How can business cope with terrorism?

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Abstract

“What can business do to cope more successfully with terrorism?” The policy against terrorism available to business is a neglected issue in the scholarly literature especially in so far as individual firms rather than the business sector as a whole are concerned.

Two sets of proposals are advanced, based on an economic analysis of terrorism. The first set discusses possibilities to reduce terrorists’ incentives to attack business premises; the second part outlines proposals designed to minimize the costs to businesses once a terrorist attack has taken place, hence reducing the impact. © 2009 Society for Policy Modeling. Published by Elsevier Inc. All rights reserved.

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1. Neglect of policy advice to business

The relationship between terrorism and business has been studied in the literature on terrorism but it certainly has not been at its forefront. Most attention has been directed towards assessing the impact of terrorist attacks on particular sectors of the economy (in particular on tourism, trade, foreign direct investment, insurance, and defence) as well as on the macro-economy (financial...
asset prices, national income, and life satisfaction\(^4\). Most of these studies take into account and make explicit that a substantial part of the costs imposed on business have been caused by the political reactions to terrorism, in particular those following the attacks of 9/11. Thus, the grounding of the civilian airlines in the United States, or the introduction of much stricter security measures for international travellers and international trade, have imposed additional heavy costs on business enterprises. The impact of anti-terror policies, including the so-called “War on Terrorism”, have produced cumulative material costs of much greater magnitude than the direct effects of the terrorist acts. Yet, it is the more spectacular and obvious effects that have received by far the greatest attention in the media.

A quite different aspect of the relationship between business and terrorism pertains to the similarity in organisational forms. International terrorism has, to some extent, imitated the “global franchise” models of international businesses such as McDonald’s or Starbucks. Al-Qaeda has become such an entity, no longer directly controlled by Osama Bin-Laden but still deriving inspiration from his example. Most international terrorist groups of the 21st century are no longer organized in a strict hierarchical form. Rather, they function, more or less, as informal networks which makes their members much more difficult to identify and capture (e.g. Sageman, 2004, 2008).

This paper is policy orientated; it does not intend to contribute to the literature previously mentioned, but it builds on the models used in the economic approach to terrorism. The question to be answered is: “What can business do to cope more successfully with terrorism?” The policy against terrorism available to business is a neglected issue in the scholarly literature\(^5\) especially in so far as individual firms rather than the business sector as a whole are concerned. In this paper, the term “coping with”, rather than “fighting”, terrorism has been chosen on purpose. In line with all serious scholars I start from the position that terrorism always has existed, and always will exist (see e.g. Parry, 1976). It is impossible to eradicate terrorism completely, not even if the most stringent deterrence policies are employed. Business leaders should not fall prey to the illusion that terrorism is a transitory phenomenon that will disappear in due course. Rather, they need to muster ingenuity and resources and set out to deal with terrorism as a part of the many other challenges they must face.

Two sets of proposals are advanced in this paper, based on an economic analysis of terrorism. The first set discusses possibilities to reduce terrorists’ incentives to attack business premises (Section 2); the second part outlines propositions designed to minimize the costs to businesses once a terrorist attack has taken place, hence reducing the impact (Section 3). The six concrete proposals advanced here are preliminary and are intended to initiate a more extensive discussion about their advantages and disadvantages. It is readily conceded that there may exist other proposals, potentially of equal or greater usefulness. However, to my knowledge, no such policies have been developed so far. This paper’s goal is to launch a discussion about the possible solutions available to businesses in order to successfully deal with terrorism rather than to simply curse terrorism, make vague appeals, or to remain in the academic ivory tower of pure analysis.

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\(^4\) See e.g. Bird, Brock Blomberg, and Hess (2008) who provide further references. The effect of terrorism on life satisfaction is discussed and applied in Frey, Luechinger, and Stutzer (2007).

\(^5\) The more popular literature does not do any better. It often restricts itself to quite general and vague appeals to “join forces with the government to fight terrorism”. 
2. Reduce the incentives to attack businesses

Terrorists can be considered rational actors in the sense that they want to reach their goals as efficiently as possible. Thus, rationality does not refer to the goals the terrorists want to achieve. The specific goals of a terrorist group may appear outlandish and difficult to appreciate by outside observers, but terrorists, nevertheless, will endeavour to reach these goals as efficiently as they can. They strive to achieve a maximum effect through the actions chosen. Empirical research has convincingly established that terrorists indeed opt for those kinds of actions from which they expect the highest benefit–cost ratio (e.g. Enders & Sandler, 2006; Frey, 2004). If, for instance, the police make some kind of terrorist act more difficult to accomplish, terrorists quickly shift to a different attack mode.

