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Government's role in fighting terrorism

by

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GOVERNMENT'S ROLE IN FIGHTING TERRORISM[*]

Abstract

This article briefly presents two main stances on terrorism's impact on an economy. It provides arguments for the government's active counterterrorism policy by presenting consequences of neglecting to respond. Consequently, authorities have to prepare a strategy which may be based on prevention or punishment-deterrence actions. The three phases of response, prevention, recovery and military operations, incur costs which are difficult to asses. Boosted public spending may be financed by expenditure switching, marginally balanced budgets or government borrowing. Nonetheless, all these methods impose threats on fiscal consolidation and evoke crowding out, spin-off and resource mobilization effects on the entire economy.

Introduction

In spite of the fact that the word *terrorism* is very frequently used in the international politics and news services, there is no universal and commonly accepted definition of the phenomenon. Several hundreds various denotations can be found in the literature of the subject (e.g. Thackrah, 2004; www.unodc.org; Borucki, 2002). A succinct definition is proposed by Wojciechowski (2005, p. 11) who perceives terrorism:

> "*as the use of violence, or threatening to do so, by an individual or by a group who undertake activities (breaking international law) aimed against individuals, institutions, states or objects in order to achieve certain, mainly political benefits*".

Numerous acts of terror, such as attacks of 9/11, Madrid, Bieslan and London, expose the scale of this incomprehensible, unpredictable and dangerous phenomenon. The fact that an attack can occur at any place makes terrorism one of the biggest global problems of present times[1].

The purpose of this paper is to analyze the rationale of engaging a government in combating terrorism and consequences stemming from that. More precisely, the emphasis is put on the economic cost of counterterrorism measures and its effects on fiscal balances. Structure of this paper is as follows. Section 1 presents the two opposite stances on the impact of terrorism on economic activity. Section 2 provides justification of the government's reaction and active engagement in countering terrorism. Consequently, Section 3 introduces the two basic models of reaction to the threat and the economic grounds for decision-making on the scale of response. Section 4 exhibits the

classification of costs incurred by the United States in different phases of an-titerrorist activities. The main economic effects of the increase in security expenditures are analyzed in Section 5. Hence, Section 6 presents issues experienced in fiscal consolidation as a result of higher spending.

1. Terrorism's impact on an economy

Undoubtedly, such an omnipresent phenomenon like terrorism must have an impact on actions of individuals, organizations and governments. Thus, it cannot be indifferent to the economy. In common belief terrorism causes uncertainty; therefore, it increases risk and costs of transactions. Nevertheless, economists' opinions on the harmfulness of this phenomenon are divided.

The two main standpoints on the impact of terrorism on economic activity can be distinguished. The first assumes that the analyzed phenomenon should not have a significant effect on economic outcomes[2]. Becker and Murphy (2001) provide an example of the air industry. They argue that the ability to deal with the external threat that persists over time will improve and costs imposed on passengers in terms of long queues and timetable turmoil will be greatly reduced as more efficient ways to ensure security are invented.

The advance of safety measures will result in absence of new incidents; therefore, psychological impact of previous attacks will diminish. Furthermore, Becker and Murphy (2001) evaluate the total economic loss of the 9/11 attack to range from 25 to 60 billion dollar. In comparison, the total physical assets in the United States are about 30 trillion dollar and the total

productive assets amount to about 100 trillion dollar. Hence, the loss represents only 0.2 per cent of the physical assets and 0.06 per cent of all the productive assets. Since terrorist attacks generate such small depletion of capital stock, they should not have a large effect on economic activity in long run.

The second standpoint maintains that terrorism significantly affects economic outcomes[3]. Abadie and Gardeazabal (2003 and 2005) prove that terrorist attacks may have a large effect on allocation of productive capital across countries. Terrorism increases uncertainty and reduces the expected return to investment. Thus, if the world economy is sufficiently open and risk-averse investors tend to maximize their profits, changes in the intensity of terrorist incidents may generate substantial movements of capital between countries. In consequence, the higher level of a terrorist risk engenders lower levels of net foreign direct investment in the affected country.

Diversity and extent of costs caused by terrorist attacks (see Section 4) is an argument in favor of government's intervention. The immediate short-run costs are loss of human and physical capital, the impact of uncertainty on consumer and investor behavior, and demand drop in sectors and regions perceived as dangerous. However, long-run costs are much more treacherous for the economy. Examples of these include rise in security and defense expenditures which crowds out more productive investment, and persistent psychological consequences of attacks.

2. Rationale of government's reaction

As already mentioned in Section 1, terrorism brings about uncertainty which may be harmful in both social and economic aspects. Providing security to individuals and businesses should be the government's priority which can be achieved by means of civil or military defense. The size of potential losses and the fact that counterterrorism requires significant expenditures in security sector make the government the main sponsor of actions taken against internal and external threats. Security is a typical public good: it has increasing return to scale, it is non-rival and non-excludable (Denek *et al.,* 1997). Counterterrorism activities are collective goods and they contribute to the benefits of society generally but not to any particular individual[4].

Recurrent terrorist attacks decrease the probability of survival and make life shorter on average. The reaction of individuals is based on the perceived intensity of the threat. Facing a moderate menace, individuals reduce consumption and increase saving in liquid assets. This leads to liquidity growth in the banking sector. However, as a result of higher risk, banks demand higher interest rates. Simultaneously, the terrorist threat negatively affects the expected return to investment. Consequently, higher costs of capital and lower prospective benefits result in investment decrease.

If individuals face very intensive threat and death seems unavoidable, they may prefer current consumption to saving (Eckstein and Tsiddon, 2004). In this situation, lower savings lead to increase of capital cost which put together with higher risk discourages investors. In both cases, lack of the saving – investment conversion will inevitably weaken the economic growth.

