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WHY DO EUROPEANS FLY SAFER? THE POLITICS OF AIRPORT SECURITY IN EUROPE AND THE US

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Hitherto, political science has failed to answer a rather simple question: Why do some states provide high levels of airport security, while others fail to do so? Drawing upon a rational choice institutionalist framework, we compare airport security regimes in the US and Europe (in particular Germany) and show that the performance gap before September 11 can be largely attributed to institutional factors. In the US, responsibility was assigned to airlines, whose cost-cutting efforts resulted in lax controls. In Germany, the government shielded the provision of airport security from market pressures. We claim that delegation of responsibility for airport security to the government is a necessary, yet not a sufficient condition for a high security performance. Systems in which responsibility lies with private airlines are doomed to fail, since private markets are ill-equipped to provide a high security performance. While airlines have a long-term interest in safeguarding civil aviation, there exists both a time inconsistency and a collective cost problem that prevents sufficient investment in security in the short run. Thus, US policy-makers are well advised to resist the growing pressures for re-privatization and cost-cutting as well as to eliminate remaining flaws in the current federalized system.

INTRODUCTION

The issue of airport security policy strikes scholars with an intriguing puzzle: Despite the generally high interest of citizens in safe air travel, a systematic cross-national comparison reveals that the performance of airport security regimes on both sides of the Atlantic is diverging widely, with Europe at the top. For all the key indicators we consider, the US regime performs substantially lower than its

European counterparts. This leads us to ask: What accounts for the variation in the performance of airport security regimes? Why do states react differently to the global threat of terrorist attacks against civil aviation targets? Have airport security policies improved since the September 11 attacks? Unfortunately, the political science literature hitherto does not provide any answer to these questions despite the high importance of the topic.[1] To improve existing policies, we need to know why some security regimes are more effective than others in preventing terrorist attacks.

Based on two detailed comparative case studies of the US and Germany, the exemplary case for the European approach to airport security, this paper demonstrates that the performance of airport security systems is largely a function of their underlying institutional configuration. We find that the delegation of *responsibility* for airport security measures to the government is a necessary, but not a sufficient condition for a high security performance. In any case, systems in which responsibility for airport security lies with private airlines are doomed to fail, since private markets are ill-equipped to provide a high security performance. The reason is that while airlines have a long-term interest in safeguarding civil aviation, there exists both a time inconsistency and a collective cost problem that prevents them from sufficiently investing in airport security. This argument is in line with the available empirical evidence of various other countries.

Our analysis carries important policy implications for the future of airport security in Europe and the US: Airport security needs to be left to the government, preferably with a single, fully accountable institution that has no commercial interest in air travel, a sufficiently long time horizon, and whose organizational goal is tied directly to high security performance. That is why the US government's decision to federalize screening in the aftermath of September 11 represents a positive turn. However, we show that key remaining weaknesses require immediate improvements (that arguably would even result in substantial cost savings) and that the danger of erosion is already looming on the horizon. In turn, as the Americans are trying to catch up to the international average, the European countries have moved a step beyond their already higher airport security standards in the aftermath of the September 11 attacks. They have recently introduced the first supranational airport security system. These binding regulations raise the standards of all EU-members to those of the best performers. While their experience shows that there is a role for private screening companies in the *conduct* of security measures if implemented in a rigorous institutional straightjacket, European policy makers should strive to keep their airport security systems as

heavily government dominated as they currently are. The increasing use of private firms in the execution of airport security tasks might soon conflict with security performance if taken any further.

The paper is divided into seven parts. The next section presents empirical evidence for the claim that airport security is worse in the US than in Europe. In the third and fourth parts we examine the trajectory of airport security regimes in the US and Germany. Part five puts the cases in a comparative perspective and lays out the analytical argument. Part six examines the recent changes made in US and European airport security policies as a reaction to the September 11 attacks in light of the general argument. The last section offers concluding remarks and policy recommendations.

THE DIVERGENT PERFORMANCE OF AIRPORT SECURITY REGIMES IN EUROPE AND THE US

The fact that airport security, at least before September 11, was worse in the US than in Europe is hardly new to aviation experts, although this claim has rarely been quantified in comparative data. Concerns have long existed about security at US airports. Numerous reports compiled over the last twenty years by controlling agencies, watchdog organizations, and journalists all point to the fact that the performance of the US airport security regime was rather low.[2] In turn, experts agree that European countries have implemented comparatively effective and tight security standards at their airports.[3]

The results of the few studies available accentuate this view.[4] To quote Isaac Yeffet, a former security director at El Al airlines who conducted a study in the wake of the 1988 Lockerbie disaster:

> There is no airline security in the United States. [...] From poorly phrased or non-existent pre-board questioning, ineffective use of X-ray machines and metal detectors to curbside check-in, there is nothing that Americans do well when it comes to airport security.[5]

Apart from lax regulations and a general lack of commitment towards security issues, his main criticism aims at the enormous gaps in human security:

> Humans alone can make judgment calls. Yet Americans place decisions as to whether a plane is secure or not in the hands of a poorly trained, underpaid, unmotivated and overworked contract employee.[6]

However, most of the existing studies are restricted to a single case and do not assess the performance of different airport security regimes in a rigorous comparative perspective. To overcome this

error of omission, our analysis examines the performance of the US and the European airport security regime along a range of indicators for which comparative data is publicly available. The focus will be on baggage and passenger screening. While airport security as a whole consists of a wide range of different measures, screening constitutes the crucial last line of defense against terrorist attacks and can thus be considered as the backbone of any airport security system.[7] The empirical evidence we draw upon is based on data compiled from a variety of sources such as the Federal Aviation Administration (FAA), reports by the General Accounting Office (GAO), congressional testimonials, the European Union (EU), German government documents, and personal interviews conducted with a variety of security managers and politicians. The data relates to the situation before September 11. The changes implemented in the aftermath of the attacks will be considered in a later section of this paper.

Screening of Passengers and Hand Baggage

Both in Europe and the US passengers and their carry-on luggage are subject to screening. The quality of the screening, however, is substantially different. To assess actual screening performance it would be best to compare detection rates.[8] But since data on comparative detection rates does not exist or is not publicly available, our analysis follows an indirect line of proof. In the first step, the key factors impairing screening performance will be identified. In the second step, comparative data on these factors will be presented.

Numerous tests have demonstrated that three factors impair screening performance: high turnover, low pay, and poor training among screeners.[9] The causal links between these variables and screening performance are straightforward.[10] Without receiving proper training, screeners will hardly know what to look for. As one scholar put it: 'Taken in its totality, the lack of required training [...] is the single most glaring deficiency in the U.S. civil aviation security system'.[11]

A similar causal logic applies to low pay. It is one of the well-proven findings in labor economics that 'you get what you pay for.' Low pay not only discourages highly skilled workers from applying. It also reduces the employee's incentive to perform well and increases the incentive to engage in moral hazard since similar or even better employment can easily be found elsewhere. This is particularly troublesome as the job of a screener itself is very unattractive. The screening task is highly repetitive and working conditions are usually bad. Screening stations are choke points and stress builds if long queues accumulate.

The causal mechanism underlying the correlation between turnover and screening performance is as follows: As with most tasks, the performance of screening increases with experience. If, as found in one study, of the 993 screeners trained at one airport over a one-year period only 142 (or 14 per cent) are still employed at the end of the year, security checkpoints are rarely staffed with experienced personnel.[12] Furthermore, with a rapidly fluctuating workforce nothing like an 'organizational memory' can be developed that would enable managers constantly to update and review procedures in a process of trial and error.

As argued above, three key factors provide good predictors of screening performance: turnover, pay, and training. In the next section we shall compare data on these indicators for the European and the American case. The empirical evidence clearly shows that a huge performance gap existed. On all three indicators, the US regime scored substantially lower.

We will consider turnover first. Table 1 displays annual average turnover rates for the US and selected European countries for the 1998–99 period.

The annual average turnover among screeners at major US airports was an alarming 126 per cent. At this rate the average US screener remained on the job for only four and a half months. In contrast, none of the European countries reached turnover rates higher than 50 per cent, with Belgium hitting an extraordinarily low 4 per cent. If we compare disaggregated data, the gap becomes even more

Table 1. Turnover rates among screeners 1998–99 Europe versus the US

Country (%)	Turnover rate*
US	126
France	Lower than 50
Germany	11
UK	Lower than 50
Netherlands	Lower than 50
Belgium	Lower than 4

Source: GAO, *Airport Safety and Security Journal*, EU and several personal interviews.

*In some European countries officials are reluctant to publicly release exact turnover rates, but usually data is provided in the 'lower than' form.

(Unweighted) annual average turnover rate among screeners at 35 major US airports (in percent).

Table 2. US airports with highest turnover rates among screeners 1998–99

Airport turnover rate (%)	
Lambert St. Louis International	416
Hartsfield Atlanta International	375
Houston Intercontinental	237
Boston Logan International	207
O'Hare Chicago International	200
Denver International	193
Frankfurt International	6–8

Source: FAA, GOA, *Airport Safety and Security Journal*, EU and personal interviews.

Annual average turnover rate among screeners (in percent).

dramatic. Table 2 shows those US airports with the highest annual average turnover rates for the 1998–99 period.

At Lambert St. Louis International, the whole screening workforce was replaced every three months. This amounts to a turnover rate about 104 times higher than that at Frankfurt International or at an average Belgian airport.

