Appendix I

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FINAL REPORT

COMPARISONS OF AIRPORT CHARGES AT PRINCIPAL AIRPORTS SERVED BY AIR NEW ZEALAND

Prepared for

Auckland International Airport

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1 INTRODUCTION

LeighFisher has been commissioned to produce a report for Auckland International Airport Limited (AIAL) on airport charge comparisons among international airports served by Air New Zealand, specifically related to international services.

This work is intended to provide an overview of the relative levels of aeronautical charges at all airports served by Air New Zealand which handle over 500,000 international passengers per year, namely Adelaide, Auckland, Beijing, Brisbane, Cairns, Christchurch, Hong Kong, Honolulu, London Heathrow, Los Angeles, Melbourne, Nadi, Osaka Kansai, Papeete, Perth, San Francisco, Shanghai, Sydney, Tokyo, Vancouver and Wellington airports.

An identical study was carried out by Jacobs Consultancy (LeighFisher's previous name) in 2010. A proposed methodology, which exactly replicates that used in our published annual *Review of Airport Charges* (apart from an aircraft sample proposed by AIAL which is intended to be specifically relevant to Air New Zealand)[1], was set out in a proposal dated 16 August 2011, which was approved by AIAL on 22 August 2011.

The scale of international and total operations at the sample of airports is shown in Table 1 below.

Table 1: Passenger throughput at sample airports in 2010

Passengers 2010 (000s)	International	Total	Int'l as % of Total
Beijing	14,190,153	73,948,113	19.2%
London Heathrow	60,903,278	65,747,173	92.6%
Los Angeles	15,935,982	59,070,127	27.0%
Hong Kong	49,774,874	49,774,874	100.0%
Shanghai	14,100,263	40,385,996	34.9%
San Francisco	8,848,588	39,116,764	22.6%
Sydney	11,391,211	35,562,255	32.0%
Tokyo Narita	32,163,522	33,815,906	95.1%
Melbourne	5,820,581	27,605,194	21.1%
Brisbane	4,246,654	19,760,647	21.5%
Honolulu	4,053,496	18,440,205	22.0%
Vancouver	7,998,292	16,779,709	47.7%
Osaka Kansai	10,486,233	14,353,443	73.1%
Auckland	6,695,588	12,808,010	52.3%
Perth	3,144,621	10,963,793	28.7%
Adelaide	540,678	7,366,151	7.3%
Christchurch	1,580,639	5,997,626	26.4%
Wellington	645,288	5,175,456	12.5%
Cairns	644,853	3,761,454	17.1%
Nadi	1,249,650	1,606,805	77.8%
Papeete	515,768	1,178,397	43.8%

Source: ACI

1 The two aircraft types selected for this study represent over 60% of the aircraft used for international services by Air New Zealand

The report is arranged in five main sections.

- In the first we set out in detail our methodological approach.
- In the second we describe the charges in force at each airport.
- In the third we set out the results of our analysis of charges at the sample of airports, and comment on variations between aggregated charges for a sample of two aircraft and charges for the individual aircraft within that sample.
- In the fourth we comment on the period of time over which the individual charges have been in force at each airport.
- In the fifth section we comment on changes in the results compared to those produced in the work carried out by Jacobs Consultancy in 2010, and in particular highlight any effects caused by currency movements over the intervening period.

2 METHODOLOGY

INTRODUCTION

The methodology used in this study replicates that used in our published work Review of Airport Charges. This work was first produced in 1990, and the methodology has remained unchanged throughout that period. In addition, the methodology is identical to that used in similar pieces of work carried out for AIAL in April 2009 and September 2010.

RECOGNITION OF THE METHODOLOGY

Over the period of twenty-one years 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 and international airports), Hong Kong International Airport, the Vancouver International Airport Authority in Canada and Luftfartsverket, the operator of Sweden's airports. In addition, the UK Monopolies and Mergers Commission and the successor Competition Commission have made reference to the Review in the three most recent 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 (ACI), 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, who is the principal author of the Review and who has produced this report, is a member of the ACI World Economics Standing Committee.

METHODOLOGY USED IN PUBLISHED WORK

LeighFisher's *Review of Airport Charges* compares international airport charges at a sample of 50 airports around the world. The *Review* has been produced annually since 1990, and is a globally recognised reference source on airport charges. 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 numerical ranking. The SDR is a basket of currencies calculated from the trade-weighted values of four G8 nation currencies, namely the Euro, the US Dollar, Sterling and the Yen. The use of the SDR helps to smooth out some of the larger fluctuations which appear over time when comparisons of this sort are made against a single currency, such as the US Dollar.

While the first three of these charge types are imposed by airport operators, terminal navigation charges are not, being applied 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 these cases it is assumed that the landing charge imposed by the airport includes an element intended to recover the cost of the service. Within the sample of airports included in this study, a terminal navigation charge exists at all airports except Hong Kong, Honolulu, Osaka Kansai and Tokyo Narita[2]

2 In the cases of Los Angeles and San Francisco we have calculated a proxy terminal navigation charge, as described further in Section 3, based on published costs of terminal area air traffic control operations serving those airports.

It is also important to determine whether a charge is intended to recover the direct or external costs of providing the airport infrastructure or not: if it does not, it is not included in our calculations. The main examples of charges which are not included for this reason are passenger departure taxes and tourist taxes which are applied directly to passengers' ticket prices. 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 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. Examples of such charges at airports included in this study include the Australian Passenger Movement Tax, the Hong Kong Airport Departure Tax and the UK Air Passenger Duty.

The sample of airports included in the published Review is intended to provide geographical representation for most world regions, and is not selected on the basis of covering the 50 busiest or largest airports by any specific measure. The aircraft sample is intended to represent aircraft of 100 seats or more which are commonly used on international services at many of the world's international airports. **The aeronautical charges included in the calculation in the publication are specifically for international 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, variations relating to destination and rebates for remote stand/bussing operations 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 emission levels, and variations in or exemptions from charges relating to transfer passengers. In the case of the airports included in this study, there are an emissions charge, transfer and remote stand rebates and destination variations at London Heathrow, transfer rebates at Auckland, Osaka Kansai, Tokyo Narita and Vancouver, a remote stand rebate at Hong Kong and transfer and bussing rebates at Sydney.

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, and is usually available from the airports' websites. 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).

The aircraft weights and passenger numbers used as a basis for calculation are set out in Appendix A.

METHODOLOGICAL FEATURES SPECIFIC TO THIS STUDY

Within this report, as well as being converted to SDRs, costs are also converted to, and ranked in, New Zealand Dollars. The exchange rates used to convert local currencies to SDRs and New Zealand Dollars are shown at Appendix B.

In this study the sample of airports consists entirely of international airports served by Air New Zealand. In order to make the sample size manageable the sample has been limited to those airports which have international passenger throughputs exceeding 500,000 per year. We have focussed on the charges which would be applied to the two aircraft types commonly used by Air New Zealand on short/medium- and long-haul international services, namely the Airbus A320-200 and the Boeing 777-200ER.

Data downloaded from the Air New Zealand website provides an average passenger load factor (PLF) of 82.3% for Air New Zealand's international operations, and this has been used as a basis for our calculations. This information was not available when our analysis was carried out in 2010, and last year the ICAO average figure for international scheduled services was used instead. The PLF used for this study is 6.6 percentage points higher than was the case in the 2010 study, and this has resulted in an increase in charges calculated of around three to five percentage points in all cases, regardless of any changes to charges or currency effects.

In the case of this study the charges used as a basis for our calculations are those in force in July 2011, and the data used for eight of the 21 airports were from the IATA Manual, which is updated on a monthly basis, with other updates based on information available from the airports' websites.

3 THE CHARGES INCLUDED IN THE ASSESSMENT WITHIN THIS REPORT

In this section we set out details of the structure of charges in force at each airport covered by this report. We also comment generally on differences and similarities between charge structures at the sample airports and those elsewhere in the world. The actual charge rates for each airport are set out in detail at Appendix C.

ADELAIDE

As with the other Australian airports there is no international landing charge per se at Adelaide, although there is a separate rescue and firefighting charge levied by AirServices Australia with a unit rate which increases with aircraft size. There is no charge for parking within a scheduled turnaround period. There is a per passenger international aircraft charge and a passenger facilitation charge. There is a screening charge payable per departing passenger (lower for transit passengers), and a separate terminal navigation charge per tonne of aircraft MTOW.