Thus, future wealth and future consumption will be smaller than if there was no terrorism. Figure 1 illustrates this problem as a shift from the steady state depicted by loci CC_0 and KK, which is appropriate for times of peace, to K_T.

Figure 1.

Steady state equilibrium and the reaction
of the government to the security decline
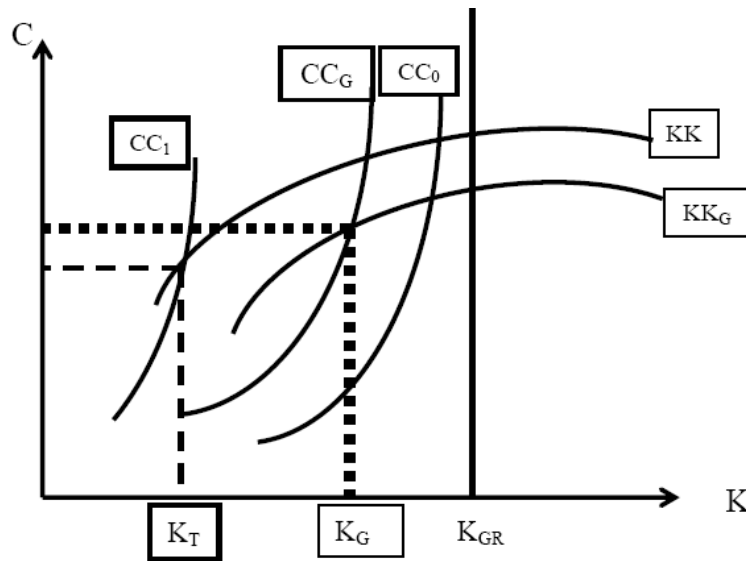
Source: presented after Eckstein and Tsiddon (2004, p. 35).

However, a responsible government should conduct a cost-benefit analysis of its potential actions and intervene by increasing defense expenditures. If the introduced measures are effective, the expected lifespan will become longer. Consequently, it will amplify the incentive to save and, furthermore, invest (Eckstein and Tsiddon, 2004). The consumption locus tilts to CC_G. Nevertheless, the government has to obtain resources to finance its actions, for example by imposing a tax. The immediate cost of this is lesser resources available for private use; hence, KK shifts downwards to KK_G. A new equilibrium K_G is obtained. The magnitude of the changes depends on the scale and

effectiveness of the government's interference. Concluding, the economic slow-down may be smaller with increased defense spending than when the expenditures are too low and number of casualties is high (Eckstein and Tsiddon, 2004).

3. Scale and model of reaction

When countering terrorism, governments can choose between two basic models of reaction: acting in the punishment-deterrence manner or concentrating on preventive actions (Gold, 2005). In the latter, which corresponds to the prevention branch in Figure 2, authorities address the roots of terrorism and terrorist motivation in order to limit the threat level. Prevention efforts may have many forms and be of positive or negative nature. The most important part in the first category is promoting peace by enhancing living conditions in underdeveloped countries and stimulating international cooperation[5]. Furthermore, this category comprises of diplomatic measures and influence campaigns aimed on dissuading terrorists from attacking the country, diverting individuals, especially youths, from joining terrorist organizations, and persuading state leaders and nongovernmental institutions to suppress their support for terrorists (Cragin and Gerwehr, 2005). The notable examples of positive preventive measures are efforts to rebuild Iraq and Afghanistan which costs are estimated at around 56 billion and 27.5 billion dollars, respectively (Economist, 2004). The second category comprises of negative tools such as sanctions imposed on companies conducting businesses with or in terrorist states, and embargos enacted on these countries[6].

However, in this category emphasis is put on cutting off the source of finance for terrorists (Gold, 2005) and securing weapons from their reach[7].

The second model of reaction is based on punishment and deterrence. In this case, the government responds only to existent and immediate risks of terrorist attacks, or even after their occurrence (Gold, 2005). Most countries chose this model because the number of actual terrorist attacks is smaller than the number of potential incidents; hence, it is easier to allocate resources when appropriate agencies focus on necessary responses. This model is simpler, more convenient and beneficial, at least in short run. At times of peace and non-violence, resources can be devoted to build up infrastructure and to research and development activities, which undoubtedly will enhance economic growth of the country (Gold, 2005). It is also more profitable for politicians. In times of peace, spending money on terrorism prevention is neither in demand nor marketable. Addressing current social problems is more likely to boost popularity of the governing party. Unfortunately, such an attitude ignores social processes in other countries, among them terrorist activities. Thus, it is ineffective in long run and only postpones future incidents. It should be stressed that the described models do not exclude one another and many Western countries, among them the United States, try to combine them together.

Having chosen the punishment-deterrence or preventive model, the government must decide whether the reaction should be extensive or modest. A rational government follows a cost-benefit analysis in which security spending will reach its optimum when marginal cost of security equals mar-

ginal benefit (Zycher, 2003). The situation looks simple in short run. Because the personnel, equipment and operation systems are already fixed and in place, prevention of an attack adds little or nothing to the total cost, making it plausible to assume that the short-run marginal cost of countering terrorism is close or equal to zero. Prevented attacks and losses which would be inflicted form the benefit side. Zycher (2003) estimated that an average bombing imposes costs of around 21.9 million dollar; thus, it can be assumed that each prevented attack brings about short-run marginal benefit of this value. A year after the September 11, an American official declared that the ongoing U.S. counterterrorism efforts had prevented 100 attacks (Zycher, 2003). Hence, if we use above assumptions, the total benefit of these actions would be worth about 2.2 billion dollar. Going back to the cost and benefit analysis, the short-run marginal benefit of counterterrorism is remarkably or even infinitely greater than its short-run marginal cost. Therefore, the counterterrorism effort cannot be too big in short run (Zycher, 2003).

