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MELBOURNE AIRPORT PERFORMANCE AND CHARGES BENCHMARKING STUDY

Prepared for

Melbourne Airport

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EXECUTIVE SUMMARY

Aeronautical charges

The aggregated aeronautical charges for a landing and take-off by eight different aircraft types at Melbourne are lowest within a sample of nine airports in Australia and New Zealand. The result is the same if charges for a Boeing 747-400 alone are considered. In both cases, Melbourne's charges are around half the level of those at the most expensive airport.

The calculations of charges at the same airports have also been compared with the results of identical calculations for a sample of fifty airports worldwide. Within this combined sample of fifty-eight airports, Melbourne's charges rank in 32nd position out of 58. The most expensive of the ANZ airports ranks in 4th position.

Operational and financial performance

The performance of Melbourne airport is compared with that of the similarly sized airports at Auckland, Brisbane, Calgary, Copenhagen, Manchester, Perth, Stockholm, Sydney, Vancouver, Vienna and Washington Dulles. The data used cover the period 1995/96 – 2009/10.

Overall cost levels at the Australian airports are clearly lower than those of the other airports in the sample. Total costs per passenger at Melbourne Airport are also low compared to other Australian airports.

Staff costs per passenger at the southern hemisphere airports, and staff costs as a percentage of total costs, are also relatively low when compared to northern hemisphere airports. The combination of low staff costs per passenger and low total costs per passenger at Melbourne indicates that the use of contract staff and outsourcing at Melbourne does not result in any significant switching of costs from staff costs to other operating costs.

In general, there has been an upward trend in staff productivity as measured by passengers per employee among southern hemisphere airports. On average, staff productivity rates at the southern hemisphere airports are now more than three times greater than at the northern hemisphere airports. There is no evidence that this disparity can be explained by high levels of outsourcing. In turn Melbourne's productivity is around 50% higher than the southern hemisphere average.

The southern hemisphere airports produce on average a higher Return on Capital Employed that the northern hemisphere airports. Melbourne Airport has outperformed its peers in this metric in recent years, and experienced a significant increase in Return on Capital Employed in 2009/10. This may in part be due to differing policies on asset revaluation.

There has been a clear upward trend in income from aeronautical charges at the Australian airports since price regulation was replaced by price monitoring. Even so, on average the northern hemisphere airports derive almost 40% more revenue from aeronautical charges on a per passenger basis compared with those in the southern hemisphere. Melbourne Airport's aeronautical revenue per passenger was over 20% lower than the southern hemisphere average in 2009/10.

The southern hemisphere airports have consistently outperformed those of the northern hemisphere in terms of both EBIT and EBITDA margins. Similarly, the net cash generated by the southern hemisphere airports has outperformed those of the north. This disparity is largely due to lower operating costs (particularly staff costs) at the southern hemisphere airports, and is not due to high levels of revenue per passenger. In the cases of Brisbane, Melbourne and Perth

the absence of a noise curfew may provide some degree of operational advantage over peer airports.

Unit asset values at the southern hemisphere airports are higher than those of the north. This may reflect relative asset age, surplus capacity and the fact that all of the Australian airports' assets were restated on a more commercial basis at the time of privatisation and some, but not Melbourne's, have been revalued since.

Capital expenditure levels at the southern hemisphere airports have been lower than those at the northern hemisphere airports. This may reflect lower levels of construction costs and the relatively lumpy nature of airport investment.

Within this sample, it appears that the Australian airports are generally the most efficient in cost and staff productivity terms, and derive the lowest levels of revenue from their airline users. They are also the most profitable airports in the sample. Within this sample, therefore, they may be regarded as representing industry best practice.

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1 INTRODUCTION

LeighFisher has been asked by Melbourne Airport (The Airport) to carry out a benchmarking review of aeronautical charges and operational and financial performance at Australian airports. The work has been requested to assist The Airport in its preparation of a submission to a Public Inquiry called by the Productivity Commission on the economic regulation of airport services in Australia.

This work takes the same form as two reports produced for the same purpose in 2006, in connection with the previous Productivity Commission Inquiry on the same topic, by the UK Transport Research Laboratory (TRL). In both cases, the work was carried out by or under the supervision of Peter Mackenzie-Williams, who has developed the widely recognised aviation benchmarking publications *Airport Performance Indicators* and *Review of Airport Charges* over a period of over twenty years. Peter moved from TRL to LeighFisher at the end of 2006, and the rights to publish these and other publications previously produced by TRL also passed to LeighFisher. In both cases the work for The Airport has closely followed the established methodologies used in the published work.

This report consists of the following sections:

- A description of LeighFisher's expertise in the field of airport charges and airport performance comparisons;
- A description of the charges included in the charges assessment contained in this report;
- A discussion of the relative level of Melbourne Airport's charges in a regional context;
- A discussion of the position of Melbourne Airport's charges in the context of the rankings calculated in LeighFisher's publication *Review of Airport Charges 2010*;
- A discussion of the position of Melbourne Airport in respect of a range of twelve performance measures, in relation to a sample of eleven peer airports worldwide.

2 LEIGHFISHER'S EXPERIENCE IN THE ASSESSMENT OF AIRPORT CHARGES AND AIRPORT PERFORMANCE

2.1 Introduction

LeighFisher's relevant experience rests primarily with Peter Mackenzie-Williams, a LeighFisher Director, who has been responsible for the production of this report. Peter joined LeighFisher in 2006, having previously joined TRL in 1998, and prior to that he had worked since 1989 with Travers Morgan (later Symonds Travers Morgan). From 1990 onwards Peter was responsible for the authorship and production of the annual publication *Review of Airport Charges* and, from 1997 onwards, for the annual *Airport Performance Indicators.* Following Peter's move to LeighFisher in 2006 the intellectual property vested in this work was acquired from TRL, and the production of both publications has continued under the same authorship.

2.2 Review of Airport Charges

This work compares airport charges at a sample of 50 airports around the world. Our objective may be defined as seeking to identify all of the charges which are used to recover or contribute to the infrastructure and environmental costs associated with the arrival at and departure from an airport by a sample of eight different aircraft types, carrying a typical passenger load on an international flight. The charges taken into account are landing charges, aircraft parking charges, any passenger-related charges and terminal navigation charges. The applicable costs for one landing and one departure are calculated for each of a sample of eight aircraft operating on international services at each airport. The costs are then converted to a single unit of currency (Special Drawing Rights – SDRs) and presented in a numerically ranked Index.

While the first three of these charge types are imposed by airport operators, terminal navigation charges are not, being imposed by the relevant air traffic control service provider. The inclusion of the charges in our calculations is intended to ensure comparability with those airports where the service provider does not impose a charge direct to the airlines for its service, but charges the airport operator instead.

In such cases it is assumed that the landing charge imposed by the airport includes an element intended to recover the cost of the service. The provision of an air traffic control service is clearly essential to any airport operation and the cost of that service is relevant to any consideration of the cost of operating into an airport, regardless of how that cost is recovered from the airlines as end users.

The inclusion of terminal navigation charges emphasises an underlying principle of the Review, which is to ensure that all comparisons are made on a like-with-like basis. There are other examples of services which may be charged for in different ways at different airports. Some airports provide their own security services, and it may be assumed that their passenger-related charges are designed to recover the associated costs. At other airports security services are provided by an external agency, such as a police force, and in these cases a separate security charge is levied, usually payable by the airlines. The inclusion of these charges in our calculations ensures comparability with those airports which incur their own costs of security provision. In the case of the Australian airports Rescue and Firefighting charges are imposed by the air traffic service provider, AirServices Australia. Elsewhere in the world both of these charge categories tend to be levied by the airport itself.

It is also important to determine whether a charge relates to the recovery of the direct or external costs of providing the airport infrastructure or not: if it is not, it is not included in our calculations. The main examples of charges which are not included for this reason are passenger departure taxes. In many cases these are of no benefit at all to the airport, even though it may be the responsibility of the airport to collect them. In such cases the charge is simply a tax imposed on air travellers, the revenues from which are remitted directly to the national exchequer. These are

of no more benefit to the airport than highway tolls which passengers may need to pay in order to reach the airport, and on this basis we do not include them in our calculations.

The sample of airports included in the Review is intended to provide geographic representation for most world regions, and is not selected on the basis of covering the 50 busiest or largest airports by any measure. The aircraft sample is intended to represent aircraft of 100 seats or more which are commonly found at many of the world's international airports. The aeronautical charges included in the calculation are specifically for international services, corresponding with the exclusion of smaller aircraft types which are typically used mainly on domestic services.

A standard set of assumptions relating to aircraft weights and passenger numbers is used for each airport calculation. The number of passengers assumed is based on the average international passenger load factor (percentage of seats filled) reported by the inter-governmental International Civil Aviation Organisation (ICAO) for the previous year.

We take account of charge variations such as peak/off-peak pricing where these exist at a particular airport, either on the basis of actual data provided by the airports or on the basis of ratios of use estimated from available information such as airline timetables. We also take account of noise surcharges and discounts which vary according to aircraft noise levels, and also emissions charges.

The publication takes account of charges in force in the middle of each year, in principle on 1 July.

The charges information used as a basis for the calculation of the Index is invariably provided by the airports included in the Review. Occasionally the information is not received in time for use in the calculations, and in these cases reference is made to information contained in the *Airport and En-Route Aviation Charges Manual* produced by the International Air Transport Association (IATA).

Over the twenty-one years period since its production began, the Review has gained a high level of acceptance in the airport and airline world. Its findings have been referred to regularly in the annual Report and Accounts of a number of airport operators, including those of BAA (operators of London Heathrow and other UK airports), the former Federal Airports Corporation of Australia (FAC), the Vancouver International Airport Authority in Canada and Luftfartsverket, the operator of Sweden's airports.

BZW, advisers to the Australian Government on the sale of the first tranche of operating leases on Australian airports, requested that reference be made to the Review during the sale process which took place in 1996/7. The Charges Index for 1996 together with details of the Review's methodology were included in the public set of information made available to prospective investors. In addition, the UK Monopolies and Mergers Commission makes regular reference to the Review in its five-yearly reviews of the regulatory formulae governing charges at BAA's London airports.

The Review is recognised by IATA as being a reliable source of information on airport charges comparisons, and LeighFisher and IATA frequently co-operate through exchanges of charges data. Similarly, the Airports Council International, the world's principal airport trade association, has commented favourably on the methodology employed in the Review, particularly relating to the representative balance of airports included in the sample. Peter Mackenzie-Williams is a member of the ACI-World Standing Economics Committee.

2.3 Airport Performance Indicators

The decision to introduce this publication was taken in the light of a number of approaches from financial institutions interested in gaining a broader understanding of the financial performance of airports than was conveyed by the *Review of Airport Charges*. The publication provides a range

of operating and financial performance measures which gives airport operators, analysts and other interested parties an indication of how well various airports are performing on a comparative basis. This work is significantly broader in its scope than the work on airport charges.

The work relies on data extracted from the published audited Report and Accounts of a range of airports around the world. The airports included in this work partly overlap those which are covered in the *Review of Airport Charges* but for various reasons the samples differ. The overall approach taken is similar, with financial measures being first calculated in units of local currency and then converted to SDRs.

A particular difficulty related to comparisons of airport performance is caused by the fact that the range of activities undertaken by different airports varies considerably. For example, a number of airports included in our sample perform their own ground handling services or operate their own car parks, but many do not. A number of airports' Report and Accounts cover the activities of a national civil aviation administration, which as well as operating the airports perform other functions such as the provision of air traffic control services. If this difficulty is not addressed, a number of performance measures, especially those related to staff numbers, are likely to be distorted.

The approach which is taken to deal with this problem is to identify those activities which do not constitute what can be regarded as core to the operation of an airport, and to adjust the relevant data by deducting all revenues, costs and staff numbers associated with the additional activities. At the same time it is reasonable to assume that if the airport did not itself carry out functions such as the operation of car parks it would appoint a concessionaire to do so, and that the concessionaire would pay the airport a fee. In these cases a notional fee is added back to the airport's revenues so as to allow like-with-like comparisons to be made with airports where a concessionaire is actually in place.

2.4 Related work

A substantial body of work has been carried out on an individual commission basis, drawing on the general methodological approach of the two publications already described. Summaries of a selection of projects undertaken are set out below.

In 2010, a substantial aeronautical charges benchmarking study was carried out on behalf of the **Changi Airport Group**. This sought to compare charges at Singapore airport with those at a range of international peer airports, and also with those at airports regularly used by Singapore's principal airline users. The results of the work were used in Changi's consultations with airline users over various changes to its aeronautical charges structure. We were also asked to assess the charges benchmarking tool which Changi had previously used internally to monitor the competitiveness of its charges.

We are currently engaged in carrying out a study analyzing the fees and taxes structure of Egyptian airports on behalf of **The Egyptian Holding Company for Airports and Air Navigation (EHCAAN)**. The work is intended to identify the competitive level of charges at Egyptian airports at a regional level, and to assess ways in which airport charges could move to a more cost-related basis in place of the current system of a common schedule of charges for all airports except Cairo Airport.

In 2009, we produced a comparison of aeronautical charges at **Copenhagen Airport** with those of peer European airports, with a focus on non-transfer operations. The work contributed to Copenhagen's discussions with airlines regarding differentiated charges for its new low cost airline terminal.

In 2009, we carried out a comprehensive benchmarking study for the **Airports Company South Africa (ACSA)** to compare the financial performance of ACSA's three main international airports with that of international peer airports. Key issues which emerged were that ACSA performed relatively poorly in terms of the generation of non-aeronautical revenues, while regulated

aeronautical revenues appeared to be very low, limiting the scope for investment in infrastructure needed to cater for expanding demand.

In 2008, on behalf of **Finavia**, the State operator of Finland's airports, carried out a comparative assessment of aeronautical charges at Helsinki Airport compared to those of peer European airports, and made proposals for ways in which pricing policy could be used as a means of encouraging different airline operations.

In 2007, we produced an analysis of aeronautical charges and operating and financial efficiency at **BAA**'s Scottish airports, compared with a benchmark sample of UK regional airports. This work was required by BAA's then new owners as part of a review of its overall aeronautical pricing strategy.

In 2002, while at TRL, Peter Mackenzie-Williams was commissioned by **IATA** to produce a study intended to identify examples of airport best practice. This work was based on a time-series of data for a sample of 30 major international airports, and used a simple proportional scaling approach to combine performance in six key performance indicators so as to produce a single measure of combined performance.

During 1993 and 1994, Peter Mackenzie-Williams was co-author and technical leader of a piece of work carried out by Travers Morgan on behalf of the **Australian Bureau of Industry Economics (BIE)**. The BIE wished to examine the value for money received by the Australian travelling public using air services, and it also sought to examine the performance of Australian aviation infrastructure services against best international practice. TM's input to the production of the BIE report1 was to carry out a study on international best practice at airports. This included a number of productivity measures which were subsequently used in *Airport Performance Indicators*, together with a number of customer-oriented measures, including relative levels of airport landing charges.

1 International Performance Indicators – Aviation. Research Report 59, Bureau of Industry Economics, August 1994.

3 THE CHARGES INCLUDED IN THE ASSESSMENT CONTAINED IN THIS STUDY

Calculation of the Index

The Index of charges in our published work is calculated from the charges which would be imposed on a sample of eight different aircraft types making one landing and one departure at each airport. The aircraft vary in size from around 115 seats (the Boeing 737-500) to around 380 seats (the Boeing 747-400), and the sample is intended to cover a range of types commonly used on international services around the world. The charges used for the calculations are for international rather than domestic services in cases where airports have different levels of charges for the two categories of service.

In our published work, the sample of 50 airports covers a broad geographical spread, but with a predominance in Europe, North America and Australasia. It is not intended to represent the fifty busiest airports by any particular measure, either globally or regionally, but to cover a broad spectrum of different approaches to airport pricing in a variety of public- or private sector operating environments under different regulatory regimes. However, the sample includes virtually all airports worldwide which handle in excess of 10 million international passengers.

The charges are calculated in the currency in which they are levied, which is the local currency in all cases except three: Budapest (which entered the European Union in 2004 but is not yet in the Eurozone) charges in Euros while Moscow and Sao Paulo charge in US Dollars. The aggregated charges for the eight aircraft types are then converted to a single unit of currency, the Special Drawing Right (SDR) and ranked from highest to lowest.

Aircraft weights

In order to ensure that our calculation of charges is equalised for all airports, it is necessary to define a standard set of weights for each aircraft type. We use for this purpose the relevant maximum weights as published by each aircraft manufacturer, and their defined weights are shown in Table 1 below.

Table 1 Aircraft weights (metric tonnes)

Aircraft	MAW	MTOW	MLW	MZFW
Boeing 737-500	52.6	52.4	49.9	46.7
Boeing 737-700	60.6	60.3	58.1	54.7
Boeing 737-800	70.8	70.5	65.3	61.7
Airbus 320-200	73.9	73.5	64.5	62.5
Boeing 757-200	109.3	108.8	89.8	84.4
Boeing 767-300	187.3	186.9	145.2	133.8
Boeing 777-200	264.0	263.1	208.7	195.0
Boeing 747-400	398.3	396.9	295.8	251.7
Total for sample	1,112.6	1,108.3	891.8	809.8

Source: *Flight International* Commercial Aircraft of the World, Boeing website

Note: all weight-related charges in the sample of airports included in this study are based on Maximum Take-off Weight (MTOW). Elsewhere in the world they can be based on Maximum All-up Weight (MAW), Maximum landing Weight (MAW) or Maximum Zero Fuel Weight (MZFW).

