

The “new normal” for airport investment

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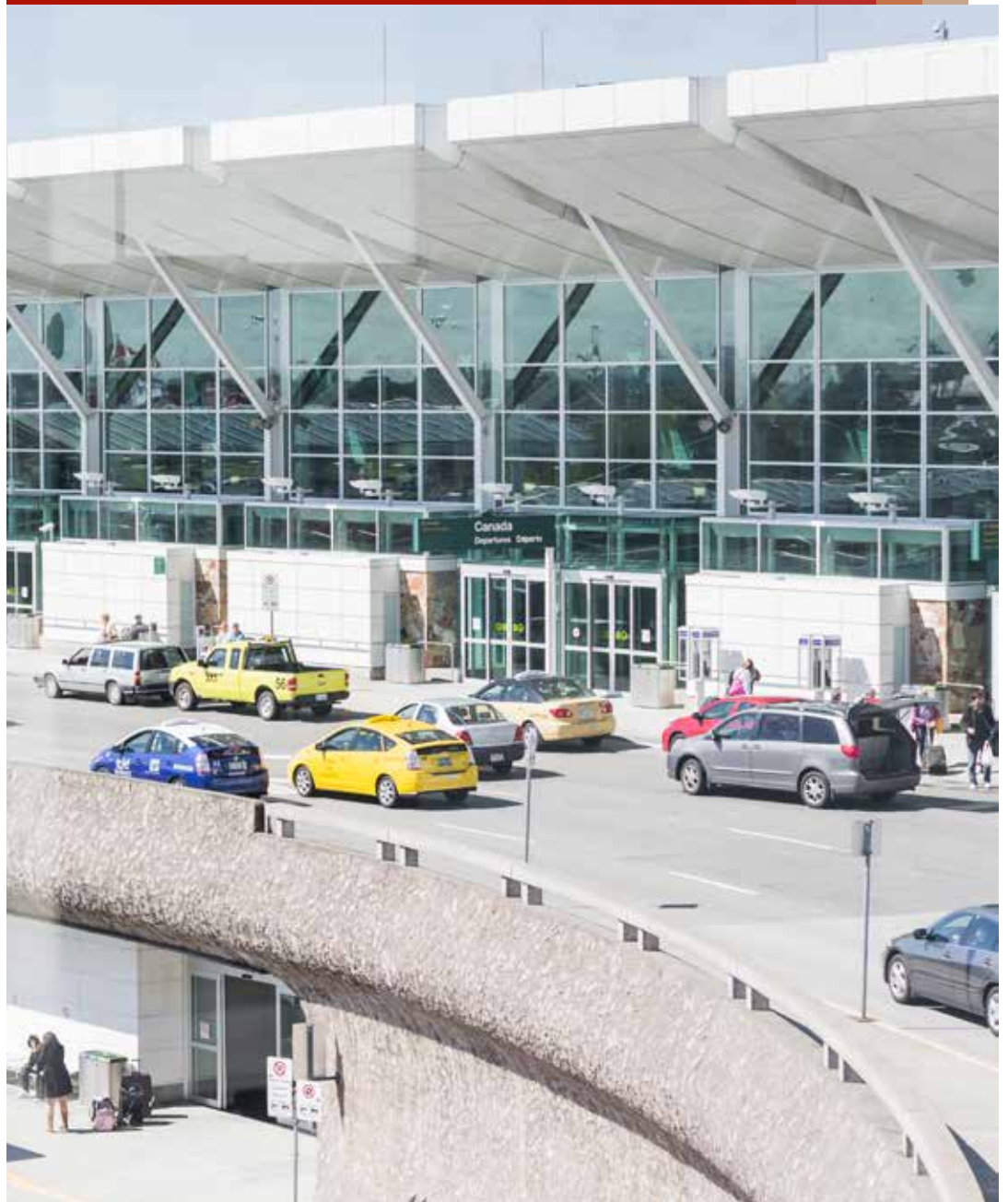
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Airlines and airports today are looking at an uncertain future.

As the global economy slowly emerges from the impact of the global financial crisis, aviation sector players face a new world where they can no longer count on cheap financing or cheap fuel. Equally challenging, it is difficult to identify where the new sources of growth will be, whether it is the BRICS, or further afield, in markets such as Turkey or Indonesia.

This world of uncertainty isn't just a one-off experience that the sector must get through before things can return to previous trends. It's the "new normal"—here to stay, for a while at least. And instead of planning for a new phase of constant straight line growth, sector players will need a strategy for operating within this new set of conditions.

A clear theme of this updated compendium is an exploration of the key impacts of the "new normal" and ideas for how best to cope with its challenges. For example, you'll read about how airlines are overhauling their business models to survive in a newly competitive and dynamic market—and what that means for airports and thus investors. And you'll see how new players arising in the aviation infrastructure investment space may be better equipped for the game than players of yesterday. The inputs of growth are also examined, whether it be in the risks associated with new airport projects, or the increasing clarity of the government's approach to carbon and emissions.

Investors of all types will need to adjust their strategies to ink the best deals in the "new normal". To

do that, they'll have to deepen their understanding of the aviation sector on several key fronts—including what government stakeholders want to get out of an airport; how to reduce costs and develop new business in an age of uncertainty and resource constraints; and how to assess the nuanced risks and opportunities arising in emerging markets' aviation sectors.

The good news is that the opportunities are out there, despite the worldwide economic downturn, and that most airports are still making money. By understanding the new landscape, investors can identify the most promising of those opportunities, manage the risks, and shorten the odds of gaining the best returns.

Yours truly,



Michael Burns
Partner, PwC

What is the “new normal” for aviation?

Dr Andrew Sentance

As the major western economies emerge from the turmoil of the global financial crisis, we find ourselves in a strange and uncertain world.

Growth rates are disappointing, relative to the experience before 2007. In the UK, economic growth averaged 3% per annum from 1982 until 2007, more than doubling the size of our economy in 25 years. The only comparable period of sustained UK economic growth was the post-war “golden age” of the 1950s and 1960s. But since the trough of the recession in 2009, UK economic growth has averaged not much more than 1% per annum.

Other major western economies are also struggling. In the three years 2011–2013, US economic growth is set to average under 2% and the euro area has struggled to register any growth at all. Emerging and developing economies—by contrast—are performing much more strongly. Even though growth has slowed down in some of the emerging superpowers like China and India, the International Monetary Fund (IMF) is still projecting growth of 4.5–5% in the emerging and developing world this year and next.

With strong growth outside the West pushing up energy and energy and commodity prices, we are living in a world of relatively high inflation. And volatility in financial markets is continuing to add to uncertainty about economic prospects and access to finance.

These are all features of a “new normal” economy which reflects three big changes in the economic environment from the world we were living in before the financial crisis.

The first change is in the financial system. From the 1980s until 2007, western economies enjoyed an era of easy money. The operation of a highly deregulated and liberalised global financial system provided consumers and businesses with relatively easy access to finance and allowed a build-up of debt. Now, banks have become much more cautious and their reluctance to lend is being reinforced by new regulatory requirements.

The second change is affecting the cost of imports. From the mid-1980s—when oil prices fell sharply—until the mid-2000s, western consumers benefited from an environment of cheap imports from the rest of the world. Energy and other commodity

A long period of strong consumer-driven growth in the West has come to an end.

prices remained subdued until the mid-2000s. And the expansion of the world economy to include new sources of low-cost production—including China and India—initially pushed down prices of many manufactured products and provided a further boost to western living standards.

However, as these large emerging market economies have developed and grown, the tables have turned. Strong growth in Asia and elsewhere in the emerging world is now exerting more inflationary pressure across the world economy. The world of cheap imports has been eroded by successive waves of energy and commodity inflation since the mid-2000s. And strong growth in China, India and elsewhere is pushing up their labour costs and adding further to import costs for the UK and other western economies.

The current era of high and volatile energy and commodity prices is unlikely to be a temporary phase. The ten largest economies in the Asia-Pacific region already account for nearly 30% of world gross domestic product (GDP)—making a larger contribution to the world economy than either the United States or the European Union. Over the first half of this century, Asia's share of world GDP is likely to rise to around 50%.¹ As living standards in Asia continue to move closer to western levels rise and population growth continues, there will be continued upward pressure on the demand for energy and commodities, with new sources of supply struggling to keep pace.

A third change since 2007 has been in the ability of governments and central banks to underpin confidence in the private sector. Before the financial crisis, governments and central banks appeared to be able to support growth, contain inflation and maintain orderly financial conditions. This confidence has been severely dented by the experience of the financial crisis and the difficulty we have had steering our way out of a period of economic turbulence.

Three tailwinds which supported growth for over two decades prior to the financial crisis—easy money, cheap imports and strong confidence—are no longer available to support growth in western economies. The UK and other western economies are going through a prolonged period of structural adjustment to the “new normal” world of more restricted finance and higher and more volatile energy and commodity prices. And this adjustment is likely to continue through the mid-2010s.

A long period of strong consumer-driven growth in the West has come to an end and export opportunities in emerging and developing economies are now more likely to be an engine of growth, which is why export-oriented economies like Germany and Sweden have performed well relative to their European partners. Another aspect of the adjustment is that indebted consumers and governments need to adjust their spending and debt levels downwards to more manageable levels.

But even though the macroeconomic environment has become more difficult, there are still new opportunities arising—driven by

technology, social and demographic trends and growth opportunities in Asia and other emerging market economies. While businesses need to be cautious about over-extending themselves in a volatile and uncertain environment, it would be unwise to totally neglect growth opportunities. At the same time, the adjustment to the “new normal” world implies further business restructuring—particularly in sectors heavily dependent on consumer growth in the UK and other western markets.

So what does this mean for airlines and airports? What are the major adjustments which need to take place in the global aviation industry if it is to adapt successfully to this “new normal” world?

The first major conclusion is that growth is likely to be relatively weak in the mature aviation markets of US and Europe and the major engine of growth will be the dynamism of Asia and other emerging markets. This is already evident in the IATA global air traffic data which show the US market up by just over 2% so far this year, compared with growth of nearly 6%–7% in the Asia-Pacific region, Africa and Latin America and double-digit growth in the Middle East. European air traffic growth is still benefiting from the development of low-cost budget airlines, but as that segment matures, growth rates should slow here too.

Long-haul air travel is also likely to be a beneficiary of this shift in the centre of gravity of the global economy. As western businesses seek out new areas of opportunity in Asia and other emerging markets, new business travel flows are likely to develop. Trade between the EU and China, for example, has doubled since 2003—and flows of international trade and investment are major drivers of longhaul air travel for business purposes.

¹ See, for example, Asian Development Bank (2011): “Asia 2050: Realising the Asian Century” and PwC (2006): “The world in 2050”.

Airlines and airports need to reposition themselves to take advantage of these growth opportunities rather than relying on increasingly mature established markets. Those that are unable or unwilling to do so are likely to struggle and may not survive the next wave of industry consolidation.

A second key feature of the “new normal” world for airlines and airports is a continued climate of financial uncertainty and volatility. Air travel is very sensitive to fluctuations in GDP and financial shocks, as we saw in the global financial crisis, after 9/11 and in the late-1990s Asian crisis. In addition, the slim operating margins and high proportion of fixed costs in the airline industry mean that fluctuations in demand can create very large swings in profitability and cashflow. These vulnerabilities are exacerbated by the lags in the investment cycle. There are many examples of airlines and airports which have found that investments planned in the upswing of the cycle come on stream just as demand is turning down—creating a double whammy for profitability and cashflow.

There is no simple strategy for managing these vulnerabilities—but there are three very useful lessons from past experience of managing economic and financial volatility in the aviation industry. First, ensure that capacity expansion is cautious and gradual, reducing the risk of having to fill large numbers of new aircraft, or a large airport expansion, in very weak demand conditions. Second, spread risk among suppliers and business partners by ensuring that contract conditions can be varied in the event of a downturn in demand or some other negative financial shock. And, third, try to ensure a diversification of revenue across a range of geographies and market sectors. Economic and financial shocks normally have a regional or sector-specific component. The failure of Eos, Silverjet and other “business only” airlines which

flew between the UK and the US in the late 2000s reflected their high exposure to a specific traffic flow which was undermined by the global financial crisis.

In addition to managing changing sources of growth and volatility, airlines and airports need to be able to adjust to a new era of high and volatile energy and commodity prices. In particular, the oil price is a key influence on airline profitability. When I joined British Airways in 1998, the norm was a US\$15 to US\$20 per barrel oil price. Now, the oil price can move by US\$15 to US\$20 per barrel in a matter of weeks and the norm is US\$100 to US\$120 per barrel.

surge in oil prices may not be the last. And as the global economy picks up again from the recent weakness associated with the euro crisis, we could easily see a renewed surge towards \$150 per barrel in 2014 or 2015.

The “new normal” economy has a number of significant challenges for airlines and airports—changing sources of growth, continued volatility, and sustained high (and also volatile) energy prices. The industry players who are most successful at managing these challenges will be those who recognise and adjust to this “new normal” quickly. Those who are waiting for a return to the “old normal” of easy money, cheap

The “new normal” economy has a number of significant challenges for airlines and airports.

In my view, this is not a temporary phase. Since the mid-2000s, every time the emerging world and the major western economies have both been growing healthily, we have seen a major surge in oil prices, often associated with broader commodity price pressure. The first surge in 2003-2005 took the oil price from around US\$20 to US\$50–US\$60 per barrel. The second surge in 2006-8 took the price up to nearly US\$150 per barrel, before it fell back to US\$40 in the depths of the financial crisis. And from 2009–2011, the oil price surged again to over US\$100 per barrel, where it has remained despite the recent weakening in the global economy.

The IMF’s baseline scenario for the oil market is for a further rise to US\$200 per barrel by 2020². So the recent

imports and robust confidence will have a long wait. Those conditions are not set to return. And industry players who think these pre-2007 conditions will return risk not only disappointing performance, but ultimately extinction!

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² See IMF (2012): “The future of oil – Geology versus Technology”, Working Paper WP/12/109

When airport projects fly off course.

Anthony Morgan

Executive summary

Any major infrastructure project is vulnerable to going over budget, running behind schedule, or experiencing other setbacks. Sometimes the issues can be resolved through negotiations, but often they lead to disputes that require arbitration or result in litigation.

Airport projects unfortunately may fly off course more often than other types of infrastructure construction because they are more complicated and involve more uncertainty.

The stakes can be high: A US\$400 million contract for construction of a new runway, breakwater, and terminal at Beirut-Rafic Hariri International Airport ballooned by more than US\$100 million because of additional costs the contractor claimed due to delays that put the project more than 19 months behind schedule.

Airport projects are especially complex because they involve a wide variety of stakeholders and revenue sources. Airport developments also are typically very large in scope and have a long timeline from planning to completion, increasing the likelihood of design and other changes along the way. And

perhaps most significantly, airport facilities are being built at a volatile time for air travel when it is difficult to predict accurately an airport's needs 10 years or even five years into the future.

