazabal (2010) finds that domestic terrorism in Spain has an impact on voters' share for the major parties PP (Partido Popular) and PSOE (Partido Socialista Obrero Español). Gardeazabal studies the impact of economic factors and terrorism on voting behaviour. He finds that both economic factors (unemployment, inflation) and terrorism activity on the national aggregate level have a statistically significant impact on vote shares particularly at the provincial level. In short, there is evidence for a distinct political shift to the right after terrorist attacks. This finding may be questioned in the case of international terrorism, however, as a right-wing government lost power in response to the terrorist attacks of Madrid in March 2004.

So despite considerable evidence on the wider political impact of terrorism, the evidence should not be overstated – which mirrors the above argument about the long-term resilience of mature economies. Voters in liberal democracies also remain sensitive to other concerns and costs of policies. Bozzoli and Müller (2009), for instance, also show that despite the heightened threat concerns, support for additional funding in security policies remains limited to the first days after the attack.<sup>15</sup> When moving away from the immediate aftermath of terrorist attacks, there is even less evidence for a permanently terrorised public. Drakos and Müller (2010a, 2010b) use data from the Eurobarometer opinion surveys (2003-2008) to explore whether terrorism risk are mirrored in subjective feelings of insecurity (risk perception). Overall, it emerges that terrorism generally ranks quite low with European publics, which corresponds to the fairly low number of terrorist attacks. Similarly, competing security and political issues, such as crime rates or housing costs, reduce the likelihood that

---

<sup>15</sup> Entrepreneurial activity in the aftermath of terrorist attacks (Brück et al., 2010b) could also indicate that public opinion and confidence is more robust than commonly assumed.

terrorism is mentioned as a prime concern.<sup>16</sup> So even if personal characteristics and political attitudes also play a role,<sup>17</sup> public opinion in Europe is not excessively sensitive to the threat of terrorism.

However, the most serious indirect impact of terrorism may be its long-term effect on civil rights and legal systems. Against the background of a large number of qualitative and historical studies on problematic aspects of counter-terrorism policy, Goderis and Versteeg (2009) present a pioneering comparative and quantitative analysis that tests the effects of 9/11 and alliance with the US on human rights violations. The paper finds that during the first five years after 9/11, there was no discernible check by legislatures on executive action. In other words, governments across the world acted in accordance with majority views when they breached human rights. Only independent and non-majoritarian judicial review provides an effective counterbalance, when controlling for many other variables, such as general democracy scores, legal culture or participation in wars.<sup>18</sup>

However, Goderis and Versteeg also show that human rights breaches decreased after 2006 even in countries without such judicial review. This finding is in line with arguments about public opinion outlined above, namely that societies are not permanently fixated on the threat of terrorism, particularly if overall attack rates remain low. In short, EUSECON research shows that public opinion and electoral systems are vulnerable to overreaction and overspending in relation to terrorist attacks, particularly if the political system does not allow for non-majoritarian checks. Over the medium-term, the shift in favour of more repressive policies and increased security spending clearly levels off, and public opinion shows resurgent sensitivity to alternative concerns.

---

<sup>16</sup> In this context, it should be noted that EUSECON also uncovered a hitherto unnoticed interaction effect between terrorism and crime. Based on Israeli data from 2000 to 2005, Gould and Stecklov (2009) shows that terror attacks are negatively correlated with crime levels. They conclude that this may be due to an increased police street presence after terrorist attacks. Furthermore, crimes in private homes (burglary) are also reduced, as people tend to stay more at home after a terrorist attack instead of going out.

<sup>17</sup> People on the right on the political spectrum are more likely to be concerned about terrorism. In contrast, men are less like to worry about terrorism.

<sup>18</sup> For current EU policy debates, this is highly relevant, as the judicial review powers of the European Court of Justice in security affairs have been upgraded with the ratification of the Lisbon Treaty. Furthermore, the EU formally acceded to the European Convention of Human Rights, which already helped to hold European governments to account when dealing with issues such as extraordinary renditions or indefinite detention. It goes beyond the scope of this paper to discuss the future prospects of judicial accountability in EU security policy, as it also involves a complex interplay between a wide range of other actors, such as the European Data Protection Adviser or the European Parliament.

### **3.5 Policy implications**

Insecurity has impacts beyond immediate damage, loss of income and other direct costs. It increases volatility and uncertainty in markets and affects people in their ways of life, which finds expression in public opinion polls and voting behaviour. Policy makers in theory have a number of options to deal with the broad perception of the costs of insecurity and peaks in attention. For instance, they could in theory ignore them, basing their decisions on direct costs. However, this theoretical option is difficult to implement in a competitive political system. Sensitivity to public sentiments is a core of democratic political systems. Thus, politicians not responding to broad perceptions and peaks of insecurity are likely to come under attack from other politicians (who may even fan feelings of insecurity).

Another problem is that decision-makers have to deal with the possibility of major threats or attacks in the future. Even if their occurrence may be unlikely, not to adequately prepare for a ‘high impact’ event could seriously undermine trust in the political system – as could be gauged from the shocked reaction of US citizens to the attacks of 9/11. In short, there is no “objective” way to estimate the “right” level of policy. Even if the various costs and impact of different security threats could be measured – which is a demanding task in many ways – the weighing of these costs depends on subjective factors. Nevertheless, given the mounting evidence on significant political and fiscal over-reactions in the aftermath of security crises, while markets and societies have been fairly resilient, political actors should increasingly consider the long-term costs and benefits of security policies.