Passenger numbers

The number of passengers which we assume are being carried in each aircraft type also needs to be defined for the purposes of calculating passenger charges. The number of seats fitted in aircraft of the same type can vary considerably, and the percentage of those seats which are filled may also vary year on year. In order to define the number of seats to be used as a basis for our calculations, we derive an average from the actual seating capacities of ten different operators of each type. A sample of operators is selected either on the basis of the number of each aircraft type which they operate, or on the basis of their fleet being used primarily for international services.

The number of passengers is then defined by the average passenger load factor for international services worldwide in the previous year, as reported by ICAO. The figure for 2004 was 73.8%, up a little from 73% in 2003, and showing a good improvement over the level of 70% achieved in 2001. The change reflects a return to more robust traffic growth following the airline industry downturn triggered by the events of September 11 2001 and the SARS epidemic.

Prior to the events of 2001, a gradual increase had been seen since the early 1990s, reflecting the growing effectiveness and sophistication of computer reservation systems. The 2007 average load factor was the highest reported by ICAO since publication of *Review of Airport Charges* began in 1990, as was the 2006 figure used in the previous year.

The range of seat numbers for each aircraft type, derived average capacities and the derived assumed number of passengers per aircraft are as shown in Table 2 below.

Table 2 Aircraft seat capacities and assumed passenger loads

Aircraft	Range of capacities	Average Capacity	Assumed passenger occupancy
Boeing 737-500	100 – 132	115	87
Boeing 737-700	118 – 149	134	101
Boeing 737-800	144 – 189	175	132
Airbus A320-200	140 – 180	158	119
Boeing 757-200	174 – 235	201	152
Boeing 767-300	214 – 328	258	195
Boeing 777-200	245 – 358	304	229
Boeing 747-400	280 - 426	373	281
Total for sample		**1,718**	**1,296**

Sources: *Flight International* World Airliner Census; *JP Airline-fleets International* 2010/2011

Airports included in the sample

The airports included in the sample are as shown in Table 3 below.

Table 3 Airports included in the charges analysis

	International passengers 2009	Total passengers 2009
Adelaide	516,153	6,933,894
Auckland	6,488,948	13,300,394
Brisbane	4,116,108	18,885,750
Cairns	508,022	3,519,459
Christchurch	1,613,821	5,904,648
Melbourne	5,206,237	25,127,483
Perth	2,792,084	10,057,410
Sydney	10,644,791	32,997,717
Wellington	621,964	5,100,868

Source: ACI

Aircraft parking

Aircraft parking charges are generally based on the length of time that an aircraft is parked. For the purposes of our calculations we assume that the aircraft types used on short-haul services are parked for two hours, while the two aircraft types used for long-haul services, the Boeings 777-200 and 747-400, are parked for four hours.

General comments on the Australia/New Zealand charge structures

The structure of aeronautical charges at the Australia/New Zealand airports is unusual in that only Auckland has a traditional landing charge based on aircraft weight. At all of the Australian airports there is a single charge, payable on a per passenger basis, which takes the place of a traditional combination of a landing charge and a per passenger charge. At Wellington the landing charge and passenger departure charge are separate, but both are levied on a per passenger basis.

The thinking behind the model applied at the Australian airports is that it shifts some market risk from the airlines to the airports. With a traditional landing charge the airline is charged irrespective of the passenger load, which means that in times of passenger traffic downturn there is a fixed price per landing to be paid, even though airline revenue per landing may have diminished significantly. However, at this stage this model has little application outside of the Australia/New Zealand region.

Within the sample, the main exception to the general pattern of charges is Christchurch. Here there are fixed charges based on aircraft type, which do not vary at all according to passenger loads. This model is (as far as we are aware) unique in the world, having been introduced around fifteen years ago.

The charges used in the airports in the study sample were in all cases those in force at the time of carrying out this study: these have mostly been in force since July 2010, although Sydney's charges came into force in January 2011 and Cairns' charges have been in force since August 2009. The charges used in the published sample of airports are also those in force in July 2010.

The main features of the charging structures are set out below.

Adelaide

The Australian airports have a separate rescue and firefighting charge levied by AirServices Australia with a unit rate which increases with aircraft size. There is no international landing charge. Parking charges only apply to general aviation aircraft parked for longer than two hours. There is a per passenger charge applied to international air transport aircraft which is partly designed to provide remuneration of airside facilities, including runway use, and a per passenger

international passenger facilitation charge. There is a security screening charge payable per departing passenger and a separate reduced screening charge for transit passengers. There is a separate terminal navigation charge per tonne of aircraft MTOW levied by AirServices Australia.

Auckland

There is a traditional landing charge based on the aircraft's MTOW per landing and a structure of aircraft parking charges but these are not included in our calculations because the charges only apply after the aircraft has been parked for six hours. Passenger related charges consist of a passenger service charge payable by both arriving and departing passenger using any of the international terminal facilities. In addition, there are a security charge, a terminal service charge and a CAA levy payable per departing passenger.

There is a separate terminal navigation charge split into two components: Aerodrome Service and Approach Service charges. These are imposed by Airways New Zealand, based on a charge plus a variable charge based on the square root of the aircraft MTOW minus two tonnes.

Brisbane

There is no international landing charge at Brisbane. There is a separate rescue and firefighting charge levied by AirServices Australia with a unit rate which increases with aircraft size and a parking charge per 24 hours based on MTOW for aircrafts parked for more than two hours. There is also a passenger service charge and a government mandated charge per arriving and departing international passenger, with the former including an element intended to cover the remuneration of airside facilities, including the equivalent of a landing charge. Terminal navigation charges are imposed by AirServices Australia, based on the aircraft's MTOW.

Cairns

An international passenger service charge applies to arriving and departing passengers. International passenger CUTE and security charges are imposed on departing passengers only. There is a structure of aircraft parking charges but these are not included in our calculations because the charges only apply after the aircraft has been parked for six hours. Terminal navigation and rescue and firefighting charges are imposed by AirServices Australia, based on the aircraft's MTOW.

Christchurch

There are separate fixed charges, based on aircraft type, for airfield use and terminal use, per aircraft departure. There is no separate specified aircraft parking charge. Aerodrome Service and Approach Service charges are imposed by Airways New Zealand, based on a combination of charge plus a variable charge based on the square root of the aircraft MTOW minus two tonnes. In addition, there are a security charge, a baggage reconciliation charge and a CAA levy payable per departing passenger.

Melbourne

There is an international passenger terminal charge for passenger aircraft imposed per arriving and departing passenger. There are passenger security and passenger screening charges payable per departing passenger. There is a structure of aircraft parking charges but there are no charges for commercial passenger aircraft. Terminal navigation and rescue and firefighting charges are imposed by AirServices Australia, based on the aircraft's MTOW

Perth

An airfield usage charge and an international passenger terminal charge are both applied to arriving and departing passengers. There are baggage handling system, security recovery,

passenger screening and checked bag screening charges payable per departing passenger. Aircraft parking charges apply per aircraft per day in excess of a two hour stay, so this is included in our calculations in the case of the two long haul aircraft types which are assumed to be parked for four hours. Terminal navigation and rescue and firefighting charges are imposed by AirServices Australia, based on the aircraft's MTOW.

Sydney

There is a terminal charge per arriving and departing passenger, which we have weighted to take account of a transfer passenger exemption. An aircraft parking charge is applied per 15 minutes, with no free time. Terminal navigation and rescue and firefighting charges are imposed by AirServices Australia, based on the aircraft's MTOW.

Wellington

Landing charges are payable on a per arriving and departing passenger basis. There is also an international passenger departure charge. There is a structure of aircraft parking charges but these are not included in our calculations because the charges only apply after the aircraft has been parked for six hours. There is a separate terminal navigation charge split into two components: Aerodrome Service and Approach Service charges. These are imposed by Airways New Zealand, based on a charge plus a variable charge based on the square root of the aircraft MTOW minus two tones. In addition there are a security charge, a baggage reconciliation charge and a CAA levy payable per departing passenger.

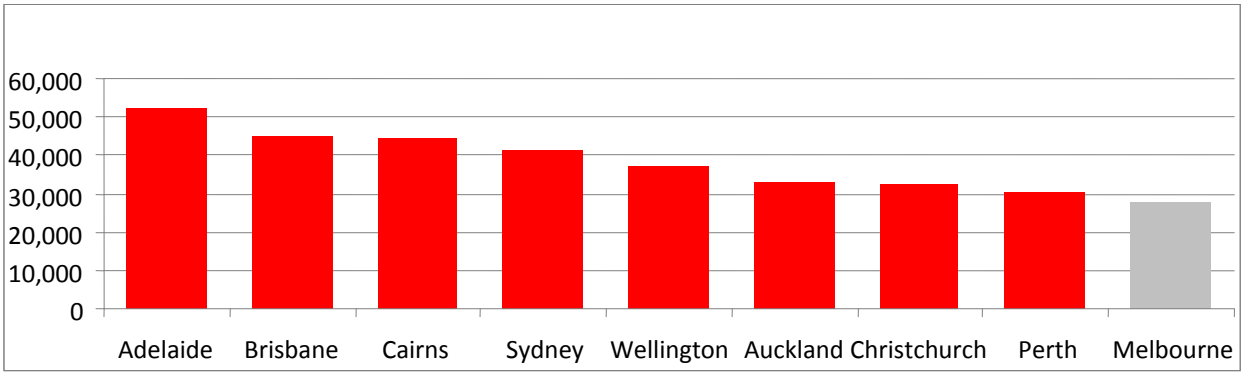
4 THE POSITION OF MELBOURNE AIRPORT'S CHARGES IN A REGIONAL CONTEXT

For the sample of nine airports included in this study, the charges calculated using the methodology described in the previous section are shown in Table 4 below, and illustrated in Figure 1 below. The charges are shown in absolute terms in SDRs, and indexed against the highest ranking airport, which is Adelaide. The calculated amounts in each charge category are shown in local currency at Annex 1.

Table 4 Index of charges at the regional sample of nine airports, for eight aircraft types

	Total charges in SDRs	Index
Adelaide	52,423	100
Brisbane	45,110	86
Cairns	44,445	85
Sydney	41,530	79
Wellington	37,108	71
Auckland	33,136	63
Christchurch	32,167	61
Perth	30,355	58
Melbourne	27,961	53

Figure 1 Total charges for eight aircraft types at the regional sample of nine airports (SDRs)



Within this sample, Melbourne airport is ranked lowest, with total charges which are a little more than half of those at the most expensive airport.

Relative levels of airport charges may be influenced by many factors, including ownership structure and the competitive and regulatory environment in which they operate. The sample of airports in this study is relatively homogenous in these respects, and this being so a relatively close (inverse) relationship between the size of the airport in passenger throughput terms and its charge levels might be expected. This is because the high level of fixed costs in airport operations will tend to mean that small airports need to charge more than large airports in order to achieve adequate levels of cost recovery.

Against this background, it is not particularly surprising to find Adelaide and Cairns among the most expensive of the Australian airports, since they are the smallest within this sample in terms of passenger numbers. Brisbane's position is affected by significant levels of capital expenditure in recent years, as discussed in Section 6 below, which have put pressure onto charge levels. The disparity between the levels of charges at Sydney and Melbourne is at first sight surprising, given that Melbourne's traffic levels are around 24% lower than those at Sydney, but relative

levels of capital expenditure at the two airports in recent years are also likely to have influenced these results.

Within the sample, the most significant shift in rankings has occurred in the case of Brisbane, which ranked in eighth position out of nine when we carried out our analysis in 2006, but is in second position in this analysis. The levels of Brisbane's Passenger Service Charge per passenger for the International Terminal have increased by a little over 50% since that for 2007/2008.

Table 5 Sample airport ranking positions in 2006 and 2011

	Ranking position in 2006	Ranking position in 2011
Adelaide	1	1
Brisbane	8	2
Cairns	3	3
Sydney	4	4
Wellington	2	5
Auckland	5	6
Christchurch	6	7
Perth	7	8
Melbourne	9	9

The sample of eight aircraft used to calculate the total charges are, as already discussed, those used in the publication *Review of Airport Charges*, and as such it is possible to relate the results above directly with those in the published work. This is done in Section 5 below. However, we recognise that in the case of the Australian airports there is a larger proportion of long-haul traffic in the international traffic mix than the proportion implied by the sample of eight aircraft in our published work. As a sensitivity test to examine the situation in a hypothetical all long-haul traffic mix compared to the results above, we have therefore extracted the charges calculated for the Boeing 747-400. These are shown in Table 6 below.

Table 6 Index of charges at the regional sample of nine airports, for Boeing 747-400 only

	Total charges in SDRs	Index
Adelaide	15,539	100
Cairns	10,934	70
Brisbane	10,769	69
Sydney	9,658	62
Wellington	8,119	52
Auckland	8,053	52
Perth	7,779	50
Christchurch	7,753	50
Melbourne	6,749	43

Three pairs of airports, namely Brisbane and Cairns, Auckland and Wellington, and Christchurch and Perth, exchange positions as a result of this test compared to the results in Table 3, while Melbourne's indexed position in relation to Adelaide reduces somewhat. These results are not in themselves surprising, since aircraft weight has no influence on charges at the Australian airports except in the case of the charges imposed by AirServices Australia.

5 THE POSITION OF MELBOURNE AIRPORT'S CHARGES IN THE CONTEXT OF THE RANKINGS CONTAINED IN LEIGHFISHER'S PUBLICATION *REVIEW OF AIRPORT CHARGES*

The calculated charges for the sample of airports in this study have also been introduced into the Index of charges contained in the 2010 edition of *Review of Airport Charges*, so as to put them into an international context. The sample of 50 airports included in the publication already contains Sydney, which ranks in 8th position in the sample. If Melbourne Airport were included in the main sample it would rank in 27th position out of 50.

Table 7 below shows the Index of charges including the eight additional airports, expanding the sample to 58, and indexing to the most expensive airport in this sample, Toronto. This indicates that Adelaide's charges are not only high in a regional context, but also in an international context. However, some caution needs to be used in relating charges at the smaller regional airports with those in a sample of large international airports, for the reasons discussed in the previous section. On the other hand the passenger level at Melbourne means that comparison can reasonably be made with a number of the airports in the main sample with similar passenger throughputs, including for example Dublin, Washington and Zurich. It is also noticeable that there are a number of much larger airports, including Beijing and Tokyo Narita, which have significantly higher charges than Melbourne.

Table 7 Worldwide airport charges Index 2010

	AIRPORT	SDRs	Index	Passengers 000s (Source: ACI) International	Total
1	Toronto	62,184	100	17,638.3	30,368.3
2	New Jersey-EWR	55,067	89	10,617.1	33,399.2
3	Osaka	52,639	85	9,351.6	13,448.3
4	Adelaide	52,423	84	516.2	6,933.9
5	Athens	51,031	82	10,029.8	16,135.2
6	Tokyo	45,730	74	30,894.5	32,135.2
7	Vancouver	45,209	73	7,499.1	16,176.5
8	Brisbane	45,110	73	4,116.1	18,885.8
9	Cairns	44,445	71	508.0	3,519.5
10	New York-JFK	44,122	71	21,899.7	45,915.1
11	Frankfurt	41,730	67	44,520.7	50,615.6
12	Sydney	41,530	67	10,644.8	32,997.7
13	London-LHR	40,658	65	60,651.3	65.907.9
14	Zurich	40,402	65	21,280.5	21,879.1
15	Moscow	38,995	63	9,846.3	14,708.2
16	Paris-CDG	38,208	61	53,032.5	57,812.0
17	Wellington	37,108	60	622.0	5,100.9
18	Vienna	35,533	57	17,383.6	18,058.1
19	Amsterdam	35,431	57	43,520.7	43,523.1
20	Berlin	33,054	53	7,538.9	14,154.9
21	Budapest	32,814	53	8,060.9	8,060.9
22	Brussels	32,811	53	16,770.4	16,771.5
23	Munich	32,758	53	23,347.2	32,628.8
24	Auckland	32,167	52	6,488.9	13,300.4
25	Beijing	31,160	50	14,098.4	65,372.0
26	Dublin	30,486	49	19,849.3	20,484.3
27	Perth	30,355	49	2,792.1	10,057.4
28	Johannesburg	29,570	48	8,153.8	17,446.2
29	Prague	28,463	46	11606.2	11,608.1
30	Dusseldorf	28,436	46	13,470.9	17,754.6
31	Washington	28,118	45	6,246.4	23,073.7
32	Melbourne	27,961	45	5,206.2	25,127.5
33	Copenhagen	27,804	45	17,620.4	19,622.2
34	Warsaw	27,783	45	7,472.8	8,300.0
35	Miami	27,351	44	15,970.4	33,886.0
36	Bangkok	26,624	43	28,834.6	39,044.9
37	Lisbon	26,560	43	11,070.2	13,241.6
38	Los Angeles	26,184	42	15,100.9	56,520.8
39	Seoul	25,754	41	28,080.5	28,459.8
40	Oslo	24,432	39	9,442.9	18,069.9
41	San Francisco	23,859	38	8,321.1	37,224.3
42	Mexico City	23,241	37	8,150.7	24,243.1
43	Stockholm	23,141	37	12,114.3	16,063.5
44	Milan-MXP	22,733	37	14,308.7	17,349.6
45	Madrid	22,168	36	29,066.1	47,951.0
46	Helsinki	21,167	34	10,236.5	12,609.0
47	Mumbai	20,918	34	7,628.8	24,371.5
48	Rome	20,834	34	26,852.6	33,415.1
49	Jeddah	20,702	33	9,832.5	15,921.8
50	London-LGW	20,662	33	28,699.0	32,369.9
51	Cancun	20,317	33	8,150.7	11,191.6
52	Dubai	19,129	31	40,104.1	40,104.1
53	Singapore	16,661	27	36,089.0	36,089.0
53	Hong Kong	14,467	23	44,979.1	44,979.1
55	Sao Paulo	13,849	22	8,458.9	21,684.8
56	Kuala Lumpur	12,557	20	19,401.7	29,398.5

6 BENCHMARKING FINANCIAL AND OPERATIONAL PERFORMANCE AT INTERNATIONAL AIRPORTS

6.1 Introduction

LeighFisher is pleased to present this report on international airport operational and financial performance. The report was requested by Melbourne Airport, which wished to gain a detailed independent perspective on the level of its own performance compared to that of other airports in the Pacific Rim region and elsewhere in the world. It is understood that the report is likely to be submitted to the Australian Productivity Commission during the forthcoming interim regulatory review.