The thinking behind the system of having no specific landing charge is that in this way the risk effects of a traffic downturn are shared more evenly between the airport and the airlines, with the majority of charges being directly related to passenger numbers. This arrangement was introduced at the time that Australian airports moved from a system of price regulation to one of price monitoring, following a Prices Commission review in 2002. It should be noted that this structure is at variance to the current ICAO principle for landing charges, as expressed in Document 9082/8, that “Landing charges should be based on the weight formula…”

AUCKLAND

The landing charge at Auckland is levied per tonne of aircraft Maximum Certified Take-off Weight (MCTOW) with a fixed rate for aircraft of under 6 tonnes and a rate per tonne which increases through two weight bands of between 6 and 40 tonnes, and over 40 tonnes. Aircraft parking is free for the first six hours parked, and thereafter at varying rates for aircraft of under and over 40 tonnes. Passenger related charges consist of a passenger service charge payable by both arriving and departing passengers (from which transfer and transit passengers and children under the age of 12 are exempt), a terminal service charge, a security charge, CAA Levy and Baggage Reconciliation Charge, with the latter three charges being payable direct by airlines to the relevant agencies. There is a separate terminal navigation charge split into two elements, for aerodrome service and approach service, in both of which there is a small fixed charge plus a variable charge based on the square root of the aircraft MTOW minus two tonnes.

BEIJING AND SHANGHAI

Charges at airports in mainland China are at present set at identical rates in all cases. The landing charge consists of fixed and variable elements, with both increasing for a total of five aircraft size categories. Parking is free for the first two hours, after which it is chargeable at 15% of the landing charge. There is a simple per passenger charge, a per passenger security charge and a boarding bridge charge. There is a separate terminal navigation charge with a fixed and variable element.

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. There is no charge for parking within a scheduled turnaround period. There is a passenger service charge, which in effect includes an element to cover the costs of operation of the airside infrastructure. There is a government mandated security charge payable per departing passenger, and a separate terminal navigation charge per tonne of aircraft MTOW.

CAIRNS

The structure of charges at Cairns is identical to that at Brisbane, save that parking is free for the first six hours.

CHRISTCHURCH

The structure of the main charge elements at Christchurch is defined separately for landing (airfield) and terminal charges according to aircraft type. Airfield charges are based on a weight charge per aircraft type under different weight categories and reflect the aircraft maximum certified take off weight (MCTOW).

In addition, there is no parking charge, and a passenger service charge applies to qualifying departing and arriving international passengers. The same security charge, CAA Levy and Baggage Reconciliation Charge are applicable as at Auckland which are payable direct by airlines to the relevant agencies. There is a separate terminal navigation charge with the same two-part split as that at Auckland.

HONG KONG

Landing charges are set according to a constant fixed charge and a variable charge based on MTOW minus 20 tonnes, so that the overall charge per tonne reduces gradually as aircraft size increases. There is a parking charge with no free parking, although there is a small rebate for remote stand use. There is a Terminal Building Charge and a Security Charge, both payable per departing passenger. There is no separate terminal navigation charge.

HONOLULU

Landing charges are on a single rate per 1,000 pounds of Maximum Landing Weight (MLW). There is no parking charge. There is a joint use Holdroom and Baggage System charge and an International Arrival Area Charge and an FIS space Use Charge, all payable per departing passenger, as well as the nationally-mandated security charge common to all US airports.

In the US there is an International Transportation Tax payable by all departing international passengers. In principle, monies raised from this tax are hypothecated for use in developing the air transportation system, including payments made to airports through the Federal Airport Improvement Program (AIP) to fund or help fund infrastructure improvements. While not all of the monies raised by this tax are used in this way this does not detract from the fact that AIP payments are regularly received by airports, and when calculating charges for the US airports in our published work, we believe it is right to take account of the benefits derived by each airport from the AIP programme. This is done by deriving a per passenger AIP payment received at each airport in the most recent twelve-month reporting period. The same approach has been taken in this report.

LONDON HEATHROW

At Heathrow there is a fixed landing charge for all aircraft of over 16 tonnes MTOW, a system which has been in place for many years in recognition of the extreme shortage of available runway capacity. There is a relatively small emissions charge based on the weight of nitrous oxide emitted by each aircraft type. There is a parking charge, consisting of both a fixed and variable weight- and time-based element, which is also weighted according to the level of use in peak periods. There is a per departing passenger charge which varies according to whether passengers are travelling within Europe or elsewhere in the world, and charges are differentiated according to whether passengers are terminating or transferring. These are also rebated if the aircraft has been parked on a remote stand. There is a terminal navigation charge which was levied separately by the air navigation service provider prior to 2008 but which is now included

within the landing charge, albeit it continues to be identified separately. A charge for Passengers of Reduced Mobility (PRM) has been introduced since our analysis was carried out in 2010.

LOS ANGELES

There is a single landing charge rate per tonne of maximum landing weight with no fixed element. Parking is free for the first three hours, and charged at a rising rate per tonne in three-hour increments thereafter. There are separate, differentiated terminal charges for arriving and departing passengers, a passenger facility charge and the Federally-mandated security charge. As with Honolulu we have derived a per passenger amount received through AIP payments, and we have also derived an average cost per passenger for the provision of the terminal navigation service, based on published FAA cost data.

MELBOURNE

There is a passenger charge per arriving and departing passenger to cover both the terminal and exterior airside facilities. There are no parking charges for passenger flights. There is a security charge and a passenger and bag screening charge, both charged per departing passenger. Melbourne has the same structure of rescue and firefighting and terminal navigation charges as Brisbane and Cairns.

NADI

There are rising landing charge rates per tonne for aircraft of up to 15 tonnes, 15 – 25 tonnes, 25 – 50 tonnes and over 50 tonnes. Parking is free for the first three hours, with rising rates for four aircraft size categories thereafter. There is a passenger charge per departing passenger, payable by passengers on their tickets, and a security charge per departing passenger which has been introduced within the past year. There is an airport development charge per departing international passenger.

OSAKA KANSAI

There is a single landing charge rate per tonne of MTOW with no fixed element. Parking is free for the first six hours, and on a fixed rate per tonne per 24 hours thereafter. There is a passenger service facility charge, payable by the passenger on the airline ticket, with an exemption for transfer and transit passengers. There is a fixed airbridge charge for each landing and departure, and there is a baggage handling system charge which increases through five aircraft size categories.

PAPEETE

There is a landing charge per tonne of MTOW which rises on a per tonne basis through three aircraft size categories. This charge is then factored by between 1.00 and 1.33 to take account of the aircraft noise output, and in addition a correction factor of 1.0967 (the purpose of which is unclear) is applied. Parking is free for the first two hours and charged per tonne thereafter. There is a passenger charge per departing passenger, payable on the passenger's ticket. There is a terminal navigation charge calculated by multiplying a unit rate by the MTOW to the power of 0.90 and a correction factor.

PERTH

The structure of charges at Perth is identical to that at Melbourne, except that the main charge per arriving and departing passenger is split into an Airfield Usage Charge and a Terminal Charge, thus more closely replicating a traditional landing/passenger charge structure. There is also a minor charge for parking for more than two hours.

SAN FRANCISCO

There is a single landing charge rate per tonne of maximum landing weight with no fixed element. The parking charge is a fixed amount depending on aircraft weight. Passenger related charges consist of the government-mandated security charge plus a small additional security charge and a passenger facility charge. As with Los Angeles we have derived a per passenger amount received through AIP payments, and an average cost per passenger for the provision of the terminal navigation service, based on published FAA cost data.

SYDNEY

There is a terminal charge per arriving and departing passenger, which we have weighted to take account of a transfer passenger exemption. There is no free parking, with a fixed charge per fifteen minutes being applied. Sydney has the same structure of rescue and firefighting and terminal navigation charges as the other Australian airports.

TOKYO NARITA

Landing charges are set according to six different rates per tonne which are set according to the aircraft type's noise output; there is no fixed charge element. There is no free parking, with a fixed charge per tonne for the first six hours and the same charge per tonne for each subsequent 24 hour period. There are baggage handling charges which are fixed for each of five aircraft size categories, differing by terminal; the rate used in our calculations is that applied in the terminal used by Air New Zealand. There is a fixed boarding bridge charge, and a passenger charge per departing passenger. A new security charge was introduced in end 2009.

VANCOUVER

There are increasing rates per tonne for aircraft of up to 21 tonnes, 21 – 45 tonnes and over 45 tonnes MTOW. Parking is free for the first six hours, and thereafter on a rate per tonne per 24 hours. There is a General Terminal Fee, with fixed amounts payable for each of twelve bands of aircraft seat capacities. There are two separate passenger security fees, one payable to the airport and one payable by passengers on the ticket. For transborder flights there are US pre-clearance fees and there is a separate turn-around fee for all flights from the international terminal. There is an Airport Improvement Fee and a boarding bridge charge which distinguishes between single- and double-headed loading.