## **4 Assessing current counter-terrorism and security policy**

This section investigates how European security and counter-terrorism policies and strategies could be assessed, and possibly improved, in greater detail. Economic research can offer several different approaches to policy evaluation. First, economic models of rational action (or game theory) can illuminate whether policy-makers cooperate in collectively rational ways. This includes the question of international cooperation in response to transnational threats. For instance, do defensive installations against terrorism only displace the threat to a different location, or can they reduce the overall threat levels (Brandt and Sandler, 2010)? Second, security instruments and investments can be compared to their intended effect or outputs. For instance, does the installation of a new generation of security scanners

significantly improve detection rates or could an increase in personnel be more cost-effective? Third, cost-benefit analyses aims to assess policy outcomes over the medium term and at a more systemic level, i.e. including comparisons with other possible courses of action or policy objectives (ideally in fully monetised terms). For instance, are new aviation security regulations needed to prevent further disasters and attacks, or should government rather invest in road safety or public health campaigns?

Taken together, these three approaches could ideally show how policies may be optimised under conditions of scarcity, collective action problems, and unclear long-term benefits in relation to both direct and opportunity costs. Yet one should be aware of fundamental limitations. Full and precise cost assessments, and cost-benefit analyses, remain out of reach due to incomplete data or inherent uncertainty, while security decision-makers always have to operate under considerable constraints.

#### **4.1 Collective action and the provision of transnational security**

Although most Western countries and international organisations have invested heavily in the fight against terrorism, it remains questionable whether these efforts can at all be effective.

This does not only concern the question whether the complex structural causes of terrorism are actually amenable to policy interventions (first part of this paper), or could be paid for (second section of this paper). Economists have also argued that the fight against (international) terrorism and other serious crime pose collective action dilemmas (Enders and Sandler, 2008) that may frustrate even the best of policies.

In abstract, defensive policies appear preferable to aggressive policies that may increase support to terrorist groups. Yet due to the fact that terrorism can choose between a wide variety of targets to strike fear and attract publicity, governments are faced with several dilemmas. They cannot reasonably defend all targets, while attacks may simply be displaced to another location.<sup>19</sup> At the same time, cooperation between different security providers or several states is difficult, as security is typically a public good. Public goods invite free-riding, as rational actors do not voluntarily pay for a good that they could enjoy while it is produced by others.

---

<sup>19</sup> Similar dynamics may be made out with regard to the fight against serious crime that has displayed significant innovation and diversification in the face of government repression. The extended and highly costly “war on drugs” exemplifies this dynamic.



Governments typically resolve this problem by their power to command and to tax. But this option is not readily available in the case of transnational cooperation between sovereign states. Purely national security policies invite other collective action problems, whereby each country seeks to protect itself, but may only deflect the threat to another location that is less well-defended. These weaker countries can, in turn, serve as a springboard for transnational threats, which undermines collective welfare and security objectives of all states. This is especially the case of terrorism that is often subject to weakest link effects, whereby attackers exploit vulnerabilities in one part of the system to strike elsewhere.<sup>20</sup>

EUSECON built on this well-established economic reasoning and investigated how European security policy can be understood as a collective good, but also avoid collective action problems. Engerer (2009) agrees that security is generally a non-excludable public good, but that specific policy instruments to counter new transnational threats can come in all different mixtures of excludability and rivalry. This deviation from a pure public good model, in turn, raises the prospects for cooperation and collective security provision.

Drawing on this conceptual groundwork, Bossong (2011a) focuses more specifically on European and international cooperation in response to terrorism, which has widely been criticised as ineffective (Bureš, 2011; Coolsaet, 2010). As just mentioned, general models of collective action indicate that international terrorists are at an advantage over governments, which either merely displace the threat or get very little benefit out of their defensive investments. However, Bossong (2011a) argues that preventive and responsive policies to counter terrorism are not necessarily subject to weakest link dynamics, and can be made exclusive to a club of countries, which alleviates collective action problems. Furthermore, contextual factors can support international cooperation. This is especially evident in the case of the EU, where dense institutional interactions exist. Thus, the EU could “add value” to national counter-terrorism by building mutual trust and addressing weakest link vulnerabilities.

But Bossong also argues that the EU’s fight against terrorism is still sub-optimal from a collective action perspective. Measures that can help to prevent or respond to terrorism by a significant pooling of resources, such as in the case of foreign policy or civil protection,

---

<sup>20</sup> The previous section on the indirect costs of terrorism also showed that attacks can have far-reaching repercussions beyond the immediate location or even country.

remain underdeveloped due to weak institutional mechanisms that could regulate the use of common assets.<sup>21</sup> Finally, the EU's development of innovative policies in the fight against terrorism, i.e. 'best shot' efforts to prevent further attacks, are undercut by a lack of relevant competences and expertise at the EU level. So far, smaller groups of member states have retained the lead for developing programs for reducing 'violent radicalization and recruitment' into terrorism. It remains to be seen whether recent EU efforts to create new forms of knowledge and best practice exchange can generate more collective utility.

A different and economically significant area for better EU cooperation in security affairs is raised by Marti (2010, 2011). Based on an extensive and groundbreaking survey of the civilian European security market, he argues that the bulk of small or middle-sized companies cannot be expected to operate effectively without outside intervention. Coordination of demand for both security goods and services is required when agents have to simultaneously invest to achieve a certain desired level of security. In Europe, high levels of market fragmentation and intense international competition underline the case for political intervention. This mainly, but not exclusively, refers to the US, which invests significantly more in technological research and has been able to set most relevant industrial standards, which favours US market actors. So even if the U.S. generally tends to over-invest in security (see also below), an economic analysis indicates the potential for a strategic industrial policy in Europe.

