# 19. The economic consequences of terrorism

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## I. Introduction: the shock of the new

The most shocking aspect of the 11 September 2001 terrorist attacks in the United States was the tragic loss of lives. The attacks also, however, caused serious economic disruption: financial markets did not operate for some days; a large part of southern Manhattan, where Wall Street stock exchanges and major investment banks are located, was destroyed; and communication links were inoperative. All US airport commercial flight operations were halted, and border crossings and ports were subject to intense scrutiny. In October, letters filled with concentrated anthrax spores were mailed to US news media and politicians, causing postal mail to be disrupted in a large part of the country. For the first time, terrorist events hampered the free movement of persons, merchandise, mail and money in the United States. Although these disruptions were temporary, they heralded a new era in which the protection of people and property from terrorist attacks could no longer be taken for granted anywhere. The US homeland was no longer considered a sanctuary, and the United States' economic recovery, eagerly awaited after a period of recession, was considered to be in jeopardy.

Large firms already knew that the safety of properties, employees and merchandise could not be taken for granted. In fact, since the early 1980s private-sector spending on security in the USA had quintupled and the number of security companies had grown almost fourfold. Companies realized that they had to protect themselves against theft, fraud, crime, hackers and eavesdropping. They had established security departments for this purpose, but they did not believe that they would be the targets of devastating terrorist attacks, nor that the smooth flow of industrial inputs and outputs on which they relied could be disrupted. They were not expecting their supply chains, now based on deliveries with extremely narrow time margins, to be interrupted. Cross-border operations, for example companies with plants in both Canada and the USA linked by fast transportation lines, no longer felt like a safe bet.

This chapter examines the consequences of terrorist threats for the functioning of modern economies and how economic agents—investors, consumers, companies and markets—reacted to the new threat. Was there a 'flight to safety' in the business community? Have companies spent more money to protect their premises and employees? Has insecurity inhibited risk-taking behaviour, an indispensable component of economic growth in market-based economies? Have measures enacted to tighten security been economically harmful? Section II discusses the economic consequences of the attacks and section III the business sector's own reaction to the elevated security threat. The specific problems in the insurance sector are addressed in section IV, and section V discusses the economic consequences of government measures for secure cross-border transfers of merchandise. Section VI examines the consequences of the rise in budgetary spending on homeland security and military operations that followed the al-Qaeda attacks. Section VII presents the conclusions.

## II. A less safe world

Terrorists had struck at North American and European interests before 11 September 2001. The United States itself had been attacked on its own soil: in 1993, when a large bomb was detonated in an underground car park of the New York World Trade Center, killing six people and injuring more than 1000; and in 1995, when the Murrah Federal Building was bombed in downtown Oklahoma City, killing over 160 persons. However, at the time these were seen as non-recurring events (in the first case caused by Islamic fundamentalists with broadly anti-US motives and in the second by anti-government extremists). There were many incidents in Europe but, again, for the most part with identifiable and nation-specific causes. For example, the United Kingdom suffered casualties from bombings linked to the Irish Republican Army (IRA), such as the explosion in the centre of Manchester in 1996 which injured over 200 people. In the latter half of the 1990s France was hit by a wave of bombings and an Air France aircraft hijacking linked to civilian unrest in Algeria, and Spain suffered from a series of incidents related to the situation in the Basque region. In the 1980s several passenger aircraft were attacked, most notably the bombings of flight PanAm 103 over Lockerbie in 1988 and of flight UTA 772 over Chad in 1989.

The terrorist acts of September 2001 were of another dimension. They were carried out by terrorists who were determined, organized, well funded and ready to give their lives for their ideals. They not only inflicted heavy losses but also succeeded in causing widespread fear. The attacks generated a dramatic rise in the general feeling of insecurity: people felt that the environment of relative safety that had previously been taken for granted was no longer guaranteed.