WELLINGTON

There is a landing charge which is payable per arriving and departing passenger. Parking is free for the first six hours, with fixed charges for each 24 hours thereafter. Otherwise, there is the same structure and level of passenger departure, passenger security, baggage reconciliation, CAA Levy and terminal navigation charges as at Christchurch.

COMMENTS

The following overall comments can be made in relation to the structures of charges described above.

First, with few exceptions, the charge structures reflect a level of complexity which is now fairly common at many airports worldwide. All of the following appear at various of the airports in the sample:

- peak/off-peak price variations;
- variations on charges based on noise or emissions;

- separate security charges;
- separate terminal navigation charges;
- variations based on the origin/destination of a flight.

Variations of this kind have become increasingly common in airport charging structures worldwide over the past 15 – 20 years, and separate security charges in particular have become increasingly prolific, whereas in the early 1990s they were to be found at few airports.

There are various reasons underlying this complexity around in the world, but the most important are that:

- Airports have sought to ensure that significant new areas of cost (particularly security) are adequately recovered, and in many cases this has been specifically approved by regulators;
- Airlines have encouraged the unbundling of airport charge structures as a means of increasing the level of transparency of airport charges.

The first of these reasons goes hand-in-hand with the increasing commercialisation of airports, either through privatisation or simply because State or local government owners have become more aware of the need and opportunities for revenue enhancement at airports to contribute more significantly to the costs of providing new infrastructure. The second point reflects the continuing financial difficulties experienced by the airline sector, and the focus of IATA in particular on containing airport and air navigation service user charges.

It is also worth commenting on the common-rating of charges at the two mainland Chinese airports, as part of a common-rating of all Chinese airport charges. The common-rating of charges at airports with a single ownership is not in itself particularly unusual: for example, such systems exist in India, Egypt, South Africa, Sweden and Spain. However, the existence of common-rated charges implies that the charges are not well related to costs, since it is unlikely that the cost structures of a group of airports of diverse sizes are identical. Some degree of cross-subsidisation by the larger airports of the smaller airports within groupings therefore seems inevitable. In some cases, such as where a small airport serves an isolated community with poor surface access links, this may be justifiable on the grounds of social welfare. However, it must be recognised that pricing in this way means that charges at the larger airports are higher than might be the case if a stricter relationship between costs and charges existed. We understand that a part of the revenues raised by the security tax at the three international New Zealand airports is used to subsidise operations at smaller domestic airports, although what proportion of the revenue is used in this way is unclear.

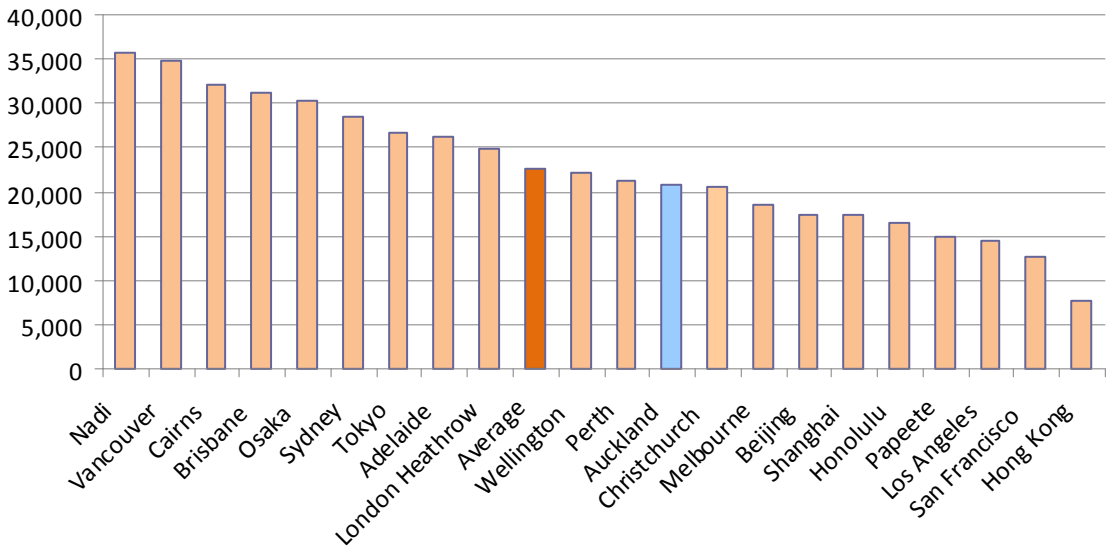
Finally, it can be noted that the sample of airports covered by this report displays a diversity of ownership and regulatory control. Both of these factors, details of which are summarised in Table 2 below, can affect airport pricing levels. It can be seen that within the sample of airports there are examples of all common forms of ownership, including full and partial privatisation and 100% public ownership, and regulatory structures ranging from a formalised price cap through government control exercised only periodically to light-handed/reserve powers regulation.

Table 2: Ownership structures and regulatory controls at sample airports		
	Ownership	**Regulatory control**
Adelaide	Adelaide Airport Limited, in turn owned by a number of superannuation funds.	Price monitoring only – regulatory price cap suspended
Auckland	67% free float, Auckland Council 22.4%, New Zealand Superannuation Fund 9.4%	Light handed, periodic Commerce Commission Inquiries
Beijing	66.7% National government, 33.3% free float	Set at government level in accordance with ICAO principles
Brisbane	Brisbane Airport Corporation Pty Limited (in turn owned by major Australian and international organisations (including Schiphol Airport) and institutional investors).	Price monitoring only – regulatory price cap suspended
Cairns	North Queensland Airports Consortium (in turn owned by infrastructure investors and AIAL).	Price monitoring only – regulatory price cap suspended
Christchurch	75% Christchurch City Council, 25% government	Light handed, periodic Commerce Commission Inquiries
Hong Kong	National government	Prices set (irregularly) after negotiation with airlines and approval by Government
Honolulu	State of Hawaii	Residual cost
London Heathrow	BAA Ltd. (in turn owned by Ferrovial, Caisse de dépôt et placement du Québec and Government of Singapore Investment Corporation).	Regulatory price cap – single till
Los Angeles	City of Los Angeles	Compensatory cost
Melbourne	Australia Pacific Airports Corporation Ltd, in turn owned by a number of infrastructure funds.	Price monitoring only – regulatory price cap suspended
Nadi	National government	No formal regulatory structure - changes/increases approved by Government
Osaka Kansai	Kansai International Airport Authority (public corporation)	Prices set (irregularly) after negotiation with airlines. Government has power of veto.
Papeete	National government (France)	No formal regulatory structure - changes/increases approved by Government
Perth	Airstralia Development Group (in turn owned by infrastructure and property funds).	Price monitoring only – regulatory price cap suspended
San Francisco	City and County of San Francisco	Residual cost
Shanghai	Shanghai Airport Authority	Set at government level in accordance with ICAO principles
Sydney	Southern Cross Airports Corporation (Macquarie Airports and affiliates 82.93%, Hochtief 12.1%, Ontario Teachers 5.0%)	Price monitoring only – regulatory price cap suspended
Tokyo Narita	Narita International Airport Corporation *(full privatisation expected but timing unknown)*	Prices set (irregularly) after negotiation with airlines. Government has power of veto.
Vancouver	Vancouver International Airport Authority (non-government 'not for profit' organisation)	No regulation. The "not for profit" status of Canadian airports does not preclude the setting of prices so as to recover infrastructure investment costs.
Wellington	Infratil 66%, Wellington City Council 34%	Light handed, periodic Commerce Commission Inquiries

