



## The good, the bad, and the ugly: 30 years of US airline deregulation

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### ABSTRACT

The US airline industry was deregulated in 1978 and has undergone significant changes in industry structure, profitability, employment, passenger volume, and patterns of service and fares, among other characteristics. This paper sets out to make three contributions to the literature as related to the story of airline deregulation. First, discussion of economic theory will provide the context for an updated overview of the positive, negative, and really negative results of US airline deregulation, summarized in the form of “the good”, “the bad”, and “the ugly”. Second, this paper provides a periodization of the 30-year history of US airline deregulation that is important in understanding the cycles of change as reflected in the industry’s financial performance and other relevant data. Third, this paper contributes to the renewed debate about the efficacy of deregulation and liberalization policies, particularly at a time when the global financial crisis has cast a harsh spotlight on the (un)desirability of these policies. Some of the good results during the 30 years of airline deregulation, from the industry and consumer perspective, include higher passenger volumes, more service to the most popular destinations, and lower fares on average. Bad results include financial and employment instability, diminution in the quality of airline service overall, and fewer flights and higher fares to smaller places. The recent 2000–2005 period has been particularly ugly, as the airline industry has lost over \$30 billion, and several high-profile carriers, such as United, Delta, Northwest, and US Airways, were forced into bankruptcy.

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### 1. Introduction to airline deregulation

It has been 30 years since the US Airline Deregulation Act was approved by Congress on October 24, 1978 and was signed into law by President Jimmy Carter four days later. This act meant that the government would no longer be engaged in economic regulation of the airline industry, after forty years of domestic regulatory control by the Civil Aeronautics Board (CAB). Instead, private airlines were allowed to make all decisions regarding entry, exit, and fares, while authority over mergers and acquisitions was transferred to the Department of Transportation (and later to the Department of Justice) upon the CAB’s termination on December 31, 1984.

The domestic airline industry was one of the first US industries to be deregulated,<sup>1</sup> and has come to symbolize the beginning of a tectonic shift in global economic policy toward neoliberalism that started in the late 1970s and 1980s. Seen from today’s perspective, deregulation was part of the neoliberal policy agenda enacted by the Thatcher government in the UK and the Reagan Administration

in the US, based on the economic theories of Frederick von Hayek, Milton Friedman, and the Chicago School of Economics that favored a more *laissez-faire* approach to economic matters. From the structural adjustment programs of the 1980s to the Washington Consensus in the 1990s, neoliberal economic policies held sway in the US and UK, and were actively promoted around the world through the actions of the US government, the World Bank, and International Monetary Fund, among other governments and agencies. Friedman (2000) identified deregulation as one of the central characteristics of the “golden straitjacket” approach for national success in the contemporary era of globalization, along with privatization, free trade, reducing state bureaucracies, opening markets to foreign investment and ownership, and other policies that favor the private sector (Goetz, 2002).

Airline deregulation in the US has been widely hailed as a success by government agencies, several research organizations and think-tanks, the airline industry itself, and the popular media. The US Department of Transportation (1990, 1996, 2000), the US Government Accountability Office (2006), the Transportation Research Board (1991, 1999), and the Brookings Institution (Morrison and Winston, 1995, 2008; Winston and Peltzman, 2000), among others (Levine, 2006) have each documented the success of airline deregulation, especially in terms of lower fares, increased passenger traffic, and more flights since 1978. The airline industry, mainly through the US Air Transport Association and other trade groups,

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<sup>1</sup> Deregulation of the airline industry was followed closely by other transportation industry deregulation, including railroads (1980), and motor carriers and buses (1982). Deregulation of financial services, (including savings and loan institutions), energy, and telecommunication industries occurred over the next two decades.

has also touted the benefits of deregulation, and has remained publicly supportive.<sup>2</sup> Two popular video documentaries and companion books, *Commanding Heights: The Battle for the World Economy* (Yergin and Stanislaw, 2002) and *The First Measured Century* (Caplow et al., 2001) featured airline deregulation as one of the marquee successes of the neoliberal agenda over the last 30 years.

Yet, despite this chorus of support, numerous concerns regarding US airline deregulation have emerged. The industry has gone through waves of mergers and consolidations that have resulted in high levels of single-firm concentration in certain markets. The widespread adoption of hub-and-spoke networks, in conjunction with industry consolidation and barriers to entry, has led to the establishment of “fortress hubs”, where a single airline has come to control 70%, 80%, or even 90% of the market in those cities. This domination has resulted in a fare premium, or “monopoly rent” that travelers from those cities have been forced to pay. In addition to the fortress hubs, many mid-sized and smaller communities have encountered substantially increased average fares and reduced levels of service, leading to the development of programs to ameliorate these problems. Certain regions of the US, such as the southeast Piedmont area, the upper Midwest, and parts of the Northeast, have been identified as “pockets of pain” because of perennially high fares and poorer quantity and quality of service (Goetz, 2002). Throughout the period of deregulation, and especially in the late 1990s, smaller carriers have alleged that larger airlines engaged in predatory pricing behavior to drive the smaller carriers out of lucrative markets or out of business altogether (USDOT, 2001). And, the financial condition of the US airline industry since deregulation began has been highly erratic, as losses have overwhelmed profits by a wide margin.

Added to these concerns is the overall role that deregulation has played in other industries, which has resulted in a number of major economic scandals. The global economic crisis of 2008 is the most recent and largest crisis that, many analysts contend, had its roots in the deregulation of the financial services industry, serving as an example of why the implementation of deregulation as a universal economic policy panacea is naïve and short-sighted. The weakening of New Deal-era financial regulations and regulatory structures in the name of *laissez-faire* economic policy, has been a contributing factor in the current financial disaster. The abdication of responsible government oversight has led to conflicts of interest and fraudulent abuse that contributed to the collapse of the financial services industry and the need for a federal government bail-out totaling at least \$700 billion as of September and October 2008 (Kuttner, 2007).

The most recent and largest crisis was not the first. The savings and loan (S&L) crisis of the late 1980s and early 1990s was caused in part by federal legislation, such as the Depository Institutions Deregulation and Monetary Control Act (the Garn-St Germain Act), that deregulated the industry and ultimately led to a \$125 billion US government bail-out when many S&Ls failed (Calavita et al., 1997; Congressional Budget Office, 1992; Lowy, 1991; Mayer, 1990; Robinson, 1990; White, 1991). Energy deregulation in California facilitated corporate fraud and abuse in the case of the Enron scandal and collapse in 2001 (Slocum, 2001). And the global economic crisis of 2008 also has its roots in the sub-prime mortgage crisis that is ravaging many homeowners, neighborhoods, and financial institutions, while wreaking general havoc on the US economy. Mortgage giant Countrywide Financial received a \$5 bil-

lion US government bail-out in 2007, the US Federal Reserve assisted the sale of financial institution Bear-Stearns in March 2008 with \$30 billion of guarantees, and the US Treasury Department and Federal Reserve bank announced their support of the Federal National Mortgage Association [Fannie Mae] and the Federal Home Loan Mortgage Corporation [Freddie Mac] in July 2008 due to the losses incurred as part of the sub-prime mortgage crisis. These actions were taken before the collapse of Lehmann Brothers in September 2008 sent the stock market into a tailspin, and the US Treasury Department announced the need to provide \$700 billion of relief to financial institutions to help loosen the tightening credit market.

In comparison to the financial services industry, the airlines have been a relative success story. Yet, there are troubling similarities in each of the cases of industry deregulation. While the airline industry has not yet experienced crises on the scale of the savings and loan industry or the mortgage institutions, the deregulatory ethos that dismisses the role of government oversight is the common denominator. Fortunately for the airline industry and travelers, the problems of deregulation have been relatively less severe, but experiences in the other industries are important lessons that should be heeded.

