

***Terrorism and Safety Perceptions: the Economic Impact
of Terrorism on the World Civil Aviation Industry***

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Introduction

Travel and Tourism is the world's largest economic sector with annual turnover of US\$4,494bn, (WTTC, 2002, p. 2). Underpinning that sector is civil aviation, which had been growing at 5.5% per annum in recent years. In 1999 the sector saw 1.5 billion passenger journeys. But after

September 11 2001 traffic (measured in Revenue Passenger Kilometres) is down nearly 5% and industry losses stand at US\$12bn, (IATA, 2002, p. 4.) A number of high profile carriers have gone bankrupt, and others such as British Airways, face severe problems. The large commercial aircraft manufacturers, Airbus and Boeing, also face acute problems. In 1999 over 900 large commercial aircraft, worth well over US\$ 50billion, were manufactured and delivered to customers. In 2003 this will be down by 33% to 600 units, (Flight International, 2002). Hence the events of September 11 have had an acute impact on both aviation and civil aerospace.

Aviation is a critical "intermediate good", which facilitates and underpins other sectors. In general the health of civil aviation is a good barometer for the general strength of the world economy. The links with tourism are paramount. In 2001 the UK tourism sector, already in trouble because of foot and mouth disease, was pushed into crisis as a direct result of September 11 and the reluctance of U.S. tourists to fly across the Atlantic. Overall in 2001 overseas visits to the UK declined by 9%, with a 15% drop in spend, (British Tourist Authority, 2002). The vulnerability of aviation to terrorism is thus twofold. There is the physical risk to aircraft, passengers and the wider public, so dramatically illustrated in the New York and Washington attacks. But there is also the insidious economic effect when public confidence in air travel is undermined. This paper explores the cost aspects of the terrorist threat and also how media coverage of air safety events amplifies the impact of terrorism