Unlike other capital projects, airport developments tend to be more politically sensitive and attract much more media attention. The media coverage can be primarily local, but may be international because an airport is a city's gateway to the world, attracting people from across the globe. If a project encounters serious setbacks, widespread media attention can damage the airport's reputation with potential travellers, retailers, construction and engineering firms, and other interested parties. The negative coverage may even cost a city's mayor his job in the next election.

But airport owners and developers can mitigate the risk of disruptions and disputes by making provisions for possible adjustments in their contracts, incorporating as much flexibility as possible into their designs, and closely monitoring not only the construction process, but also changes in the airline industry and the outlook for air travel.

With any type of project, the greater the uncertainty about demand and other factors, the greater the risks will be.

Multiple stakeholders, revenue sources, and regulations

Building a bridge or parking garage is relatively straightforward, with only a few key stakeholders and a single revenue source. In contrast, an airport construction project typically entails a large variety of stakeholders and multiple revenue sources. When an airport expands, it affects the operations and revenues of the airlines flying into that facility, operators of the car parking and garages, retail shops in the terminals, nearby hotels, and train lines to the airport, among others. In fact, a national airline may be effectively shut down if its home airport isn't operating.

That greater complexity means that the repercussions can be much more significant when a project runs into trouble and the calculation of the exact impact on the various stakeholders' revenue more difficult. When an oil pipeline is late, it is relatively straightforward to determine the impact on a refinery's business. But with an airport expansion delay, the financial loss to airlines, retailers, food caterers, and parking facilities isn't so clear-cut. How do you determine how much revenue a souvenir shop lost because of a delayed airport project?

Airports also can encounter problems if they were designed without taking into account all of the relevant regulations. In addition to international aviation standards, project managers need to be knowledgeable about national and local regulations. For example, the new airport in Berlin, Germany,

was nearing completion when local regulatory authorities said the smoke alarm and evacuation systems didn't meet code requirements, delaying its opening and requiring additional work.

The cloudy skies

With any type of project, the greater the uncertainty about demand and other factors, the greater the risks will be. But the volatility of air transportation is especially intense today, which can make the outlook particularly cloudy and add uncertainty to an already complex project.

During the construction phase, airports may have to adapt to changes in their mix of airlines and the size and shape of jet planes, technological advances that can affect an airport's operations, and an increase or decline in the number of passengers flying in.

Moreover, a particular airport could suddenly face political instability and see a sharp drop in tourism in the midst of a major expansion. We also have seen how a major devastating event such as the terrorist bombings of the World Trade Center and Pentagon in 2001 and the global financial crisis in 2008 can sharply change air travel patterns and affect airport projects.

Indeed, by the time an airport project is finished, the amount of air travel and passengers' needs may have changed so much that the number of security lines, parking capacity, or other features of the new facilities are no longer suitable.

For instance, technology allows passengers now to check their baggage online, print out their own luggage tags, and load their bags on a conveyor belt when they arrive at the airport—all without even interacting with an airline employee. As a result, an expansion project may be well under way before an airport owner sees that it needs less physical space for people to queue up and check bags than in the past.

That would then require a terminal redesign in the middle of construction to allocate some of that check-in space to other uses, such as retail shops. Such modifications can result in differences of opinion and disputes between owners and contractors over how much the changes increased costs or delayed completion of the project.

Even more costly and disruptive is a major change in an airport's roster of airlines. If an airport is being expanded to serve as a hub with many passengers transferring to other flights, it requires a more expensive, sophisticated baggage handling system to transfer people's luggage. Should the airline that's intended to transport people to other destinations go bankrupt or be acquired by a competitor, the expansion project is no longer appropriate and money was wasted on such features as the transfer baggage system.

Emerging markets: opportunities and risks

With air travel expected to grow fastest in emerging markets, airport construction will increasingly be concentrated in the Middle East, Asia, and other developing areas of the world. While that bodes well for engineering and construction firms, it also may mean more complications and disputes. Growth rates in emerging markets are harder to predict

than in mature economies, making it that much more difficult to project air travel demand in five or 10 years and design an airport of the proper size with the necessary features.

Moreover, airport operators and contractors in emerging markets don't have the experience in dealing with risk and the sophisticated knowledge to figure out solutions to problems that their counterparts in Europe and North America enjoy. They also don't have the established relationships that can often help the parties in an airport construction project avoid problems and resolve disputes more expeditiously. In addition, contractors from developed economies will likely find different construction standards and a looser legal framework in emerging countries.

Cultural differences will also come into play. For instance, project changes may not be viewed as a normal part of the construction process in some inexperienced, emerging countries. As a result, they may not build change control procedures into contracts, leading to disputes that can't be easily resolved.

Another potential risk factor in the Middle East is the desire to create a landmark design for an airport that has a sort of "wow" factor. Such unique designs may draw attention, but they also are more vulnerable to problems because they've never been done before. Contractors may try to price that risk into the contract, but if they don't get it right, they will try to get their money back by contending that the design was flawed from the start and the problems are the owner's fault.

Anticipate change

Scope change is the one sure thing to count on with an airport construction project. So from the outset, airport operators need to plan for the likelihood of needing to make adjustments to the project.

Project owners and contractors should clearly set their expectations and establish communication channels and change procedures. They need to agree up front that there will most likely be changes along the way and that they should be prepared to reassess the business case frequently to determine whether the assumptions behind the project still hold true. Such advance work can go a long way toward preventing major disputes that end up in arbitration or litigation.

It's best to detail in contracts the governance structure processes and information requirements for dealing with changes and variations. The airport owner shouldn't be required to carry all the risk and pay for all design changes. The contractor not only would make money from every change, but he also would hold the negotiating power. Instead, owners should consider a "gain share/pain share" approach, which means sharing with contractors both the risks of cost overruns and schedule delays and the financial benefits of finishing under budget. The project owner also might consider withholding part of the budget and establishing a capital reserve to cover the expected but unknown changes, rather than add new charges later.

How to avoid disputes

To minimize the number of disputes, project managers need to look outward, not just inward. They are used to ensuring that the project comes in on budget, on scope, and on schedule. But with airports, they need to closely monitor the bigger world of airlines and travel to make certain that the project still matches market needs.

Another way to avoid disputes is to expand in smaller increments. While it might be more economical to design an airport expansion to meet expected demand for 10 years down the road rather than just five, that longer time horizon increases the risk of making inaccurate passenger demand forecasts and needing to modify designs during the construction process.

Airport designers also are advised to build in as much flexibility as possible. If they use modular design, they can move or knock down walls to change configurations. Such a simple adjustment could provide more room for baggage claim, for instance, if passenger traffic suddenly rises that space could be taken away from another area, such as duty-free shops. Flexible design also could allow terminals to more quickly add parking slots for planes or make modifications to accommodate larger or smaller planes.

Project managers also should stay on top of the rapid advances in technology to avoid being stuck with outdated systems when the airport project is completed. That's made

From the outset, airport operators need to plan for the likelihood of needing to make adjustments to the project.

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even more complex by the extensive network of technologies within an airport. So much technical change is possible during an airport construction project that the risks can be quite high and the likelihood of disputes much greater than with other types of infrastructure projects. While a toll road involves some technologies, it's much less complicated than an airport's host of technologies, including navigation, radar, baggage management, communication, reservation, and check-in systems.

Finally, it's usually preferable to build the kind of airport structures that have been done successfully in the past. One-of-a-kind terminals may be visually exciting and add to an airport's allure, but they also invite a multitude of potential problems and disputes during construction.

Being prepared for possible disputes

Information is power. That's why it's so important that both airport owners and contractors invest in top-notch information technology systems to collect data about a project that can be used later to support their case in the event of a dispute. Such thorough, easily accessible records can help resolve a conflict more swiftly.

It's also wise to include in the contract the dispute resolution mechanisms, such as mediation or arbitration, which will be used in case there's a conflict over changes and increased costs. That way, the parties spend any expense and time on resolving the conflict rather than figuring out the procedure for settling it.

Owners and contractors also may want to select in advance an adviser that can do a thorough quantitative analysis in case of a dispute. When a new airport was being built in Hong Kong, it turned out that the specifications for the terminal's roof tiles were extremely tight, causing problems with the construction tolerances and requiring reworking. That resulted in a disruption claim against the owner in which the contractor retained an adviser to conduct an extensive analysis to quantify the impact of the tight tolerance on productivity and costs and presented those findings to a mediator for settlement of the claim.

From a cost and time standpoint, it's clearly better to resolve disputes outside the courtroom. Taking legal action also can raise questions about which nation's laws apply if the contractors, operators, or financing entities are from outside the airport's home country.

Next steps

Airport operators and engineering and construction firms will no doubt face more, not less change in the air travel business in the coming years. They also will be working increasingly in less developed countries, where disputes are more likely than in mature markets. Consequently, they need to become more flexible and more sophisticated to thrive in this volatile climate. Simply put, the better they can anticipate and plan for changes in air travel demand and shifts within the airline industry, the more likely they are to avoid major adjustments to projects and thorny, costly disputes.

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Impact management: creating and sustaining value.

Jonathan Grant and Susannah Fitzherbert-Brockholes

Environmental, social and economic impacts increasingly need to be measured, managed and communicated to a wide group of stakeholders. Like many businesses airports are feeling the pressure.

Airports looking to maintain competitive advantage must be able to demonstrate to investors, as well as the communities in which they operate, a broader range of value measures. Not only do they need to create real value in the form of a return on capital invested, but they also need to demonstrate their value to the wider economy and society. And that value includes managing and reducing their environmental impact. Multiple compromises will have to be made over the coming decades between growth, the environment and communities. The successful airports of the future will be able to make best use of the

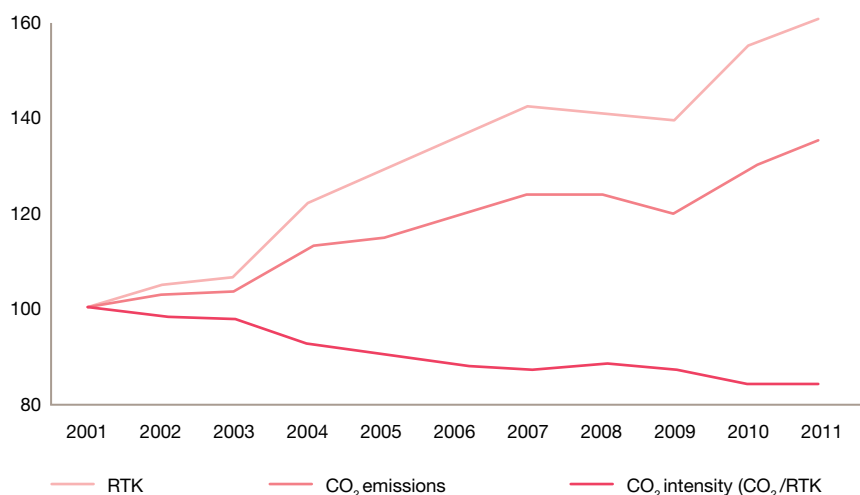
information available to understand all these issues, their consequences and how to respond. This will be key to maintaining asset value and future viability.

In an ever more uncertain and competitive world, airports are already faced with a series of complex challenges to the way that they currently operate. Additional pressure is being placed on the industry as the global community tries to meet the challenge presented by climate change. The aviation sector currently contributes approximately 2% of total energy-related Greenhouse Gas emissions. This may not sound like much but it represents over 660 million tonnes of CO₂ annually and is rapidly growing (see Figure 1 on next page).

Despite only contributing to a small proportion of these emissions, airports are also expected to play their part in controlling them. There are many examples of airports leading the way in emissions reductions and operational efficiency. Such as the Swedavia group of airports which is aiming to be zero carbon by 2020. The International Air Transport Association (IATA) has also set ambitious efficiency and emissions targets.

In an ever more uncertain and competitive world, airports are already faced with a series of complex challenges to the way that they currently operate.

Figure 1: Traffic, emissions and intensity trends in the aviation sector 2001-11



Source: IATA WATS 2011, PwC analysis, 2001=100.

Just last month at International Civil Aviation Organization's (ICAO) 38th Assembly meeting, governments agreed to negotiate a global market based approach to addressing climate change by 2016. This was the outcome that aviation business groups were calling for. The alternative, a patchwork of different regulations around the world, would be an administrative nightmare as well as raise concerns about competitive distortions for both airlines and hub airports. In the interim ICAO has reaffirmed its target of improving energy efficiency by 2% a year as well as formally endorsing the use of the Clean Development Mechanism as an approach to carbon offsetting.

With many hundreds, if not thousands, of new airports to be built in emerging economies over the coming decades, it is hard to see how they will be exempt from this pressure. Easy access to cheap finance is no longer a given and investors increasingly expect companies of all types to demonstrate that they are taking into account the broader impact of business decisions and managing material risks. New airports will be expected to be designed to the highest possible standards: energy efficient, smart, safe and resilient.

Consideration for the communities in which airports operate will also

be increasingly critical. Airports contribute many benefits to the wider economy and society, including access to markets, jobs, social progress and global connectivity. As airports, particularly in mature aviation markets, seek to maintain competitive advantage, their ability to communicate these benefits in comparison to their environmental impacts will have a material influence on key business decisions. Getting this message across is not always easy—the difficulties faced by a number of large hub airports in securing additional capacity demonstrate just what a challenge this can be.

One way of demonstrating this is through Total Impact Measurement and Management (www.pwc.com/totalimpact) which gives boards and investors better insight into the social, fiscal, environmental and economic impacts of their activities. Being able to measure, understand and compare the trade-offs between different strategies, means that decisions can be made with more complete knowledge of the overall impact they will have and a better understanding of which stakeholders will be effected by which decisions.

Finally, it is not just the impact that airports have on their surroundings that is important. Airports will increasingly need to understand what

impact climate change itself is likely to have on its own operations. The coming decades are expected to see major shifts in the frequency, severity and distribution of extreme events and climate conditions. Many airports are located in low-lying coastal regions where sea level rise and increased precipitation pose a real threat.

Failure to develop comprehensive climate change risk management strategies will impact the continuity of business operations, profitability and asset value. Basing investment and risk management decisions on past experiences only will increasingly expose business to losses in the future. Airports will need to look to the future and understand what risks are posed to their physical assets and ability to operate by disasters and the changing climate. Climate Analytics help to identify and quantify climate risk by translating complex scientific information for commercial use by businesses in efforts to plan and manage assets, investments and operations.

It is clear that there are still many challenges that lie ahead for the aviation sector in both achieving its targets for a low carbon future and preparing itself for a changing climate. In a future world where stakeholders are likely to increase their demands on businesses to deliver value—for the economy and society, and not at the cost of the environment—being able to measure, manage and communicate this in a meaningful way will be critical. Maintaining competitive advantage and a license to operate will depend upon it.

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Has the trend line shifted? The impact on airport valuations.

Romil Radia, Constantinos Orphanides and Robert Behan

Executive summary

2013 has seen Manchester Airport Group's (MAG) acquisition of Stansted Airport, followed by various European airport transactions, namely the sale of Hochtief's airport division to PSP Investments. Both these transactions demonstrate that there is still strong interest in the airport sector. Understanding individual airport value drivers and associated risks remains key to securing a good deal.