Accordingly, this paper sets out to make three contributions to the literature as related to the story of airline deregulation. First, economic theory will provide the context for an updated overview of the positive, negative, and really negative results of US airline deregulation, summarized in the form of “the good”, “the bad”, and “the ugly”. Second, this paper provides a periodization of the 30-year history of US airline deregulation that is important in understanding the cycles of change as reflected in the industry’s financial performance and other relevant data. Third, this paper contributes to the renewed debate about the efficacy of deregulation and liberalization policies, particularly at a time when the global financial crisis has cast a harsh spotlight on the (un)desirability of these policies.

## 2. Theoretical and historical background

### 2.1. Relevant economic concepts

There are a number of economic concepts that are relevant to the theoretical discussion of regulation and deregulation in industries and economies.

Many traditional neoclassical economic models are predicated on the assumption of “perfect” or “pure” competition, wherein very large numbers of buyers and sellers trade standardized products or services in a market and no one entity can control prices. While few, if any, actual industries can be described as perfectly competitive, some industries, such as traditional agriculture, have approximated this behavior. The concept of perfect competition has attained considerable analytical importance because it is a tractable starting point against which actual economic performance can be compared and has been widely used as a basic assumption in economic models. According to orthodox neoclassical economic theory, there should not be a need for government regulation in a perfectly competitive market because the market is not subject to monopoly abuse. This argument sets aside a host of other reasons why there is a need for government regulation in a free market economy, e.g., the nature of public goods, environmental concerns with common resources, workers’ rights, national security and defense, and other national or state interests.

At the other end of the spectrum is “perfect” or “pure” monopoly, wherein the market for a product or service is controlled by only one seller, and prices are wholly determined by that seller. An oligopoly refers to a market that is controlled by only a few

<sup>2</sup> The airlines were initially opposed to deregulation, but after the lead of United, they eventually all fell into line with the new policy and became highly supportive of it. The airlines became attracted to deregulation because of the increased power and control ceded to industry management which would prove useful in curbing labor costs, as well as the potential for each airline to become a “big” player in the newly scrambled industry.

sellers, and can behave like a monopoly. Similar to perfect competition, there are few, if any, actual industries that are perfect monopolies, but some industries with large economies of scale and high barriers to entry such as classic public utilities (e.g., electric power, water supply), have been considered to be monopolistic. An industry that is characterized by only one buyer that can exert control over prices is called a perfect monopsony. In an industry characterized by monopoly or monopsony conditions, and in which there is a significant “public interest” in the operation of an industry, it has been necessary for government to enact regulations so that single entities cannot unduly control prices and quantity produced to the detriment of the public.

Real-world industries and markets lie on a continuum somewhere between pure competition and pure monopoly. The need for government regulation depends on the degree to which an industry is subject to monopoly abuse, as well as the degree of public interest in that industry. The extent of government regulation has changed over time, depending on economic conditions and perceptions. Throughout much of the 1800s in the US, a *laissez-faire* system of capitalism reigned supreme whereby government played virtually no role in economic matters, and private firms had *carte blanche* in business matters within the existing legal framework. This led to a period of Darwinistic survival of the fittest, where very large firms came to dominate important industries, including steel, oil, railroads, banking, and communications. The railroad industry was one of the first to be subject to significant government regulation in the US because of the outcry from farmers as part of the Granger movement which strenuously objected to monopoly pricing by the railroads. This political movement led to the promulgation of the Interstate Commerce Act of 1887 that created the Interstate Commerce Commission (ICC) with the purpose of regulating railroad rates, entry, and exit. This form of regulation was extended to motor carriers (trucks) and airlines in the 1930s.

The US airline industry in the 1930s was just starting to become a contributor to the movement of passengers and mail, although it was beset by a number of problems due to its fledgling technology as well as depressed economic conditions of the time. Market failure during the Great Depression of the 1930s led the federal government to develop a variety of regulatory mechanisms to stabilize and bolster the national economy. In the airline industry, the federal government had been supporting airline delivery of mail through a subsidy program, but the cash subsidies were growing larger, which was a problem. Numerous airline companies started and failed, creating an air of instability in the industry, compounded by a disastrous safety record for a technology that was still in its developmental phase. In response to these concerns, the US Congress promulgated the 1938 Civil Aeronautics Act which created the Civil Aeronautics Authority (renamed in 1940 as the Civil Aeronautics Board [CAB]) to:

- encourage and develop the air transport system,
- promote safety and economic growth,
- regulate route entry and exit,<sup>3</sup> fares, mergers and acquisitions, and subsidies.

The CAB was authorized to award “certificates of public convenience and necessity” to airlines to serve specific markets. Sixteen airlines (including American, Continental, Delta, Northwest, and United) were “grandfathered” in as original trunk airlines. Local service airlines and air taxis (commuter airlines) were also allowed

to begin service during the 1940s. The CAB awarded routes to airlines so as to provide a mix of larger and smaller markets to each airline, expecting that each airline would be able to cross-subsidize losses in smaller markets with profits earned in larger ones. Thus, each airline was required to serve certain less profitable routes but was also given more lucrative routes to help compensate.

The system of regulation provided stability in the airline industry that facilitated its technological and economic growth over the next forty years. But a number of problems with the regulatory system led to the beginning of its reconsideration, as the system created some market inefficiencies. Airlines were not able to compete with each other based on price, due to regulated pricing by the CAB, and thus competed with each other on quality of service. The CAB was very inflexible regarding changes in pricing, entry, or exit, thus depriving travelers of different price/service options. The CAB did approve fare increases regularly as airlines sought to pass along increasing costs. And, the issue of regulatory capture (who regulates the regulators?) by special interests is always a concern in any regulated environment.

By the 1970s, these concerns with the regulatory system led to a reexamination of the efficacy of a regulated airline industry. A number of economic studies (Caves, 1962; Levine, 1965; Jordan, 1970; Keeler, 1972; Douglas and Miller, 1974) laid the groundwork for deregulation by showing that unregulated intrastate airlines in California and Texas were able to offer lower fares and increased service in comparison to regulated airlines. These and other studies (Crane, 1944; Koontz, 1951; Proctor and Duncan, 1954; Wheatcroft, 1956; Cherrington, 1958; Gordon, 1965; Eads et al., 1969; Straszheim, 1969; Murphy, 1969; White, 1979) also found that there were no significant economies of scale or barriers to entry in the airline industry, thus supporting the claim that continued regulation was not needed. Other studies and testimonies (Kahn, 1977, 1978; Bailey and Panzar, 1981; Baumol et al., 1982) suggested that the theory of contestable markets, wherein just the potential *threat* of entry would cause firms to eschew monopoly pricing and keep fares at lower levels, was applicable to the airline industry. Armed with these studies, a political consensus began to emerge that the airline industry should be deregulated. Congressional hearings in 1975, led by Senator Edward Kennedy and assisted by current Supreme Court Justice Stephen Breyer, and the appointment of deregulation advocate Alfred Kahn as Chairman of the CAB in 1977 paved the way for the decision to deregulate the airline industry.

The Airline Deregulation Act was promulgated by the US Congress and signed into law in October 1978, calling for removal of CAB authority over fares, entry, and exit. Any carrier that was “fit, willing, and able” would be allowed to serve any route at any fare. After a transition period from 1978 to 1982, the CAB itself was sunsetted in December 1984. Authority over mergers and acquisitions was transferred to the Department of Transportation from 1985 to 1989, and then finally to the Antitrust Division of the Department of Justice in 1989, though most merger requests have been granted throughout the deregulation period.