4 RESULTS OF THE CHARGES ANALYSIS

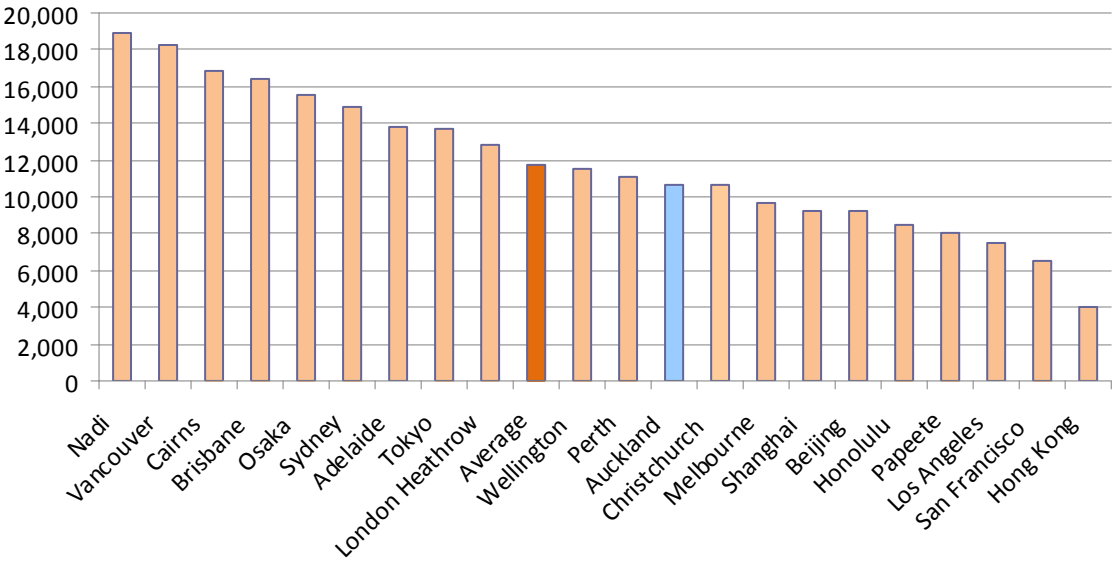
The results of the charges analysis, based on charges in force on 1 July 2011 and totalled for the two aircraft types, are illustrated in Figure 1 below in New Zealand Dollars.

Figure 1: Total turnround charges - A320-200 and B777-200ER (NZ$)



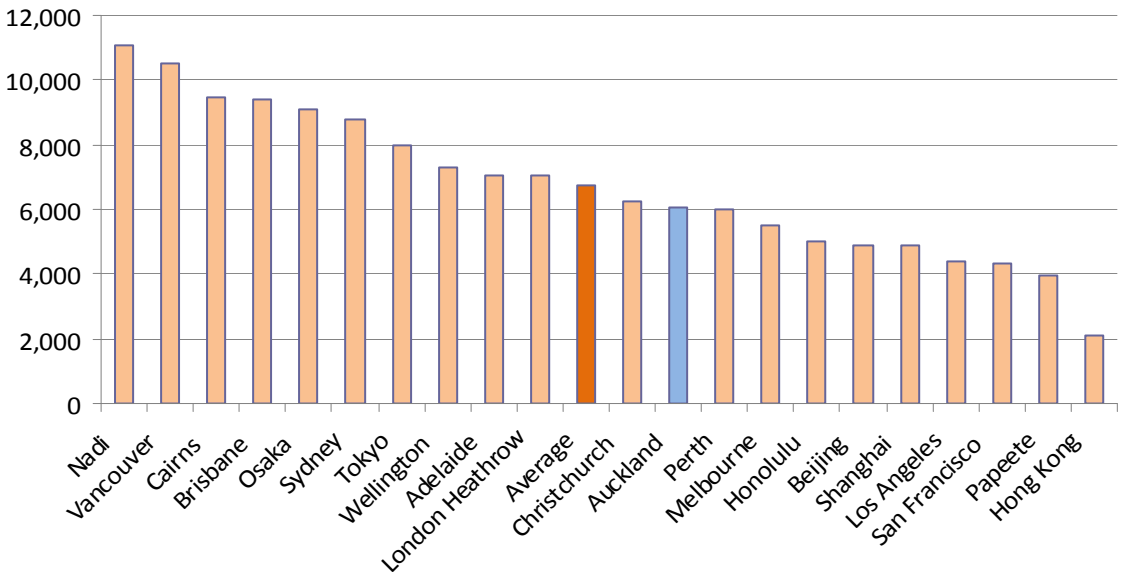
The equivalent results expressed in SDRs are shown in Figure 2 below.

Figure 2: Total turnround charges - A320-200 and B777-200ER (SDR)



The results of the charges analysis for the Airbus A320-200 only are illustrated in Figure 3 below in New Zealand Dollars.

Figure 3: Total turnround charges - A320-200 (NZ$)



The equivalent results expressed in SDRs are shown in Figure 4 below.

Figure 4: Total turnround charges - A320-200 (SDR)

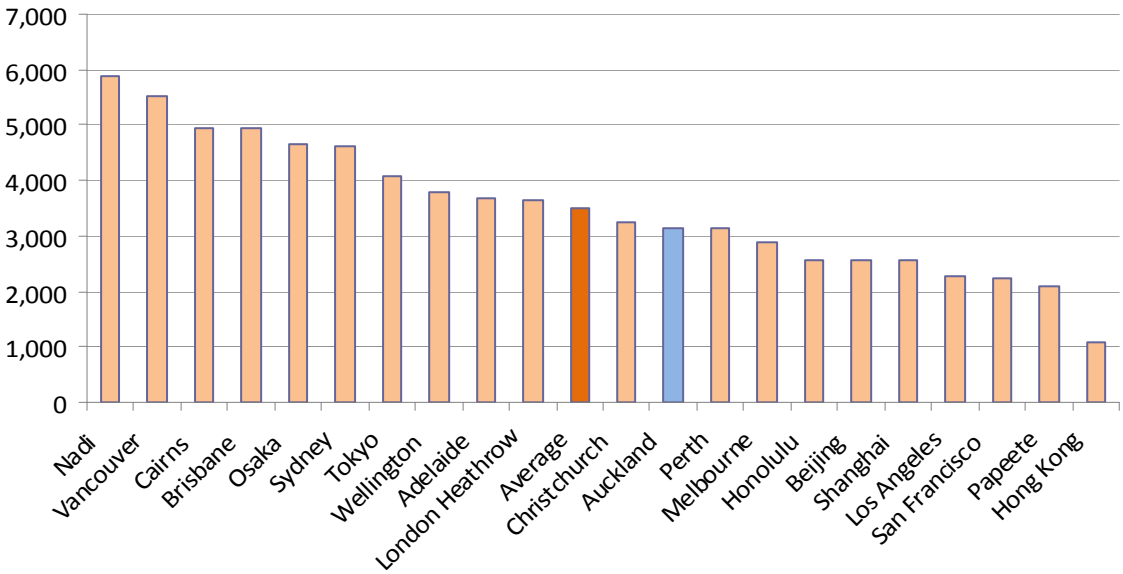
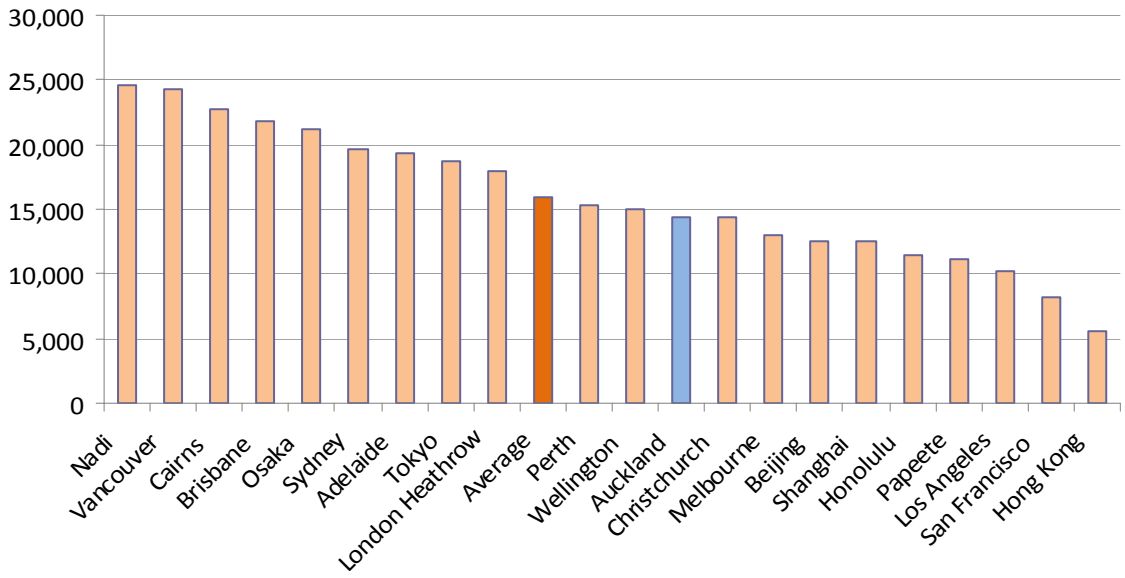
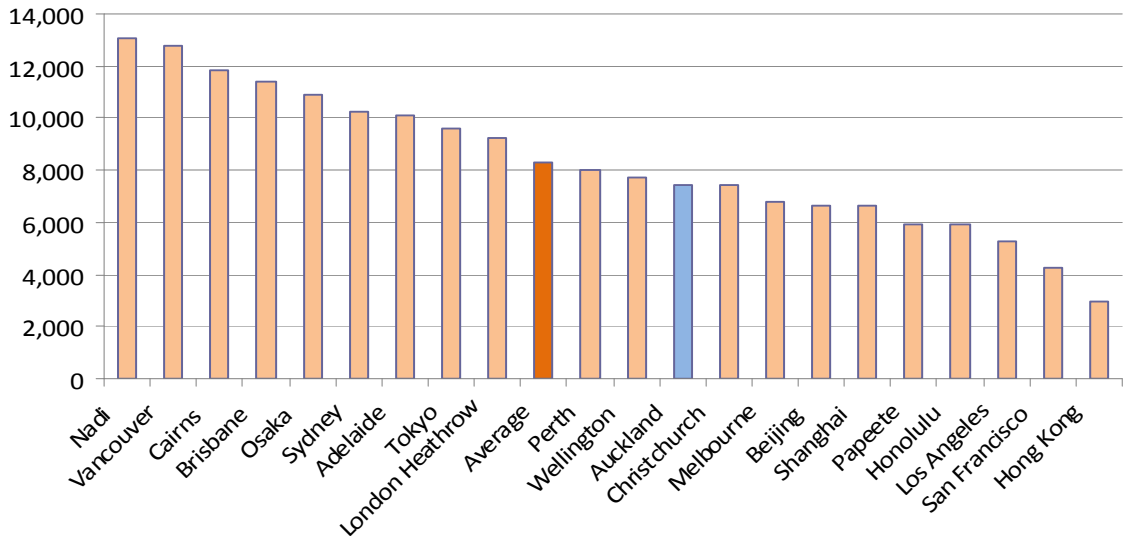