Airports are a unique class of asset. While they have historically enjoyed a moderate degree of cash flow certainty they have also offered greater potential for growth than more traditional infrastructure assets.

European airports at or above 25 times EV/EBITDA. Passenger traffic growth forecasts at the time of these transactions indicated expectations were for continued traffic growth from an all-time high.

But unlike more traditional infrastructure assets, airports serve airlines as their primary clients and therefore share in the fortunes and woes of a highly cyclical industry. Airport valuations are predicated on expected future cash flows, which are in turn underpinned by passenger demand for travel.

Despite the resilience of airport cash flows in the previous economic downturns, the onset of the global financial crisis led to lower passenger traffic and revised growth expectations. Downside valuation risks for airports became apparent. These risks were subsequently borne out by airport transaction multiples observed since 2008 which, on average, declined in-line with traffic growth expectations.

Today's market is characterised by modest growth expectations and significant short-term uncertainties.

Airports are a unique class of asset.

In the mid to late 2000s, against a backdrop of greater availability of credit and sustained passenger traffic growth, we saw enterprise value to earnings before interest, tax, depreciation and amortisation ("EV/EBITDA") transaction multiples for

Airport transactions continue to hit the headlines.

For this reason, we do not for the moment expect to see a return to EV/EBITDA transaction multiples of more than 20x for European airports last observed in the mid to late 2000s.

Instead, airport transactions in the past five years indicate that regional airports with higher traffic growth transact within a range of between 14 to 18 times EV/EBITDA, and larger, more mature airports transact within a range of 10 to 14 times EV/EBITDA.

However, once there is greater visibility around the strength and pace of traffic recovery, nothing precludes observing the higher level of multiples again in the medium term, if there are asset specific reasons to justify this.

This article explores the trends in UK passenger growth and the movement in EV/EBITDA transaction multiples for airports over time. It also highlights airport valuation drivers and risks. Finally, we identify considerations important for investors to take into account when valuing airports.

Airports: A very current valuation topic

Airport transactions continue to hit the headlines: MAG acquired Stansted concurrently with Australian infrastructure fund IFM's purchase of a minority stake in MAG in January 2013; Canadian pension fund PSP acquired the airport portfolio from Hochtief group in third quarter of 2013. More recently, the Spanish public body Aena acquired Luton Airport from Abertis in August 2013.

Given the continuing Eurozone crisis and the need for investments in key transport infrastructure in the emerging markets, partial or full privatisation of state-owned airports may remain popular. Furthermore, the

increasing uncertainty in economic outlook across the world makes airports a relatively attractive asset class to invest in.

Airports are uniquely appealing assets

Many investors see airports as relatively safe assets. That is because airports typically offer stable cash flows with the potential to realise significant capital gains on disposal. Indeed, having at times enjoyed traffic growth rates in excess of two times gross domestic product (GDP) growth, listed European airports, on average, have continued to outperform the FTSEurofirst 300 index over the last five years. (See figure 1.)

Even when air traffic falls during economic slowdowns, airports can still deliver growing dividends to investors through the deferral of operating costs and rescheduling or reducing of capital expenditure.

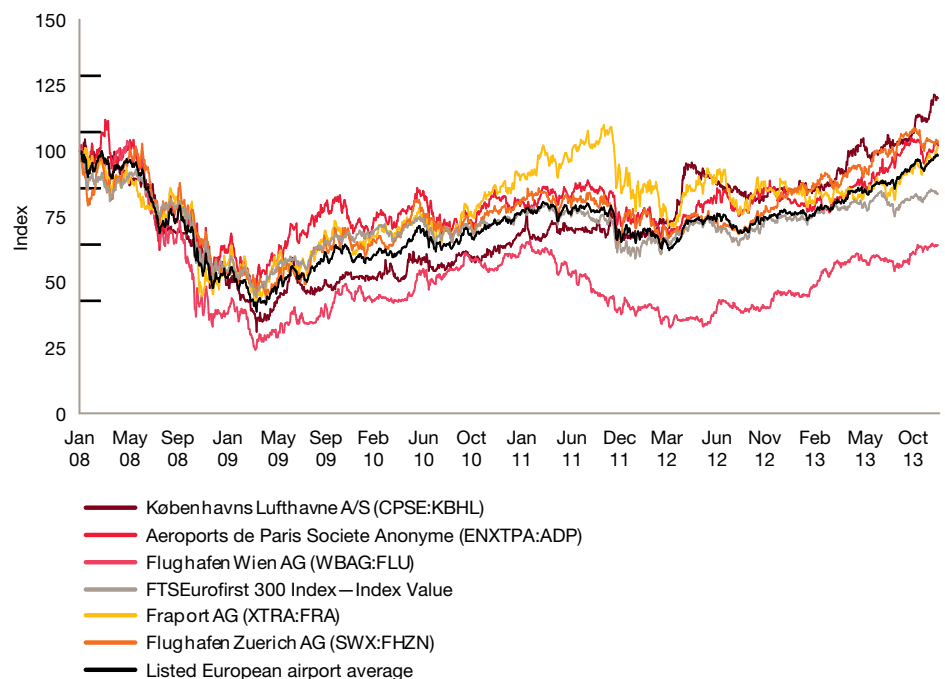
Airport investors

Financial investors in airports such as infrastructure or pension funds are interested in the stable cash flows airports offer. And they often invest with their eye on the long term. Many focus on the internal rate of return (IRR). They also try to enhance value by implementing optimal financing structures.

Trade buyers (such as other airport operators) try to improve operational efficiencies; for example, by increasing commercial yields and by expanding the airport's route network. We are observing an increasing trend of airport operators forming consortia with financial investors with the aim of boosting value through operational and financial structuring improvements.

The key messages arising from this paper are relevant and applicable to both trade and financial investors.

Figure 1: Listed European airport share price performance



Source: Datastream and Capital IQ

UK traffic: Reversion to trend?

Tracking growth against the trend

Figure 2 shows UK terminal passenger traffic (“pax”) since 1976, with the long-term passenger growth trend superimposed.

The graph shows that, up until 2008, it typically took four to six years for traffic to return to the long-term passenger growth trend following a recession or other economic shock.

Thanks to these patterns, it has often become conventional wisdom that traffic growth and associated airport cash flows will revert to the long-term trend after a shock rather than grow at a similar rate from a lower base. Indeed, between the late 1990s and mid 2000s, UK traffic saw significant growth above the long-term trend. This was fuelled by a sustained period of economic growth, greater availability of credit, and the emergence of low-cost carriers (LCCs).

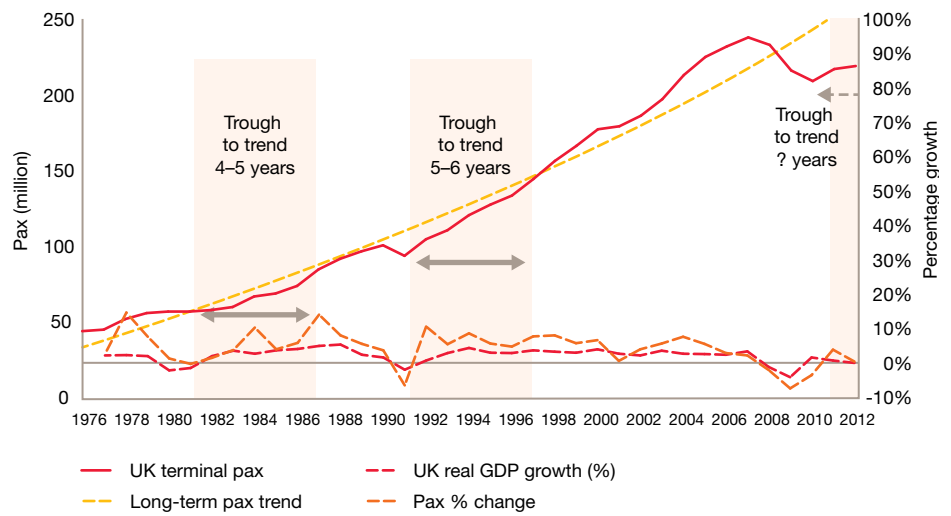
Growth expectations and transactions

Figure 3 shows actual UK passenger traffic alongside UK traffic expectations in 2007, the last full year prior to the global economic crisis.

In 2007, the expectation was that UK airport traffic would continue growing from its 2007 peak at a rate broadly in line with the long-term growth trend. With hindsight it is clear that 2007 passenger growth expectations did not materialise.

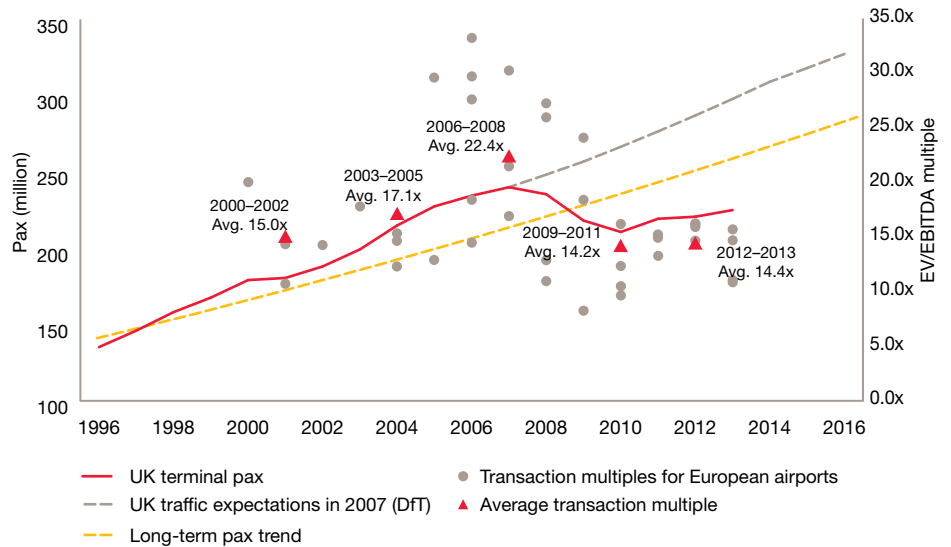
Take a look at the EV/EBITDA multiples between 2000 and 2013 for European airports in Figure 3. Whilst there are obvious challenges in comparing transaction multiples between airports due to each airport’s specific operations and individual growth potential, it is fair to say that, on average, airport transactions multiples rose in early to mid 2000s,

Figure 2: UK airport traffic and GDP growth



Source: CAA, IMF, PwC analysis

Figure 3: UK airport traffic and European transactions



Source: CAA, DfT projections, PwC analysis

Note: The graph above combines European transaction and UK traffic data as European traffic information dating back to 1976 was not available

peaking in around 2007 and, on average, have fallen since.

Perhaps unsurprisingly, passenger numbers in the UK have seen a similar pattern. The upshot of this analysis is relatively straightforward: at a basic level, transaction multiples are a function of current earnings

and expectations for future earnings growth, with the simple relationship being that the greater the growth potential, the higher the multiple.

In the case of airports a primary driver of earnings growth potential is passenger growth.

What influences an airport's value?

Discounted cash flow analysis. While transaction multiples provide useful valuation benchmarks, typically the discounted cash flow (“DCF”) valuation methodology is used as the primary approach to value airports. This is because airports generally have long-term projections that offer cash flow visibility. The DCF approach is also more appropriate for differentiating between an airport's revenue streams (aviation, retail, real estate, external operations) and the various regulatory mechanisms under which airports operate.

Airport transaction multiples. There are clear challenges in comparing transaction multiples between airports. This is due to each airport's specific operations and individual growth prospects. In addition to market factors and competitive bidding conditions at sale, key factors impacting airport value and transaction multiples include the following:

- **Maturity of the airport.** Most large, mature airports have less potential to increase traffic than smaller regional airports and may trade at a lower multiple. For a small regional airport starting from a low passenger base, attracting two or three new airlines can transform the business—a prospect that is often reflected in transaction multiples. Conversely, larger airports tend to have a broader airline base, so they are less vulnerable to customer concentration risk and volatility.
- **Potential for yield improvements.** Airports with non-aeronautical revenues that are lower than those of comparable airports can boost their earnings by improving their retail offerings, increasing parking fees, and making other similar enhancements. This potential for better earnings can also be reflected in transaction multiples.
- **Regulatory environment.** Airports are typically subject to regulation when regulators see them as holding substantial market power. Regulated airports' risk/reward profile differs from those of unregulated airports—for example investors see regulated airports as more vulnerable to changes in regulatory regimes i.e. regulatory risk). Airports are also subject to different regulatory environments in different jurisdictions. In the UK, for instance, regulated airports are allowed to earn a return on their regulated asset base (RAB). RAB is therefore a key valuation metric, and the market places significant emphasis on enterprise value to RAB multiples in assessing the value of regulated airports.
- **Catchment area penetration.** The extent to which an airport has penetrated its primary and secondary catchment areas affects its passenger growth potential.
- **Capacity constraints.** Runway or terminal capacity constraints tend to depress an airport's traffic growth potential. Alleviating these constraints may require significant capital expenditure (capex) spend as well as planning and regulatory approval.
- **Airport traffic mix.** The make-up of an airport's traffic—the mix of short—and long-haul as well as business, leisure, charter, and low-cost traffic—affects airport earnings. For example, traffic mix can strongly determine an airport's commercial revenue spend per passenger. Domestic passenger retail spending will tend to be lower than that of other leisure and business travellers, due to shorter airside dwell time. Also, business traffic will likely stay steady during an economic slowdown, compared to other traffic types such as charter.
- **Airline customer dependence.** The degree of airline concentration at an airport will impact value. If an airport is highly dependent on one or two key airline customers a reduction in aircraft capacity (due, for example, to reallocation of aircraft capacity across an airline's network or airline bankruptcy) will have a material impact on the airport. Further, airports typically have to renegotiate tariff increases on a frequent basis with their main carriers and single airline dominance at an airport will impact negotiating power.

Given the number of circumstances affecting an airport's value, investors need to carefully assess airports' comparability and adjust transaction multiples where appropriate.

Back in 2006–2008, observers expected long-term passenger traffic to keep growing at the rates seen in the immediate preceding years rather than revert to the long-term trend. Put another way, they anticipated a one-off upward shift in the long-term traffic trend.

These expectations were reflected in increasingly higher transaction multiples paid over that period. In effect, investors in airports were willing to pay high sums for the future growth they anticipated in 2007. Once investors realised that the expected growth wasn't going to materialise—and once credit markets tightened—transaction multiples declined.

Over the past year we have seen average transaction multiples stabilise at around 14 to 14.5 times EV/EBITDA. The latest UK traffic data (to July 2013) seems to suggest future terminal passenger growth may follow the revised long-term traffic trend.