The performance of Melbourne is compared with the airports listed in Table 8 below, which are shown alongside the reference codes used in the charts in this report:

Table 8 Airports included in performance benchmarking sample

Airport	Airport identifier	Total 2009 passengers (000)
Auckland	AKL	13,300
Brisbane	BNE	19,067
Calgary	CAL	12,175
Copenhagen	CPH	19,669
Manchester	MAN	18,824
Melbourne	MEL	25,249
Perth	PER	10,064
Stockholm	STO	16,099
Sydney	SYD	33,451
Vancouver	YVR	16,348
Vienna	VIE	18,114
Washington	IAD	23,074

Source: ACI World Airport Traffic Report, 2009

The sample of airports has been selected on the basis of two criteria:

- They are all located in OECD countries; and
- They all operate on a scale comparable with those of the Australian airports.

These criteria were intended to ensure that there was a reasonable level of comparability within the sample. OECD country membership ensures that the costs of operation are broadly similar, to a much greater extent than would be the case if airports in, say, Africa had been included. The scale of operations is also relevant because it is often felt that airports achieve economies of scale as they grow larger. This is a complex issue, and one to which there is not a straightforward answer, but this complexity is avoided by selecting a sample which is reasonably homogenous in terms of throughput.

The time series of data used is from f/y 1995/96 to 2009/10 in all cases except Auckland (from f/y 1996/97).

The performance measures produced are:

- Aeronautical revenue per passenger;
- Total costs per passenger;
- Staff costs per passenger;
- Other operating costs per passenger;
- Staff costs as a percentage of operating plus staff costs;
- Passengers per employee;
- Return on capital employed;

- EBIT as a percentage of turnover;
- EBITDA as a percentage of turnover;
- Net cash generation per passenger;
- Fixed assets per passenger; and
- Capital expenditure per passenger.

The report consists of a discussion of the position of Melbourne Airport in respect of the performance measures listed above compared to the other airports in the sample.

6.2 Results of the performance analysis

6.2.1 Introduction

In this section we set out the results of our analysis of performance by the sample of airports listed at the start of the report. Given that the analysis covers a period of fifteen years' performance by twelve airports, we have for ease of graphical presentation divided the results into two categories, namely Melbourne and the southern hemisphere airports, and Melbourne and the northern hemisphere airports.

Graphs illustrating the airports' performance within each measure are included. The graphs are divided vertically to mark the Phase 1 privatisations in 1997, and the cessation of price regulation in 2002.

The results are summarised in Table 9 below. Throughout this section, financial measures are presented in both SDRs, as used in our published work, and in Australian Dollars.

Table 9 Regional and overall average performance benchmarking results, and results for Melbourne

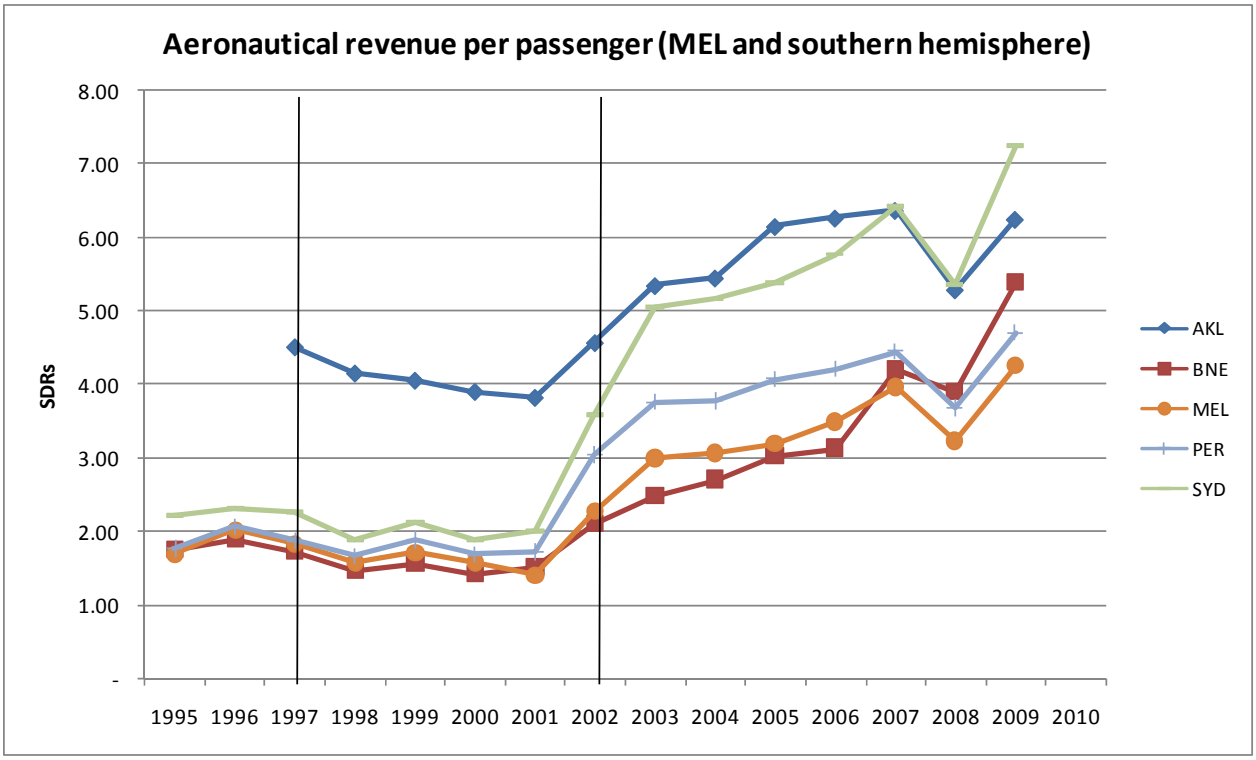
	Aeronautical revenue per passenger		Total costs per passenger	
	SDRs	AUDs	SDRs	AUDs
S hemisphere average	5.57	10.72	4.95	9.53
N hemisphere average	7.77	14.96	9.94	19.12
Overall average	6.86	13.20	7.86	15.12
Melbourne	4.25	8.19	3.60	6.92
	Staff costs per passenger		Other operating costs per passenger	
	SDRs	AUDs	SDRs	AUDs
S hemisphere average	0.81	1.56	2.21	4.25
N hemisphere average	3.11	5.98	3.73	7.18
Overall average	2.15	4.14	3.10	5.96
Melbourne	0.52	1.00	1.89	3.64
	Staff costs as a percentage of operating and staff costs		Passengers per employee	
	%		pax	
S hemisphere average	26.6%		95,137	
N hemisphere average	41.9%		31,266	
Overall average	35.5%		57,879	
Melbourne	21.5%		141,628	

	Return on capital employed		EBIT as a percentage of turnover	
	%		%	
S hemisphere average	9.4%		58.5%	
N hemisphere average	6.9%		22.5%	
Overall average	7.9%		37.5%	
Melbourne	17.7%		62.4%	
	EBITDA as a percentage of turnover		Net cash generation per passenger	
	%		SDRs	AUDs
S hemisphere average	74.3%		4.79	9.22
N hemisphere average	47.5%		0.19	0.36
Overall average	58.7%		2.10	4.05
Melbourne	74.8%		3.60	6.93
	Fixed assets per passenger		Capital expenditure per passenger	
	SDRs	AUDs	SDRs	AUDs
S hemisphere average	94.25	181.40	4.07	7.83
N hemisphere average	65.86	126.76	5.95	11.45
Overall average	77.69	149.53	5.17	9.94
Melbourne	60.72	116.86	3.55	6.83

Source: LeighFisher analysis. SDR to Australian Dollar exchange rate dated 1July, 2009, i.e. 1.92462

6.2.2 Aeronautical revenue per passenger

This is a simple measure of the level of revenue earned by airports from landing charges, aircraft parking charges and passenger-related charges. This revenue source will be affected by price regulation, as applied in Australia between the time of the first airport privatisations and 2002, and it may also be affected by competitive pressures from other airports.



Performance at the three smaller Australian airports was closely matched throughout the period leading up to, and immediately after, privatisation. This reflects the fact that at that time aeronautical charges were common-rated at the main Australian airports, so that any differences

in unit aeronautical revenues were due to differences in aircraft size and the numbers of passengers per aircraft.

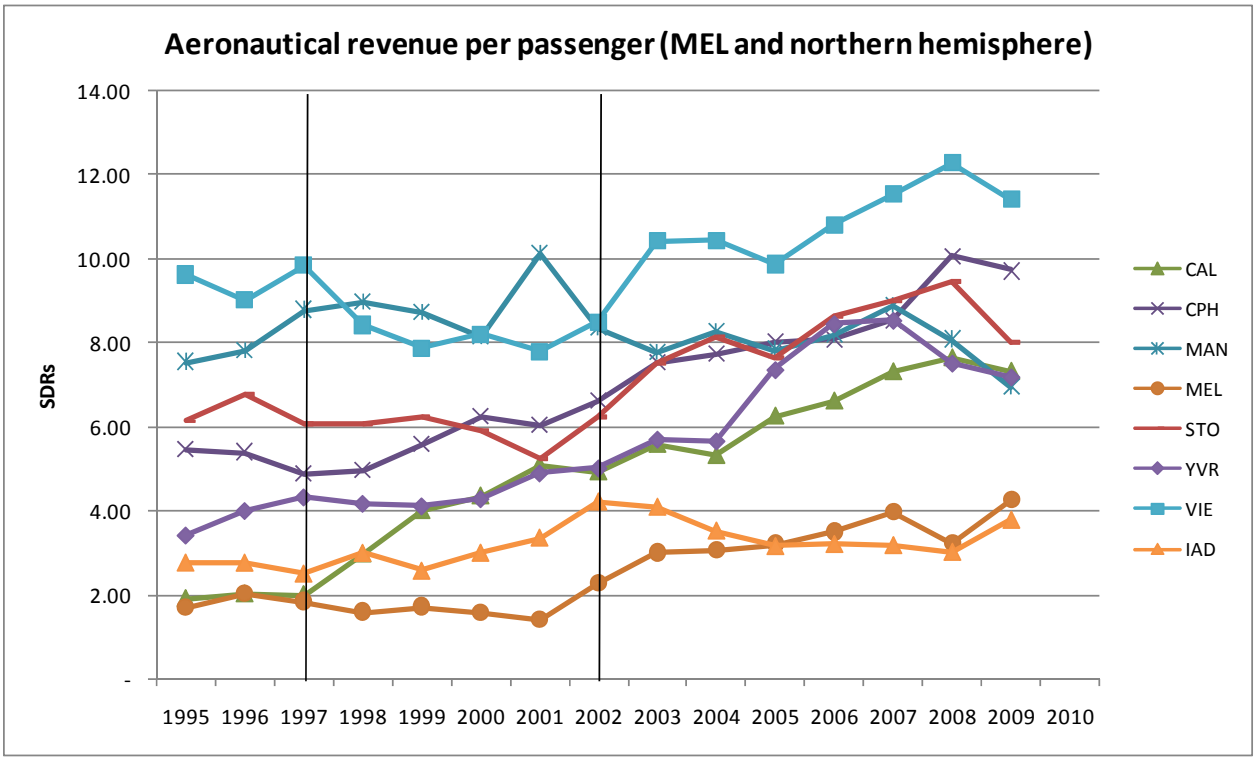
The price regulation which accompanied the Phase 1 privatisations does not appear to have made a significant difference to levels of unit aeronautical revenue. This suggests that the real reductions in prices were balanced in overall revenue terms by increases in passenger numbers – indeed the price control formulae resulted in price reductions in nominal terms in some years.

Within the southern hemisphere sample, there has been a very clear upward trend in Australia since 2001/02. Increases at Sydney have been particularly marked, and by 2005 its performance level matched that of Auckland, which outperformed the other airports in the group by a substantial margin up to 2002.

At least two factors account for these increased revenues.

- In the case of the Phase 1 airports, price increases that occurred both immediately before and after the removal of price controls in June 2002. In the case of Sydney, where the largest increase occurred, this was a result of an extensive inquiry by, and with the approval of, the regulator;
- Increasing security charges leading to significant increases in aeronautical charges, since the costs were passed directly to the passengers.

In 2008/09, aeronautical revenues per passenger in SDRs decreased at several airports in the southern hemisphere, including Melbourne. This is principally the result of a weakening of the Australian Dollar: when measured in Australian Dollars, aeronautical revenue per passenger for Melbourne increased slightly in this year.



There is again an upward trend at most of the airports, although it is less pronounced than in the case of the Australian airports. The European airports clearly generate higher levels of revenue, while Melbourne consistently produced lower levels than this sample, with the exception of Washington Dulles where aeronautical revenues per passenger have declined in some recent years.

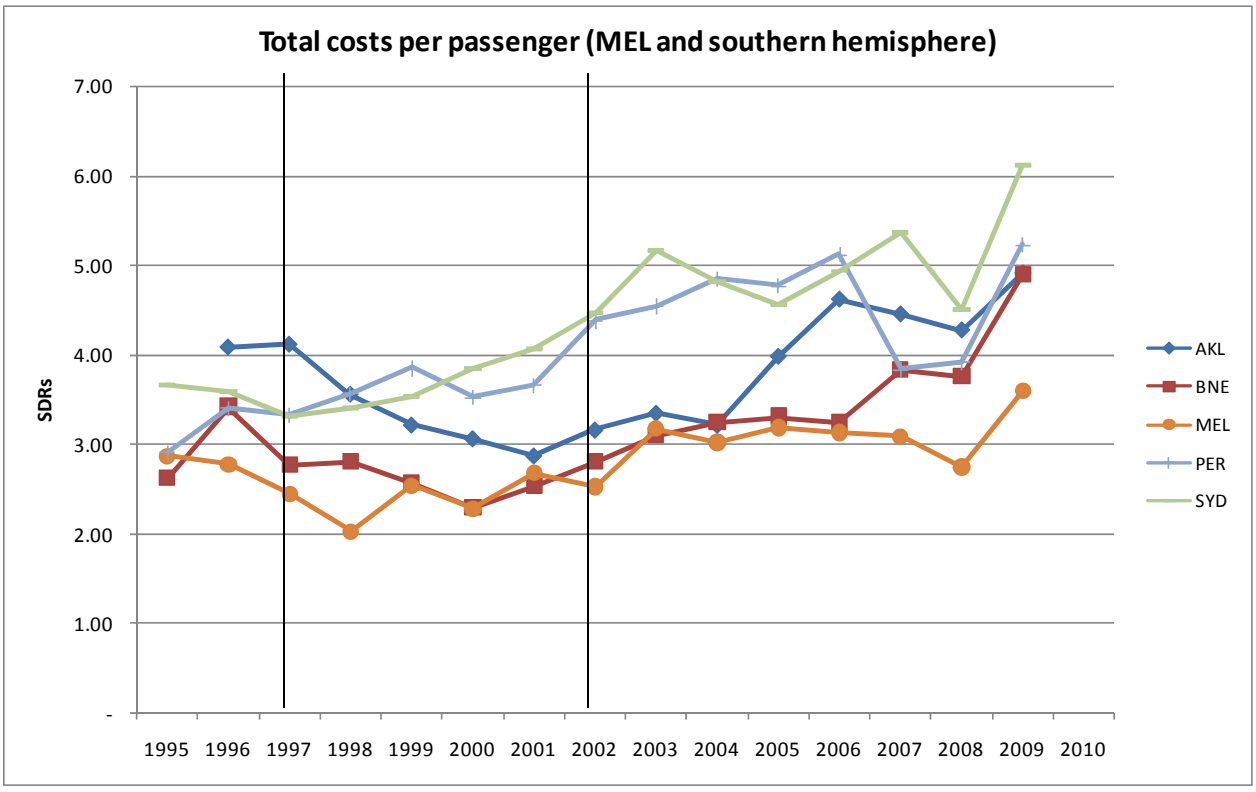
In the context of the northern hemisphere airports, it can be seen that although Melbourne's aeronautical revenue per passenger has risen it remains at a low level compared to the rest of the sample. There was a general upward trend between 2001 and 2007, mainly due to security

charges, and Melbourne's performance during this period was not significantly different to that of the rest of the sample.