The challenge is to profit from the externalities of U.S. research and replicate well-proven and effective solutions, design smart agreements on licences and to appropriately tailor products to real market needs. In contrast, policy-makers should aim to minimise the inherent tendencies for oligopolies and rent-seeking in the area of high-end and capital-intensive security goods.

## **4.2 Cost effectiveness**

In sum, EU security cooperation could ensure a higher degree of cohesion and competitiveness. However, these analyses remain at a fairly high level of abstraction and include a bundle of different policies. This needs to be broken down further, as there is a serious lack of systematic evidence on the effectiveness of specific counter-terrorism instruments (Lum et al., 2006; Van Um and Pisoiu, 2011).

---

<sup>21</sup> Similarly, Brück and Xu (2011) provide a quantitative analysis of patterns of European aid policies, which underlines the lack of cross-national coordination of resource-intensive policies.

Bossong (2011b) questioned whether the EU's own review and assessment mechanisms for counter-terrorism have made headway in this respect. The paper discusses how a "peer review" among security officials of EU member states helped to define basic recommendations for counter-terrorism policy, such as improved information sharing and training of national security actors or better use of security-sensitive information in legal prosecutions (among others). The EU furthermore provided a formalised reporting system on the implementation of these recommendations, which supported international trust. Nevertheless, first EU peer review (that was concluded in 2007) could not be said to have significantly influenced national security systems, but rather shadowed event-driven policy-making after terrorist attacks. Furthermore, this review could not be regarded as a thorough policy evaluation, which could assess the appropriate level of security investments in respect to cross-national threat variation and competing policy objectives. This was underlined by the second round of EU peer reviews on response mechanisms to serious terrorist attacks and disasters. This review listed a large number of 'best practices' in this issue area, but without providing any evident rationale or justification for selecting these practices, such as cost-effectiveness.

More fundamentally, EUSECON underlined why it remains difficult to measure – and thus to legitimise or criticise – policy measures in this field. Van Dongen (2009) highlights a fundamental methodological problem in the area of counter-terrorism: How can we reliably link policy interventions with desired effects, if success is defined by a counter-factual, i.e. the absence of an attack? It does not seem feasible to escape this dilemma by correlating "average" attack rates with overall security investments. Terrorist attacks differ in impact and origin, while the absence (or decrease) of attacks is potentially caused by an infinite number of factors. Last but not least, the numbers of terrorist attacks may go down in a specific area, but may be substituted elsewhere.

These difficulties were spelt out in more detail by other EUSECON researchers that focused on particular counter-terrorism instruments or security policies from the perspective of goal-attainment and cost-effectiveness.<sup>22</sup> The cases under investigation cover a wide range of counter-terrorism policies as defined by the four strands of the EU counter-terrorism strategy, namely to prevent, pursue, protect from and respond to terrorism.

---

<sup>22</sup> A conceptualised overview of academic studies on counter-terrorist effectiveness was provided by Van Um and Pisoiu (2011).

Stutzer and Zehnder (2010) explore the security technology of camera surveillance (CCTV) that should help both to prevent and pursue terrorism (and crime). CCTV has gained particular prominence after the London bombings, as the attacker as well as subsequent copycat attackers have been identified, though not deterred, by this instrument. Its proponents argue that the use of CCTV saves manpower, while increasing public confidence. However, Stutzer and Zehnder make clear that there is no methodologically sound evaluation of these claims. At best, research pointed to a highly context-specific impact of CCTV on crime rates, which is also vulnerable to displacement effects (see above). Skepticism is all the more warranted in the case of terrorism. No terrorist attack has hitherto clearly been prevented due to CCTV, whereas CCTV images of attackers may play into the hands of terrorists who aim to achieve public attention and spread fear.<sup>23</sup> The biggest danger lies in a defensive arms race, whereby CCTV spreads from “high-security” locations all across society, which constitutes a collectively irrational outcome. In sum, the authors argue that the growth of CCTV installations could not only be explained by rational calculations alone, at least when it is intended as a deterrent for terrorism and serious crime.<sup>24</sup>

The fight against the financing of terrorism can also be seen as a contribution to the prevention as well as the pursuit of terrorism. As just touched upon above, the EU (in line with the US, the FATF and the UN) has made considerable strides in this field. Yet there is a big gap between policy output (such as new financial regulation) and intended policy impact. Brzoska (2011) argues that measures have been inflated beyond their defensible level, as a climate of high risk and uncertainty have blocked efforts to systematically measure the effectiveness and efficiency of those measures. Brzoska emphasises that extending counter-terrorist financing (CTF) measures imposes costs, both in terms of tangible costs for the financial sectors and the customers, and intangible costs in terms of confidentiality of financial data and erosion of basic rights, that have not been taken into account. This corresponds to the growing legal literature on the problematic sides of the fight against the financing of terrorism.

---

<sup>23</sup> Similarly, CCTV images of crime may not reduce crime rates, but rather accentuate the visibility of crime (and thus the demand for security technologies).

<sup>24</sup> Marti (2011) adds that CCTV may have also spread due to falling prices. Lower prices may justify investments for individual actors, even if effectiveness is low or questionable. However, the problem of a collective over-investment due to displacement effects and accentuation of public worry remain in place.