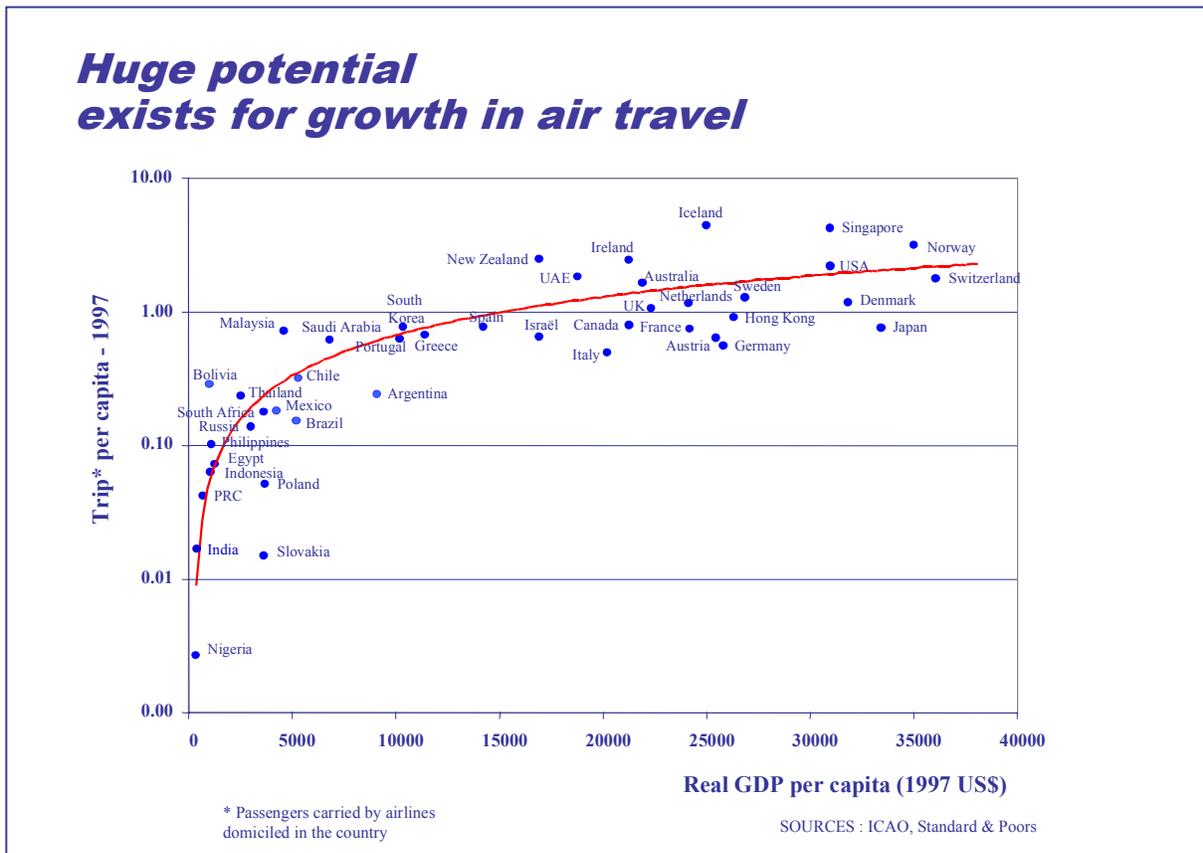
Changes in the Air Transport Market

The air transport market has undergone significant changes over the last decades. As former EU Transport Commissioner Neil Kinnock commented,

In order to secure efficient and cost-effective mobility for people and goods, which also respect the need for sustainable economic development we must be able to deploy the best available technologies. These guarantee both economic competitiveness and the maintenance of high standards of safety, which are under such pressure because of the constant growth of transport demand. Transport is important for the well being of everyone. The (transport) industry's annual financial turnover is second only to that of the food industry and accounts for 7% of gross domestic product and 4% of all employment. Quite obviously we cannot do without it and would not want to try, (Kinnock, 1998.)

The growth of air travel appears to illustrate a basic fact about increasing economic prosperity. As figure one shows as people possess more disposable income they seem to substantially increase their propensity to travel. But because travel is sensitive to economic prosperity and is not an essential item of consumption, economic downturns are quickly manifested in reduced passenger numbers. Air transport is this highly cyclical.

Figure 1. Air Travel and Per Capita GDP



Historical crises, such as the 1991 Gulf War, also reveal how air travel is vulnerable to broad changes in public mood and confidence in safety regimes. As the attached slides (see 18) show the Gulf War impacted very severely on revenue passenger kilometres. As a result of the 1991 War and the ensuing recession in the United States, airlines lost some US\$12.7bn between 1990 and 1993, with PAN AM and Eastern Airlines going bankrupt, while others such as TWA and Continental filed for Chapter 11 protection, (Heppenheimer, 1995, p. 343) In consequence it can be seen very clearly that air transport is both a volatile and risky industry, prone to severe cycles. In addition, public anxiety about air travel is amplified substantially by saturation coverage of aviation accidents. In our IAPA study of passenger perceptions we have been very surprised by the detailed knowledge of air accidents exhibited by our sample.

Public Perception of Air Safety

Commercial aviation is very safe, with an unparalleled level of performance compared to other sectors. But occasionally the system suffers a major air disaster, creating a negative public and media reaction. Most recently, the crash of Swissair Flight 111 over Nova Scotia raised major public concerns, especially because the airline was seen as the embodiment of a safe carrier. Risk averse behaviour is evident in the way that many air travellers avoid commuter turbo props,

new-entrance airlines or third-world carriers in-order to reduce their risk, however very few would have felt uneasy boarding Flight 111 (Barnett (1998)).

