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SESSION 1:

Principal Paper

on

Producers Price Indexes

PRODUCERS PRICE INDEX

for

**AIR PASSENGER AND AIR FREIGHT
TRANSPORT SERVICES**

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1. Summary:

The air transport industry is unusual in that it is one of the few service industries in the economy operating across countries. In some countries, this industry is very competitive, but in other countries such as New Zealand, one or a few large firms dominate the industry.

The air passenger transport industry contributes the largest share to total income for the air transport industry (approximately 75 percent in New Zealand). International air transport contributes more (approximately 73 percent in New Zealand) to the total income of the air transport industry than domestic air transport. This indicates that international passenger transport has the highest weight within the air transport industry and is therefore the most important part of the industry.

2. Introduction

The indexes in New Zealand are used mainly for the deflation of the National Accounts. Producers Price Indexes (PPIs) are mainly used for deflation of Gross Domestic Product (GDP) aggregates. Therefore, the 1993 System of National Accounts forms the basis on which the indexes for the PPIs are constructed.

New Zealand has been producing PPIs for inputs and PPIs for outputs since 1977. This paper will focus on the PPI outputs for the air transport industry and will not discuss the inputs indexes in any detail.

The outputs indexes measure changes in prices received by businesses for goods and services produced. This definition is consistent with gross output as defined by the System of National Accounts (SNA). Gross output within the SNA is equivalent to the sales of goods or services, plus net addition to stocks, plus work in progress and own account capital work (eg buildings constructed for own use). The theoretical concept on which the PPI outputs should be based is that of 'basic prices' (IMF PPI Manual: par 2.38, p66). This concept refers to the amount receivable by the producer from the purchaser for goods or services, minus any tax payable, and includes any subsidies receivable. It also excludes any transport charges invoiced separately. The concept of basic prices is also referred to as 'factory gate' prices (IMF PPI Manual: par 2.42, p67). However, the outputs indexes in the PPI in New Zealand however exclude subsidies, since the commodity indexes based on the 'output' concept that feed into the PPI outputs are currently also used as a proxy (or price indicator) for input indexes for the various industries. Therefore, the PPI outputs are not based on a pure 'basic price' concept. The commodity index for air passenger transport, for example, is used as the input costs of air transport by all other industries. It is important to note that there are currently no subsidies for the air transport industry and therefore this issue does not really affect this industry.

Inputs indexes measure price changes in the current costs of production within the economy. The definition of current costs of production is consistent with intermediate consumption as defined in the SNA (p151). The theoretical concept on which the PPI inputs should be based is that of 'purchasers prices' (IMF PPI Manual: par 2.37, p66). This concept excludes subsidies, but includes transport costs not paid for separately and also include non-deductible taxes. As mentioned in the previous paragraph the

commodity indexes also feed into the PPI inputs. Therefore, the PPI inputs are based on the same concept as that of the PPI outputs.

(See Appendix 1 for weights of the PPI inputs and PPI outputs for all industries (excluding administration, health and education); and weights for the PPI inputs and PPI outputs for the air transport industry).

It is, therefore, of the utmost importance for countries to clarify the concept and structure to be used when price indexes are developed. This will be influenced and determined by the use of the indexes and, specifically, the use of the indexes in the National Accounts. Ultimately, the ideal concepts and structure used should be matched to the resources available to calculate the indexes, such as in the case of New Zealand.

Statistics New Zealand appointed an independent consultant from Australia in 2002 to review the PPIs and based on the findings, we started a full redevelopment project in September 2003, which will be completed by June 2008. During this redevelopment the focus will be on the commodity indexes within the suite of Business Price Indexes (Producers Price Indexes, Capital Goods Price Index and Farm Expenses Price Index). The redevelopment will include the creation of a new set of commodity indexes to fit into the new industry classification to be implemented in 2008; a reselection and reweight of the sample of items-to-price within each of the commodity indexes; a reselection of respondents from which this sample of items will be priced; a review and redevelopment of the methodologies used to calculate the commodity indexes; and a full reweight and rebase of the indexes on the commodity and lowest industry level.

The transport and storage industry will be redeveloped in 2004/05 since this industry underwent major changes in the last couple of years, especially in the types of services offered. The base information for redeveloping the commodity indexes will be obtained from the Supply/Use tables of 2001 produced by National Accounts. The data will be supplemented by additional data obtained from respondents to redevelop the commodities. The Supply/Use tables use a different classification which has been developed for the sole use of National Accounts. This classification (National Accounts Commodity Classification (NACC96) has a flat structure and is based on various levels of the Australian and New Zealand Standard Commodity Classification (ANZSCC96) currently used in the indexes.

The practise of using 'output' based commodity indexes as price indicators for intermediate consumption (inputs) will be investigated in the next few years by the development project team. In theory, separate commodity indexes should be developed for outputs, inputs and stocks if it is found that the use of the 'output' based commodity indexes do not represent the price movements that a particular industry pays for air transport services. The main reason why separate prices for 'inputs' and 'outputs' indexes have not been collected to date is that it would be difficult to collect prices for the same item based on different concepts from various respondents (depending on whether the item is used to represent an inputs or outputs price). This would also create more work to process the extra information that would lead to additional staff resource requirements.

3. Industry Organisation

a) Size and structure of the industry

In New Zealand, the air transport industry contributed approximately 19.4 percent to the Gross Domestic Product (GDP) of the transport and storage industry. The transport and storage industry contributed approximately 5.0 percent to total GDP in the year ending March 2004¹.

The structure of the industry in New Zealand has strong monopolistic features and for this reason the results of the industry are combined with the communications industry in the GDP for publication purposes. The air transport industry is dominated by a single New Zealand owned airline, which contributes approximately 80 percent to the total income of the air transport industry.

The industry is divided into three classes, international scheduled passenger and freight transport; domestic scheduled passenger and freight transport; and non-scheduled international and domestic passenger and freight transport. Scheduled international air transport contributed approximately 84 percent to the income earned by the air transport industry, scheduled domestic air transport contributed 12 percent and non-scheduled air transport contributed 4 percent in 2003.

A large number of internationally owned airlines operate ticket sales or booking offices in New Zealand. It is therefore important to ensure that businesses are correctly classified, since it is easy to misclassify these businesses to air transport services instead of travel agency services, which belong to a different class of the classification (I664100).

b) Public ownership

The airline industry in New Zealand is more than 80 percent owned by the government. The New Zealand airline company was incorporated in 1940 and the government of New Zealand started to privatise the company on 24 October 1989. However, in 2002 the government had to invest a substantial amount into the airline to recapitalise the company after substantial losses were incurred in 2001 as a result of the liquidation of an Australian airline purchased by the New Zealand airline in 2000.

c) Data availability

In view of the monopolistic nature of the airline industry in New Zealand, and as a result of the close competition of the neighbouring country's (Australia) airline operating within New Zealand, data from the New Zealand airline is highly commercially sensitive. Consequently, it is quite difficult to obtain low-level data for weighting purposes. Price information, on the other hand, is freely available. A study recently undertaken by the Consumers Price Index team comparing the behaviour of internet prices and prices collected by postal questionnaire showed that prices moved similarly over four quarters. The problem with internet data however, is that it is not easy to pick up changes in the conditions of the airfares. The relationship that the organisation had with the respondent deteriorates because frequent contact does not occur and it is quite difficult to obtain answers to questions about fare changes. A

¹ Latest available GDP at constant 1995/1996 prices

further problem is that although all fare classes are available, not all fare types within each class are available on the internet each time it is being priced. A representative coverage becomes more difficult to price continuously from the web. The advantages of collecting data from the internet (such as lowering of respondent burden, accessing pricing information instantaneously, web discounts) outweighed the disadvantages for the CPI area and the decision was made to move to internet pricing from the June 2004 quarter. The CPI methodology collects the cheapest available fare type within each class and therefore, it is less of a problem than it would be in the case of the PPI.