Terrorists being rational actors, it is necessary to consider the benefit–cost relationships of various strategies from the point of view of the terrorists. Businesses are used as targets by terrorists for many different reasons:

- Some firms are highly visible targets; an attack on them is certain to attract the attention of the media, wide sections of the population, and, of course, the government thus supply terrorists with the publicity they seek.
- Many firms are soft targets in the sense that it is impossible to prevent potential terrorists from coming near or even entering the premises.
- When firms are attacked, the economic process is disrupted. The firms directly or indirectly affected may be induced to relocate to other areas or countries. International firms are less likely to undertake direct foreign investments in that area. The economic situation within the affected country may worsen, leading to dissatisfaction and possibly even revolts, making it more likely that the proclaimed goals of terrorists become more acceptable and reasonable.
- Some companies may be part of the control and authority on which the power of the government that is opposed by the terrorists rests. The firms may be owned by the government or by members of the government. Companies may support the government financially, or help it by providing advice and technological means. Attacking such firms reduces the government’s possibilities to pursue its own goals.

The stronger the effects terrorists may expect their acts to have on businesses, the more likely it is that they will attack firms. Firms represent attractive targets as they can be situated almost anywhere, and therefore, are difficult to protect. In contrast, government organizations are often concentrated in certain parts of cities, which may be cordoned off and protected through security measures. Moreover, private firms have to provide and finance their own protection. They have to hire commercial security firms and have to install expensive equipment raising their costs of production.

Business actors have to devise strategies, which make acts against businesses become less attractive to terrorists because their benefit–cost ratio has been lowered. Important goals for terrorists are to receive as much publicity as possible for their demands, and to induce governments to yield totally or at least partially to their demands. The first two proposals seek to lower the benefit–cost ratio to terrorists, and to therewith reduce their incentives to attack. Both proposals build on the force of decentralization, the first one with respect to buildings, and the second with respect to organization.

**Proposal 1.** Terrorists have a lower incentive to attack when business buildings are decentralized rather than centralized.
When the productive activity of a firm takes place in not just one but in several different locations, an attack has a less devastating effect on a company than if all activity is centralized in one location. If one production location is hit, the other locations may quickly stand-in and take over so that the commercial activities may swiftly and effectively be resumed.

Decentralization is also useful when a business is confronted with the threat of an attack, in particular the threat of a bomb. If every sector of a business is concentrated in one building, all productive and administrative activities are disrupted in case of a threat, as employees will have to evacuate the building and the premises have to be carefully searched.

Centralized buildings, especially headquarters, have additional disadvantages. Sometimes such buildings may play an “iconic” role, representing the “spirit”, “image” and “trademark” of an enterprise. This adds to their attractiveness as targets for terrorists. Attacking them will deliver a heavy blow to the enemy and guarantee extensive media attention. The latter is of crucial importance to terrorists who want to propagate their goals to as wide an audience as possible.6

It may be argued that it is easier to protect only one central location than it is to secure many dispersed locations. This may indeed be the true for certain instances, but is unlikely to be generally true. It is well known that it is practically impossible to ensure that terrorist attacks are always thwarted. Even substantial expenditures, hiring private security services, equipped with the most advanced anti-terror technology, cannot always prevent a terrorist attack. In any case, protective measures exhibit strong diminishing returns, i.e. it is relatively cheap to thwart ill planned and small scale terrorist attacks but the costs of protection increase steeply when the probability of an attack is to be reduced further. This suggests that it is often more efficient to provide relatively minor protection to several disjoint buildings such as using road blocks to prevent explosives from being carried on lorries close or into the buildings and TV surveillance to monitor persons entering the buildings. These measures are already now a matter of course in many firms so that no additional costs will arise.

The proposition to decentralize activity and to occupy and utilize several buildings will produce higher costs to a firm when it is subject to economies of scale. These size advantages can be assumed to be larger for production activities than for administration as contact between employees can be established and maintained by virtual means such as phone, fax, e-mail, intranet and closed-circuit TV. It follows that an optimal policy to cope with terrorism is not to fully decentralize into a large number of different buildings but to make an effort to do so for those activities that are not subject to economies of scale, or even have diseconomies of scale.