From a marketing point of view safety is an important aspect of product quality and can be seen as a competitive advantage that improves the airline's financial performance and stock value. The Flight Safety Foundation's ICARUS Committee (1998), for instance, has underlined that a highly successful international airline recently conducted a survey of its customers to identify why passengers choose to fly with their airline. The survey showed that about 25 percent of the respondents chose the airline over its competition because of convenient schedules; another 25 percent preferred its generous Frequent Flyer program. But the most significant finding was that about 50 percent of the respondents selected the airliner because of its excellent safety record. However, it has to be pointed out that the airline is operating in a part of the world, where safety, due to the current safety standards, is a major concern to everyone. Thus, the airline's finding may not necessarily be representative for other countries or world regions. Furthermore, it has to be underlined that it is indeed difficult for consumers to judge the safety performance or the risk they take when boarding an aircraft. According to Nancy L. Rose (1992), "Unlike other characteristics of product quality – such as scheduled convenience, crowding, on-board service consumer have difficulty in observing the level of safety provided by a carrier when making a travel decision. This has also been revealed by several studies, which concluded that, the individual risk perception is largely dependent on the degree to which people believe they have situational control (Rolen & Schmidlin 1998). In road traffic where car drivers are in control of the vehicle, the risk acceptance seems to be higher than for cases without such control. Examples of lack of control are passengers in trains and aircraft. Another factor, which was related to the level of accepted risk by the consumer is the chance of high fatality accidents, which again is higher in non-road transport than in road transport (Anon, T. 1996). The third factor that plays a role is the time that has passed since a similar event took place. The more retrievable the event is from memory, the greater its intuited probability. Finally, people tend to overestimate the likelihood of low probability events occurring as they seem more probable than they are in. According to O'Banion (1980), individual risk perception can be characterised as follows:

- Individuals, as a rule, tolerate much greater risk in activities over which they exert personal control than in those over which control is in the hands of some external body;
- Individuals tend to be more favourably disposed to consequences that are distribute over time then to those where a lot of people get it at once (risk aversion);
- The more retrievable the event, the greater its intuited probability;
- Low probability events are overestimated; they seem more likely than they are in fact.

In other words, individuals may be expected to respond more negatively to "risky" events that:

- Are under external control;
- Are low probability but catastrophic in nature;
- Have recent and/or salient instances.

These characteristics are typical for aviation. Many people express the feeling that their fate depends on the skill of the pilots, who have to deal with extremely complex technologies. The

aviation community is furthermore regarded as being very closed, where people who make mistakes are backed-up by other people within the system.

Even though accident probability is very low when fatal accidents do happen, the number of fatalities is relatively high. Currently, the number of passenger fatalities per fatal accident in western built jets is 69 (Anon., 1997), but the size of aircraft is constantly increasing (the average number of seats is 146, increasing to 175 in 2016). Furthermore the developments of Very Large Aircraft such as the Airbus A380, may translate into a disproportional negative influence on the public's perception in case of an accident. A comparable situation existed in the early seventies with the introduction of wide-body aircraft. The first wide-body aircraft disaster occurred on 3 March 1974, when a Turkish Airlines DC-10 flying from Paris Orly to London Heathrow crashed after cabin de-pressurisation caused by the loss of a cargo door. 346 people died in the crash, making it the most severe aviation accident of that time. This accident generated enormous media attention, which in turn contributed to the DC-10's reputation of being an unsafe aircraft.

As a result of accidents, government and regulatory authorities have put in place complex regulations to assure minimum safety standards and practices. However, there are other indirect market forces driving these standards, such as the system of tort liability and also consumer confidence in selecting a certain mode of transport and fly with a certain airline on a specific aircraft type. As September 11 2001 showed specific markets and routes can lose substantial numbers of customers after a major disaster

The fact, that passengers, following accidents, change their travel behaviour, is what Schmidlin and Toft (1998) describe as "Marketing of Disaster". The notion of "Marketing" relates to the fact that the loss experience of a firm in terms of lost rider-ship or lost reputation, will be absorbed by other competing firms. Although with respect to September 11 this was not the case. Here the system was affected generically. Still some of the normal responses to accidents do relate to the 9/11 attacks.

The changes in passenger travel behaviour can be described as follows:

x% of passengers do not travel at all.

x% of passengers still travel by air but divert to another airline, e.g. not using a U.S. carrier to fly trans-Atlantic

x% of passengers still travel but divert to another mode of transport,

x% of passengers still continue to travel with the airline,

100%

In our IAPA survey a finding of some note was that 5% of individuals who had experienced an event they perceived as dangerous ceased travelling by air for a certain period. The percentage distribution of the change in travel behaviour is a reflection of the media coverage, and more

specifically which institution or individual the media is blaming, as well as the national culture, including the values and beliefs of the population touched by the event.