If we look at the pay and benefits of screeners, a similar picture emerges. As can be easily inferred from Table 3, European screeners on average received substantially higher pay and benefits.

While in Belgium or the Netherlands screeners received wages regarded as 'middle income' as well as health care and vacation and retirement benefits, US screeners enjoyed no benefits at all and

Table 3. Pay and benefits for screeners 1999 Europe versus US

Country	Averaged real pay per hour*	Health care benefits	Vacation benefits	Retirement benefits
US	$5.15	Usually not	No	Usually not
France	$5.80**	Yes	Yes	Yes
Germany	$12	Yes	Yes	Yes
UK	$8	Yes (free)	Usually	Yes
Netherlands	$7.5	Yes	Yes	Yes
Belgium	$14–15	Yes	Yes	Yes

Source: GAO, Airport Safety and Security Journal, FAA, EU, and own interviews.

*Converted to purchasing power parity

**In France and Germany, workers receive 13 monthly wages for every 12 months worked. Numbers displayed exclude this additional salary.

were rarely paid beyond the minimum wage of $5.15. As found in one study, screeners' pay was often even below that of employees in the airport's fast food restaurants.[13]

Last but not least, the cross-sectional comparison reveals that American screeners were also less trained than their European colleagues. Required hours of both classroom and on the job training in Europe clearly exceeded those mandated by US regulations. Results are displayed in Table 4.

Moreover, in the US legal regulations have often been violated. Unfortunately, comparative data is not available. Each year, however, dozens of instances occurred in which screeners reported that they received training that was well below the required standards.[14]

The empirical evidence offered above substantiates our claim that the performance of passenger screening in the US was substantially lower than in Europe. This gains further support by the results of a joint test the FAA conducted with Belgian authorities. Screeners there detected twice as many dangerous objects as their American colleagues.[15] As a security manager put it in a personal interview: 'Screeners in the US before September 11 were essentially a disaster'.

Screening of Checked Baggage

The second major component or 'bedrock of any heightened civil air security system'[16] is the matching and screening of checked baggage. Two indicators can be used to judge performance: First, the screening rate, which measures the percentage of bags that actually runs through conventional x-ray machines or Explosive Detection

Table 4. Official training and certification requirements for screeners (as by October 2000)

Country	Hours of classroom training	Hours of on the job training	Other criteria
US	10	40	None
France	60	20	EU-Citizen
Germany	120	40	EU-Citizen
UK	70	60	Resident for at least 5 years
Netherlands	40*	2 month	Resident for at least 5 years
Belgium	64	64	Citizen and resident

*Not including 24 hours of required additional training each year.
Source: FAA, GAO, Airport Safety and Security Journal, and personal interviews.

Systems (EDS) before being loaded on the airliner.[17] The second indicator is the matching of checked baggage. If for any reason a bag gets on an airplane and its owner does not board the plane, it should be taken off. Baggage matching is a tedious and costly business since unloading an unaccompanied bag takes time, resulting in costly delays which are often enhanced by the fact that the scheduled take-off slot is missed resulting in congestion for new slots at the busy airports.

Regarding baggage screening, there was a huge divergence in the number of bags actually screened on both sides of the Atlantic. In the US, just around 10 per cent of all checked baggage was screened before September 11. At the same time in Europe, screening rates were about 80 per cent.[18] By the end of 2001, only 142 EDS machines were in place at US airports. According to various estimates 2000–3500 machines (costing up to $2.3 billion in total) would be required to reach European standards.[19]

If we look at the matching of baggage a similar picture emerges. In the US, positive baggage matching for international flights has only been done since 1989. For domestic flights, positive baggage matching was never introduced at all.[20] To quote Isaac Yeffet:

> A passenger wearing a T-shirt that says, Abu Nidal, the 15th of May Organization, as long as he has a ticket, can even have his luggage loaded beneath the cockpit unexpectedly. [...] At La Guardia I was able to place my suitcase on the United Flight 76 to O'Hare without ever showing a ticket or getting on the plane. I took American Airlines to Chicago instead and picked up the bag.[21]

Moreover, regulations have been violated frequently.[22] In his 2001 book *Lockerbie—The Story and the Lessons* Rodney Wallis concludes: 'U.S. aviation security standards are still less than optimum, and passengers remain vulnerable to the baggage bomber.'[23] In most European countries, positive baggage matching has been mandatory since 1989, the year after the Lockerbie bombing. Compliance is heavily monitored by government agencies.

Concluding the Performance Assessment

The empirical analysis reveals a clear picture. There existed a huge divergence in the performance of airport security regimes on both sides of the Atlantic. The US regime performed substantially lower in all the key security components we examined. We are left with an intriguing puzzle. What accounts for the variation in the

performance of both airport security regimes? This question will be addressed in the following two case studies.

EXPLAINING EUROPE'S HIGHER PERFORMANCE: THE GERMAN CASE

Comparing the institutional development of airport security regimes in different European countries, a common pattern can be identified. Despite certain differences in the particular national trajectories, most countries experienced a similar sequence in the development of their airport security regimes. Early federalization was a response to the first international wave of hijackings in the late 1960s. Following this critical conjuncture, airport security policies remained on this state-driven path for almost 20 years. Only then, a wave of privatizations, spearheaded by Margaret Thatcher's 1988 aviation deregulation act, swept from the UK to the continent and led to subsequent outsourcing of security measures in the 1990s. Germany neatly fits this common pattern and will therefore be treated here in detail as the exemplary case for the European approach to airport security.

The birth of the German airport security regime dates back to 1970. Earlier than most European countries, a few German states (*Länder*) introduced security measures for the first time at some of the bigger airports such as Frankfurt, Munich and Berlin. Before that date, there had been no airport security apart from routine police patrolling. The first measures that were implemented consisted of manual searches of passengers and carry-on baggage at the gates. They have to be seen as a direct response to the first international hijackings that struck the aviation community in the late 1960s. Although no German plane had been hijacked by then, the Federal Government (*Bund*) feared that this might happen soon and urged state administrations (*Länder*) to implement appropriate preventive measures, although a legal foundation for such measures was still absent.

Due to the strong commitment of most states, Germany as a whole saw considerably high screening rates over the following years.[24] However, it soon became evident that an encompassing federal legislation was badly needed. In the mid-70s the world experienced a rapidly increasing number of hijackings.[25] On 22 February 1972, the first German plane got hijacked when a Lufthansa airliner *en route* from New Delhi to Athens was taken over by the Palestinian terrorist group Popular Front for the Liberation of Palestine (PFLP) and diverted to Aden. Over the following years, Lufthansa experienced further hijackings, culminating in the 'Landshut' drama in October

1977, when terrorists demanding the release of leading members of the Red Army Faction from German prisons seized Lufthansa flight 181 from Palma de Mallorca to Frankfurt. While there was no immediate legislative reaction, this series of hijackings greatly contributed to the heightening of public awareness for aviation security matters.

After almost five years of intense political and legal debate a new civil aviation act was finally passed in 1980.[26] This reform introduced the basic legislative framework of the German airport security regime that apart from minor changes is still in existence today. For the first time, 'aviation security' (*Luftsicherheit*) was defined as a legal term and distinguished from 'aviation safety' (*Flugsicherheit*). Most importantly, safeguarding aviation against acts of unlawful interference was explicitly assigned to the civil aviation authorities (Art. 29c). Airport security thus was legally established as a sovereign task whose core parts could not be executed by private companies. The screening of baggage and passengers was to be run by the states that also had to bear the main cost burden.[27]

Preceding the act was an extensive political struggle over who was to pay for airport security measures. The Federal Government saw airport security as part of law enforcement that had to be executed and paid for by the states under federal oversight.[28] The Federal Government would only fund the acquisition of screening equipment. The states engaged in lobbying against this view, arguing that the aviation industry should be charged for security measures. The Federal Government, however, resisted these pressures. It held that, apart from legal problems with the privatization of governmental tasks, profit-driven firms would be ill equipped to provide high security standards.[29] It also felt a strong need to protect the aviation industry from additional financial burdens.

Since then, German airport security policies remained on the same institutional path for almost two decades and only incremental change occurred. What did this mean for security performance? Because the state itself executed the screening of passengers and baggage, this core part of airport security was relieved of market pressures. Thus, the organizational aim of the institutions carrying out the screening task was to enforce and maintain high security standards instead of cutting costs to gain economic profits. Screening took place completely independent of airlines and there was hardly any possibility for them to lower standards to speed up security procedures. All screeners were state employees, mostly Federal Border Guards who executed screening at the behest of the civil aviation authorities. As such, they were considerably well paid and bound

to extensive training, social benefits, career opportunities and (most importantly) effective monitoring. Being on the payroll of the state, screeners at checkpoints had no incentive to tilt the balance between security concerns and passengers' desire for speedy travel in favor of the latter. In turn, the Federal Government, as the final supervising institution, could demand the proper implementation and maintenance of effective security measures at low cost, because the states had to take the main financial burden. All these factors contributed to a rising performance of the airport security regime.

Since 1980, Germany has screened all passengers and carry-on baggage.[30] Screeners are well paid and trained, turnover is low and it can thus be assumed that detection rates have been considerably higher than in the US. In 1984, for example, 817 firearms were detected at German airports compared to only 1,971 in the US, whose aviation market was about six times the size of the German one.[31] One should also note that in contrast to the US, the possession of firearms is heavily restricted in Germany and therefore, the total number of weapons is much lower.

