TERRORISM

Note prepared for
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ANNEX: Tables and Figures
Terrorism is one of the main challenges to security and peace. It became a global problem, and represents a daily menace in many developed and developing countries. Tens of real or hypothetical terror-plot threats and thousands of individuals are under tight surveillance. The human and material costs of terrorism are tremendous. In 2006 only, there were 6,425 terrorist incidents, with 11,886 fatalities – about 75% of them took place in the Middle East/Persian Gulf region.\(^1\) The 1990’s saw the emergence of religious factors behind terrorism, and a growing recourse to suicide attacks, which exacerbates tensions between civilizations. In particular, religious terrorism opposes the West to the Moslem world, undermines the integration of foreign communities in immigration countries, and stimulates xenophobia in many places. It may lead to international conflicts, and de facto it delays pacification in specific regions. In the long-term, terrorism could reduce the scope for political, social and economic progress in developing countries, enlarge the North-South divide in terms of wealth and income, and weaken democratic rules and human rights in the richer countries.

This text addresses terrorism with a focus on selected economic and policy issues, including a tentative Cost-Benefit Analysis of antiterrorism based on recent quantitative findings. Considering the vast amount of literature on terrorism published after 9/11, a selection of material had to be made, partly relying on personal preferences. It should be made clear that terrorism is a complex phenomenon that combines many factors such as social conditions, minority and majority status, social stratification and mobility, “territoriality”, history, politics, human rights and freedoms, governance and corruption, demographic trends, cultural identity and modernization.\(^2\) Subsequently, for the sake of effectiveness, economic measures that address terrorism must be designed in the context of broad strategies that integrate other and more important dimensions, which goes far beyond the present work.

1. **The problem: the costs of terrorism**

**Definition of terrorism and data collection**

There are many definitions of terrorism proposed by the media, experts, academia, research, politicians, governments and international organizations. Nevertheless, decades ago, experts already predicted that the dispute about a detailed and comprehensive definition of terrorism will not result in the consensus.\(^3\) The absence of a universally accepted definition of terrorism matters for policy makers, citizens – particularly in democracies – and the international community, and might have significant economic consequences. For instance, the use of public funds to address so-called terrorism by governments and international organizations has to be justified by those who may advocate costly, risky and far-reaching responses such as the use of military forces in third countries. Box 1 presents the US definition of terrorism.

The systematic record of statistical data and other information on what is seen as terrorism is relatively recent; despite shortcomings, documentary bases are used for studying the issue, testing hypotheses, provide explanations, and policy advice. One database is being developed by the so-called ITERATE project in the US and contain statistics that are used for modeling; another database – interactive – is proposed by the (National) Memorial Institute.

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1 See the Memorial Institute for the Prevention of Terrorism, [www.tkb.org](http://www.tkb.org).


for the Prevention of Terrorism, MIPT. Both databases are definitely useful and powerful tools. Nevertheless, for some experts, and the former UN Secretary General, the high figures provided for some countries, Iraq in particular, would be better classified under other labels than terrorism – e.g. civil war.  

**Box 1: How do you define terrorism?**

The Intelligence Community is guided by the definition of terrorism contained in Title 22 of the US Code, Section 2656f(d):

— The term “terrorism” means premeditated, politically motivated violence perpetrated against non-combatant targets by sub-national groups or clandestine agents, usually intended to influence an audience.

— The term “international terrorism” means terrorism involving the territory or the citizens of more than one country.

— The term “terrorist group” means any group that practices, or has significant subgroups that practice, international terrorism.

**Source:** CIA website.

History and geography of terrorism

From the 1960s until the late 1980s, the main motives for terrorism were political. The nature of terrorism changed overtime with more internationalization, the emergence of religious factors in the 1990s, and the growing recourse to suicide. Figure 1, that shows the number of incidents worldwide over the period 1968-2006, reveals an exponential trend for recent years, which reflects the Middle-East – especially Iraqi – situation (see table 1); the situation in Iraq in terms of number of incidents, injuries and deaths, seems to have deteriorated further in 2007. Nevertheless, as indicated by figure 2, all continents are or have been confronted with the scourges of terrorism, which became a global and growing threat.