Finally, in the area of protection and response to terrorism, Ramseger et al. (2009) highlight that it is very difficult to ascertain whether measures against CBRN attacks are adequate with regard to the expected damages. Existing data is highly fragmented and based on extremely diverse scenarios. At best, preventive and protective costs need to be distinguished. The costs of responding to an actual CBRN attack dwarf most passive preventive costs (such as securing stockpiles of weapons of mass destruction). Therefore, measures that aim to prevent CBRN attacks should still be worthwhile investments, even if the likelihood of such attacks has previously been exaggerated. Beyond such very general considerations, however, it remains currently impossible to provide precise estimates of an adequate or optimal investment level, or how public CBRN policies could be effectively combined with private investments for protecting productive assets, such as factories or infrastructure networks.

In sum, subjecting counter-terrorism policies to cost-benefit analysis generate inconclusive or critical assessments. The range of counter-terrorism instruments covered in EUSECON further highlights that this reading applies to all aspects of a comprehensive counter-terrorism strategy. This contrasts with the general benefits of transnational security cooperation to resolve collective action problems that were outlined in the previous section. Thus, one can infer that international cooperation and coordination is desirable, but that the supply of certain security goods or policies should be made subject to stringent evaluation to limit the risk of wasteful (or even harmful) investments.

These somewhat contrasting findings underline the need for further economic research on policy evaluation. One possibility would be to expand the dialogue between economists and the growing field of quantitative research in criminology.<sup>25</sup> Here one could witness a dramatic increase of quasi-experimental research designs that seek to isolate the effects of a particular policy intervention. But even this “gold standard” of scientific inference (Stoker, 2010) is not without serious problems when it comes to scaling results from a location or population under study to a wider area or country. Methodological obstacles are even higher in the case of terrorism that cannot be quasi-experiments. The alternative of purely probabilistic reasoning tends to be deficient (Furedi, 2008; Brown and Cox, 2011; Salter, 2008), particularly if purely

---

<sup>25</sup> For the difficulties of bringing the disciplines together, see Zedlewski (2009). Dubbner and Levitt (2007), in contrast, provide a positive example. They argued that it was ultimately a change in birthrates other than different micro-level interventions that made a decisive impact on crime rates. This argument has been criticized, but attracted considerable attention, among criminologists.

hypothetical “worst case” scenarios dominate political discourse and public imagination (De Goede, 2008).

#### **4.3 Cost-benefit analyses and strategic policy guidance**

While detailed policy evaluations may be particularly desirable at this stage, cost benefit analyses at a macro-level also need to be developed further. Mueller (2006; 2010a) assessed the US counter-terrorism on the basis of a heuristic cost benefit calculation, whereby he compared the general increase in Homeland Security spending with expected saved lives. The results clearly indicate that US Homeland Security spending has an exceedingly low cost-benefit ratio in comparison to other possible security measures, such as an increase in road safety.<sup>26</sup>

In Europe, it is much harder to aggregate data on security spending and set in relation to long-term and monetised benefits. Data remains fragmented or is simply unavailable. From a political perspective, Heller (2009) shows that the very concept of costs has not been effectively developed in EU policy discussions on internal security. The proliferation of strategic documents in this issue area should, therefore, not be misinterpreted. Instead of defining priorities and possible course of action under conditions of scarcity and conflicting objectives – as an idealised understanding of strategy would imply -, these policy documents are more likely to promote security policy-making and investments with little regard to social and economic costs.

Therefore, further fundamental research and data gathering must be undertaken before more substantive and credible cost-benefit analyses can be presented for European security policy-making. At this stage, EUSECON helped to clarify various questions and challenges that need to be tackled in this respect. Müller and De Ree (2009) provide a formal exposition of policy-makers’ cost benefit calculations that should minimise the effects of terrorism as well as the costs of countermeasures. As outlined over the course of this paper, EUSECON made a significant contribution to fill the different variables of such a calculation. First, it underlined the benefits of dealing with terrorists and serious criminal as rational actors. Second, it provided increasingly precise and comprehensive assessments of both the direct and indirect

---

<sup>26</sup> A related question is whether aggregate security spending clearly reflect non-functional distributional conflicts or not (Prante and Bohara, 2008; Mueller and Stewart, 2011). At the time of writing, the debate has gained yet more salience in the US that has to reduce its security spending across the board. Yet it should also be noted that Muellers' simple argument has been challenged (Eller and Gerber, 2010; Mueller, 2010b).

costs of terrorism. Yet it needs to be acknowledged that much more needs to be known about the benefits of specific policy interventions (see above), before all sides of the equation can be estimated with reasonable precision. And security policy making as well as academic analysis will continue to be conducted under conditions of considerable uncertainty and the influence of partisan interest. A fully “evidence-based” or “cost-effective” approach to security provision will remain a distant ideal, even if it is very much worth striving for.

## **5 Conclusions**

Ten years after the attacks of September 11, it has become widely accepted that the US War on Terror has become overly costly. Even if the recent elimination of Bin Laden may have critically weakened Al Qaeda, terrorist groups increasingly point to the economic effects of their attacks and of subsequent counter-terrorism measures. In fact, economic warfare seems to have turned into one of the major drivers of transnational terrorism (see Libicki et al., 2007; Berrebi, 2009). At the same time, transnational organised crime and unconventional security threats, such as piracy, exert considerable pressure on Western governments to constantly review and improve their security policies. Security economics and EUSECON can support decision-makers to address these challenges in various ways:

Rational models of the drivers and motivations of terrorism and other forms of serious crime have proven to generate significant insights, even if their application remains context-dependent. Thus, the first task for policy-makers is a careful analysis of the motivation of terrorist groups, including a differentiation between different levels of hierarchy within groups. This provides the basis for sophisticated counter-terrorism policies that may pursue different objectives and levels at the same time, such as arresting frontline terrorists and deterring terrorist leadership. At the same time, policy makers need to address wider conditions that are conducive to the emergence of terrorism.

