1. Introduction

Harry W. Richardson, Peter Gordon and James E. Moore II

This book is an eclectic collection of chapters that explores the relationships between global business and terrorism. The rationale for the book is clear. One of the sponsors of this research, the Department of Homeland Security, has spent large sums of money inside the United States to protect the homeland, but has devoted little attention, at least openly, to the international aspects of terrorism and how its threats can affect the global economy.

There are many examples of the potential links between global business and terrorism, some of which (but not all) are discussed in this book. One important example is how a major terrorist attack in a Western country might affect the global economy, typically by a crash in world stock markets. Baumert’s chapter (Chapter 7) sheds some light on this by showing that the Madrid train bombing had a modest and short-term impact on stock markets. However, we should not generalize from a single case.

Another example is what might be the consequences of an attack on a multinational corporation. There have been a few individual abductions and assassinations, but no massive attack. Alexander’s chapter (Chapter 8) shows how a multinational corporation caved in to threats by paying protection money, but this was not in response to a direct major attack. There have been several attacks in the Nigerian oil sector, for instance, but they have not received much attention and appear to be more locally inspired than related to international terrorism. If there were attacks on major corporations, this could have significant repercussions by raising operating costs in the form of protection or by resulting in a pull-out from a region or even a country.

An especially vulnerable aspect of global business that is vulnerable to terrorist attacks is oil and natural gas pipelines, especially outside the United States (70 percent of US oil consumption is from overseas and transferred locally via pipelines). Some pipelines have been attacked many times, but with minimal long-term disruptions probably because the pipelines are relatively easy to repair. Nevertheless, because of their isolation
and long distances, pipelines are very difficult to protect so there is a possibility that a small number of simultaneous attacks at a few strategic locations could be much more damaging.

An interesting idea suggested by Napoleoni (2003) is that international terrorism is itself a global business in the sense that terrorist organizations have raised funds for terrorist activities by investing in profitable businesses. A widely quoted example is that while in Sudan in 1997, Bin Laden invested heavily in the Gum Arabic Co., of which 80 percent of its output was exported to the United States. One estimate, quoted by Napoleoni but not clearly substantiated, is that the global terrorism business is worth $1.5 trillion. A related but unsupported argument is that terrorists, being aware of 9/11 in advance, indulged in insider trading to take advantage of post-9/11 stock market changes. There is no firm evidence for these arguments, although it is clear that international terrorism has derived some funding from direct or indirect business activities.

Yet another possibility, hinted at by Intriligator (Chapter 2), is the opportunities for global businesses to counter terrorism via a range of activities from consultancy services to developing new technologies for protective devices and systems. There are again no hard data on the scale of this business, but judging by the number and size of business shows and conventions as proxy variables, this appears to be a rapidly growing business.

In his chapter (Chapter 3), Sheffi discusses the importance of ‘business continuity’; a more general term might be ‘business resilience’. One of the surprising immediate consequences of 9/11 was the speed of adjustment by downtown Manhattan firms impacted by the attack to continue their businesses at satellite locations in New Jersey and elsewhere. As a result, many large corporations have now developed contingency plans to open up offices elsewhere away from their headquarters; some have even decentralized completely to locations less at risk.

The second part of this Introduction is a brief review of the chapters in this book. As pointed out by Intriligator (Chapter 2), globalization is a powerful real aspect of the new world system, and it represents one of the most influential forces in determining the future course of the planet. It has manifold dimensions: economic, security, political and others. Two important aspects of globalization are global business and global terrorism, with the two linked. This chapter discusses these links and evaluates how the two influence each other, including how global terrorism makes use of global business and how global business could play a major role in reducing the dangers of global terrorism. Global business could have an important role as a major player in the development of new global institutions that would combine public and private interests on a multinational
basis to counter global terrorism, challenging the acquisition of various resources by global terrorists.

Sheffi’s chapter (Chapter 3) suggests a comprehensive framework for thinking about and applying business continuity at the corporate level. It looks at the role of security; the role of planning in creating options for response and resilience; how detection should be integrated into the framework both for ‘expected’ and ‘unexpected’ disruptions; the execution of business continuity; and issues of corporate culture beyond planning for bouncing back from disruptions.