Figure 5: Total turnround charges - B777-200ER (NZ$)



The equivalent results expressed in SDRs are shown in Figure 6 below.

Figure 6: Total turnround charges - B777-200ER (SDR)



The results are also shown on a per passenger basis in Figures 7 to 12 below.

Figure 7: Total charges per passenger - A320-200 and B777-200ER (NZ$)

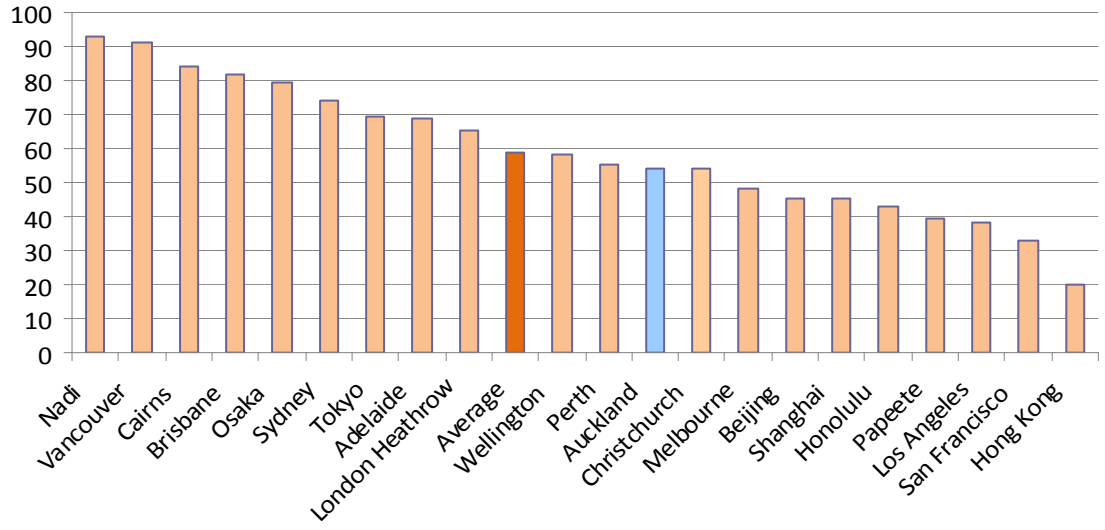


Figure 8: Total charges per passenger - A320-200 and B777-200ER (SDR)

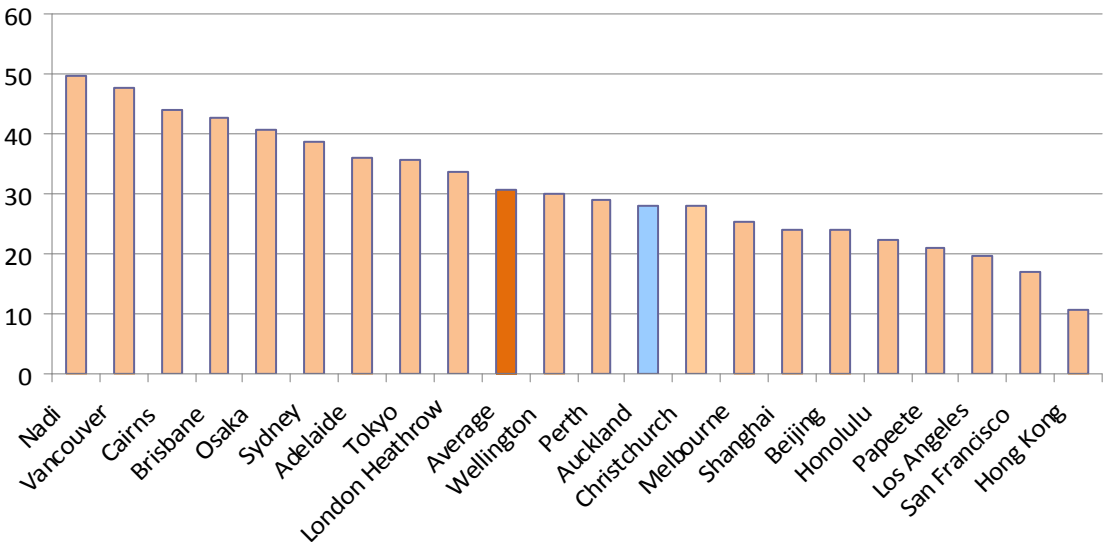


Figure 9: Total charges per passenger - A320-200 (NZ$)

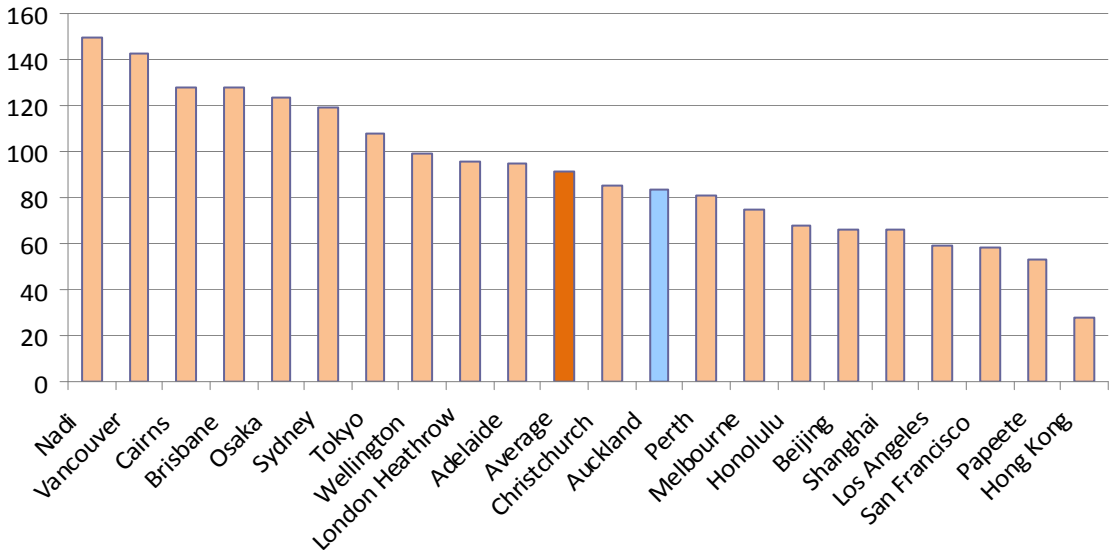


Figure 10: Total charges per passenger- A320-200 (SDR)

