



# Value Chain Profitability

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04



An analysis of the level of investor returns within the airline industry and its supply chain.



IATA Economics Briefing N° 4:  
VALUE CHAIN PROFITABILITY

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# 00 | Foreword

Airlines and the wider aviation industry generate substantial value for their customers and the wider economy. But airlines are not able to retain enough of that value to pay a normal return to their own investors.



Why is this a problem?

Well, unless airline investors receive a fairer share of the value the industry creates, future growth in air travel will either be constrained or inefficiently met, with substantial value lost for the global economy. The airline industry currently faces a contradiction in terms. Significant new investment is required to meet the fast-growing demand for air travel, but current rates of return do not even justify retaining the level of capital that is already invested. Improving the efficiency of use of existing capital – and the returns it provides – is essential if new investment is to be attracted to the industry.

This report identifies three main routes through which this can be achieved. Firstly, Governments must get out of our industry. Heavy-handed Government intervention – whether financially or through unnecessary regulations – damages profitability. Further liberalisation of out-dated Government operational and ownership restrictions on airlines is vital. At the same time, we cannot and should not face ill-advised schemes for further taxation.

Secondly, inefficiencies and monopolistic power within our supply chain must be addressed. There are parts of the industry – such as some major airports or computer


reservation system providers – that have exploited their monopoly position to derive returns or impose charges that are wholly unjustified by their level of efficiency or by the risks they bear. We do not per se oppose our industry partners earning a high return – however they must provide an efficient and effective service in order to justify these returns.

Thirdly, the airline industry itself must continue to improve its own efficiency. Airlines have made substantial progress in this area in recent years. IATA's Simplifying the Business and Fuel Action Campaigns are just two of the key areas in which we seek to drive further efficiency improvements among our member airlines. Every airline seeks to be a lower cost airline. The challenge is to continually seek further efficiency gains, creating greater value for airline investors as well as for customers and the wider economy.

A handwritten signature in blue ink, reading "Giovanni Bisignani". The signature is fluid and cursive, with a small dot at the end of the last stroke.

**Giovanni Bisignani - Director General & CEO, IATA**

# 01 | Executive Summary

 The airline industry has been unable to generate sufficient returns for existing investors. Unless invested capital is used more effectively – and returns improved – future investment will either be constrained or delivered inefficiently or both. Billions of dollars of potential value for customers, investors and the wider economy will be lost.

The airline industry is extremely important for the global economy, carrying over 2 billion passengers each year and over 35% of global merchandise trade by value. Customers have captured increasing amounts of value from the industry as fares have declined and choice has widened. For example, deregulation in the domestic US market is estimated to provide airline customers with at least \$20 billion of additional value (i.e. consumer surplus) each year<sup>1</sup>. Businesses and the wider economy also benefit from 'spillovers' created by the air transport network that boost investment and productivity<sup>2</sup>.

But clearly, the value created by airlines is not reflected in the profitability of the airline industry. Globally, airlines have suffered net financial losses of over \$40 billion between 2001 and 2005. The overall picture for airline investors has not been healthy. Nevertheless, there are several airlines that have been and remain profitable. Their example, along with low barriers to entry, continues to attract some new capital into the industry (e.g. the large number of new aircraft orders for the Indian market). However, if experience is a guide, not all of this new investment will be used efficiently. This can have damaging effects – lowering the returns earned by existing capital in the industry and raising the costs and risks for future investment capital.

## THE SCOPE OF THE STUDY

Poor airline investor returns may, in part, be due to poor investor judgement. But they are also a result of more fundamental structural factors within, and external influences on, the airline industry. This study looks at how these factors have impacted (often differently) on the airline industry and on the aviation value and supply chain. It uses these results to identify potential ways in which capital can be used more efficiently, to the long-term benefit of all stakeholders.

IATA worked closely with McKinsey & Company to examine the investors' returns obtained within the aviation industry over a full industry cycle (1996 to 2004). Investor return is defined as the surplus financial value that directly accrues to investors (e.g. shareholders). It is calculated as the difference between the financial return earned on capital invested and the financial return that would be expected from investing in an asset with a similar risk profile, i.e. the cost of capital (see Appendix A for more details).

McKinsey's analysis looks at major firms within different parts of the aviation industry. However, it excludes Air Navigation Service Providers (ANSPs) due to the lack of detailed financial information and the predominance of public sector ownership in the sector. In addition, it includes some small jet fuel suppliers, but is unable to include many of the major firms in the sector because it is not possible to isolate their financial results from those of their, much larger, Oil & Gas parent companies (e.g. Shell Aviation results are incorporated in the Shell Group accounts). Also, a major player like GE, active in engine manufacturing, maintenance and aircraft leasing, could not be included due to the lack of transparency for each of the different activities.

<sup>1</sup> Alfred E. Kahn (2004), "Lessons from Deregulation", AEI-Brookings Joint Centre for Regulatory Studies, Washington D.C.

<sup>2</sup> IATA (2006), "Airline Network Benefits", Geneva.

## KEY RESULTS

The McKinsey study provides insights into the structure, performance and efficiency of the various segments of the aviation industry. By highlighting the returns on invested capital across sectors and time, it focuses on the success or otherwise of the industry in delivering sufficient and sustainable returns and in adapting to structural changes. It creates an invaluable benchmark for future strategic and investment decisions within the industry.

### The key results arising from the study are:

#### The aviation industry has already attracted substantial amounts of investment capital.

The sectors included in the analysis (see Appendix B for more details) had over US\$680 billion of capital invested in 2004. Airlines account for over 55% of this total, with \$380 billion of invested capital. As such, airlines had \$200 of capital invested for every passenger journey made in 2004.

The aviation industry uses a substantial amount of investment capital. By way of illustration, total capital invested in the firms studied was higher than the total stock of foreign direct investment capital in China in 2004. However, the industry continues to face contrasting situations; with capacity bottlenecks and the need for investment in some areas (e.g. European hub airports) but excess capacity – or at least excess capacity at a break-even price level – in other areas (e.g. some US domestic routes). This suggests that the existing invested capital may not be used optimally – a suggestion borne out by a closer look at investor returns.

#### Airlines have not provided investors with a sufficient return.

Airlines did generate positive operating profits between 1996 and 2004. In other words, airline operations did generate a financial return above the cost of providing these operations – the minimum requirement for an industry to sustain its operations. However, though returns were positive they were not sufficient to provide airline investors with the 'normal' rate of return associated with the risks they take, i.e. the cost of capital. Airlines provide the majority of invested capital in the aviation industry but are unable to generate a sufficient return on this capital.

There was an average annual shortfall of \$11.7 billion between the actual return on invested capital (c.\$16.8 billion) and the level of return expected by investors (c.\$28.5 billion). Even in the "upturn" period (1996-2000), airlines could only generate an average annual return on invested capital of around 6%, well below their estimated cost of capital of around 7.5%. In the "downturn" period (2001-04), the average annual return fell to a very weak 2%. On a regional basis, US airlines changed from the highest returns on invested capital in 1996-2000 to, by far, the lowest returns in 2001-2004. European and Asian airlines also saw a decline in returns between the "upturn" and "downturn" periods, but to a lesser extent.

