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**Research Report**

## Security Economics: A Guide for Data Availability and Needs

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- **What are the main sources of data?**
- **Is the available data sufficient for academic research?**
- **What other needs should be covered?**

#### **Summary:**

In this Policy Briefing, we review the available terrorism databases by focusing on their characteristics, advantages and disadvantages. This serves as a guide for policymakers and academic researchers alike. The rapid and accelerating development of security economics has generated great demand for more and better data, to accommodate the empirical research agenda. We also discuss data shortages and needs that are considered essential for enhancing our understanding of the complex phenomenon of terrorism, as well as designing and evaluating policy. We conclude that there is a need for terrorism related databases that will include more information, over and above terrorism incidents per se.

# **POLICY BRIEFING**

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## **Security Economics: A Guide for Data Availability and Needs**

### **Introduction**

Security economics is a newly developing discipline that aims to measure the economic impacts of terrorism. Moving to the quantification of these impacts one may distinguish between direct and indirect effects that range across a wide spectrum of economic actors' decisions and markets. In general, terrorist activity generates various direct costs such as the loss of life and property damages, but also the portion of fiscal expenditures directed to counterterrorism (Brock *et al.* 2008). Among terrorism's indirect costs one may include the reduction in economic activity taking the form of lower FDI flows (Abadie and Gardeazabal 2008), reduced international trade (Nitsch and Schumacher 2004), lower tourism demand (Drakos and Kutan 2003), and lower GDP growth (Blomberg *et al.* 2004). In addition, significant losses have been established in stock market capitalization as a consequence of terrorism (Drakos 2004).

This study focuses on two main issues. First, it takes stock of the existing databases and also highlights their main components. Second, it discusses data shortages and needs that are considered essential for enhancing our understanding of the complex phenomenon of terrorism, as well as designing and evaluating counterterrorism policy.

There have been two previous papers dealing with the issue of terrorism databases. Fowler (1981) presented a comparison of databases existing at the time, paying

special attention to their scope and content and the systems used for data retrieval. More recently, Schmid (2004) offered an up-to-date review of existing terrorism databases and also explored various issues by performing statistical analysis.

The research underlying the answers to these questions is studied in the EUSECON project and this Policy Briefing is based on Konstantinos Drakos (2011). Further research is referenced in this original study.

### **Required properties of datasets from the viewpoint of an applied researcher**

The applied researcher conducts econometric/statistical analysis based on available data for three main purposes: (i) explain the past; (ii) predict the future; and (iii) provide policy advice. Given these three main purposes, one can identify the following properties that a database should possess.

### **The definition of terrorism should reflect what constitutes terrorism activity, not represent its politically-driven motives.**

- *Relevance and transparency of definition:* the working definition of terrorism should reflect a scientific view of what does – and what does not – constitute terrorism activity, rather than represent contextual and politically-driven motives. In addition, the definition should be transparent, minimizing the scope for ambiguities and/or borderline cases. However, the definition should be broad and flexible enough to accommodate the potential emergence of new types of terrorism in the future.

- *Spatial and intertemporal consistency:* the adopted definition used in the collection of data must be consistent both over time and across regions. The intertemporal stability is essential to allow a meaningful time series analysis of the terrorism process and its effects. Furthermore, the delicate transition from comprehending the past to predicting the future depends crucially on the intertemporal stability of definition. Similarly, the definition of

terrorism must be consistent across regions. From an econometric point of view this consistency is required in order to allow cross-country analysis. The spatial and intertemporal consistency is essential for arriving at meaningful comparisons on various dimensions such as terrorism hazard, terrorism consequences, and counterterrorism effectiveness.

- *Operational and exhaustive reporting:* the reporting of terrorism data must be operational in order to accommodate the econometric analysis. In particular, one identifies two elements for which operationalization is important. First, in several cases the level of disaggregation must be fine enough (for instance at a regional or micro level). Second, when possible, it should provide direct numeric measurement (for instance terrorism's direct consequences, agents' willingness to pay to avoid the risk of terrorism). Furthermore, any dataset must be exhaustive both cross-nationally and intertemporally (i.e. covering all years and all countries). Moreover, the coding of a terrorism incident must incorporate, when possible, all important incident attributes (i.e. types of attack, weapons used, type of target, perpetrator, number and nationalities of terrorists involved, number and nationalities of victims, number of casualties, property damages, etc).