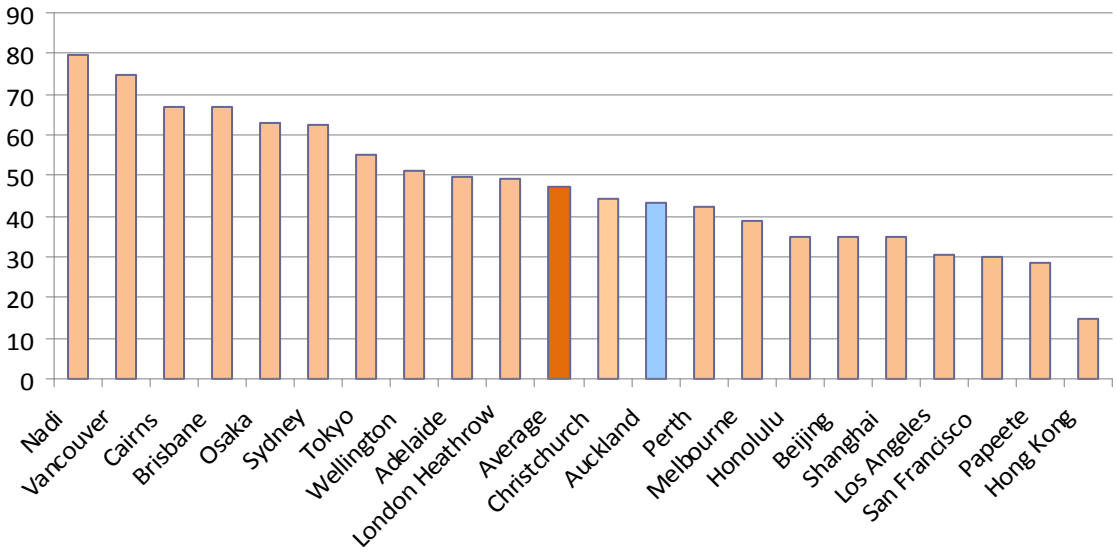


Figure 11: Total charges per passenger- B777-200ER (NZ$)

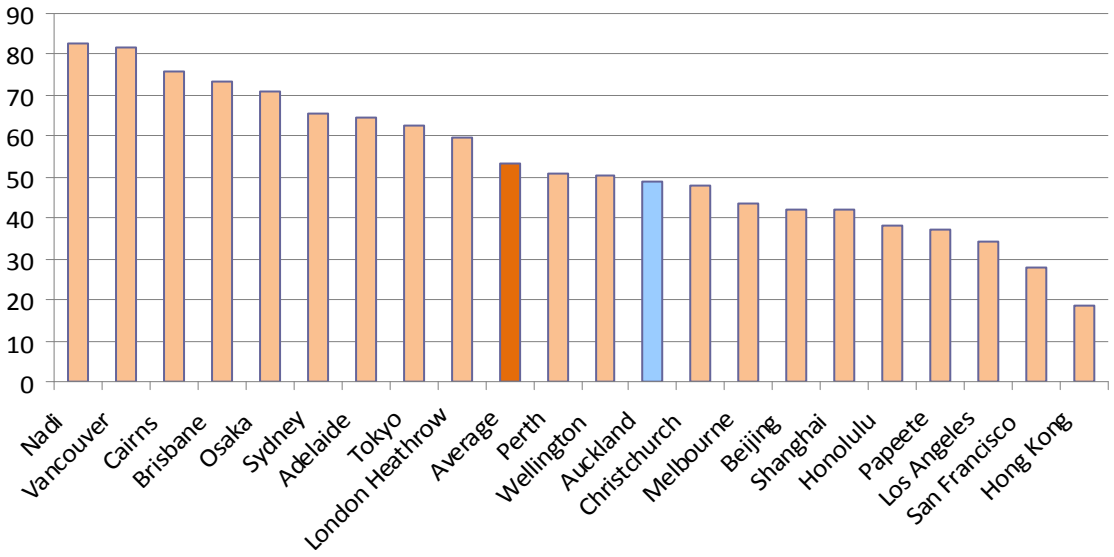
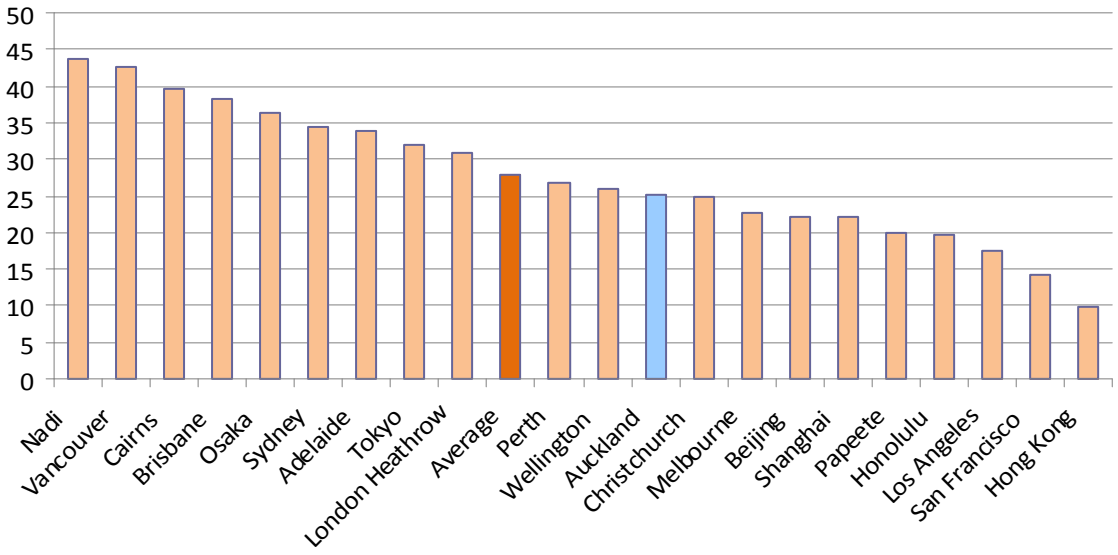


Figure 12: Total charges per passenger- B777-200ER (SDR)



Auckland ranks in 12th position out of the 21 airports in all cases for the individual aircraft types, and also when charges for the two aircraft are combined. In addition, its calculated charges sit between around 8.5% and 9.4% below the average in each aircraft/currency combination. The gap between the cost of Auckland's charges and the average cost has widened since we carried out the same comparison in 2010, as shown in Table 3 below:

Table 3: Difference between Auckland charges and average charges

	NZ$		SDRs	
	2010	2011	2010	2011
Both aircraft combined	-6.7%	-8.5%	-6.7%	-9.3%
Airbus A320-200 only	-6.6%	-8.6%	-6.8%	-9.4%
B777-200ER only	-6.4%	-8.5%	-6.6%	-9.3%

In most cases, the revenues from passenger charges account for around or over two-thirds of the total revenues calculated. The exceptions to this generality are:

- Hong Kong, where landing and parking charges account for nearly 50% of the charges calculated (but charges overall are relatively low);
- Papeete, where there is an unusually high terminal navigation charge due to it being denominated in Euros, while the other charges are in Polynesian Francs;
- Wellington, where consideration is being given to the introduction of a revised structure of charges.

Parking charges generally have very little impact.

A ranking of total aeronautical revenue per passenger might not necessarily reflect exactly the same profile as shown above, although we would expect a reasonable correlation. Adelaide, Auckland, Beijing, Brisbane, Cairns, Hong Kong, London Heathrow, Melbourne, Osaka Kansai, Papeete, Perth, Sydney, Shanghai, Tokyo and Vancouver all waive their passenger charges for passengers in transit or transferring between flights within 24 hours. Of these, we have weighted the charge calculations to take account of known percentages of transfer or transit passengers in the cases of Adelaide, Auckland, Brisbane, Hong Kong, Melbourne, Osaka, Papeete, Perth, Sydney, Tokyo and Vancouver. In some cases, no information was available on transfer and/or transit rates. Given the relative positions within the charge rankings we feel it is unlikely that Auckland's ranking would be affected by any additional transfer-led reduction in charge weightings calculated for these airports, where transfer levels are not thought to be significant.

It is also possible that the rankings in terms of revenue could be affected by new service incentives and other forms of discounts on published charge rates. While some airports publish details of new service incentives this does not appear to be the case with the sample of airports included in this study, and it is most likely that incentives and other offers, where they exist, are negotiated on a case by case basis.

At Appendix D we show indices of charges for the two individual aircraft types in the sample. Within an analysis of this kind it is possible for the charge ranking for an individual aircraft to differ from the aggregated ranking for a sample of aircraft. This is generally due to differences in the relative weighting of airport charge components within a sample of aircraft, most commonly caused by different landing weights per tonne above and below a specified aircraft weight. Within this sample there are also variations caused by the differing relative level of importance of passenger charges, which, particularly in the case of the Australian airports, may increase the ranking of larger capacity aircraft.