#### The "No-Frills" airlines, in general, do not generate a sufficient return either.

Some airlines have generated high investor returns. For example, the market-leading low-cost carriers (LCCs) in the US and Europe have used a lower cost base to deliver high rates of return. A few network airlines have also been relatively successful, combining premium service with cost efficiency improvements to increase returns. However, it is clear that the business model itself is not a guarantor of success or otherwise – it is the individual airline's strategy that is key. LCCs as a whole did outperform network airlines, but in aggregate they failed to generate sufficient returns to cover their cost of capital. New or small LCC airlines must cope with tough operating environments, facing the same issues as existing airlines with regard to overcapacity, suppliers or Government intervention. Every airline seeks cost efficiencies. Low-cost by itself is not sufficient to generate good returns if most of the cost improvement is passed through in lower yields.



### The Aviation Supply Chain provides a small positive return above investor expectations.

The aviation supply chain generated a small average annual surplus of \$0.7 billion (equivalent to 0.2% of invested capital) above its cost of capital. However, within this small surplus are significant differences between sectors and across regions. Aircraft manufacturers, financial lessors, freight forwarders and computer reservation system (CRS) providers all generated a surplus above their cost of capital, with CRS companies in particular delivering very high rates of return. The small-scale fuel suppliers included in the analysis had high returns, though the subsidiaries of larger oil companies that are not included are likely to have been even more successful at using current high oil prices to boost their profit margins.

Airports had an average annual shortfall of \$1.1 billion compared to their cost of capital, but this disguises significant regional differences. US airports accounted for all of this shortfall, and more, with their not-for-profit ownership structures and low commercial incentives leading to intentionally low returns. By contrast, European and Asian airports, with much stronger commercial incentives, generated surpluses above their cost of capital and relatively stable levels of return across the cycle. This, combined with IATA members' experience of excessive charges at some of these airports, highlights a degree of unregulated monopoly pricing power in the European and Asian airport sectors.

Furthermore, as the accounts of many jet fuel suppliers cannot be isolated from their major Oil & Gas parent companies, we cannot fully estimate the excess returns earned in this sector. However, it is important to note that the sharp jump in refining margins since 2003 (over and above the increase in crude oil prices) represents an additional \$14 billion payment each year from the airline industry to the highly profitable oil companies.

### But uneven returns highlight inefficiency or monopoly power in some sectors.

IATA does not automatically oppose surplus returns being earned amongst aviation suppliers. However, surplus returns must be justified by productivity, efficiency or bearing a high share of risks. High returns can often be a sign of a distinctive and productive capability for a successful firm. On the other hand, they can also signal unregulated pricing power and protected markets.

The sectors with the highest returns in the aviation supply chain include specialist niche areas (e.g. CRS), intermediaries with strong pricing power (e.g. freight forwarders, fuel suppliers) or sectors with a low threat of competition from new entrants (e.g. manufacturers).

Airports, especially those with strong, but weakly-regulated, commercial incentives, can use their natural monopoly position to generate excess returns. This situation is worsened where suppliers are inefficient – highlighted by a combination of high prices but low or even negative investor returns. For example, US airports have a deliberately low rate of return on invested capital but some major US airports have landing charges that are among the highest in the world.

### The highest risk does not equate to the highest returns – quite the opposite for airlines.

Investors are attracted to higher risk assets by the prospect of higher returns. However, while risk is distributed unevenly across the aviation industry, those bearing the highest risks do not earn the highest returns – quite the opposite in some cases. Caterers and airlines saw high volatility in returns, with average returns on invested capital in the “upturn” (1996-2000) over three times higher than average returns in the “downturn” (2001-04). Yet, airlines had the lowest average return amongst all sectors with caterers also seeing a relatively low average return. By contrast, airports, CRS firms and service activities such as fuelling and maintenance achieved relatively stable returns across the cycle and higher average returns than airlines. Freight forwarders were actually counter-cyclical, enjoying higher average returns in the “downturn” than in the “upturn”.

## IMPLICATIONS

The aviation industry – and in particular the airline sector – faces a significant, yet contradictory, challenge. The significant value it creates for customers and for the wider economy means that demand is expected to continue to grow at a strong rate. Accommodating this growing demand, particularly in emerging economies or where capacity is currently constrained will require substantial new investment. Yet, as this report demonstrates, airlines – which account for the majority of invested capital in the aviation industry – have been unable to deliver sufficient returns on existing capital.

Retaining the status quo structure of the industry means that past experience of insufficient investor returns will be repeated in the future. This will either raise the cost of attracting new investment or deter some much-needed investment. This will lower the potential growth rate of the aviation industry and lose billions of dollars of potential value for customers and economies.

Airlines may share certain characteristics with, for example, the newspaper industry or sports teams. Some investors may look for status rather than high returns, while others may continue to be attracted by the prospect of high returns for the handful of successful investors, even though the majority do not earn a sufficient return. However, in a fast-growing and liberalising market, the average return – rather than just that of the ‘winners’ – will need to rise if substantial investment capital is to be attracted.

This report identifies three main routes through which airline investors should be able to improve the efficiency of their invested capital and achieve a fairer share of the value the industry creates, to the long-term benefit of all stakeholders:

### **Firstly, Governments must allow airlines to have greater freedom over operational and ownership decisions.**

Liberalisation and deregulation will reduce the current high barriers to exit or restructuring, allowing capacity to adjust towards levels appropriate for individual markets. Financial intervention must also be reduced, by removing ineffective subsidies – for parts of the supply chain as well as airlines – and by reducing the already high burden of taxation<sup>3</sup>.

### **Secondly, there must be a greater sharing of risk and reward within the aviation industry.**

This report demonstrates that parts of the supply chain continue to exploit strong pricing power or protected markets to derive high returns or to cover up for inefficiencies. Where monopolistic pricing power exists, for example at major European airports, IATA seeks sensible and effective regulation. Where inefficiency exists, IATA seeks clearer benchmarking and transparency of costs and will work in partnership with others to improve cost efficiency for all. Where protected markets exist, IATA will seek greater competition and a fairer share of the risks borne by airlines.

### **Finally, airlines themselves must continue to improve their productivity and cost-efficiency.**

Great progress has already been made in reducing non-fuel unit costs, but it remains an on-going process. Airlines must seek a more sustainable approach in their cyclical management strategies. Customers and employees are fundamental to the business – but have sometimes received value that is unsustainable for airlines to provide. Greater control in matching aircraft capacity to demand will help to avoid unsustainable price competition. Airlines will also continue to adjust their labour costs and productivity levels as a major part of helping to improve returns in a highly competitive market.

<sup>3</sup> IATA (2005), “Aviation Taxes and Charges”, Geneva.



# 02 | Introduction

↗ The importance of an industry can be measured by the economic and social benefits it creates. However, the efficiency and sustainability of the industry requires that the investors in the industry receive a fair return, ensuring that it continues to attract long-term investment.

The airline industry is undoubtedly important for the global economy. It generates substantial economic and social benefits for a wide range of stakeholders, from its customers to the wider economy. However, the last five years have highlighted the significant financial risks that are associated with investment in airlines. This report compares the returns earned by investors in the airline industry and along the aviation supply chain. It also discusses the implications of its key results for the future expansion of and investment in global aviation.