Operational planning in every company takes into account several sources of uncertainty. The main one is customer demand, but other sources of uncertainty include manufacturing yield, the quality of parts, late deliveries and other normal fluctuations. The chapter focuses on high-impact, low-probability disruptive events for which the normal recovery means of keeping extra inventory or increasing overtime are not enough. In fact, many of these events can result in the loss of the business.

The chapter also classifies the sources of such events and then outlines an organization’s possible responses. During these recovery activities the organization can only adopt options that were prepared and planned ahead of time. The chapter then outlines the planning activities which should be undertaken to generate these options, and describes corporate culture issues that go beyond a narrow definition of business continuity planning.

Kunreuther and Michel-Kerjan (Chapter 4) explain that increasing globalization of economic and social activities worldwide makes catastrophic risks more and more global because of interdependencies across sectors and over time. A hallmark of the twenty-first century is a new era of catastrophic risks, with pressure for the private and public sectors to react very quickly even though they cannot always predict the impact that their actions will have.

Managing global risks under conditions of uncertainty, interdependency and competing interests is not simple. Three years ago, the World Economic Forum (WEF) launched the Global Risks Initiative to address the issues related to these events, under a joint initiative with several large companies and the Wharton Risk Management and Decision Processes Center at the University of Pennsylvania. Building on the WEF Global Risks 2007 report, this chapter applies pathways to mitigation of the risks of terrorism and natural disasters by both the private and public sectors. These pathways include improving insight, enhancing information flow, refocusing incentives and improving investment.

The chapter also explores the decision-making processes of individuals that are critical to developing better strategies and public policies for
mitigating global risks. One of the biggest challenges in implementing these strategies is overcoming the tendency to focus only on immediate pay-offs. Because of myopia, individuals and firms require a sufficient return in the short run to justify the upfront costs of protection. We often decide not to invest in risk-reducing measures because we fail to consider that the expected benefits from these options are likely to extend over many years.

Jaffee and Russell (Chapter 5) extend the discussion on similar lines, but to more complicated issues. Terrorists equipped with unconventional weapons (also known as nuclear, biological, chemical and radiological or NBCR weapons) present a real and present threat of creating catastrophic losses for the US, as well as for many other countries in the world. NBCR risks have long been excluded from many insurance policies in the US and other countries, even though the risk-sharing created by insurance would clearly be welfare enhancing. Since the 9/11 terrorist attack, however, the US and other countries have created government programs that backstop at least some of the losses that would be created by terrorist attacks, in some cases including, and other cases excluding, losses created by NBCR attacks.

In the chapter, the authors begin by exploring the reasons why NBCR risks are so often excluded from insurance coverage, starting with the historical context and finishing with the recently created government programs. Not surprisingly, the dominant reason is the magnitude of the possible losses, which could well exceed the resources available to a country’s insurance industry. The chapter then focuses on solutions, including the possibility of unifying resources on a worldwide basis through either reinsurance entities or the capital markets directly.

Coaffee (Chapter 6) turns his attention to London. The early 1990s witnessed a noticeable targeting of global cities and in particular their economic infrastructure by terrorist organizations in order to attract global media publicity and cause severe insurance losses and disruptions in trade. In London the Provisional IRA (Irish Republican Army) successfully attacked a number of key economic targets in the 1990s with large bombs exploding within the London financial core. These bombings, and the subsequent reaction of the urban authorities, served to highlight the need for more advanced approaches of counter-terrorism and new forms of terrorism insurance, in order to stop the relocation of international business and to protect the image of the UK economy.

In the chapter, the response of central London authorities both pre- and post-9/11 is used as the lens through which to view attempts to reduce the real and perceived threat of terrorist attacks against economic infrastructure in the UK, including a consideration of the main provincial cities identified as key terrorist targets. Increasingly, such responses are seen
in terms of attempts to embed ‘resilience’ into the managerial and urban
design responses of both local and national government in order to reduce
risk and give confidence to business communities by enhanced securitiza-
tion of the public realm and more proactive contingency planning.

Baumert (Chapter 7) explores another European case, the Madrid rail
bombings of 11 March 2003, with some comparison with the New York
City attack of 9/11 and the London attacks of 7 July 2005, specifically
focusing on the impact with respect to international stock markets. The
financial markets’ reactions to these events are especially relevant, as they
reflect immediate investor perceptions about the short- and medium-term
economic impact of the attacks *ceteris paribus* (normally no additional
information except that referring to the attacks is considered). Thus,
financial markets are the first to transform the news of a terrorist attack
efficiently into economic information.