### 3. Results of airline deregulation

#### 3.1. Overview of the US airline industry since 1978

Since 1978, the US airline industry has experienced several waves, or phases, of expansion and retrenchment, with significant effects on industry structure, profitability, patterns of service, and average fares (see Table 1). From 1978 to 1983 (“Rise of the New Entrants, Part I”), the newly deregulated industry witnessed an influx of new entrants in many markets that had previously been protected by the CAB. The ten trunk airlines that were in existence

<sup>3</sup> It should be noted that CAB regulation did not extend to frequency nor capacity of service, so once an airline had the authority to serve a route, that airline could add as many flights and seats to that route as it deemed appropriate. In order to be more competitive, airlines would add more frequencies but the additional capacity resulted in lower average load factors during the pre-deregulation period.

**Table 1**  
The historical periods of US airline deregulation, 1978–2008.

Dates	Period	Airlines in ascendancy
1978–1983	Rise of the New Entrants, Part I	PEOPLExpress, New York Air, Midway, America West, Southwest
1983–1993	The Majors Strike Back: mergers, acquisitions, and increased concentration	American, Continental, Delta, Northwest, United, US Air
1993–1996	Rise of the New Entrants, Part II	ValuJet/AirTran, Frontier, Kiwi, Spirit, Vanguard, Western Pacific
1996–2000	Major responses	American, Continental, Delta, United
2000–2008	LCC Growth and ‘Legacy’ Decline	Southwest, JetBlue

Source: Authors.

at the start of deregulation (American, Braniff, Continental, Delta, Eastern, Northwest, Pan Am, TWA, United, and Western) saw their market share decline from 87% to 75% as a result of the growth among the formerly local service/regional airlines (e.g., Frontier, Ozark, Piedmont, Republic, US Air), the intrastate airlines (e.g., Air California, Air Florida, Pacific Southwest, and Southwest), charter airlines (e.g., American TransAir [ATA], Capitol and World), and completely new airlines (e.g., America West, Jet America, Midway, Midwest Express, Muse, New York Air, and PEOPLExpress).

From 1983 to 1993 (“The Majors Strike Back”), the former trunk airlines (now referred to as majors based solely on their size) were able to grow through mergers, acquisitions, and bankruptcies leading to increased concentration and market share. After the demise of Braniff, Eastern, and Pan Am, and the absorption of Western into Delta, the remaining ten largest airlines held a 97% market share in 1991 (Goetz, 2002). American, Continental, Delta, Northwest, United, and US Air became the dominant players through acquisitions, alliances with regional and commuter airlines, increasing control over airport gates and slots, and successful marketing strategies such as development and use of computer reservation systems (CRSs), frequent flyer programs, and travel agent commission overrides (Levine, 1987; Petzinger, 1995). Smaller independent airlines were unable to compete with the majors, and many were acquired or folded.

In the mid-late 1990s (“Rise of the New Entrants, Part II”), another wave of expansion occurred that featured new entrants such as Frontier,<sup>4</sup> JetBlue, Kiwi, Midway,<sup>5</sup> Reno, Spirit, ValuJet/AirTran, Vanguard, and Western Pacific. Together with the continued growth of Southwest Airlines, America West, ATA, and Midwest Express, the larger carriers experienced a decline in their market share through the 1990s. But by the late 1990s (“Major Responses”), buoyed by a strong economy and increased demand for air travel, the majors reasserted their strength for a brief time.

The post-2000 period (“LCC Growth and ‘Legacy’ Decline”) has been very difficult for the US airline industry. The principal catastrophe was the terrorist attacks on September 11, 2001, in which two American Airlines and two United Airlines planes were hijacked, and deliberately crashed into the World Trade Center, the Pentagon, and a field in southwestern Pennsylvania. This event was followed by an unprecedented four-day shutdown of the airline system, and a prolonged period of low demand due to economic recession, heightened security restrictions, the SARS outbreak, concerns over the invasions of Afghanistan and Iraq, and rising fuel costs. This “perfect storm” of events led to the loss of nearly \$35 billion from 2001 to 2005 (US Air Transport Association, 2006), by far the largest losses ever for the US airline industry. The largest and oldest airlines, increasingly referred to as “legacy” carriers, were particularly hard hit. Delta, Northwest, United, and US Airways (twice) filed for bankruptcy protection since 2002, TWA was acquired by American in 2001, US Airways merged with America West in 2005, and the publicly-supported Pension Benefit

Guarantee Corporation (PBG) was forced to take over pension benefit plans from United, US Airways, and Delta. In contrast, low-cost carriers (LCCs) such as Southwest and JetBlue were profitable throughout much of this period, and other surviving low-cost carriers were not as badly affected as the legacy carriers. Most recently, in the 2005–2008 period, the sharp increase in the cost of fuel has hurt the entire industry, leading to the termination of service by Aloha Airlines, ATA, and Skybus Airlines, bankruptcy protection for Frontier, and continuing financial losses for most other airlines.

### 3.2. Results of deregulation – “the good”

As mentioned previously, most assessments of US airline deregulation have been positive. Reports from the Transportation Research Board (1991, 1999) endorsed airline deregulation, noting that consumers had benefited from low prices and new services, carriers had become more cost conscious, and industry productivity was improving. The US Government Accountability Office (2006) stated that “the change in fares and service since deregulation provides evidence that the vast majority of consumers have benefited, though not all to the same degree.” They also concluded that “reregulation of airline entry and fares would likely reverse much of the benefits that consumers have gained and would not save airline pensions.” The Brookings Institution (Morrison and Winston, 2008) noted that the nation has reason to celebrate the 30th anniversary of the Airline Deregulation Act because fares have fallen significantly, flight frequency has increased, carriers have become more efficient, and air travel safety continues to improve.

Indeed, there have been benefits to airline deregulation. The total number of passengers flying on US airlines has nearly tripled over the past 30 years from approximately 275 million in 1978 to nearly 750 million in 2006 (see Fig. 1). It could be argued that the number of passengers would have increased without deregulation, but it most likely would not have been nearly as high. Every one of the top 100 air passenger cities experienced an increase in the number of passengers over the last 30 years (see Fig. 2). The largest increases were for cities along the East Coast, Florida, Texas, and the Far West. Many cities in the Midwest and South had smaller increases. These patterns tend to mirror overall population and economic growth among US cities over the last 30 years, but cities with an economic orientation toward higher-order producer services and leisure/resort markets typically had the largest increases. The number of flight departures increased over twofold from five million in 1978 to over 11 million in 2006 (see Fig. 3). Nearly every major air passenger city experienced an increase in flight departures (see Fig. 4). The largest increases were in the Northeast, Florida, and California, while Pittsburgh and New Orleans were the only two cities with decreases. Pittsburgh recently lost its main hubbing airline (US Airways) while New Orleans was devastated by Hurricane Katrina, and has experienced a sharp dropoff in population and economic activity.

It has been well-documented that average fares have declined during the period of deregulation (Transportation Research Board, 1999; US Department of Transportation, 2000). Fig. 5 illustrates that average fares have continued to trend downward from 1993 to 2007, especially when controlling for inflation. Non-adjusted fares increased slightly during the 1990s, dropped significantly

<sup>4</sup> The original Frontier Airlines was a local service carrier before deregulation and was acquired by PEOPLExpress and then folded into Continental in 1986. The new Frontier Airlines started operations in 1993.

<sup>5</sup> The original Midway Airlines started shortly after deregulation began and ceased operations in 1991. The new Midway Airlines started service in 1993.