### **What are investor returns?**

Chapter 3 distinguishes between the customer and wider economic value created by the aviation industry's activities and the financial returns on capital received by investors in individual companies. Customer value is the priority for a service industry, but the creation of a sufficient return for investors is important too for the long-term sustainability of the industry.

### **Investor returns in the airline industry**

Chapter 4 examines the performance of the airline industry in delivering returns to its investors over the period 1996 to 2004. It compares the rate of return that is earned on the capital invested in the sector with the rate of return that could be expected from investing elsewhere. It finds that most airlines have been unable to deliver sufficient returns for their investors.

### **Investor returns in the aviation supply chain**

Chapter 5 widens the analysis to look at the investor returns that have been earned within the aviation supply chain, from aircraft manufacturers to travel agents. The analysis highlights the impact that different structures and competitive factors can have on the returns earned in separate parts of the industry supply chain. There are sectors that earn excess returns. Nevertheless, the supply chain as a whole generates only a small level of return above the cost of the capital that is employed.

### **Structural changes in the industry will impact upon future investor returns ...**

Chapter 6 discusses the structural changes that are already underway in the industry and how they are expected to impact upon investor returns over the next industry cycle. For example, greater use of the Internet will increase price transparency and competition in some sectors. Nevertheless, without more substantial structural change, airline investor returns are expected to remain insufficient.

### **... but even greater changes are needed to improve airline investor returns.**


Chapter 7 discusses why it is important to improve investor returns. Improving the efficiency of the substantial amount of capital already invested in the industry will boost the current value created for all stakeholders and will attract future investment capital more cost-effectively.

### **Meeting the challenge of improving returns and attracting new investment.**

Chapter 8 proposes three key areas for improving the level and distribution of investor returns within the aviation industry. These steps will require a more realistic approach from Governments towards the industry and constructive engagement from airlines and supply chain partners to improve efficiency and productivity.

Chapter 9 provides a summary and conclusions.

# 03 | VALUE CREATION AND INVESTOR RETURNS

 The airline industry creates significant economic and social value, both directly through its own activities and indirectly through the net positive impacts it has in generating economic activity elsewhere.

Airlines are extremely important for the global economy, carrying over 2 billion passengers each year and over 35% of global merchandise trade by value. Airlines act as a facilitator for economic and social activity amongst people, businesses and economies across the globe. Without airlines, businesses would have much less access to global markets and be less able to achieve greater efficiency in production through globalisation. Without airlines, leisure travel would be much less widespread, restricting the economic and development benefits available from a thriving tourism industry. The growth of the global airline industry also involves some wider costs, for example from environmental emissions. However, airlines continue to meet the demands of customers for greater travel while meeting environmental, health, safety and security obligations in a responsible way.

## Value Created for Customers and the Wider Economy

Customers have received increased amounts of value from airline services as choice has widened and fares have declined. Airline pricing does not fully capture the willingness to pay of each individual customer. This creates a large surplus of value (known as consumer surplus) between what they are willing to pay and what they actually have to pay. Customers have benefited greatly from competition and deregulation in the airline sector. Declines in real fares and greater price transparency – that reduces airlines ability to match prices more closely to individual willingness to pay – have significantly added to the value received by consumers. For example, deregulation in the domestic US market is estimated to provide airline customers with at least \$20 billion of additional value each year<sup>4</sup>.

However, for network infrastructure industries such as aviation, the true value it creates goes beyond just its customers. Businesses within the wider economy also benefit from 'spillovers' created by the air transport network that boost investment and productivity<sup>5</sup>. The global connections provided by the network help to increase the efficiency of production and investment. Without aviation, the resources used in the industry could be employed elsewhere, but the additional benefits the network provides in facilitating economic growth would be lost.

## Investor Returns

Customers and the wider economy clearly receive substantial benefits from airline services. However, investors also seek a financial reward for the risks they take in investing their capital in the industry. For investors, the key consideration is the return on capital invested net of the cost of that capital, defined as:

$$\text{Investor Return} = \text{Return on Invested Capital (ROIC)} \\ \text{minus the Weighted Average Cost of Capital (WACC)}$$

In other words, investor returns reflect the actual financial return received minus the opportunity cost of placing funds in the aviation industry rather than other assets with a similar risk profile (i.e. the cost of capital). Investor returns are positive where an industry provides a return greater than could be expected elsewhere. If returns are less than elsewhere, there is an implicit loss of value for the investor. Consequently, returns on invested capital must be, at least, equivalent to the cost of capital for an industry to continue to attract new investment in the long-term. The calculation of investor return is discussed in more detail in Appendix A.

The ROIC should move in the same direction as the operating profit margin (i.e. operating profit as a proportion of annual sales). However, the actual level of the ROIC and the operating profit margin will differ across sectors depending on the intensity of capital needed in each sector. For example, airports are relatively capital intensive, with the level of capital invested (e.g. land) higher than the level of annual revenues. As such, operating profit margins will need to be relatively higher than other sectors in order to generate an equivalent return on capital. By contrast, sectors such as groundhandling where annual sales are higher than the level of invested capital will have an ROIC higher than the operating profit margin.

In a competitive industry, investor returns are expected to equal the cost of capital in the long run. If returns are higher than the cost of capital it will attract new entrants, if lower than the cost of capital firms will exit the industry. However, if high barriers to entry or exit exist they can distort the level of returns made. Positive investor returns could be due to a distinctive and productive capability available to a particular firm or sector. However, they may also be a sign of strong pricing power and protected markets. At the same time, relatively low investor returns, combined with high prices, are a clear sign of inefficiency, especially in markets with limited competition.

<sup>4</sup> Alfred E. Kahn (2004), "Lessons from Deregulation", AEI-Brookings Joint Centre for Regulatory Studies, Washington D.C.

<sup>5</sup> IATA (2006), "Airline Network Benefits", Geneva.

# 04 | INVESTOR RETURNS IN THE AIRLINE INDUSTRY

 The airline industry has attracted hundreds of billions of dollars of investment, but has been unable to provide investors with a sufficient rate of return.

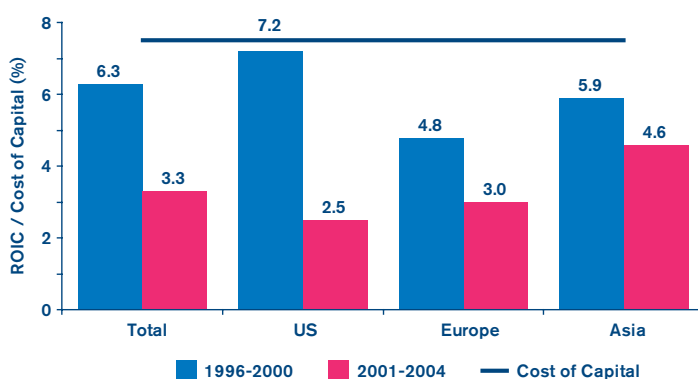
IATA worked closely with McKinsey & Company to examine the investor returns delivered by the airline industry and by the aviation supply chain. McKinsey analysed the financial results of a representative sample of major operators in each sector of the industry (see Appendix B for more details). The analysis looked at the period 1996 to 2004, effectively a full cycle for the industry consisting of an “upturn” period from 1996 to 2000 and a “downturn” period from 2001 to 2004.