The specific fare types that the PPI include are not continuously available on the internet and it is easier to price these directly from the airline. It is, therefore, most likely that the collection of airfares via postal survey will continue.

d) Composite goods or bundling of services

In the current (prior to 2004) methodology, some prices are requested for packaged air holidays such as ‘Discover Disneyland’ and ‘Swingaway Australia’ and for multi-modal transport services such as “fly-cruise-fly”. The prices include the airfare, accommodation at a specified hotel, airport transfers (transport between airport and hotel), and multi-modal transport such as water transport. This is a typical bundling problem. Prices for the hotel and water transport part of the service should not form part of the air transport commodity index. The packaged holiday price should be replaced with another price for air transport if the price for the air transport part of the package cannot be obtained separately from the respondent. The multi-modal transport price should also be replaced with an airfare price only if the respondent is not able to split the air transport price from the water transport price. It is more difficult to control for quality if bundled services are included in the items to price. It might be difficult for the respondent to separate the airfare price from the rest and will put more burden on the respondent to complete the survey.

4. Index structure

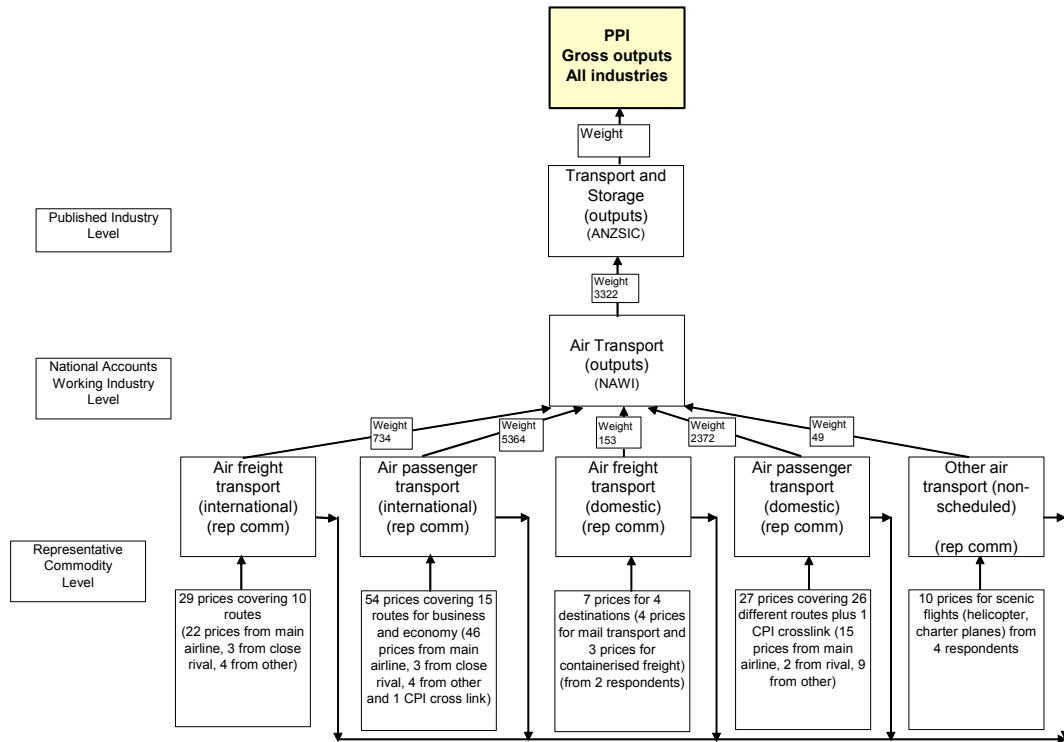
a) Index model

During a previous redevelopment (1995-98), New Zealand introduced a ‘building block’ structure for the PPIs. In this structure, prices collected for air transport services feed (with weights) into five commodity indexes (air freight transport (international); air freight transport (domestic); air passenger transport (international); air passenger transport (domestic); other air transport), which represent elementary aggregates in the index structure. These five representative commodity indexes then feed into:

- the lowest level (sub) industry outputs index for air transport (also called National Accounts Working Industry (NAWI) level), which then feed into a published aggregated industry outputs index for transport and storage;
- all the lowest level (sub) industry inputs indexes for the other industries that reported air transport input costs.

Below is a flow diagram of the outputs index structure for the air transport industry.

Flowchart of air transport in PPI
(Structure before development)



See Appendix 2 for the time series of the air transport outputs index, transport and storage industry outputs index.

See Appendix 3 for a graph reflecting the time series of the air transport index and the commodity indexes for air passenger transport (international), air passenger transport (domestic), air freight transport (international), air freight transport (domestic), other air transport.

b) Classification and relationship to CPC

Commodity classification:

The commodity classification used in the current PPI structure is the 1996 Australian and New Zealand Standard Commodity Classification (ANZSCC96). This classification has been developed for use in Australia and New Zealand and is based on a provisional version of the international Central Product Classification (CPC). From 2004, all new and redeveloped commodity indexes will be based on the 2001 Australian and New Zealand Standard Product Classification (ANZSPC01), which is based on a final version of CPC (Version 1) that better reflects contemporary standards.

Below are the two commodity classifications (current and new) for air passenger and freight transport:

ANZSCC96 (current)	ANZSPC01 (new)
73 AIR TRANSPORT SERVICES	66 AIR TRANSPORT SERVICES
731 Passenger transportation by air 731.10 Scheduled passenger transportation by air 731.20 Non-scheduled passenger transportation by air	661 Air transport services of passengers 6611 Scheduled air transport services of passengers 6612 Non-scheduled air transport services of passengers
732 Freight transportation by air 732.10 Mail transportation by air 732.20 Transportation of containerised freight by air 732.90 Transportation of other freight by air	662 Air transport services of freight 6620 Air transport services of other freight 66200 Air transport services of other freight 6620010 Transportation services of dry/solid bulk freight by air 6620020 Transportation services of liquid bulk freight by air 6620030 Transportation services of containerized freight by air 6620040 Transportation services of livestock by air 6620090 Transportation services of other freight by air
733 Transportation via space	663 Transport services via space
734 Rental services of aircraft with operator	664 Rental services of aircraft with operator

As can be seen from the index model in the PPI structure, it was necessary to deviate from the official commodity classification in the following respects:

- ‘Scheduled passenger transportation by air’ and ‘freight transportation by air’ have been further broken down into international and domestic air transport. Prices for domestic transportation of passengers and freight by air are expected to move quite differently from prices of international transportation of passengers and freight by air, since the conditions attached to these different destinations differ substantially. Therefore, it is important that indexes are created on a more detailed level to account for these differences and to ensure sufficient quality control in the indexes. Sufficient data is also available for weighting purposes and it is therefore, possible for New Zealand to calculate indexes on this more detailed lower level.
- At the time of development it was not possible to create indexes for the different types of freight transport by air as outlined in the official classification, since sufficient data was not available.
- ‘Non-scheduled air passenger’ and ‘rental services of aircraft with operator’ have been combined in an index called ‘other air transport’, since this part of the industry is too small to warrant separate indexes.