As for the determining elements of the stock exchange reaction in the
specific case of the March 11 attacks, it can be seen that there were two
key factors which influenced market trends: the number of victims (the
only objective measurement available to investors when quantifying
the magnitude of the attacks), and who was responsible for them (and the
probabilities of whether they might spread to the rest of Europe).

Comparing the sequential impacts of 11 March, 11 September and 7
July, both the intensities and durations of the reactions became smaller. On
the one hand, this has been because of effective macroeconomic responses
(assuring liquidity, suspending electronic trading and controlling the news
flow). On the other hand, most large firms with their headquarters in big
cities have developed evacuation plans which enable them to transfer their
business very quickly from a central location in the City to alternative
suburban or other peripheral locations. These plans enable business to
continue with minimal interruption.

Alexander (Chapter 8) examines a case study of a very different type. In
March 2007 US-headquartered Chiquita Brands International (CBI) admit-
ted to engaging in financial transactions with the right-wing Colombian
terrorist group Autodefensas Unidas de Colombia. The case provides an
example of how collaboration (almost conspiracy) may arise between tran-
snational companies and terrorist groups based in host countries.

The chapter provides an analysis of the CBI case and sheds light on the
challenges such firms face doing business in politically unstable environ-
ments. It addresses the disparate steps global firms may pursue should they
face similar circumstances. The study then analyzes the multifaceted impli-
cations of several alternatives. The study concludes that terrorist activity
injects another layer of complexity that companies have to contend with
while doing business abroad.
The research in Asay and Clemens (Chapter 9) aims to understand changes in the patterns of air travel within the United States after 9/11, with particular attention paid to two hypotheses. First, it considers the hypothesis that large and high-volume airports were hurt more relative to lower-volume airports. Second, it examines the regional impacts of 9/11 on air travel and large airports. Key ideas are that getting through security is easier in small airports and that the risks of an attack are lower there because of much less visibility. It is also possible, however, that the finding of advantage to smaller airports is explained by pre-existing trends in the market for air travel, for example the emergence of low-cost airlines that concentrated on smaller airports. The chapter was not able to tease out further the extent to which the results can be attributed to 9/11 itself. However, there is no evidence that East Coast airports were more adversely affected than West Coast airports, despite the fact that 9/11 was primarily an East Coast attack. Nevertheless, it is possible that such an impact might be observable in data on international passenger traffic via shifts away from the US to other countries and/or to non-US airlines as a result of changes in travel behavior when individuals have higher perceived risk (or fear). In addition, leisure travel is more susceptible to the fear factor than business travel because the marginal fear factor declines rapidly with the number of trips taken. Similarly, tourist destinations suffer more than other destinations.

Current research on the effects of transnational terrorist attacks on international commerce has found evidence that terrorism reduces bilateral trade flows. One problem with the existing research is that the indicators of terrorism employed are measured at the country level. As a result they reflect country attributes more than the effects of ‘directional’ terrorist attacks. It is plausible that the country-level terrorism indicators merely reflect the overall risk environment for businesses in a country, not terrorism per se. Furthermore, many terrorist attacks involve an attacker from one particular country and a target in another. To gauge accurately the effect of terrorism on trade between countries, one should directly examine the effect of a terrorist incident involving an attacker from one country against a target in another. The idea is that such bilateral terrorist attacks more closely reflect the affinity and quality of the relationship between citizens in the two relevant countries, and hence better represent the actual risk posed to traders in the two countries.

This effect is empirically evaluated and estimated by Li (Chapter 10) within a gravity model framework using bilateral trade data and transnational terrorist attacks data from 1968 to 2000. The findings provide a better assessment and estimation of the effect of terrorism on international commerce. The study tests for the implications of controlling for
Introduction

unobservables, political ties between governments of country pairs, and subsamples based on development stage. There is no consistent evidence that terrorist incidents within countries reduce bilateral trade flows. Bilateral terrorist attacks only reduce bilateral trade in country pairs that involve at least one advanced economy. Overall, the evidence is too weak to support the view that transnational terrorism reduces bilateral trade flows. The finding suggests caution in estimating the impact of terrorist attacks on commerce.