## AIRLINES HAVE BEEN UNABLE TO CREATE SUFFICIENT INVESTOR RETURNS

- Airlines delivered a median average annual return on invested capital (i.e. the return for the average firm) of 4.9% for 1996 to 2004. However, the weighted average annual ROIC was even lower at 3.8%, because the larger airlines in the sample had disproportionately low returns. Both the median and weighted averages are lower than the estimated WACC of 7.5%<sup>6</sup>.
- The difference between the weighted average ROIC and the WACC for airlines is equivalent to an average annual loss in investor value of **\$11.7 billion**. This is **not** equivalent to accounting or cash losses in airlines' profit and loss accounts. Instead, it reflects that, for the firms in our analysis, investors expected an annual monetary return on invested capital of around \$28.5 billion on the \$380 billion of invested capital in the industry, but actually received only \$16.8 billion.
- There is a significant difference in performance between the "upturn" and "downturn" period. For airlines, the median annual ROIC was 6.3% between 1996 and 2000 but just 3.3% between 2001 and 2004 (see Figure 4.1). Nevertheless, even in the "upturn" airlines were unable to create a positive investor return.
- US airlines went from the best performing in the "upturn" – with a median ROIC of 7.2% - to the worst performing in the downturn – with a median ROIC of 2.5% (see Figure 4.1). Asian and European airlines also experienced a reduction in returns between the two periods, but to a much lower extent. Asia-Pacific is now the most profitable region for airlines.

These results suggest that the existing invested capital is not being used optimally. Airlines provide the majority of invested capital in the aviation industry but are unable to generate a sufficient return on this capital. There are individual airlines that created positive investor returns (both network and low-cost airlines). However, the airline industry as a whole failed to deliver the expected level of investor returns. Inefficient use of existing capital will raise the cost of attracting new capital to replace and expand current capacity levels, and may even deter new investors completely.



**Figure 4.1:**  
Airline Median Average Annual Rates  
of Return on Invested Capital<sup>7</sup>

<sup>6</sup> The Cost of Capital will vary by sector, region and individual firm and will also vary across time according to an individual firm's capital structure and risk profile. However, for the purpose of the analysis, a different average cost of capital is estimated for each sector, but this value does not vary between individual firms in each sector or across the time period. For example, an estimated average cost of capital of 7.5% is used for all airlines.

<sup>7</sup> For all of the charts in this report the source data is Company Reports & Accounts and McKinsey analysis.

## INSUFFICIENT INVESTOR RETURNS IS AN ISSUE FOR BOTH NETWORK AIRLINES AND LOW-COST CARRIERS

In general, “no-frills” low-cost carriers (LCCs) delivered higher ROICs than the network airlines. This is a reflection both of their higher operating margins and of their lower capital base. However, even the LCCs as a whole have not created positive investor returns (see Figure 4.2). The LCC market leaders in each region did earn high investor returns, but most of the other LCCs failed to meet their cost of capital. Due to lack of information, the analysis does not include several of the smaller LCCs that have established operations over the last four years – it is expected that their inclusion would actually reduce the ROIC earned by the LCC sector as a whole.

It is clear that an LCC business model by itself is not a guarantor of success or otherwise – it is the individual airline's strategy that is key. For example, while LCCs as a whole failed to generate sufficient investor returns there were a few network airlines that successfully combined premium service with cost efficiency improvements to increase returns. Every airline seeks cost efficiencies. Low-cost by itself is not sufficient to generate good returns if most of the cost improvement is passed through in lower yields. New or small LCC airlines must cope with tough operating environments. They will face similar issues to the existing airlines with regard to overcapacity, suppliers or Government intervention.

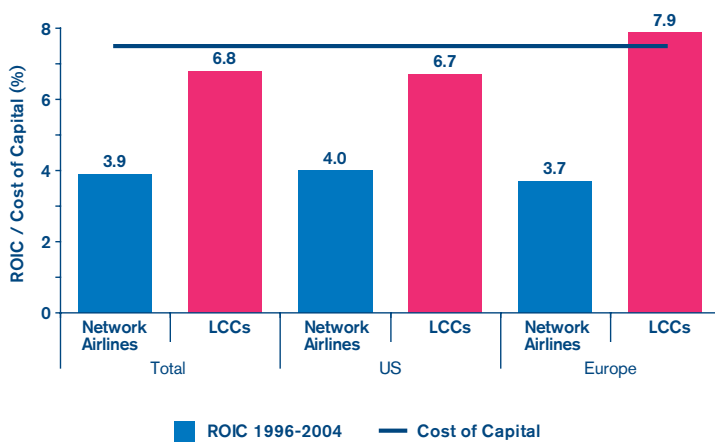


Figure 4.2: Median ROICs by type of airline



# 05 | INVESTOR RETURNS IN THE AVIATION SUPPLY CHAIN

 The aviation supply chain has generated a small surplus above its cost of capital, though with significant differences between sectors and across regions.

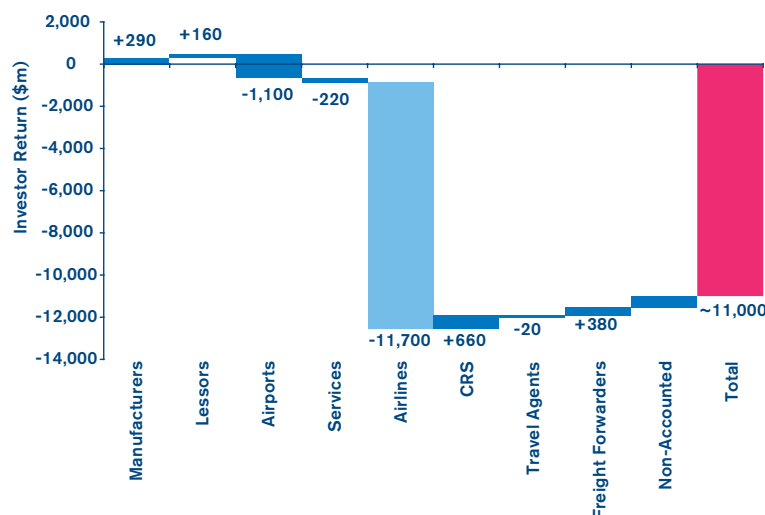
McKinsey's analysis also looked at the investor value created in other parts of the aviation industry<sup>8</sup>. This analysis provides us with an indication of the success of different sectors in generating high investor returns. A positive investor return can be due to a distinctive and productive capability available to a particular firm or sector. However, they may also be a sign of strong pricing power and protected markets. As such, this section considers the distribution and volatility of investor returns, as well as their average level, in each sector to obtain a clearer indication of relative pricing power, efficiency and exposure to the industry cycle.

<sup>8</sup> For Aircraft Lessors a Return on Equity is used rather than a Return on Invested Capital, reflecting the capital at risk of the investors rather than that the capital value of the assets managed.