Research on terrorism

Besides political/ideological statements and common views spread by the medias, there are research projects. Available studies indicate a diversity of approaches ranging from simple descriptive works to sophisticated time series analysis and modeling. From an applied economic perspective, the US experts Enders and Sandler made some of the most important seminal works on terrorism, which were followed by other studies with specific geographical coverage and time frames.

The costs of terrorism – the case of 9/11

In addition to the loss of hundreds of lives, permanent disabilities and suffering, the economic costs of terrorism are manifold and can be tremendous. Considering 9/11, immediate costs corresponded to the destruction of buildings and planes. The destruction of physical assets amounted to about $14 billion for the private sector and $2.2 billion for the public sector. In addition, rescue, cleanup and related costs represented at least $11 billion. The price of most financial assets fell. The insurance business had to disburse up to $58 billion, the largest insurance disbursement in history. In New York, 200,000 jobs were lost or reallocated. Another consequence is the imposition of more controls on the shipping and transportation

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4 For Kofi Annan, “the violence in Iraq is (even) worse than civil war”, BBC, 4 December 2006.

5 For more details, see “Economic Consequences of Terrorism”, *OECD Economic Outlook*, No. 71, Chapter 4.
industry. A third economic outcome of 9/11 is the rise of public expenditures on national security. In addition, the private sector is investing more on security and, as a result, economic growth performance could decrease. The welfare costs in terms of people’s utility losses – because, for instance, of higher stress when traveling – should be added. The costs of misplaced policies, including the use of threat assessments to distort political outcomes” could be considered. The impacts for less developed economies were and are still far from negligible. Short-term impacts corresponded *inter alia* to wider bonds spreads on financial markets. In the long-term, the higher costs of border control will impact on exports; tourism, immigration and workers’ remittances are also affected.

The global cost of terrorism

Nicole and Mark Crain provide a model to estimate the costs of terrorism and the benefits of antiterrorism, with the use of panel data from the ITERATE project. The model explains real GDP per capita and includes several indicators of terrorism activities, and other “controls” such as the total population in a country, the share of government expenditures in GDP, school enrolment, and the relative importance of trade. They consider 11,723 incidents of terror in 147 countries over the period 1968-2002, with corresponding 37,137 casualties – i.e. the number of individuals killed or injured, with 2002 as the reference year:

“The results reveal that the potential gains to a country from reducing terrorism are quite large … Most striking is the estimated world cost of terrorism, or the benefit of eliminating all international terrorism. If there were no terrorism incidents in 2002, world GDP would have been USD 3.6 trillion (we underline) higher than it was that year”.

The figure mentioned by N. and M. Crain is quite large indeed. It is more than the combined GDP of UK and Italy; it corresponds to about one third of US GDP, or 7-9 percent of World GDP. Table 2 provides the costs of terrorism for selected rich and less rich countries.

New terror threats

The global costs of terrorism, as provided in the Crain’s study, are tremendous. They may rise further with so-called weapons of mass destruction, WMDs, which includes dirty bombs, nuclear, biological and chemical weapons. Anthrax was already used on a small scale in the US just after 9/11. A radiological attack is seen as a credible threat and could use materials stored in thousands of facilities located in many countries, rich and poor. Some countries – so-called rogue or failed states – could eventually supply terrorist organizations with WMDs,

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9 OECD, op. cit., p. 134.

which would correspond to one of the worst scenarios. Terrorists may also targets critical transportation and telecommunication infrastructures, disrupting international trade and the movement of people.

2. Solutions: addressing terrorism

Data analysis and prediction

In a recent work, Enders and Sandler propose a statistical analysis of time series on terrorism. Spectral density functions show that incidents display cyclical patterns with the combination of a primary cycle of 58.18 quarters and a secondary cycle of 23.98 quarters. The detection of cycles could support the making of forecasting models and, as a result, better plan the mobilization of public resources and antiterrorist forces. Nevertheless, one may question its feasibility because, implicitly, it assumes that terrorist groups ignore it can be done and cannot obtain the relevant information, which is in fact partly available in books and articles.