In the case of checked (hold) baggage screening (HBS), today Germany is one of the leading countries worldwide. Especially in the wake of the 1988 Lockerbie bombing, screening rates were constantly increased and 100 per cent HBS was in place at all 37 major airports by the end of 2002. Most airports, Frankfurt International being the main exception, have already installed smart 3-level systems that represent the state of the art in baggage screening.[32]

Since the act of 1980 there have been some attempts to change the existing system. Not surprisingly, the states, that had to bear the increasing security costs of a rapidly growing aviation business, pushed for a shift of the cost burden to the airlines. But for almost ten years the Federal Government blocked all attempts to change the system. In the face of the all-time height in attacks on civil aviation that occurred in the 1980s,[33] the Federal Government saw no incentive to take the risk of changing a seemingly successful policy.[34] The airlines, of course, heavily opposed the states' demands too.

A window of opportunity finally opened in 1990, when growing budget constraints of the states made changes in the distribution of the financial burden seem inevitable. Over the previous ten years, the aviation sector had experienced such a tremendous growth that the states simply could not bear the security costs anymore. The Federal Government finally gave up its strategy of protecting the industry. Despite vivid protests from the airlines,[35] an aviation security fee was introduced to recover parts of the staff and equipment expenses for passenger and baggage screening.[36]

While the aviation security fee alleviated the financial burden of the states, they remained dissatisfied and kept lobbying for privatization to further reduce costs. At the same time, the Federal Government made plans to privatize the organization of flight control, a sovereign task formerly executed by the state. To accomplish the privatization a new amendment to the civil aviation law was needed. As the aviation topic re-entered the political agenda, the states successfully used the flight control issue as a stepping-stone to lobby for further privatization of airport security. If flight control could be privatized, screening should be outsourced as well. The Federal Government remained concerned about the effectiveness of private security firms. In 1992, however, the Kohl administration introduced at least the legal possibility to outsource screening under certain rigid conditions, but retained control over when and how this would actually happen. In fact, the administrative restrictions imposed by the Federal Government proved to be so rigid that the first private screeners at German airports were employed no earlier than 1995.

Today, most of the German airports employ private screening firms or conduct screening themselves.[37] However, to speak of 'real' privatization would be misleading. Instead, a complex joint governmental/private system has been established that remains largely government dominated and private firms operate in a rigorous institutional straightjacket. Screening firms need to be officially certified. There are demanding requirements including the evaluation of the solvency of the firm; extensive background checks of directors, managers and screening personnel; adequate compensation and benefits; and the use of long-term contracts to allow for career-path development and the retention of key staff. Thus, minimum wages and benefits are spelled out in the bid. Moreover, screeners have to obtain an individual license, which requires extensive initial and recurring training, first as a security officer and then as a specialized aviation security agent.

Governmental monitoring is very aggressive. The aviation authorities conduct periodic audits of the qualification and training of managers and screeners. At the same time, random tests are pursued at checkpoints and Federal Border Guards are constantly present to supervise screening functions.[38] The authorities can sanction low performance by suspending a company's license or terminating a company's contract at a specific location. Since these are long-term contracts, termination is a particularly effective sanction for it means that the company will not be able to provide service at the location for a very long time. Thus, the German airport security regime still provides high screening performance despite being partly privatized.

One could argue that this is unlikely to change significantly in the near future, as none of the key players has both the capabilities and a clear incentive to change the current system. The state governments are almost completely released from their financial burden as the aviation security fee has been constantly expanded and now covers most security costs. The airlines certainly lack the capabilities to push through an abrogation of the security fee. And since competition is not negatively affected, as every passenger has to pay regardless of the ticket price, most airlines have ceased lobbying and accepted that there is no chance to shift the cost burden back to the states. A development towards increased privatization would be favorable for some of the industries (mostly the screening companies). However, this is unlikely to find the approval of the Federal Government that as the central veto player has always been committed to high security performance.

THE US CASE

As outlined in the first part of our paper, American airport security has compared unfavorably with its European counterparts over the last decades. The following section will examine the institutional development that led to such a low performance.

The Federal Aviation Administration (FAA), a section of the Department of Transportation, regulates civil aviation in the United States. This organization is responsible for all aspects of flying, from pilot training to airport construction. But its mandate did not stop at the task of regulating air commerce: it was also supposed to actively promote this type of transport. When security became an issue, responsibility for this task naturally fell to the FAA, too.

The first hijacking over US-territory took place on 1 May 1961, when National Airlines flight 337 *en route* to Key West was forced to change its destination to Havana.[39] Hijacking activities by Cubans culminated in the late 1960s, and in the autumn of 1969, the FAA convinced Eastern Air Lines, which had suffered the most hijackings, to begin using weapon-detection devices to screen passengers and their hand luggage. A limited number of metal detectors were installed at selected airports. Eastern was later joined by TWA, Pan Am and Continental.[40]

However, the airlines wanted to keep security costs low and refused to screen all their passengers for weapons, and instead of trying to convince Congress to pass legislation, the FAA developed a profiling system to identify suspicious individuals in order to decrease the number of passengers that actually had to be screened. While this

proved successful against the hijackers of the 1960s, the early 1970s unfortunately saw the emergence of a new problem for civil aviation: international terrorism. The FAA responded with the introduction of a Sky Marshal Program, under which 1500 Sky Marshals were sent on board domestic and international flights.[41]

In 1971, there were 18 extortion attempts within six months on US-registered planes, with hijackers threatening to blow up the aircraft.[42] Its inability to stop the hijackings and several failures of the profiling system to single out air pirates put the FAA under severe public pressure. Pilots prepared for a worldwide strike that in the US could only be prevented by federal court orders. Airlines, too, wanted major improvements in security, but they did not want to bear the unavoidable costs. Consequently, they started intensive lobbying on Capitol Hill to convince Congress to accept airport security as a national responsibility. The Nixon administration, however, resisted the pressure.[43] A bill that provided for the creation of an FAA anti-hijacking police force was passed in the Senate, but rejected in the House.[44] Troubled by further hijackings, the FAA finally issued an emergency rule in December 1972. It required that all passengers and their carry-on baggage be electronically screened or searched manually, and that this would have to be done by the airlines. This rule was given permanent enforcement with the Anti-Hijacking Act of 1974 and the Air Transportation Security Act of 1974.[45] Since the airlines and airports conducted these activities virtually on their own, these laws also granted them far-reaching responsibilities. While the FAA only issued general guidelines and regulations, sponsored the development of new security technology and monitored the industry as a whole, airports were made responsible for the security of the airport environment and airlines assumed responsibility for screening baggage, passengers and cargo. Airports and airlines also had to purchase the security equipment.

The decision of the Nixon administration not to make passenger and baggage screening a federal responsibility can be attributed to two factors. First, airport security was not seen as a question of national security.[46] Second and most important, the American conception of the government's appropriate role in social life was (and is) quite different from the European understanding. While in Europe the provision of airport security was seen as a task of law enforcement, in the US the Federal Government regarded it as a cost of doing business.[47] Therefore, the American airport security regime was based on an institutional setup with much greater private involvement in the provision of airport security. It proved to be amazingly resistant despite growing evidence that something was wrong: while generally

effective in the early years, it did not encourage investment in security improvements, and America started to lag behind as airlines saw no reason to spend hard-earned money on screening their customers.

The public became aware of the fact that airport security was not what it could be when 277 passengers and crewmembers, many of them Americans, died in the Lockerbie bombing of December 1988. It soon emerged that baggage matching, which had been mandatory for US airlines both at Frankfurt and Heathrow (these airports had been declared as high-risk locations by the FAA) would have prevented the loading of the unaccompanied bag that contained the bomb. Pan Am had done neither of the required checks and claimed in front of a federal court that it had received a verbal waiver from the FAA.[48]

In the wake of the bombing of Pan Am flight 103, President Bush established a Presidential Commission on Aviation Security and Terrorism. Its final report, published in May 1990, was extremely critical of both Pan Am and the FAA.[49] It concluded that (1) the American civil aviation system was seriously flawed; (2) that the FAA was a reactive agency that did not enforce its own regulations; and (3) that stricter baggage reconciliation might have prevented the destruction of the aircraft.

Congress responded by passing the Aviation Security Improvement Act.[50] It directed the FAA to begin an accelerated 18-month research and development effort to find an effective explosive detection device. Moreover, it introduced limited background checks for new employees and contract personnel with access to air operations areas. In 1989, the United States had entered an international agreement to match all baggage to passengers on international flights.[51] US carriers, however, argued that passenger-baggage matching would be too cumbersome and convinced the FAA to restrict it to flights to and from Europe and the Middle East.[52] Furthermore, the performance of baggage and passenger screeners gave rise to serious concern. The General Accounting Office (GAO) noted that detection rates were declining and urged immediate action.