However, if resources allocated to prevention are not extended, they cannot be used effectively to stop other attacks if they happen at the same or similar time. The pursuit of efficiency results in counterterrorist and defense build-up, which leads to the long term analysis. Size of investments in defense and security, together with costs of acquiring necessary resources, and the loss of civil liberties sum up in the long-run cost (Zycher, 2003). Yet, thanks to the experience curve effect, some cost reductions and improvement of efficiency with which resources are used can be expected over time. Concurrently, the other side comprises of long run benefits. Definitely, the

most important pay-off is avoidance of losses stemming from terrorist at-
tacks which would be far greater in the absence of the counterterrorism
measures. Moreover, one should take into account benefits flowing for future
generations and that appropriate counterterrorism policy would contribute to
enhancing national pride and trust for the government. Although unquantifi-
able, the latter two may be crucial for obtaining the citizenry's consent to
proposed measures and reinforce people's drive to pay significant amounts to
achieve national goals (Zycher, 2003). Nevertheless, high non-quantifiability
of the variables makes it very difficult to determine the optimal level of re-
sponse in long run.

Irrespectively of chosen strategy, the government should be aware of
costs which will ensue from its commitment to counterterrorism. The medical
rule that it is better to prevent than cure seems to be appropriate here. Alt-
hough the world leaders declare to notice the important role of preventing
wars and terrorism by reducing poverty and promoting international coopera-
tion, the number of appropriated funds shows that the emphasis is put on
the punishment and deterrence (Lis, 2007).

4. Counterterrorism measures taken by the United States
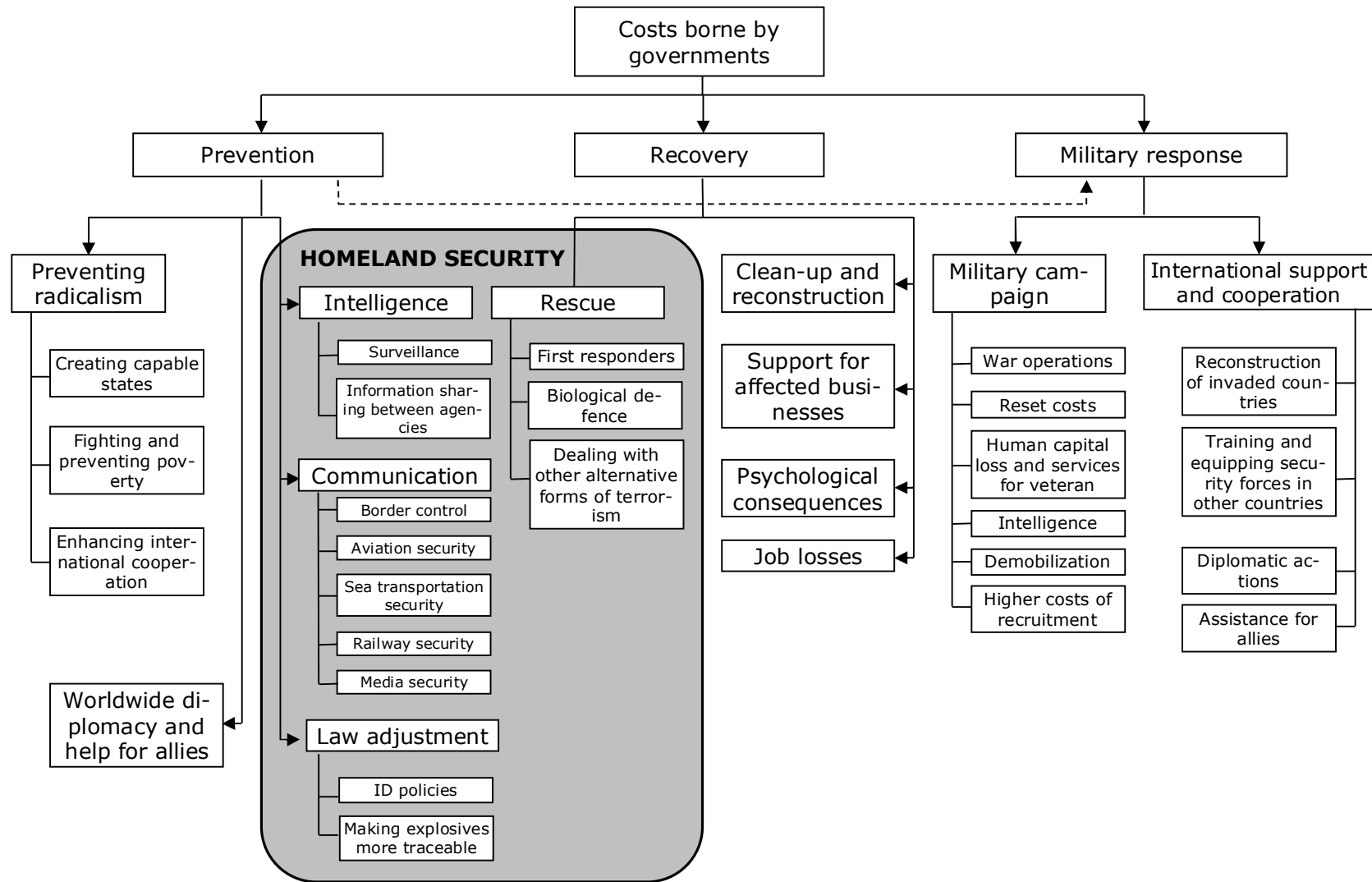
Assessing costs and benefits of ongoing counterterrorism efforts encounters
numerous problems. As mentioned in Section 3, some variables cannot be
quantified and expressed in monetary units. Moreover, various clients take
countless steps and achieve different results. All that makes determining the
total value of spent resources very difficult[8]. Numerous flaws in cost report-

ing are encountered even at the federal level, for which a good example is the Global War on Terrorism (GWOT)[9]. Undoubtedly, such situation makes it very troublesome to determine the costs of the war and the accuracy with which the funds are being spent. Consequently, use of historical data to predict future trends appear to be very difficult.