The first three cases, (“passengers do not travel at all”, “passengers do still travel by air but divert to another airline” and “passengers still travel but divert to another mode of transport”) result in a direct decrease of air passenger volume of the airline which experienced the loss, leading to a significant revenue loss which is likely to affect the profit of the air carrier.

In the case of 9/11 the comparable situation would be one where the media discredited the system as a whole, by highlighting lapse airport security. But in fact the media focus changed quite quickly to an emphasis on factors that would unite the U.S. public and discredit the perpetrators of the outrage. Only recently has the U.S. sought to challenge the intelligence agencies for their lack of vigilance before 9/11.

The last case, “passengers still travel but divert to another mode of transport”, can result in the highest losses to society. This is especially true if a high number of air travellers divert to other modes of transport, which have considerably higher fatality rates than those of scheduled air carriers.

The Real Level of Risk

In Western countries the real level of risk from travelling by air is very low. According to Barnett the chance of being killed in a fatal accident in a Western country when flying domestically is 1 in 13 million. However in some developing countries the risk goes up to 1 in 500,000, (Barnett, 2000). The heightened sense of risk in the West is thus partly a psychological factor, but also critically a media amplified process. In an earlier article Barnett examined media attention to aviation accidents. He argued that, by the criterion “page-one stories per thousand US deaths”, the New York Times devotes 60 times as much attention to jet crashes as to AIDS, 1500 times as much as to automobiles, and 6000 times as much as to cancer. This is furthermore supported by an end-of 1996 Associated Press survey, in which US newspaper editors voted the July 1996 crash of TWA #800 as the biggest news story of 1996. However, not only accidents with high number of fatalities may cause concerns amongst air travellers. Also accidents such as the 1996 crash of Value Jet which crashed shortly after take-off from Miami due to fire on board, leading to a loss of 2 flight crewmembers, 3 cabin attendants, and 105 passengers, resulted in band braking news stories (Schmidlin and Leib 1998).

The Effects of 9/11

In the late summer of 2001 the U.S economy was already exhibiting a slowdown, but the effects of 9/11 pushed the U.S. into recession. A pivotal aspect of the recession has been the impact on aviation and aerospace. As the Boeing CEO recently highlighted the aviation sector has lost US\$12bn in the last year. In addition RPKs are 5 % down for the year. This aviation recession also impacts travel and tourism. To take the case of the UK U.S. visitors can only travel by aircraft, if they perceive this to be too risky then their tours are cancelled. In turn this impacts on hotels, leisure services, car hire, restaurants etc. As our slides indicate (slide 15) the UK had 9%

fewer foreign visitors in 2001 than 2000, with disastrous effects on the tourism industry. But why should 9/11 have had such an impact.

We contend that the effects of 9/11 were significantly amplified because the media already hugely exaggerates the risks associated with air travel. The visual image of two wide-bodied jets ploughing into the twin towers will live in the mind's eye of billions of citizens in perpetuity. In addition as the cultural critic Susan Sontag has argued in modern societies we live with the imagination of disaster. High technology has created systems and materials that require sophisticated defensive systems to protect us from their malfunction or deliberate sabotage. Both Pan Am Lockerbie and TWA 800 provided images of hundreds of poor souls experiencing untold terror, before violent death. Nuclear accidents like Chernobyl also highlight the disaster potential of modern technology. But two large civil jets deliberately piloted into massive high-rise office blocks was a new dimension in this process. Media coverage showed individuals jumping to their death to avoid the inferno inside the buildings. We can only begin to imagine the hell that existed inside the twin towers.

Thus Osama Bin Laden's plot tapped into the deepest fears of a risk averse people who live side by side with dangerous technology. We know that insurance underwriters had considered a scenario of two jumbo jets colliding over a major city, with an insurance estimate for the damage of US\$2bn. But on 9/11 real life took a step beyond what the risk scenario analysts had already conceived.

References to follow