Suicide terrorism

“Suicide terrorism is the readiness to sacrifice one's life in the process of destroying or attempting to destroy a target to advance a political goal. The aim of the psychologically and physically war-trained terrorist is to die while destroying the enemy target.” Confined until recently to a few countries, suicide-terrorism is becoming a global and permanent threat, and it represents a category that requires more research for better understanding. Harrison provided an economic explanation to suicide terrorism – "trading life for identity" is what matters. Thus, there would be a rational choice behind suicide terrorism, i.e. a welfare gain by anticipating death, especially when it is going to be covered extensively by media. As the number of suicide terrorist acts increases, there could be diminishing returns, reducing incentives for suicide. Responses to suicide terrorism must target sponsors, trainers and their hosting countries, and ideologists who promote hate crimes and mobilize candidates.

Poverty and terrorism

The linkage between terrorism and social conditions is a complex one. Following 9/11, different views were expressed. Those who support an absence of linkage seem to reflect a tradition for which individuals are fully aware of their choices, behave rationally and should

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11 Testimony on Terrorist Nuclear Threat of Dr. Henry Kelly, President, Federation of American Scientists, before the Senate Committee of Foreign Relations, March 6, 2002.


bear the full consequence of their acts. Krueger and Maleckova wrote one of the most representative articles on terrorism in which the impact of economic conditions is minimized. They conclude that econometric models yield little in terms of predictions because non-economic factors such as personal ambitions do also matter to explain terrorism. Abadie reports similar findings. In the case of 9/11, terrorists were far from being poor and were educated; some of them would belong to the middle-class.

The above conclusions are challenged by analyses proposed for the Middle East and other regions. For instance, a study proposed by Saleh underlines that beside retaliation and vengeance factors, GDP-related and unemployment variables matter to explain youth violence in the West Bank and Gaza. Considering Chechnya, despite assistance for reconstruction, the region remains characterized by widespread poverty fuelled by environmental degradation, and non-business-conducive conditions with high levels of corruption and rampant crime. The world leaders also admit that: "Poverty in all its forms is the greatest single threat to peace, security, democracy, human rights and the environment." Causality can work the other direction too: terrorism negatively impacts on businesses and may cause significant economic decline, as that has been the case of the Basque region in Spain. De facto, a case-by-case approach should be the rule when assessing the relationship between social conditions and violence.

Wealth and the sponsoring of terror

Terrorist organizations use money laundering to recycle illicit funds. Money laundering is a complex process by which illicit money is (re-)integrated in the economy to finance legal activities. The al Qaida network has used money laundering, relying on the services offered in major financial and off-shore centers located in several countries. Some wealthy Islamic donors and charity institutions, where clerics might play key-roles, funded al Qaida. Moreover, the involvement of Saudi officials, diplomats or their relatives, in the funding of 9/11 remains unclear, which indicates that in addition to poverty, and possibly by exploiting unique opportunities created by poverty and distress, oil rents could fund terrorism.

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17 This corresponds to the "Economics of Crime" of Nobel Prize winner G. Becker.


22 Statement of M. Moore, head of WTO, at the summit on development held in Monterrey, Mexico. At the same summit, several leaders said that defeating poverty would thwart a major driving force behind international terrorism. See "Poverty Fuelling Terrorism", BBC News, 22 March 2002.


Following 9/11, the international community is better equipped to supervise formal banking operations and detect suspicious transfers. The recommendations of the Financial Action Task Force (FATF) represent a “must” for financial systems, and they are adopted in many countries with IMF support. Nevertheless, more must be done to implement effectively FATF recommendations, especially in developing countries; moreover, terrorist organizations rely on informal banking, and international seed money for terrorism can be complemented and replaced by legal economic activities; in the case of 9/11, the pilot lessons amounted to a few thousands dollars.