### **Existing databases**

The main terrorism databases that basically correspond to chronologies of terrorist events are the following.

1. International Terrorism: Attributes of Terrorist Events (*ITERATE*)
2. Terrorism in Western Europe: Events Data (*TWEED*)
3. Global Terrorism Database (*GTD*)
4. World Incident Tracking System (*WITS*)
5. Memorial Institute for the Prevention of Terrorism (*MIPT*)
6. RAND database

The most recent database is the Global Terrorism Database (*GTD*), developed by Gary LaFree and Laura Dugan at the University of Maryland, which contains both domestic and international incidents. The

original database consisted of two distinct parts: (GTD1) recorded worldwide events for the period 1970 to 1997 and (GTD2) for the period 1998 to 2004.

## **Spatial and intertemporal consistency in data is essential for a comprehensive analysis.**

### **Alternative resources**

Since 2007 the Europol has published an annual report entitled *Terrorism Situation and Trend Report (TESAT)* for EU member states, covering a number of aspects that could potentially be useful for academic research. The data appearing in *TESAT* cover arrests, prosecutions and convictions in the EU for terrorist offences.

The value added of the *TESAT* reports is that they provide information for some dimensions of authorities' counterterrorism performance that, as a rule, do not appear in chronologies, and could be a useful complement for research.

### **Proposals for collection mechanisms**

The non-canonical nature of security-related data and the diverse goals of final users make the actual collection of data, and the subsequent compilation of databases, a very challenging task. As has become apparent from the previous sections, the only systematic data collection process so far has been in the form of terrorist events chronologies that suffer from the fact that only provide information related to terrorism events that took place.

The second pillar, and perhaps the most important, requires the disengagement of terrorism databases from events themselves. From a purely statistical point of view, terrorist events are the mere realization of a more general stochastic process that generates them. There is only so much that can be said about this process from the study of the timing, the frequency and the attributes of terrorist events. Policy design and making, as well as academic discourse, would be greatly benefited if databases focused on more general and enduring issues, what one could call the 'fundamentals of the terrorism process'. As implied so

far, these fundamentals go beyond the terrorist events per se and require systematic and extensive information gathering on the behavior, actions, attitudes and perceptions of the agents involved. This brings to center stage the collection of data for (i) counterterrorism's overall conduct, (ii) private security, (iii) terrorist groups' conduct and (iv) individuals' and firms' terrorism risk perception and welfare effects.

### **Data shortages**

An apparent gap is the almost total absence of data regarding counterterrorism, which is one of the major co-determinants of terrorist activity and its consequences. The lack of data has severely restricted academic output. Data on counterterrorism expenditures would be instrumental for measuring its effectiveness and also for performing cost-benefit analysis. With regards to counterterrorism effectiveness, one could measure whether anti-terrorism expenditures do result in lower terrorist activity intertemporally and/or cross-nationally. Apart from expenditures, other non-pecuniary aspects of authorities' conduct, such as terrorism-related arrests, indictments and sentences, would also assist researchers in obtaining a more complete picture of counterterrorism.

## **Data on counterterrorism expenditures is needed for performing cost-benefit analysis.**

### **Policy recommendations**

The present study serves as a guide to policy makers and active researchers for security-related databases' availability, and furthermore discusses data needs. The paper focuses on two main issues. First, it takes stock of the existing databases and highlights their main components. Secondly, it discusses data shortages, and sketches data needs as well as the collection mechanisms of security related data.

What is more important is that there are several terrorism dimensions for which there is no information in existing databases. Thus, a change of

philosophy is required in order to produce such new databases that will provide hard data for terrorist groups' behavior, counterterrorism activity and micro level perceptions and responses to terrorism.

### Credits

This EUSECON Policy Briefing was authored by Christos Kallandranis (Business College of Athens) and Konstantinos Drakos (Athens University of Economics and Business). The views expressed in this briefing are the authors' alone.

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EUSECON, or 'A New Agenda for European Security Economics' is a four-year collaborative research project, administered by DIW Berlin and funded by the European Commission that analyses the causes, dynamics, and long-term effects of both human-induced insecurity threats and European security policies.

For more information on EUSECON, please visit our website:

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