Unfortunately, the analysis had to exclude Air Navigation Service Providers (ANSPs) due to the lack of detailed financial information and the predominance of public sector ownership in the sector. In addition, it includes some small jet fuel suppliers, but is unable to include many of the major firms in the sector because it is not possible to isolate their financial results from those of their, much larger, Oil & Gas parent companies (e.g. it is difficult to distinguish Shell Aviation results from within the Shell Group accounts). Also, a major player like GE, active in engine manufacturing, maintenance and aircraft leasing, could not be included due to the lack of transparency for each of the different activities.

## THE AVIATION SUPPLY CHAIN CREATED A SMALL SURPLUS ABOVE THE COST OF CAPITAL

- The aviation supply chain generated a small average annual surplus of **\$0.7 billion** (equivalent to 0.2% of invested capital) above its cost of capital (see Figure 5.1). However, within this small surplus are significant differences between sectors and across regions.
- Computer reservation systems (CRS), a sector dominated by just four major firms, delivered the highest returns, with an annual surplus of \$660 million over their cost of capital. Aircraft manufacturers, financial lessors and freight forwarders all generated a surplus above their cost of capital, with CRS firms in particular delivering very high rates of return. Services firms (e.g. ground handling, catering, maintenance), on average, saw small investor value losses across the cycle.
- The small-scale fuel suppliers included in the analysis had high returns, though the subsidiaries of larger oil companies that are not included are likely to have been even more successful at using current high oil prices to boost their profit margins. As such, the analysis also includes a small 'non-accounted' pool of investor value as a proxy estimation for some aviation firms that are not included in the analysis.
- Airports had an average annual shortfall of \$1.1 billion compared to their cost of capital. However, US airports accounted for all of this shortfall, and more. The not-for-profit ownership structures and low commercial incentives of US airports (who account for more than a third of global airport traffic) leads to intentionally low returns on invested capital. By contrast, the more commercially focused airports in Europe and Asia generated surpluses above their cost of capital, along with relatively stable levels of return across the cycle. This is discussed in more detail at the end of this chapter.



**Figure 5.1:** Average Annual Investor Returns in the Aviation Industry, 1996-2004

## INVESTOR RETURNS VARY ACROSS THE SUPPLY CHAIN AND ACROSS THE CYCLE

Investor returns vary quite significantly between different sectors (see Figure 5.2). The sectors with the highest returns in the aviation supply chain include specialist niche areas (e.g. CRS), intermediaries with strong pricing power (e.g. freight forwarders, fuel suppliers) or sectors with a low threat of competition from new entrants (e.g. manufacturers). In addition, freight forwarders were actually counter-cyclical, enjoying higher returns in the “downturn” than in the “upturn”.

IATA does not automatically oppose surplus returns being earned amongst aviation suppliers. However, surplus returns must be justified by productivity, efficiency or bearing a high share of risks. Therefore, it is important compare the level of returns in Figure 5.2 with information on the distribution and volatility of investor returns in each sector outlined in the next few sections of this chapter.

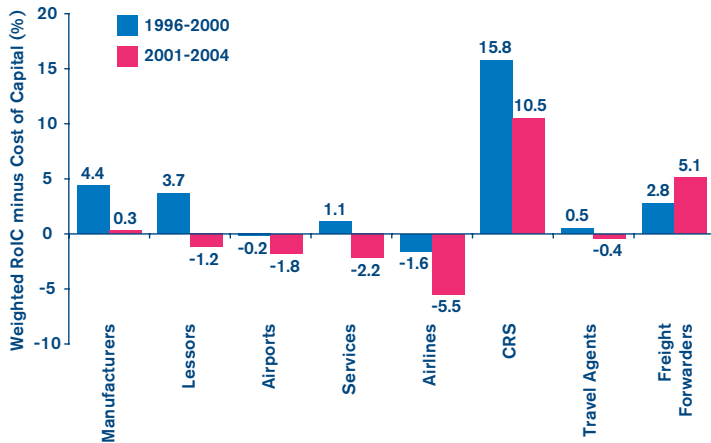


Figure 5.2: The Weighted Return on Invested Capital minus the Cost of Capital by Sector

## INVESTOR VALUE VARIES ACROSS FIRMS IN EACH SECTOR

Within each sector there are, of course, differences in the investor value created by individual firms. Returns on invested capital above 15% are earned by the top 25% of firms in 7 of the 11 sectors within the supply chain (see Figure 5.3). Therefore, investors can find several successful firms within the industry that generate strong returns across the cycle. However, there are also 5 sectors where the bottom 25% of firms earn returns on invested capital of less than 5%.

For airlines, even the top 25% of firms earn an ROIC less than the median average in seven other sectors in the supply chain. The relatively low deviation between returns across airlines indicates that there are strong sectoral characteristics – such as higher competition and lower barriers to entry than in other sectors – as well as firm-specific factors that impact upon performance. However, as the previous chapter showed, it is not the airline business model (e.g. LCC or network) by itself that creates success or otherwise – it is the individual airline’s strategy that is key.

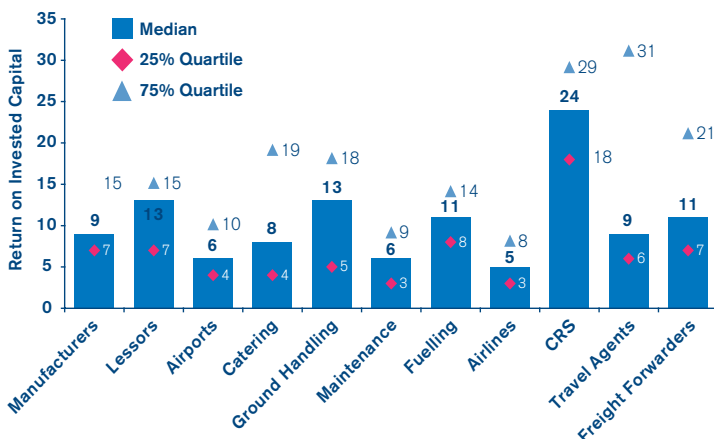


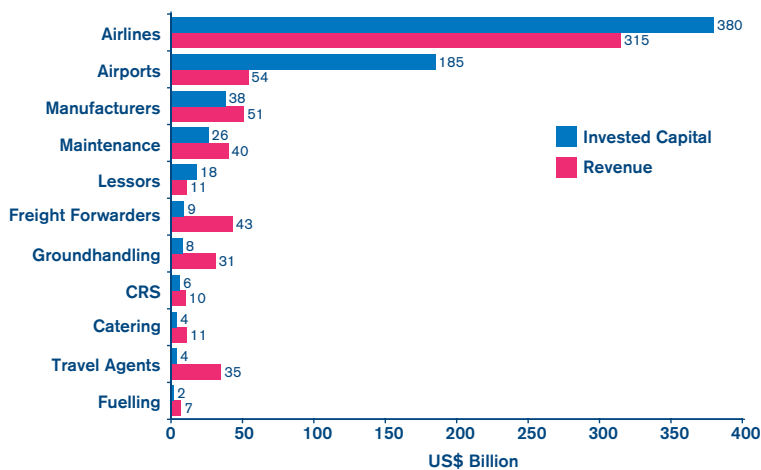
Figure 5.3: The Differences in Return on Invested Capital within each Sector

## INVESTED CAPITAL AND REVENUES

The sectors included in the analysis had over US\$680 billion of capital invested in 2004 (see Figure 5.4). By way of illustration, total capital invested in the firms studied was higher than the total stock of foreign direct investment capital in China in 2004. Airlines account for over 55% of this total, with \$380 billion of invested capital. As such, airlines had \$200 of capital invested for every passenger journey made in 2004. However, the insufficient or low investor returns highlighted above suggest that this capital is not used optimally. The industry continues to face contrasting situations; with capacity bottlenecks and the need for investment in some areas (e.g. European hub airports) but excess capacity – or at least excess capacity at a break-even price level – in other areas (e.g. some US domestic routes).