These security gaps highlighted the underlying flaws in the American airport security regime: Since airlines were operating in a highly competitive environment, saving costs through outsourcing passenger and baggage screening to the lowest bidder developed as a standard practice in the aviation industry.[53] For private security firms that conducted the screening there was a strong incentive to provide levels of security that only reached the legal minimum, if at all. FAA officials urging additional security investments upon the aviation industry often faced skepticism and generally found them

disinterested in emerging threats.[54] Airline unwillingness to spend on airport security was further reinforced by a lack of regulatory oversight. Since the FAA had the dual statuary goals of ensuring aviation safety and security and the promotion of air commerce,[55] it came to understand its relationship with the aviation industry as primarily cooperative, and according to Billie Vincent, a former FAA security chief, 'the FAA had entered into all sorts of collegiate partnerships with the very people they regulate'.[56]

Thus, US airlines were not closely regulated and monitored. In turn, this made cutting costs in providing security even more rewarding, since violations of federal regulations were not likely to be detected and leniently sanctioned by the FAA in any case. Michael Pangia, former FAA chief trial lawyer, declared that it was 'common practice for the airlines and the FAA to negotiate fines down to as low as 10 cents on a dollar – and often times agreeing on a price for a bulk of fines.'[57]

In 1991, Peter St. John noted that 'as 1989 dawned it was very clear that a whole new approach to airport security would be called for to deal with the destruction of Pan Am 103.[58] American airport security, however, remained largely unchanged. Minor modifications were made, but the basic institutional setup remained in place. The central reproductive mechanism that sustained this dysfunctional security regime over time could best be described as 'airline capture': with tremendous skill and effort, the airlines managed to prevent or delay any new security measure and put profit concerns first.

In 1996, American airport security policy was seriously questioned again. In response to the ValuJet and TWA 800 crashes earlier that year the White House Commission on Aviation Safety and Security was established. The Commission's final report contained 31 recommendations relating to aviation security. The most important recommendations included (1) a proposal that the Federal Government should consider aviation security as a national security issue and provide substantial capital funding; (2) licensing screening companies to improve screener performance; (3) the expansion of background checks on all screeners and all airline and airport employees with access to secure areas; (4) expanded FAA airport security tests; and (5) a tentative call to begin implementation of comprehensive passenger-baggage matching.

Some of the commission's recommendations were subsequently turned into law through the Federal Aviation Reauthorization Act of 1996.[59] Congress eliminated FAA's dual mandate, making it clear that safety and security were its only priority.[60] The FAA was given authority and funding to acquire new explosive-detection devices, but

by February 2000, it had deployed only 101 EDS machines and 552 TEDDs (trace explosives detection devices) to the largest airports.[61] The slow acquisition policy led Senator Ron Wyden of Oregon to ask the transportation secretary why 'the city of Manchester, England, purchased more state-of-the-art explosive device detectors than the entire United States?'.[62] Background checks were somewhat expanded, and Congress directed the FAA to certify screening companies. However, even five years later the FAA had not certified a single company.[63]

The issue of full passenger-baggage matching was again met with strong resistance by the aviation industry. The airlines began an intensive lobbying campaign at the White House and argued that it was impossible to introduce without causing major disruption to domestic air travel. Two weeks after the publication of the final report, Vice-President Gore had to back-pedal from the initial proposal.[64] In the following years, baggage matching was prevented by deliberate obstruction: the industry argued that it was impossible to introduce it without having done a test involving a number of airports, and after the results had seen lengthy deliberation, it was concluded that it was necessary to do another test involving a larger number of airports.[65]

When stating the progress of a complete overhaul of FAA regulations to the FAA Aviation Security Advisory Committee (ASAC) in June 2001, Chairman Canavan could not help noticing that it was 'something like about a ten-year-old effort, so we think it's going to come out this time. We'll see.' The minutes record 'laughter' among participants.[66]

It should be pointed out that such obstructive behavior was not caused by a perception of the threat being rather low: While this might have been true until the late 1980s, it became clear by the early 1990s that 'the relative immunity from international terrorism that America had enjoyed for many years was gone'.[67] The FAA's own Baseline Working Group, which was set up in 1996, came to the conclusion that 'we can't feel complacent any longer that we in the United States are immune from foreign terrorist actions. We are not.'[68] In the same year, the Gore commission found that:

> The terrorist threat is changing and growing. Therefore, it is important to improve security not just against familiar threats, such as explosives in checked baggage, but also to explore means of assessing and countering emerging threats, such as the use of biological or chemical agents, or the use of missiles.[69]

The minor improvements introduced during the 1990s did not alleviate the long-standing problems in American airport security. Screener performance remained problematical and deteriorated even further.[70] Furthermore, the White House Commission's report did not contain any recommendations for shielding the FAA from the strong lobbying of the aviation industry. Instead, it encouraged the FAA to enter into new 'partnerships for progress' with the aviation industry.[71]

In practice, this meant that security measures were not implemented until the FAA working group had reached an agreement about every detail.[72] An ASAC working group that was supposed to review the relationship between the FAA and the carriers even lamented that cooperation could not go far enough because of certain legal limits.[73] That way, the strong influence the aviation industry had within the FAA (including its unofficial veto power over costly proposals) was reinforced and legitimized.[74] FAA's ability to effectively regulate the aviation industry was further diminished.

While aviation experts concluded that 'domestic aviation security performance in America was on a par with that of the poorest countries in the developing world',[75] the institutional flaws outlined above led to the amazing situation that chairman Canavan of the ASAC met no contradiction when he concluded in April 2001: 'We are the world leader in many aspects of civil aviation security, and it's not just us, it's the airlines and, also, the airports, because we are modelled [in] many places in the world'.[76]

COMPARING THE CASES

Putting the cases in comparative perspective reveals a striking divergence in the trajectories of the airport security regimes. At an early stage, Germany adopted a security system totally run and financed by the government. Airport security was perceived as a task of law enforcement that had to be undertaken and provided by the government. The US, in contrast, implemented airport security as a responsibility of the airlines. Airport security was seen as a cost of doing business, thus the airlines had to carry the bulk of the financial burden. As demonstrated in the case studies, these early institutional setups had a great effect on the development of security performance. In Germany, the provision of airport security was taken out of market pressures and the Federal Government, committed to protecting the people, prescribed high standards and assured sufficient capital and human investment in the security realm. In the US, security

was left to profit-driven airlines, which subcontracted screening to the lowest bidder. Especially in the domestic market, where airlines make most of their profit, cost cutting instead of high security provision was the rule and breaches even of the low prescribed standards have been frequent. The FAA as the monitoring agency never managed to discipline the airlines. So the US, particularly in the domestic market, ended up with a quality standard of airport security far below that of what had been achieved in most European countries.

The case study has argued that this policy failure was more the result of strategic interaction between the key players (mainly the airline lobby) instead of a misperception of the threat level. As was shown above, information about a growing threat to American domestic aviation was readily available and acknowledged even in publicly available official government documents. For almost two decades, the GAO has uncovered and criticized key weaknesses in the US airport security system when giving testimony in Congress. In fact, the 'little threat' argument was more frequently used strategically by airlines to justify lower standards. As Rodney Wallis, a prominent aviation expert who contributed to two US presidential commissions studying airborne terrorism, puts it: 'Poor security performance was not simply attributable to a lack of perception of threat facing US civil aviation targets. It had more to do with cost cutting'.[77]

The general argument arising from these case studies is that private markets tend to fail when it comes to the provision of airport security. As can be seen in both cases, the airlines, despite their long-term interest in safer flights, have a strong incentive to eschew from costly security expenditures and the necessary 'convenience sacrifice' of tight controls in exchange for short-term profit and market share. As ironic as this may sound, given competitive markets, it simply does not pay for the individual airline to invest in security. More security translates into higher ticket prices and ultimately results in loss of market share, since competitors will opt to abstain from security investment and offer cheaper deals instead.

In turn, 'freeriding' is not punished, because the overwhelming majority of customers can be said to buy air tickets upon price rather than security performance. To be sure, most consumers are ultimately concerned with their personal safety. However, we argue that the weight attached to security performance in most consumers' utility function is rather low when it comes to the actual decision of which ticket to buy. Three reasons account for this low weight: 1) Air travel is generally regarded as the safest form of travel available and even of the 'relatively' few accidents that occur the great majority result from

safety instead of security failures. 2) The security performance of airlines is generally assumed to differ very little and the differences are hard to observe except in the case of extreme 'outliers'.[78] 3) There are no bulletproof systems, thus even with the safest airline some (although relatively small) probability of becoming the victim of air terrorism remains. Although it would require systematic empirical research to further substantiate this claim, most consumers are likely to decide upon a rather simple decision heuristic: always take the cheapest ticket available, but never fly with airline X (because it has a been involved in a recent crash or is known to have had an extraordinarily bad security performance).

The lower the number of spectacular terrorist attacks over the relevant time horizon of the consumers, the lower this 'security weight' in their decision-making becomes. The reason why the market does not reward security investment is indeed that terrorist attacks on aviation targets are statistically speaking rare events. Thus, it is not feasible for an airline to profitably market on a 'high security reputation' This holds even if the security performance would be perfectly known by consumers, since in pure economic terms, the gains resulting from a lower attack probability will almost surely be offset by the huge investments it takes to significantly improve security. In other words, consumers might be willing to pay a little more for their tickets in exchange for more security, but for airlines to significantly improve security, ticket prices would have to rise by a higher amount than consumers are willing to pay. They would also have to offer less service in terms of requiring customers to arrive at the airport long before takeoff. People are unlikely to be willing to pay these opportunity costs of waiting in exchange for higher security. At the end of the day, the cheaper and more convenient airline, despite being less secure, will always win over market share. The tougher market competition, the stronger the incentive for airlines to act opportunistically.