The economic consequences of this sudden rise in fear and uncertainty quickly became clear.[1] Indicators of business and consumer confidence plunged. US consumer and business surveys showed a drop in overall levels of confidence. Economic forecasters projected that investment and consumer spending would be hit hard and downgraded their projections for growth. The

[1] See also Lenain, P., Bonturi, M. and Koen, V., *The Economic Consequences of Terrorism,* Economics Department Working Paper no. 334 (Organisation for Economic Co-operation and Development (OECD), Economics Department: Paris, 17 July 2002). This chapter is based largely on this document, as updated in 2003. The OECD Working Papers are available at URL <http://www.oecd.org/eco>.

hope that the US economy would rebound from its recession faded away. Equity prices tumbled. Financial markets trembled worldwide. The gap between corporate and government bond yields widened, as did those between emerging market and US bond index yields. Several business sectors were particularly hard hit. The insurance industry (particularly the reinsurance industry) faced the largest reimbursement claims ever submitted, with additional claims still subject to litigation.[2] The airline industry in the USA and elsewhere suffered because passengers no longer felt that air travel was safe. Aircraft manufacturers almost immediately saw their orders curtailed. Spending on tourism fell sharply, affecting hotel chains and cruise operators. For the first time, a terrorist attack was forecast to have major consequences not only for security and political stability but also for the economy in virtually every region of the world.

Re-establishing confidence was important for promoting economic recovery. Confidence is a key factor in market-based economies because without it firms do not invest, employers do not create jobs and banks do not lend. Aggregate demand shrinks, with the risk of dragging the economy into recession. Positive expectations are essential for output growth and employment creation. Governments therefore acted quickly after the September 2001 attacks in an attempt to dissipate the feeling of uncertainty before it affected the economy. In order to strike at the sources of the terrorist threat, President George W. Bush declared the aggression to be an act of war and in early October 2001 military action commenced in Afghanistan, the country harbouring the al-Qaeda terrorist network which was responsible for the attacks. This was presented as the first phase of a broader and possibly protracted war against global terrorism.

In addition to military action, the US crisis management policy also encompassed economic policy. The US Federal Reserve indicated that it stood ready to inject virtually unlimited amounts of liquidity to avoid payment failures and cascading defaults. It made a series of aggressive cuts in interest rates: the federal funds target rate (FFTR) was cut by 50 base points, and over the subsequent weeks by another 125 base points. On 14 September 2001, the US Congress cleared a $40 billion supplementary appropriation for an emergency spending package. At least half of the money was to be used for relief related to the destruction in Manhattan, at the Pentagon and in Pennsylvania. Ten billion dollars were available immediately for emergency rescue and rebuilding efforts; for tightening security at airports and other transportation centres and in public buildings; for investigating and prosecuting those involved in planning and executing the attacks; and for enhancing national security. The Department of Homeland Security (DHS) was established on 1 January 2003 to coordinate the government's efforts against terrorism.[3]

[2] On the insurance problem see section IV.
[3] On the US Department of Homeland Security see URL <http://www.dhs.gov/dhspublic>.

The enhancement of security is costly. Government spending on homeland security and military operations requires budgetary appropriations that have to be financed either by borrowing or by increasing taxes. Similarly, private corporations' security departments represent a business cost, in terms of staff resources, external services and equipment. There are also less visible costs resulting from border security requirements. Bringing merchandise across borders involves complying with a number of formalities required by customs officials which are costly and cause delays. Faced with less predictable supply chains, companies need to hold larger inventories of inputs and therefore carry additional costs. Rising insurance premiums represent another additional cost, reflecting a revaluation of risks as well as a need for insurance companies to replenish their reserves. All of these additional security costs have the potential to diminish returns on investment, lower productivity, reduce capital formation and undermine economic growth.

While the quest for enhanced security was a rational reaction to the destruction caused by terrorism, the question must be asked: Has the effort to increase security gone too far and put economic prosperity at risk?

## III. Is the private sector spending more on security?

After the September 2001 attacks in the United States, it was expected that the security departments of private corporations would be strengthened and the 'security economy' would be boosted. Only limited data are available on recent developments. A 1999 study estimated that the USA spends about \$40 billion annually on private security.[4] Nearly half of total spending on security by the private sector is composed of a single category—security guards and other protective service employees. The rest is on items such as alarm systems, computer security, locks, safes, fencing, surveillance cameras, safety lighting and guard dogs. The total amount is considerable: it is comparable to what the US Government spends on the federal, state and local police (excluding the armed forces).