In the classification presented in Figure 2 costs are divided according to the three phases of the government's reaction[10]. The first kind of efforts belongs to the prevention model which is described in Section 3. This group comprises of various actions aimed at preventing radicalism, such as promoting international cooperation, fighting poverty and support for democratic state authorities. Diplomatic measures are crucial here as an effective tool of cooperation in combating terrorism. Equally important are the steps taken in order to ensure homeland security[11]. Intelligence services, which are responsible for gathering information about potential threats and neutralizing them, play a pivotal role in safeguarding the country. Safety of communication channels should be of the highest importance because all kinds of disruptions in this field may cause serious economic and social consequences. Recent years have shown that terrorists are inclined to air transport[12]; hence, the biggest security efforts have been made in this area. Not later than in November 2001, American authorities amended the aviation law[13]. The new act introduced many changes that intended to boost air transport security. Its implementation incurred costs of 9.34 billion dollar in Fiscal Years 2002-2006[14] (Coughlin *et al.*, 2002).

Figure 2. Classification of costs borne by governments induced by response to terrorism

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                          ┌─────────────────┐
                          │  Costs borne by │
                          │   governments   │
                          └─────────────────┘
        ┌─────────────────────────┼─────────────────────────┐
  ┌───────────┐            ┌───────────┐            ┌──────────────────┐
  │ Prevention│            │  Recovery │            │ Military response│
  └───────────┘            └───────────┘            └──────────────────┘
```

Prevention
- Preventing radicalism
  - Creating capable states
  - Fighting and preventing poverty
  - Enhancing international cooperation
- Worldwide diplomacy and help for allies

HOMELAND SECURITY

- Intelligence
  - Surveillance
  - Information sharing between agencies
- Communication
  - Border control
  - Aviation security
  - Sea transportation security
  - Railway security
  - Media security
- Law adjustment
  - ID policies
  - Making explosives more traceable
- Rescue
  - First responders
  - Biological defence
  - Dealing with other alternative forms of terrorism

Recovery
- Clean-up and reconstruction
- Support for affected businesses
- Psychological consequences
- Job losses

Military response
- Military campaign
  - War operations
  - Reset costs
  - Human capital loss and services for veteran
  - Intelligence
  - Demobilization
  - Higher costs of recruitment
- International support and cooperation
  - Reconstruction of invaded countries
  - Training and equipping security forces in other countries
  - Diplomatic actions
  - Assistance for allies

Source: Lis (2007)

Much more difficult to protect are trains and railways which also can be easy targets for terrorists and bear high number of casualties[15]. Safeguarding the Internet appears to be very important nowadays. The network being down for just one day could disrupt countless transactions which are conducted via e-commerce, e-mail, voice communicators, banking machines or credit and debit card authorizations. Such disturbances would bring about not only serious financial implications[16] but also psychological consequences which could be much more damaging. The United States worked out a new border control philosophy which tends to minimize terrorists' chances of getting into the American territory[17]. Nevertheless, statistics show that there is still much to be done in this area. Only 5 per cent of 9 million cargo containers that entered the United States in 2004 were inspected (Benjamin and Simon, 2005, p. 249). Efforts to improve homeland security may violate civil liberties; hence, must be approved by lawmakers, who are responsible for appropriate law amendments.

The second category illustrated in Figure 2 is recovery, to which the U.S. Congress assigned 40 billion dollar within three days after 9/11[18] (Economist, 2001). In the confines of already mentioned homeland security lay rescue activities which focus on preparedness of first responders and, when necessary, conducting appropriate actions in response to various acts of terror. To enhance security and preparedness to prevent, respond to, and recover from terrorist incidents in populated areas, the Department of Homeland Security (DHS)[19] has launched *the Urban Areas Security Initiative* (UASI). As a part of the program, in FY 2004 DHS gave 675 million dollar to

fifty urban areas which were considered to face the highest risk from terrorist atrocities (Willis *et al.,* 2005). Preparedness to deal with alternative forms of terrorism is also an important part of the rescue branch in Figure 2. An example of costs incurred to develop readiness to respond to biological attacks is the "*BioShield*" program which proposed spending of 560 million dollar a year for the next ten years on developing bioterrorism countermeasures (Economist, 2003).

After the immediate rescue actions it is time for clean-up and reconstruction along with taking care of victims of the incident. The government wants to minimize the negative impact on the economy and society, and so forth, it supports affected businesses and individuals. The undertaken actions concentrate on limiting job losses and psychological impact of the attack[20].

The last category of costs in Figure 2 belongs to the military response which in case of the United States means the Global War on Terrorism (GWOT). Undoubtedly, GWOT actions target at destroying terrorist organizations and infrastructure; thus, they are a part of prevention. Yet, because of their magnitude and specific character, they are marked out as a separate category in Figure 2. In spite of all the difficulties, economists try to estimate the costs of GWOT, which outstandingly differ from the level expected in the wake of the war. Definitely, the expenses turned out to be much higher than prospected in March 2003 when the US Secretary of Defense, Donald Rumsfeld, estimated that the total cost of the Iraq war would not exceed 50 billion dollar (Gazeta Wyborcza, 2006). According to Bilmes and Stiglitz (2006), through the end of November 2005, Congress earmarked around 357

billion dollar for military operations, reconstruction, embassy costs, boosted security at American bases and aid programs in Iraq and Afghanistan[21]. It is appealing that the monthly average cost rose from 4.4 billion dollar in FY 2003 to 7.1 billion dollar in FY 2005[22] (Bilmes and Stiglitz, 2006). The same researchers estimated that the total cost of the Iraq war would be some-where in the range of 750 billion to 1.2 trillion dollar[23]. Shortage of first responders in the United States appeared to be an indirect and unquantifiable cost of GWOT. More than a half of National Guard's soldiers, together with many police officers, have been or are deployed in Iraq and Afghanistan (Bilmes and Stiglitz, 2006). When the Hurricane Katrina struck in 2005, rescue units were short of trained and experienced personnel to conduct its tasks effectively. Hence, it is plausible to suppose that the losses would have been smaller if the first responders had been at home instead of having been sent abroad (Bilmes and Stiglitz, 2006).