Industry classification:

The industry classification currently being used in the indexes in New Zealand is the 1996 Australian and New Zealand Standard Industrial Classification (ANZSIC96), which is based on ISIC Revision 3. Work is currently underway to release an updated version for ANZSIC in 2006. The North American Industry classification (NAICS) of 2002 was used as basis and adapted for Australia and New Zealand. This updated version (ANZSIC06) will be implemented in the indexes during 2008 or 2009. The ANZSIC96 structure will therefore be kept until at least the year 2008. To prepare for the implementation of ANZSIC06, New Zealand will create the necessary commodity indexes during the current redevelopment based on ANZSPC01 to ensure the basic commodity index structure at the lowest level is in place. There are significant changes in the new industry classification especially in the information technology area. An entire new division called the 'information, media and telecommunications division', will provide better coverage for the information technology area².

In ANZSIC06, the transport and storage division will be renamed to the transport, postal and warehousing division. The decision was made to move courier and postal services from the communications industry into the transport and storage industry. It is further proposed in ANZSIC06 that the ANZSIC subclasses for air and space transport merge into one subclass - air and space transport.

The reasons for the proposal are:

- The ANZSIC06 'air and space transport' subdivision will not be split along freight/passenger lines. This is due to the (possible) difficulty of splitting data on a freight/passenger basis given the integrated nature (ie a significant proportion of units in the industry provide both passenger and freight services) of the service provision activities of units in this industry. Secondly, splitting air transport activities into freight/passenger categories will lead to low coverage ratios for the air freight transport category due to the difficulty in splitting the data of units providing both passenger and freight services. This does not seem to be a problem for the New Zealand airline, and revenue data for 2003 has been provided for freight and passenger commodities separately.
- In ANZSIC96, the subdivision/group was split into 'scheduled international air transport' and 'scheduled domestic air transport' and 'non-scheduled air and space transport' classes. Given the significant upheaval of the airline industry in both Australia and New Zealand in the past decade, this distinction has become blurred. Units in Australia and New Zealand now operate on both international and domestic routes, operating with similar capital and labour requirements. Therefore, the distinction between domestic and international air services will be removed in ANZSIC06. The data is, however, available from the New Zealand airline for 2003, so separate commodity indexes for international and domestic passengers and freight will be created on the lowest level based on ANZSPC01 to ensure quality price indexes.
- The other major change to the air and space transport subdivision is removing the non-scheduled air transport class, as this class does not meet economic significance criteria in Australia and New Zealand. The contribution of non-scheduled air transport to total air transport in New Zealand has fallen to such an extent in the last few years that these indexes (based on ANZSPC01 non-

² Out of scope for this paper and therefore it will not be discussed in any detail.

scheduled air transport services of passengers) will probably be removed from the current index structure.

- The main service offered by couriers is the transport and delivery of mail and small cargo and therefore it should be part of the transport and storage industry. Mail services cannot be clearly distinguished from that of general cargo in practise and therefore the decision was made to keep these together in the new transport, postal and warehousing division in ANZSIC06.

Below are the two industry classifications (current and new) for air passenger and freight transport:

ANZSIC96 (current)	Proposed ANZSIC06
I640: Group - AIR AND SPACE TRANSPORT	I49: AIR AND SPACE TRANSPORT
I6401: Class - scheduled international air transport	I490: air and space transport
I640100: Subclass - scheduled international air transport	I4900: air and space transport
I6402: Class - scheduled domestic air transport	
I640200: Subclass - scheduled domestic air transport	
I6403: Class - non-scheduled air and space transport	
I640300: Subclass - non-scheduled air and space transport	

Below is some detailed information about what is included and excluded in the ANZSIC96 classification.

1996 ANZSICI640100: Subclass - Scheduled international air transport

This sub-class consists of units mainly engaged in operating aircraft on scheduled routes for the transportation of passengers or freight between domestic and foreign ports.

Exclusions/References

Units mainly engaged in:

- repairing aircraft (in subclass C282400 aircraft manufacturing);
- operating aircraft on a non-scheduled basis for the transportation of passengers or freight between domestic and foreign airports (in subclass I640300 non-scheduled air and space transport);
- operating ticket sales or booking offices of non-resident airlines (in subclass I664100 travel agency services);
- international air freight forwarding (in subclass I664300 freight forwarding (except road)).

Primary activities include:

- air transport service (scheduled, international);

- b) aircraft charter, lease or rental (with crew; for use in scheduled international air transport);
- c) passenger transport service (scheduled international air transport);
- d) air transport terminal operation (for scheduled international air transport; except airports);
- e) freight transport service (scheduled international air transport).

1996 ANZSICI640200: Subclass - Scheduled domestic air transport

This sub-class consists of units mainly engaged in operating aircraft on scheduled routes for the transportation of passengers or freight domestically.

Exclusions/References

Units mainly engaged in:

- a) repairing aircraft (in subclass C282400 aircraft manufacturing);
- b) operating aircraft on a non-scheduled basis for the transportation of passengers or freight domestically (in subclass I640300 non-scheduled air and space transport);
- c) domestic air freight forwarding (in subclass I664300 freight forwarding (except road)).

Primary activities include:

- a) air transport service (scheduled, domestic);
- b) aircraft charter, lease or rental (with crew; for use in scheduled domestic air transport);
- c) passenger transport service (scheduled domestic air transport);
- d) air transport terminal operation (for scheduled domestic air transport; except airports);
- e) freight transport service (scheduled domestic air transport).

1996 ANZSICI640300: Subclass - Non-scheduled air and space transport

This sub-class consists of units mainly engaged in operating aircraft on other than scheduled routes for the transportation of passengers or freight. It also includes units mainly engaged in operating flying schools.

Exclusions/References

Units mainly engaged in:

- a) aerial crop dusting, helicopter cattle mustering or in the provision of other aerial agricultural services (in subclass A021300 aerial agricultural services);
- b) repairing aircraft (in subclass C282400 aircraft manufacturing);
- c) civil airport operation (except air transport terminals) (in subclass I663000 services to air transport);
- d) air freight forwarding (in subclass I664300 freight forwarding (except road));
- e) leasing or hiring aircraft without crew, from own stocks (in subclass L774200 other transport equipment leasing);
- f) aerial surveying or photography (in subclass L782200 surveying services).

Primary activities include:

- a) air transport terminal operation (non-scheduled air transport; except airports);
- b) freight transport service (non-scheduled air transport);
- c) space transport service (non-scheduled);
- d) aircraft charter, lease or rental (with crew, for use in non-scheduled air transport);
- e) passenger transport service (non-scheduled air transport).

Below is information about what is included and excluded in the **new ANZSIC06** classification for the industry.

I49 AIR AND SPACE TRANSPORT

I490 Air and Space Transport

I4900 Air and Space Transport

This class consists of units mainly engaged in operating aircraft for the transport of freight and passengers.

Primary Activities include:

- a) aircraft charter, lease or rental with crew for freight/passengers;
- b) air freight transport service;
- c) air passenger transport service.