Proposal 2. Terrorists have a lower incentive to attack a firm’s major exponents when a firm’s decision-making is decentralized rather than centralized.

A person who is in sole and complete charge of a firm’s business affairs represents an attractive target for terrorists. To kill, or take hostage a person who acts as both CEO and president of a company, represents a much a larger success for terrorists than if two persons hold these positions. As is the case for the protection of buildings, the argument rests on the (realistic) assumption that it will never be possible to comprehensively protect a person, and that it becomes increasingly costly to lower the probability of an attack. Similarly, if terrorists attack a person who runs and personifies a company they can expect higher media attention than if it is known that there are several persons leading the firm.

6 See Frey (2004), and for an empirical analysis Frey and Rohner (2007).
If decision-making is decentralized (rational) terrorists have a smaller incentive to attack respective business leaders and, therefore, will attack them less. A company in question will need to spend fewer resources to protect their managers and thus saves money.

Decentralization of decision-making is not only important and useful for the top echelon of a firm (such as the president, the CEO, CCO, CFO, CIO, etc.) but also for the administration department and back offices of a corporation. If these are concentrated in one location even a hoax bomb warning may strongly disrupt business. Employees will have to leave their work places and be evacuated which is not only a hassle but also costs much time and effort. Moreover, such an incident creates uncertainty and confusion, which may hamper effective management.

To decentralize decision-making certainly has its costs. It is well known that personal relationships among the top decision makers in a firm are important. However, in view of the threat of terrorism, management can, and should, learn to effectively use other forms of interaction such as televised conferences. It may well be true that it is easier to protect a group of managers than each one of them separately (i.e. there are some economies of scale of protection). However, it is crucial to remember that it is impossible to guarantee complete protection against attacks. Also, the potential harm done to a business in case terrorists successfully attack and annihilate the whole top echelon is extremely high and should, therefore, be reduced and avoided as much as possible.

The third proposal, geared to reduce incentives for terrorists and prevent them from launching an attack, intends to raise the cost–benefit ratio to terrorists by negatively affecting those persons terrorists depend on, or whom they value highly.

**Proposal 3.** Take relatives, friends and supporters as (virtual) hostages.

A business corporation can increase costs to terrorists by hiring people who are of special importance to their potential attackers. These can be persons who are emotionally close to the terrorists such as parents, brothers or sisters, other relatives and friends, or individuals terrorists depend on for financial, material or political support. These persons could lose their jobs, be hurt or even be killed in an attack. As a consequence they will not support terrorist attacks and turn against the terrorists, or will at least make an effort to convince them not to attack the firm they are associated with. An attack therefore would significantly raise the costs to terrorists.

The (at first sight counter-intuitive)\(^7\) proposal suggests that firms should make an effort to hire persons associated in this way with terrorists. As a result they become (virtual) hostages in the sense that the attackers will have to suffer costs in case the interests of these persons are damaged. The damage may refer to their physical integrity but also to their employment prospects. This effect of raised costs is strengthened if a firm that employs friends and relatives of terrorists situates their jobs in those places most likely to be hit by potential attackers. In this way they effectively serve as a buffer zone for the firm.

Terrorists are forced to evaluate the costs to them when damaging the interests of the virtual hostages and have to consider whether their activity is worth the cost of having their relatives, friends and supporters lose their jobs, be hurt or even killed in an attack. The higher these costs are, the smaller are the terrorists’ incentives to attack.

The strategy of taking (virtual) hostages also involves costs to the firms in question. The firms must evaluate whether the added cost of hiring such individuals will be beneficial in terms of

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\(^7\) To take virtual hostages can in somewhat similar ways be observed in other areas. Firms routinely gather information about the family of their employees and security services seek extensive information about the persons surrounding a subject. The “Hell’s Angels” and other groups were employed by the underground providers to guarantee security, and the University of Southern California hired the parents of the youngsters who painted graffiti in the university campus.
reduced risk. Most likely such persons will not always be the most suitable and able employees but there are certainly many jobs (such as those of cleaners or helpers) for which they can be hired. In many places, especially in developing countries, such persons can be hired at low cost so that the expenditures remain rather low. However, firms must consider the danger that these employees may actively collaborate with terrorists, for instance by providing them with information on the most effective way to attack the firm. But this only represents an added cost if this information had not been available to the terrorists before. Sometimes, the dissemination of such information may also be beneficial to the firm, especially when terrorists realize that due to the decentralization of the activities (see Proposals 1 and 2) a firm is resilient and attacks are futile. The strategy works less well when it is unknown which terrorist group is involved. However, even in that case the disincentive provided by virtual hostages may work as long as the firm has hired local employees who risk losing their jobs or even their lives if a successful terrorist assault occurs. These employees may well be better informed than the executives of the firm and have an incentive to help to reduce the chance of attack.