However, caution should be exercised: Based on the latest data released in October 2013, IMF revised its global and Eurozone GDP forecast down by around 1% from the first half of 2012, whilst UK forecast growth remains unchanged. Therefore some downside risk to the sustainability of future traffic growth still remains. Indeed, smaller regional airports are even more vulnerable given the shift in the balance of power to low cost carriers who are increasingly mobile and can relocate their operations at short notice. Cardiff Airport and Glasgow Prestwick Airport were re-nationalised recently after failing to attract buyers. The key for these airports is to ensure there is a healthy balance in airline customer dependence such that the traffic growth expectation is sustainable.

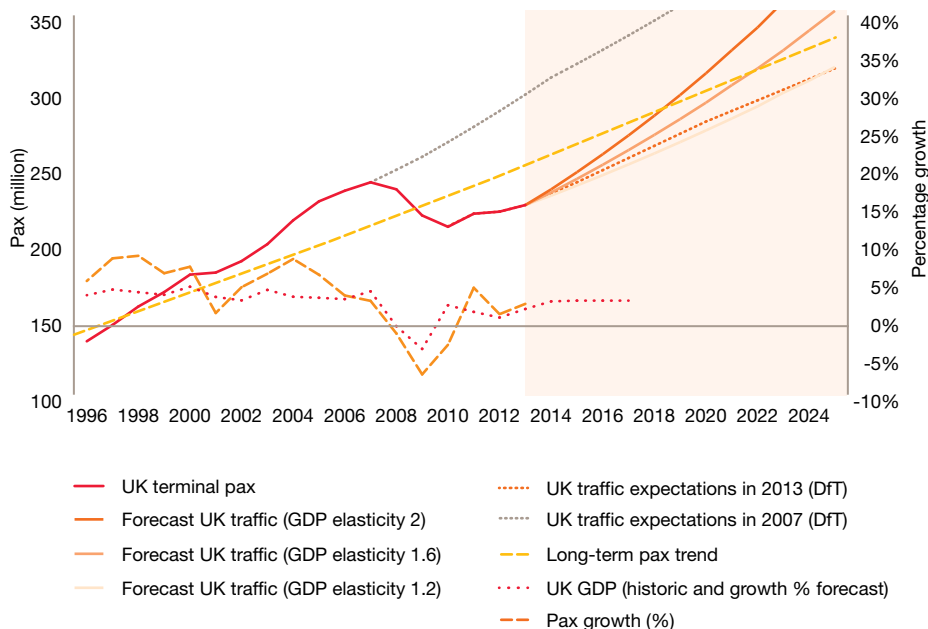
Note: The transactions we are talking about here relate to European as well as UK airports. We believe that the two airport markets are sufficiently developed and similar to draw consistent insights from the data.

Where do we go from here?

An improving picture is slowly developing for the advanced economies, albeit from lower expectations than the first half of 2012. But emerging economies like India, Indonesia, Turkey, South Africa and Brazil have run into trouble as capital has started to flow back to the advanced economies. Moreover, the pace of European economic growth remains uncertain and the impact of the Fed's inevitable decision to taper quantitative easing looms.

After a period of generally disappointing growth in 2011 and 2012, the UK economy has shown signs of recovery in the first half of 2013. Consumer spending growth is projected to follow a slightly more optimistic UK GDP growth rate. But again risks to growth remain weighted to the downside, due in particular to the possibility that the current relative calm in the Eurozone may not last.

Figure 4: UK airport traffic and GDP growth



Source: CAA, DfT, IMF, PwC analysis

The speed at which traffic may return to the long term trend line hinges on the pace of economic recovery. Figure 4 sets out current passenger number expectations for the UK aviation market, but also projects a range of potential passenger growth profiles based on forecast UK GDP growth and a range of income elasticities.

In Figure 1, we saw that in the early 1980s and 1990s, it took four to six years for traffic to revert to the long-term trend after an economic slowdown.

The patterns in Figure 4 suggest that even in a high-growth scenario, passenger numbers are unlikely to revert to the trend line before 2022–2024.

Given that the drop in UK passenger traffic since 2007 has been markedly sharper than that observed in previous periods of economic recession, a ten to twelve year period for reversion to the long term trend does not appear unlikely. Indeed if one were to focus on lower passenger growth profiles, it could be argued that the long-term trend line is shifting downwards and that the premise that traffic always reverts to long term historical trends must be questioned.

Looking at current growth expectations and market uncertainties, we do not expect to see a return to the 20+ times transaction multiples observed in the mid 2000s in the short term.

However, once there is greater visibility into the strength and pace of traffic recovery, nothing precludes seeing this level of multiples in the medium term if there are asset specific reasons to justify this. As can be seen in Figure 3 airport transaction multiples are perhaps stabilising.

Given current market evidence, we would continue to expect higher growth regional airports to transact within a range of 14 to 18 times EV/EBITDA, and larger more mature airports in the range of 10 to 14 times EV/EBITDA.

There is certainly significant interest in the airport assets coming up for sale, and competitive tensions may increase transaction multiples observed.

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If you're thinking about investing . . .

1

Cyclicality should be built into long-term cash flow projections

When assessing the value of an airport it is essential to recognise the cyclicality of the industry, consider where we currently sit in the economic cycle and build sensitivities into cash flow projections to reflect economic downturns and other risks. Recent evidence suggests that airport performance is not as immune to wider market volatility as perhaps once thought.

2

Airport transaction multiples are unlikely to reach pre-recession levels in the short term

Given current growth expectations and market uncertainty we do not expect to see a return to the 20+ times EV/EBITDA transaction multiples for European airports in the short term. However, once there is greater visibility around the strength and pace of traffic recovery there is nothing to preclude observing this level of multiples again in the medium term, if there are asset specific reasons to justify this.

3

A comprehensive assessment of comparable transaction multiples is required if used as valuation benchmarks

While airport transactions clearly provide useful valuation benchmarks, it is imperative to undertake a comprehensive assessment of the comparability of transactions and make appropriate adjustments if it becomes apparent that they are incorporating different, or even unrealistic, growth expectations.

4

Reversion to the long-term passenger traffic trend will take several years

An assessment of historical UK passenger traffic suggests that growth rates are not constant. With potentially a 10-12 year period before traffic reverts to historical passenger growth trends, it seems timely to revisit the premise that traffic always reverts to long-term trends.

5

Airport operators and financial investors are increasingly joining forces to deliver airport value improvements

We are observing an increasing trend of airport operators forming consortia with financial investors with the aim of delivering value enhancement through both operational and financial structuring improvements. The key messages arising from this paper are relevant to both trade and financial investors.

The European airline landscape is changing: Can airports keep up?

Anna Sargeant

Executive summary

The recent turbulent history in the European airline industry has presented operators with challenges across their business environment. Since the creation of the Common Market for air services in 1997, privatisation of carriers and removal of state support, consolidation of airlines has gained some momentum within Europe. Moreover, new business models have emerged, not only in terms of low-cost operations but also in the form of truly “multi-national” carriers operating throughout the EU. These carriers are locating their operations on the basis of market opportunities rather than in a fixed base country. Add to this mix volatile fuel prices, new security measures and environmental concerns, and airlines need to adopt new tactics for controlling costs and boosting revenues in order to protect their already slim profit margins.

The volatility of the business operating model has huge implications for airports. Today, European airlines are no longer captive customers for airports. Carriers can—and do—pull up stakes and leave. And their owners can—and do—demand operational improvements at airports to protect their own interests. Just as airlines have had to sharpen their business acumen, so now must the airports. That means airports can no longer simply be providers of infrastructure—perhaps with a retail offering of a few shops and restaurants. Instead, they must work to retain their passenger and airline customers. In addition, airports must recognise the limits of their market power and their dependence on a shrinking group of successful carriers. To succeed under these circumstances, they will need to become sophisticated self-contained businesses.

To succeed under challenging circumstances, airports will need to become sophisticated businesses.

Airlines: A shifting business landscape

European airlines are facing challenges on several fronts—including shrinking operating margins, an ever more difficult yield environment, privatisation and consolidation. All of this is setting the stage for an uncertain future for airlines—privatised and state-owned alike. And it has catalysed a scramble to explore new avenues for survival.

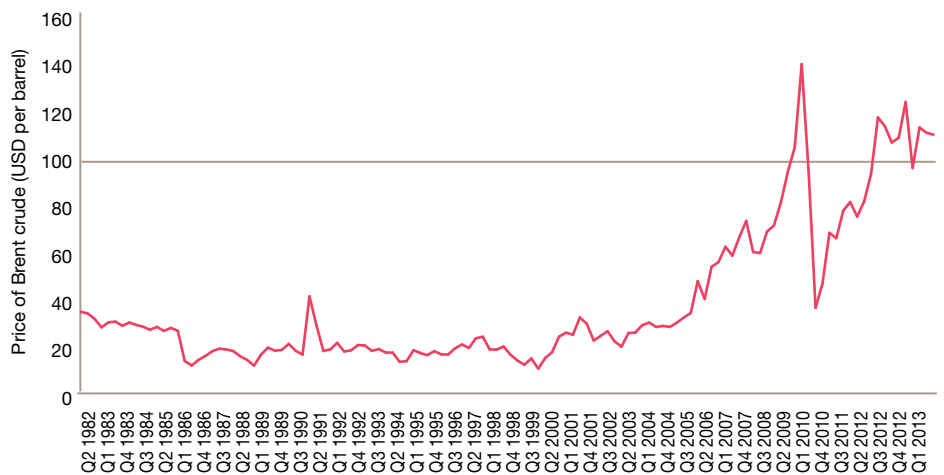
A more sophisticated, dynamic and competitive market

Historically, airlines have been the least profitable link in the air transport supply chain. Today, the situation is critical: Rising costs—primarily for fuel but also from increases in taxes, airport and flight charges, and overall inflation—are squeezing airlines' already slim operating margins more tightly than ever. (See Figures 1 and 2.)

Furthermore, airline operators face challenges to their yield, particularly in Europe. Soaring fuel prices, tax burdens, declining social security payments and constrained household incomes are collectively depressing leisure spending. All this is putting downward pressure on economy class fares and low-cost carrier (LCC) ticket pricing, eroding airlines' revenue passenger miles (RPM). At the same time, seat capacity in Europe has kept expanding, thanks to the introduction of a new (and up-gauged) fleet. This has further raised the hurdles confronting airlines as they strive to improve yield.

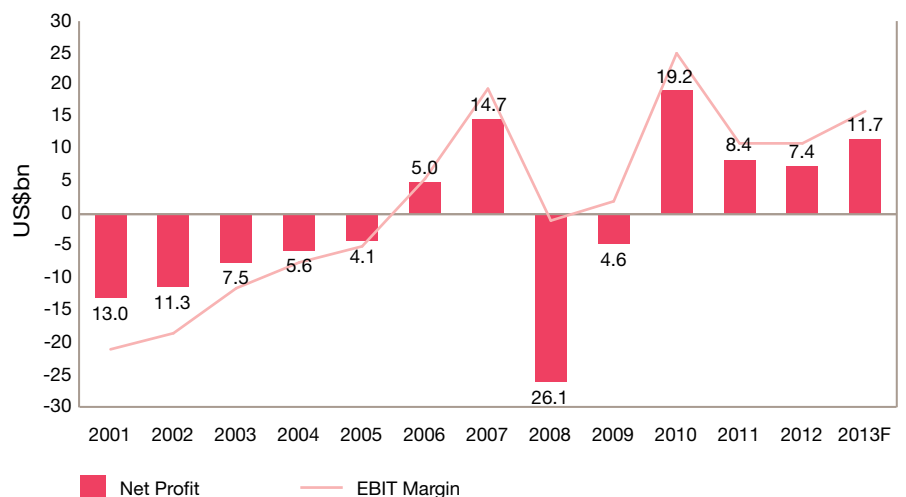
Both the full-service and LCC models face challenges. The network carriers, who have largely lost the battle with LCCs for intra-Europe travel, still need to operate those services to feed their hubs and international networks.

Figure 1: Brent crude oil price (USD per barrel), 1982–2013



Source: Thomson Reuters

Figure 2: Global commercial airline profitability, 2001–2013F



Source: IATA (September 2013)

At the same time, their long-haul networks have come under pressure from the Gulf carriers, who have made inroads into the European market. These inroads have further eroded European network carriers' ability to stabilise their yields.

The economic benefits of hubs are well known—hubbing enables airlines to operate thinner routes

more profitably, with the support of connecting traffic. Costs are inevitably higher, but they are often outweighed by higher revenues. Still, to be viable, a hub needs a significant level of local demand as well as an extensive network of feeder services. That's why the most successful hubs are situated at major cities.

Just as airlines have had to sharpen their business acumen, so now must the airports.

However, airport capacity at some European hubs, London Heathrow being the starkest example, is already limiting the number of key feeder routes that can be operated. This is gradually reducing the proportion of transfer passengers, as airlines are forced to focus more on point-to-point traffic and are increasingly unable to launch services to new destinations. Owing to the withdrawal of connecting services over Heathrow, for example, several Gulf airlines now operate wide-body aircraft directly to their hubs from numerous regional cities, and sometimes at a more than daily frequency.

LCCs, on the other hand, tend to have multiple bases within their geographic market rather than hubs. But even for them, the market is changing. As LCC networks expand, the opportunity to use connecting services inevitably increases. The growth of so-called “self-connecting” by passengers has prompted some LCCs to amend their basic model and start catering to this segment of the market.

M&A and investment moves

The last few years have seen a number of high-profile merger and acquisition (M&A) transactions that have further reshaped the airline industry. (See Table 1.) This reflects a push for consolidation and a drive for scale among top-tier global carriers. With these moves, carriers are trying to gain access to growing markets or expand their share in mature markets, reduce costs and deliver sustainable profitability, with an appropriate return on capital, and by capturing revenue and cost synergies.

Would-be acquirers face considerable legal and regulatory barriers to full mergers, including limits to foreign ownership and ongoing government shareholding. Still, a number of non-European carriers have succeeded in making strategic investments in European airlines. Etihad’s 29% stake in Air Berlin and 3% share in Aer Lingus and Qatar’s 35% stake in Cargolux are just a few examples. Foreign investment limits for European airlines remains unchanged, however,

at 49%. The test of “effective control” could restrict this further.

Arguably, government regulation has not kept pace with the commercial realities of operating a global airline and the need to generate a consistent return on capital. If the development of international aviation had followed the pattern of other industries, airline alliances would probably never have matured to the levels they are today. Airlines would almost certainly have engaged in cross-border mergers and investments, probably resulting in the creation of global companies rather than the nation state-based organisations that still dominate air transport. Airline alliances are a second-best solution to the fundamental need for greater consolidation. They enable airlines to extend their geographical reach and achieve certain economies (notably of scope), with varying degrees of effectiveness, without the need to engage in full mergers.

Today, more than 50 airlines are members of the three global alliances: Star Alliance, oneworld and SkyTeam. These alliances differ markedly in the degree of their overall integration, just as individual members have varying levels of commitment. Star Alliance is probably the most fully integrated team of the three, and oneworld the least integrated. However, all alliances exhibit a significant degree of instability. It has become extremely difficult to forecast with any certainty whether they will survive in the long term, let alone what they will look like if they do.