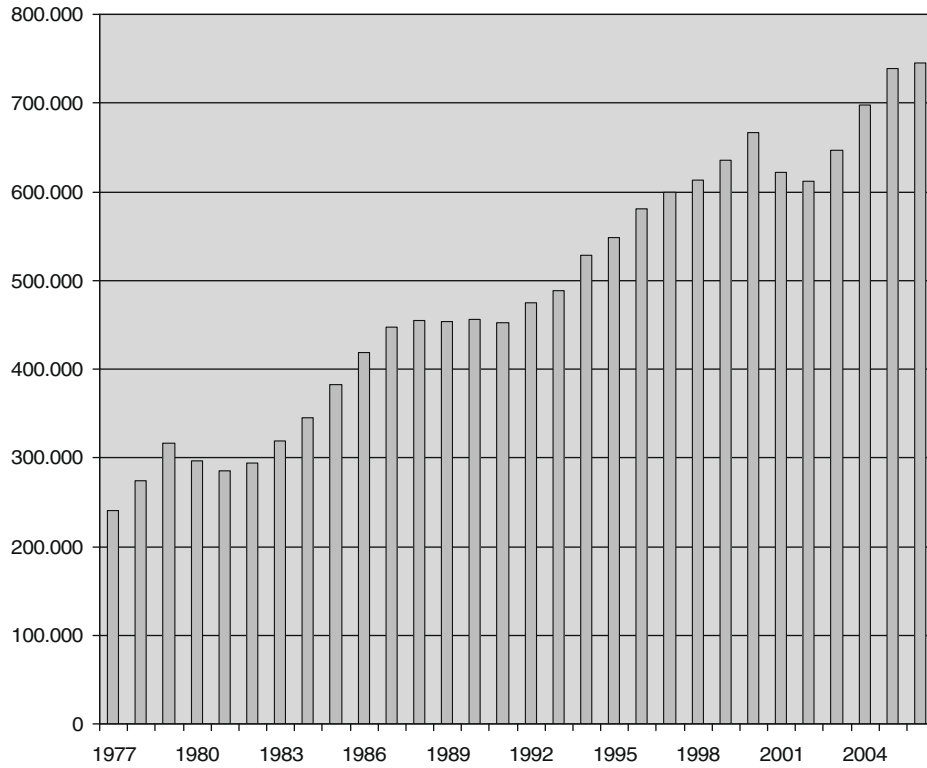


Fig. 1. Total US Airline Passengers, 1977–2006 (in thousands). Source: FAA Terminal Area Forecast (TAF), 2007.

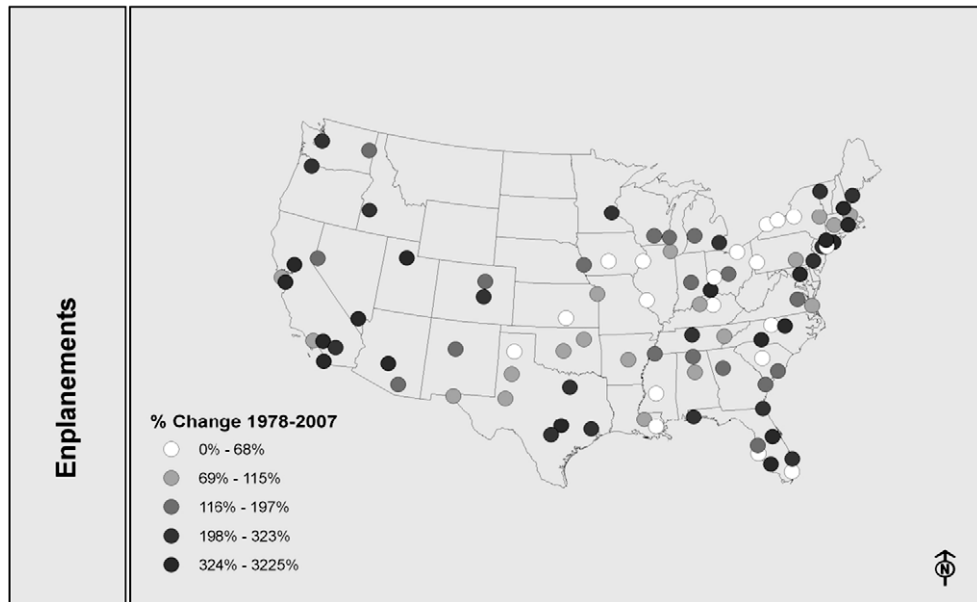


Fig. 2. Percent Change in US Airline Passenger Enplanements for the Largest 100 US Air Passenger Cities, 1978–2007. Source: FAA Terminal Area Forecast (TAF), 2007.

during the first half of the 2000s, but started to rise again in the last several years due to the rapidly rising cost of fuel.

Air safety has generally not been compromised during the period of deregulation, despite concerns that carriers under financial stress might forego safety overhauls and aircraft maintenance in order to save money. Airline fatalities have generally declined over the last 30 years, including several years with no fatalities (see Fig. 6). Of course, 2001 stands out as a year with a sharp increase in fatalities but that was due to the terrorist attacks of September

11. The number of fatal accidents per 100,000 departures has also been trending downward.

US domestic airline deregulation has had a major effect on the international aviation regulatory environment. Since US aviation policy has embraced deregulation in both the domestic and international arenas, a large number of liberalized ‘open skies’ bilateral air service agreements have been signed with other states that shared this policy initiative. As a result, international fares have been reduced, international flights and passengers have increased,

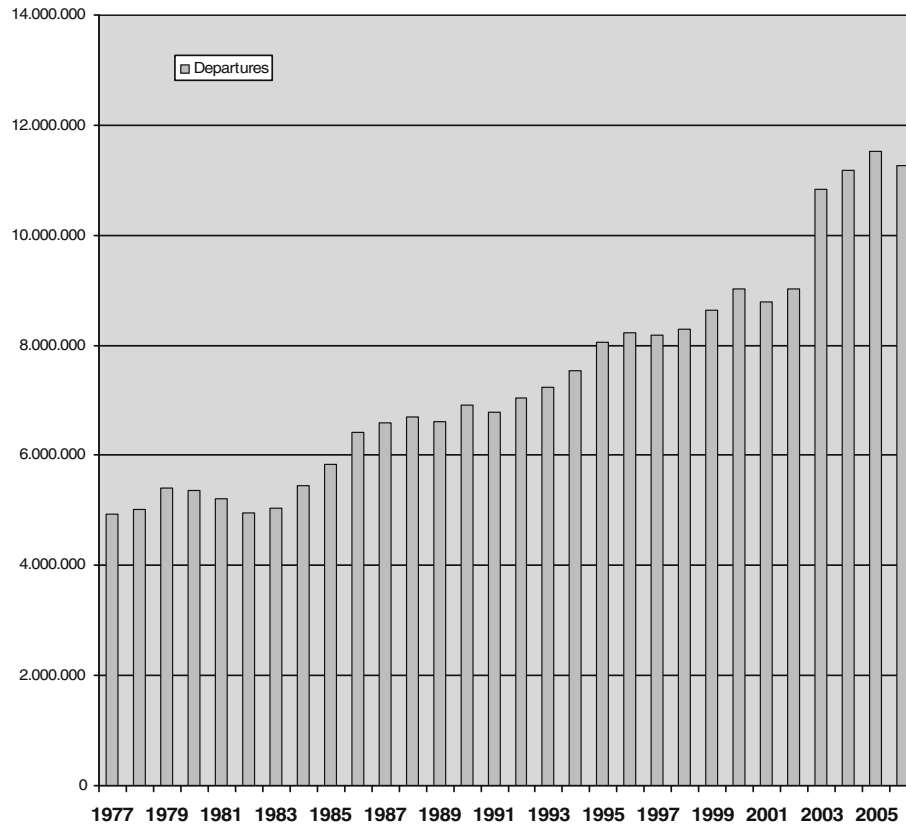


Fig. 3. Flight Departures, 1977–2006. Source: FAA Terminal Area Forecast (TAF), 2007.