Furthermore, economic methods illuminate complex relationships between conditions that promote terrorism and serious organised crime as well as possible response strategies. EUSECON corroborated the view that economic grievances and discrimination patterns in specific sub-sections of the labour market are likely to be relevant in this regard. However, instability, crime or terrorism are also likely to increase as underdeveloped societies

modernise and grow. This means that policies to address ‘causes’ of terrorism have to be pursued over the long term, and that instabilities may have to be endured before stability and security can take hold. At the same time, policy-makers also have to consider more short-term priorities. Terrorist campaigns of “medium” intensity pose the greatest challenge and may lead to significant political concessions, whereas terrorist campaigns of the highest intensity (repeated mass casualty bombings) are likely to alienate the terrorists’ support base. Similarly, counter-piracy (and organised crime) policies should be targeted on areas that experience significant deficits in - but not a complete absence of - governance, which provides the necessary context of profitable illicit activities.

The second part of the paper provided a detailed estimation of the direct and indirect, as well as the short-term and long-term costs of terrorism. It was shown that markets are highly sensitive to terrorist shocks, but that aggregate economic costs remain comparatively limited in mature markets. The long-term indirect effects of terrorism and growth on terrorism have been small. EUSECON even showed how security crises can generate new business opportunities, so that policy-makers could take confidence in the ability of entrepreneurs in the face of adversity. Similarly, public opinion and voting patterns display considerable shifts in relation to terrorist attacks. Yet in contrary to qualitative studies about political development in the US over the last decade, EUSECON also showed that this effect has dissipated relatively quickly in European member states, and that competing concerns of voters, such as about unemployment, remain significant.

Overall, these findings supported a preference for restrained policy strategies that reflect the considerable resilience of society and markets. This does not resolve the political dilemmas that arise out of public pressure for a decisive response to each terrorist attacks, so that, over time, security measures can add up in unforeseen ways. The possible dangers of such a “ratchet effect” have also been documented in a more systematic manner by EUSECON. Both the US and European countries experienced an erosion of civil rights and human rights provisions since 9/11, which could only be counteracted by increasing judicial control, i.e. by putting a break on (short-term) political demands. This underlines the importance of safeguarding core constitutional principles and non-majoritarian considerations for security policy-making.



The last section of the paper explored in how far economic approaches could be drawn to evaluate existing policy strategies as well as particular instruments in the fight against terrorism and crime. Policy-makers should take note of economic reasoning on collective action problems when confronting transnational threats. This mainly concerns the risks of displacing rather than reducing the threat by uncoordinated national policies. Yet EUSECON research also showed that the cost effectiveness of different counter-terrorism and security policies remains elusive. The available evidence points to a highly circumscribed benefit of policies that are solely focused on terrorism. At this stage, the evaluation of specific security policies requires further academic research, but also political support for more consistent data gathering and openness to critical voices.

On this basis, security economics should be able to devise more rigorous and well-informed cost-benefit calculations that could guide security strategies over the long-term. But it also remains open to question whether serious crime and terrorism can be dealt with on the basis of a “calculable” risk management approach (Golany et al., 2009), or whether it requires a political approach that prioritises the principles of precaution and pre-emption, which, in turn, should be based on wider public participation (Hardaker et al., 2009).

## References

- ABRAHMS, M. 2006. Why Terrorism Does Not Work. *International Security*, 31, 42-78.
- ABRAHMS, M. 2008. What Terrorists Really Want: Terrorist Motives and Counterterrorism Strategy. *International Security*, 32, 78-105.
- AYERS, N. 2008. Ghost Martyrs in Iraq: An Assessment of the Applicability of Rationalist Models to Explain Suicide Attacks in Iraq. *Studies in Conflict & Terrorism*, 31:9, 856-882.
- BERREBI, C. 2009. The Economics of Terrorism and Counterterrorism: What Matters and is Rational-Choice Theory Helpful? In *Social Science for Counterterrorism: Putting the Pieces Together*, edited by P.K. DAVIS and K.R. CRAGIN. Santa Monica, CA: RAND, 151-208.
- BOGENSCHNEIDER, K. & CORBETT, T. 2010. *Evidence-based policymaking: insights from policy-minded researchers and research-minded policymakers*, Routledge, New York.
- BOSSONG, R. 2011a. Public Good Theory and the ‘Added Value’ of the EU’s Counterterrorism Policy. EUSECON Working Paper 42, January 2011.
- BOSSONG, R. 2011b. Peer reviews on the fight against terrorism a hidden success of EU security governance? EUSECON Working Paper 50, July 2011.
- BOWLING, B. & PHILLIP, C. 2007. Disproportionate and Discriminatory: Reviewing the Evidence on Police Stop and Search. *The Modern Law Review*, 70, 936-961.
- BOZZOLI, C. & MÜLLER, C. 2009. Perceptions and Attitudes to a Terrorist Shock: Evidence from the UK. EUSECON Working Paper 13, June 2009 (Revised October 2009).
- BRANDT, P.T. & SANDLER, T. 2010. What Do Transnational Terrorists Target? Has It Changed? Are We Safer? *Journal of Conflict Resolution*, 54, 214-236.
- BROWN, G.G. & COX, J.L.A. 2011. How Probabilistic Risk Assessment Can Mislead Terrorism Risk Analysts. *Risk Analysis*, 31, 196-204.
- BRZOSKA, M. 2011. The Role of Effectiveness and Efficiency in the European Union's Counterterrorism Policy: The Case of Terrorist Financing. EUSECON Working Paper 51, July 2011.
- BUREŠ, O.R. 2011. *EU counterterrorism policy: a paper tiger?* Ashgate, Farnham.