We can reasonably assume that progressive liberalisation of airline ownership and control restrictions will take place over time. What then will happen to the global alliances? Full mergers create far more economic benefits for the participants than even the most integrated form of alliance.

Table 1: Airline M&A activity in 2012–13

Minority investment	Acquisition/merger
	Aug 13 IAG/ Vueling
	Jul 13 Tiger Airways/Virgin Australia
Delta/Virgin Atlantic	Jun 13
Air Asia/Zest	May 13
Korean Airlines/Czech Airlines	Apr 13 Skywest/Virgin Australia
	Apr 12 IAG/BMI
	Jun 12 LAN/TAM
Etihad/Air Berlin	Jan 12
Etihad/Air Seychelles	Jan 12

Furthermore, it is by no means certain that the partners chosen for alliances will be the same airlines a particular carrier might want to merge with. So the long-term structures and even existence of the global alliances aren't at all guaranteed.

An uncertain future

All these changes spell an uncertain future for the European airline market. For a number of years, industry commentators have predicted a shakeout in the market and the rise of four or five mega-airlines.

Between 2001 and 2010, at least 94 airlines went bankrupt in Europe. The majority of these were in the low-cost, regional or leisure/charter sectors. However, there have been casualties among 'national airline' network carriers too—perhaps most prominently that of Alitalia in 2010. Hungary's national carrier, Malév Airlines, and Spain's Spanair S.A. in 2012.

Our analysis suggests that we may see a stratification of the European market, with short-haul routes dominated by low-cost specialists. European long-haul carriers will focus their short-haul operations on feeding their long-haul operations at a limited number of hubs. The rebranding of Lufthansa's non-Frankfurt and Munich flights to Germanwings and Iberia's use of Vueling seems to confirm this trend. This scenario could create more sharply focussed business models, optimised for short- or long-haul networks, and it could give a clear choice to air travellers.

We also think that things will need to change for European airlines that are still wholly and partially state-owned. Most of these have recently signalled that they are investigating options for privatisation or are searching for strategic investors. (See Figure 3.) This isn't surprising,

given that governments no longer have pockets deep enough to support airlines struggling with ongoing losses. While some potential investors have materialised, no real money has. That is in part because these airlines are not particularly differentiated in the eyes of passengers and other customers. As such, they are struggling to compete with the LCCs that are pushing into their airspace and the full-service offering coming from better-invested carriers.

European legislation prohibits government subsidies. This is making it harder for states to continue to fund ongoing losses. (Malév's demise came in part from the need to repay illegal state support following an EU ruling in 2011. Even if governments can find a way to support their flag carriers, sovereign funding constraints make continued support of loss-making, capital-intensive airlines fiscally and politically unpalatable.

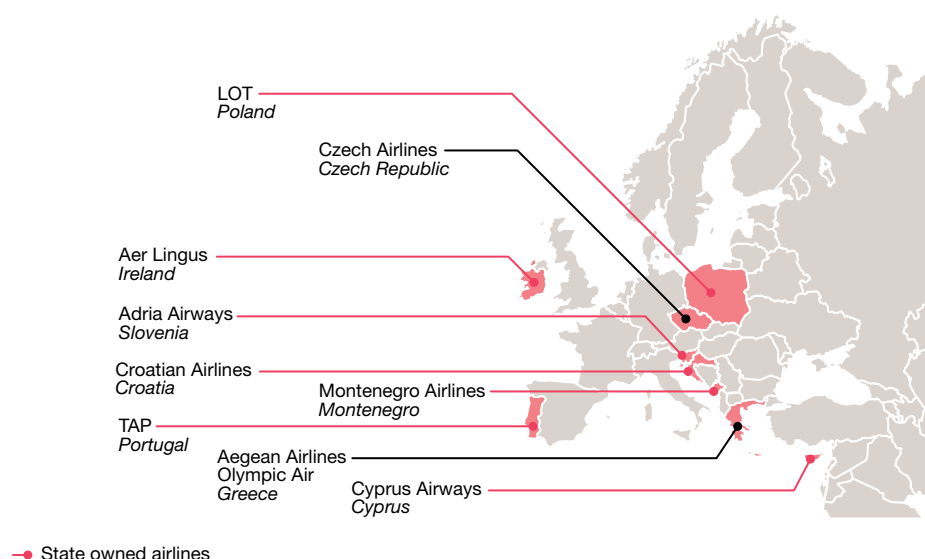
Airlines' responses

How can airlines best protect their future amid all the uncertainties they're facing? It is expected that they will have to adopt new management practices, redefine their market position and create unique offerings that will generate real strategic value for new investors. The following moves may help, and many airlines are already making them:

More extensive alliances and code sharing

Alliances and code shares can help airlines satisfy customer demands for global connectivity, often in tandem with joint sales and shared aircraft. We expect to see further participation in alliances and joint business arrangements in 2012 and beyond, as well as more competition between the big three alliances for new members. Though code-sharing agreements deliver limited cost synergies, they give participating airlines an

Figure 3: European airlines seeking investment



Source: PwC analysis

opportunity to “get to know each other better.” These agreements can thus serve as a precursor to a merger, acquisition or strategic investment that might be feasible if the regulatory landscape changes.

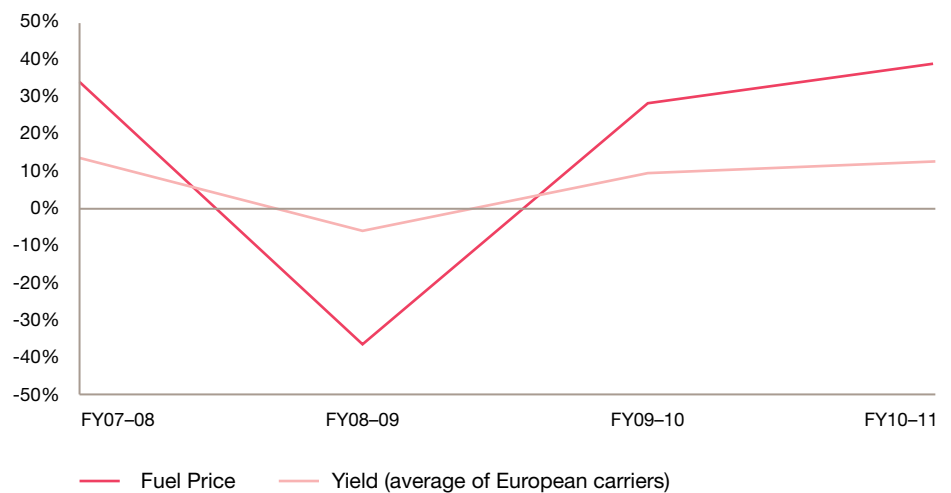
Longer-term cost control

The downturn in demand for air travel in 2009 and major increases in fuel prices since then have catalysed cost-reduction programmes across the airline sector. These efforts have mainly targeted non-fuel costs, such as catering and distribution fees. Airlines have presented a lot of these programmes as transformational and have reported the potential for significant savings to the market. For instance, Air France/KLM’s “Transform 2015” scheme is intended to generate an additional euro 1 billion of free cash flow by 2015. And Lufthansa’s “SCORE” programme promises to deliver euro 1.5 billion in improved earnings for the group by 2015.

Some programmes are more tactical than transformational. They consist mostly of low-value initiatives and one-off cost cuts, such as slashing marketing spend, reducing rates with existing suppliers and reducing staffing levels. The Air France programme does include sustainable changes relating to boosting workforce productivity, but it also stipulates pay and hiring freezes for the next couple of years, which will translate into only temporary savings. Such tweaks don’t lead to longer-term transformational change.

To drive more enduring change, an airline must reconfigure its operating model to extract greater efficiency from existing processes, make more sustainable improvements to profitability and cash flow, and motivate the right behaviours in a large, often highly unionised

Figure 4: % Change in yield vs % change in fuel price



Source: PwC analysis

workforce. It must also ensure effective execution of its change programmes. It can do this by establishing the right governance structures to realise the full range of benefits identified and by allocating sufficient resources to execute the initiatives throughout the organisation. Finally, the airline industry can leverage insights from other capital-intensive industries, such as automotive, on how to achieve long-term improvements in their cost bases and operating models.

Yield improvements to offset cost pressure

In 2011, the Indian aviation market learnt a hard lesson about the perils of chasing volume. For most of that year, Air India, the national carrier, pursued a volume-based strategy driven by aggressive yield discounting. That destroyed yields in the market at a time when oil prices were spiking and the rupee was depreciating against the US dollar. As a result, analysts expected the aviation market in India to deliver a loss of US\$2.5 billion in 2011, in large part driven by a decline in yield. Ongoing turbulence in the Indian airline market largely bears this out.

This situation underscores the importance of focusing on yield improvement to boost profitability, rather than using low prices to chase volume. Seat capacity constraint is starting to provide the right environment for yield improvement, and most airlines have made this a priority in recently announced restructuring plans. We are also seeing LCCs sharpening their focus on yield development. For instance, easyJet has targeted the business travel market, in part to improve yield. Meanwhile, Ryanair has reduced its capacity to focus attention on routes most profitable over the winter season, a move that increased yield by up to 14% over late 2011 and early 2012.

What led to these developments? With the spike in oil prices from November 2010 to February 2011, many airlines took the opportunity to increase their passenger fares or their airline fuel surcharges. These increases were not enough to fully offset the rises in fuel price. (See Figure 4.) Many airlines anticipated just a temporary spike in fuel prices coming from the Arab Spring, but oil prices have stayed

between US\$100 and US\$120 per barrel. Equally important, the average passenger isn't paying a fare sufficient to cover the cost of flying and to deliver a reasonable economic return to the airlines and their stakeholders. Raising fares further isn't palatable in the current economic environment. But it may be necessary to secure the industry's long-term future.

Airports: Under pressure to evolve

Changes in the airline industry's landscape have big implications for airports—which must plan their long-term investments around their major airline customers or alliances. Airports are vulnerable when their fortunes depend on a single airline that faces an uncertain future.

Impact of airline bankruptcies

Several airports, whose businesses had developed hand in hand with their national carrier, have discovered how risky that interdependence can be. Bankruptcy of an airline is a major problem for the hosting airport on several fronts. On the one hand, the airport may end up having to deal with masses of stranded passengers. In addition, an airport will often be left without coverage of operating cost as a result of bankruptcy protection. Airlines willing to pick up the void left by these airlines will most often have very different ideas of what they are willing to pay. For example, when Malév (Budapest) and Spanair (Barcelona) liquidated, competitors were waiting to fill the void, many of them armed with available spare capacity of their own. But these carriers' requirements, the networks they'll serve, and the depth of their pockets differ widely from those of the national hub carriers.

Italy's Milan Malpensa (MXP) faced a similar situation when Alitalia ceased hub operations in 2008 because of its deteriorating financial situation. LCCs snapped up much of the excess capacity, leaving the airport dependent on more financially aggressive players seeking discounts and incentives. While passenger numbers may return after such a situation occurs, it's often at the expense of reduced aeronautical yields.

not able to accommodate all of its operations into the single terminal—its operations have spread across three terminals. The demise of BMI has also affected the planning for Heathrow's new Terminal 2—which was envisaged as a Star Alliance hub, but now without that alliance's key domestic member.

A non-Europe example is the merger of TWA and American Airlines,

Airports' relationships with their key customers—airlines and passengers—need to change, because airports now have new competitors.

This scenario isn't new. For example, Brussels National Airport (BRU), formerly the ninth-busiest airport in Europe, dropped out of the Top 20 when Sabena went bankrupt in 2001. Traffic plummeted from 21.6 million passengers per annum (MPPA) in 2000 to just 14.4 MPPA in 2002 and then picked up only slowly, leaving the airport with a lot of excess capacity. The rapid growth of LCC business at Brussels South-Charleroi (CRL) and leakage of passengers to high-speed rail links worsened the financial damage inflicted on the airport.

Impact of airline M&A

Bankruptcy of a key airline is not the only potential pitfall for an airport that is striving to craft capital investment strategies. M&A moves among airlines can also disrupt airport operations. As a case in point, the building of Terminal 5 at Heathrow to house British Airways global operations is affected by the acquisition of BMI in April 2012. With this merger BA is now

which resulted in St. Louis losing its hub status and American Airlines reverting to an origin/destination (O&D) operation. An airport that had been built to handle 30 million passengers a year saw that number drop to 10 million, because 20 million passengers were being transferred through Chicago and Dallas rather than through St. Louis. This left St. Louis struggling for business despite its highly efficient airfield design—which had come with significant capital investment. The identical situation took place in Cincinnati when Delta pulled its hub after the merger with Northwest.

Wanted: a better business mindset

While European airlines have worked to adapt to their more competitive, dynamic market, airports have often been slower to adjust. On the whole, even as many European airports have embraced private investment, their mindset has remained within the public sector—often because

of enforced legacy arrangements, state controls and regulations. Some airports have been able to replace the traffic lost from the shrinking or closure of their traditional base carriers, as demonstrated by the Milan Malpensa example mentioned previously. But others, such as airports at Budapest and Athens, have struggled to regain the long-haul connections once provided by their home carriers. These airports are now at the mercy of LCCs who can drive a hard bargain, and they have to court Gulf carriers to provide some level of long-haul connectivity.

Today, airports must adjust to a new reality—one defined by cost pressures, revenue challenges and the need for better customer service. That calls for more of a business mindset than airports have traditionally demonstrated. The following tactics have been employed by some of the more successful players in the market.

Revisit the revenue model

Airports are seeking to shift the balance between aeronautical revenues and non-aeronautical revenues (retail, car parking, property) toward the more commercial sources. If an airline goes bankrupt, upends its operations or reconfigures a hub by pulling out of an unprofitable route, the airport may be able to recover traffic, but its yields will suffer as discounts and incentives kick in. The airport must increase its non-aeronautical take from each passenger just to stand still. It has to develop new products and services that provide value to passengers as well as to airlines. Many airports have begun offering premium services to passengers (such as lounges) as airlines have reduced services.

Foster new relationships with airline and passenger customers

Airports' relationships with their key customers—airlines and passengers—

need to evolve. Airports, like airlines, are now faced with market competitors, a concept that was once non-existent. Their previous monopoly position has come under threat, with airports often competing for the same passenger demographics owing to the opening of borders and improvements to surface transport links. For example, Ryanair has 30-plus bases in Europe and is not reliant on any single country market or base airport. If something unfavourable to its operations occurs in a particular airport—a national government raises taxes on airlines or an airport raises surcharges—Ryanair can pull its aircraft out of that location and move the fleet somewhere friendlier. Thus airlines that seem well entrenched at a particular airport one year may be gone the following year.

Passengers have more choices, too. Improved surface transport links give them access to alternative airports. And within Europe, passengers are increasingly crossing borders to get cheaper flights or better connectivity. Even the creation of the eurozone has increased competition by making it easier for passengers to compare pricing. In choosing which airports to use, passengers now consider not only price but also factors such as processing times, retail offerings and transport access, as well as connectivity and flight frequency. Thus, like airlines, passengers can be here today and gone tomorrow as airport customers.