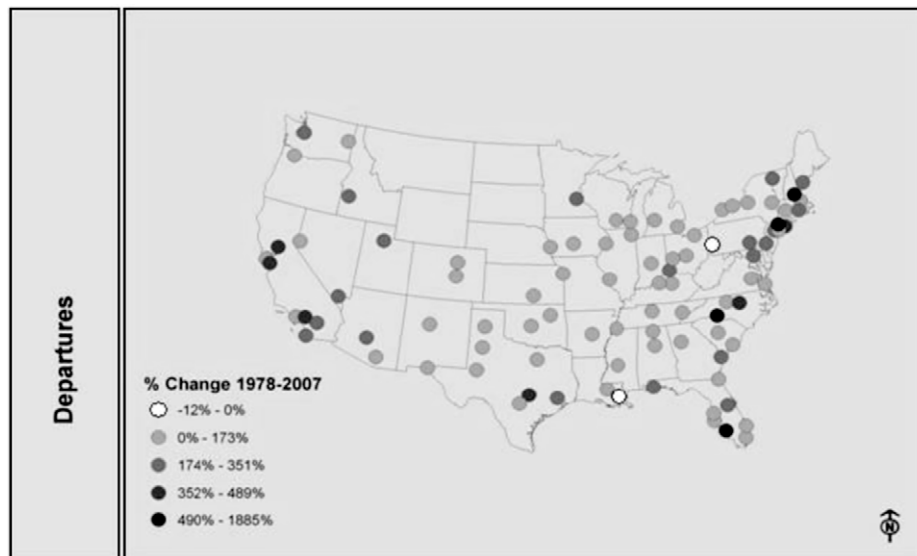


Fig. 4. Percent Change in Flight Departures for the Largest 100 US Air Passenger Cities, 1978–2007. Source: FAA Terminal Area Forecast (TAF), 2007.

and more cities are now receiving international service than before deregulation started.

3.3. Results of deregulation – “the bad”

Even though there have been some positive results as just discussed, there have also been some negative aspects associated with US airline deregulation. There has been a tremendous amount of turnover in the US airline industry over the last 30 years, with many carriers being merged, acquired,

or liquidated. This has led to increased instability in employment and distinct periods of labor strife. The takeover of Eastern Airlines by Continental CEO Frank Lorenzo in the late 1980s led to a particularly acrimonious strike by Eastern’s mechanics which ultimately resulted in the demise of Eastern and bankruptcy for Continental. Overall, labor–management relations in the airline industry over the last 30 years have not been stellar. Labor strife has negatively affected most of the major airlines, with some notable exceptions such as Southwest Airlines.

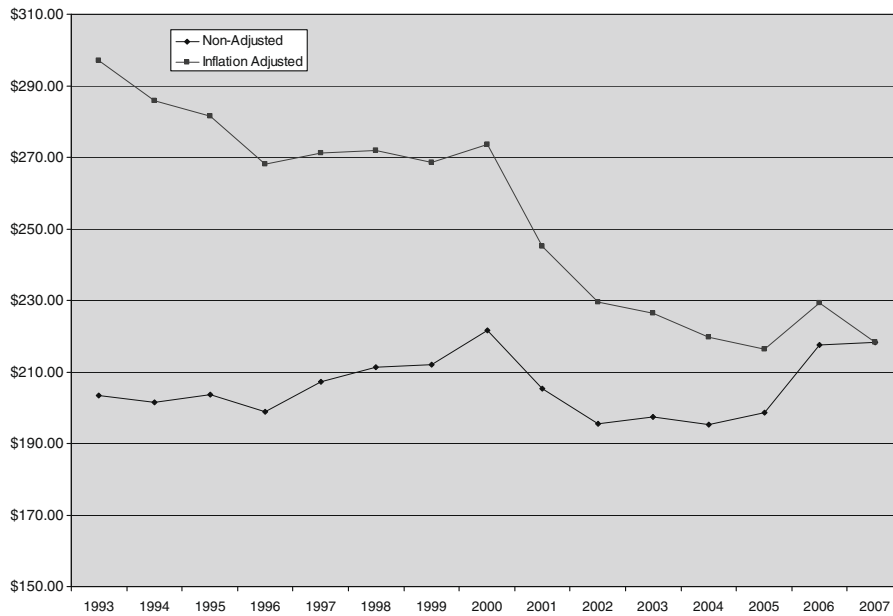


Fig. 5. Average One-Way Fares, 1993–2007 (in US dollars). Source: The Airline Origin and Destination Survey (DB1B), Office of Airline Information of the Bureau of Transportation Statistics, 2008.

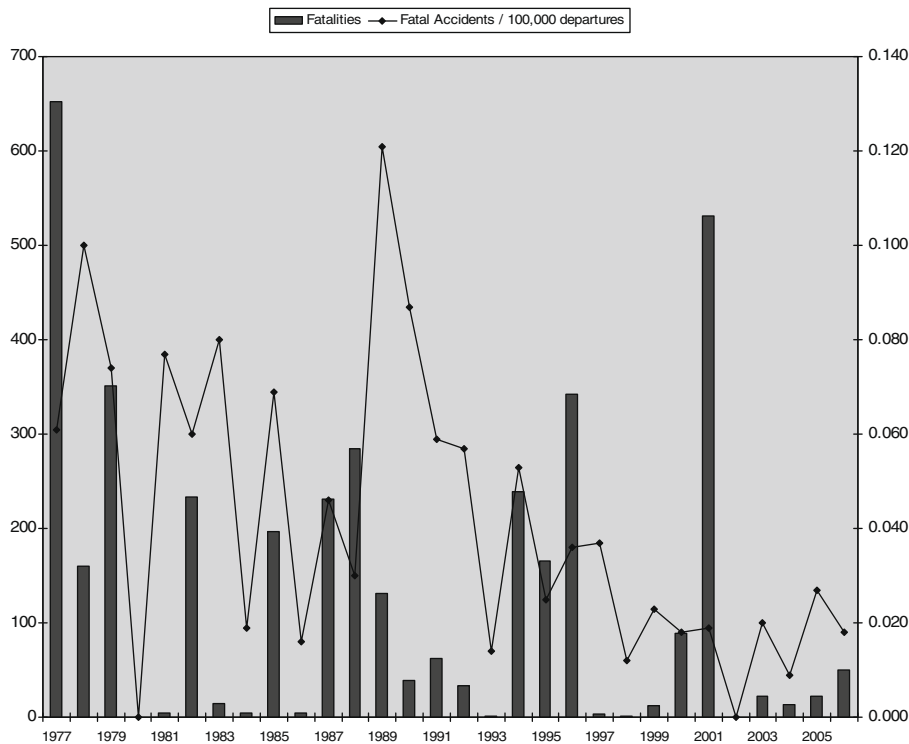


Fig. 6. Fatalities and Fatal Accidents, 1977–2006. Source: US Air Transport Association, Annual Report of the US Airline Industry, 2007.