The capital intensity of different sectors can be measured by their asset turns, i.e. the annual revenues generated from the invested capital base. The airline industry is relatively capital intensive, with an asset turn of around 0.8, i.e. annual revenues are equivalent to 80% of invested capital. However, airports are even more capital intensive, with an asset turn of only 0.3 indicating that a larger amount of invested capital (primarily land) is needed for each unit of revenue.

Consequently, to meet their cost of capital airlines must generate an operating margin (i.e. return on sales) of 9-10%. By contrast, airports need to generate a rate of return on sales of nearly 25%. Many of the other sectors in the supply chain generate higher annual revenues than their invested capital base. As such, the reported operating margin for these sectors will actually be significantly lower than the ROIC they earn for investors.



**Figure 5.4:** Invested Capital and Annual Revenues by Sector

## INVESTORS' RISK EXPOSURE TO THE INDUSTRY CYCLE

Investors are attracted to higher risk assets by the prospect of higher returns. However, while risk is distributed unevenly across the aviation industry, those bearing the highest risks do not earn the highest returns – quite the opposite in some cases.

Caterers and airlines saw high volatility in returns (see Figure 5.5), with average returns on invested capital in the “upturn” (1996-2000) over three times higher than average returns in the “downturn” (2001-04). Yet, airlines had the lowest average return amongst all sectors with caterers also seeing a relatively low average return. By contrast, airports, CRS companies and service activities such as fuelling and maintenance achieved relatively stable returns across the cycle and higher average returns than airlines. Freight forwarders actually enjoyed higher average returns in the “downturn” than in the “upturn”, due to the robustness of their business model, ongoing consolidation and strong demand from Asia.

Therefore, airlines provide the majority of capital for the industry but also face one of the highest volatility in returns. By contrast, even though since 2001 the industry has experienced the worst financial crisis in its history, airports and some service suppliers have seen relatively steady investor returns. This indicates a large degree of unregulated monopoly pricing power in these sectors.

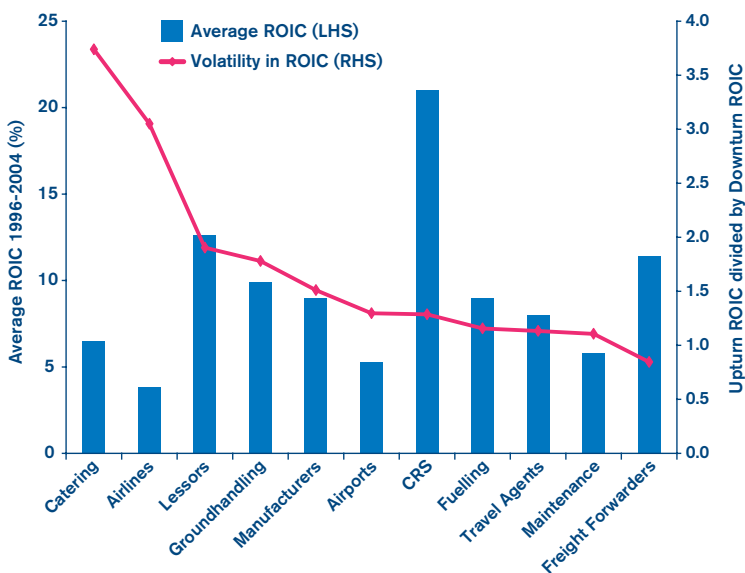


Figure 5.5: The Ratio of Average “upturn” ROIC to Average “downturn” ROIC

## A SIGNIFICANT REGIONAL DIFFERENCE FOR AIRPORTS

The different structure of airports in different regions leads to significant differences in the returns on invested capital:

- US airports are typically owned by local city authorities and are regarded as a public service utility. There is less of a commercial orientation for maximising non-aeronautical revenues, indeed airlines often own and manage their own terminals and retain any retail revenue. In addition, US airports only qualify for investment subsidies if they re-invest profits into the facility, thereby reducing the profit incentive and increasing the invested capital base. US airports achieved an average return on invested capital of 3.1% between 1996 and 2004.
- By contrast, several major European airports are wholly or partly-owned by the private sector. As such, profit maximisation is sought from all sources, and European airport user charges are among the highest in the world. European airports also participate to a greater extent in services such as ground handling. European airports earned an average annual return on invested capital over the cycle of 7.8%, higher than their cost of capital. Returns were especially high during the “upturn” period.



➤ Asian airports (excluding Japan) also delivered positive investor value across the cycle. Non-aeronautical revenues are more than half of total revenues for Asian airports, while the invested capital base is also relatively lower. Japanese airports have delivered lower returns on invested capital, largely a reflection of excess supply and historic over-investment, with 97 operational airports in the country. However, with the Japanese central bank interest rate set at zero for much of this period the cost of capital may also have been significantly lower in Japan too, helping to boost investor returns.

Therefore, some airports, especially those with weakly regulated commercial incentives, have used their natural monopoly position to generate excess returns. For example, European and Asian airports (excluding Japan) have generated surpluses above their cost of capital and relatively stable levels of return across the cycle. This, combined with IATA members' experience of excessive charges at some of these airports, highlights a degree of unregulated monopoly pricing power in the European and Asian airport sectors. For airline users, an additional concern is where suppliers are inefficient – highlighted by a combination of high prices but low or even negative investor returns. For example, US airports have a relatively low rate of return on invested capital but some major US airports have landing charges that are among the highest in the world.

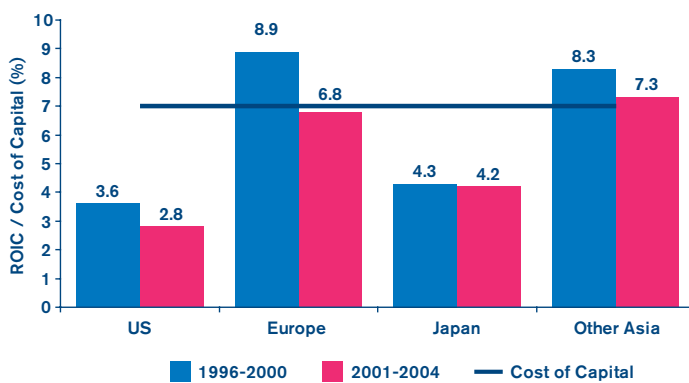



Figure 5.6: Airport Investor Value by Region

# 06 | THE IMPACT OF STRUCTURAL CHANGES ON FUTURE INVESTOR RETURNS

 The aviation industry has experienced significant structural, as well as cyclical, changes over the last ten years. It remains exposed to further structural changes in the future.