North Korea has a terrorist past, primarily against South Korea. Today, the threat is more indirect, supplying weapons (possibly even weapons of mass destruction) to terrorists around the world and/or rogue nations. The reunification of the Korean peninsula might resolve these concerns. Would an improvement in the North Korean economy assist in this goal, and can, and should, the rest of the world contribute? Currently, only South Korea and China are investing in the North. If the strategy is justifiable, it would probably require a combination of public investment by governments (primarily in infrastructure projects that have a problematic payback) and private investment by transnational corporations (focusing on job creation in export activities). However, the risks to foreign direct investment prior to reunification are huge, pending resolution of the political instability problem.

Richardson and Bae (Chapter 11) place this discussion in the context of alternative reunification strategies: a sudden R-day (Reunification Day), that is, the German model; and the TP (transition phase) approach that requires actions both before and after reunification. The chapter argues that the TP approach is preferable (in part because of the economic implications for South Korea), but that its success would depend on the participation of global business and international financial institutions. The research illustrates this argument with two case studies, the Kaesong Industrial Complex and the Tumen River Project. The Kaesong project, while perhaps overambitious, is quite promising, while the Tumen River Project is hitherto very problematic.

The possibility of an international avian influenza pandemic has suggested to policy-makers the need to consider the possibility of border closures to interrupt trade, international business travel, tourism and immigration. In an era of significant globalization, the costs of such measures are substantial. On the other hand, the duration of a worst-case outbreak could be as long as a year and hundreds of thousands of Americans could die. In this light, extreme measures may have to be contemplated. Gordon et al. (Chapter 12) apply NIEMO (a 47-sector, 50-state National Interstate Economic Model), the first operational multiregional input–output model, to simulate these possible impacts, their magnitude, and their spatial
incidence. The research considers the loss of imports and exports (but allows for exporters and importers to mitigate impacts by trading with each other domestically), an interruption to international travel, the loss of tourism, and the loss of immigrant labor and cross-border interactions. Border closures of different levels of intensity and different durations are analyzed. The results must be assessed carefully in light of the uncertainties involved and the fact that this could be an extreme event (possibly resulting in a 14 percent decline in US gross domestic product, GDP) outside the normal range of the data used to estimate the model. Nevertheless, the estimated costs of border closure and the benefits (the dollar value of lives saved and health expenses minimized) are sufficiently close to each other that closing the border merits serious attention as a mitigation strategy if a pandemic breaks out.

Rose et al. (Chapter 13) analyze the same problem, but use a different type of model (more macro rather than spatial), and examine alternative types of threats and various durations and degrees of border closure. Given that the US economy is highly dependent on international mobility of goods and people, the economic impacts of a partial or total border closure are significant. Major economic impacts would stem from four factors. First, the US imports a significant volume of both intermediate and final goods. Second, its exports are an important source of foreign exchange, and the United States may face retaliation in the form of import bans on its goods if it imposes restrictions on goods coming in from other countries. Third, international visitors are a significant stimulus to the US economy. Fourth, in-migration provides important workers at all skill levels.

The research analyzes the impacts of the curtailment of all of these actions using the REMI (Regional Economic Models Inc.) Economic Forecasting and Simulation Model. The analysis is performed via a set of comparative static simulations to isolate the impact of each aspect of a curtailment as well as a comprehensive simulation to identify interaction effects. In addition, resilience actions are factored in to minimize the potential shock at both the individual business and market levels. These include the use of inventories, excess capacity, conservation, domestic input substitution in response to price changes, redirecting exports to domestic input needs, and rescheduling lost production to a later date.

In the final chapter (Chapter 14), Willis and LaTourrette explore some of the problems involved in applying cost–benefit analysis to terrorism security problems. Under the authority of Executive Order 12866, the White House Office of Management and Budget directs agencies to conduct regulatory impact analyses to evaluate the benefits and costs of proposed regulations. However, conducting cost–benefit analyses of terrorism security efforts is difficult for several reasons, including: uncertainty
Introduction

about terrorism threats; lack of data on the effects of security measures in reducing terrorism risks; and the possible occurrence of catastrophes that experts suggest are low-probability events. The chapter discusses the challenges posed by each of these factors as well as approaches to addressing them within the context of a Department of Homeland Security regulation (the Western Hemisphere Travel Initiative) to be fully implemented by June 2009.

REFERENCE