All these issues imply that airports need to work harder to attract and keep their airline and passenger customers. One thing airport managers can remember is that in the aviation industry, no single airline or airport “owns” the passenger. Passengers' experiences are influenced from the moment they arrive at an airport to the moment they step off the plane at their final destination. Now more than ever, airlines and airports must work together to enhance passenger experience.

Airports can also link the business models they use to serve their two customer groups. For instance, if better merchandising strategies inspire travellers to spend more on retail while they're waiting for their flight, the airport may be able to lower the fees it charges airlines. These moves could keep airlines loyal and even attract new airlines to the airport, further increasing passenger traffic.

As such, some airports are involving their airline customers in terminal development—as design or even as financing partners. Munich and Frankfurt, for example, work closely with Lufthansa in new terminal developments. London Heathrow worked and is continuing to work very closely with British Airways. Such close cooperation allows a more seamless development of the passenger experience and should reduce operational costs for both parties. But it also places more risk on the airport operator. If the partner airline fails or changes its business model, the airport may be left with a white elephant.

Use data to understand customers

Instead of simply presenting services to their customers and expecting them to “take it or leave it,” airports must gather and analyse market data to understand the changing priorities of their airline customers as well as the shifting needs, preferences and demographics of their passenger customers. For example, by understanding what products and services passengers are consuming while waiting for their flights, an airport can develop better retail offerings. Similarly, data on passengers' preferences in surface access can generate insights for improving car-parking usage and yields.

Leverage outside expertise

Our analysis shows that airports have increasingly hired senior executives from customer-oriented industries, such as hospitality and retail, as well as from industrial operations to strengthen their management and operational performance. This process can be facilitated by new ownership. For instance, Global Infrastructure Partners has demonstrated innovation at its holdings at London City and Gatwick Airports, often by bringing expertise from its links with GE's stable of businesses. Fresh insights and innovation from such outside expertise can help airports adapt to their new market conditions.

Next steps

With the European airline landscape far more competitive today than it was 20 years ago, carriers are making bold moves to secure their future. These moves have presented new challenges to the airline sector. And just as competition has transformed the airline market, it will transform airports as well. Today, airports can no longer see themselves simply as transport infrastructure—they need to become sophisticated businesses if they hope to navigate successfully in the new landscape.

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Propensity to fly in emerging economies: Implications for infrastructure investment.

Hayley Morphet and Claudia Bottini

Executive summary

In markets around the world, changes in propensity to fly affect demand for air travel. And when future demand increases, so does the need for investment in aviation infrastructure. Many investors focus their analyses on developed markets and, more recently, the BRIC countries—Brazil, Russia, India and China—when crafting their infrastructure investment strategies. When it comes to emerging markets, the BRICs do call for close consideration. But there are forces at work in several other emerging markets that could present equally attractive opportunities.

Investors who focus their emerging market investment strategies solely on the BRICs risk passing up interesting prospects in other economies. Identifying investment opportunities with strong growth prospects requires an understanding of trends in the forces affecting revenue growth—which are driven primarily

by passenger growth and therefore propensity to fly. In this article, we aim to build that understanding. Using forecasting and modelling and drawing on our industry and sector knowledge, we analyse how propensity to fly may shift in various emerging markets in the coming decades—and where the most promising investment opportunities may lie in the future. Hint: The best opportunities may not be where investors expect them to be.

What influences propensity to fly?

In any given market, propensity to fly (number of air trips per capita) strongly determines future demand for air travel among business and leisure travellers. The faster the future demand growth, the more urgent the need for safe and efficient airports, reliable transportation and communication networks around airports, and other forms of aviation infrastructure. And the more urgent the infrastructure need, the more opportunities investors have. So understanding how propensity to fly might change in various markets can help investors anticipate where the best opportunities may arise in the future.

The best opportunities may not be where investors expect them to be.

Factors affecting propensity to fly

- **Economic health.** Propensity to fly goes up when people have enough personal income to afford holidays and when growth in the overall economy reflects growth in business and therefore the need for business trips. Having enough money for travel requires a strong economy reflected in healthy growth in gross domestic product (GDP).
- **Demographic changes.** A growing population can increase propensity to fly merely by raising the number of people living within a particular economy. An expanding middle class can boost propensity as well, as more and more people have the incomes needed to afford air travel.
- **Market maturity.** As with demographic changes, propensity to fly doesn't increase indefinitely as an economy grows.¹ In fact, it tapers off as a market matures and approaches saturation.
- **Crises.** Unexpected crises, such as the 9/11 terrorist attacks and the global financial crisis in Europe, can temporarily decrease propensity to fly. Following the crisis, propensity can revive strongly in a kind of catching-up pattern after several years of suppressed growth.
- **Geographical features.** Propensity to fly is greater within island nations, countries that are relatively isolated with limited land transport and large distances between population centres, and countries with a long, thin shape, which makes even high-speed rail a challenging option for travel.
- **Competition.** The rise of a new business model in a market—such as low-cost carriers (LCCs)—can increase propensity to fly if it makes air travel more affordable or appealing for consumers and businesspeople.
- **Airport hub status.** Countries with air connectivity far out of proportion to their size, because of their airports' hub status, have a higher propensity to fly owing to the availability of air services. Singapore and the United Arab Emirates are good examples of this.

¹ There's still a limit to how many trips a person can reasonably take in a year, given work and personal commitments. So demographic changes can't raise propensity to fly indefinitely.

But propensity to fly is affected by a lot of different, interrelated forces. (See the sidebar above.) An economy's health (and therefore its personal income levels), demographic changes and the affordability of air travel are just a few examples. To identify the most promising opportunities for aviation infrastructure investing, investors must understand how those forces are changing within particular markets and compare their findings across markets. Many investors are already basing their investment strategies at least in part on their analysis of the aviation markets of the BRIC countries. But as we'll see, that same configuration of markets may not necessarily present the best opportunities in the future.

With that in mind, let's take a look at the forces affecting propensity to fly. We'll then compare how the most powerful of these forces are changing in several markets. And we'll consider what our analysis suggests about investment opportunities.

Our analysis

We analysed trends in aviation markets around the globe, with an eye toward determining where the best investment opportunities might arise in the near and long term. Our analysis focused on two factors: compound annual growth rates (CAGR) and correlations between per-capita GDP and number of air trips per capita, taking into account the various factors discussed above.

Growth in number of air passengers

When it comes to growth in number of air passengers, our analysis of the developed world presented no surprises. Propensity to fly has been increasing rapidly in Europe, owing to deregulation of the airline industry and therefore increased competition and the consumer benefits that have ensued. But it will probably slow in the medium to long term, after the effects of deregulation have worn off and the market has reached a point of saturation. The US has already experienced this pattern.

It's the rapidly developing markets—particularly newly industrialised economies² like Brazil, China, India, Indonesia, the Philippines and Turkey—that are seeing the biggest jumps in the number of air passengers.

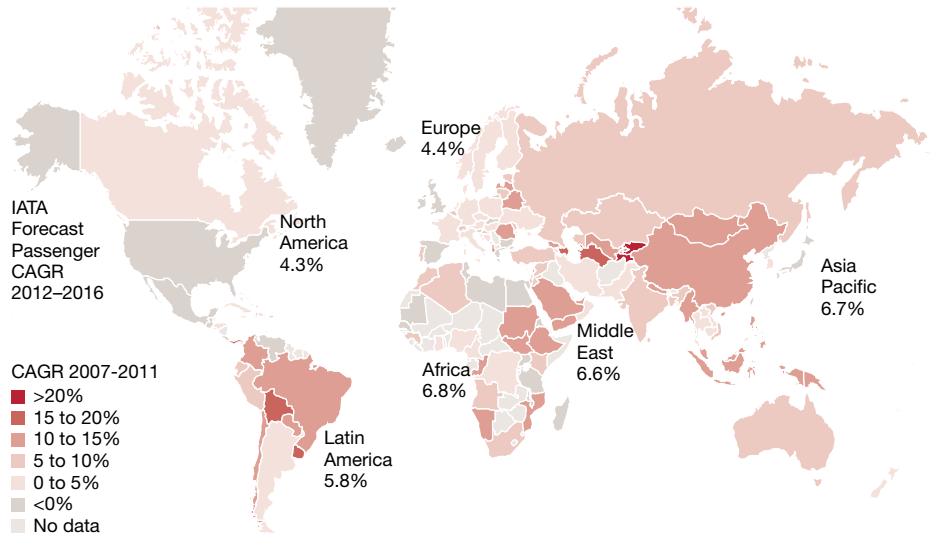
(See Figure 1.) These countries enjoyed CAGRs of 8% to 5% between 2007 and 2011.³

Correlations between per-capita GDP and number of air trips

In addition to analysing growth in the number of air passengers, we looked at the relationship between per-capita GDP and number of air trips. But we qualified this analysis in several ways. For instance, we based our calculations on the number of one-way passengers with the point of sale in a particular country.⁴ This approach takes out the impact of disparity between inbound and outbound passengers. Countries with a lot of inbound tourism and a low local resident population show a much higher number of trips per capita, driven by the economies of the inbound countries. So to keep things simple, we considered only resident travel patterns in our analysis.

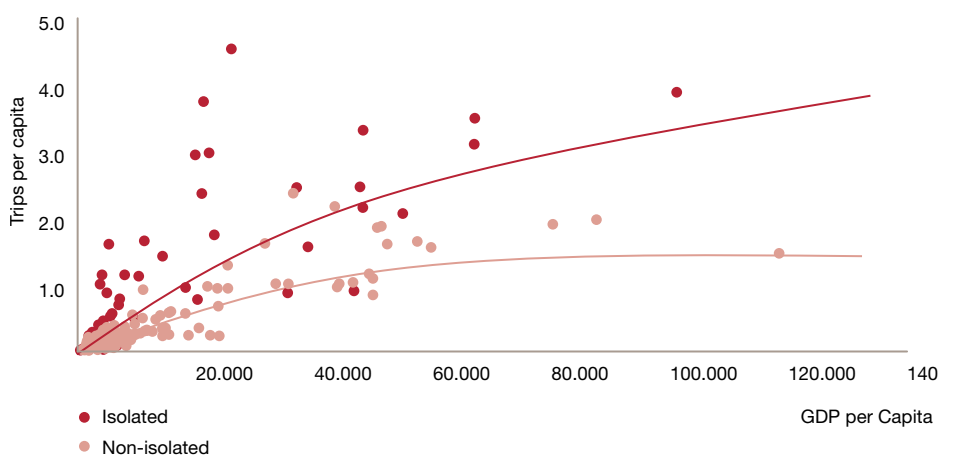
For nearly 200 countries, we plotted per-capita GDP against per-capita number of trips. Collectively, the countries we analysed account for 99% of passenger trips captured in Sabre's airport data intelligence database.⁵ Drawing on the data, we developed a relationship between propensity to fly and per-capita GDP. We took into account market saturation, assuming 2–2.5 trips per capita for non-isolated markets (countries where alternative transport modes are available) and more than twice that for isolated

Figure 1: Historical and forecasted growth in air passengers (total international and domestic), 2007–11



Source: IATA, PwC

Figure 2: Relationship between air trips per capita and GDP per capita, 2012



Source: BMI, Sabre Air Transport Intelligence, PwC analysis

2 As defined by the International Monetary Fund.

3 IATA 2007–11.

4 We excluded countries for which economic data was unavailable as well as nations that have low levels of outbound travel because of political or social restrictions. Likewise, we didn't include countries that have a disproportionate share of outbound passengers and that have incomplete point-of-sale or point-of-origin data.

5 Though air fares and exchange rates also contribute to the number of trips a person takes, it wasn't feasible to gather this level of detail for each country. For this reason, our analysis doesn't reflect these fares and rates.

markets (for example, small island nations, countries where other travel modes are not available or competitive, or countries with major air hubs creating an inflated air travel market due to connectivity). Figure 2 shows that as GDP increases, propensity to fly increases. It also suggests that propensity to fly reaches saturation as GDP rises.

Resident trips per country

We used the relationships derived for isolated and non-isolated markets from the data in Figure 2 to forecast growth in resident trips for 2020 for each country in our study, given growth in per-capita GDP and population over the coming three decades.⁶ We then compared these forecasts to resident trips for each country in 2012 and

considered how the top 20 rankings might change by 2020. (See Table 1.)

Potential investment hot spots: Our interpretation

The upshot of our analysis is that the ranking within the top 20 countries by air trips will change over the coming decade. Our findings suggest that Indonesia, Australia, the Philippines, Russia and India will move up most in the ranks in terms of resident air trips. India and Brazil will overtake the UK and become the fourth and fifth largest air travel market respectively. In the following paragraphs, we discuss a selection of markets that present varying levels of opportunity.

China

To capitalise on forecasted growth, the Chinese government is making significant investments to upgrade aviation infrastructure. For instance, mainland China currently has 175 commercial airports. According to the China Civil Airport Outline, this market will boast as many as 244 commercial airports in operation by 2020. Thirteen of these airports will have an annual capacity of more than 30 million passengers per annum (MPPA); six of them, 20 to 30 MPPA; and 10 of them, 10 to 20 MPPA. What's more, China plans to expand more than 100 of its existing airports, including upgrading military and general aviation airports for commercial use. By 2030, the number of airports in the country is expected to reach 300.

Indonesia

Indonesia is currently the biggest aviation market in the ASEAN group of nations. With a population of over 250 million people and the fastest growing economy in South-East Asia, the need for additional aviation capacity and infrastructure is critical.

Table 1: Resident trips, 2012 versus 2020

Ranking	Country (2012)	Resident trips ⁷ (m) (2012)	Country (2020)	Resident trips (m) (2020)	Ranking change
1	United States	589	United States	674	-
2	China	328	China	442	-
3	Japan	116	Japan	127	-
4	United Kingdom	99	India	126	4
5	Brazil	93	Brazil	120	-
6	Germany	83	United Kingdom	118	-2
7	Spain	76	Germany	93	-1
8	India	72	Australia	89	1
9	Australia	72	Indonesia	88	4
10	France	61	Spain	83	-3
11	Italy	61	France	68	-1
12	Canada	56	Russia	66	2
13	Indonesia	54	Italy	64	-2
14	Russia	49	Canada	64	-2
15	South Korea	33	South Korea	50	-
16	Mexico	32	Philippines	42	1
17	Philippines	28	Mexico	41	-1
18	Malaysia	27	Malaysia	36	-
19	Saudi Arabia	27	Saudi Arabia	34	-
20	Thailand	25	Thailand	30	-

Note: These figures represent unconstrained (for example, capacity and regulation) forecasts based on 8-year forecasted GDP and population projections from BMI. These figures represent indicative air-traffic growth figures based on assumptions and analysis outlined in this paper. Because events and circumstances frequently do not occur as expected, there may be material differences between forecasted outcomes and actual outcomes and no reliance should be placed on these forecasts.

Source: PwC analysis

A wide range of opportunities for investment in infrastructure is available. Thirteen airports have been listed for expansion and refurbishment programs, as outlined in the Masterplan for Acceleration and Expansion of Indonesia Economic Development (2011–2025). Additional opportunities lie in the refurbishment of air traffic control assets and ground handling, where the demand for new equipment will be considerable. Investments by domestic and foreign parties are fully

supported by the government in a bid to support growth.