Numerous studies by the US Government Accountability Office (1988, 1989, 1990a,b,c, 1991a,b, 1993, 1996a,b,c, 1997a,b,c, 1998a,b,c, 1999a,b,c,d, 2000, 2001a,b,c, 2002, 2003, 2004, 2005a,b, 2006a,b),<sup>6</sup> the Transportation Research Board (1991, 1999) and others (Borenstein, 1989; Brenner, 1988; Debbage, 1993; Dempsey and Goetz, 1992; Fleming, 1991; Goetz, 2002; Goetz and Sutton, 1997; Ivy, 1993; Reynolds-Feighan, 1998; Vowles, 2000) have identified some problems with airline service and fares. In gen-

eral, service and fares in shorter-distance<sup>7</sup> and less-traveled city-pair markets (i.e., smaller cities) have not been as good as those in longer-distance and heavily-trafficked markets (US Government Accountability Office, 2006). Travelers in concentrated markets subject to single-carrier domination with market shares of 60% or higher have tended to pay higher fares. Travelers have also experienced a decline in the quality of airline service, as measured by increased

<sup>6</sup> Called the US General Accounting Office prior to 2004.

<sup>7</sup> The GAO defined short-distance routes as less than 250 miles.

congestion and delays, longer travel times, and poorer customer service.

The combination of these service and fare tendencies has exhibited a distinctive spatial form, wherein certain cities in certain re-

gions have chronically received poorer service and higher fares. Fig. 7a–c exhibits the spatial pattern of low and high fare regions, as well as low and high yield (fares per passenger-mile) cities for 1993, 1998, and 2003, respectively. The Southwest and West Coast

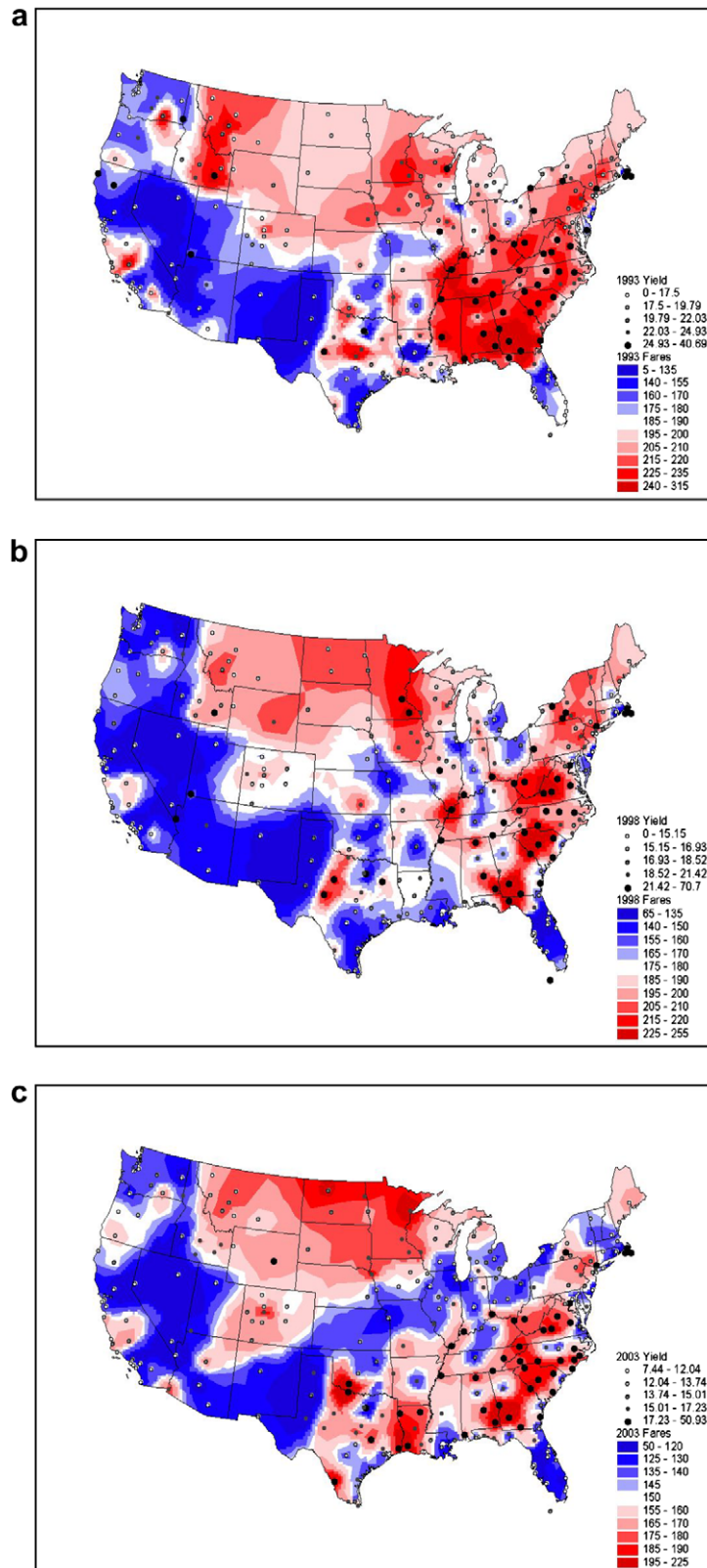


Fig. 7. Geography of Air Fares for FAA-Defined Large, Medium, and Small Hub Cities: (a) 1993, (b) 1998 and (c) 2003. Source: The Airline Origin and Destination Survey (DB1B), Office of Airline Information of the Bureau of Transportation Statistics.



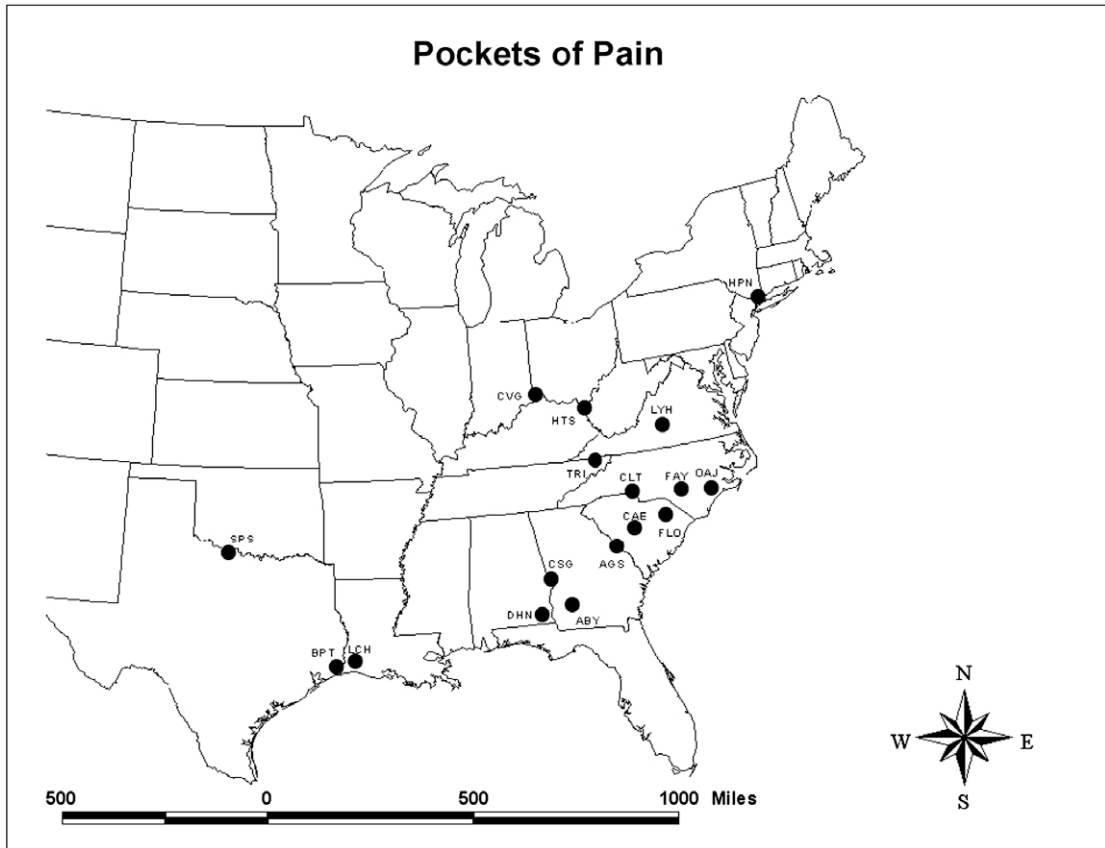


Fig. 8. “Pockets of Pain” in the US Air Transport System. Source: Goetz (2002).