Fighting a war abroad needs international support and cooperation. Both of them may be obtained by engaging local communities and other countries in reconstruction efforts, together with training and equipping security forces in other countries. The war in Iraq has significantly reduced the credibility of the United States abroad which in turn may discourage other countries from cooperating with the American partner. President Bush lied saying that his administration had solid proofs for Iraqi possession of weapons of mass destruction (WMD). Moreover, the international opinion was shocked by the fact that Americans – the nation of human rights defenders – have been using tortures during interrogations in Abu Ghraib and Guantana-

mo (Bilmes and Stiglitz, 2006). Although highly unquantifiable, these costs should be taken into account when estimating overall consequences of GWOT. They may have a significant impact on bilateral and multilateral relations of the United States with other countries and result in negative attitude to American products around the world.

American policy is dominated by the belief that all these actions combined together appropriately and conducted effectively should contribute to the victory over global terrorist organizations. Unfortunately, five years after 9/11 the virus of terrorism is even more widespread around the world than before the attack and the end of GWOT seems to be very distance. Sections 5 and 6 scrutinize the effects that the described costs impose on the economy and their impact on fiscal consolidation processes.

5. Consequences of increasing counterterrorism expenditures

Combating terrorism reduces resources available for more productive activities and diverts them to actions directly related to security and defense. In short run government expenditures are likely to offset the decline of private sector spending[24]. Nevertheless, it is doubtful that the government can lay out resources as effectively as private businesses. The overall effect of the boosted spending on the economy is also dependent on the methods used to finance it, which are discussed in Section 6.

Increasing security expenditures by the government should prompt three basic effects (Gupta *et al.,* 2002). First, a crowding out effect which is manifested by reduced funds available to the private sector for investment

and for more productive public spending. Second, a spin-off effect which is based on the positive supply-side spillover effects of security expenditures on sectors other than defense. Third, there is a resource mobilization effect on savings and investment (Gupta *et al.,* 2002). Effective defense and security spending is likely to enhance both external and internal safety of the country. As a result, one may expect increase in private savings and investment together with attracting foreign capital. Undoubtedly, the last two effects should positively influence the economic growth. However, the positive impact on saving and investment is likely to hold only up to a certain level of the security expenditures. After this point is passed, higher government spending would rather bring down further savings and investment (Gupta *et al.,* 2002). In the aftermath of 9/11, US federal spending rose by approximately 95 billion dollar. The money was earmarked for reconstruction, humanitarian and economic aid, defense and domestic security (Zycher, 2003). Nonetheless, bureaucracy is a costly mechanism that consumes a significant part of additional funds assigned to security. Thus, a raise in spending is not reflected by equal increase in effectiveness of security-related actions. Moreover, obtaining resources by government means much higher costs for an economy than the amount eventually spent. Zycher (2003) argues that doubling the number, which is then 190 billion dollar, should give us a rough estimate of real costs imposed on the American economy. Nonetheless, not only the central government spends money on counterterrorism. Regional authorities also take various steps to enhance security within their territories. It is estimated that American states and localities spent 5 billion dollar in

a year following the September 11 attack. Analogically, one must add the cost of acquiring the resources which was roughly calculated to reach 1 billion dollar (Zycher, 2003). Thus, the response to 9/11 consumed around 196 billion dollar over the first year after the attack.

However, public intervention aimed at reducing the risk of terrorist attacks seems to be justified and necessary. Otherwise, higher perceived risk[25] is very likely to bring about rise of the risk premium, especially for the types of investments or geographic areas which are associated with the excessive risk[26]. Real interest rates would be likely to grow; yet, the reduced demand for investment would impose downward pressure on the former, making the ultimate effect unpredictable (compare: Zycher, 2003). The lower aggregate investment would reduce the long-run capital stock which in turn would have adverse impact on wages and bring about decrease in the demand for assets denominated in the national currency. Consequently, the latter would weaken, *ceteris paribus*. The reduced wages and the weak currency would lead to lowering of national wealth and increase in the general price level.

As already said, the new extensive risks are not equal between economic sectors or geographic regions. Hence, it is plausible that relative prices would be also affected. The new imbalance between different spheres would bring about shifts of human and physical resources among sectors and geographic areas[27] (Zycher, 2003). Such fundamental changes would require workers and businesses to gather information and adapt to the new situation. Thus, a period of increased unemployment would follow (Zycher, 2003). Prospective drop in consumer confidence would be accompanied by fall in pur-

chases of final goods by households. The rise in public and private spending on security and reconstruction efforts would compensate some of this effect; nonetheless, it would not cover all the losses (Zycher, 2003).