Exclusions /References

Units mainly engaged in:

- a) aerial surveying in class 6922 surveying and mapping services;
- b) repairing aircraft in class 2394 aircraft manufacturing and repair services;
- c) operating ticket sales or booking offices of non-resident airlines are included in class 7220 travel agency and tour arrangement services;
- d) domestic and international air freight forwarding are in class 5292 freight forwarding services; and
- e) transport of passengers by aircraft solely for sightseeing purposes are included in class 5010 scenic and sightseeing transport.

c) Data model for the commodity indexes

Pricing methodologies

(i) Air freight transport (international)

Routes:

New Zealand has three main international airports, Auckland, Wellington and Christchurch. Cargo flights are operated internationally from these airports. The current index structure measures routes between these airports and Australia (Sydney, Melbourne, Brisbane), America (Los Angeles), the United Kingdom (London), South Africa (Johannesburg), Hong Kong, Fiji (Nadi), Honolulu and Singapore.

Methods:

The methods used are generally combinations of 'model' services and list prices. This index contains approximately 29 items (all excluding GST). Prices are asked in New Zealand dollars (if departing from New Zealand) and foreign currency (if departing from abroad). In the last-mentioned case, the price is converted to NZ\$ using the ruling exchange rate at the midpoint of the quarter (ie on the 15th of the middle month of the quarter). Price items asked are any one or a combination of the following:

- general cargo;
- specific items (eg lobsters and crabs; horses; fruit and vegetables).

Price specifications for these items are any one or a combination of the following:

- normal rate and/or discounted rate (special or frequent use) and/or special rate for a specific commodity (eg racehorses);

- per kilogram without or with a specified weight limit (e.g. over 45kg, over 100kg, under 45kg, 50kg or more);
- per container or pallet (different sizes, eg 20 ft or 40 ft, flat charge with a weight limit);
- a specified number (eg 1000 horses).

These exact specifications are specific to the respondent and are dependent on how customers are charged.

Respondents:

The respondent sample consists of only five respondents. The main airline accounts for approximately 88 percent of the weight in the index.

Shortcomings of the index:

It was found recently that two of the five respondents had been reclassified to other parts of the industry, namely ANZSICI661400 (travel agency services) and ANZSICI663000 (services to air transport) and should therefore not be in this class. The population sample is in the process of being reselected to better reflect the current situation in the air transport industry.

The representation of the routes in the current sample is also being investigated. New Zealand's export markets have changed in the past 10 years and it is quite possible that routes in the sample are not representative of the actual freight transported abroad. It will also be investigated whether it will be possible during this redevelopment to create indexes for different types of freight. In view of the large share held by the main airline, the information is highly market sensitive and it is quite difficult to obtain detailed information required to create indexes for different types of freight. Any changes to the methods will depend on the level of detail the respondent can supply.

The use of the exchange rate at the mid-point of the quarter to convert foreign currency prices to New Zealand dollars has been questioned. This should be investigated and an alternative method applied, if necessary to better represent actual prices paid by producers for air freight services.

(ii) Air passenger transport (international)

Routes:

International passenger flights are operated from the three international airports (Auckland, Wellington and Christchurch). The indexes currently have prices for air passenger transport between these airports and Australia (Sydney, Melbourne, Great Barrier Reef, Brisbane, Perth), Honolulu, United States (Los Angeles), the United Kingdom (London via Asia, London via USA), Fiji (Nadi), New Caledonia (Noumea), Cook Islands (Rarotonga), Western Samoa (Apia), Singapore, Japan (Tokyo) and Hong Kong.

Methods:

The index contains 54 different international airfares (53 business customer fares with a combined weight of 90 percent of the index and a link from the CPI for household fares with a weight of 10 percent of the index). The price specifications for the business customers include any one or a combination of the following:

- different seasons (eg high season, low season, shoulder season (all with dates specified));
- different classes (eg economy, business, first);
- different conditions (eg valid for 12 months, early purchase, on-line fare);
- different types (eg epic, epex, pex, hflexi, tsaver) – mostly specific to the respondent and helps to identify changes in quality, since any change in conditions relates to a quality adjustment in price;
- one way for some fares and return for others.

Weights for the airfares were assigned equally within each route category, since information could not be obtained at the time of development to assign proper fare class and fare type weights. The routes were weighted according to the contribution to total sales with the following weights (North American route 34 percent, United Kingdom/Europe route 9.25 percent, Asia route 34 percent, Australia route 20 percent and Pacific Islands route 1.75 percent). This information was available from the annual financial statements of the dominant airline in the industry. An investigation is currently underway to determine how representative the routes are and whether the different types of fare classes and types (with different conditions) are still applicable. After lengthy negotiations over the last few months the main airline agreed to provide information on a lower. Statistics New Zealand is currently awaiting the return of the questionnaire that will provide proper weighting data for the routes (destinations within each route) and fare classes and types.

Respondents:

The sample for the PPI is very small. The 53 prices for businesses travellers are collected from four airlines and one of these airlines has a weight of 91 percent in the index.

Shortcomings of the index:

It would appear that the fares currently collected are heavily weighted towards economy class and should be reviewed. From information obtained from a travel agent, it would appear that business travellers book business class rather than economy class in view of the long distances business travellers need to travel to countries other than Australia. Therefore, the PPI should assign a higher weight to business class and first class fares and a lower weight to economy class for international destinations other than Australia.

The use of the CPI economy class fares for business customers making use of economy fares (with a lower weight) is also under investigation. There are different fare types with different conditions that affect the price within economy class. The CPI economy fare measures the cheapest available, and information obtained from travel agents suggests that business customers do not necessarily obtain the cheapest available since business travellers do not book far in advance and also want the opportunity to change travel plans after the initial booking. Migration data will be investigated to establish whether a breakdown of business and holiday travellers is of use in the PPI. It is unsure if this will provide sufficient weighting information for business/household travellers for different destinations and fare classes.

The CPI price used in the PPI is based on a methodology that is different from PPI methodology. It is of the utmost importance to ensure that the concepts used by the

CPI and the PPI are the same when a decision is made to use the CPI price in the PPI. International airfares for the CPI are collected from four travel agents, whereas international airfares for businesses for the PPI are collected from the airlines themselves. Airfares are supplied for nine destinations, which are weighted to reflect the countries that New Zealanders travel to. Investigations by the CPI team found that there is little or no difference in the price of an airfare to any international destination if departing from another airport within New Zealand. The decision was therefore taken that all airfares (except to Sydney, which also departs from Wellington) would be priced from Auckland. The fares that are collected for the CPI are for United Kingdom (London), Canada (Vancouver), America (Los Angeles), Hong Kong, Singapore, Australia (Sydney (via Auckland and Wellington), Brisbane) and Fiji (Nadi). Three fares are supplied for each destination, the New Zealand airline, the airline of the country destination and the cheapest available. The current problem with accepting this index as a price indicator for households for PPI purposes is that foreign-owned airline prices are included in the price index because the CPI is designed to measure the changing cost of goods and services purchased by New Zealand households, irrespective of whether it is produced by a New Zealand resident company or a foreign company. In terms of the National Accounts concepts, the PPI should reflect only price changes of goods and services produced and consumed by New Zealand-owned companies. This will be addressed in the redevelopment and the price obtained from the CPI will exclude any foreign-owned airlines.