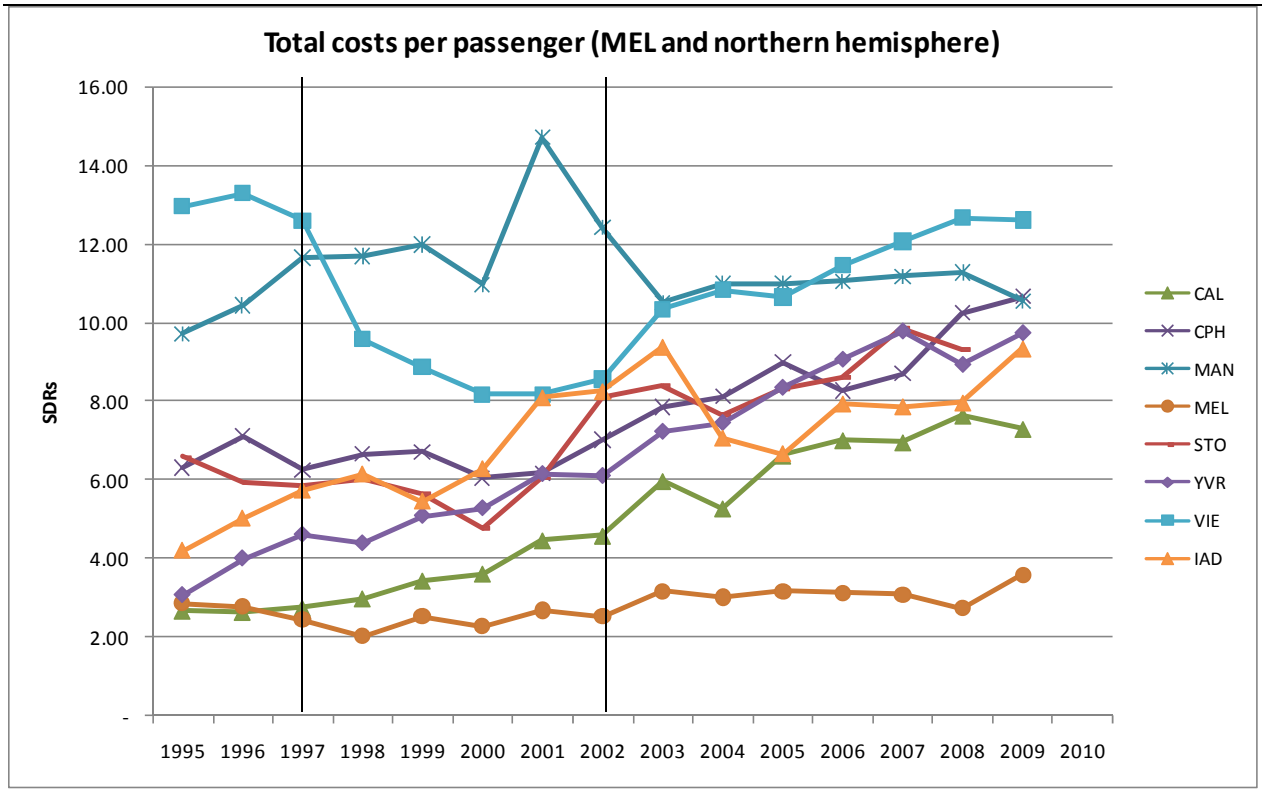
It should also be noted that a number of the other airports in the sample were subject to various forms of price control. Manchester was subject to a fairly stringent CPI-X formula (although price cap regulation was removed with effect from 1 April 2009); Vienna was subject to a formula based on passenger numbers, and Copenhagen was subject to extended periods of price freezes, reflecting agreements reached with airline users.

6.2.3 Total costs per passenger

This measure presents a picture of total operating expenditure, including depreciation but without financial costs or tax, on a per passenger basis.



Within the southern hemisphere group, Melbourne and Brisbane have historically produced the lowest cost figures throughout the period, although Brisbane's total costs per passenger have increased in recent years. Melbourne's total costs per passenger were the lowest in the sample in all years with the exception of 1995, 2001 and 2003, when Brisbane's costs were slightly cheaper.



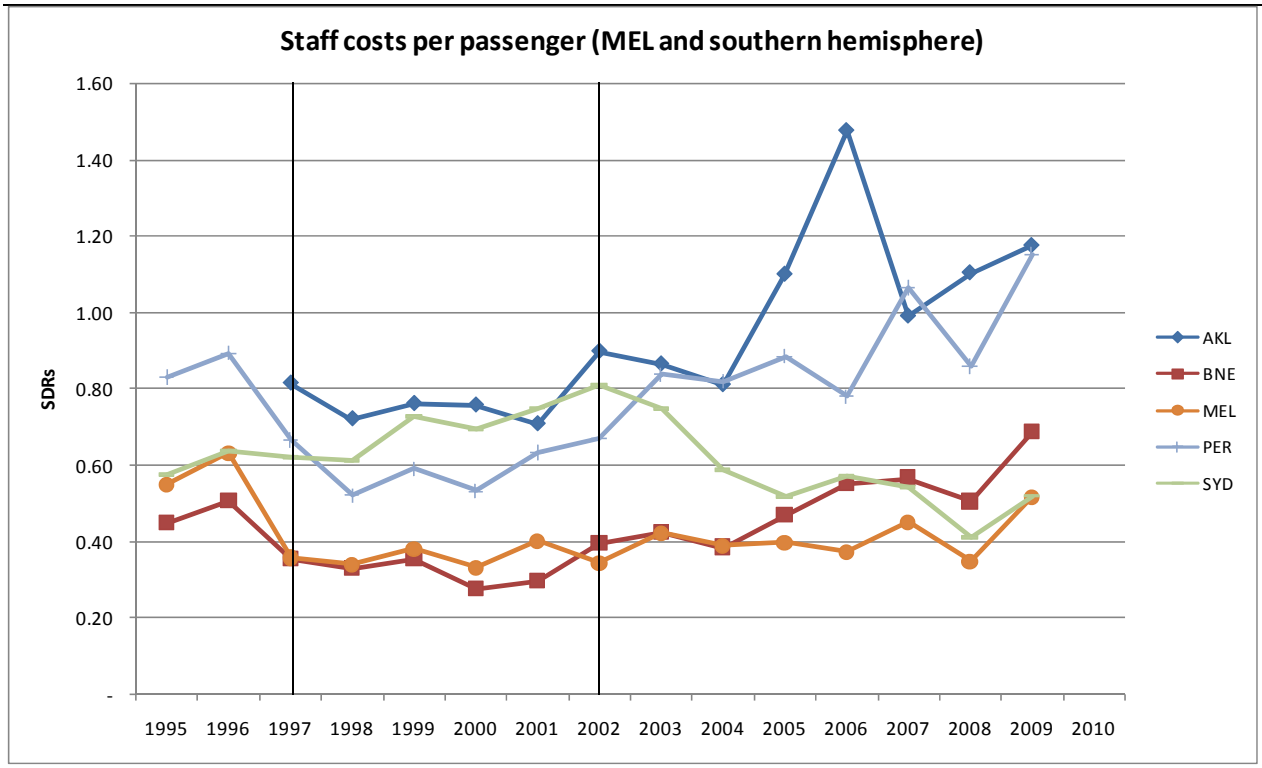
Compared to the northern hemisphere group, Melbourne cost levels have been significantly lower than all others except Calgary and Vancouver in the early years of the study period. Costs at the Canadian airports rose steadily through most of the period, largely due to the imposition of ground rents by Transport Canada. The Canadian airports are established on a not-for-profit basis and in overall financial terms these rents are offset by a relatively benign tax regime.

In the context of this sample, Melbourne's costs have remained relatively stable throughout the period, compared to a much stronger growth trend at the other airports.

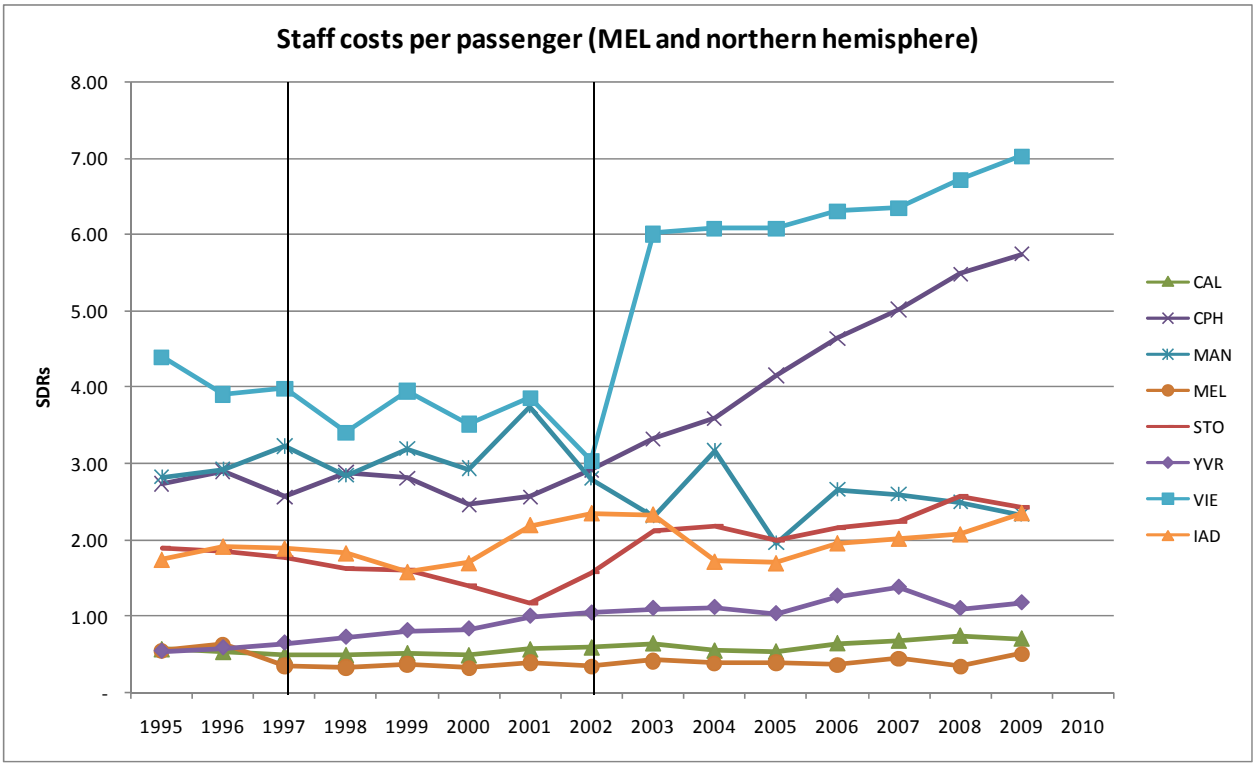
6.2.4 Staff costs per passenger

Since our airport performance benchmarking work began, Australian airports have had conspicuously lower staff costs and staff numbers than airports in almost all other parts of the world, with the Canadian airports again coming closest to matching Australian performance levels. For a number of years we felt that this difference must be due to the fact that the domestic terminals at the Australian airports were operated by the main domestic airlines, and we used an adjustment factor to build back notional staff costs and staff numbers to simulate a situation in which the terminals were operated by the airports themselves.

With the demise of Ansett and the operation of its Sydney, Melbourne and Perth terminals by the airport operators, the position which emerged was that in fact airport operator staff levels hardly changed. The conclusion to be drawn from this seems to be that fundamentally different staff deployment practices exist at Australian airports compared to much of the rest of the world. If the difference was due to a large degree of outsourcing then this might be expected to be reflected in a situation in which total costs at Australian airports were more comparable with their international peers, but the preceding analysis of total operating costs shows this not to be the case.



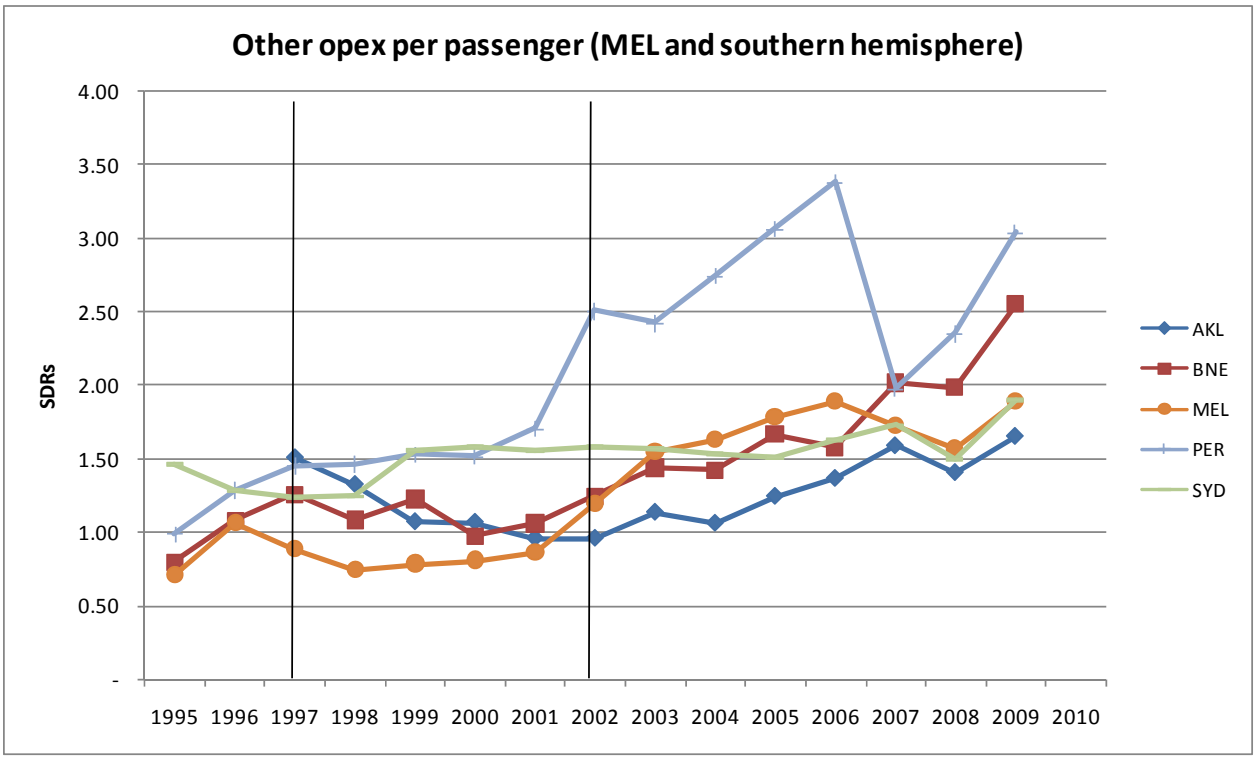
Against this background, Melbourne and Brisbane have again historically been the two airports in the southern hemisphere group with the lowest cost levels. Sydney has experienced a significant reduction in staff costs per passenger since 2002, and its performance is now in line with that of Melbourne and Brisbane. Auckland's staff costs per passenger were unusually high in 2006 due to share option costs.



Compared to the northern hemisphere group, Melbourne was again lower than all airports except in relation to the Canadian airports in the early years of the analysis. Since then a fairly constant gap has been maintained compared to Calgary, the airport with the next lowest level of costs. Within this group, Melbourne's staff costs appear to have been essentially constant.

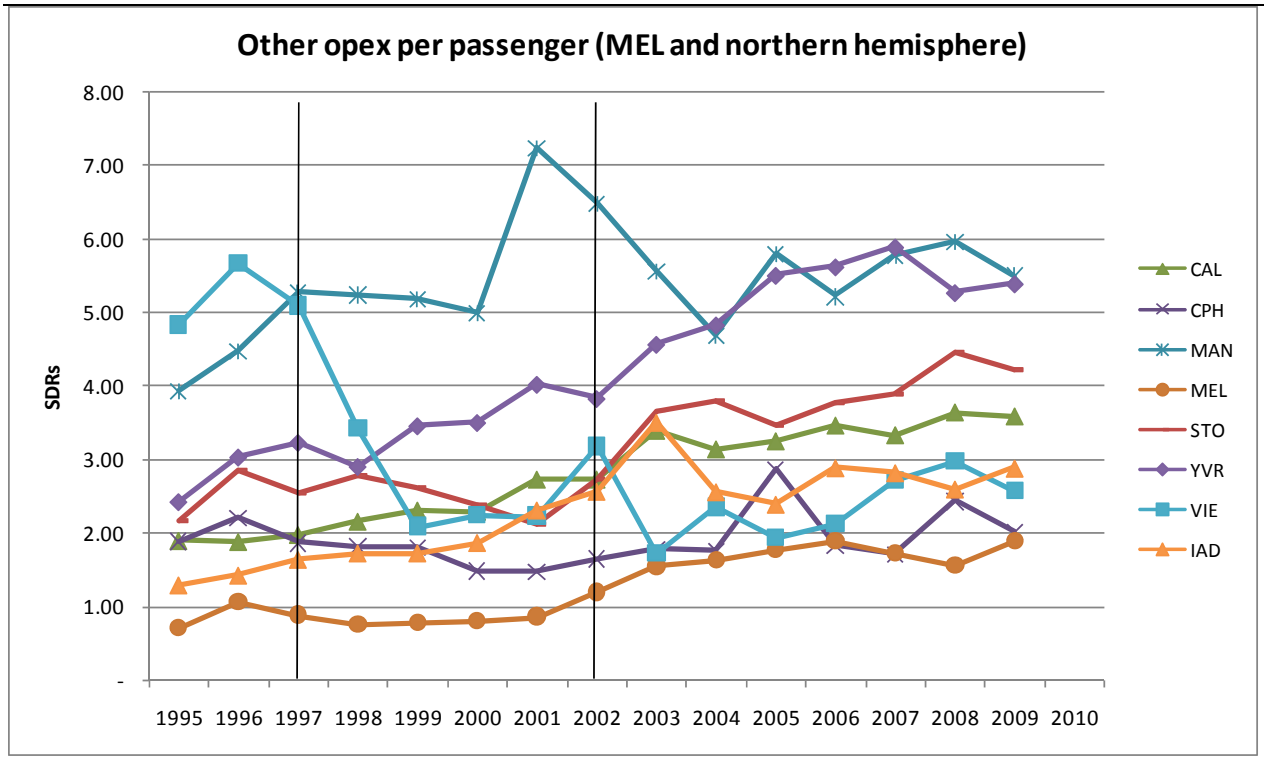
6.2.5 Other operating costs per passenger

This cost category covers all operating cash outflows (i.e. excluding depreciation) apart from staff-related expenses. It might therefore be expected to highlight areas where low levels of staff cost can be accounted for by high levels of outsourcing.