Indeed, the financial crisis in the industry in recent years has required the pace of structural change to increase in several sectors, as part of the drive to improve efficiency and to lower costs. Structural changes expose the industry to external and internal pressures – whether from greater global communications and transparency (e.g. the Internet), increased consumer purchasing power, changing regulatory environments or competition from low-cost new entrants. Nevertheless, though they can create uncertainty, they can also offer significant opportunities to firms and investors.

## THE IMPACT OF INDUSTRY STRUCTURAL CHANGES ON INVESTOR RETURNS

Recent and ongoing structural changes will have different impacts on future investor returns within each sector. IATA's estimate of these impacts are outlined in Table 6.1.

- **Changes in Demand.** The rapid expansion of the LCC airline sector generates new passenger demand but increasingly competes for existing demand with network airlines. Cost pressures arising from new price-sensitive customers also has a slightly negative impact on demand for many servicing sectors. By contrast, outsourcing of non-core operational activities is positive for sectors such as CRS, while an increase in the financial benefits of aircraft leasing over ownership is positive for the financial lessors. Greater use of the Internet can have opposite impacts on investor returns. It increases price transparency and competition in some sectors, but can also lower sales and distribution costs.
- **Changes in Business Models.** The growth in LCCs forces a readjustment in business models in other sectors of the aviation industry. Cost pressures require greater efficiency or diversity in the operations of some service sectors, whether in response to lower commissions for travel agents or the impact of buy-on-board food for caterers.
- **Changes in the Competitive Structure.** The airline industry has relatively low barriers to entry, but Government restrictions continue to create high barriers to exit or restructuring. This leads to a sub-optimal allocation of capital and a tendency to excess capacity (and low yields) in some markets. By contrast, a move towards consolidation in some sectors, such as freight forwarders, may allow economies of scale to boost investor returns.

Recent and ongoing structural changes will impact upon the level and distribution of returns over the next industry cycle. Several of the service sectors are facing structural pressures that will force them to deliver efficiency improvements and lower costs for their services to airlines. Even CRS firms are beginning to see competition from the Internet lower their very high investor returns. However, other sectors, such as airports, are not facing similar external structural pressures. In these cases, independent economic regulation can help to provide the necessary incentive mechanism for delivering efficiency improvements.

Nevertheless, airlines are expected to be more negatively affected by structural changes than other sectors. Without more substantial (positive) structural change, the already insufficient airline investor returns could become even lower, both in absolute terms and relative to the aviation supply chain.

**Table 6.1:** The Expected Impact of Recent Structural Changes on Investor Returns

	Sensitivity to Cycle	Structural Changes In:		
		Demand	Business Model	Competitive Structure
<b>Network Airlines</b>	High	Slightly Negative	Slightly Negative	Negative
<b>Low-Cost Airlines</b>	High	Positive	Positive	Neutral / Negative
<b>Airports</b>	Low to Medium	Neutral	Slightly Negative	Neutral
<b>Manufacturers</b>	Medium to High	Slightly Negative	Neutral	Positive
<b>Lessors</b>	High	Positive	Neutral	Neutral
<b>Freight Forwarders</b>	Low	Neutral	Neutral	Positive
<b>Maintenance</b>	Medium	Slightly Negative	Neutral	Neutral
<b>CRS</b>	Medium to High	Positive	Slightly Negative	Slightly Negative
<b>Catering</b>	High	Slightly Negative	Negative	Slightly Positive
<b>Travel Agents</b>	Medium to High	Slightly Negative	Negative	Slightly Positive
<b>Ground Handling</b>	High	Slightly Negative	Neutral	Negative

# 07 | WHY MUST WE IMPROVE INVESTOR RETURNS?

 Airlines have been unable to generate sufficient returns for their investors.

Why is this a problem?

Unless airline investors receive a higher share of the value the industry creates, future growth in air travel will either be constrained or inefficiently met, with substantial value lost for the global economy.

The airline industry creates substantial value for customers and the wider economy. But clearly, the value created by airlines is not reflected in the airline profitability or investor returns. As shown in this report, the overall picture for airline investors has not been healthy.

Yet the demand for airline services will continue to grow strongly over the next two decades, especially in emerging economies. Facilitating this demand – and the substantial value it will generate – requires the replacement and expansion of a large proportion of existing capacity. But the airline industry currently faces a contradiction in terms. Significant new investment is required to meet the fast-growing demand for air travel, but current rates of return do not even justify retaining the level of capital that is already invested.

Airlines may share certain characteristics with, for example, the newspaper industry or sports teams where some investors may look for status rather than high returns. At the same time, other investors continue to be attracted by the prospect of high returns for the handful of successful investors, even though the majority do not earn a sufficient return (e.g. the large number of new aircraft orders for the Indian market). However, if experience is a guide, not all of this new investment will be used efficiently.

For the airline industry to deliver its full potential value for customers and the wider economy it will need to attract new investment capital on a sustainable rather than speculative basis. Retaining the status quo structure of the industry means that past experience of insufficient investor returns will be repeated in the future. This will either raise the cost of attracting new investment or deter some much-needed investment. This will lower the potential growth rate of the aviation industry and lose billions of dollars of potential value for customers and economies.

# 08 | HOW CAN WE IMPROVE INVESTOR RETURNS?

➤ Greater structural and operational changes are required if airlines are to be able to deliver a higher return to their investors – to the long-term benefit of all stakeholders. These steps will require a more realistic approach from Governments towards the industry and constructive engagement from airlines and supply chain partners to improve efficiency and productivity.

This report identifies three main routes through which airline investors would be able to improve the efficiency of their invested capital and achieve a higher share of the value the industry creates:

### **1. Liberalisation and deregulation.**

Governments must allow airlines to have greater freedom over operational and ownership decisions. National limits on foreign ownership and the outdated bilateral regulation system create a major barrier against the rational restructuring of the industry. Liberalisation and deregulation will reduce the current high barriers to exit or restructuring, allowing capacity to adjust towards levels appropriate for individual markets. Airlines need greater freedom to restructure their operations on a commercial basis, with cross-border mergers if necessary.

Financial intervention by Governments must also be reduced. The industry already faces a too-high burden of taxation. Airlines support economic development through their operations, while investment in new technologies continues to deliver environmental improvements. Misguided tax schemes will damage, not achieve, development or environmental benefits. In addition, Governments should remove ineffective subsidies – for parts of the supply chain as well as for inefficient “flag-carrier” airlines. Subsidies merely provide a further barrier against the optimal allocation of capital and capacity.

### **2. A greater sharing of risk and reward within the aviation industry.**

This report demonstrates that parts of the supply chain continue to exploit strong pricing power or protected markets to derive high returns or to cover up for inefficiencies. Where monopolistic pricing power exists, for example at major European airports, IATA seeks sensible and effective regulation. Where inefficiency exists, IATA seeks clearer benchmarking and transparency of costs and will work in partnership with others to improve cost efficiency for all. Where protected markets exist, IATA will seek greater competition and a fairer share of the risks borne by airlines.