The anticipated increase in corporate security was also expected to increase the US labour force. Companies were expected to hire more security guards and contract new security services, but it was also feared that this additional labour force would reduce the level of labour productivity. Like spending on the reduction of pollution, private efforts to enhance security may improve welfare but do not produce output in the sense in which it is traditionally measured. Other security measures, such as extra controls at airports and borders, were also seen as lowering productivity because, for instance, they would require business travellers to spend more time going through airport security controls.

[4] Anderson, D., 'The aggregate burden of crime', *Journal of Law and Economics*, vol. 42, no. 2 (1999).

The medium-term impact of a sharp increase in private security spending was generally gauged to be small. A study prepared by the US Council of Economic Advisers estimated that a doubling of private security spending would reduce the level of potential output by 0.6 per cent after five years.[5] A more recent study suggests that a doubling of private sector security spending and additional airport delays would reduce labour productivity by 1.12 per cent and multi-factor productivity by 0.63 per cent.[6] Seen against the strong rise in labour productivity currently observed in the United States, however, these are small impacts.

So far, the private sector does not appear to have increased its spending on security as a result of the al-Qaeda attacks. A recent survey of 331 large companies by the Conference Board found that spending on security had increased by only 4 per cent since 2001, and that most of this increase was in the form of higher insurance premiums.[7] The passive reaction of the US corporate sector to the increased risk of terrorism seems confirmed by the stability of employment in security-related jobs. The US Department of Labor even reports a small decline in the number of private security guards in 2002 over the previous year, to slightly fewer than 1 million.[8] If these trends are confirmed, this would suggest that the corporate sector has resisted making large increases in security-related spending—perhaps by reorienting the priorities of existing programmes. This may leave private companies vulnerable to costly disasters, especially if, as discussed below, their insurance coverage against terrorist risk has shrunk. On the other hand, this may also imply that even the small deterioration of labour productivity which had been expected to result from the hiring of security personnel and the enforcement of greater controls in private premises will now not become a reality.

## IV. The insurance problem

The insurance sector was directly affected by the attacks on the New York World Trade Center. Insurance claims for damages and losses resulting from the attacks in various classes of business (e.g., liability and workers' compensation) are currently estimated at $40 billion.[9] As noted above, the precise amount is subject to a high degree of uncertainty because litigations are still pending; the process of assessing claims may well extend beyond 2004 (especially for aviation). The attacks represented the largest insurance event in

[5] US Council of Economic Advisers, *Economic Report of the President* (US Government Printing Office: Washington, DC, 2002).

[6] Hobijn, B., 'What will homeland security cost?', *Economic Policy Review* (Federal Reserve Bank of New York), vol. 8, no. 2 (Nov. 2002).

[7] Armstrong Whiting, M. and Cavanagh, T. E., *Corporate Security Management: Organization and Spending Since 9/11*, Conference Board Research Report no. R-133-03-RR (Conference Board: New York, July 2003).

[8] See the 2002 National Occupational Employment and Wage Estimates, available on the Internet site of the US Department of Labor at URL <http://www.bls.gov>.

[9] Swiss Re, 'Reinsurance: a systemic risk?', *Sigma*, no. 5 (2003), URL <http:www.swissre.com/sigma>.

recent history, dwarfing the $21 billion in losses incurred when Hurricane Andrew hit Florida in 1992. In terms of non-life insurance premiums, only the San Francisco earthquake of 1906 was more damaging.[10] In spite of the magnitude of these payments, no major bankruptcies have occurred in the industry, in part because the risk was spread over a number of companies and countries. It is estimated that reinsurers, most of them European, incurred over half the losses.[11] The capital base of many insurance and reinsurance companies has been severely hit because the shock came on top of a series of other recent disasters (including a number of major storms) and portfolio losses associated with stock market declines.

Following the attacks in 2001, primary insurers and reinsurers raised their premiums and curtailed or dropped altogether coverage for terrorism-related risk. The rises in insurance premiums have hit several industries. Aviation has been hit the hardest, but other sectors—including transport, construction, tourism and energy generation—have also been affected. Overall, reinsurance rates are estimated to have increased globally by about 85 per cent between 2000 and 2003.[12] The rapid increase in premiums of 2001–2002, however, slowed down considerably in 2003.