Although Melbourne ranked lowest in this measure for some of the period under review, its costs rose between 2002 and 2006, at a time when Brisbane and Sydney have remained relatively constant or trended downwards. However, this result needs to be put into the context of the fact that Melbourne ranks lowest in the sample in terms of both total costs and staff costs per passenger. It is also noted that in these years Melbourne Airport has experienced a heightened level of development work which is largely outsourced.

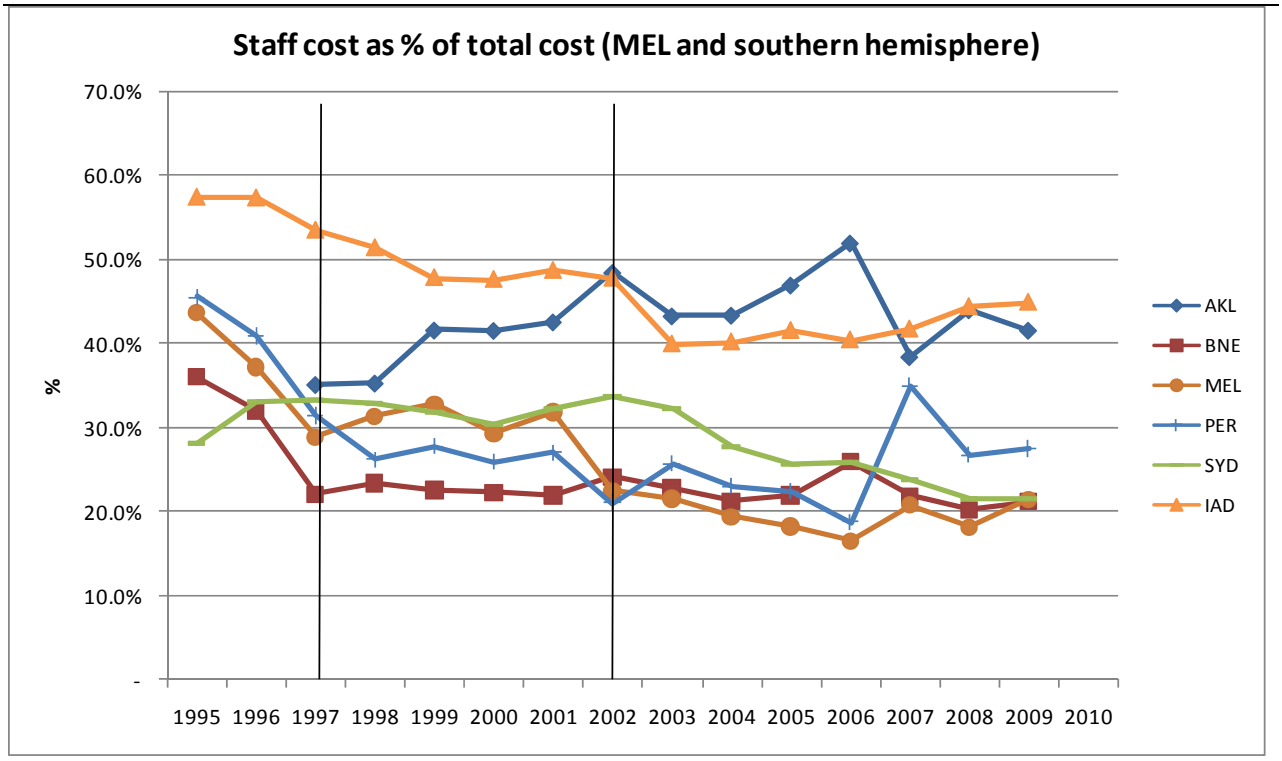
More recently, other operating costs per passenger have trended downwards, and the airport's performance in this area is now in line with that of Sydney and Auckland, the lowest cost airports in the sample.



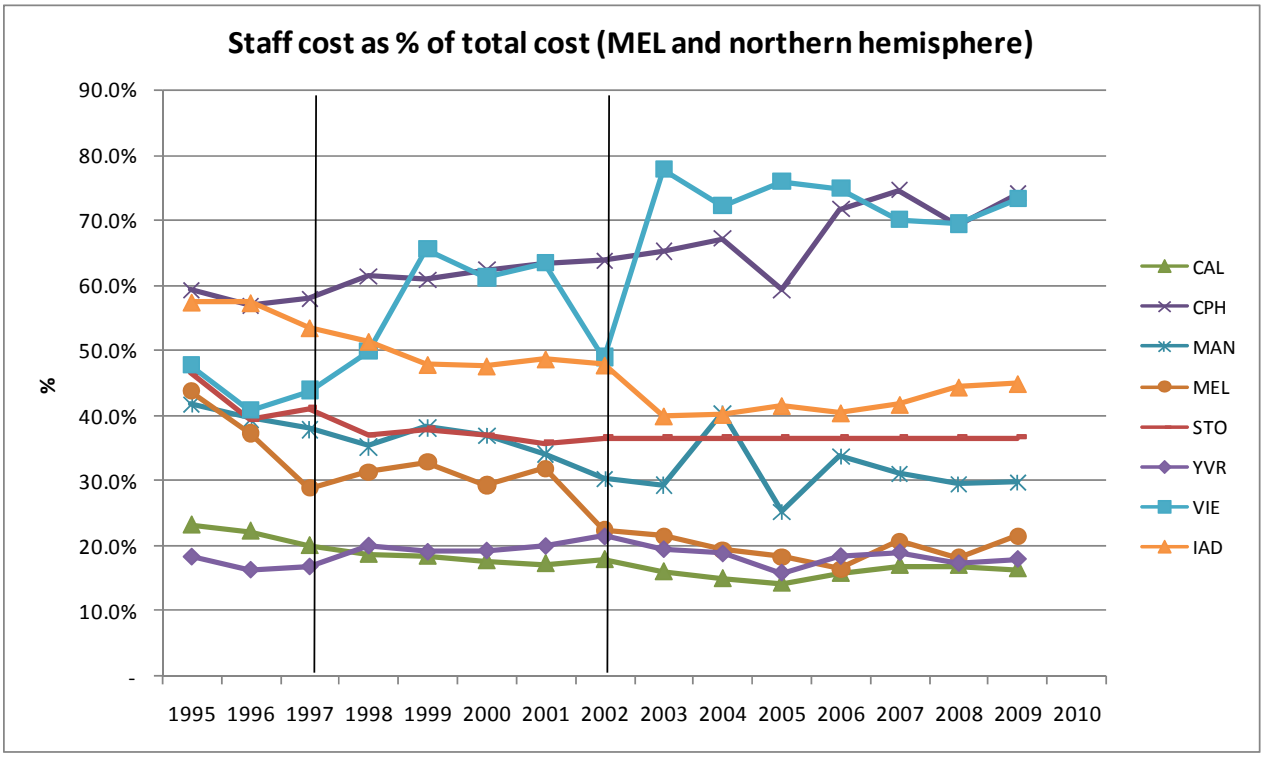
Compared to the northern hemisphere group, Melbourne has remained consistently in a low position in this measure, although following the increases which have taken place in the period from 2002 to 2006 Copenhagen became somewhat cheaper in 2006 and 2007. Vancouver's position in this measure does suggest that its good performance in terms of unit staff costs is partly due to outsourcing, and the same applies to a lesser extent in the case of Calgary.

6.2.6 Staff costs as a percentage of total operating costs

This measure is intended to demonstrate the proportion of cash outlays which is accounted for by personnel expenses, and helps to identify those airports where staff costs have a particular influence in driving up day-to-day cash expenditure. Assuming increasing staff productivity over time compared to a more linear relationship between air traffic growth and the consumption of utilities and maintenance, a falling trend in this measure might be expected.



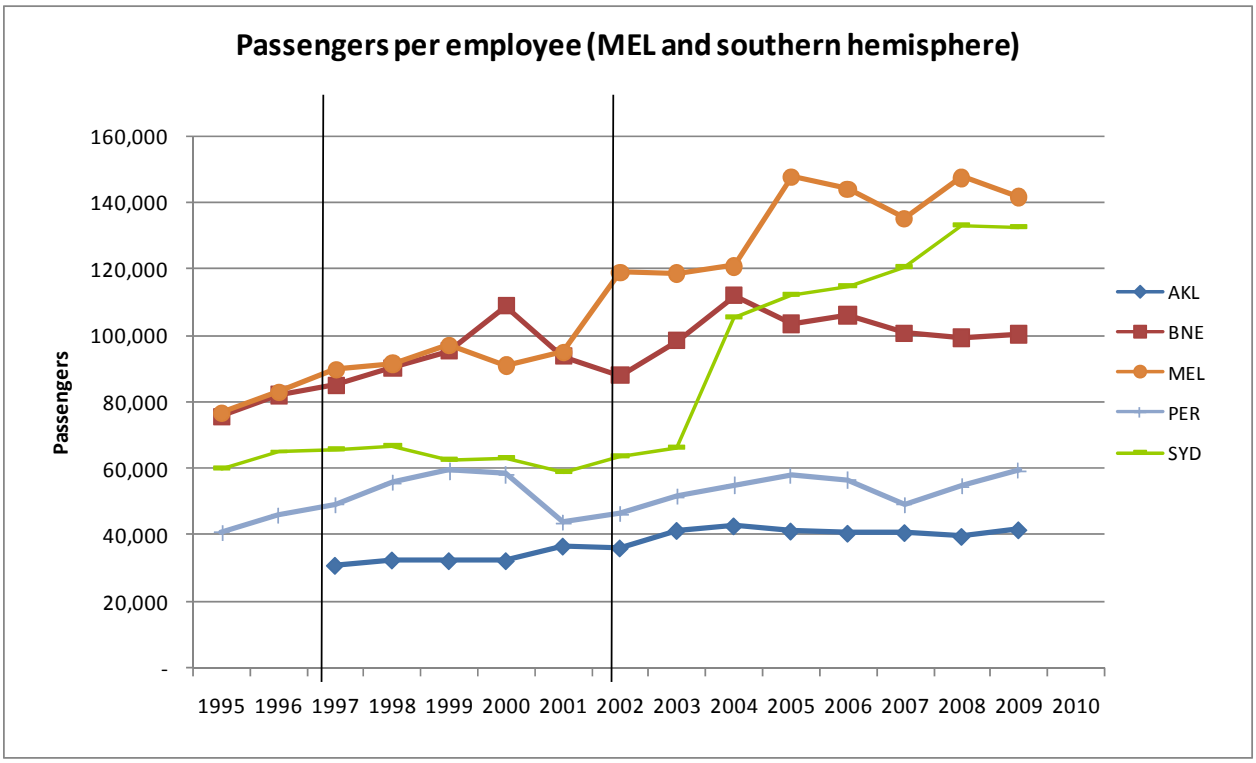
The proportion of staff costs to overall cash expenditure has clearly trended downwards at the southern hemisphere airports. The main decreases at the Phase 1 airports were again in the pre-privatisation years, while the improvement in Sydney's performance has mainly taken place in the past seven years. Melbourne's proportion has generally been the lowest within this group in recent years, but in 2009 Brisbane, Sydney and Melbourne were more or less in line. Auckland's staff costs as a proportion were unusually high in 2006 due to share option costs.



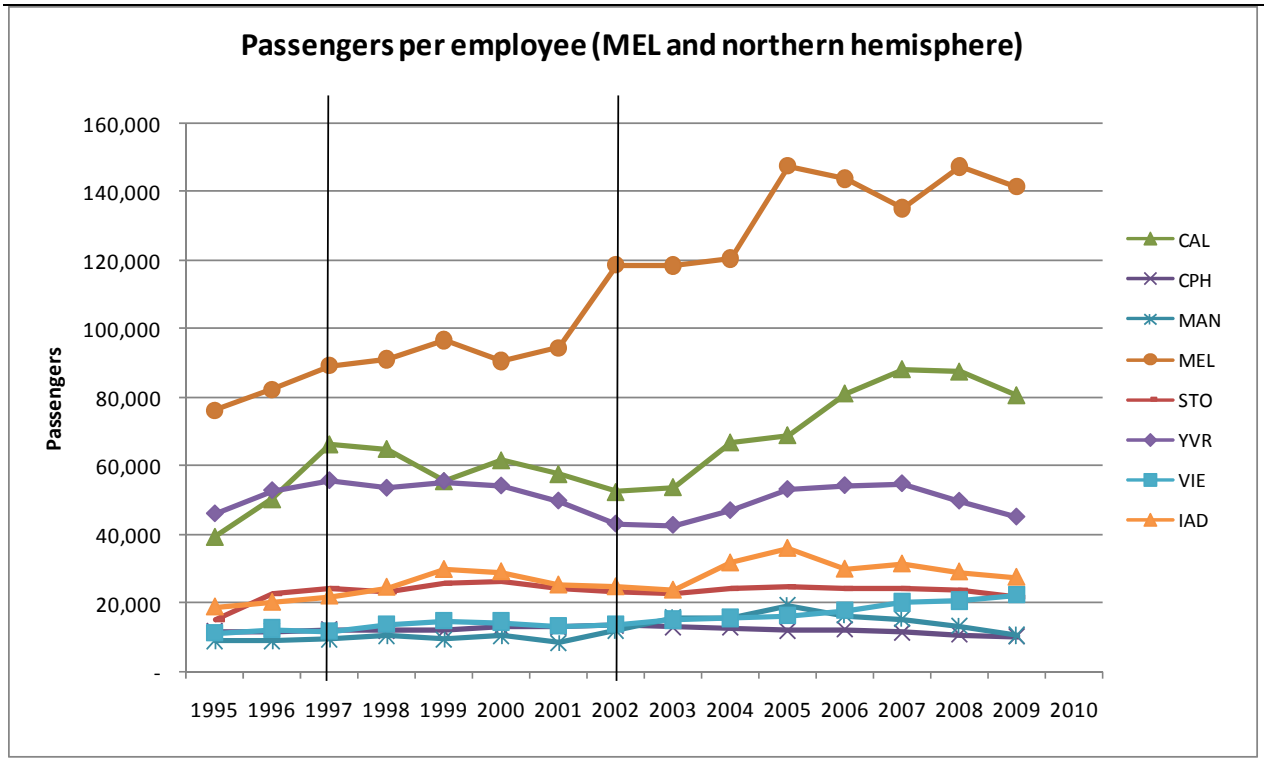
There has also been a general downward trend at the northern hemisphere airports with the exception of Copenhagen and Vienna. In this case the Canadian airports generally achieve a lower proportion than Melbourne, which gives some credence to the possibility that they are more reliant on outsourcing. However, Melbourne has achieved a much more significant reduction in this measure than the Canadian airports.

6.2.7 Passengers per employee

This measure is a very clear indicator of staff productivity. High productivity levels may indicate flexible working practices or high levels of outsourcing. In principle, low levels of productivity may be inevitable in cases where the airport layout results in some degree of staff duplication, as may be the case with multi-terminal airports where the terminals are not located close to each other. Again in principle, a rising trend over time could be expected as long as increasing economies of scale in staff time were still being achieved as traffic increases.