This combined collective action and time inconsistency problem of airport security provisions is enhanced by the fact that consumers react to major attacks in a rather irrational manner. Instead of avoiding a specific carrier, customers punish airlines collectively by temporarily staying away from air travel all together. This is most clearly demonstrated in the major drop of passenger figures in the aftermath of the September 11 attack. While only two airlines were involved in the attacks, the whole industry saw a harsh decline in passengers. Those airlines that were directly affected did not face significantly stronger declines than other, uninvolved airlines.[79] This 'collective punishment' enhances the security dilemma, since it further elimi-

nates the incentives for airlines to invest in security in the first place. Why should I invest in security, if I cannot protect my airline against an externally induced fall in passengers by making my own procedures more secure? As long as customers do not punish airlines for attacks on a permanent and individual basis, investment in security does not pay.

One has to be careful not to fall into the trap of *ex post facto*, *ad hoc* theorizing since it is always easy to point to flaws in a system once it eventually failed. Thus, it is important to note that even a state driven security system would not have offered a guarantee against the attacks of September 11. Nonetheless, as our analysis shows, there is considerable ground both empirically and theoretically to argue that the American system of airport security, with its delegation of the responsibility to the airlines, did indeed bear in it the seeds of its own destruction. The inferior security performance prior to the attacks has been extensively documented. As the American aviation expert Darryl Jenkins puts it: 'the real reason that the events of September 11 did not happen earlier is simply that we have been lucky. The luck of the draw does not imply security on our part'.[80] An attack might not have happened, but Americans on average flew unsafe compared to Europeans.

In terms of 'constitutional engineering', the German case clearly shows that only government provision can overcome this combined collective action and time inconsistency problem of airport security. The Federal Government as the central veto player managed to block all cost-cutting attempts both from the states and the industry that could have eventually eroded the security performance. Only the government has long enough a time horizon to assure high quality standards on a long-term basis and overcome the freerider problem by securing funding via tax revenues or the implementation of compulsory security fees affecting all competing airlines to a similar degree. Only the government is able to uphold security concerns not represented in the incentives of commercial interests. Thus, delegation of the responsibilities for airport security to the government is a necessary (but not a sufficient) condition for the provision of a high security performance.

This claim is supported not only by the German case, but also by the experiences in most other countries about which information is available. Most European governments have assumed responsibility for airport security early on and achieved a considerably higher security performance. Cases in point include Ireland, Belgium, France, the Netherlands and Israel, albeit the latter country surely represents a special case due to the extraordinarily high threat environment.[81]

In Switzerland the police employment of screeners and security is at high standards.[82] The UK provides a special case where the airport security regime is characterized by strong government involvement, but the actual screening responsibility is delegated to the British Aviation Authority (BAA) that obtains income from the airlines that use airports and from the commercial franchises that operate there. Despite being at least formally an independent agency, the BAA provides a case for our general argument: security needs to be delegated to a single institution that has no commercial interest in air travel and has a sufficiently long time horizon, that is, the success of the institution needs to be directly tied to security performance. In the UK any outlay on security is ultimately recovered from the carriers, thus the BAA can 'afford' the highest standards. It is responsible directly to and monitored by the British Department of Environment, Transport and the Regions.[83] Further evidence comes from the Malaysian case, where airport security performance significantly improved after federalization with the creation of a national screening force that offers extended pay, career opportunities, and comprehensive training.[84] The US case with its federalization provides us with a controlled experiment to further test our hypothesis. Although systematic evidence is yet absent, to our knowledge screening performance has improved since the institutional responsibilities shifted.

A caveat remains in order, however. While the delegation of the responsibility for screening is a necessary condition for a high security performance it is surely not a sufficient one: market failure might be replaced by government failure. Assuming responsibility will only lead to a higher performance when the government agency has the necessary commitment to security and is sufficiently insulated from industry pressure. Moreover, as the recent sweep towards a government dominated private/public partnership model in the German case shows, there might be a role for the use of private screening companies when it comes to the actual execution of the screening task. To be sure, in contrast to the previous German system, under which screening was totally run by the government itself, a principal-agent relationship between the authorities and the firms exists today. But yet, due to the right institutional incentive structure (rigid monitoring and powerful sanctioning), the regime is still compatible with the security goal. The key difference to the former US regime is that the companies are directly responsible to the government and not to the airlines. Due to the right incentive structure opportunism does not (yet) pay off for screening firms really intending to earn money in the German aviation security business. However, we remain critical about the use of private screeners, since the more responsibility is

delegated, the higher the chances of moral hazard as private firms are ultimately driven by profit and not by security interest.

Further research will have to show whether pure government run systems prove more effective than government dominated public/private partnership models. Whatever the exact institutional framework in the execution, the key to success in the airport security realm lays ultimately in the delegation of general responsibility to the government or a single non-profit driven controlling agency whose institutional aim is directly tied to the security performance. Aggressive government monitoring, assured levels of adequate funding, as well as a constant reviewing and updating of the security procedures are crucial. Most importantly, however, the key performance determinants – adequate wages, low turnover, career development, and extensive training – need to be guaranteed by legal provisions. Private firms are likely to score lower on most of these criteria. There is no single optimal regime to airport security, but we argue that these key building blocks are necessary to assure a high performance.

The question that remains is how do the airport security regimes in the US and Europe post September 11 compare against this standard? This is the issue to which we now turn.

LESSON LEARNED? THE CHANGES IN EUROPEAN AND US AIRPORT SECURITY POST 9/11

Immediately after September 11, the existing regime of American airport security was verbally torn apart. Critique focused on long-standing issues such as unsatisfactory screener performance and questioned the airlines' willingness to pay for effective passenger and baggage screening.[85] The GAO, in a report published on 25 September, found that

> Aviation Security has truly become a national security issue, and as we will discuss today, responsibility for screening may no longer appropriately rest with air carriers. It has been observed that previous tragedies have resulted in congressional hearings, studies, recommendations, and debates, but little long-term resolve to correct flaws in the system as the memory of the crisis recedes. The future of aviation security hinges in large part on overcoming this cycle of limited action that has too long often characterized the response to aviation security concerns.[86]

In contrast to earlier incidents, September 11, which was seen as an 'Attack on America', linked airport security to national security

issues. However, serious disagreement about the appropriate level of federal involvement in the provision of airport security, especially passenger and baggage screening, dominated debates in Congress.[87] The Senate voted 100:0 on a bill that would have made screening a federal responsibility. However, this unanimous vote hid the political and ideological divergence regarding stronger federal involvement. House Republicans, the Bush administration, and Secretary of Transportation, Norman Mineta, favored enhanced federal oversight over private screeners. Democrats insisted on direct federal responsibility to ensure effective screening. The House passed a Republican version of airport security legislation that established federal oversight over private screeners. Finally, compromise legislation was passed on 19 November 2001 with the Aviation and Transportation Security Act.[88]

Its main provisions include 1) the transfer of all screening responsibilities to the newly created Transportation Security Administration (TSA) by 19 November 2002; 2) the directive to implement qualification standards for screeners and the realization of Congress's earlier mandate to certify screening companies; 3) the order to screen all checked baggage with EDS by the end of 2002; 4) the further extension of criminal background checks; and 5) TSA's authorization to collect a security fee of $2.50 per flight segment, not to exceed $5.00 per one-way trip or $10.00 per round trip. In addition, the act authorized the TSA to impose a fee on air carriers if revenues from the new security fee were insufficient to meet the demands set forth by the act. As a pilot project, five airports will continue to use private screeners to collect data for a comparison of private and federal screeners. After three years, airports will have the option to return to private screeners. These will have to live up to the same standards as federal ones.

Against the background of our prior argument, these transformations do indeed constitute a critical conjuncture and a positive turn in American airport security policy, although serious limitations remain. Making passenger and baggage screening a federal responsibility and certifying screening companies as well as individual screeners will help to improve overall screening performance. Federalization results in higher pay and significantly enhanced training and testing levels and thus addresses concerns that have been raised again and again over the last decades. The TSA claims that screening effectiveness has indeed increased. It recently stated that between February 2002 and March 2003, federal screeners have intercepted more then 4.8 million dangerous items, including 1,101 firearms, nearly 1.4 million knives, 39,842 box cutters, 125,273 incendiary or flammable objects and 15,566 clubs.[89] This is an impressive figure, but

it has to be kept in mind that most of these items were by and large permissible prior to September 11. Unfortunately, comparable data from prior years is not available.

There is also more certain evidence that the TSA has adopted more of a 'policeman' attitude in its relationship with the aviation industry. The GAO reported in July 2002 that

> Since TSA took over aviation security responsibilities on February 17, 2002, discoveries of guns, knives, and other potential weapons on passengers who had passed security checkpoints have prompted evacuations at 124 airports and resulted in 631 flights being called back to terminals so that passengers could be searched again.[90]

This stands in stark contrast to FAA's lax enforcement of its own regulations that has been noted earlier. Furthermore, as the TSA assumed complete responsibility for passenger and baggage screening by 19 November airlines will have a harder time delaying the implementation of necessary security measures. Never before has government involvement in airport security reached such dimensions. In FY 2003, the Federal Budget has appropriated $4.8 billion for airport security measures.[91]

One could argue that these changes give the new American airport security regime a certain 'European' flavor. The distinct American solution of assigning airlines the responsibility for airport security has been transformed to a government-controlled regime. This puts an end to the stable detrimental institutional configuration observable in the period between 1972 and 2001. However, important caveats seem in order, especially against the background of the unpromising US track record in implementing past security reforms. The same lobby groups that have obstructed installation of effective and costly security procedures prior to the reform are unlikely to vanish or back pedal from their efforts to continuously push for cheap and convenient air travel. These economic goals will clash with security motivations in the near future. Given the effectiveness of these groups to act as obstructionist players in the past we argue that the US airport security system faces the danger of erosion once September 11 has faded from the immediate public awareness.