The weights currently assigned to the prices collected from the main airline are too high since data from 2003 Annual Enterprise Survey (AES) suggests that this enterprise should only have a weight of approximately 80 percent.

(iii) Air freight transport (domestic)

Routes:

The routes cover mostly the four main national airports (Auckland, Wellington, Christchurch and Palmerston North).

Methods:

The index contains seven prices. The price specifications for these items are any one or combination of the following:

- per kilogram, with or without a specified weight limit with special conditions (eg 5 kg (first 2kg = \$40 plus \$5 per kg after that));
- special conditions (eg overnight express, air express, excess);
- rate per flying hour;
- per container or pallet (different sizes eg 20 ft or 40 ft, flat charge with a weight limit);

Respondents:

The sample consists of only two respondents.

Shortcomings of the index:

One of the respondents is classified to a different industry classification in ANZSIC96 – postal services, which is part of the communication services industry. In the new ANZSIC06 classification the postal services commodity index will become part of the transport and storage industry. For weighting purposes, it should be

ensured that only that part of the income that the respondent earned from delivery of air transport services are included.

(iv) Air passenger transport (domestic)

Routes:

The routes cover most of the 24 routes flown within New Zealand.

Methods:

The index contains 27 items of which one is a link from the CPI with a weight of 30 percent.

The price specifications for these items are any one or a combination of the following:

- different fare types within the same class (eg 'K', 'L', 'B' or just 'basic');
- mostly one-way fares.

Respondents:

The sample consists of six respondents. Three of the respondents are subsidiaries of the main New Zealand airline.

Shortcomings of the index:

There is a price included for a scenic 'fly-cruise-fly' deal which leads to quality problems since it is unsure whether a price increase due to the 'cruise' part of the deal or the 'fly' part of the deal. Obviously the 'cruise' part of the deal belongs in a different commodity index (passenger transport by sea).

The biggest problem with the domestic airfare commodity index is that very few specifications are outlined in the questionnaire. This makes quality control extremely difficult. Major changes in domestic airfares in the past year saw the major airline company introduce a 'no frill' domestic service that led to the scrapping of business class on domestic routes. Economy class is now divided into three different 'classes' within economy and each class has four different 'types'. There are 24 different domestic routes and therefore, each route has a minimum of 12 different fares. Prices for the fare types and the number of seats available per fare type differ depending on many factors that are determined by the airline. The respondent uses an econometric model (unavailable to Statistics New Zealand) to manipulate the number of seats available and prices of each fare type on a daily basis to maximise profits. There is usually only a limited number of cheap seats available per flight and these will mostly be filled first by travellers who booked well in advance. It was suggested by a travel agent that business travellers usually don't get hold of these cheaper seats since they usually book at short notice.

It is relatively easy to decide on the routes to choose since a large number of the routes are not extensively used by business travellers and also do not carry a large amount of passengers. Information obtained from a travel agent suggests the two main routes (Auckland to Wellington and Auckland to Christchurch) carry 70 percent of the passengers, the Wellington to Christchurch route 15 percent with the remaining 21 routes carrying the remaining 15 percent. This information has not been verified by the airline.

A further problem is to decide which of the 12 fare types to choose for each route and how to obtain data to weight these fare types. This information is market sensitive and to overcome this problem a suggestion has been made by the airline to provide a weighted average domestic price without any detailed breakdown of route, fare class or fare type. If in a given quarter the number of passengers paying the different fare types varies (since the airline can control the availability of the different types of fares to maximise profits for the airline), the average price will change even though the actual price per fare type did not change. This will cause the indexes to show price and volume movements (instead of only pure price movements). Therefore the suggestion from the airline to provide an average domestic price for airfares without controlling for the distances flown or the conditions attached to the fare types cannot be accepted.

The choice of fare classes (and types) to include in the index will be determined by the contribution to total revenue and the index development team will choose a fare class and type based on the conditions of the fare class and type that would suit a business traveller best. After discussions with a travel agent, it was determined that business travellers make more use of fares with less strict conditions, such as changes to dates and times, how long in advance the booking should be made etc. This information will assist in the decision to choose the most appropriate fare class and type by route for business travellers. Weights will be determined by the contribution to total revenue.

(v) Other air transport

This index contains 10 prices obtained from four firms that provide ‘non-scheduled passenger and freight services by air’, as well as ‘rental services of an aircraft with an operator’.

Methods:

The method is a combination of a charge-out rate and a model service. The price for ‘rental services of an aircraft with an operator’ is obtained with an hourly charge-out rate for the aircraft with operator. The price for ‘non-scheduled passenger and freight services by air’ is obtained by specifying a model with a minimum amount of time, for example: ‘Mt Cook spectacular – 40 minutes with snow landing’. This index has a very small weight (approximately 0.5 percent). A decision needs to be made in consultation with National Accounts whether this index should be continued.

Main limitations with the current methods

- The current methods don’t have enough specifications on the questionnaires and the specifications are not always consistently asked from all respondents. This makes quality control difficult.
- Weights have been based on limited information and in most cases have been assigned subjectively without supporting data.
- It is uncertain whether the routes for both passenger and freight air transport are representative. A number of new routes were introduced in the past couple of years that have not been included in the sample of routes, since no information was available to reweight the different routes.

- The methodology of the CPI does not conform to the concepts in the PPI. The use of the index should be reconsidered if the CPI can not provide an index without foreign airline prices.

5. Sample Design

a) Population

There are more than 500 firms on the Business Frame classified to the air transport industry (ANZSIC I64). Since a large number of these industries fall outside the scope of the PPI, the Annual Enterprise Survey (AES) of 2003 will be used for purposes of selecting a population for the indexes. The AES sample has a population of 228 enterprises of which only 73 earned income for the year. From the income-earning population only nine enterprises were classified to the scheduled international air transport class (ANZSIC I6401), 15 enterprises to the scheduled domestic air transport class (ANZSIC I6402) and 49 enterprises to the non-scheduled air transport class (ANZSIC I6403)). Total sales collected via this survey represented approximately 90 percent of the total sales for the air transport industry (I640). In AES 2003, the dominant airline contributed almost 72 percent to total sales of the industry.

b) Sample units

The sample will be selected from the enterprises currently in AES 2003. This survey collects financial information from a cross section of New Zealand businesses in a wide selection of industries in the economy. This data is also used for weighting purposes on the National Accounts Working Industry (NAWI) level.

Gross output and intermediate consumption variables from AES 2003 will be used to rank the respondents in terms of their importance to the National Accounts defined industries. The ideal sample should be selected in such a manner that 80 percent of the industry (National Accounts defined industry) is represented.

Although the aim is that the sample includes a sufficient number of companies so that 80 percent of the total operating revenue of the industry is represented, the size and structure of the industry does not allow New Zealand much of a choice but to use purposive sampling in the sample design and enterprises will be mostly purposively selected in the three different sub-classes.

The nine enterprises in the scheduled international air transport class (I6401) accounted for approximately 85 percent of total sales of the air transport industry. This class is dominated by the largest company in the air transport industry, which contributed approximately 80 percent of income to this class. From the remaining eight companies in this class only three contributed more than one percent to total income of this class. To ensure coverage of price movements of the other main competitors as well, the sample for the PPI will consist of the top three companies in this sub-class for air passenger transport, plus one more company that specialises in air freight transport.