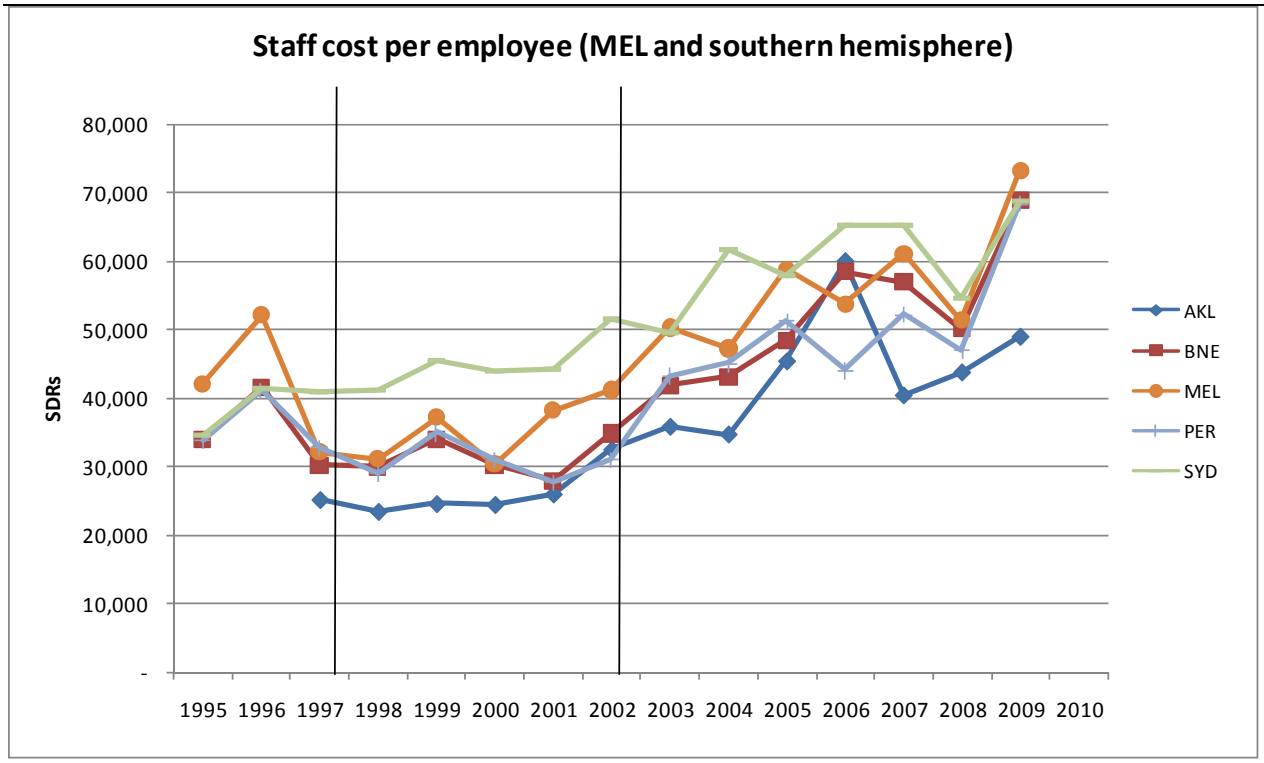


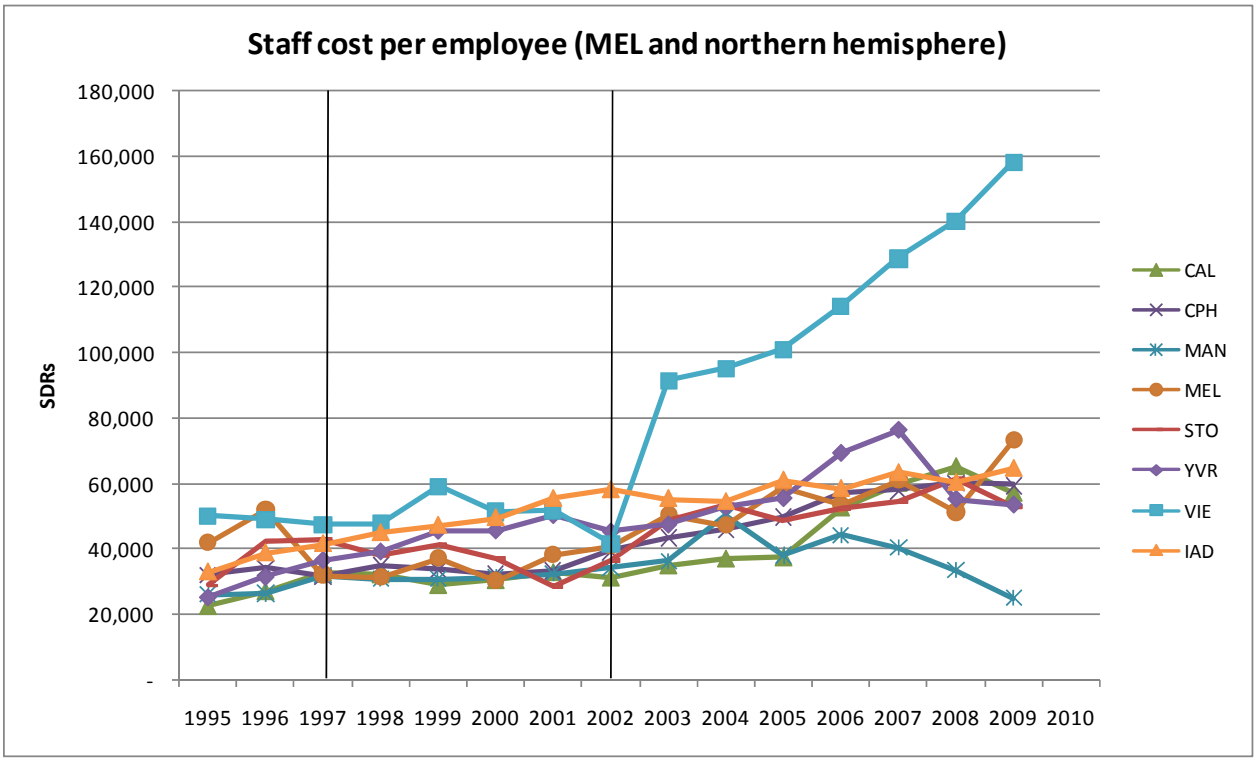
In general, the southern hemisphere airports conform to the expectation of a rising trend over time. Melbourne achieved the highest productivity in all years since 2001, although Sydney's productivity has increased significantly in recent years. Auckland's performance has consistently been at a lower level than at the Australian airports.



Compared to the northern hemisphere airports, Melbourne has performed significantly better than the Canadian airports throughout the period, with the latter themselves maintaining a clear advantage in comparison with the other airports in the sample. In this case it is much more difficult to identify a clear upward trend, with a number of the airports achieving a flat or even falling trend line for much of the period. All airports apart from Melbourne experienced a drop in productivity in the industry downturn following the September 11 2001 terrorist attacks.

The disparity in performance between the southern and northern hemisphere airports leads to the conclusion that the differences in staff costs are due to very relaxed staffing policies (or high levels of unionisation), assuming that wage differentials are not the cause. The following two charts demonstrate that southern hemisphere per capita wage rates are indeed comparable with those in the northern hemisphere. This has been the case throughout the study period and in fact Melbourne's pre-privatisation wage rates appeared high in comparison with those in the northern hemisphere.

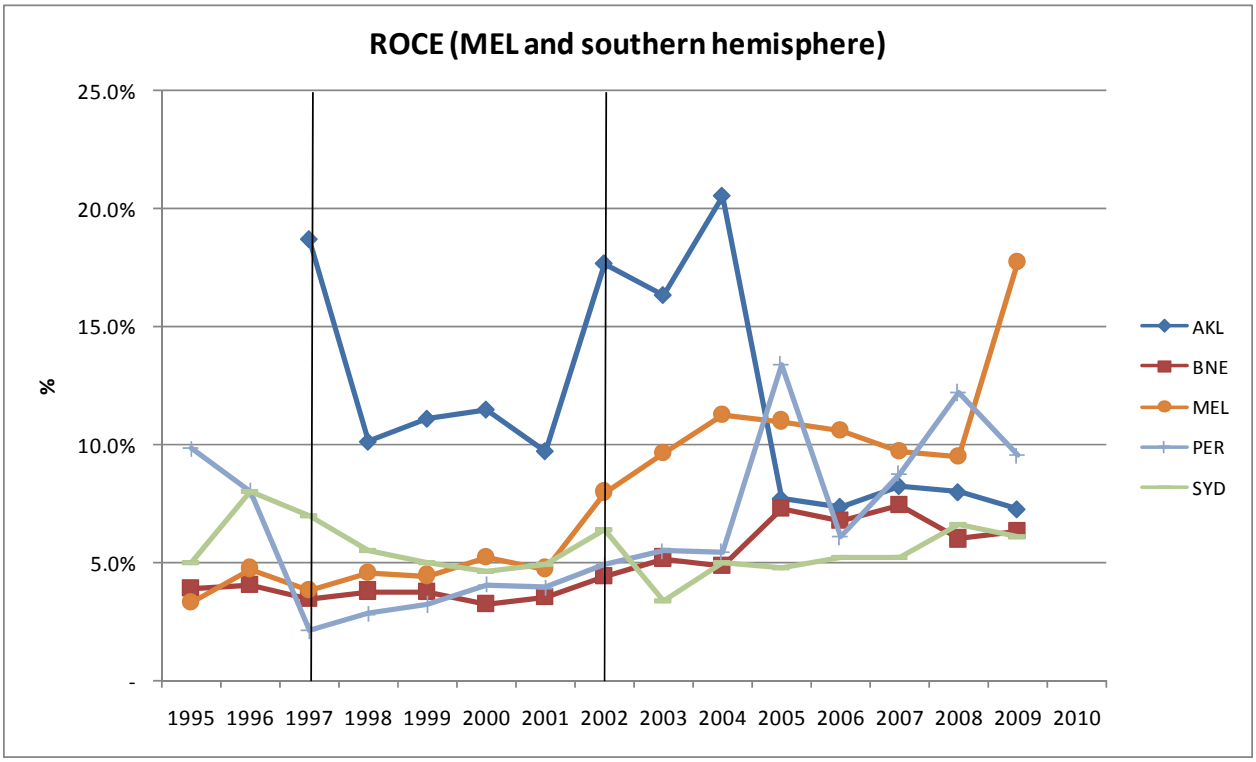




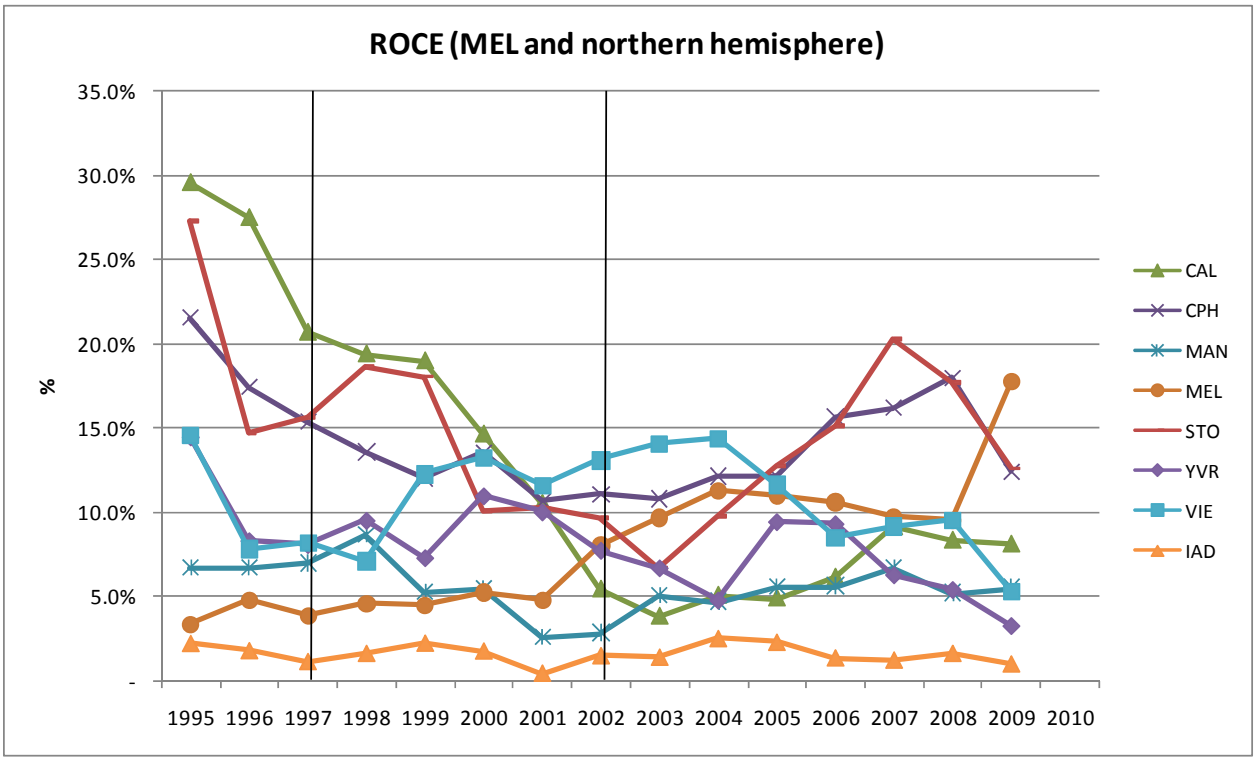
6.2.8 Return on Capital Employed (ROCE)

This measure is calculated by the division of operating profits before interest and tax by total capital including debt. Apart from the level of operating profit, this measure may be affected by:

- High levels of capital expenditure driving up debt, and high dividend payments which take funds out of the balance sheet, reducing ROCE; and
- Low asset valuations and low levels of issued share capital will increase ROCE.



Within the southern hemisphere group, Auckland initially outperformed the Australian airports, but performance has recently declined. Performance at the Australian was closely matched until 2001, but since then Melbourne has outperformed its compatriot airports. The recent significant increase is principally due to a substantial reduction in Melbourne's long-term liabilities.

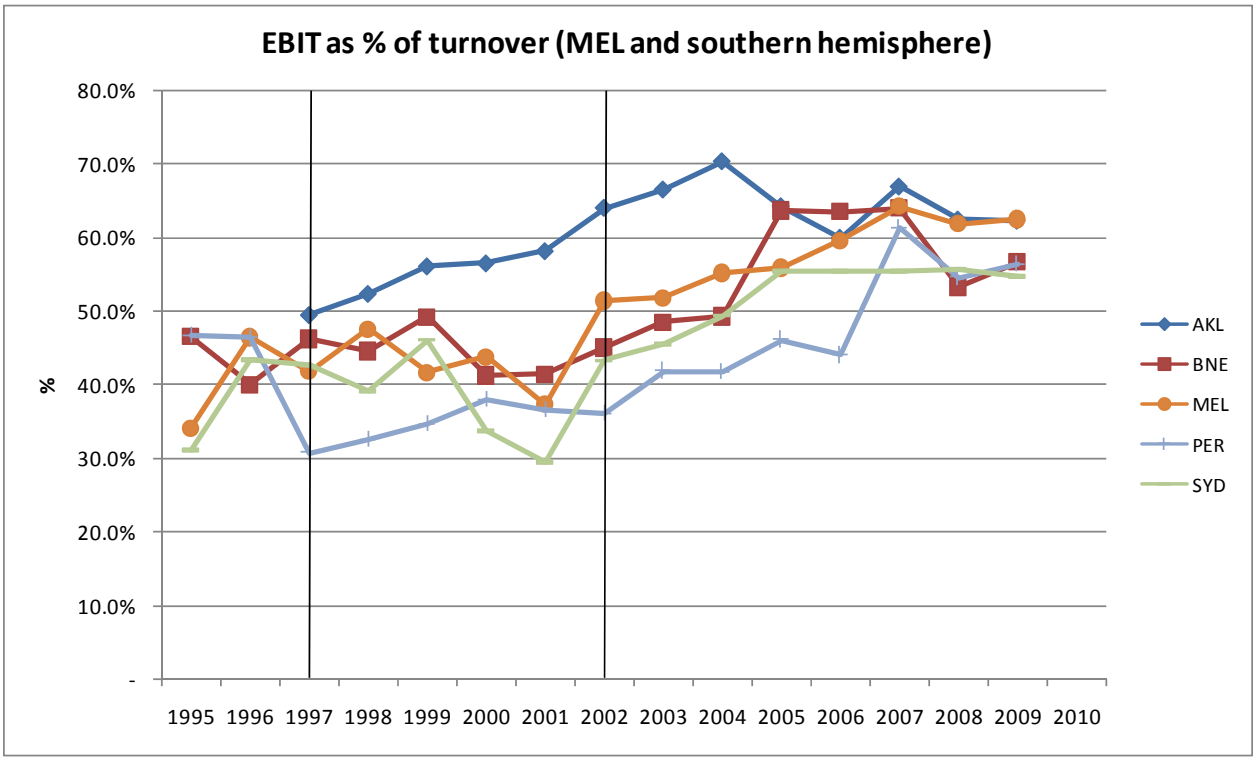


In the case of the northern hemisphere airports there is a much more diverse range of performance than in the case of the southern hemisphere airports, and in a number of cases the general trend was downwards. The Canadian airports' performance fell in the years leading up to 2003/04 as a result of the effect of increases in ground rent. Washington's relatively poor

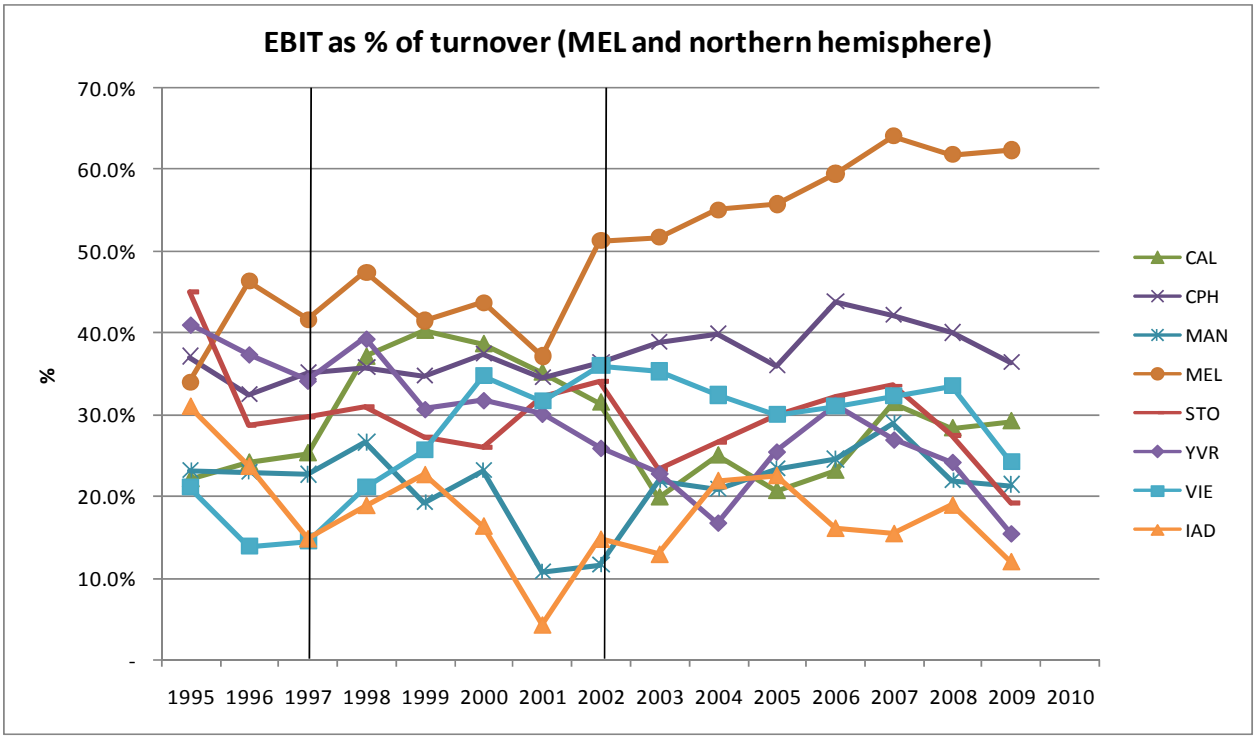
performance reflects the system of setting airport rates and charges in the US, which is effectively intended to prevent airports from operating at normal commercial levels of profitability.