- BUTLER, C.K., & GATES, S. 2010. The Technology of Terror: Accounting for the Strategic Use of Terrorism. EUSECON Working Paper 30, February 2010.
- BRÜCK, T., KARAIISL, M. & SCHNEIDER F. 2008. A Survey of the Economics of Security. EUSECON Working Paper 1, April 2008.
- BRÜCK, T., JUSTINO, P., VERWIMP, P. & AVDEENKO, A. 2010a. Identifying Conflict and Violence in Micro-Level Surveys. EUSECON Working Paper 38, July 2010.
- BRÜCK, T., LLUSSÁ, F. & TAVARES, J. 2010b. Perceptions, Expectations, and Entrepreneurship: The Role of Extreme Events. EUSECON Working Paper 41, December 2010.
- BRÜCK, T. & XU, G. 2011. Who gives aid to whom and when? Aid accelerations, shocks and policies. EUSECON Working Paper 49, July 2011.
- CAPLAN, B. 2006. Terrorism: The relevance of the rational choice model. *Public Choice*, 128, 91-107.
- CHRISTOFIS, N., KOLLIAS, C., PAPADAMOU, S., & STAGIANNIS, A. 2010. Terrorism and Capital Markets: The Effects of the Istanbul Bombings. EUSECON Working Paper 31, April 2010.
- CLARKE, S.E. & CHENOWETH, E. 2006. The Politics of Vulnerability: Constructing Local Performance Regimes for Homeland Security. *Review of Policy Research*, 23, 95-114.
- COOLSAET, R. 2010. EU counterterrorism strategy: value added or chimera? *International Affairs*, 86, 857-873.
- COX, J.L.A. 2008. Some Limitations of “Risk = Threat  $\times$  Vulnerability  $\times$  Consequence” for Risk Analysis of Terrorist Attacks. *Risk Analysis*, 28, 1749-1761.
- CRONIN, A.K. 2007. Ending Terrorism: Lessons for defeating al-Qaeda. *Adelphi Papers*, 47:394 (Special Issue).
- CRONIN, A.K. 2009. How terrorism ends: understanding the decline and demise of terrorist campaigns. Princeton University Press, Princeton.
- DE GOEDE, M. 2008. Beyond Risk: Premediation and the Post-9/11 Security Imagination. *Security Dialogue*, 39, 155-176.
- DE GROOT, O.J., BRÜCK, T. & BOZZOLI, C. 2009. How Many Bucks in a Bang: On the Estimation of the Economic Costs of Conflict. EUSECON Working Paper 21, November 2009.
- DE GROOT, O.J. & SHORTLAND, A. 2010. Gov-arrgh-nance: Jolly Rogers and Dodgy Rulers. EUSECON Working Paper 39, October 2010.
- DE GROOT, O.K., RABLEN, M.D., & SHORTLAND, A. 2011. Gov-aargh-nance – “even criminals need law and order”. EUSECON Working Paper 46, April 2011.
- DERSHOWITZ, A. 2002. *Why Terrorism Works*. Yale University Press, New Haven.
- DRAKOS, K. 2009a. Security Economics: A Guide for Data Availability and Needs. EUSECON Working Paper 6, January 2009.
- DRAKOS, K. 2009b. Big Questions, Little Answers: Terrorism Activity, Investor Sentiment and Stock Returns. EUSECON Working Paper 8, February 2009.
- DRAKOS, K. 2009c. Cross-country Stock Market Reactions to Major Terrorist Events: The Role of Risk Perception. EUSECON Working Paper 16, September 2009.
- DRAKOS, K. 2009d. The Determinants of Terrorist Shocks' Cross-Market Transition. EUSECON Working Paper 17, September 2009.
- DRAKOS, K. & MÜLLER, C. 2010a. On the Determinants of Terrorism Risk Concern in Europe. EUSECON Working Paper 36, June 2010.
- DRAKOS, K. & MÜLLER, C. 2010b. Terrorism Risk Concern in Europe. EUSECON Working Paper 37, June 2010.
- DRAKOS, K. & KONSTANTINO, P. 2011. Terrorism Shocks and Public Spending: Panel VAR Evidence from Europe. EUSECON Working Paper 48, May 2011.
- ELLER, W.S. & GERBER, B.J. 2010. Contemplating the Role of Precision and Range in Homeland Security Policy Analysis: A Response to Mueller. *Policy Studies Journal*, 38, 23-39.
- ENDERS, W. & SANDLER, T. 2006. The political economy of terrorism, Cambridge University Press, New York.
- ENDERS, W. & OSLON, E. Forthcoming. Measuring the Economic Costs of Terrorism. In *Oxford Handbook of the Economics of Peace and Conflict*, edited by M. GARFINKEL & S. SKAPERDAS.
- ENGERER, H. 2009. Security Economics: Definition and Capacity. EUSECON Working Paper 5, 2009.
- FREY, B.S. & LUECHINGER, S. 2003. How to Fight Terrorism: Alternatives to Deterrence, *Defence and Peace Economics*, 14:4, 237-249.
- FREYTAG, A., KRÜGER, J.J. & MEIERRIEKS, D. 2010a. The Origins of Terrorism: Cross-Country Estimates on Socio-Economic Determinants of Terrorism. EUSECON Working Paper 27, February 2010.
- FREYTAG, A., MEIERRIEKS, D., MÜNCH, A. & SCHNEIDER, F. 2010b. Patterns of Force: System Strength, Terrorism and Civil War. EUSECON Working Paper 28, February 2010.
- FUREDI, F. 2008. Fear and Security: A Vulnerability-led Policy Response. *Social Policy & Administration*, 42, 645-661.