The operator of Indonesia's Soekarno-Hatta International Airport in Jakarta, the nation's capital, is committing the equivalent of US\$1.24 billion to bring the airport up to date and on par with other major global airports. Soekarno-Hatta was built in 1985. In 2011, it was the world's 12th busiest

⁶ Based on real GDP per capita and population forecasts from Global Insight (September 15 2012).

airport. It's become so overcrowded that it experiences major flight delays at peak travel times, and passengers can expect to wait as long as an hour to claim their luggage after touching down at the airport. The area around the airport has even more problems, including telecommunications difficulties and blackouts. The airport upgrade, which kicked-off in August 2012, will be carried out in phases and calls for a new terminal and an extra runway to be completed by 2015.

As Soekarno-Hatta is being improved, an entirely new site has been constructed in Medan, about 900 miles north of Jakarta. The New Medan International Airport (Kuala Namu), which with a capacity of 8.1million passengers per year is the second largest after Soekarno-Hatta International, opened this year in late July. It replaces the existing international airport in Medan (Polonia). Airside facilities are controlled by the Indonesian government, and landside facilities are owned by a joint venture with PT Angkasa Pura II,⁷ which is expected to provide US\$350 million as an initial investment in return for a 30-year lease. After the lease expires, ownership will revert to PT Angkasa Pura II. The Medan site is to serve as a regional hub at the same level as Singapore's Changi and Bangkok's Suvarnabhumi airports.

Saudi Arabia

The Kingdom, which is heavily reliant on air travel, is investing significantly in infrastructure projects to accommodate future growth and help to transform Saudi Arabia into an important hub for east-west routes. In 2010, the General Authority of

⁷ PT Angkasa Pura II is the state enterprise of the Indonesian Department of Transport that is responsible for the management of airports and air traffic services in Indonesia.

The ranking within the top 20 countries by air trips will change over the coming decade.

Civil Aviation of Saudi Arabia (GACA) estimated that over the next 20 years, the government will commit at least US\$5.3 billion in the development and revamping of airports. The Saudi market is opening up to foreign investors, as evidenced by foreign organizations managing three of the four international airports in the country.

A consortium led by the Turkish group TAV Airports was awarded the build-operate-transfer contract for Prince Mohammad Bin Abdulaziz International Airport in Medina in October 2011, making it the first airport privatisation deal in Saudi Arabia. The agreement was made between the GACA and TAV alongside partners Al Rahji and Saudi Oger. The consortium will construct a new passenger terminal by the first half of 2015, and will operate the airport for 25 years.

There is private sector involvement in Saudi Arabia's three major international airports in Riyadh, Jeddah and Dammam. Fraport Saudia Arabia Ltd (a 100% subsidiary of Fraport AG) is responsible for the management, operation and further development of the King Abdulaziz International Airport in Jeddah and the King Khalid International Airport in Riyadh. Changi Airports International (a 100% subsidiary of Changi Airports Group) manages King Fahd International Airport in Dammam.

A second tranche of Islamic bonds worth SR15.2 billion (US\$4.05 billion) was issued to further finance the expansion projects of King Abdulaziz International Airport (KAIA) in Jeddah and King Khalid International Airport (KKIA) in Riyadh.

The Philippines

The Philippines government announced a Php 303 million (US\$7.3 million) project to construct, improve and expand airports in San Vicente, Pagadian City, Butuan City, Dipolog City, Sanga-Sanga, Tawi-Tawi, Cotabato City and Maasin. In June 2012, the Department of Transportation and Communications (DOTC) invited local and foreign firms to bid for contracts to expand and improve the passenger and airport traffic handling capacity of these eight provincial airports.

Amongst ongoing projects is the upgrade of Tacloban Airport, for which a budget of Php 2.12 billion (US\$49 million) was approved by DOTC (additional budget, however, may be required for its completion). The construction of a new apron and taxiway is expected to be completed by 2014, whereas landside works will be put up for tender in 2014.

Close to capacity facilities at Cebu Airport have also called for the government to bid out an upgrade plan for the construction of a new passenger terminal building and the expansion of the existing one. This will increase Cebu Airport's capacity from 4.5 million passengers per year to 8 million per year.

Furthermore, a US\$79.41 million design and build contract for the upgrade and expansion of Puerto Princessa Airport (DOTC) was put to tender in August. The cost of the project was supported by the Export-Import Bank of Korea from which the Philippines' Government received a US\$71.6 million loan.

India

India is currently one of the ten largest markets globally. The rapid growth in the aviation sector in India requires significant updating of outdated airport infrastructure. There are currently 454 airports and airstrips in India, 16 of them designated as international airports. The Airports Authority of India (AAI) owns and operates 97 airports. India's government allows for domestic and foreign investors to participate in the development of airport infrastructure at selected airports. Foreigners can currently invest up to 25% in Indian companies, with this figure set to increase to 49% in 2013. However, many international concession companies fear that the anticipated foreign direct investment policy changes in 2013 may not come to pass because of impending elections. The government passed a legislative amendment in 2003 allowing the private sector to enter the field of airport development and permitting 100% foreign direct investment for greenfield airports. A number of other airports have been granted approval to be constructed and financed through public-private partnerships (PPPs).

Given the need to enhance connectivity, the Government is planning to build 51 airports over the next few years. Of these, 15 are low-cost airports with construction set to start in 2013. The investment envisaged for the airports sector is of US\$12.1 billion, of which US\$9.3 billion is expected to come from the private sector. These investments will be used for a wide range of infrastructure projects, including the construction of new airports, the expansion and upgrade of existing airports and the development of low cost airports. The development of world class ground handling, cargo, logistic facilities including high-output distribution centers at major airports,

is also expected to require a very significant investment.

Of India's 454 airports, the majority are in Tier 2 and Tier 3 cities. These airports are too small to attract foreign concessionaire interest. A long-standing debate is taking place over how these airports will be modernised (with the support of foreign investors) if traffic volumes cannot support foreign investment.

In contrast, the greenfield international airports at Bangalore and Hyderabad were constructed with financing through PPPs with significant shares of foreign investment. In fact, PPPs enabled

modernisation and expansion of the Delhi and Mumbai airports through a transparent competitive bidding process. Other major airports such as Chennai and Kolkata will likely also be modernised through PPPs.

Russia

Strong economic growth is predicted for Russia in the short term. Demand for air travel is set to grow as a result of a growing middle-class with willingness to diversify their consumption needs.

Russia counts 315 airports, of which 64 are in urgent need of upgrades. Most of the airports requiring refurbishment are located in areas where air travel is the only mode of transport available. The government has been injecting cash into regional airports in a bid to attract private investors. However, due to the size of the airports (often smaller than 1

million passengers per annum in size), this has been quite difficult.

With Russia hosting the 2014 winter Olympics Games and 2018 FIFA World Cup, major development plans are expected for Russian airports, representing an opportunity for investment.

Brazil

Many of Brazil's major airports are currently capacity constrained and require upgrading and expansion. Future performance of Brazil's airports is critical, particularly because of Brazil's hosting of the 2014 World Cup and the Olympics in 2016 in Rio de

Each of several emerging markets needs significant infrastructure upgrading.

Janeiro. In 2011, the government of Brazil decided that private companies would be granted a concession to commercially run some of Infraero's⁸ airports to implement upgrades to airport facilities and infrastructure. Current legislation in Brazil does not allow the sale of airport infrastructure; however, the government can grant concessions or perpetual franchises to the private sector for airport operations. The concessions are taking the form of PPPs in which the concessionaire would own 51% of the shares and Infraero would own 49%, holding veto rights on strategic decisions in the joint ventures.

In 2012, the semi-privatization of three of the largest airports in the country, namely, Viracopos International

⁸ Infraero is responsible for operating Brazil's main commercial airports.

Investors will want to take into account the market's unique characteristics.

Airport in Campinas, Guarulhos International Airport, Brasilia International Airport, started to occur with these airports being auctioned to a consortium of private firms. Galeão International Airport in Rio de Janeiro, and Confins International Airport in Belo Horizonte are also set to be partially privatized in a second round of concessions occurring later this year. Infraero, has also been investing in facility improvements at these two airports.

Additional potential is identified in retail expansion. In 2011, non-aeronautical revenue accounted for about 32% of the total revenue, highlighting that there may be scope for maximizing revenue generation generated through retail.

With traffic volumes expected to increase significantly in Brazil over the next 10 years, Brazilian airports will likely remain attractive to investors.

Turkey

The Turkish economy has grown robustly over the last decade, and its air transport services have developed exceptionally as both its airlines and its infrastructure have modernised successfully. Visitors to Turkey increased at an average annual rate of over 10% over the last decade as well as seeing a huge increase in resident trips due to strong economic growth. New airport infrastructure and Turkish Airlines' aggressive growth has allowed for this development. There has been increased private sector involvement in airport development since the government enacted a law on the realisation of certain investments and services in the Build-Operate-

Transfer (BOT) Model in 1994. Since then, there has been private sector involvement for development at Antalya, Istanbul-Ataturk, Izmir-Adnan Menderes, Dalaman and Milas-Bodrum airports. Turkish operator, TAV holdings, not only is the largest airport operator in Turkey, but also operates airports abroad.

A third airport with a final passenger handling capacity of 150 million passengers per year is planned to be developed in Istanbul with the view of replacing Ataturk Airport. The project was contracted using the BOT model. The 25 year tender was auctioned off for euro 22 billion (US\$31 billion) in May to a consortium of five Turkish companies.

Expansion programs for Ataturk Airport as well as Sabiha Gökçen Airport are also underway in a bid to provide for additional aviation capacity.

Japan

Air traffic growth in Japan is slowing because of Japan's ageing population. The resulting decline in population, coupled with slow real growth in GDP, means that propensity to fly needs to work even harder for Japan's air travel market to continue to grow and keep up with other markets. LCCs are beginning to have a presence at Japanese airports, potentially leading to stiffer competition and lower fares, which could increase propensity to fly. Despite modest growth expectations, Japan still presents an opportunity for investors, as the Japanese government has announced plans to concession up to 27 airports between 2015 and 2019. In parallel, the state of Hokkaido

has also expressed an interest in concessioning its 11 airports. Japanese airports present significant commercial opportunities, as this area has previously been underexploited.

Considerations for investors

We have outlined several emerging markets that will see a major increase in their propensity to fly by 2020. Each of these markets needs significant infrastructure upgrading. In making investment decisions, investors will want to take into account these markets' unique characteristics, including the regulatory environment and the changing global aviation landscape.

Let's consider the regulatory environment first. Tax and investment laws, along with other regulations, can put up barriers to investors in markets that look good because they're anticipating huge growth in their aviation industry. For example, China will see a big jump in air traffic growth, and (as we noted above) its government is planning to invest heavily in beefing up aviation infrastructure. The government is also initiating reforms to raise income levels—including increasing the minimum wage 40% by 2015, expanding the government-funded social welfare and health care system, and promoting labour-intensive service industries. These moves could boost consumption as a percentage of GDP growth. All this suggests that China may represent a good opportunity for investment. But owing to regulations restricting foreign investment, the door isn't necessarily open for outside

investors. By contrast, the Indian government allows foreigners to invest significantly in Indian companies, and prospects look good for foreign direct investment in greenfield airport developments. Thus India's aviation infrastructure may constitute a much better opportunity, at least in the medium term.

Here's another consideration: Developed economies' aviation markets might not look like worthy investment targets because of market maturity and the influx of new competitors from the Middle East, Turkey and other emerging economies. But that's a surface-level view of the situation. Our analysis shows that these new competitors won't necessarily pose a threat to developed economies in terms of taking away market share. They could actually present an opportunity—for mature markets and investors alike. Why? Their presence will create more inter-airport connections and thus increase cross-border networks. Aviation infrastructure will expand as a result, opening up new opportunities for investors in developed and developing markets.

Next steps

By understanding trends in the forces affecting propensity to fly and comparing these trends across aviation markets, investors can gain critical insights into where the most promising opportunities may arise in the future. Our analysis suggests that while the US, Europe and the BRICs still merit consideration, a number of additional markets—notably in Indonesia and the Philippines—may offer equally attractive potential in the future and thus bear watching. Undoubtedly other factors—particularly restrictions on foreign investment and appetite for private-sector participation—and other market features also play an important role in decisions about which markets to focus investment. However, propensity to fly can provide some useful insights into a market's potential in the longer term.

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Airport transactions: Taking off around the globe.

Bernard Chow and Colin Smith

Executive summary

Airport transactions are on the rise, presenting a host of new opportunities for investors around the world. But to secure the best deals, investors must understand how the landscape is changing—in terms of who the biggest players are and what they're after. They also need to consider where the best opportunities might arise in the future as well as what pitfalls they might encounter—and how to avoid them.

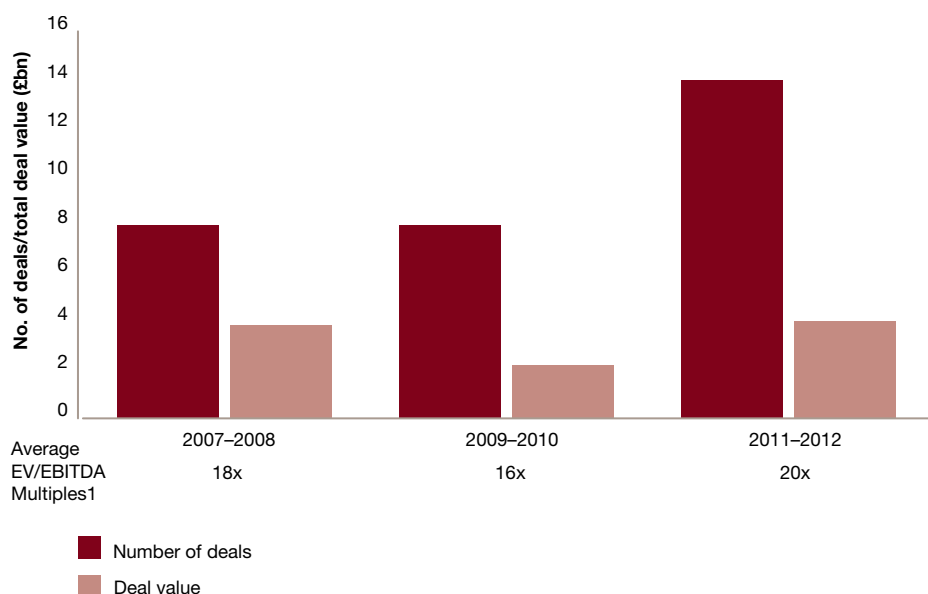
In this article, we draw on our analysis of airport transaction trends and airport markets across the globe to offer insight into these questions. And we propose some guiding principles for navigating in the complex and changing airport investment arena.