5 LONGEVITY OF CHARGES

Table 4 below illustrates the dates on which each charge category at each airport in the sample became effective (source: IATA Airport, ATC and Fuel Charges Monitor).

Table 4: Dates on which individual charges became effective

Airport	Charge category	Effective from
Adelaide	Passenger	01.07.11
	Terminal navigation	01.07.08
Auckland	Landing, parking and passenger	01.07.11
	Terminal navigation	01.07.11
Beijing and Shanghai	Landing, terminal navigation	01.03.08
	Parking	15.07.91
	Passenger	01.03.08
Brisbane	Passenger Service Charge (incl. Landing)	01.07.11
	Terminal navigation	01.07.08
Cairns	Passenger Service Charge (incl. Landing)	01.07.11
	Terminal navigation	01.07.08
Christchurch	Airfield and terminal	01.07.10
	Passenger	05.11.98
	Terminal navigation	01.07.11
Hong Kong	Landing	01.01.00
	Parking	01.01.07
	Passenger (Terminal Building Charge)	01.01.05
Honolulu	Landing, holdroom, baggage system	01.07.10
London Heathrow	All charges	01.04.11
Los Angeles	Landing	01.01.11
	Parking	01.01.89
	Passenger Facility Charge	01.07.01
Melbourne	Passenger Service Charge (incl. Landing)	01.07.11
	Terminal navigation	01.07.08
Nadi	Landing	01.09.10
	Parking	01.06.93
	Passenger	07.04.11
Osaka Kansai	Landing	01.04.10
	Parking	04.09.94
	Passenger	01.04.97
Papeete	Landing	01.07.09
	Parking	01.07.09
	Passenger	01.07.09
Perth	Passenger Service Charge (incl. Landing)	01.07.11
	Parking	01.07.11
	Terminal navigation	01.07.08
San Francisco	Landing	01.07.11
	Passenger Facility Charge	01.07.04
Sydney	Passenger Service Charge (incl. Landing)	01.07.11
	Parking	12.05.11
	Terminal navigation	01.07.08
Tokyo Narita	Landing, Parking	01.10.05
	Passenger Service Facility Charge	01.01.99
Vancouver	Landing, parking, passenger	01.01.11
	Terminal navigation	01.09.08
Wellington	Landing	01.04.11
	Parking	05.02.03
	Passenger	05.11.98
	Terminal navigation	01.07.11

The longevity of the charges listed above varies considerably. While some charges have been changed within the past year, as part of a regular annual review, others have remained unchanged for relatively long periods. The passenger charge at Osaka Kansai has not been changed since 1997, and the Passenger Service Facility Charge at Tokyo Narita has not changed since 1999. Parking charges at a number of airports have not been changed for a relatively long time: this is not unusual, and reflects the fairly low importance generally placed on this charge category as a means of revenue generation.

Out of the airports within this sample, only airports in the UK and North America can be expected to revise charges on a regular basis. In the case of London Heathrow annual revisions in charges are an intrinsic feature of the price cap regulation to which it is subject. In the case of all US airports, landing charges are reset at the start of every financial year to reflect the coming year's forecast cost base, and to reflect any under- or over-recovery of costs in the previous year. Although Vancouver is not subject to a formal regulatory process, it takes the opportunity to revise charges annually at the start of the year.

At some airports around the world, charges have remained unchanged for extended periods. At many such airports, ownership remains wholly or mainly in public hands. In the case of publicly-owned airports, it may be the case that governments wish to subsidise charges for publicly owned airlines, or for tourism and business development purposes, or simply because strong traffic growth generates a sufficient growth in revenues.

6 COMMENTS ON CHANGES COMPARED WITH AUGUST 2010

In September 2010, LeighFisher (then Jacobs Consultancy) conducted a similar comparison of airport charges at principal airport served by Air New Zealand. In this section, we comment on the extent to which charges have changed since this previous review.

Table 5 demonstrates the movements in charges at the relevant airports compared to September 2010, shown in local currency. Charges shown are for the A320-300 and the B777-200ER combined. Changes larger than 6% have been highlighted, and an explanation of the movement has been provided.

Table 5: Changes in charges at airports in the sample

Airport	Sep 2011	Aug 10	Change	Comment
Adelaide	20,544	19,398	5.9%	
Auckland	20,679	20,060	3.1%	
Beijing	95,148	89,869	5.9%	
Brisbane	24,442	22,660	**7.9%**	Pax charges increased
Cairns	25,103	22,552	**11.3%**	Pax service charge increased
Christchurch	20,619	19,613	5.1%	
Hong Kong	50,102	48,406	3.5%	
Honolulu	13,588	9,488	**43.2%**	Increase in both landing and pax charges. US Residual cost pricing system can result in large tariff increases in response to increases in costs.
London Heathrow	12,852	10,898	17.9%	Increase in both landing and pax charges. The UK regulatory authority currently allows Heathrow to increase charges by 7.5% over inflation to facilitate agreed capital funding needs
Los Angeles	12,034	11,162	**7.8%**	Largely due to increased PLF
Melbourne	14,409	13,869	3.9%	
Nadi	52,916	35,156	**50.5%**	Pax charge increased by 46.7%, also new security charge introduced
Osaka	2,009,890	1,932,303	4.0%	
Papeete	1,057,973	1,015,444	4.2%	
Perth	16,581	14,192	**16.8%**	Increase in security and screening charges
San Francisco	10,398	9,818	5.9%	
Shanghai	95,148	89,869	5.9%	
Sydney	22,188	21,003	5.6%	
Tokyo	1,766,865	1,672,181	5.7%	
Vancouver	28,088	26,293	**9.0%**	Significant increase in landing charges
Wellington	22,250	20,586	**8.1%**	Increase in landing charge

As noted in Section 2, the higher PLF assumed in this year's analysis has resulted in calculated charges being around three to five percentage points higher than in last year's analysis. However, even after taking this into account, this table demonstrates that charges at a number of the sample airports have increased substantially over the period. The average of the increases (not weighted) was 10.9%. Charges at Auckland Airport, however, increased by only 3.1% over the period, representing the lowest rate of increase in the sample.

Auckland's move down in the rankings this year comes against a background of a continued strengthening of the New Zealand Dollar. The rate of the NZ$ relative to the SDR in this year's analysis was NZ$1.933 = 1 SDR, a 10.7% strengthening which followed a 24.2% strengthening in the previous year. Despite this, the ranking for charges for the two aircraft combined moved down

to 12th place compared to 11th place last year. As shown in Table 5, Auckland's relative position has improved because of significant increases in charges at nine of the other airports in the sample which outweighed the combination of Auckland's sub-1% increase and the strengthening of the NZ Dollar. As already noted, Auckland's charges also fell in relation to the averages for the sample for both aircraft type.

APPENDIX A- INPUT DATA FOR AIRPORT CHARGES COMPARISON

The assumptions on aircraft weights and passenger numbers used in the airport charges comparisons were as follows.

Aircraft	Maximum Take-off Weight (tonnes)	Maximum All-up Weight (tonnes)	Maximum Landing Weight (tonnes)
Airbus A320-200	73.5	73.9	64.5
Boeing 777-200ER	297.6	298.6	236.1
Source: Air New Zealand, Flight International Commercial Aircraft of the World			

Aircraft	Capacity (seats)	Assumed load factor	Assumed passenger occupancy
Airbus A320-200	152	82.3%	125
Boeing 777-200ER	313	82.3%	258
Source: Air New Zealand			

APPENDIX B- EXCHANGE RATES

	NZ $	SDRs
Adelaide	1.280	1.494
Auckland	1.000	1.933
Beijing	0.183	10.352
Brisbane	1.280	1.494
Cairns	1.280	1.494
Christchurch	1.000	1.933
Hong Kong	0.152	12.454
Honolulu	1.210	1.600
London Heathrow	1.941	0.999
Los Angeles	1.210	1.600
Melbourne	1.280	1.494
Nadi	0.674	2.790
Osaka	0.015	129.378
Papeete	0.014	131.870
Perth	1.280	1.494
San Francisco	1.210	1.600
Shanghai	0.183	10.352
Sydney	1.280	1.494
Tokyo	0.015	129.378
Vancouver	1.241	1.538
Wellington	1.000	1.933