Already there is evidence that the reforms brought about by the Aviation and Transportation Security Act did not go as far as they could have to make skies safer—or, as George W. Bush put it, 'give all Americans greater confidence when they fly'.[92] While 100 percent baggage screening as a defense against baggage bombs was finally endorsed for domestic flights,[93] the domestic airline lobby again

successfully prevented the ratification of positive passenger and baggage matching, arguing that it was an unnecessary and disruptive inconvenience.[94] As mentioned in the first part of this paper, such an attitude stands against the overwhelming majority of security experts worldwide and contradicts the long-standing standard practice in most European countries and ICAO regulations. Only the use of a multi-layered security system that uses both 100 per cent baggage screening *and* positive baggage matching assures effective security against the threat of a bombing. This dualistic approach is practiced for example in the UK and in Germany since the Lockerbie bombing. Terrorists have used baggage bombs for over two decades and there is no reason to believe that they will retreat from doing so.

The lobbying success of the US carriers is the more astonishing since the European experience suggests that positive baggage matching is one of the few areas of airport security where economic efficiency and security concerns seem to go together. Positive baggage matching systems proved to work effectively at all major European hubs through cooperative efforts between airline and airport management. Their introduction has resulted in saving of huge sums previously spent on tracing, returning and compensating their customers for lost and mishandled baggage.[95] Customers profit as well. The US administration is well advised to break the carriers' resistance in this important issue in the near future and assure a long-term insulation of the TSA from airline pressures.

The second issue where we see gray clouds on the horizon is the question of funding. The implementation of the new security reform, in particular the installation of new EDS equipment and the rapid build-up of a well trained and paid screening force, incurs huge start-up as well as maintenance costs.[96] As Jenkins puts it succinctly: 'Senators, who agreed 100:0 on the new measures, will fall apart during the next year figuring out how to pay for their laws'.[97] There are essentially two ways to go: higher taxes or security fees added to flight tickets. Both measures do not have a favorable political cost–benefit ratio and are likely to be delayed or avoided. According to the most recent developments there are already new pressures coming up to 'rightsize' the TSA budget and to 'trim down' the TSA workforce, with 6,000 screeners being laid off again and a cap being put on the TSA full-time screener positions.[98] These layoffs (and recently also postponement of air marshal training) have been forced upon the agency by severe budget constraints, since it has received nearly $1 billion less than it has sought from Congress.[99] Federalization and committed airport security provision means bigger government, and this is unlikely to stay a popular option once the immediate

threat perception of September 11 fades away. In face of the powerful interest for lean government, the danger of re-privatization seems real.

THE EUROPEAN RESPONSE

Unlike the USA, Germany did not respond to September 11 with major changes in its national airport security regime, but only employed *ad hoc* measures like increased use of sky marshals and the strengthening of cockpit doors according to the change in international standards. Additionally, airports have implemented double-checking of passengers bound for the US. This speaks for the confidence of the government in the existing security regime.

The European Union, however, immediately took the initiative to improve airport security in all of its member states. On 10 October 2001, the Commission put forward proposals to improve access control and the screening of passenger luggage and freight on the ground at airports.[100] The issue was addressed by the European Parliament (EP) in November: the British Conservative MEP Jacqueline Foster, who had previously worked in the airline industry, presented her report and called for an adoption by all member states of many of the security measures the United Kingdom had developed to counter the IRA threat.[101] Not all of these were approved by the Council, which on 4 February rejected the introduction of staff screening and unannounced inspections by the Commission. It also declined an express reference to the standards of the European Civil Aviation Conference (ECAC),[102] which until then had only been recommendatory, and did not respond to the call to consider new measures of funding security.[103] On 14 May 2002, the EP made clear that it expected member states to take responsibility for additional security costs and did not want to drop any of the other contentious issues.

In such cases of disagreement between Parliament, Commission and member states in matters requiring co-decision, the EU Treaties call for a conciliation procedure, which in this case lasted from June to the end of October. By 14 November a joint text was formally adopted. The document was a triumph for the EP, since it included most of its demands in total or in a reworked form. Despite strong resistance, the issue of funding was addressed by an 'inter-institutional declaration', in which the EU pledged to take note of the Commission's position that it would positively consider public financing for the compensation of additional security measures.

The new Regulation 2320/2002 will not only require of baggage matching by all member states by 31 December 2003,[104] but also,

in little more than a year after the tragedy of New York, the EU now has acquired authority to inspect airports (Art. 7(2)) and can demand compliance with its new regulations (Art. 7(4)). In other words, unannounced teams can inspect the security procedures of every commercial airport within the EU at any time. The airport will then receive a report including a list of deficiencies they have to tackle. Although member states are still allowed to have whatever institutions they like to regulate airport security, they now have to designate one authority that bears final responsibility and can be addressed by the Commission in case of shortcomings.

The European reply to September 11 has thus been the introduction of the first supranational airport security regime in history, with the aim of raising the standards of all members to those of the best performers. In addition to the 15 member states, 23 further countries that subscribe to Europe's security code of conduct and the recommendations of ECAC have voluntarily agreed to implement the new measures. When the final stumbling block of funding will be overcome (probably with the help of a higher security fee), there can be little doubt that this regulation will ensure that Europeans will be flying safer than others for some time to come.

CONCLUSION

In our article, we have shown that the different performance of the American and German airport security regimes before September 11 can be largely attributed to institutional factors. In the US, responsibility for airport security was assigned to airlines whose cost cutting efforts resulted in low performance and lax controls. In Germany, in contrast, responsibility was delegated to the government, which shielded the provision of airport security from market pressures and led to high performance. Drawing upon the in-depth study of both cases, experience from other European countries, and the theoretical arguments developed above we claim that the delegation of responsibility for airport security to the government is a necessary condition for a satisfactory security performance. There are sound theoretical reasons arising from both problems of collective action and time inconsistency that lead to market failure when it comes to the provision of high quality airport security, and this hypothesis is supported by the empirical evidence available.

US policy makers are well advised to acknowledge this lesson and to resist the pressures for re-privatization and cost-cutting that dangerously loom on the horizon. America must never re-privatize airport security again. The immediate federalization of airport

security after September 11 is a great achievement that needs to be defended. However, it is not sufficient. The current US airport security regime is still less than it could be. Key weaknesses, such as positive baggage matching, require immediate improvement. Moreover, sufficient funding has to be guaranteed on a long-term base.

In the overall outlook, the contrast to Europe could not be any stronger: While the Americans try to catch up to the international average, the European countries have moved a step beyond their already higher airport security standards with the legal provision of a new supranational security regime. Nonetheless, there is no reason for complacency on that side of the Atlantic either, and all European states have to take great care in their future policies: Close EU monitoring makes us optimistic for Germany and Europe as a whole, but we fear that the increasing use of private firms in the execution of airport security tasks will conflict with security performance if taken too far. This fact is currently overlooked, but the danger is real. Airport security best remains government-dominated to prevent profit interests from triumphing over security concerns.

NOTES

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1. While some work has been done on air terrorism, safety issues, and the institutions of civil aviation in general, the politics of airport security has been almost completely ignored by political scientists. This is particularly troublesome since 'airport security is indeed at the very heart of civil aviation; [. . .] this is the point at which the system succeeds or fails.' Peter St. John, *Air Piracy, Airport Security, and International Terrorism* (New York: Quorum Books 1991) p.179. The only two exceptions include George H. Frederickson and Todd R. LaPorte, 'Airport Security, High Reliability, and the Problem of Rationality', *Public Administration Review* 62 (2002) pp.33–43, who exclusively focus on organizational theory aspects of airport security, and Darryl Jenkins, 'A Primer on Airport Security', in Alasdair Roberts (ed.), *Governance and Public Security* (New York: Campbell Public Affairs Institute, Maxwell School, Syracuse University 2002). Important work on air terrorism has been done by practitioners, such as Rodney Wallis, *Lockerbie—The Story and the Lessons* (Westport: Praeger

Publishers 2000); *How Safe Are Our Skies*? (Westport: Praeger Publishers 2003); Jin-Tan Choi, *Aviation Terrorism: Historical Survey, Perspectives and Responses* (London: Palgrave Macmillan 1994); and the series of articles published in the special issue of *Terrorism and Political Violence* on the topic, in particular Paul Wilkinson and Brian M. Jenkins, 'Introduction', *Terrorism and Political Violence* 10 (1998) pp.2–8; Bruce Hoffman, 'Aviation Security and Terrorism: An Analysis of the Potential Threat to Air Cargo Integrators', ibid. pp.54–61; and Brian Jenkins, 'Airport Sabotage', ibid. pp.51–69. This general work on air terrorism provides an important precursor to our analysis, which focuses on the topic of airport security specifically. To our knowledge, this paper provides the first theoretically guided and empirically grounded comparative analysis of airport security regimes across countries.