Investors interested in infrastructure used to see airports primarily as a means of travelling from one deal to the next. Now many of them are looking at airports as deals in themselves—thanks to a recent glut of airport transactions. (See Figure 1.) The glut has followed a volatile period in which the global recession created a decline in the number of airport deals as well as deal value. As the impact of the economic downturn intensified, EV/EBITDA (enterprise value to earnings before interest, tax, depreciation and amortisation) multiples dropped from 18× in 2007–08 to 16× in 2009–10. Between 2007 and 2010, the number of deals stagnated owing to a lack of financing, reduced confidence in air traffic travel demand and gaps in valuation expectations. Consequently, we saw lower multiples. Many airport transactions were delayed, as investors elected to hold off until air passenger traffic demand showed clear signs of recovery.

But during 2011–12, average multiples rebounded to above precrisis levels, thanks to signs of economic recovery and transactions in emerging markets

Investors used to see airports primarily as a means of travelling from one deal to the next. Now many of them are looking at airports as deals in themselves.

Figure 1: Global airport deals and deal value



Based on a selection of publicly disclosed airport transaction multiples. Includes 15 deals between 2008 to 2012 across a range of geographies. Source: Infranews, PwC analysis

such as Brazil. With multiples improving, deal value is recovering somewhat, and the number of deals has doubled from the 2009–2010 period. We think there are enough opportunities in the pipeline now to fuel investment activity for the next two years at least. That’s good news for the diverse players hunting for deals in the airport sector.

Who’s playing in the space?

Today’s airport investor profile looks very different from yesterday’s. In the past, infrastructure funds and construction companies were the big players in this space. Now, major players also include previously conservative pension funds that are investing directly in airports and boldly setting aside money for emerging markets. Sovereign wealth funds, logistics groups, private equity houses and consortia made up of financial institutions and operational experts have also moved into the game. The infrastructure firm Global

Investment Partners (GIP) is an apt example. Founded by Credit Suisse, General Electric Company and an independent senior management team, GIP acquired Gatwick airport in 2009 and Edinburgh airport in April 2012.

Even as new faces are showing up, familiar faces are disappearing—or at least fading into the background. Take Hochtief AG, the German construction company, for example. Hochtief had moved into the airport management space but has since sought to divest its airport concessions business primarily as a means to unlock value and defend against Grupo ACS’s hostile takeover in 2010.

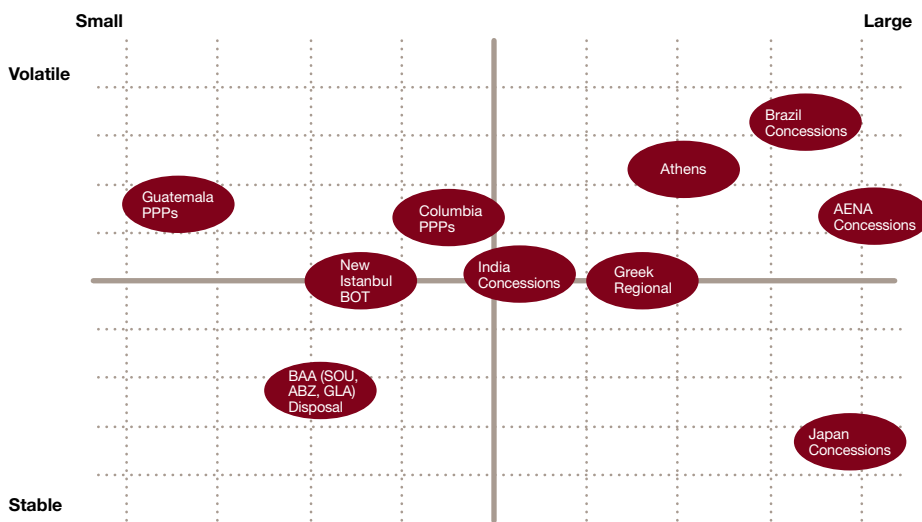
What’s driving these changes? For the most part, it’s the global financial crisis that, in turn, has subjected investors to brutal refinancing pressures. Airport investors who borrowed money from banks five or six years ago were assessing multiples of 18×. Then those multiples dropped to 15×, leaving investors with insufficient asset backing to pay their loans. These

trends have prompted investors to put more cash into airports. That isn’t easy for speculative investors for whom cash is expensive. Often, it’s construction companies that fall into this category. This scenario has played out in a big way in Spain. Following a wave of airport investing by Spanish construction companies, the Spanish economy collapsed, crippling the construction business. Companies had to sell their assets because of financing requirements.

Today’s airport investors not only look different from yesterday’s; they also keep different criteria in mind when they’re eyeing potential deals. (See Figure 2.) Private equity firms are usually most interested in small airports—those with one terminal and fewer than 5 million passengers per year—that have the potential to grow quickly. And they’re looking at a relatively short investment horizon of five to seven years. By contrast, pension funds typically seek stable assets in a position to ensure longer-term returns (10-plus years). They’re more interested in airports that serve more than 5 million passengers per year and that have multiple terminals. Construction companies, not surprisingly, are interested in airports that need significant development.

More investors may also be considering airports’ revenue mix when making investment decisions. While the lion’s share of most airports’ revenue comes from carriers, revenue from retail and real estate has become a notable source of growth. Some European airports are deriving anywhere from 33% to as much as 50% of their revenue from real estate and retail. UBS points out that Zurich Airport, whose retail and real estate revenue amounted to 50.3% in 2011, has even more retail space landside as its urban location tempts nonpassenger shoppers. Indeed, Goldman Sachs cites retail revenue as a major factor in recommending European airports.

Figure 2: Airport deals pipeline



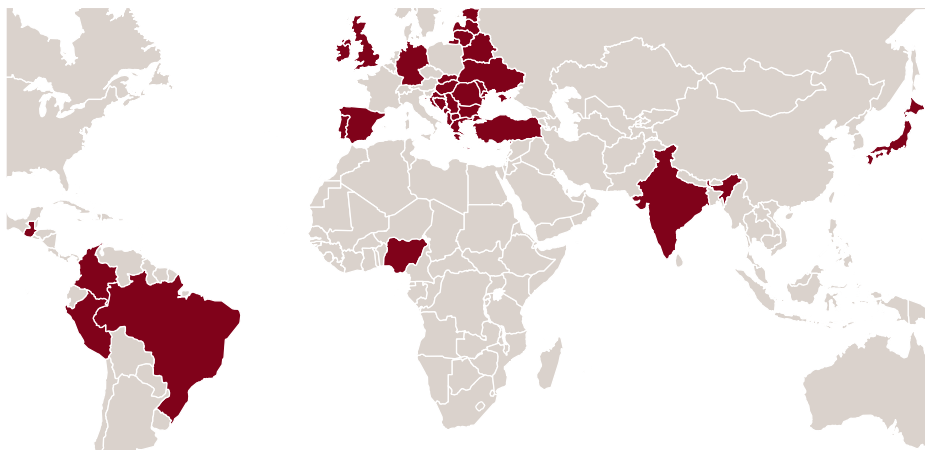
In other markets, such as Brazil, Vietnam, Indonesia and Central America, governments are replacing private-sector airports with public-sector airports. These airport markets have no trouble finding money for investment; what they need is expertise. So they're launching concessionary programs aimed at gaining commercial and operational efficiencies. In many emerging markets, airport development is also a key component in governments' plans for developing the national economy.

As investors (including private holders) sell their assets, there's more stock on the market. But the opportunities look different, depending on how the assets come to market and where the activity is taking place. For instance, some opportunities are all about refinancing: An investor can snap up an airport because the investor has enough cash to cover the debt and equity. In many emerging markets, the opportunities are all about new builds and redevelopment of existing airports.

So what can we expect to see? Though government sales of airports have come slowly to market, we anticipate a pick-up in such activity, with Portugal, France, Greece, Spain and Ireland all expected to launch privatisation processes for European airports.

And with airport operators being typically capital-constrained, we expect to see partnerships in which operators align their operating credentials with infrastructure investors' firepower to improve airport commercial and operational infrastructure and thus aero and commercial yields. We may see this particularly in the sale of large, government-owned airport groups such as Aeropuertos Españoles y Navegación Aérea (AENA) of Spain.

Figure 3: Areas for short- to medium-term transaction activity



What are the opportunities—and where will they arise?

A number of forces have come together to produce perfect conditions for airport investment. These forces include pressures on governments and major corporations to reduce their debt burdens, regulators forcing sales to increase competition and improve passenger service levels, a recovery in passenger air traffic demand, and a sustained interest in good-quality infrastructure assets among both equity and debt providers.

For today's diverse investors, all this is redefining the fundamentals of the market—creating a whole new set of opportunities. (See Figure 3.) On the supply side, the types of airports coming to market, as well as the ways they come to market, have changed. For instance, some markets (Japan, Portugal, Spain) are seeing extensive privatisation of airports, as governments seek to sell off assets to manage monstrous levels of debt.

For large, stable airports, we think there will continue to be no shortage of long-term capital available. Indeed, the big hub airports like Zurich, Vienna, France's Charles de Gaulle and Frankfurt are relatively stable in terms of traffic, because more airlines want to use them than they have room for. Even if some aren't at full capacity throughout the day, they will be at peak times morning and evening. And if an airline goes bankrupt, there will be another airline ready to take up the slack. Meanwhile, infrastructure funds and private equity houses will remain interested in fast-growing, well-run airports, driving merger and acquisition (M&A) activity into the foreseeable future.

What are the investment pitfalls?

Despite the allure of new opportunities, investors will need to take care to avoid several pitfalls. For one thing, airports are not a single asset class, despite sharing characteristics such as runways, passenger terminals and luggage carousels. The performance of airports varies from one another according to factors like location, captive market, mix of airline customers and management team. All of these can in turn affect an airport's investment potential.

Investors who ignore this fundamental truth are at serious risk of overvaluing airports. Witness the recent rebuilding of airport balance sheets for those that were overleveraged in the heady days of 2006–08. The lesson? Investors need to evaluate each airport on its own merits as well as make strict due diligence a core part of the deal-making process.

The overvaluation risk can also be avoided by aligning a particular airport to an investment strategy. Stobart

Group did this by recognizing the potential in using Southend Airport as its southern logistics hub and attracting easyJet flights away from Stansted. Middle Eastern investors Qatar Investment Authority (QIA) and Abu Dhabi Investment Authority (ADIA) saw value in the long-term regulated stability of Heathrow and Gatwick, respectively. And GIP no doubt is starting to realise the "Gatwick magic dust" opportunities at Edinburgh, an airport that has demonstrated resilience during the recession and that has strong growth opportunities operating as a hub airport in the North.

But there are other risks in addition to that of overvaluing airports. To illustrate, for the many investors focused on the BRIC countries—Brazil, Russia, India and China—the danger is that economic growth in any of these markets may stall. If that happens, investment opportunities in emerging markets will be slow coming to market. What's more, airport markets in developing countries don't yet have well-established passenger travel trends. Take Vietnam, where it's unclear whether Hanoi or Ho Chi Minh City will become the country's primary destination hub and thus the best opportunity for investment. This situation injects more uncertainty into the picture for investors than they face in developed markets, where travel trends are more established.

What's more, in some markets, deals on offer can be less than stellar. For example, when the Spanish

government offered concessions for the Madrid and Barcelona airports, the terms were so draconian that no one bid. The risk here for investors is that they may spend a lot of time and money on inquiries, legal fees and other expenses associated with the bidding process, only to discover that the deal in question won't be going anywhere.

The deepening of the relationships between airports and their airline customers presents another kind of risk for investors. Even though an airport's revenues may increasingly come from non-aviation sources (such as retail, parking and real estate), many large airports are tied to their large airline customers. In the past, infrastructure investors weren't as involved in airport operations and could afford to adopt a hands-off approach, expecting airlines to accept the fees that were set. But airlines now face daunting operational, competitive and cost challenges and have overhauled their business models to meet those challenges. Investors therefore need to understand the difficulties confronting airlines, the changes that air carriers are making to improve their competitive position, and the impact of all this on the relationship between airports and airlines.

Finally, for investors considering committing to a consortium, it's important to understand which credentials the partners should bring to the table and ensure that the right expertise is represented in the final

Today's airport investor profile looks very different from yesterday's.

configuration. That all depends on the target airport and its defining characteristics—such as whether major construction will be required and whether a potential upside can be captured through expertise in commercial development. In addition, the right relationship and business culture is important when vendors decide on the preferred bidder, especially when existing shareholders such as local authorities may have specific requirements in mind. Different partners can bring different forms of value to the table, and outside advisers can bring critical insight in areas including financial, business planning, legal, operational, capital expenditures (capex) and tax and accounting. (See Figure 4.)

A number of forces have come together to produce perfect conditions for airport investment.

Next steps

The airport sector will continue to see significant deal activity in the next three years, with a great number of opportunities for investors to consider in coming months. While competition is fierce and valuations are likely to increase further, investors should exercise due care in evaluating each opportunity, to avoid several potential pitfalls. Having early conversations with advisors who bring in-depth sector knowledge and experience can help.

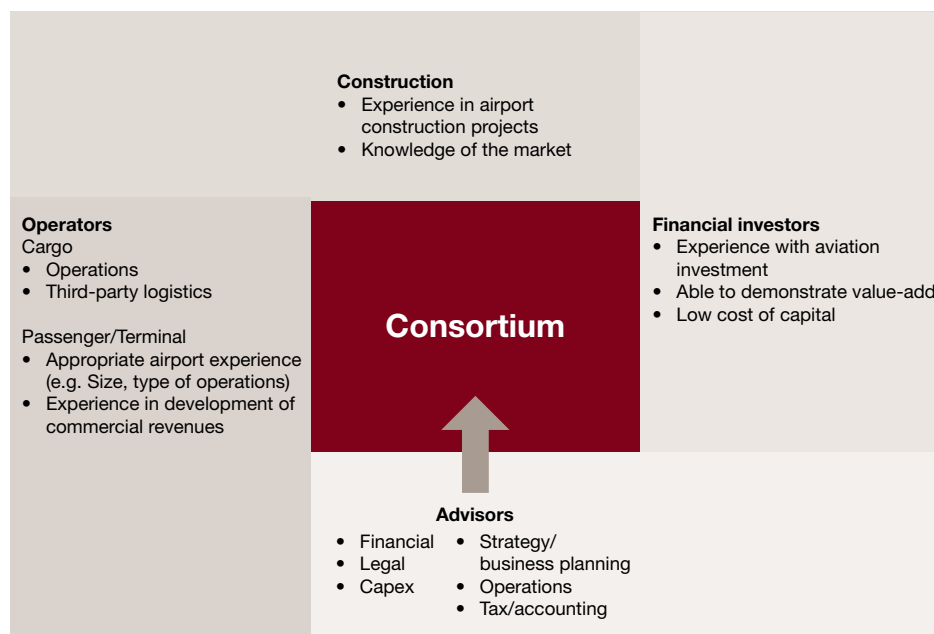
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Figure 4: Building a strong consortium

Consortium requirements will depend on the target airport and key characteristics—e.g. Will major construction be required, can potential upside be captured through expertise in commercial development



***To have a deeper conversation
about how this subject
may affect your business,
please contact:***

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