An important channel through which the insurance sector can affect the economy is the reduction in coverage. After the attacks, insurers and reinsurers adopted the approach of generally excluding terrorism losses from coverage for major risks. Insurers offered clients a limited re-inclusion of such losses in the coverage against payment of an additional premium. The reduction in risk coverage was in large part the result of the difficulties which insurance firms had in putting a price on large-scale terrorist attacks: it required reducing exposure and making it controllable. Aviation insurers, for instance, cancelled coverage for war hazards in October 2001 and granted new third-party liability coverage with an upper limit of $50 million per year. This limit prevented airlines from flying because, by doing so with insufficient coverage, they would have contravened leasing and other agreements as well as government regulations.

In response, the US Government decided to provide insurance coverage for a limited period. In November 2002, as provided for in the Homeland Security Act,[13] the government addressed the insurance needs of the US domestic airline industry that were not met by the commercial insurance market. Air carriers were offered third-party war risk liability insurance coverage beyond $50 million per occurrence and expanded war risk coverage for aircraft hulls, passengers, crew and property liability. Thus government became an insurer of last resort for the aviation industry.

[10] The losses from the 11 Sep. 2001 attacks account for *c.* 11% of US non-life net premiums; the San Francisco earthquake came to 35% of US primary insurance premiums at the time. Swiss Re (note 9).

[11] See Jenkins, P., 'Munich Re warns of losses', *Financial Times*, 26 Nov. 2003.

[12] See *The World Catastrophe Reinsurance Market: 2003*, Guy Carpenter Special Report, Sep. 2003, at URL <http://www.guycarpenter.com/portal/extranet/publications/white/whitep.html?vid=57>.

[13] See section 1202 (Extension of insurance policies) of the Homeland Security Act of 2002, available at URL <http://www.dhs.gov/interweb/assetlibrary/hr_5005_enr.pdf>.

Similarly, the US Government set up a special programme to cover the terrorist peril, with the passage of the Terrorism Risk Insurance Act (TRIA) in November 2002.[14] The programme pre-empts and nullifies most pre-existing terrorism exclusions. It is triggered when an event meets the definition of an act of terrorism committed on behalf of a foreign person or interest. The act requires mandatory participation in the programme and the provision of terrorism coverage by all insurers providing commercial property and casualty insurance. The act provides only a short-term solution, however, because it will terminate on 31 December 2005. Each participating insurance company will be responsible for paying out a certain amount in claims—known as a 'deductible'—before federal assistance becomes available. For losses above a company's deductible, the federal government will cover 90 per cent, while the company will contribute 10 per cent. Losses covered by the programme will be capped at $100 billion. Above this amount, the US Congress is to determine the procedures for and the sources of any payments.

Government-sponsored schemes to help maintain coverage against terrorism risk were also introduced in other countries. For instance, in Germany the Extremus AG scheme offers terrorism coverage for properties and business interruption policies up to €25 million, and the French GAREAT insurance pool provides similar coverage.[15]

## V. Tighter border controls and their costs

The costs of running corporate security departments and paying insurance premiums are two economic consequences of terrorism. In addition, the business sector is also indirectly affected by government measures aimed at better control of the flow of persons and merchandise, notably at border crossings.

In the days following the 11 September 2001 attacks, the US authorities undertook to monitor border crossings more carefully. Both passengers and merchandise were subject to heightened control procedures. This caused temporary but severe disruptions to the transportation systems. The most severe bottlenecks occurred at the US–Canadian land border, where on average half a million vehicles and $1.4 billion in bilateral trade cross each day. Although the exceptional security measures were gradually lifted, US borders were still considered to be porous and the USA consequently vulnerable to further terrorist attacks. Permanent, tighter screening procedures were deemed necessary. Maritime transport was seen as particularly important because 20 million cargo containers enter US ports every year with very little or no screening. On average, customs officers inspect only 2 per cent of incoming containers.

[14] For the TRIA, 27 Nov. 2002, see URL <http://www.ustreas.gov/offices/domestic-finance/financial-institution/terrorism-insurance>.

[15] On Extremus Versicherungs-AG see URL <http://www.extremus-online.de> (in German); and on GAREAT see Raoul, B., 'The French GAREAT—first post-WTC terrorism insurance pool', *Exposure*, no. 10 (Jan. 2003), p. 4, URL <http://www.ercgroup.com/gpc/resource_center/exposure/archive/no_10/expo10_e.pdf>.