The 15 enterprises in the scheduled domestic air transport class (I6402) accounted for approximately 12 percent of total sales of the air transport industry. The top three

companies in this class contributed approximately 80 percent to total sales of the class. Only three more companies in this class contributed more than 1 percent to total sales of the class. The sample for the PPI will consist of the top four companies (of which three are subsidiaries of the dominant New Zealand airline) plus one more company that specialises in domestic air freight services.

The non-scheduled air transport class (I6403) accounted for only 3 percent of total sales of the air transport industry in AES 2003. This class has a dominant company in the population that contributed 13 percent to the sales of this class and a further 12 companies that contributed between 1 and 3 percent. The PPI sample will consist of the dominant company, plus a random selection of one more company, to obtain prices for non-scheduled passenger and freight services and rental services of an aircraft with an operator if the decision is made to continue this index.

As discussed above, the industry group (ANZSIC I640) consists of three classes, scheduled international passenger and freight transport (ANZSIC I640100), scheduled domestic passenger and freight transport (ANZSIC I640200) and non-scheduled passenger and freight transport (ANZSIC I640300). Scheduled international passenger and freight transport is by far the largest class in the group.

The passenger transport component of the scheduled international passenger and freight transport class is by far the largest. In the June 2004 financial statements of the dominant airline, income from passenger transport was approximately 90 percent of total income for these activities.

c) Respondent burden

The economy in New Zealand is dominated by a small number of large firms that contribute a large percentage to GDP and a very large number of small firms.

A few very large companies dominate the air transport industry. All these large companies are classified as key companies and participate in most of the surveys conducted by Statistics New Zealand. Respondent burden is a problematic issue in Statistics New Zealand. Every effort is made to reduce respondent burden for the small and medium enterprises and these companies are included in surveys only if it is absolutely necessary. Statistics New Zealand does not have a rotation policy in place for the PPIs because of the limited number of firms that can be chosen for the sample. The large firms are usually so dominant in the market that they cannot be excluded from the sample.

6. Technical Concerns

a) Quality adjustments and new item bias

A concern for countries constructing a price index for air transport services is how to deal with quality/quantity issues to ensure that price indexes reflect only 'pure' price changes and not volume movements. These include, for example, changes in the characteristics of the freight service and airfare such as service standard changes (for example, enhanced on-line tracking), charges for meals, seating space, baggage allowance changes and, more recently, mileage or frequent flyer programs. To adjust the price for these changes a value should be calculated for the difference in price due

to the change, especially if a similar service is not available that would enable you to proxy a price. The value assigned to the loss/gain is usually very subjective.

Efforts by the CPI to deal with these quality differences by adjusting the price for the airfare based on the value placed on the loss/gain from a consumer's point of view are not necessarily applicable to the PPI. The 'value' of the loss/gain may be quite different from a consumer's point of view than the actual value of the difference based on the cost passed on by the producer. New Zealand currently applies the same adjustment to the PPI as that applied by the CPI since the assumption is made that the values are essentially the same. This is an area where a lot of research still needs to be done, since the value to the consumer is not necessarily equal to the cost to the producer.

Appendix 4 outlines a typical quality adjustment problem that Statistics New Zealand recently dealt with. The name of the airline has been changed for confidentiality purposes.

New item bias exists when a new service appears in the market and the statistical agency does not include the new service in the price index at the right time. It can cause the price index to either overstate or understate the actual price movement for the period (quarter in the case of the New Zealand PPI). The example provided in appendix 4 also deals with a new service that recently appeared in the domestic air transport industry. In this case the new service was introduced simultaneously on all domestic flights one month into the quarter (on 1 August). Since Statistics New Zealand usually prices at the midpoint of the quarter (in this case it would be 15 August), the new service was priced as if it was available for the entire quarter and the quality adjustment made in the normal manner as if the service existed for the entire quarter.

7. Survey Vehicles

a) Methods to secure cooperation and to reprice

Statistics New Zealand mostly uses the Commodity Price Survey (CPS) to reprice the items. The CPS is a quarterly postal survey designed to capture data for use in several outputs including the PPI, Farm Expenses Price Index, Capital Goods Price Index, Overseas Trade Price Indexes, plus other ad-hoc price indexes for National Accounts and external users. The target response rate for the CPS is 96 percent overall. Actual response rates on the CPS are fairly high (approximately 97 percent for non-key respondents and 100 percent for key respondents) - See appendix 5 for a copy of the CPS.

Key companies are all managed by a group of account managers in Auckland. These account managers put a tremendous amount of effort into managing the relationship Statistics New Zealand has with them. For this reason, these companies are usually very cooperative in providing the necessary information. The target response rate for key companies is 100 percent and this target has always been met.

Most information that is collected for use in the indexes is price level information. However, other information is collected that is used to derive a 'price'. This information is usually collected using ad-hoc questionnaires.

Examples include:

- quantity and value information (from which a price is calculated by dividing value by volume);
- foreign exchange buy and sell rates;
- interest rates (to calculate bank margins);
- price indexes published by other national statistical offices;
- stock exchange indexes;
- discount levels; and
- information to calculate weights.

Statistics New Zealand also uses indexes from the Consumer Price Index as a proxy for price movements in the PPI.

Prices for use in the air transport indexes are mostly collected via the CPS, with some minor collections of domestic airfares via a telephone questionnaire and from the CPI. The possibility of using the internet will also be considered, although as it has been mentioned in this paper there are certain difficulties with internet price collection that need to be taken into consideration.

The dominant airline in this industry is regarded as a key firm and although pricing information is generally forthcoming from them, weighting information is quite difficult to obtain.

b) Strategies to secure and maintain data quality

Data is subjected to a series of edits when it is entered into the processing system (Generalised Index Facility Toolbox – or GIFT). During the entering phase the statistician will follow up any changes made by the respondent to the specifications of the service. If the price changed from the previous quarter, the respondent is asked to provide a reason for the price change. The questionnaire has a standard list of reasons from which the respondent can choose (see appendix 5 for an example of the CPS questionnaire showing these reasons-for-change on page 2). The reasons-for-change help us identify quality/quantity changes from ‘pure’ price changes.

After data has been entered, a series of edit reports are run to identify large movements. On the micro-edit level all prices are checked that are outside of the tolerance level of plus/minus 5 percent that is set in GIFT. On the macro-edit level, reports are run first for the commodities and then the lowest level industry indexes. These are scrutinized to identify unexpected price movements, quantity or quality issues. It is usually fairly easy to pick up strange price movements on the different levels of the indexes.