- GARDEAZABAL, J. 2010. Vote Shares in Spanish General Elections as a Fractional Response to the Economy and Conflict. EUSECON Working Paper 33, April 2010.
- GARVEY, J. & MULLINS, M. 2009. An Examination of "New" and "Old" Terrorism Using High-Frequency Data. EUSECON Working Paper 18, September 2009.
- GODERIS, B. & VERSTEEG, M. 2009. Human Rights Violations after 9/11 and the Role of Constitutional Constraints. EUSECON Working Paper 11, April 2009.
- GOLANY, B., KAPLAN, E.H., MARMUR, A. & ROTHBLUM, U.G. 2009. Nature plays with dice - terrorists do not: Allocating resources to counter strategic versus probabilistic risks. *European Journal of Operational Research*, 192, 198-208.
- GOULD, E.D. & KLOR, E.F. 2009. Does Terrorism Work? EUSECON Working Paper 12, June 2009.
- GOULD, E.D. & STECKLOV, G. 2009. Terror and the Costs of Crime. EUSECON Working Paper 15, September 2009.
- GUNARATNA, R. 2002. *Inside Al Qaeda: Global Network of Terror*, Columbia University Press, New York.
- GUPTA, D.K. (2008). *Understanding terrorism and political violence. The life cycle of birth, growth, transformation, and demise*, London, Routledge.
- GVINERIA, G. 2009. How Does Terrorism End? In *Social Science for Counterterrorism: Putting the Pieces Together*, edited by P.K DAVIS & K.R. CRAGIN. Santa Monica, CA: RAND, 257-298.
- HARDAKER, J.B., FLEMING, E. & LIEN, G. 2009. How Should Governments Make Risky Policy Decisions? *Australian Journal of Public Administration*, 68, 256-271.
- HARRISON, M. 2009. Counter-Terrorism in a Police State: The KGB and Codename Blaster, 1977. EUSECON Working Paper 20, October 2009.
- HELLER, R. 2009. Notions of Insecurity and Security Policy within the EU: A Historical Perspective. EUSECON Working Paper 4, January 2009.
- JENKINS, B.M. 2006. *The New Age of Terrorism*. McGraw-Hill Homeland Security Handbook, McGraw-Hill.
- KOLLIAS, C., MANOU, E., PAPADAMOU, S. & STAGIANNIS, A. 2010. Has Stock Markets' Reaction to Terrorist Attacks Changed throughout Time? Comparative Evidence from a Large and a Small Capitalisation Market. EUSECON Working Paper 40, November 2010.
- KRULÍK, O., PERNICA, B., STEJSKAL, L. & KAŠÍK, J. 2009. More Security Issues are Needed on the European Union Agenda: Beyond an Academic Concept of In/Security in the Era of Global Terrorism. EUSECON Working Paper, January 2009.
- KYDD, A.H. & WALTER, B.F. 2006. The Strategies of Terrorism. *International Security*, 31, 49-80.
- LAKE, D. A. 2002. Rational Extremism: Understanding Terrorism in the Twenty-first Century. *Dialog-IO*, 1, 15-29.
- LIBICKI, M.C., CHALK, P. & SISSON, M. 2007. Exploring Terrorist Targeting Preferences. Santa Monica, CA: RAND. Prepared for the Department of Homeland Security.
- LORD CARLILE OF BERRIEW. 2011. Report to the Home Secretary of Independent Oversight of Prevent Review and Strategy. [www.homeoffice.gov.uk](http://www.homeoffice.gov.uk) [Online].
- LUM, C., KENNEDY, L. & SHERLEY, A. 2006. Are counter-terrorism strategies effective? The results of the Campbell systematic review on counter-terrorism evaluation research. *Journal of Experimental Criminology*, 2, 489-516.
- LYNCH, A.K. 2010. The economic costs of criminal activity: and a discussion of methodological approaches and cost estimates. In *Handbook on the Economics of Crime*, edited by B.L. BENSON & P.R. ZIMMERMANN, Edward Elgar, London, pp. 285-302.
- MALEČKOVÁ, J. & STANIŠIĆ, D. 2010. Public Opinion and Terrorist Acts. EUSECON Working Paper 32, April 2010.
- MARTI, C. 2010. The European Security Industry: A Research Agenda. EUSECON Working Paper 29, February 2010.
- MARTI, C. 2011. A Survey of the European Security Market. EUSECON Working Paper 43, February 2011 (Revised April 2011).
- MEIERRIEKS, D. & KRIEGER, T. 2009. What Causes Terrorism? Center for International Economics Working Paper Series, no. 2008-5.
- MERARI, A. 1993. Terrorism as a Strategy of Insurgency. *Terrorism and Political Violence*, 5:4, 213-251.
- MUELLER, J. 2010a. Assessing Measures Designed to Protect the Homeland. *Policy Studies Journal*, 38, 1-21.
- MUELLER, J. 2010b. Response. *Policy Studies Journal*, 38, 41-46.
- MUELLER, J.E. & STEWART, M.G. 2011. *Terror, security, and money: balancing the risks, benefits, and costs of homeland security*, Oxford; New York, Oxford University Press.
- MÜLLER, C. & DE REE, J. 2009. The Threat of Terrorism: The Perspective of a Policy-Maker. EUSECON Working Paper 3, January 2009.
- MULLINS, M. & GARVEY, J. 2010. Radical Islamic Terrorism in the Middle East and its Direct Costs on Western Financial Markets. EUSECON Working Paper 35, May 2010.
- MYTHEN, G. & WALKLATE, S. 2008. Terrorism, Risk and International Security: The Perils of Asking 'What If?'. *Security Dialogue*, 39, 221-242.