have generally experienced lower air fares throughout this time period, while the Southeast, the upper Midwest, and parts of the Northeast have had higher fares. These geographic patterns have remained relatively stable throughout this time period, resulting in certain places (e.g., Charlotte, NC; Cincinnati, OH; Memphis, TN, and Richmond, VA) that have experienced higher than average

fares throughout much of the period of airline deregulation (see Fig. 8). Fig. 9 displays average fares for 2007, showing continued higher fares in the Southeast, Upper Midwest, and parts of the Northeast, in addition to higher fares along the West Coast. Lower fares are concentrated in Florida, Texas, and parts of the Northeast, Midwest and West. Much of this relatively consistent pattern can

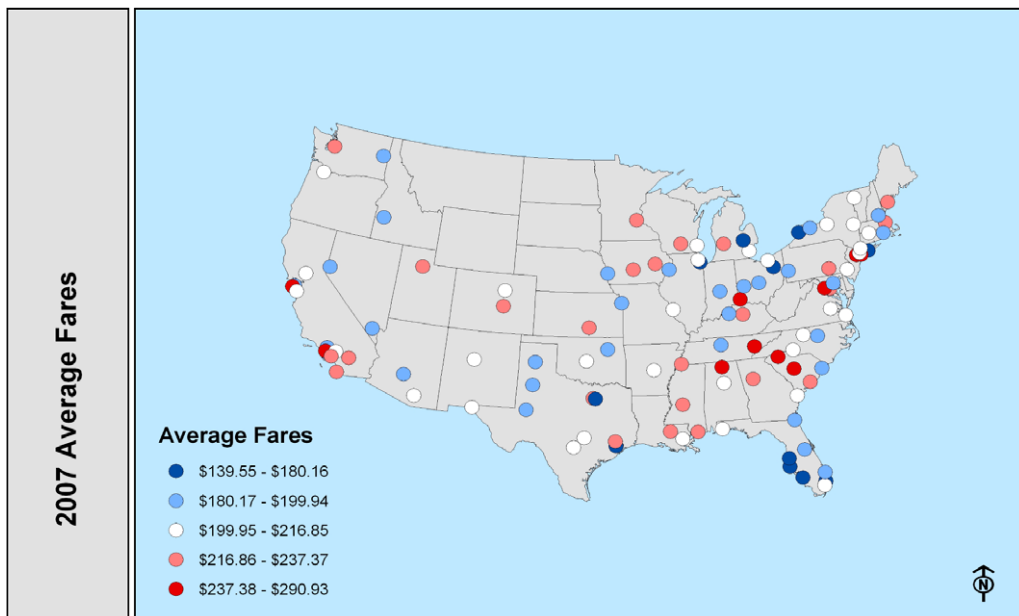


Fig. 9. Geography of Air Fares for the Largest 100 US Air Passenger Cities, 2007. Source: The Airline Origin and Destination Survey (DB1B), Office of Airline Information of the Bureau of Transportation Statistics.

be explained by the presence or absence of low-cost carriers, as well as regional concentrations of cities with single-carrier domination.

3.4. Results of deregulation – “the ugly”

What is undoubtedly the ugliest aspect of the US airline industry over the last 30 years has been its financial performance. Fig. 10 illustrates the cyclical nature of US airline financial performance from 1977 to 2006. While there have been some highly profitable periods, such as 1995–2000, there have been some spectacularly unprofitable periods, such as 1990–1994 and especially 2001–2005. The most troubling aspect of this cyclical pattern is that the amplitudes of the cycle keep getting larger and the degree of losses is larger than the previous degree of gains. This trend does not bode well for the future of the airline industry, especially considering the sharp increases in fuel costs from 2005 to 2008, and long-term uncertainties with petroleum-based aviation jet fuel (Dempsey, 2008).

The financial problems in the US airline industry have led to many changes in industry structure. Table 2 documents significant bankruptcies, terminations, mergers, and acquisitions just from 2000 to 2008. Industry stalwarts Delta, Northwest, United, and US Airways (twice) have each declared bankruptcy since 2000, as has 1990s startup Frontier. Aloha, ATA, and Skybus have ceased operations as of 2008. TWA was acquired by American in 2001, US Airways merged with America West in 2005, and Delta and Northwest merged in 2008. United and Continental agreed to an alliance, or “virtual merger” in 2008 to link international networks and share technology and passenger perks (Johnsson, 2008).

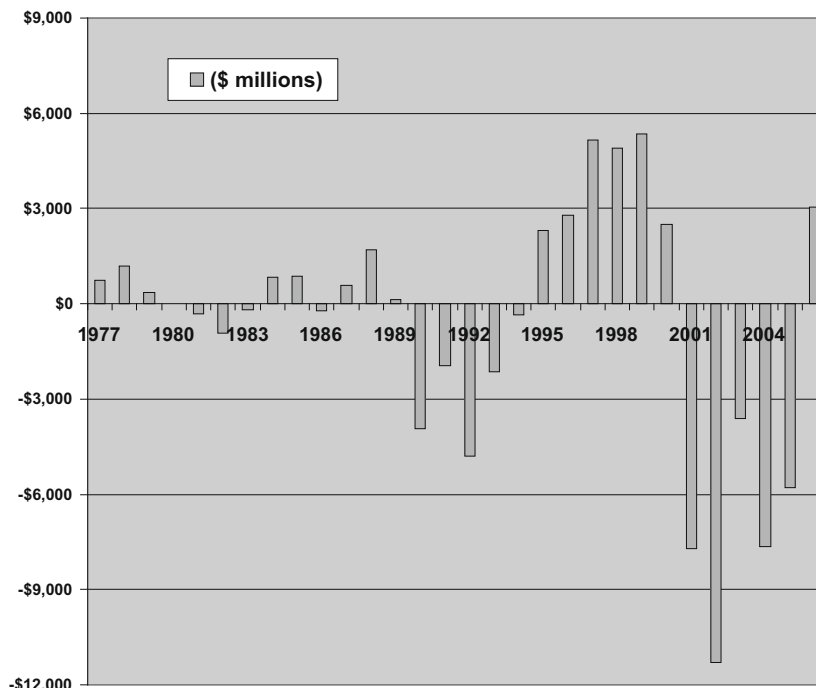
Another disturbing consequence of the financial disasters in the airline industry has been the move by some airlines under bankruptcy protection to terminate their defined benefit pension programs. Since 2000, United, US Airways, and Delta Airlines, in addition to Eastern and Pan Am in 1991, were successful in paring their pension obligations, thus necessitating the federal Pension Benefit Guarantee Corporation (PBGC) to assume some of their pen-