Source: IMF website, rates applicable on 1 July 2011

APPENDIX C- DETAILS OF CHARGES

Individual charge rates used (rates shown are net of GST/VAT where applicable)				
	Charge categories			
Airport	Landing	Parking	Passenger	Terminal navigation
Adelaide	Rescue & firefighting variable rate per tonne MTOW	-	International passenger air transport aircraft charge: $11.32/ arr &d dep pax. International passenger facility charge: $6.30/ arr &d dep pax. Screening charge: $5.57/dep pax (lower for transit).	$10.40/tonne MTOW
Auckland	$13.41/tonne MTOW	-	Pass. Service Charge $12.44/arr & dep pax Security $6.96/dep pax Terminal Service Charge $7.26/dep pax CAA levy $0.87/dep pax Baggage reconciliation charge: Confidential. Same charge applies across the 3 NZ airports.	Aerodrome Service $4.58 + (0.09114 x √(MTOW-2 tonnes) Approach Service $38.60 + (1.36179 x √(MTOW-2 tonnes)
Beijing and Shanghai	Fixed charge ranging from CNY2,200 to CNY8,600 + varying weight based charge	15% of landing charge after 2 hours	Passenger charge CNY160 (70+90)/dep pax Security charge CNY12/dep pax Airbridge US$200 fixed + US100 per half hour after one hour	Fixed charge ranging from CNY1,060 to CNY3,820 + varying weight based charge
Brisbane	Rescue & firefighting variable rate per tonne MTOW	-	Pass. Service Charge $23.73/arr & dep pax Security charge $4.69 per dep pax	$5.30/tonne MTOW
Cairns	Rescue & firefighting variable rate per tonne MTOW	-	Pass. Service Charge $22.09/arr & dep pax Security charge $5.40 per dep pax CUTE charge $0.48/arr & dep pax	$10.95/tonne MTOW

Christchurch	Fixed Airfield charge per aircraft type	-	Terminal charge fixed by aircraft type International departure charge $.1122/arr & dep pax Security charge $8.89/dep pax CAA Levy $0.87/dep pax Baggage reconciliation charge: confidential. Same charge applies across the 3 NZ airports.	Aerodrome Service $7.64 + (0.15193 x √(MTOW-2 tonnes) Approach Service $36.77 + (1.29685 x √(MTOW-2 tonnes)
Hong Kong	Fixed charge $2,210 + $63 x (MTOW-20 tonnes)	$140/15 minutes contact stand (or $156 for larger aircraft)/$125/15 minutes remote stand	Terminal Building Charge $23/dep pax Security Charge $33/dep pax	None
Honolulu	$4.23/1,000 lbs MLW	-	Joint use holdroom $1.86/dep pax Joint use baggage system $3.93/arr pax Int'l Arrival Area Rate $10.31/dep pax Security Charge $2.50/arr & dep pax AIP proxy charge $1.29/arr & dep pax	None
London Heathrow	£818.68 fixed over 16 tonnes MTOW Emissions charge varies with aircraft output of NOx	£3.38 fixed + £0.053/tonne MTOW/15 minutes, with variable peak adjustment factor	Europe: £21.80/dep pax, £16.35/transfer pax; Other destinations: £30.63/dep pax, £22.97/transfer pax, with rebates for bus operations	£75.61 fixed + £1.03/tonne MTOW
Los Angeles	$4.06/1,000 lbs MLW	$0.10/1,000 lbs MLW after 3 hours	Terminal Charge $4.78/arr pax, $4.40/dep pax Passenger Facility Charge $4.50/dep pax Security Charge $2.50/arr & dep pax AIP proxy charge $1.27/arr & dep pax	AIP proxy charge $1.53/arr & dep pax
Melbourne	Rescue & firefighting variable rate per tonne MTOW	-	Pass. Service Charge $13.69/arr & dep pax Security $0.21/dep pax Passenger & bag screening $3.77/dep pax	$4.60/tonne MTOW
Nadi	$16.46/tonne MTOW	Fixed charge for second three hours based on aircraft size, hourly thereafter	Passenger charge $110/dep pax Development charge $5.00/dep pax Security charge $5.00/dep pax	$2.22/tonne MTOW

Osaka Kansai	¥2,090/tonne MTOW	-	Passenger Service Facility Charge ¥2,650/dep pax Baggage handling ¥118,800/departure Airbridge ¥7,300/arr & dep	None
Papeete	Weight-dependent fixed charge + (MTOW-75 tonnes x weight-dependent variable charge) x variable noise factor x 1.0967 correction factor	Fr15.00/tonne MTOW/hour after 2 hours	Passenger charge Fr1,404/dep pax	€12/tonne MTOW to the power of 0.9 x 1.247 correction factor
Perth	Airfield Usage charge $3.65/arr and dep pax Rescue & firefighting variable rate per tonne MTOW	$30.37/aircraft over 2 hours	Terminal charge $9.075/arr & dep pax Security recovery $1.115/dep pax Baggage handling $2.05/dep pax Passenger and bag screening $5.179/ dep pax	$7.85/tonne MTOW
San Francisco	$3.79/1,000 lbs MLW	-	Security Charge $2.50/arr & dep pax + $0.15/dep pax Passenger Facility Charge $4.50/dep pax SFOTEC charges $1,250/departure AIP proxy charge $1.43/arr & dep pax	AIP proxy charge $1.68/arr & dep pax
Sydney	Rescue & firefighting variable rate per tonne MTOW	$35/15 minutes	Terminal charge $25.51/arr & dep pax	$5.06/tonne MTOW
Tokyo Narita	Variable rate between ¥1,650 – ¥2,100/tonne MTOW	¥200/tonne MTOW	Passenger Service Facility Charge ¥2,040/dep pax Baggage handling ¥85,500/departure Airbridge ¥13,000/turnround Security ¥500 dep/pax	None
Vancouver	$5.16/tonne MTOW	-	General terminal fee varies by aircraft size Airport Improvement Fee $15.00/dep pax Security, turnaround & pre-clearance fees $8.62/dep pax National security $25.91/dep pax Airbridge $60.14 single/$90.23 double	$23.90/tonne MTOW to the power of 0.80

Wellington	$11.78/arr & dep pax	-	International departure charge $21.74/dep pax Security charge $8.70/dep pax CAA Levy $0.87/dep pax Baggage reconciliation charge Confidential. Same charge applies across the 3 NZ airports.	Aerodrome Service $7.08 + (0.14074 x √(MTOW-2 tonnes) Approach Service $36.77 + (1.29685 x √(MTOW-2 tonnes)

APPENDIX D- INDICES OF CHARGES BY INDIVIDUAL AIRCRAFT TYPE

The tables below show the cost of an arrival and a departure by each individual aircraft type, in NZ Dollars and SDRs. The average figures and figures for Auckland are also shown on a per passenger basis.

A320-200 (NZ$)	
Nadi	11,048
Vancouver	10,533
Cairns	9,458
Brisbane	9,419
Osaka	9,105
Sydney	8,806
Tokyo	7,974
Wellington	7,292
Adelaide	7,030
London Heathrow	7,057
Average	**6,716**
Christchurch	6,277
Auckland	**6,137**
Perth	5,973
Melbourne	5,508
Honolulu	4,992
Beijing	4,866
Shanghai	4,866
Los Angeles	4,372
San Francisco	4,308
Per passenger	
Average	53.7
Auckland	49.1

A320-200 (SDRs)	
Nadi	5,872
Vancouver	5,520
Cairns	4,948
Brisbane	4,927
Osaka	4,663
Sydney	4,607
Tokyo	4,084
Wellington	3,771
Adelaide	3,678
London Heathrow	3,639
Average	**3,502**
Christchurch	3,247
Auckland	**3,174**
Perth	3,125
Melbourne	2,881
Honolulu	2,579
Beijing	2,570
Shanghai	2,570
Los Angeles	2,259
San Francisco	2,225
Per passenger	
Average	28.0
Auckland	25.4

B777-200ER (NZ$)	
Nadi	24,632
Vancouver	24,319
Cairns	22,668
Brisbane	21,861
Osaka	21,230
Sydney	19,590
Adelaide	19,261
Tokyo	18,693
London Heathrow	17,890
Average	**15,893**
Perth	15,247
Wellington	14,958
Auckland	**14,542**
Christchurch	14,342
Melbourne	12,933
Beijing	12,534
Shanghai	12,534
Honolulu	11,444
Papeete	11,069
Los Angeles	10,185
Per passenger	
Average	61.6
Auckland	56.4

B777-200ER (SDRs)	
Nadi	13,093
Vancouver	12,746
Cairns	11,859
Brisbane	11,437
Osaka	10,872
Sydney	10,248
Adelaide	10,076
Tokyo	9,573
London Heathrow	9,225
Average	8,290
Perth	7,976
Wellington	7,737
Auckland	7,522
Christchurch	7,418
Melbourne	6,766
Beijing	6,621
Shanghai	6,621
Papeete	5,920
Honolulu	5,911
Los Angeles	5,261
Per passenger	
Average	32.1
Auckland	29.2

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