The leaders of a terrorist movement are often aware of the risk that virtual hostages can pose to their organizations and seek to reduce it by employing members who have no local roots and ties. However, this response does not fully undermine the proposal. Even if the employees have no personal relationship to the terrorist attackers they bear a cost if they lose their job with the firm assaulted because it reduces or even discontinues its activities. Moreover, the locals negatively affected are likely to reduce their political support of the terrorists and their cause.

The strategy of taking virtual hostages is likely to work best in a developing country. Consider a foreign firm that runs a production plant in a poor country. It employs only a few or no local workers, and keeps out any person who has any kind of personal or political relationship to potential terrorists. In such a scenario only very few persons have an immediate interest to oppose and prevent a possible attack by the terrorists. In contrast, if a firm hires many locals who are related or who are friends to the terrorists, as well as other persons who will profit from the existence of the firm, these persons will certainly oppose an attack as it could threaten their personal interests. It may even induce them to reduce or stop their support of the terrorists. The strategy can, of course, not guarantee that terrorists will not attack, but it does reduce the probability of an attack as terrorist groups heavily rely on the support of the local population.

3. Mitigate the costs of attack

A firm, which has suffered a terrorist attack, has several possibilities to reduce the severity of the damages. If this is done in an effective way, (rational) terrorists will realize that their attacks produce less damage than they had hoped for. The terrorist organization will therefore have a smaller incentive to attack yet another time. Moreover, it will provide a lesson and strong signals with respect to possible attacks on other firms, as well as to other terrorist groups.

Three proposals are presented in this regard.

Proposal 4. Prepare for quick intervention after an attack.

By preparing carefully for the event of an attack the damages suffered by a firm can be reduced considerably. Immediately after an attack a firm’s own security service or police force as well as the fire fighting personnel must ensure the safety of the area. If possible they must ensure the integrity of buildings and prevent panic from spreading and causing additional damage. They must also keep away spectators in order to keep the space open for the quick arrival of rescue teams. The ambulance teams must ensure an efficient treatment of casualties on the spot, and good
medical treatment thereafter. That these preparations need to be made seems self-evident but they are not, as can be seen with many TV reports showing the immediate aftermath of terrorist attacks. In Israel, which has been subject to a great number of terrorist attacks, researchers have analyzed the conditions that determine how many persons die in an attack or how quickly and fully they eventually are able to recover from their injuries (Perliger & Pedahzur, 2006). It turns out that it is of great importance to immediately secure the area after an attack. Several cases have been reported in which the rescue teams could not find the exact place, or could not reach it quickly because people blocked their way and bystanders interfered in their task.

Preparations for rapid intervention certainly cause costs to firms. However, the precautions are also useful for other contingencies a firm may be faced with, in particular fires or other accidents occurring for other reasons than terrorism. Firms can lower their cost by arranging for the exchange of services with neighbouring firms.

Proposal 5. Prepare for the rapid reconstruction of physical capital.

Terrorists want to impress the public and the media by causing devastating and lasting damage. This aim is frustrated if the company in question has ready plans and the will to rebuild destroyed structures quickly (see Frey & Rohner, 2007). At the same time, management should make great efforts to resume production and other activities immediately. This may not only reduce direct costs but it will also demonstrate and prove to everyone that the firm is steadfast and resilient. If these actions are not undertaken, the wreckage and the disrupted production will constantly remind everyone of the successful attack and therewith of the terrorists’ power.

Modern technology allows to reconstruct buildings quickly. The costs depend on the availability and free capacity of the building industry. If local firms are not able to provide the needed services quickly and efficiently, builders from outside the region or from a foreign country may be called in. To avoid bureaucratic hassle (which otherwise is often the case when construction is concerned), the firms may secure the right of turning to them before they decide to become active in a certain locality. It should also be noted that if a firm has been attacked, economic activity might well be hampered in general, thereby providing the necessary capacity for rebuilding.

Proposal 6. Prepare for the rapid reconstruction of human capital.