The efficiency and effectiveness of government's efforts are another issue which needs to be discussed. A shower of optimistic demands, when the government has to show that it is doing something about terrorism, can cause huge imbalance in spending. The U.S. Department of Homeland Security, which manages the second biggest budget for counterterrorism operations, is often criticized for lack of transparent decision-making criteria and laying out resources without proper risk assessment[28]. Gold (2005) notices that many projects within DHS are passed without comparative evaluations and those with the strongest political, institutional or regional support seem to have superiority. For example, the Federal Bureau of Investigation (FBI) paid 581 million dollar for a computer system allowing data sharing between different agencies. Despite of such a huge amount spent, FBI is not even close to having a functioning system. The key software that cost 170 million dollar has had to be completely scrapped because it simply did not work (Benjamin and Simon, 2005, p. 254). Relatively often grants are given to places that are very unlikely to become terrorists' targets[29]. However, two effects must be taken into account when optimizing the resource allocation. First, terrorists may respond strategically to countermeasures in big cities and target less protected localities. Second, the marginal effectiveness of funds spent, for example, in New York City is likely to decrease with continuing investment (Willis *et al.,* 2005). Consequently, it seems reasonable to

build up security infrastructure in areas that are rather questionable targets for terrorists but only after optimal safeguarding of the most risky areas.

Doubts are also raised when assigning some tasks to public agencies, as it is with *the Aviation and Transportation Security Act*. The incentive system for government employees may lead to overproduction of security; therefore, to excessive costs. It is likely because the public agency is rather judged on its security record than on the overall picture of the aviation system efficiency. Another disadvantage of the proposed solution is its monopolistic nature. A monopoly does not feel the competition pressure; thus, it does not attempt to reduce costs (Coughlin *et al.,* 2002).

All kinds of military or paramilitary conflicts, including terrorism and the war on it, bring about disruptions in international flows of persons, goods, services and investments which in the globalization era are the foundations of economic development. Intensified terrorist risk has made many countries boost or at least rearrange their security and defense spending. Common sense is that military spending brings adverse effect for medium- and long term growth through such channels as: lower capital accumulation, reduced civilian labor force or losses stemming from capital reallocation. Yet, empirical studies bring ambiguous results and do not give a clear answer about the impact of military spending on growth. Most typically, they show that increased defense spending induces boosted growth in short run, but in long run the effect tends to be negative. However, this impact is likely to be small and much smaller than of any other traditional determinant of growth (OECD, 2002).

6. Threats imposed on fiscal consolidation by the war on terrorism

As reaffirmed before, terrorism is likely to bring about negative effects on an economy as a whole by increasing the perceived risk level and boosting or rearranging government outlays. Disruption of economic activities may lead to a tax base erosion, decrease in efficiency of tax administration and distortion of the public spending (Gupta *et al.,* 2002). In other words, lower corporate and personal incomes mean lower tax revenues. This combined together with higher security expenditures and deficits caused by discretionary and mandatory spending may ultimately hamper further economic growth. Consequently, destruction of physical and human capital, and the indirect effects on tourism, trade, and business confidence, not only weaken the fiscal position, but also make future standards of living and ability to satisfy security needs curtailed.

There are three different fiscal methodologies of financing security and defense: expenditure switching, marginally balanced budgets and government borrowing. The first method requires the government to decrease other expenditures in order to be able to earmark more funds to the defense and security efforts. Substitutions may be done even within the concerned categories. An advantage of the expenditure switching is that it affects public deficits and taxpayers to the least extent (Bilmes and Stiglitz, 2006). However, leakages which appear when financing a war abroad are the downside of this method. When public resources are spent on research, infrastructure or education within the country, they have a full first round impact and even bigger impacts in following rounds (Bilmes and Stiglitz, 2006). This is a simple mul-

tiplier effect: each dollar spent within the economy increases business reve-nues, which is followed by the increase of income and employment. Both are associated with growth in consumer spending and savings which are trans-mitted back to the business. Moreover, enhanced quality of infrastructure and human capital is very likely to attract foreign investors. Ultimately, the future long-run output should be higher. Concurrently, the multiplier tends to be significantly smaller when the military operations are conducted abroad (Bilmes and Stiglitz, 2006). Since domestic companies provide numerous goods and services for the army, a part of the resources is spent within the national economy. Similarly, a part of money paid to the personnel abroad goes back to the United States and stimulates the American economy in the first round. Nevertheless, gross of the funds stays abroad in form of interna-tional aid or payments for commodities, equipment, services, etc. Hence, there is no first round effect on domestic GDP and the effects of subsequent rounds are reduced (Bilmes and Stiglitz, 2006). In result, the long-run output will be smaller compared to what would be obtained if the resources stayed within the country.

The second method of financing higher expenditures is based on mar-ginally balanced budgets. In this case, taxes are supposed to increase (de-crease) along with increasing (decreasing) budgetary requirements. Tax cuts may be expected even if the public sector needs are growing; nonetheless, they would be smaller than in times of peace (Bilmes and Stiglitz, 2006). An argument in favor of financing counterterrorism efforts with tax is that secu-rity measures are primarily designed to protect human and physical capital.

Hence, it seems fair to appropriate some part of income tax revenues for a counterterrorism fund. Unfortunately, extensive taxation would make owners of mobile capital to move to other countries, shifting the tax burden to owners of immobile assets (Zycher, 2003). Besides, the transparency of such a system could be abused by politicians, who could go under interest-groups' pressures and add unrelated programs to the counterterrorism efforts. In result, the government could not obtain the citizenry's consent for higher taxes.