**Box 19.1. New cargo inspection procedures**

The *Container Security Initiative* (CSI) involves inspection in foreign ports of containers destined for the United States. US customs officers posted overseas inspect containers before they are loaded on to ships. Agreements have been signed with authorities responsible for 20 large ports that account for two-thirds of the volume of containers shipped to the USA. This involves improved procedures and technology, requiring significant capital investment in ports, ships and containers. Cargo originating in one of these ports is able to go through more expeditious custom procedures when entering the USA, effectively creating an 'express lane' for shipping.

The *Custom–Trade Partnership Against Terrorism* (C-TPAT) is a voluntary supply-chain security programme requiring certification from the customs administration. Under this programme, businesses must conduct comprehensive self-assessments of their supply chain using the security guidelines developed jointly with the Customs Service, and they must familiarize companies in their supply chain with the guidelines and the programme. These businesses must provide to the authorities specific relevant information about their trucks, drivers, cargo, suppliers and routes. As C-TPAT members, companies may become eligible for expedited processing and reduced inspections. Companies that do not participate face various consequences such as stricter scrutiny of cargo, increased audits and examinations, and requests for information, and they have no guarantees for cargo processing time.

Finally, a *24-hour notification requirement* was introduced in December 2002. Shippers are required to submit a detailed cargo declaration 24 hours before cargo is loaded aboard a vessel in a foreign port. Given the processing time involved, this means that carriers typically have to impose cargo cut-off time, ranging from 72 to 96 hours. Carriers also impose surcharges to cover the cost of preparing manifests.

Observers feared that containers could easily be used to carry weapons of mass destruction (WMD) into the United States.

Several border agencies were merged to form a new body, with 40 000 employees, in charge of overseeing border crossings—Customs and Border Protection, or CBP—within the DHS.[16] The department is responsible for all issues related to border crossings of passengers and merchandise, from arresting terrorists and searching for WMD to collecting import duties. The department has put in place a number of new procedures aimed at tightening the inspection of cargo imported into the United States while at the same time facilitating trade (see box 19.1).

It was feared at the time that all these new security measures, although necessary to secure borders, would significantly increase shipping costs and thus hurt international trade. The declining trend in international transportation costs has been a key driving force behind the process of globalization, contributing to the increase in productivity levels and potential output. Reversing the trend towards more affordable transportation costs, and tightening border

[16] See URL <http://www.customs.ustreas.gov/xp/cgov/toolbox/about/mission/cbp.xml>.

crossings indiscriminately, would risk scaling back openness and could have a long-lasting negative impact on growth for both the member states of the Organisation for Economic Co-operation and Development (OECD) and the non-member economies. Quantitative studies of international trade have indeed shown that imports and exports are highly sensitive to transportation costs and that permanently higher costs could affect future trade decisions.

The available evidence suggests, however, that the additional costs of these measures are currently limited. A microeconomic study of the Port of Seattle suggests that these costs are relatively small.[17] If this is extended to the entire USA, the results of the study imply an increase in shipping costs of only $2 billion, equivalent to 0.2 per cent of the value of non-energy imports of goods. Similarly, US balance-of-payments statistics show that the cost of freight and port services increased from 3.37 per cent of imports in 2001 to only 3.54 per cent in the first half of 2003.[18] Indirect costs may also be involved, including the impact of having to retain merchandise in ports, which entails carrying costs. However, the available evidence does not suggest that these costs will have long-term detrimental effects on international trade.

Immediately after 11 September 2001, a trade-off between security and efficiency of border crossings was anticipated. In the event, this trade-off seems to have been resolved without major consequences. New security measures have been formulated in a way that does not unduly diminish the efficiency of merchandise border crossings. International cooperation and partnership between the public and private sectors seem to have helped to make security measures more efficient, while reducing their potentially negative impact on trade flows.