- MURSHED, S.M. 2009a. Threat Perceptions in Europe: Domestic Terrorism and International Crime. EUSECON Working Paper 2, January 2009.
- MURSHED, S.M. 2009b. On the Interaction Between Fear and Hatred. EUSECON Working Paper 10, April 2009.
- MURSHED, S.M. & PAVAN S. 2009. Identity and Islamic Radicalization in Western Europe. EUSECON Working Paper 14, June 2009.
- OBERSCHALL, A. 2004. Explaining Terrorism: The Contribution of Collective Action Theory. *Sociological Theory*, 22, 26-37.
- PELEG, K., REGENS, J.L., GUNTER, J.T. & JAFFE, D.H. 2011. The normalisation of terror: the response of Israel's stock market to long periods of terrorism. *Disasters*, 35, 268-283.
- PRANTE, T. & BOHARA, A.K. 2008. What Determines Homeland Security Spending? An Econometric Analysis of the Homeland Security Grant Program. *Policy Studies Journal*, 36, 243-256.
- RABBY, F. & RODGERS III, W.M. 2009. Post 9-11 U.S. Muslim Labor Market Outcomes. EUSECON Working Paper 19, October 2009.
- RABBY F. & RODGERS III, W.M. 2010. The Impact of 9/11 and the London Bombings on the Employment and Earnings of U.K. Muslims. EUSECON Working Paper 24, February 2010.
- RAMSEGER, A., KALINOWSKI, M.B. & WEISS, L. 2009. CBRN Threats and the Economic Analysis of Terrorism. EUSECON Working Paper 9, February 2009.
- ROSE, A. 2009. Framework for Analyzing the Total Economic Impacts of Terrorist Attacks and Natural Disasters. *Journal of Homeland Security and Emergency Management*, 6, 1-27.
- SALTER, M.B. 2008. Imagining Numbers: Risk, Quantification, and Aviation Security. *Security Dialogue*, 39, 243-266.
- SANDLER, T. 2010. Terrorism and Policy: Introduction. *Journal of Conflict Resolution*, 54, 203-213.
- SCHÄFER, U. 2011. *Der Angriff. Wie der islamistische Terror unseren Wohlstand sprengt*, Campus, Frankfurt.
- SCHNEIDER, F. & WINDISCHBAUR, U. 2010. Money Laundering: Some Facts. EUSECON Working Paper 25, February 2010.
- SCHNEIDER, F. 2010. Money Laundering and Financial Means of Organized Crime: Some Preliminary Empirical Findings. EUSECON Working Paper 26, February 2010.
- SCHNEIDER, F., BRÜCK, T. & MEIERRIEKS, D. 2011a. The Economics of Terrorism and Counter-Terrorism: A Survey (Part I). EUSECON Working Paper 44, April 2011.
- SCHNEIDER, F., BRÜCK, T. & MEIERRIEKS, D. 2011b. The Economics of Terrorism and Counter-Terrorism: A Survey (Part II). EUSECON Working Paper 44, April 2011.
- SCHNEIDER, F. 2011. The Financial Flows of the Transnational Crime: Some Preliminary Empirical Results. EUSECON Working Paper 53, August 2011.
- SCHNEIDER, F. & CARUSO, R. 2011. The (Hidden) Financial Flows of Terrorist and Transnational Crime Organizations: A Literature Review and Some Preliminary Empirical Results. EUSECON Working Paper 52, August 2011.
- SHORTLAND, A., & VOTHKNECHT, M. 2011. Combating "Maritime Terrorism" off the Coast of Somalia. EUSECON Working Paper 47, April 2011.
- STOKER, G. 2010. Exploring the Promise of Experimentation in Political Science: Micro-Foundational Insights and Policy Relevance. *Political Studies*, 58, 300-319.
- STUTZER, A. & ZEHNDER, M. 2010. Camera Surveillance as a Measure of Counterterrorism? EUSECON Working Paper 34, April 2010.
- UK SECRETARY OF STATE FOR THE HOME DEPARTMENT 2011. Review of counter-terrorism and security powers. Review findings and recommendations. *Cm 8004*.
- VAN DONGEN, T. 2009. Break it Down: An Alternative Approach to Measuring Effectiveness in Counterterrorism. EUSECON Working Paper 23, December 2009.
- VAN UM, E. 2009. Discussing Concepts of Terrorist Rationality: Implications for Counter-Terrorism Policy. EUSECON Working Paper 22, December 2009.
- VAN UM, E. & PISOIU, D. 2011. Effective counterterrorism: What have we learned so far? EUSECON Working Paper 55, September 2011.
- VICTOROFF, J. 2005. The Mind of the Terrorist: A Review and Critique of Psychological Approaches. *Journal of Conflict Resolution*, 39, 3-42.
- ZAKHARCHENKO, A. 2007. The EU and U.S. Strategies against Terrorism and Proliferation of WMD: A Comparative Study. *German Marshall Centre Occasional Paper*, 6.
- ZEDLEWSKI, E. 2009. Conducting Cost Benefit Analyses in Criminal Justice Evaluations: Do We Dare? *European Journal on Criminal Policy and Research*, 15, 355-364.

## Annex

Fig. 3 Classification of research within the EUSECON project