Security and defense programs can also be financed by the government borrowing, which is traditionally used in the United States[30]. It seems appropriate to finance the counterterrorism efforts with debt because the future generations will derive nontrivial benefits, assuming effectiveness of taken actions. Thus, the benefits will be aligned with the costs (Zycher, 2003). Putting it in other words, future generations should pay the price for living in peace. Recent increases in expenditures and tax cuts have brought about federal budget deficits in the United States. Table 1 shows the growing fiscal burden of defense and homeland security and its impact on budget deficit and gross federal debt.

As shown in Table 1, the federal budget ran surpluses in Fiscal Years 2000 and 2001. The increased national defense and security expenditures after the September 11 led to the budget deficit, which in FY 2005 amounted to 426.6 billion dollar. Similarly, in FY 2005 the gross federal debt exceeded 8 trillion dollar, which represents approximately 43 per cent growth when compared to its FY 2000 level. The gross federal debt to GDP ratio rose from

57.34 per cent in FY 2000 to 64.32 per cent in FY 2005 (U.S. Census Office).

The right side of Table 1 shows the main contributors to the debt growth. The

annual spending on national defense has almost doubled since FY 2000,

which gives 1 per cent increase in relation to GDP (U.S. Census Office). The

homeland security expenditures almost tripled in nominal terms and in rela-

tion to GDP grew from 0.13 per cent in FY 2000 to 0.27 per cent in FY 2005

(U.S. Census Office). Growing debt is quite likely to result in upward move-

ments of interest rates which equal higher debt costs and impose even heav-

ier burden on the federal budget.

Table 1.

***Gross federal debt, budget deficit, national defense and
homeland security spending (2000-2005 in billion of dollars)***

Fiscal Year	Surplus/deficit	Gross federal debt	National defense expenditures		Homeland security expenditures	
			USD bln	Year-to-year growth	USD bln	Year-to-year growth
2000	236.4	5 628.7	294.5	n.a.	13.1	n.a.
2001	127.4	5 769.9	305.5	3.74%	n.a.	n.a.
2002	-157.8	6 198.4	348.6	14.09%	17.6	n.a.
2003	-377.6	6 760.0	404.9	16.17%	32.0	82.08%
2004	-412.1	7 354.7	455.9	12.59%	26.5	-16.99%
2005*	-426.6	8 031.4	465.9	2.19%	33.3	25.33%

* Estimation

Source: U.S. Census Office, www.census.gov.

Further commitment to the Global War on Terrorism and enhancing home-

land security requires investment of significant resources[31] which are most

likely to be paid from the American budget. Demanding trade-offs are neces-

sary and they will become even more difficult with time when the administra-

tion faces increasing fiscal burdens, such as growing debt and its costs. Future costs of GWOT, which are certain to be in hundreds of billions of dollars (see Section 4), are dependent on many variables. The direct determinants are extent and duration of military operations, facilities necessary to support service members, eventually force redeployment plans and, subsequently, reset costs. The GWOT related costs are also covered by other U.S. government agencies. Among them the most notable are the efforts to construct and sustain capable governments in Afghanistan and Iraq and the long term costs of caring for veterans[32].

Summing Up

Since security is a classic public good, authorities have to work out their strategy to ensure safety of citizens and businesses. Consequences of neglecting this task may be very costly for an economy, hindering its further growth or causing decline in national wealth. Generally, there are two basic models which governments may use to combat terrorism. The first one assumes that prevention and assistance to poor countries would considerably contribute to diminishing the terrorist risk. The second one concentrates on short term issues and is based on punishment and deterrence. In practice many countries try to combine the two of them; still, the emphasis is put on the latter. Respectively to the chosen model, the cost structure will vary, what is shown in the proposed cost classification.

When earmarking resources for counterterrorism, the government should conduct a cost-benefit analysis and react rationally by seeking the op-

timum level of resources committed to defense. A problem may occur when the authorities assign too many tasks to public agencies, which will never be as effective as private entities. First of all, they have monopolistic nature and are not dedicated to reducing costs. They are run by human beings that react emotionally to petrifying terrorist actions and very often succumb to political pressures. Undoubtedly, appropriating big amounts of resources for defense and homeland security may impose serious consequences on the entire economy. The two groups of expenditures neither do contribute to improving country's human or physical capital nor bring results similar to those of research and development activities. Nowadays it is impossible to determine even rough estimates of costs incurred in the global campaign against terrorism. Nevertheless, effective actions will generate significant benefits in form of avoided losses from reduced trade and investment flows which are crucial for economic growth. Concurrently, since global markets transmit terrorism's costs around the world and terrorists operate across different countries, failure to curb their activities will impose costs on all open economies and their populations.

NOTES

[1]   Over 30 thousand people died in 18 thousand terrorist attacks between January 2001 and September 2006 (*Wprost*, 2007).

[2]   Such opinion can be found in: Becker and Murphy (2001), OECD (2002), Brenner (2001), Raby (2003).

[3]   Such opinion can be fund in: Abadie and Gardeazabal (2003), Abadie and Gardeazabal (2005), Enders and Sandler (1996), Pshiva and Suarez

(2004), Frey, Luechinger and Stutzer, (2004), Eckstein and Tsiddon (2004).

4   Note that the increase in protection may vary among people, economic sectors or even geographic regions; thus, taken measures may have different value for various individuals.

5   The European Union provides a good example for effectiveness of this method. Its establishment was based on the idea of bringing peace to the continent by enhancing economic cooperation and dependence of member states on their neighbors. The results have been extremely positive: although the continent was plagued by wars and atrocities over past centuries, nowadays, a war between EU countries seems unimaginable. Another example are the UN *Millennium Development Goals*, which set targets to reduce extreme poverty and hunger by half by 2015 (see: http://www.un.org/millenniumgoals/).

6   An example of sanctions was the D'Amato law, which was introduced in 1996 in the United States. The bill obliged the American President to impose restrictions on any company investing more than 40 million dollar a year in the gas and petroleum industries of Iran or Libya (Economist, 1996). Probably the most famous and toughest embargo was the one imposed on Iraqi trade in years 1990 – 2003. Its effectiveness was very doubtful (see: BBC News, Dec 19, 2002, http://news.bbc.co.uk/2/hi/europe/2591351.stm); furthermore, the sanctions turned out to be a humanitarian catastrophe (UN Office of the Spokesman, 2006, and Graham-Brown, 2000).