2. Federal Aviation Administration, *Aviation Security: Personal Factors Responsible for Preboard Passenger Screening Test Results* (Washington DC: US Department of Transportation 1979); General Accounting Office, *Implementation of a Performance Standard for Passenger Screening Process* (GAO/T-RCED-88-4 1987); General Accounting Office, *Aviation Safety and Security: Challenges to Implementing the Recommendations of the White House Commission on Aviation Safety and Security*, Testimony of Gerald L. Dillingham before the Subcommittee on Aviation, Committee on Commerce, Science and Transportation, US Senate (GAO/T-RCED-97-90 1997); General Accounting Office, *Aviation Security: Long-Standing Problems Impair Airport Screeners Performance* (GAO/RCED-00-75 2000a); General Accounting Office, *Aviation Security: Slow Progress in Addressing Longstanding Screener Performance Problems*, Testimony of Gerald L. Dillingham before the Subcommittee on Aviation, Committee on Transportation and Infrastructure, House of Representatives (GAO/T-RCED-00-125 2000b); US Government, *Prepared Testimony of Gerald L. Dillingham before the Senate Committee on Commerce, Subcommittee on Aviation* (2000a); National Research Council, *Airline Passenger Security Screening. Report conducted for the Committee on Commercial Aviation Security, Panel on Passenger Screening* (Washington DC: NMAB-482-1 1996).
3. Robert W. Poole, 'Answers to Airport Security Found in Europe', *Security Management* 11 (Oct. 2001); General Accounting Office, *Vulnerabilities in, and Alternatives for, Pre-board Screening Security Operations*. Testimony of Gerald L. Dillingham before the Committee on Governmental Affairs and Its Subcommittees on Oversight of Governmental Management (GAO-01-1171T 2001).
4. St. John (note 1) p.86; Gayle Rivers, *The War Against the Terrorists* (New York: National Book Network 1986) p.49.
5. Yeffet, cited from Choi (note 1) p.35.
6. Ibid.
7. Other parts of airport security include access controls, crisis management, airport policing, and the protection of personnel, services and numerous possible targets such as ramps or parked planes.
8. Detection rates measure the percentage of test objects discovered.

9. FAA 1979 p.12; GAO 1987, 1997, 2000a, 2000b, 2000c National Research Council 1996. Cf. note 2.
10. Note that the variables themselves are causally linked as well. High turnover is indeed a product of low pay.
11. Vincent, cited from Choi (note 1) p.42.
12. Department of Transportation, *Development of Decision-Centered Interventions for Airport Security Checkpoints* (DOT/FAA/CT94/108 1994).
13. Michael Reich, Peter Hall and Ken Jacobs, 'Living Wages and Airport Security', *Working Paper, Institute of Labor and Employment*, (California: University of Berkeley 2001) p.4.
14. One of the largest screening companies, Argenbright Holdings, paid a $1.2 million fine in 2000 for using more than 1,300 poorly trained workers, some with criminal convictions (backgrounds had not been checked) at Philadelphia airport from 1995 to 1998. The same firm staffed Newark and Dulles airport, where two of the planes of the September 11 attacks took off. See US v. Argenbright Holdings Limited, Criminal No. 00-194-01, available at < http://news.corporate.findlaw.com/hdocs/docs/argenbright/argnsentmem.pdf > (retrieved 16 Nov. 2003).
15. GAO 2001 (note 3).
16. Wallis, *How Safe Are Our Skies* (note 1) p.152.
17. The term EDS refers to explosive detection system. EDS uses computerized tomography (CT) technology similar to that used for CAT scans in hospitals to create three dimensional views of what is inside a bag, including some indication of the relative density of objects. Current EDS machines weigh six to eight tonnes and are about the size of a minivan. For further details see Jehuda Yinon, 'Field detection and monitoring of explosives', *Trends in Analytical Chemistry* 21/4 (2002) pp.292–305.
18. 100 percent checked luggage screening (HBS) will be reality by the end of 2002. Viggo Butler and Robert W. Poole, 'Re-Thinking Checked-Baggage Screening', RAND Working Paper (2002) p.3; Wallis, *Lockerbie—The Story and the Lessons* (note 1) p.150; Wallis, *How Safe Are Our Skies* (note 1) p.35. Interview conducted with Peter Dienstbach, head of FRA security, 25 Sept. 2002. Interview conducted with Werner Semmling, Heiman Security Systems, 26 Aug. 2002.
19. Butler and Poole (note 18) p.2.
20. Wallis, *Lockerbie – The Story and the Lessons* (note 1) p.12.
21. Yeffet, cited from Choi (note 1) p.35.
22. Wallis, *Lockerbie – The Story and the Lessons* (note 1) pp.13, 23, 24.
23. Ibid. p.151.
24. According to German security managers we interviewed, about 50 per cent of passengers and carry-on baggage were searched as early as 1973. The world standard at that time was somewhere between 10–20 per cent. There also have been early attempts to implement checked baggage screening, but at that time the screening technology based on conventional x-ray was far from sophisticated. The first baggage-screening device was installed at Frankfurt airport in 1982, consisting of a top load box that needed to be opened and closed for every single piece.

25. Between 1967–76 179 terrorist attacks on commercial aviation occurred worldwide. In the previous decade, only 10 terrorist incidents took place. Ariel Merari, 'Attacks On Civil Aviation: Trends and Lessons', *Terrorism and Political Violence* 10/3 (1998) pp.9–26, p.10.
26. Ninth amendment to the Civil Aviation Law (*9.Änderungsgesetz zum Luftverkehrsgesetzt*) of 18 Sept. 1980. BGBl 1729 I.
27. At the same time, the act imposed various private security obligations (*Eigensicherungspflichten*) on the airports and airlines to be executed at their own cost (such as the securing of facilities and aircraft against unauthorized access, etc.). For details see Steffen Richter, *Luftsicherheit* (Stuttgart: Boorberg 1999) chapter 2; Elmar Giemulla and Roland Schmid, 'Sicherheitsmaßnahmen im Luftverkehr', *Neue Zeitschrift für Verkehrsrecht* 11/3 (1989) pp.413–19, p. 416.
28. Joint draft of the Federal Ministry of Transport and Federal Ministry for the Interior for the ninth amendment to the Civil Aviation Law (*Gemeinsamer Ministerentwurf des Bundesministeriums für Verkehr und des Bundesministeriums des Inneren zum 9. Änderungsgestez des Luftverkehrsgesetzes)* and draft of the Federal Government regarding the same issue from 25 May, 1979. Both printed in Bt-Drucksache 8/3431.
29. Official response of the Federal Government to the recommendations of the *Bundesrat (Gegenäußerung der Bundesregierung zur Stellungnahme des Bundesrates)*, BT-Drucksache 8/3431, p.22.
30. The major exception here was that most American airlines operating at German airports did not take part in the official security regime (screening and checked baggage) but instead conducted their own security measures according to FAA regulations. For example, in the case of Pan Am flight 103, which exploded in mid-air over Lockerbie in December 1988 the bomb, hidden in an unaccompanied rush-tag suitcase, was originally placed on board of a previous Pan Am flight in Frankfurt Airport and then transferred at London. The luggage screeners at Frankfurt were Pan Am employees. See the discussion of the incident in the US case study below.
31. Federal Aviation Administration, *Study and Report to Congress on Civil Aviation Security Responsibilities and Funding* (Washington DC: US Department of Transportation 1998) p.15. See also Giemulla and Schmid (note 27) p.415.
32. In these systems, screening is conducted using three levels of screening with increasing strength. If a bag is scanned as suspicious in one level it is diverted to a more thorough screening on a higher level. Usually only 3–4 per cent of baggage even reaches the third level. For further details see Wallis, *How Safe Are Our Skies* (note 1) p.33. At airports using older systems 100 per cent HBS is accomplished by screening the luggage prior to check-in. This procedure is currently in place at Frankfurt International.
33. Between 1978–87 348 terrorist attacks on commercial aviation occurred worldwide. In the previous decade, only 179 terrorist incidents took place. Merari (note 25) p.10. 13 planes got hijacked in the first half of 1985 alone. See Cockpit-Report, No. 21 from 8 July 1985.
34. Parliamentary address of the Federal Government concerning the current terrorist threat to civil aviation and the following parliamentary debate (*Erklärung*

der Bundesregierung zur Sicherheitslage in der deutschen Zivilluftfahrt) from 28 June, 1985. Printed in: Plenarprotokol 10/150 p.11230.