AIR TRANSPORT
ANZSIC Division I, Subdivision 64
Weighting Base: 1995

INPUTS		OUTPUTS	
Percentage of Total Inputs in Industry		Percentage of Total Outputs in Industry	
Materials & Services	64.2	Income From Services	99.7
Aircraft Parts	22.4	Air Passenger Transport (International)	53.6
Aircraft Fuels	18.6	Air Passenger Transport (Domestic)	23.7
Renting of Aircraft	14.5	Air Freight Transport (International)	7.3
Other	8.7	Contract Services (Engineering)	7.3
		Other	5.8
Fuel and Power	15.3	Air Freight Transport (Domestic)	1.5
Fuel	14.2	Helicopter Services	0.5
Gas	0.7		
Electricity	0.4	Other	0.3
Repairs and Maintenance	0.3		
Communications	1.4		
Finance and Insurance	0.1		
Property Services	1.3		
Business Services	3.7		
Other Expenses	13.7		
Total	100	Total	100

Notes:

- * The regimen summarises weights applied to commodities included in the index
- * Weights are derived from estimates of approximate basic value and intermediate consumption expenditure
- * Items with small weights (usually less than 1%) may not be individually specified above
- * Rounding error may occur

ALL INDUSTRIES EXCLUDING ADMINISTRATION, HEALTH & EDUCATION

ANZSIC Divisions A - L, P & Q

Weighting Base 1996

INPUTS		OUTPUTS	
Percentage of Total Inputs in Industry		Percentage of Total Outputs in Industry	
Agriculture, Forestry and Fishing	7.7	Agriculture, Forestry and Fishing	8.1
Horticulture and Fruit Growing	} 5.4	Horticulture and Fruit Growing	1.0
Sheep and Beef Farming	}	Livestock and Cropping Farming	2.5
Dairy Cattle Farming	}	Dairy Cattle Farming	1.7
Cropping and Other Farming	}	Other Farming	0.6
Services To Ag., Hunting and Trapping	0.3	Services To Ag., Hunting and Trapping	0.3
Forestry and Logging	1.5	Forestry and Logging	1.5
Fishing	0.5	Fishing	0.5
Mining	0.9	Mining	1.1
Manufacturing	35.6	Manufacturing	28.7
Meat and Meat Product Manufacturing	4.0	Meat and Meat Product Manufacturing	3.0
Dairy Product Manufacturing	4.9	Dairy Product Manufacturing	3.2
Other Food Manufacturing	3.9	Other Food Manufacturing	3.0
Tobacco, Beverage and Malt Mfg	1.3	Tobacco, Beverage and Malt Mfg	1.0
Textile and Apparel Manufacturing	2.0	Textile and Apparel Manufacturing	1.7
Wood Product Manufacturing	2.1	Wood Product Manufacturing	1.7
Paper & Paper Product Manufacturing	2.0	Paper & Paper Product Manufacturing	1.8
Printing, Publishing & Recorded Media	1.8	Printing, Publishing & Recorded Media	1.9
Petroleum, Coal & Basic Chemical Mfg	1.6	Petroleum, Coal & Basic Chemical Mfg	1.4
Plastic & Other Chemical Product Mfg	2.5	Plastic & Other Chemical Product Mfg	2.1
Non-Metallic Mineral Product Mfg	0.9	Non-Metallic Mineral Product Mfg	0.9
Basic Metal Manufacturing	1.2	Basic Metal Manufacturing	1.0
Sheet and Fabricated Metal Product Mfg	1.9	Sheet and Fabricated Metal Product Mfg	1.7
Transport Equipment Manufacturing	1.7	Transport Equipment Manufacturing	1.3
Machinery & Equipment Manufacturing	2.7	Machinery & Equipment Manufacturing	2.5
Other Manufacturing	1.1	Other Manufacturing	0.5
Electricity, Gas and Water	3.8	Electricity, Gas and Water	3.5
Electricity Generation and Supply	3.2	Electricity Generation and Supply	3.0
Gas Supply	0.3	Gas Supply	0.3
Water Supply	0.3	Water Supply	0.2
Construction	8.4	Construction	7.0
Wholesale Trade	11.6	Wholesale Trade	10.6
Retail Trade	5.6	Retail Trade	6.3
Accommodation & Restaurants	2.6	Accommodation & Restaurants	2.4
Transport & Storage	5.9	Transport & Storage	5.9
Road Transport	1.8	Road Transport	1.9
Water Transport	0.3	Water Transport	0.3
Air Transport	2.4	Air Transport	2.0
Rail, Other Transport, Storage & Services (5)	1.4	Rail, Other Transport, Storage & Services (5)	1.7
Communication Services	2.1	Communication Services	3.0
Finance and Insurance	4.3	Finance and Insurance	5.0
Finance	2.5	Finance	3.1
Insurance	1.3	Insurance	1.3
Services to Finance and Insurance	0.5	Services to Finance and Insurance	0.6
Property and Business Services	9.0	Property and Business Services	15.7
Real Estate	1.7	Real Estate	3.5
Ownership Of Owner-Occupied Dwellings	1.6	Ownership Of Owner-Occupied Dwellings	5.4
Other Property Services	0.5	Other Property Services	0.5
Business Services	5.2	Business Services	6.3
Cultural & Recreational Services	1.4	Cultural & Recreational Services	1.6
Personal & Community Services	1.1	Personal & Community Services	1.1

Appendix 2: Data series

Air transport

Published NAWI series

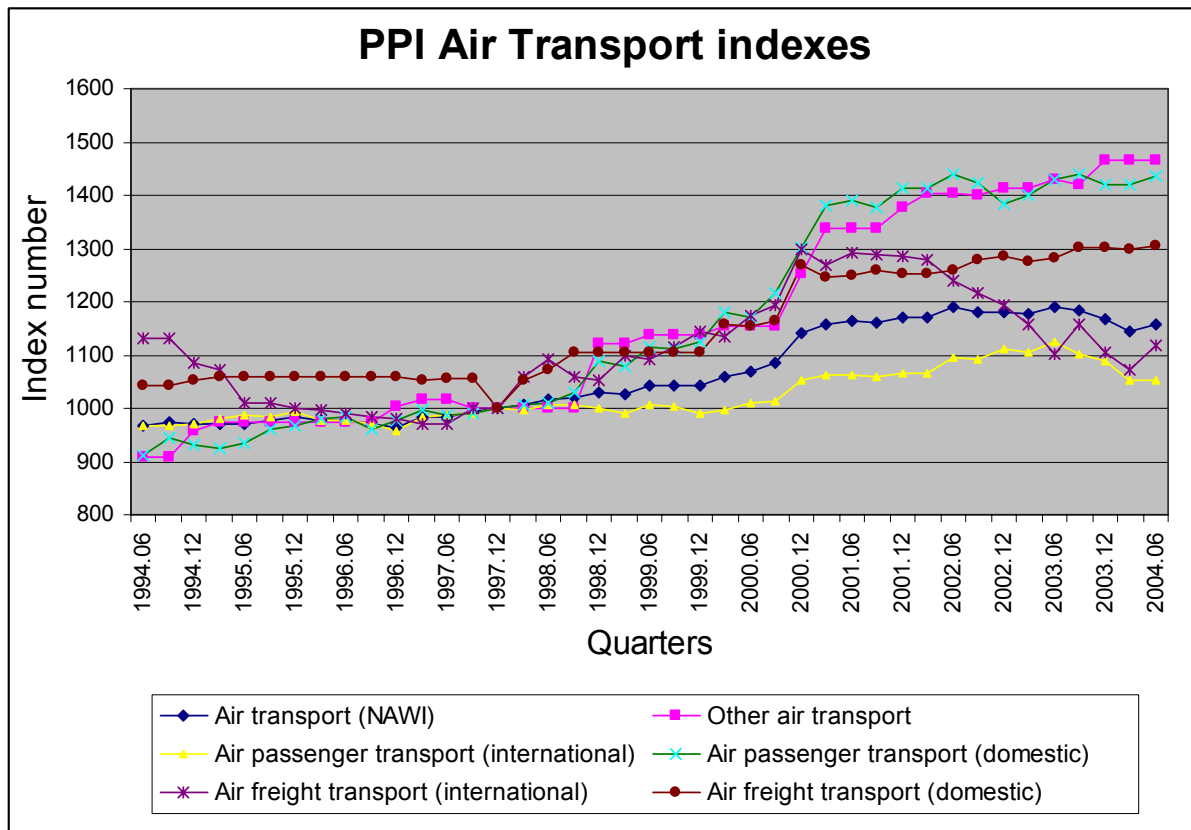
Time Refer Data	Value
1994.06	967
1994.09	974
1994.12	970
1995.03	971
1995.06	972
1995.09	976
1995.12	983
1996.03	978
1996.06	978
1996.09	970
1996.12	965
1997.03	983
1997.06	984
1997.09	992
1997.12	1000
1998.03	1006
1998.06	1015
1998.09	1020
1998.12	1031
1999.03	1027
1999.06	1042
1999.09	1043
1999.12	1041
2000.03	1058
2000.06	1068
2000.09	1085
2000.12	1140
2001.03	1158
2001.06	1165
2001.09	1160
2001.12	1172
2002.03	1172
2002.06	1189
2002.09	1181
2002.12	1181
2003.03	1178
2003.06	1190
2003.09	1185
2003.12	1168
2004.03	1144
2004.06	1157