7   Nowadays, the most dangerous are the ex-Soviet and North Korean arsenals, and Iranian nuclear ambitions. A long-running effort to dismantle weapons and secure poorly protected nuclear materials in the former USSR countries started in the 1990s. In 2002 the G8 leaders pledged 20 billion dollar to the program (Economist, 2005a).

8   Security enhancing efforts are being carried out by federal, state and local authorities. Zycher (2003) estimates that American states and localities spent 5 billion dollar in a year following the September 11 attack.

The author points out the lack of detailed data on security spending from state budgets (Zycher, 2003).

[9] Agencies other than the Department of Defence do not track the war-related costs. Even DOD meets numerous reporting problems and its statements are of low reliability (Walker, 2006).

[10] Although not shown in Figure 2, each category of actions is supported by research and development programs.

[11] American homeland security expenditures have been characterized by a high growth rate: in FY1995 the spending amounted to 9 billion dollar, in FY2000 it was 13 billion dollar, 16 billion dollar in FY2001, 34.5 billion dollar in FY2002, 37.1 billion dollar in FY2003, 40.7 billion dollar in FY2004 and 46 billion dollar in FY2005 (Benjamin and Simon, 2005, p. 240, U.S. Census Office).

[12] The most renowned examples are the September 11 attack, the Lockerbie atrocity of 1988, the foiled plot to blow up 10 passenger jets in August 2006 and the conspiracy to attack airplanes departing from India in autumn 2006.

[13] For more details on *the Aviation and Transportation Security Act* (ATSA) see: Coughlin, Cohen and Khan (2002).

[14] Over a half of the amount are the passenger and baggage screening costs (5.25 billion dollar). Additionally, the act introduced air marshals, tighter airport security measures, reimbursement of airport authorities (see: Coughlin *et al.*, 2002).

[15] Examples of attacks on rail infrastructure: Paris underground bombing in 1995, several bombs blew up on trains in Madrid on March 11, 2004, London underground bombings of July 7, 2005.

[16] If e-commerce channels were shut down for one day in 2003, the immediate losses could amount up to 6.5 billion dollar (Coleman, 2003).

[17] The new policy is based on the two major assumptions. First, it is beneficial to push the border out by moving particular operations offshore to preclude threats from approaching American borders, for example by requiring advance information on cargo and passenger manifests or moving

Customs and Border Protection personnel to overseas ports. Second, *profiling out* helps to avoid unnecessary noise and concentrate resources on trouble spots (identifying trustworthy individuals or entities and allowing them to bypass routine inspections). See: Riley (2006).

[18] Half of the amount was put into the budget for fiscal year 2002, a quarter was made available immediately and the rest was provided to the President's discretion (Economist, 2001).

[19] The United States Department of Homeland Security was established in 2002 as a partial merger of 22 separate agencies and offices. DHS employs 180 thousand people and is responsible for protecting the country from terrorism and natural disasters (Economist, 2005b).

[20] After the attack of September 11, thousands of counsellors were hired as a part of the "*Project Liberty*". Their job was to meet and talk to 1.2 million people (Economist, 2005c). The US Government Accountability Office estimated that the project cost approximately USD 121 million for the period from September 11, 2001 through September 30, 2004 (US Government Accountability Office, 2005).

[21] The number does not include losses caused by personnel deaths in occupied countries which are estimated to be around 12 billion dollar (Bilmes and Stiglitz, 2006).

[22] Mostly because of increasing costs of the operation in Iraq. At the same time, the costs of operations in Afghanistan were gradually decreasing (Bilmes and Stiglitz, 2006).

[23] The estimation is based on two scenarios. In both of them America begins its troop withdrawal in 2006. However, in the first one all the troops will be withdrawn by 2010 and in the second one by 2015. For more details see: Bilmes and Stiglitz (2006).

[24] Blomberg, Hess and Orphanides (2004) proved that in years 1968 through 2000 terrorist attacks led to rise of government spending in relation to GDP. Furthermore, they showed that in short run the rise in the government spending could offset the reduced investment spending of the same volume.

[25] Five years after 9/11, American investors seem to be more risk averse than before. Money managers invest as little as 50 per cent of their cash, while 40 per cent of fund managers admit to hold more cash in their port-folios than they used to do normally. At the same time the price of gold, a typical refuge for risk adverse investors in uneasy times, doubled (Bernstein, 2006).

[26] New risk distribution pattern would cause returns on safer assets to fall relative to returns on riskier ones. A transition period would follow during which it would be difficult to determine the appropriate relation between interest rate and risk (Zycher, 2003).

[27] The simplest example is increased security consumption, which would re-sult in consumption reductions in both public and private sectors; thus, shift of resources to the security sector would ensue (Zycher, 2003).

[28] Compare: Gold (2005), Willis *et al.* (2005) and Wermuth (2005).

[29] Zanesville, Ohio, spent 87,500 dollar in 2002 on such appliances like a thermal imager to help find victims in smoke, a thermal heat gun to test the temperature of gases, a test kit for deadly nerve agents, a monitor to measure oxygen and carbon monoxide levels in the air, four chemical suits, and many more. Such devices would be very helpful in big cities but not in a mostly agricultural county with a town of 26,000 which does not have any critical infrastructure. Similarly, in Grand Forks, North Da-kota, the number of bought bio-chemical suits is higher than this of police officers; what is more, the city has no place to store them (Hall, Oct 29, 2003).

[30] All wars in the American history, except for the Korean War which was financed by taxation, were funded by some combination of debt issuance and monetary creation (Gold, 2005).

[31] Gold (2005) estimates that by the end of the decade, the government se-curity spending, similarly with this of private sector, will increase by 100 – 200 per cent.

[32] The US Department of Veterans' Affairs has estimated that over 100,000 veterans from operations in Iraq and Afghanistan are currently using its health care services (Walker, 2006).

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