**Table 2**  
Significant US airline bankruptcies, terminations, mergers, and acquisitions, 2000–2008.

Airline	Entered bankruptcy	Exited bankruptcy	Ceased operations
<i>Bankruptcies and terminations</i>			
Midway	August 2001		October 2003
Sun Country			January 2002
Vanguard			July 2002
US Airways	August 2002	March 2003	
United	December 2002	February 2006	
Hawaiian	March 2003	June 2005	
US Airways	September 2004	September 2005	
ATA	November 2004	March 2006	April 2008
Delta	September 2005	April 2007	
Comair	September 2005	April 2007	
Northwest	September 2005	May 2007	
Independence	November 2005		January 2006
Big Sky			January 2008
Champion	March 2008		May 2008
Aloha			March 2008
Skybus			April 2008
Frontier	April 2008		
<i>Airlines</i>		<i>Date</i>	
<i>Mergers and acquisitions</i>			
TWA acquired by American		April 2001	
US Airways merged with America West		September 2005	
Delta merged with Northwest		April 2008 (subject to regulatory approval)	
United alliance agreement with Continental		June 2008	

Source: US Air Transport Association (2008).  
<http://www.airlines.org/economics/specialtopics/USAirlineBankruptcies.htm>.  
 Accessed August 8, 2008.

sion liabilities. Together with some of the most negatively affected steel industry firms, the airlines dominate the list of the largest pension bailouts in PBGC history (see Table 3). In many cases, the PBGC does not cover the full amount of pensions that workers in the original pension plans were entitled to receive. Nevertheless, these workers are provided some level of pension benefits from the PBGC,



**Fig. 10.** Profits and Losses in the US Airline Industry, 1977–2006 (millions of US dollars). Source: US Air Transport Association, Annual Report of the US Airline Industry, 2007.

which is funded through insurance premiums paid by sponsors of defined benefit plans and through other funds.

#### 4. Conclusions and reflections

After experiencing 30 years of deregulation in the US airline industry, most observers agree that it has been a success, particularly in lowering average fares, providing more flights, and increasing carrier efficiency, while maintaining a good safety record. On the negative side, airlines have encountered wide swings in profitability, with losses being much larger than gains. This financial turbulence has resulted in increasing instability in industry structure and employment, while service quality has declined. Fares and service for smaller cities, shorter-haul routes, and more concentrated markets (where single-carrier domination persists) have also been negatively affected.

Why has the US airline industry's financial performance been so miserable over the 30-year period of deregulation? Part of the answer lies in the cyclical nature of the industry and its particular vulnerability to economic conditions. When the economy is doing well, the airline industry tends to perform very well, such as during the late 1990s in the midst of the dot-com boom. But when the economy retrenches, such as during the economic/international security crises of the early 1990s and the early 2000s, the airline industry is negatively affected far more than other industries. The early 1990s economic recession and Gulf War intervention depressed demand for air travel, leading to a loss of over \$13 billion from 1990 to 1993. Likewise, the "perfect storm" of negative events from 2001 to 2005 led to a loss of over \$30 billion. But there are other factors that contributed to the size of the losses. The airlines themselves are to blame for mismanagement and poor financial decision-making. Many industry observers also cite overly generous bankruptcy laws that allow insolvent airlines to continue flying while restructuring under Chapter 11 protection from creditors. This results in maintaining additional capacity and lower fares during economic downturns, thus causing greater losses for the entire industry.

The other part of the answer to the miserable financial results has to do with deregulation itself. Under the period of regulation, from 1938 to 1978, the US airline industry never experienced financial losses anywhere near the scale of those of the post-deregulation period. The US airline industry was profitable and enjoyed steady growth and development during those forty years, albeit not without problems as identified earlier in this paper. Once the industry was deregulated, however, the airlines were allowed to make their own decisions regarding entry, exit, fares, and mergers and acquisitions.<sup>8</sup> Left to their own devices, some airlines made good decisions, some made bad decisions, while others were just plain ugly. In theory, the invisible hand of the free market should have weeded out the underperformers, but because the airline industry is naturally oligopolistic, the competitive strategies taken by some firms affect the behavior of others not necessarily in a logical manner, and the collective results are not necessarily positive. Thus, there is a compelling need for at least some regulatory oversight over this industry, since it exhibits a tendency towards destructive competition. A vital and viable airline industry is important to national economic competitiveness, regional economic develop-

<sup>8</sup> Mergers and acquisitions continued to be subject to some regulatory oversight after deregulation, first by the lame-duck Civil Aeronautics Board (1978–1984), then by the Reagan Administration Department of Transportation (1985–1989), and then by the Department of Justice (since 1989). Throughout this period, these agencies tended to approve most merger and acquisition requests, best exemplified in the merger and acquisition frenzy of the 1980s. The debt that airline companies incurred as a result of their highly leveraged buy-outs (LBOs), was a drag on profitability, and contributed to the poor financial performance of this period.

**Table 3**

Pension Benefit Guarantee Corporation (PBG) top 10 firms presenting claims (1975–2007) – single-employer programs.

Firms	Years of Termination	Claims (by Firm)
United Airlines	2005	\$7.50 billion
Bethlehem Steel	2003	\$3.65
US Airways	2003, 2005	\$2.68
LTV Steel	2002, 2003, 2004	\$2.13
Delta Airlines	2006	\$1.74
National Steel	2003	\$1.28
Pan American Airlines	1991, 1992	\$0.84
Trans World Airlines	2001	\$0.67
Weirton Steel	2004	\$0.64
Kaiser Aluminum	2004, 2007	\$0.60

Source: Pension Benefit Guarantee Corporation. Pension Insurance Data Book, 2007, Table S-5, p. 44.

ment, and the "public interest," and should not be left solely to an imperfectly competitive *laissez-faire* regime. This is not to suggest that we should return to the overtly heavy-handed regulation of the past, but that we should never abdicate responsible regulatory oversight in an industry that is naturally oligopolistic and is so vital to the national interest.

That said, the experience with deregulation in the airline industry has nonetheless been better than in some other industries that have been deregulated. Deregulation in the financial services industry caused, at least in part, the savings and loan scandal of the 1980s, and is directly responsible for the current global economic crisis and related sub-prime mortgage crisis. Though not experiencing nearly as much turmoil, the airline industry shares some of the troubling developments that have affected other deregulated industries, especially financial instability and the need for "non-market interventions" (i.e., governmental bailouts). In important "public interest" industries like financial services, energy, aviation, and others, there is a necessary role for government oversight. Many industries were deregulated in the "frenzy" of the movement of the 1980s and beyond, oftentimes with insufficient regard for the long-term consequences. A "deregulation mindset" took over wherein it seemed that well-established, well-intentioned, and common-sense regulations no longer mattered and that the invisible hand of the *laissez-faire* market would solve all problems. In retrospect, in the most egregious cases of abuse, an ounce of regulatory prevention would have been worth more than a pound of cure. It is thus the irrational aversion to government regulation, no matter the justification, that typified the excesses of the deregulation movement and ultimately laid the groundwork for the deregulation-attributed scandals that have occurred. Fortunately, at least in comparison, the airline industry and travelers have not experienced a complete meltdown.

The principal concern for the immediate future of the airline industry is financial sustainability. Losses on the order of those encountered by the US airlines especially since 1990 are clearly not sustainable. Outside of Southwest Airlines, no airline has been able to maintain a consistent record of profitability. It is inevitable that fares will increase via industry consolidation as a result of the need to cover costs. What is not clear is the effect that rising fares will have on passenger demand. Many travelers have grown accustomed to relatively low fares, but may balk at significant fare increases. Changes in business and leisure travel behavior may signal the need for retrenchment in airline service capacity. Other modes of travel (e.g., rail) or telecommunication alternatives to travel (e.g., videoconferencing, skype, etc.), will become more attractive as the fares rise. The demand for air travel is relatively elastic, and substantial increases in fares will have a depressing effect on demand.

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