6.2.9 EBIT as a percentage of turnover

EBIT is a straightforward indication of operating profit, and shows the financial contribution of operations allowing for depreciation but without financial costs.



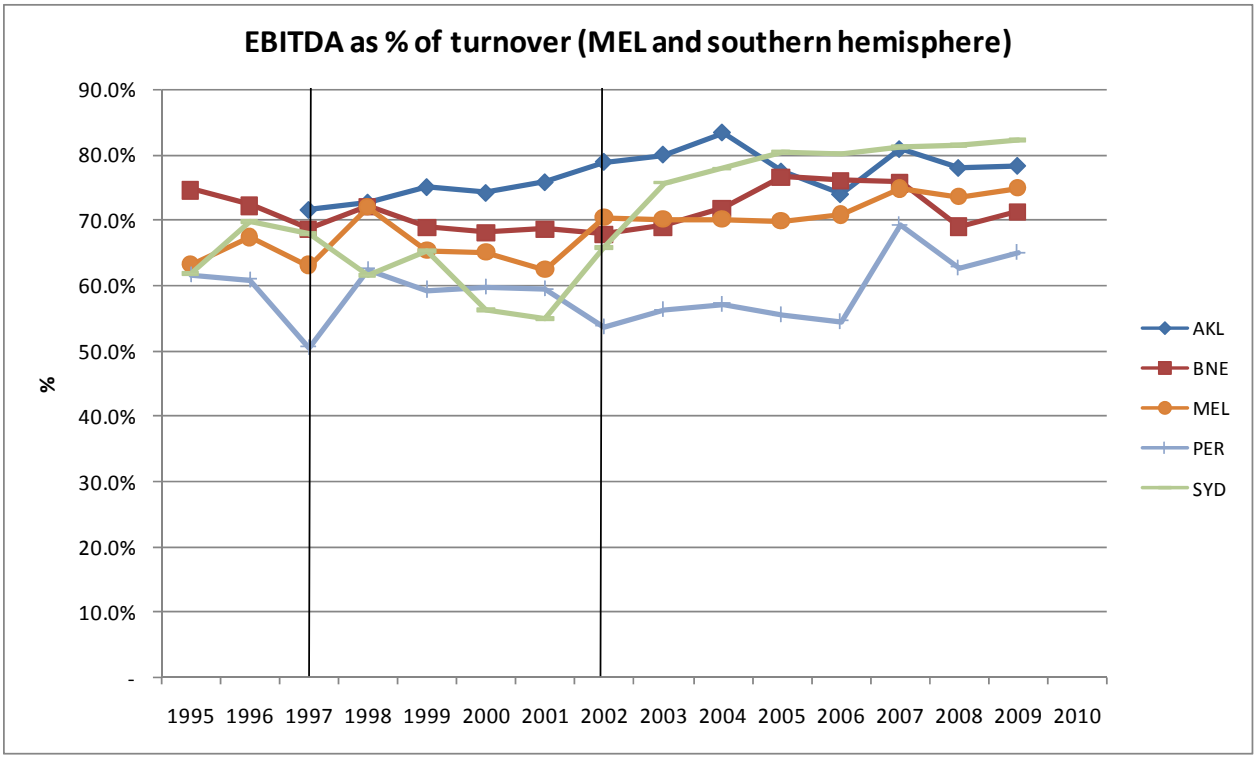
The average for the southern hemisphere airports is relatively high, with 30% of turnover representing the lower threshold. Within this group Melbourne has performed in the upper half of the performance range. Sydney's performance has increased sharply since privatisation.



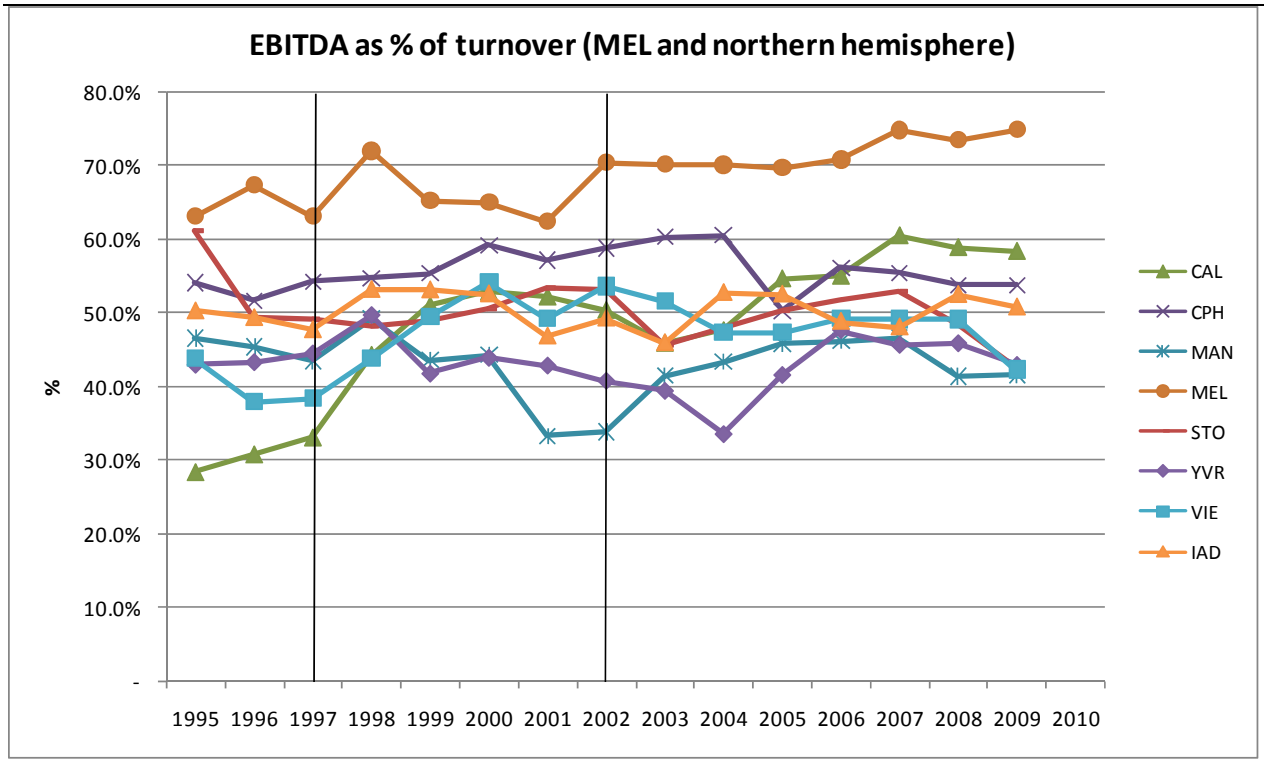
The range of performance of the northern hemisphere airports is lower, with most falling within a range of 10% - 40% compared to 30% - 60% in the case of the southern hemisphere airports. Washington's poor performance again reflects the pricing and profitability philosophy which is applied to US airports. Melbourne has outperformed this group in all years except one.

6.2.10 EBITDA as a percentage of turnover

This measure adds back depreciation to EBIT to give an indication of the cash result from day-to-day operations, again without the effects of financial results.



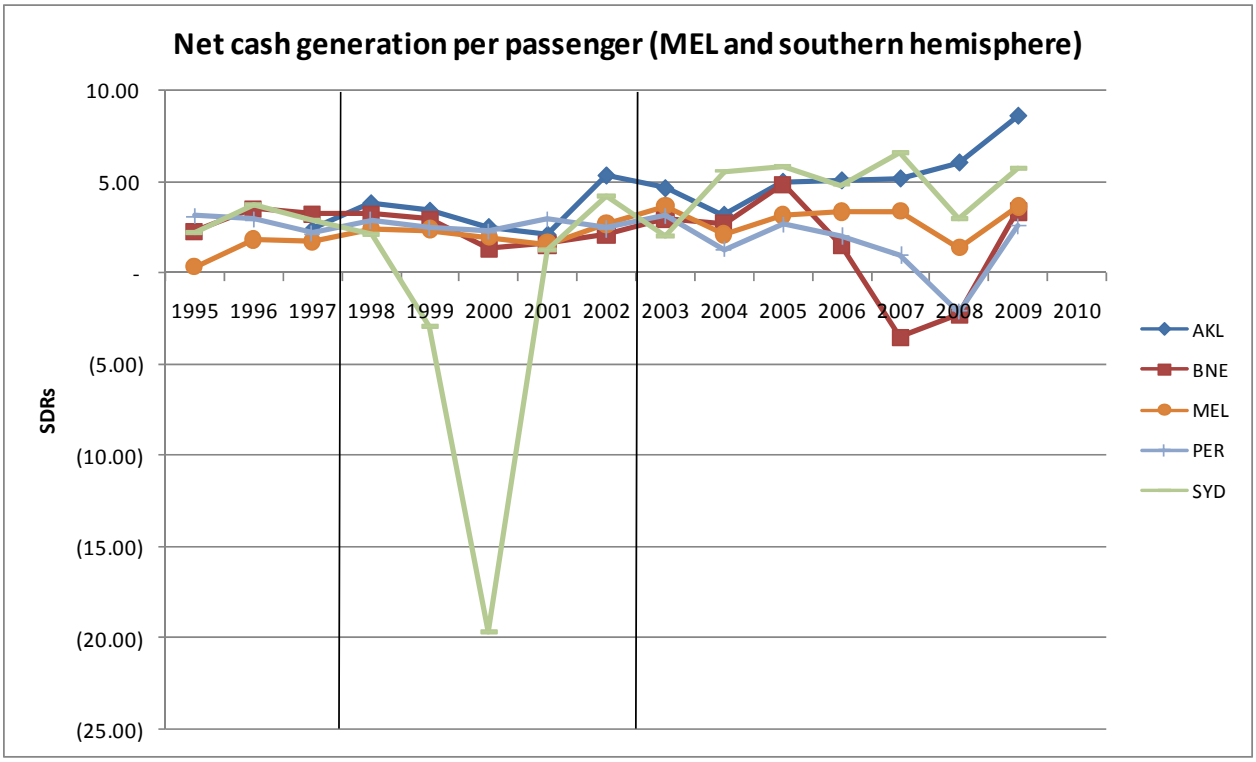
In this measure there is less of a difference between the results of the Australian airports and Auckland, reflecting higher levels of depreciation following a period of relatively high capital investment. Melbourne's performance in 2009/10 is 0.5% above the sample's average. Compared to its relative performance in EBIT, its EBITDA performance relative to Sydney and Brisbane has been lowered by its relatively low levels of depreciation, reflecting the age of its assets and a more efficient single terminal complex.



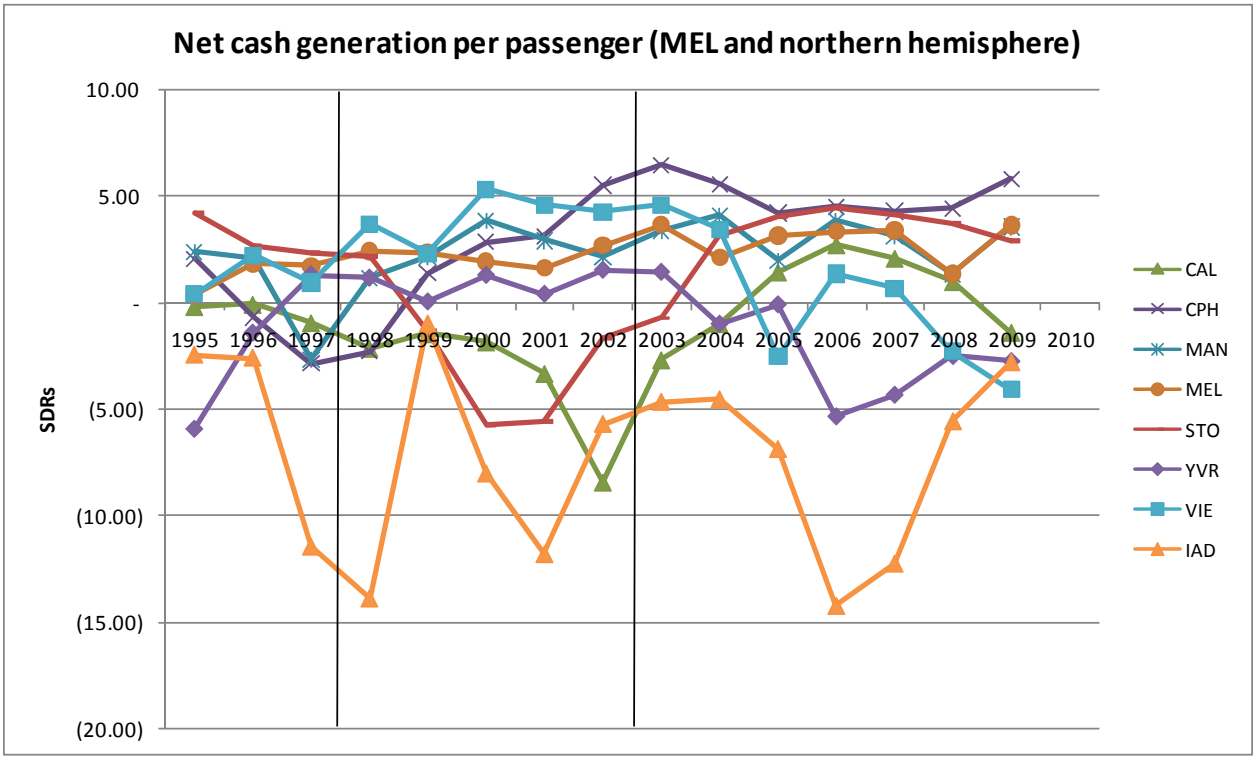
Unsurprisingly the northern hemisphere range is again lower, at 30% - 60% compared to 50% - 80% in the case of the southern hemisphere sample. Melbourne has again outperformed this sample.

6.2.11 Net cash generation per passenger

This measure adjusts operating profit by adding back non-cash depreciation and deducting capital expenditure, providing an indication of net cash flow. It is another measure of financial self-reliance, with poorly performing airports tending to have high levels of debt gearing. Low or negative performance levels are not unusual: given the generally healthy financial performance of the airport industry they are usually an indication of a period of heavy capital investment.



This chart is dominated by the effects of Sydney's very heavy investment programme leading up to the 2000 Olympics. Auckland's performance is again less distinguishable from that of the Australian airports than was the case with EBIT. Melbourne's performance has remained relatively constant.



Compared to the northern hemisphere group, Melbourne has generally performed in the top half of the sample. Most airports have seen fairly erratic changes. As already noted, in most cases this is likely to have been caused by capital investment programmes, although most airports' performance dipped in 2002/03 following the general industry downturn of the previous year.

