The Nexus of Terrorism & WMDs: Developing a Consensus
How could a Leaders' Level G20 make a difference?

December 12-14, 2004
Princeton University

BRIEFING NOTE

Paul Krugman -- Professor of Economics & International Affairs, Princeton University

THE COSTS OF TERRORISM: WHAT DO WE KNOW?

Conceptual issues

The purpose of this note is to provide a very brief overview of what we know, or think we know, about the economic costs of terrorism, mainly focused on the impact of the 9/11 attacks. Before getting to the numbers, let's talk about the nature of these costs.

Without presuming any moral equivalence, we can say that the economic costs of terrorism are similar, in principle, to the economic costs of crime. As surveys like Glaeser (1999) point out, these costs can be divided into the direct losses from criminal acts; the costs of spending on law enforcement; and the costs of distorted individual decisions because of fear of crime.

Applied to terrorism, the equivalent first category is the direct economic damage done by terrorist attacks: buildings and infrastructure destroyed, productive lives ended. Even though these losses are the result of an act of man rather than an act of God, they are similar to the costs of a natural disaster such as an earthquake or hurricane. In fact, as we'll see, the direct damage done on 9/11 was of roughly the same order of magnitude as these natural events.

The second category consists of the budget cost of government responses to terrorism: money spent on national defense and homeland security in an attempt to block or forestall future terrorist attacks. In principle this is easy to measure; in practice, we face the problem that people sharply disagree about what portion of increased defense spending is really a response to terrorism.

The third category is the subtlest: it's the cost imposed by the way people respond to fears of terrorism. This includes relatively concrete costs, such as the value of extra time spent waiting in line to pass through airport security, but also more diffuse costs, such as the "friction" imposed on global supply chains by increased fears about the security of cargo.

Direct economic costs

The 9/11 attacks were, from the terrorists' point of view, as successful as an attack not aided by weapons of mass destruction can get: because of the collapse of the World Trade Center, lightly armed terrorists inflicted huge losses of life and large property damage. Nonetheless, from the point of view of the U.S. economy, the direct costs did not bulk very large.

A report by the Comptroller of the City of New York (2002) estimated the property loss at $21.8 billion, or about 0.2 percent of one year's GDP. This appears to indicate that the 9/11 attacks inflicted damage less than half as large as the 1995 Kobe earthquake in Japan, and less than a quarter as large relative to the economy. (The Kobe earthquake also killed about twice as many people, and injured many more.)

The comptroller's office also made a rather cold-blooded estimate of the economic side of human loss, calculating the likely future earnings of those killed in the attack; this adds a further $8.7 billion in losses, plus $0.9 billion in lost earnings due to disability and trauma among survivors.

According to the report, New York City suffered further large economic losses because of the diversion of business away from the city to other locations. As I'll explain below, however, most of this does not represent a net economic loss to the nation.

The point of the comparison with Kobe and other natural disasters is not to belittle the special horror when so many people are killed through malice rather than accident. What such comparisons do show, however, is that the direct economic costs of even a very deadly terrorist attack are pinpricks to an advanced country as large and wealthy as the United States.

Defense and homeland security

The 9/11 attacks were followed by a sharp increase in defense spending, and also by increases in certain types of foreign aid, and new spending on functions newly reclassified as "homeland security." The Center for American Progress has conveniently created a category lumping together all such spending (to distinguish it from other discretionary spending); Table 1 shows the CAP estimates for fiscal years 2001 through 2004, expressed as a percentage of GDP. These numbers suggest an increase in security spending equal to 1.3 or 1.4 percent of GDP, presumably on a long-term basis. This is vastly larger than the direct costs imposed by the 9/11 attacks.

The obvious, but perhaps unanswerable, question is to what extent this additional security spending should be viewed as a response to terrorism, as opposed to a political program enabled by terrorism. Not to put too fine a point on it: the Iraq war, which seems likely to absorb about 0.6 percent of America's GDP for the foreseeable future, clearly wouldn't have happened without 9/11. But was it in any meaningful sense a response to 9/11?