A firms’ resilience should also be demonstrated by making a strong effort to rapidly recover the human capital lost. This is particularly important in firms whose competitive, non-imitative advantage relies on a particular set of employees. Medical and psychological help offered to the injured also strengthens the firm as a social unit to which loyalty is extended. The organization of the firm should be as flexible as possible to enable the replacement of victims. In particular, the rules of succession for every leading position in the corporation must be clearly established.

The costs of being able to rapidly and effectively recover the human capital lost in a terrorist attack may be considerable. However, the higher flexibility makes the firm also more resilient against other contingencies such as natural disasters or excessive wage demands by trade unions. The more important these considerations are, the more advantageous it is for businesses to invest in order maintain the human capital embodied in their staff.

4. Conclusions

The adoption of the strategies comprised in the six proposals will not eradicate terrorism—but a complete obliteration of terrorism cannot be achieved through any other method either. These proposals serve to render terrorism less devastating and possibly even induce supporters of terrorist
movements to pursue their goals in a legitimate way. The strategy suggested may look somewhat unattractive at first but it should be compared to the anti-terror policies employed now, which is based on killing and incarcerating terrorists. Such a deterrence strategy has proved itself unsuccessful, and may well have intensified terrorism (see e.g. Wilkinson, 2001). It is naïve to think that killing terrorists (or, all too often, persons falsely accused of being terrorists) “wins the war against terrorism”. Members of terrorist organizations, who cannot see worthwhile alternatives in their lives will continue to turn to terrorism, and often will do so even more quickly if a superior in their ranks is killed. This death at the hands of their enemies offers them the chance of a promotion within the terrorist hierarchy, and in addition, gives them a moral pretext to engage in revenge.

The proposals made here are based on a much different view of terrorism than that held by the proponents of deterrence, which relies on brute force. These proposals are based on the rational choice theory according to which all persons on average, and that includes potential and actual terrorists, systematically respond to relative price changes. The propositions advanced here all serve to change the benefit–cost relationship faced by persons considering engaging in terrorist acts; they reduce the expected cost–benefit ratio to terrorists.

Proposal 3 (Take relatives, friends and supporters as (virtual) hostages) serves to increase the costs to terrorists to attack a firm. However, these costs are imposed indirectly by hurting other persons. Such psychic costs differ substantially from direct costs. It can safely be assumed that only very few people, also among terrorists, derive pride from hurting their relatives and friends. For terrorists it is counterproductive to impose costs on their supporters as it induces them to turn away from the terrorist movement.

The other proposals serve to reduce the cost to the firms attacked and therefore reduce the expected benefits for terrorists to attack. Proposals 1 and 2 argue for decentralization, and Proposals 4–6 offer ways to reduce the possibly devastating effects once an attack has occurred.

Terrorists are not only motivated by extrinsic incentives. In particular, core members may, at least to some extent, pursue their goals because they genuinely believe that theirs are worthy ideals. Raising the expected costs to terrorists may lead to counterproductive effects; raised costs could increase terrorists’ intrinsic motivation to pursue their ideological goals (see, more fully, Frey, 1997, 2004). The imposition of costs tends to create martyrs who are proud to continue on their course even if their costs have risen. They may even derive some satisfaction and pride from the fact that they are faced with high costs; it signifies that they belong to the core of the chosen terrorist group (see, for a similar argument, Iannaccone, 1998 for the case of religious groups). The proposals advanced, therefore, predominantly rely on lowering the expected costs of an attack.

The proposals made here should be looked at from a comparative perspective. The question is not which strategy will be able to stamp out terrorism. This will not be achieved by any policy, despite claims to the contrary. Rather, the goal for business and society must be to live as well as possible with this curse, and not to let one’s activities be unduly disrupted by terrorism. The six proposals made here are designed to contribute to this goal. It cannot be expected that the corporate community will adopt them readily because business leaders are reared to believe only in hard counter-measures for which they lobby in parliament and government. The proposals made here may at first appear “soft” but they do work. The basic intention is to reduce the benefit–cost ratio of attacks for terrorists, and to therewith induce them not to attack. Not all terrorists, and most likely not the hard core, will immediately and strongly respond by reducing violence (it must always be remembered that this cannot be achieved by any policy). But it can safely be predicted that the less strongly committed terrorists, those that are potential terrorists, and the persons supporting them, will indeed react in the form desired. Experience and empirical research on terrorism demonstrate
that such changes in incentive as here proposed do work slowly but steadily, and that business can therewith cope with terrorism.

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References