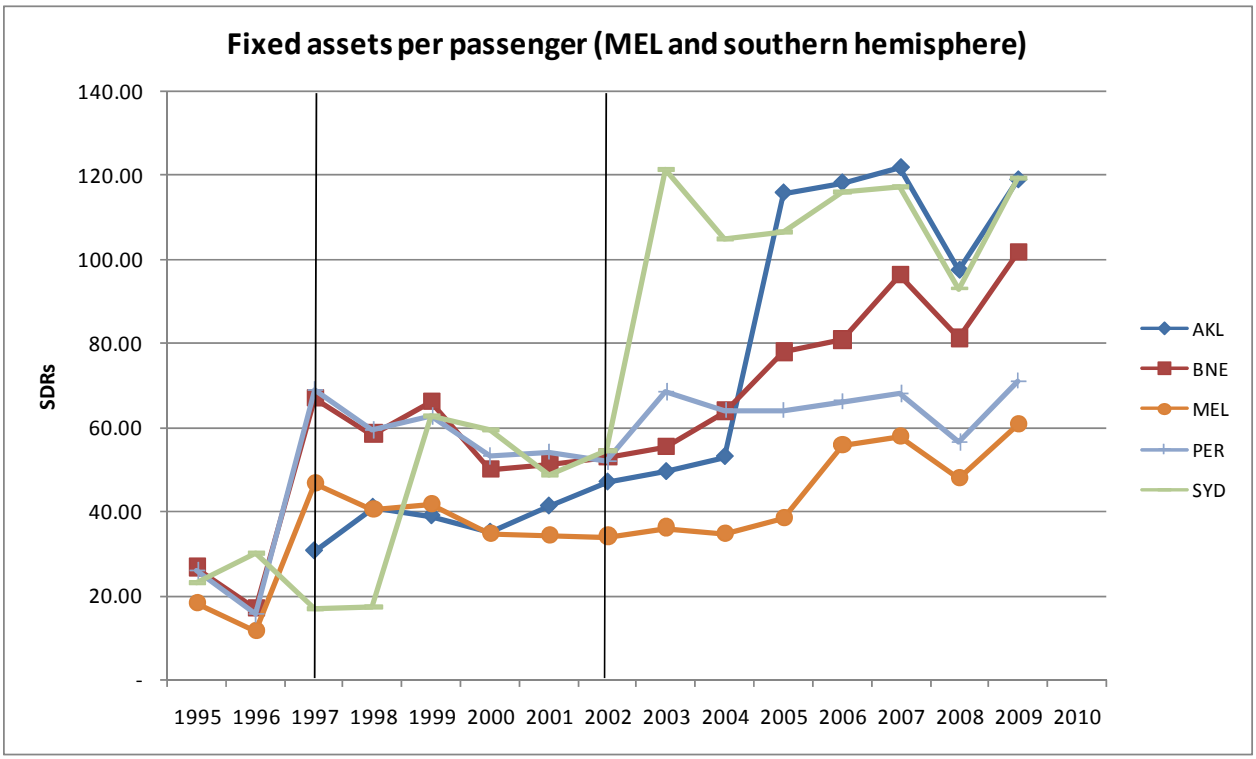
6.2.12 Fixed assets per passenger

This is a measure of capital efficiency. A characteristic is that the peaky nature of airport infrastructure investment can drive the measure up quite sharply, and relative levels are affected by the relative age of assets.

Comparisons within fairly homogeneous regions (as with the southern hemisphere group here) are useful, but within a broader geographical context some caution needs to be exercised in making comparisons, because of widely varying airport construction costs, and hence asset values, around the world. Different asset valuation policies also make comparisons difficult, with some airports revaluing assets on a regular basis, while others, including Melbourne, do not. Rapidly growing passenger numbers will of course also have a diluting effect on performance in this measure.

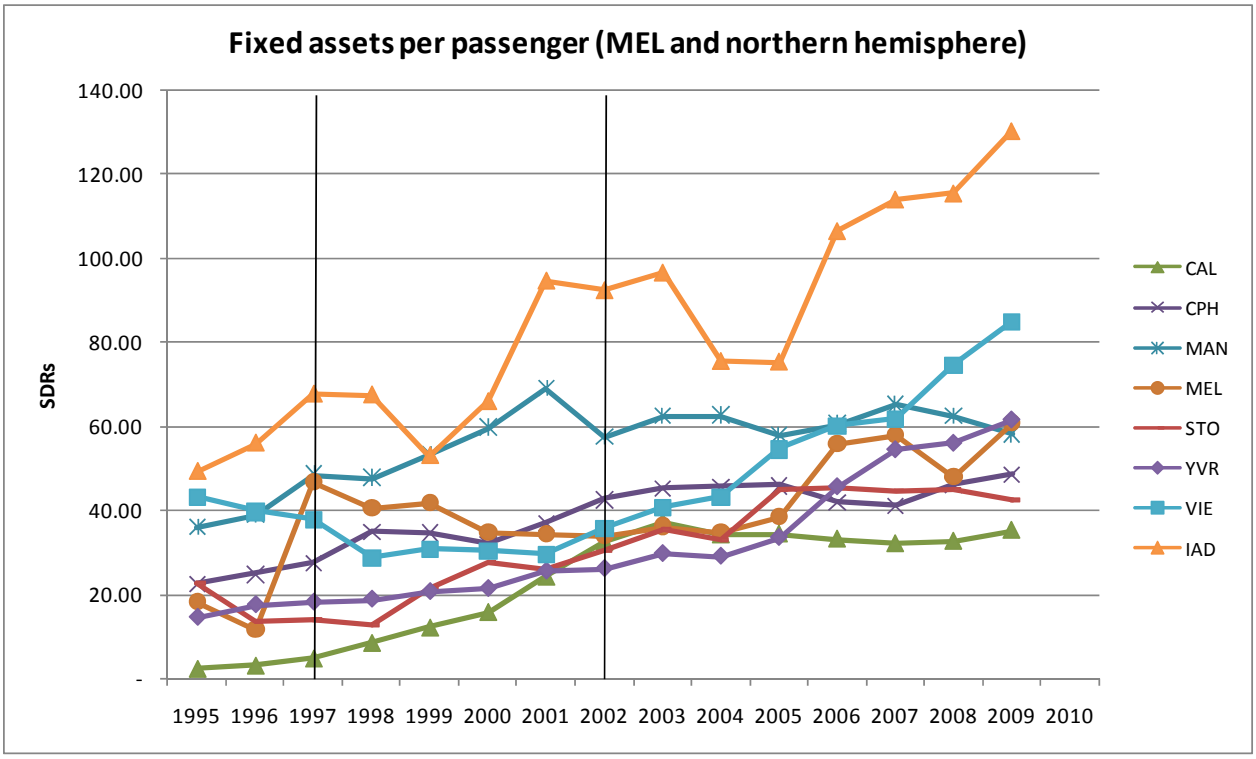
This measure needs to be treated with some caution. High levels of asset values can be a sign of unnecessary over-investment or may simply reflect unavoidable surplus capacity resulting from the lumpy nature of airport investment.

Fixed assets per passenger at the southern hemisphere airports are on average almost 40% higher than those of the northern hemisphere airports. This may reflect relative asset age, surplus capacity and the fact that all of the Australian airports' assets were restated on a more commercial basis at the time of privatisation and some, but not Melbourne's, have been revalued since.



This chart illustrates clearly the extent to which the Australian airports' assets were undervalued at the time of their administration by the FAC. Sydney's heavy investment prior to 2000 again stands out.

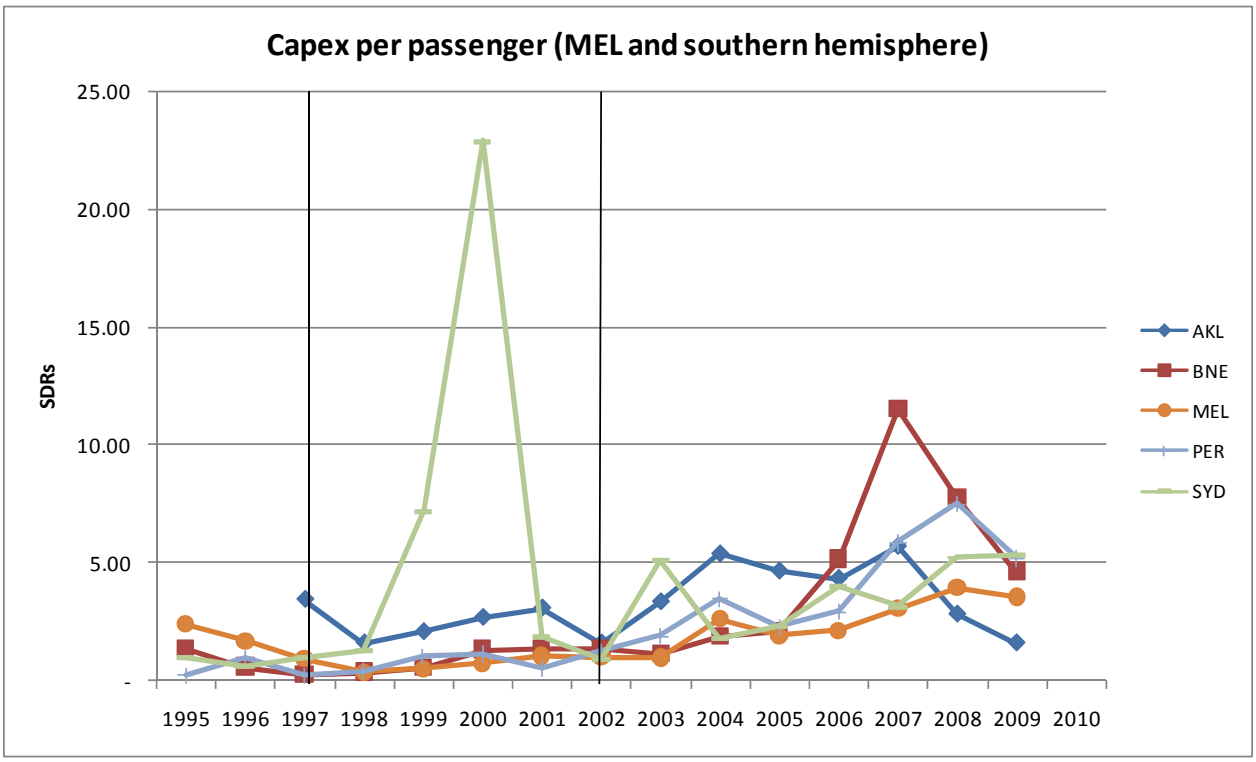
Melbourne's performance increased substantially in 2006/07, when the airport's fixed assets increased by 48% due to a change in accounting policy related to investment property.



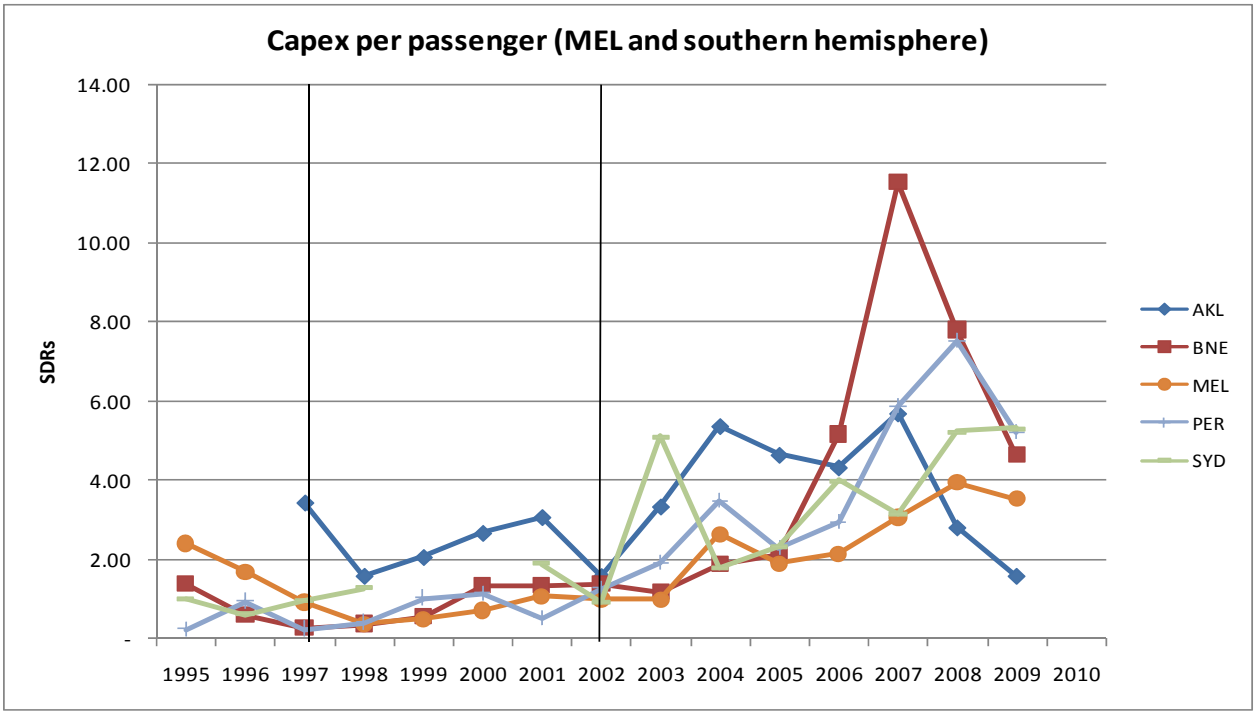
Within the northern hemisphere sample there is a rather clearer upward trend. In a number of cases this may reflect high local construction costs, and hence asset values, rather than above-average levels of capital investment.

6.2.13 Capital expenditure per passenger

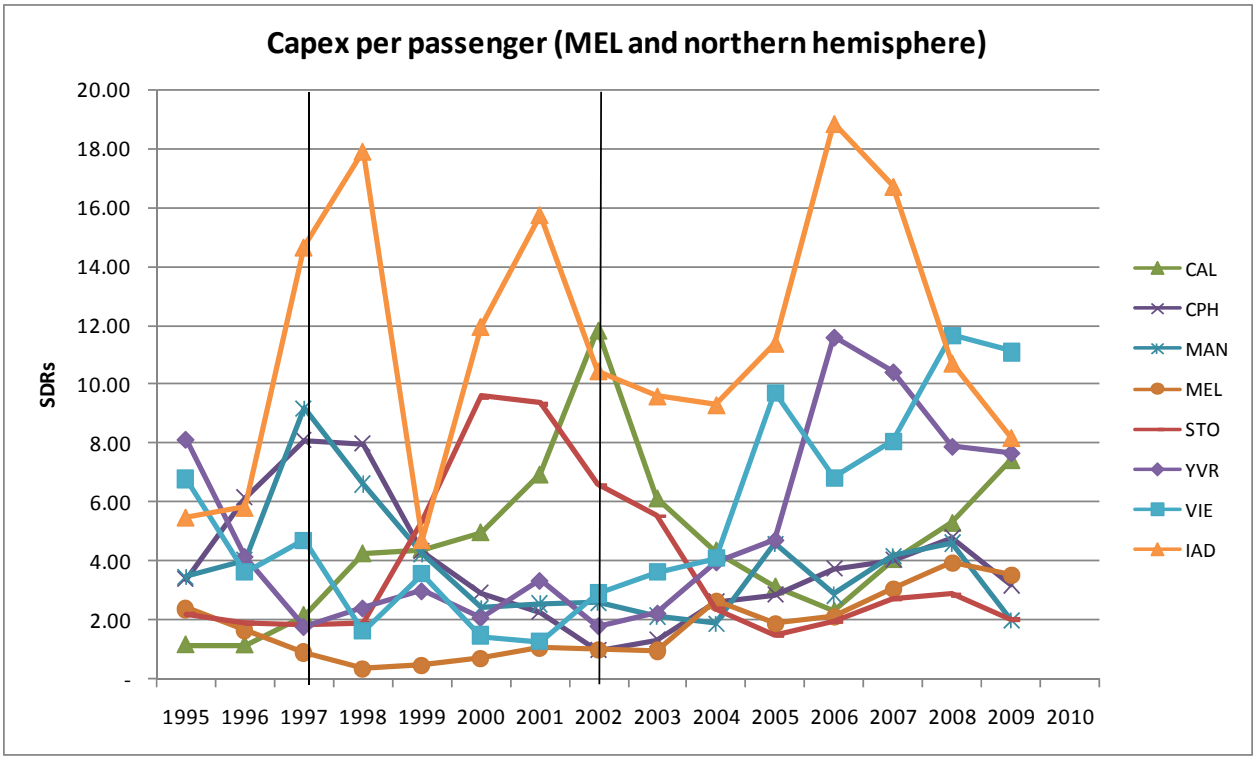
This measure can be expected to match growth in fixed assets per passenger reasonably closely. Again it needs to be treated with some caution, since it can be relatively volatile, due to the lumpiness in infrastructure investment and the durability of the assets.



This chart is again dominated by Sydney's very heavy investment prior to the 2000 Olympics. A clearer picture of performance at the other airports can be gained by removing Sydney's results for 1998/99 and 1999/2000, as follows:



By flattening the scale in this way it is possible to identify a modest upward trend in investment by the Australian airports since 2000/01. Even within this period Sydney underwent another significant tranche of investment, while Brisbane engaged in a significant investment programme in recent years, peaking in 2007/08.



It is not easy to find any particular trend in this chart, which reflects the fact that airport infrastructure investments tend to come in large tranches, punctuated by longer periods in which investment levels are much more modest. In comparison to this group, Melbourne's results have been at or around the bottom of the range.

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