Anyway, the costs of defense and homeland security spending are the main easily measurable economic impact of terrorism. This is also true in countries where the terrorist threat is much more pervasive. In Israel, the direct damage from terrorist attacks is sufficiently small that Eckstein and Tsiddon (2004) don't even include it in their calculations. But the second intifada was associated with a rise in the share of defense spending in GDP from 9 percent to 12 percent.

Economic costs of behavioral responses to terrorism

The most obvious personal cost of terrorism to most business people and other professionals is the extra time it takes to get through airport security. This, by itself, isn't that big an expense to the economy: even if all 600 million annual air travelers in the U.S. were to face an additional hour's delay, and we value their time at $20 an hour, this comes to only $12 billion per year, or 0.1 percent of GDP. But in the aftermath of 9/11, there was a widespread expectation that the costs of similar precautions at many levels would impose substantial losses on the economy. In a widely-read piece, "The Friction Economy" (2002), *Fortune* estimated losses of 1.5 percent of GDP per year.

In retrospect, that estimate looks high. Part of the problem was conceptual: a large chunk of the Fortune estimate came in the form of predicted increases in insurance premiums. These should not be considered a net economic loss: they are only a transfer of money among economic agents. The true economic loss comes from actual damage to life or property, and as we've already seen that's a fairly small factor.

The biggest item in the Fortune estimate was logistical cost: the prediction that extra precautions would slow up supply chains, force companies to maintain higher inventories, and hence reduce productivity. If there has been a large effect of that kind, it's invisible in macroeconomic data. Table 2 shows rates of U.S. productivity growth, which has actually accelerated since 9/11. The usual caveats apply: productivity growth might have accelerated even more in the absence of the attack. But at a crude level there is little visible effect.

One effect of fear – whether of terrorism or of crime – is that it distorts individual choices. This is most obvious when it comes to vacation plans. A Midwesterner decides to forgo a theater trip to New York and make a musical trip to Branson instead; a European traveler chooses a Mediterranean location rather than one in the Basque region; a transatlantic traveler goes to Europe rather than Israel. What are the effects of such distortions?

From the point of view of regional economies, they confer losses on the destinations perceived as risky, but benefits those that are chosen as alternatives. The Comptroller's report estimated a substantial decline in New York's Gross City Product as a result of individual and corporate decisions to avoid the city, but New York's loss was probably mainly other locations' gain. Thus large losses to particular regions subject to terrorism risks may be misleading indicators of the losses to society as a whole. Spanish estimates suggest that the Basque region is about 10 percent poorer than it would be in the absence of ETA; Eckstein and Tsiddon suggest a similar figure for Israel. But most of these losses aren't net losses to the world economy, or to large economic regions like the EU or the US.

The net cost to the world economy comes from the fact that people and businesses whose decisions are affected by terrorism choose alternatives that would otherwise be regarded as less desirable. To put a trivial spin on it: when a tourist decides to hear country music in Branson rather than see *The Producers* in New York, the cost to the U.S. economy is the extra he or she would have been willing to pay to see the metropolitan production.

The point is that on an economy-wide basis – except for small economies like that of Israel – the costs of behavioral responses to terrorism at current levels are probably fairly small, almost surely less than 1 percent of GDP.

One question for this conference is whether developing countries fall into the category of economies that suffer substantial losses, despite relatively small effects at the level of the world economy. I haven't been able to come up with evidence on this, but hope that participants will have something useful to say.

Policy implications

There do not seem to be strong policy implications from this quick and dirty analysis, except as follows: the biggest economic costs of terrorism right now seem to be those arising from government spending actually or ostensibly aimed at fighting terrorism. The natural question would be whether some form of international cooperation and consultation can reduce these costs.

Table 1: U.S. National Security Spending, Broadly Defined, as % of GDP (fiscal years)

2001	3.4
2002	4.3
2003	4.8
2004	4.7

Table 2: US productivity growth, % (calendar years)

2000	2.8
2001	2.5
2002	4.4
2003	4.4

REFERENCES

Comptroller of the City of New York (2002), "One year later: the fiscal impact of 9/11 on New York City"

Eckstein, Z. and Tsiddon, D. (2004), "Macroeconomic consequences of terror: theory and the case of Israel," Centre for Economic Policy Discussion Paper 4427.

Fortune, Feb. 18, 2002, "The friction economy."

Glaeser, E. (1999), "An overview of crime and punishment," World Bank