35. The German Lufthansa even sued the Federal Government for introducing the fee, but lost the trial. See Ruling of the Verwaltungsgericht Munich from 23 Oct. 1991 (M 17 K 91.3419, M 17 K 91.3610). See also Knut Focke, 'Wem dient die Sicherheitsüberprüfung der Flugpassagiere?', *Zeitschrift für Luftfahrt und Weltraumrecht* 41/3 (1992) pp.240–47.
36. Reform of the aviation administration cost regulations (*Verordnung zur Änderung der Kostenverodnung der Luftfahrtverwaltung*) from 8 June 1990. BGBl. 1990 I, p.1020.
37. At Frankfurt International, screening is conducted in a unique framework of cooperation between airport employees and the Federal Ministry of the Interior. Security cooperation is negotiated annually in an agreement between the Federal Government and the airport. The airport employs screeners who receive pay similar to that of state employees. It is about 30 per cent above the wage usually paid by private screening companies. Interview conducted with Peter Dienstbach, Head of FRA security, 25 Sept. 2002.
38. Private companies also have to constantly test their employees both on-site and in training centers by using computer simulations (threat image projection systems). Employees must perform at a specified level in order to remain on the job.
39. Choi (note 1) pp.23–4.
40. Richard S. Kent, *Safe, Separated, and Soaring: A History of Federal Civil Aviation Policy* (Washington DC: Bernan Association 1980) p.340.
41. The Sky Marshal program was terminated in 1972 after being criticized by both the aviation industry and security experts. See Choi (note 1) pp.31–2 for a discussion.
42. Kent (note 40) pp.346–8.
43. FAA 1998 (note 31) p.15.
44. Kent (note 40) pp.350–51; St. John (note 1) p.75.
45. Public Law 93–366, 5 Aug. 1974.
46. At least in the early 1970s, the nature of the threat was profoundly different from that encountered in Europe: not terrorists, but mentally deranged individuals or criminals committed most of the hijackings, comp. FAA (note 31) pp.16–18.
47. GAO 2001 (note 3) p.3.
48. Rodney Wallis, *Combating Air Terrorism* (Washington, New York, London: Brassey's, Inc. 1993) p.26. Pan Am was later found guilty of willful misconduct in US Federal Court.
49. Ibid. p.44; Wallis, 2003 (note) p.33.
50. Public Law 101–604, 16 Nov. 1990.
51. Wallis, 2003 (note) pp.131–4.
52. St John (note 1) pp.176–7; Paul Wilkinson, 'Enhancing Global Aviation Security?', *Terrorism and Political Violence* 10/3 (1998) pp.146–166, p.160.
53. St. John (note 1) pp.67–70.
54. US Congress, *Joint Inquiry into the Intelligence Community Activities before and after the Terrorist Attacks of September 11th, 2001* (Washington DC: 2003) p.360.

55. Kent (note 40) p.355.
56. Mike Fish, 'Airport Security: A system driven by the minimum wage', (retrieved 15 Aug. 2002), < www.cnn.com/SPECIALS/2001/trade.center/flight.risk/stories/part1.mainbar.html. >
57. Ibid.
58. St. John (note 1) p.77.
59. Public Law 104–264, 9 Oct. 1996.
60. See FAA 1998 (note 31) p.37.
61. US Government, *Statement of Thomas S. Hartwick before the subcommittee on aviation, committee on transportation and infrastructure* (Washington DC: 2000b).
62. Wallis, *How Safe Are Our Skies* (note 1) p.38.
63. General Accounting Office, *Aviation Security: Vulnerabilities in, and Alternatives for, Preboard Screening Security Operations* (GAO-01-117IT 2000b) p.2.
64. Walter V. Robinson and Glen Johnson, 'Airlines fought security changes despite warning, companies wanted to avoid delays' *Boston Globe*, 20 Sept. 2001.
65. Federal Aviation Administration, '*Protocol Minutes of the Aviation Security Advisory Committee (ASAC) Meetings*', available at < http://www.tsa.gov/public/display?theme = 73 (retrieved in May 2003): FAA-ASAC > Minutes of 12 Dec. 1996 pp.57–63; FAA-ASAC Minutes of 26 March 1997 p.22.
66. FAA-ASAC Minutes of 21 June 2001 p.11.
67. US Congress (note 54) p.242.
68. FAA-ASAC Minutes of 12 Dec. 1996 p.17.
69. White House Commission on Aviation Safety and Security, *Final Report* (Washington DC: 1996) p.25.
70. US Government 2000a (note 2).
71. White House Commission on Aviation Safety and Security (note 69) pp.5, 9.
72. For a typical example see FAA-ASAC Minutes of 23 April 1998 pp.82–3. The new procedures for ASAC working groups adopted in April explicitly state that 'Consensus is the goal of each working group, but should not become a stumbling block.' TSA-ASAC Minutes of 30 April 2003 p.4.
73. 'Unfortunately, the FAA is limited by certain statutes in terms of how they can engage in discussion and dialogue with the industry, the airports, and particularly when it comes down to developing a consensus opinion.' FAA-ASAC Minutes of 23 July 1997 p.40.
74. Robinson and Johnson (note 64).
75. Wallis, *How Safe Are Our Skies* (note 1) p.65.
76. FAA-ASAC Minutes of 19 April 2001 p.19.
77. Wallis, *How Safe Are Our Skies* (note 1) p.75.
78. In other words, asymmetrical information prevents consumers from observing the 'true' quality of the controls. To be sure, some elements of the screening process can be observed such as the attentiveness of the controls. However, most of the quality criteria remain unrevealed (training and turnover of the screeners, used technology etc.).
79. The losses of the US air industry after September 11 have been severe. In 2001 alone, the industry suffered a record net loss of $7.7 billion, even after receiving

approximately $4 billion in after tax compensation. Revenue passenger miles fell 19 per cent from the 4th quarter 2000 to the 4th quarter 2001 despite significantly lower average ticket prices. This resembles the largest drop in the history of US aviation. Our market analysis reveals that with very few exceptions, all airlines followed this overall industry cycle. The rankings of the top 10 US airlines in terms of Revenue Passenger Miles (RPM) saw only minor changes for 2000–2002. Moreover, the patterns of the few changes that occurred were the opposite of what one would predict if customers were punishing attacked airlines individually. American Airlines for example extended its market lead while some of the non-affected airlines such as US Airways actually lost ground. Only very few individual airlines that serve very specific markets and have different business models have been affected to a lower degree. These include for example the low-cost airline Southwest. However, even this company felt the slump as reported net income for the second quarter of 2002 showed a decrease of 41.8 per cent compared to the second quarter of 2001. See Annual Report of the Air Transportation Association (ATA) 2000, 2001, 2002; Annual Reports 2002 of the top 10 US carriers. See Hearing on Financial Condition of the airline industry before the Subcommittee on Aviation, House of Representatives of the US Congress, 24 Sept. 2002.

80. Jenkins A., *A Primer on Airport Security* (note 1) p.82.
81. Ibid. p.81; Choi (note 1) p.38.
82. Wallis, *How Safe Are Our Skies* (note 1) p.79.
83. GAO 2001 (note 3) p.11.
84. Wallis, *How Safe Are Our Skies* (note 1) p.78.
85. See instead of many others Kim Murphy *et al.*, 'Probes Found Breaches in Security', *Los Angeles Times*., 13 Sept. 2002, A15; Michael Skapinker, 'Airline's Security Record Seen As Poor', *Financial Times*, 12 Sept. 2002, A4.
86. GAO 2001 (note 3) pp.2–3.
87. See Elisabeth Bumiller, 'G.O.P. Moderates See Dangers in Bush's Stance on Aviation Security', *New York Times* 15 Nov. 2002, B1; Mike Allen, 'Airport Bill Approach Could Be Repeated; Bush Voiced Support for GOP Conservatives but Stayed Flexible on End Result', *Washington Post* 19 Nov. 2002, A2.
88. Public Law 107–71, 19 Nov. 2001; 115 STAT. 597.
89. Statement of the TSA administrator Admiral James M. Loy before the US Senate appropriations Subcommittee on Homeland security on 13 May 2003. Accessible at: < http://www.tsa.gov/public/display?content = 405 > (retrieved 20 June 2003).
90. General Accounting Office, *Aviation Security: Transportation Security Administration Faces Immediate and Long-Term Challenges*. (GAO-02-97IT 2002) p.10.
91. Office of Management and Budget, *Federal Budget 2003*, Accessible at: < http://www.whitehouse.gov/omb/budget/fy2003/bud03.html > (retrieved 1 Oct. 2002).
92. Wallis, *How Safe Are Our Skies* (note 1) p.30.
93. Note that the deadline of December 2002 proved unrealistic. By 17 Sept. 2002 only 215 EDS machines were operating at American airports. Numerous

airports are seeking an extension. See Subcommittee on Aviation of the House of Representatives, Hearing on airport security from 17 Sept. 2002.

94. Ten years earlier a similar proposal adopted by the FAA had been abandoned following heavy airline activity in Washington. Both the Bush and the Gore commission recommended the procedure but is was never implemented. See Wallis, *How Safe Are Our Skies* (note 1) p.33.
95. A two-digit sum in millions of dollars alone was saved at Frankfurt Airport (FRA). FRA adopted its own matching system labeled 'BRaLS' in the early 1990s, which was eventually sold to numerous European airports. Interview conducted with Peter Dienstbach, Head of FRA security, 25 Sept. 2002. Major savings have been reported from London Heathrow as well. The cost of mishandled baggage in the US was estimated 1988 at $400 million per annum. Today the number is supposed to be much higher. See Wallis, *How Safe Are Our Skies* (note 1) p.47.
96. Note that there are already indications that the new training standards might be undermined in practice, Mathew L. Wald, 'Official Says Airport Trainees Knew Questions Before Tests', *New York Times* 9 Oct. 2003.
97. Jenkins A., *A Primer on Airport Security* (note 1) p.83.
98. 'Screener Reduction on Track as Rightsizing is Refined' TSA Official Press release 6 June 2003. Accessible at < http://www.tsa.gov/public/display?content = 268 > (retrieved 20 June 2003).
99. Editorial Board, 'Shortchanging Security', *New York Times* 6 Aug. 2003, A1.
100. Official Journal of the European Communities (OJ) C 51 E/221, 26 Feb. 2002.
101. Interview conducted with Jacqueline Foster, Member of European Parliament, 17 June 2003.
102. The ECAC was founded in 1955 as an intergovernmental organization with the aim of harmonizing civil aviation policies and practices amongst its member states (currently 41).
103. Council Common Position of 28 Jan. 2002, OJ C 113 E/17, 14 May 2002.
104. OJ L 355/1–21, 30 Dec. 2002.