Trade, terrorism and security

There are growing concerns about the use of normal trade for carrying arms and weapons of mass destruction to hit targets such as large cities and other populated areas. When the final destination is reached, weapons/bombs can be used or exploded, causing massive damages, killing thousands of people, and disturbing the economy. At the same time, the globalization process requires the adoption of trade facilitation measures and easing the movement of people for business and tourism purposes. In other words, security measures may conflict with the opening or borders and the removal of remaining obstacles to trade, beyond the reduction of import duties within the WTO framework.

The use of modern technologies and the adoption of common security norms and control procedures are required to address risks related to the misuse of trade for terror purposes. That would conciliate the imperative of trade facilitation and the fight against terrorism. Nevertheless, the costs of security measures is large and their imposition could be detrimental to trade and economic growth in the short term. Thus, an OECD study indicates that adopting maritime security measures would cost the shipping industry $1.3 billion, excluding operation, maintenance and upgrading costs. Developing countries are also lacking resources and expertise to meet security requirements, and assistance will have to be provided by rich countries.

Immigration and terrorism

Immigrants and nationals with foreign roots were involved in 9/11 and the more recent acts of terrorism in Western Europe. These involvements raise concerns about immigration policies and integration in host countries. The fact that some terrorists were born in the West and integrated in their communities with regular jobs and, for some of them, families with children, indicate that full integration is not enough to prevent radicalization and enrolment in comprots. Demographic tendencies for Moslem countries and minority communities in host countries, particularly in Western Europe, are seen as worrisome by some "native-Europeans", populist politicians and journalists – scenarios show Moslems as becoming a prominent religious group and political force in Europe, which may impact on antiterrorism.
Immediate measures could relate to a severing of immigration procedures and border controls and, in countries where they apply, a lowering of quotas to reduce the number of incomers. More controls of "non-native communities" could also be advocated. However, such measures may create tensions between domestic and foreign communities in host countries, and would represent a loss of human rights. In addition, many host/destination countries are characterized by pessimistic demographic tendencies, which implies that immigration is important for labor supply, and possibly the payment of retirement benefits. Emigration pressures in home/origin developing countries should not decrease because of positive demographic trends, political uncertainties, limited economic prospects and environmental degradation. In other words, West European countries are confronted with dilemmas.

Long-term solutions could insist on the assimilation of incomers and their descents. Thus, a line is often drawn between integration and assimilation. Broadly speaking, integration refers to the effective inclusion in a society that can be composed of different ethnical, cultural and religious segments that may have little in common – they coexist, most often in peace. Assimilation is more demanding: one cultural group, very often a minority, is to a large extent absorbed by another group, the majority one, and adopts new values. Nevertheless, assimilation per se is another sensitive issue in societies that favor tolerance and mutual respect, as that should be the case for Western countries. Social mobility policies could be enhanced with education programs and more equal chances for minorities on labor markets – which requires addressing “Islamophobia” in Europe\(^\text{29}\) and the US (see figure 3). Development aid, including support to democratization, human rights and the reduction of gender gaps, could be increased to contain emigration.

3. Cost-benefit analysis of antiterrorism

The calculation of a Benefit/Cost (B/C) ratio requires the valuation of B and C, namely the gross benefits of antiterrorism and corresponding costs.

Benefits (B) of no terrorism at all

The N. and M. Crain’s model “provide a foundation to compute the costs of terrorism and the benefits of antiterrorism activities”. Thus, estimated equations can be used to estimate the benefits of reducing terrorism from national, regional or global perspectives. As already mentioned, the world GDP would have been $3.6 trillion higher without terrorism at all in the year 2002. The Crain’s paper does not provide the cost of eliminating completely terrorism in 2002, the reference year, which would permit the calculation of a B/C ratio. Thus, the proposed figure should be seen as a net benefit. Gross benefits must integrate the total cost of policies and measures that would allow the complete elimination of acts of terror – assuming it can be done!

The costs (C) of antiterrorism

The actual total cost of all policies and measures that matter in the fight against terror in the world are not known and there seems to be no real attempt to gather adequate information about it. Such information would definitely be useful for governments and international

organizations, especially when the rule should be international co-operation and co-ordination of the fight against terror.