## VI. The impact of growing security and military spending: has the 'peace dividend' been reversed?[19]

Although private-sector spending on security does not appear to have risen sharply, governments have significantly increased their security and defence budgets, especially in the United States. Immediately after the attacks, the US Administration and (to a lesser extent) other OECD governments increased public spending for reconstruction and to strengthen domestic security and combat terrorism. These additional appropriations resulted in a sharp increase in general government spending in the fourth quarter of 2001, which helped support aggregate demand and avoid a decline in domestic output. Such a tem-

[17] Babione, R. *et al.*, 'Post 9/11 security cost impact on port of Seattle import/export container traffic', Paper presented in the Global Trade, Transportation and Logistics Studies programme of the University of Washington: Seattle, Wash., 4 June 2003, URL <http://depts.washington.edu/gttl/SecurityCost ImpactonPortofSeattle.pdf>.

[18] These figures are calculated on the basis of data on the US balance of payments from the US Bureau of Econoomic Analysis, available at URL <http://www.bea.gov>.

[19] For figures on US military spending see also Sköns, E. *et al.*, 'Military expenditure', *SIPRI Yearbook 2003: Armaments, Disarmament and International Security* (Oxford University Press: Oxford, 2003), especially pp. 307–12.

**Table 19.1.** US Government spending on national defence, fiscal years 2000–2003
Figures are in US$ billion.

| Fiscal year | Expenditure |
|---|---|
| 2000 | 295 |
| 2001 | 306 |
| 2002 | 349 |
| 2003 (estimate) | 376 |
| *Change 2000 to 2003* | |
| Defence spending | + 81 |
| Overall fiscal balance | – 486 |

*Source*: US Executive Office of the President, Office of Management and Budget, *Historical Tables: Budget of the United States Government Fiscal Year 2004* (US Government Printing Office: Washington, DC, 2003).

porary increase is not unusual after large catastrophes or natural disasters, such as the 1995 Kobe earthquake in Japan or the windstorms that struck part of Europe in December 1999.

The US President requested from Congress several expansions of security-related programmes in the context of successive budgets. The Department of Homeland Security was created by merging a number of existing agencies—such as the Federal Emergency Management Agency (FEMA), the Customs Administration, the Coast Guard and the Secret Service—and by increasing its overall budget. The president's fiscal year (FY) 2003 budget request included $38 billion to boost homeland security activities, up from $29 billion in FY 2002 and from $17 billion in 2001.[20]

The aim of annual expenditure on homeland security is to improve the preparedness of 'first responders' (firefighters, police and rescue workers), to enhance defences against biological attacks, to secure borders and improve information sharing.

Because the DHS was created by a merger of existing agencies, its current spending can be compared with the aggregate spending of its predecessors in order to gauge the increase in overall homeland security spending. With the recent additional appropriations, the DHS disposes of budgetary authority equivalent to about 0.35 per cent of gross domestic product (GDP). While this represents a large increase, the additional budget authority represents only a quarter of a percentage point of US GDP, a very small amount in comparison with the sharp deterioration in US public finances during the period 2000–2003.

[20] See Office of Homeland Security, *National Strategy for Homeland Security*, July 2002, p. 64, URL <http://www.whitehouse.gov/homeland/book/nat_strat_hls.pdf>. These figures include supplemental funding.

By contrast, US Department of Defense expenditure has increased considerably since the attacks of 11 September 2001. Defence spending increased from about $300 billion before the terrorist attacks to an estimated $376 billion in FY 2003 (see table 19.1). A large part of this increase was for the military operations in Afghanistan and Iraq as part of the campaign against terrorism. At constant prices, military spending increased by some 28 per cent between mid-2001 and mid-2003, bringing it back to levels recorded at the end of the cold war. The costs of replenishing weapon stocks and the cost of transporting soldiers and their equipment to battlefields have been rising particularly fast.

Measured as a share of GDP, however, the increase is less considerable. Data suggest that military spending increased from about 3.1 per cent of GDP before the terrorist attacks to about 4 per cent of GDP at the time of the war in Iraq in 2003. While the US federal budget balance has moved from a comfortable surplus to a sizeable deficit over the same period, this is not mainly due to defence spending. Other factors that caused the fiscal deterioration include the tax cuts proposed by the US Administration, the cyclical downturn and the evaporation of exceptional tax revenue during the stock-market 'bubble' (such as taxation of capital gains and stock options).