Airports and other parts of the supply chain cannot look for comfort in monopoly or niche positions. The industry as a whole must seek productivity and cost-efficiency improvements if investor value is to increase for all.

### **3. Further improvements in airline productivity and cost-efficiency.**





Great progress has already been made in reducing non-fuel unit costs, but it remains an on-going process. Airlines must seek a more sustainable approach in their cyclical management strategies. Customers and employees are fundamental to the business – but have sometimes received value that is unsustainable for airlines to provide.

Greater control in matching aircraft capacity to prevailing demand conditions (e.g. an avoidance of boom-and-bust in new aircraft orders) will help to avoid unsustainable price competition. Lower yields do create additional value for customers – but if they are provided at an unsustainable level then there will be no long-term value. Higher labour costs had a direct impact on lowering investor returns over the last ten years, not least for US airlines. This is an issue not just of salary levels but also working practices and their resulting impact on productivity levels. Tough sacrifices have already been made to achieve labour cost reductions within the industry over the last two-to-three years. Airlines will also continue to adjust their labour costs and productivity levels as a major part of helping to improve returns in a highly competitive market.

# 09 | CONCLUSIONS

 The airline industry is not an investor haven, quite the opposite in fact. The efficiency of use of existing invested capital – and the investor returns it creates – must be allowed to improve if funding for new investment is to be attracted in a cost-effective and sustainable way. Without this, billions of dollars of potential value for customers and the wider economy will be lost.

Over the course of the last industry cycle airlines have failed to receive a sufficient return for the investment risks they take. The aviation supply chain did generate a small surplus over its cost of capital, though there were wide divergences between sectors and regions – raising concerns over the exploitation of pricing power in some areas or the supply chain and inefficiency in others.

-  The inability to generate sufficient airline investor returns over the last industry cycle does not mean that existing capacity or that the future rate of growth should be reduced. This is not what customers or the wider economy – key recipients of the substantial value the industry creates – would want. Instead, the demand for air travel and the global connections it provides continues to grow strongly.
-  Neither would restraining airline capacity or growth necessarily be the best option for the environment. The airline industry continues to meet the greater demand for travel in a responsible way – but needs new investment to achieve this. Investment in new aircraft and new technologies helps to improve fuel efficiency, lower average emissions and reduce noise impacts. Simply restraining capacity does not achieve this.
-  Therefore, the airline industry must be allowed to improve the allocation and efficiency of existing capital in order to attract the investment capital needed to meet greater customer demands in a cost-effective and sustainable way. This report highlights three main routes through which investor returns can be improved. These steps will require a more realistic approach from Governments towards the industry and constructive engagement from airlines and supply chain partners to improve efficiency and productivity.
-  Achieving a fairer return for airline investors will benefit all stakeholders in the aviation industry – it is not a “zero sum game” where higher airline returns come at the expense of other sectors. Higher productivity, greater efficiency and cost effective new investment will help to ensure the aviation industry as a whole can maximise its potential value for customers and the global economy.





## APPENDIX A: DEFINITIONS

### INVESTOR RETURN

**Definition:** The profit earned by a firm over and above its cost of capital. Expressed in US\$.

**Calculation:**  $(\text{ROIC} - \text{WACC}) * \text{IC}$

### INVESTED CAPITAL (IC)

**Definition:** The amount of capital invested in the operations of the firm, adjusted for leases. Expressed in US\$.

**Calculation:**  $\text{IC} = \text{Operating working capital} + \text{net plant, property and equipment assets}$ . Includes goodwill and intangibles.

### RETURN ON INVESTED CAPITAL (ROIC)\*

**Definition:** A measure of the operating performance of a company. Expressed as a percentage.

**Calculation:**  $\text{ROIC} = \text{NOPLAT} / \text{end-of-year invested capital}$

### WEIGHTED AVERAGE COST OF CAPITAL (WACC)\*

**Definition:** The opportunity cost of the funds invested in a firm. Expressed as a percentage.

**Calculation:**  $\text{WACC} = (\text{Cost of Equity} * \text{Equity weight}) + (\text{Cost of debt} * \text{debt weight})$

### NET OPERATING PROFIT AFTER TAX (NOPLAT)

**Definition:** Operating Profit after taxes, adjusted for operating leases.

**Calculation:**  $\text{NOPLAT} = \text{Adjusted Earnings before Interest, Tax and Amortisation (EBITA)}$

- Taxes Interest component of lease expense is added back into EBITA.

\* Return on Equity and the Cost of Equity were used for aircraft leasing companies, reflecting the investor capital at risk rather than the capital value of the managed assets.

## APPENDIX B: THE COVERAGE OF THE SAMPLE USED FOR EACH SECTOR

Sector	Details
<b>Airlines</b>	<ul style="list-style-type: none"> <li>- 30 airlines with a cumulative market share of 64%</li> <li>- Strong geographic coverage in the 3 largest regions</li> <li>- Representative sample of low-cost airlines</li> </ul>
<b>Manufacturers</b>	<ul style="list-style-type: none"> <li>- All four major civil aviation jet manufacturers included</li> </ul>
<b>CRS</b>	<ul style="list-style-type: none"> <li>- 3 out of 4 of major global players analysed</li> </ul>
<b>Airports</b>	<ul style="list-style-type: none"> <li>- 33 airports with cumulative global market share of 32%</li> <li>- Strong geographic coverage in the 3 largest regions</li> <li>- Balanced mix of airports with different non-aeronautical revenue shares</li> </ul>
<b>Lessors</b>	<ul style="list-style-type: none"> <li>- 3 of the largest industry players covered, representing a 31% global market share</li> </ul>
<b>Freight Forwarders</b>	<ul style="list-style-type: none"> <li>- Around one-third of the global market covered</li> <li>- Well-balanced regional coverage</li> </ul>
<b>Catering</b>	<ul style="list-style-type: none"> <li>- 5 globally active caterers, with around 60% global market share</li> <li>- Broad geographic coverage</li> </ul>
<b>Travel Agents</b>	<ul style="list-style-type: none"> <li>- Limited data accessibility due to undisclosed results or joint venture structures</li> <li>- However, homogeneity of business allows for extrapolation of results from available sample</li> </ul>
<b>Maintenance</b>	<ul style="list-style-type: none"> <li>- Representative mix of third-party maintenance players as well as in-house maintenance shops</li> <li>- Good regional coverage</li> </ul>
<b>Ground Handling</b>	<ul style="list-style-type: none"> <li>- All globally active players analysed, though these firms hold only 25% of a highly fragmented market</li> </ul>
<b>Fuelling Services</b>	<ul style="list-style-type: none"> <li>- Smallest sample of all sectors due to the high level of integration of service companies into global oil and gas companies</li> </ul>

**Achieving a higher return for airline investors will benefit all stakeholders in the aviation industry.**





Without this, billions of dollars of potential value for customers, investors and the wider economy will be lost.

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