In this paper, we assume that a full elimination of terrorism in 2002 would require the mobilization of considerable forces and resources corresponding to the sum of all actual defense budgets, which might look excessive. Nevertheless, it should be noted that the fight against terrorism is mobilizing considerable foreign – mainly US – forces in Afghanistan, Iraq and ex-Soviet Central Asian countries; moreover, the deployment of troops and equipment in distant foreign countries requires complex logistics support in the home country, in the US and allied countries, i.e. NATO members and some others (Austria, Japan...); in most countries, several non-military state agencies are also involved in the fight against terrorism, and private companies are investing to increase security levels.

In addition, rich countries are providing aid to many developing countries to help the adoption of new antiterrorism measures and acquire modern equipment such as patrol boots and computers, and international organizations are involved in the fight against terror. In other words, using the defense budgets as benchmarks does make some sense for a CBA of antiterrorism. In the year 2002, just after the 9/11 events, the total world expenditures on defense amounted to about $0.8 trillion.

Comparing benefits and costs (the B/C ratio)

When adding the “world” defense budget (i.e. $0.8 trillion) to the net benefits of the complete elimination of terrorism in 2002 ($3.6 trillions), the B (or gross benefits) value is $4.4 trillions. The corresponding B/C ratio is 5.5 (= 4.4/0.8), which could correspond to a low estimate because we believe that the optimal costs of the fight against terrorism could be smaller than actual defense expenditures. Nevertheless, one may also argue that the magnitude of B is somehow too high – in which case, there would be overestimation for the numerator and the denominator.

Limitations of the CBA

Additional data and information about the costs of terrorism and the resources that are needed to fight terrorism are required to provide more precise B/C estimates. Non-economic variables should not be forgotten. Human suffering caused by terrorism is omitted from economic calculations. Military actions in third countries are stimulating anti-Western feelings, particularly in the Moslem and developing world. The price of oil has also increased over the last few years, which undermines economic activities in developed and developing countries, and creates more uncertainties about the future of energy security. Moreover, the world is far from homogenous and not all countries are really engaged in the fight against terrorism, on the contrary. In other words, collective preferences differ among countries. When countries are lining together, there might also be differences in terms of social discount rates and time horizons.

Conclusions and final remarks

As mentioned in the introduction, the roots of terrorism are manifold and do not only relate to economic factors. Nevertheless, economic measures, policies and strategies can definitely contribute to the fight against terrorism. Table 3 underlines that some measures can be quickly (and are de facto already) implemented. Considering the use of CBA to support the decision making process in the fight against terrorism, the corresponding B/C ratio is quite high.
Recent calculations in terms of GDP indicate that huge potential gains can accrue from the reduction of terrorism.

The key-issue is how to best address and successfully reduce terrorism. Antiterrorist punitive actions can become counter-productive, especially when they are not restrained and lead to fierce retaliation, which contributes to vicious circles of violence. Whenever possible, military-type operations should be replaced, or at least complemented, by active diplomacy with adequate levels of aid to address the economic, social and political roots of violence – without compromising with those who advocate intolerance and hate crimes! A long-awaited “Marshall Plan” for the Middle East, that involves all parties, should be seen as a top priority in the fight against terror – which requires the consolidation of the Palestinian Entity, and the recognition of Israel, by the neighbors. In the Iraqi case, there seems to be a need to involve Iran and Syria, assuming they are really interested in the building of peace in the region. In many places, significant societal changes and political reforms must contribute to the building of more “open and democratic societies” and, as a result, reduce incentives for terrorism. In that context, the UN should definitely play the leading role to foster multilateralism, universal values and global governance.
Table 1: Basic statistics on terror in 10 countries, 2005