While defence spending is currently substantial in the United States, it is still below levels recorded during the cold war when measured in terms of GDP. During the 1970s and 1980s defence spending fluctuated between 5 and 6 per cent of GDP—well above the 2003 level of some 4 per cent of GDP. This apparent inconsistency between the sharp increase in constant prices and the relative stability in relation to GDP is explained by the considerable expansion of the US economy since the end of the cold war: real GDP increased by 47 per cent, providing the USA with ample economic power and budgetary resources, and allowing it to muster an impressive military force at a relatively limited cost to the economy. Other countries have made only relatively small additions to their military budgets.

All of this suggests that the so-called 'peace dividend'—the economic benefit of ending the cold war—has been somewhat reduced since the turn of the 21st century, but also that societies continue to benefit from it to a large extent.

Even though the increase in US military spending may not entirely explain the increase in the federal deficit, and although defence expenditure may not have returned to cold war levels, the increase is considerable. The impact of military spending on economic growth is important and has been the topic of theoretical and empirical research, because the peace dividend associated with the end of the cold war was expected to result in positive welfare gains. Some analysts suggest that military spending affects medium-term growth negatively through several channels (such as lower capital accumulation, a reduced civilian labour force and losses resulting from capital reallocation). Other analysts claim that these negative impacts are counterbalanced by the contribution to technological innovation made by research and development in military industries.

Empirical studies have produced ambiguous results.[21] Econometric studies typically have difficulties identifying the impact of military spending on growth because such spending boosts growth in the short run, even though it may lower it after a time lag. Although a 1996 study using panel data estimation found that military spending had a significant negative impact on growth,[22] a 2001 study found no strong relationship between military expenditure and either investment or growth. Overall, the conventional wisdom is that military build-ups are likely to have a detrimental long-term impact on economic growth, but this impact is likely to be small, and in any case much smaller than other traditional determinants of growth. Smith and Dunne, for instance, calculate that, based on commonly accepted parameters, an increase in military spending by one percentage point of GDP is likely to reduce potential output growth by 0.25 per cent during a transition period.[23]

## VII. Conclusions

Until 2001, many societies took security for granted. The dissolution of the Soviet Union eliminated the threat of an intercontinental nuclear conflict. The world prospered in a new environment of security. This encouraged the removal of border controls, boosting external trade and investment. As nations became increasingly interdependent, globalization contributed to worldwide prosperity. Governments gradually dismantled their military might, which promised to bring a welcome peace dividend.

The terrorist attacks of 11 September 2001 brought back the realities of violence and fear. With the emergence of organized and well-funded terrorist groups, citizens no longer felt that the world was safe. After having settled claims of unprecedented size, the insurance industry decided that the coverage of terrorism involved incalculable risks. It also decided to drop or drastically reduce the coverage of liabilities caused by terrorist events. Governments stepped in to provide time-limited support, which allowed businesses to resume their activities without having to pay astronomical insurance premiums or spend considerable amounts on their own security. Governments also entered into partnership agreements both internationally and with business groups to devise border control procedures that tightened security and facilitated trade. While these new procedures initially raised some concerns, there is currently little evidence to suggest that the cost of trading internationally has significantly increased.

[20] See Knight, M., Loayza, N. and Villanueva, D., 'The peace dividend: military spending cuts and economic growth', *IMF Staff Papers*, vol. 43, no. 1 (1996), pp. 1–37; Ramey, V. and Shapiro, M., 'Costly capital reallocation and the effects of government spending', *Carnegie–Rochester Conference Series on Public* Policy, vol. 48, no. 1 (1998), pp. 145–94; and Smith, R. and Dunne, P., 'Military expenditure growth and investment' (mimeo), Birkbeck College and Middlesex University Business School, Apr. 2001.

[22] Knight, Loayza and Villanueva (note 20).

[23] Smith and Dunne (note 20).

Governments are paying a relatively high cost for the provision of security in a world where terrorists can strike at any time. By becoming reinsurers of last resort, they face a large contingent liability. By reinforcing law enforcement and homeland security departments, they are increasing their spending. By seeking to deter the origin of the terrorist threats through military action, they are contributing to a reversal of the peace dividend. At a time when many governments are facing popular pressure to reduce tax burdens, it is not clear how these new programmes will be paid for. Security-related spending is contributing to larger budget deficits, increased indebtedness and additional borrowing—even though it is not the only cause of the recent deterioration of fiscal balances. If societies are not willing to pay for their security, they risk transferring this burden to future generations.