<table>
<thead>
<tr>
<th>Country</th>
<th>Incidents</th>
<th>Injuries</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>207</td>
<td>328</td>
<td>298</td>
</tr>
<tr>
<td>Colombia</td>
<td>101</td>
<td>208</td>
<td>112</td>
</tr>
<tr>
<td>India</td>
<td>272</td>
<td>1051</td>
<td>398</td>
</tr>
<tr>
<td>Iraq</td>
<td>2336</td>
<td>9399</td>
<td>6234</td>
</tr>
<tr>
<td>Nepal</td>
<td>100</td>
<td>104</td>
<td>33</td>
</tr>
<tr>
<td>Pakistan</td>
<td>163</td>
<td>398</td>
<td>160</td>
</tr>
<tr>
<td>Russia</td>
<td>102</td>
<td>113</td>
<td>51</td>
</tr>
<tr>
<td>Thailand</td>
<td>359</td>
<td>984</td>
<td>148</td>
</tr>
<tr>
<td>West Bank/Gaza</td>
<td>479</td>
<td>302</td>
<td>74</td>
</tr>
</tbody>
</table>

Source: MIPT – Terrorism Knowledge Base (www.tkb.org)

Table 2: GDP gains from less terrorism, 2002

<table>
<thead>
<tr>
<th>Country</th>
<th>Reduce incidents per year from:</th>
<th>Gain in GDP Million US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colombia</td>
<td>13 to 12</td>
<td>87</td>
</tr>
<tr>
<td>Egypt</td>
<td>5 to 4</td>
<td>221</td>
</tr>
<tr>
<td>France</td>
<td>18 to 17</td>
<td>1,161</td>
</tr>
<tr>
<td>India</td>
<td>5 to 4</td>
<td>1,132</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2 to 1</td>
<td>1,533</td>
</tr>
<tr>
<td>Philippines</td>
<td>9 to 8</td>
<td>122</td>
</tr>
<tr>
<td>Spain</td>
<td>1 to 0</td>
<td>92,000</td>
</tr>
<tr>
<td>UK</td>
<td>18 to 17</td>
<td>828</td>
</tr>
<tr>
<td>US</td>
<td>3 to 2</td>
<td>40,626</td>
</tr>
<tr>
<td>World</td>
<td>To zero for 2002</td>
<td>3,600,000</td>
</tr>
</tbody>
</table>

Source: N. Crain and M. Crain, op. cit.
<table>
<thead>
<tr>
<th>The issue</th>
<th>Measures/policies</th>
<th>Timeframe</th>
<th>Problems and risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicting terrorism with data analysis</td>
<td>Building time series and econometric models</td>
<td>Short term; can be done quickly at low costs</td>
<td>Data are not always available or lack accuracy; terrorists could know publicized forecasts and adjust their plans</td>
</tr>
<tr>
<td>Preventing terrorism with poverty reduction</td>
<td>Adoption of poverty alleviation policies and strategies; institutional development; building business conducive environments</td>
<td>Medium and long term</td>
<td>Lack of resources is an issue and foreign aid does not often fill the gap</td>
</tr>
<tr>
<td>Deterring terrorism by fighting dirty money</td>
<td>Adopting measures to better detect and prevent suspicious financial flows and transactions</td>
<td>Short and medium term</td>
<td>Lack of experience and expertise is an issue; external aid required for some countries</td>
</tr>
<tr>
<td>Impeding terrorism with trade-related measures</td>
<td>Adopting new control instruments for international commerce in line with trade facilitation measures</td>
<td>Medium term</td>
<td>Low and medium income countries are lacking resources and experience; assistance is required</td>
</tr>
<tr>
<td>Diffusing terrorism by better controlling immigration</td>
<td>Enhancing controls on the cross border movement of people; more assimilation if possible; access to good education and equal chances for all; reducing incentives for emigration</td>
<td>Medium and long term</td>
<td>More hostile attitude against immigrants and minorities in host countries; development aid insufficient</td>
</tr>
</tbody>
</table>
Figure 1: Yearly total number of terrorism-related incidents in the world, 1968-2006

Source: MIPT – Terrorism Knowledge Base (www.tkb.org)

Figure 2: Regional distribution of terrorism-related incidents, 1/1/1968-16/01/2007

Source: MIPT – Terrorism Knowledge Base (www.tkb.org)
Figure 3: The impact of 9/11 on anti-Islamic crimes in the US

Anti-Islamic hate crime, reported incidents

Source: FBI

25 February 2007