Transport and storage

Published Industry series

Time Refer Data	Value
1994.06	1023
1994.09	1021
1994.12	1017
1995.03	1015
1995.06	1014
1995.09	1013
1995.12	1016
1996.03	1012
1996.06	1012
1996.09	1009
1996.12	1006
1997.03	1012
1997.06	1006
1997.09	997
1997.12	1000
1998.03	1004
1998.06	1012
1998.09	1013
1998.12	1014
1999.03	1013
1999.06	1017
1999.09	1019
1999.12	1027
2000.03	1040
2000.06	1047
2000.09	1061
2000.12	1103
2001.03	1108
2001.06	1112
2001.09	1115
2001.12	1121
2002.03	1123
2002.06	1129
2002.09	1127
2002.12	1137
2003.03	1138
2003.06	1152
2003.09	1148
2003.12	1141
2004.03	1130
2004.06	1143

Appendix 3: Graph of commodity indexes and air transport (NAWI) index



Appendix 4:

CASE STUDY- Domestic AirFares.

'In just one month, XXXAir will begin a new era of low-cost air travel for all New Zealanders.'

On the 31st of July 2003, XXXAir unveiled its new no-frills express class service, which, from November 1, would replace its current economy and business classes. XXXAir had responded to customer demand in delivering a range of fares, which not only showed dramatic discounts on current fare levels, but were strongly competitive with rail and car travel. These new low fares are possible because of fundamental changes made to the domestic network.

These fundamental changes include:

- change in baggage limit from 25kg to 20kg. Prior to November 4 percent of passengers were over the weight limit and another 5 percent were over 20kg. From 1 Nov XXXAir was charging \$5.60 per kg for luggage over the limit.
- loss of frequent flyer points on the cheapest fare class. Passengers earn either distance * a factor (see table below) or 1000 points, whichever is greater.
Auckland - Wellington = 480 km one way

	Flexi saver	Fully-flex
Points earned per km	0.70	1.0

- change in the number of seats - and the seat 'pitch' (the spacing between them). The number of seats increased from 122 (including eight business class) to 136 with the removal of business class. Seat pitch in October was 33 inches.
- loss of meals – XXXAir offered a \$10 refund for passengers who had paid the old fares for flights after November 1.

Media reports

'XXXAir reckons the mid-range economy fare paid by Auckland-Wellington travellers return now is around \$377. The airline expects the new mid-range economy level for that fare to settle at between \$240 - \$280..... *Sunday Star Times*, August 02.

'Average fares across the XXXAir domestic network will decrease by 20 percent, and by about 28 percent on main trunk routes' XXXAir, 31 July 02.

Rival airline

On 20 August 2002, Rival airline announced it would match XXXAir's new cheap prices on domestic routes while not skimping on meals, for now.

Rival air's other conditions were:

- maintained 20kg baggage limit;
- retained frequent flyer points for all fare classes;
- retained business class;
- retained meals.

This meant that both XXXAir and Rival Air would have new fare schedules from November 1, including new names for the fares.

Tasks:

1. Calculate the price movement (with no quality adjustment) which should be shown. Assume fares are equally weighted, and that market share is split XXXAir= 75 percent and Rival air = 25 percent.
2. Identify which quality adjustments should be made, and value them.
3. Calculate the final movement to show in the index. Justify your results relative to the market's information.

TABLE 1: Surveyed October fares and conditions

Airline	Return Fares	Fare Conditions	Advance purchase	Airpoints	Fare return)
XXXAir	Gotta Go	non-refundable	21	Y	219
XXXAir	Thrifty	non-refundable	0	Y	588
XXXAir	Full Economy	refundable	0	Y	718
Rival Air	\$99 each way			Y	198
Rival Air	21 Day Advance		21	Y	199
Rival Air	14 Day Advance		14	Y	219

TABLE 2: Surveyed November fares and conditions

Airline	Fare Name	Fare Conditions	Changeable	Airpoints	Fare (return)
XXXAir	Smart-saver	non-refundable	unchangeable	N	178
XXXAir	Flexi-saver	non-refundable	\$50 surcharge for changes	Y	338
XXXAir	Fully-flex	refundable	changeable	Y	658
Rival Air		non-refundable	non-changeable	Y	138
Rival Air		non-refundable	changes <5 days out from flight	Y	298
Rival Air		refundable	changeable	Y	518

TABLE 3: XXXAir October fares and conditions

Return Fares	Fare Conditions	Advance purchase	Airpoints	Fare (return)
Gotta Go	non-refundable	21	Y	219
Real Deal	non-refundable	14	Y	279
Super Thrifty	non-refundable	7	Y	359
Thrifty	non-refundable	0	Y	588
Golden Age (over 60)	refundable	0	Y	588
Full Economy	refundable	0	Y	718
Business	refundable	0	Y	926

TABLE 4: XXXAir November fares and conditions

Return Fares	Fare Conditions	Changeable	Airpoints	Fare (return)
Smart-Saver - are 'use it or lose it' fares - so customers must make sure they get to the airport on time. If they miss the flight, they'll have to buy a new ticket.	non-refundable	unchangeable	N	118
	non-refundable	unchangeable	N	138
	non-refundable	unchangeable	N	158
	non-refundable	unchangeable	N	178
Flexi-Saver - our mid-range fares - can be changed up to 24 hours prior to the flight, but at a cost.	non-refundable	\$50 surcharge for changes	Y	238
	non-refundable	\$50 surcharge for changes	Y	278
	non-refundable	\$50 surcharge for changes	Y	318
	non-refundable	\$50 surcharge for changes	Y	338
Fully-Flex - our range of flexible fares which can be changed at any time. Book and pay within 7 days.	refundable	changeable	Y	398
	refundable	changeable	Y	498
	refundable	changeable	Y	598
	refundable	changeable	Y	658

TABLE 5: Rival air October fares and conditions

Return Fares	Fare Conditions	Changeable	Airpoints	Fare (return)
\$99 each way plus tax	non-refundable	non-changeable	Y	198
21 Day Advance	non-refundable	non-changeable	Y	199
14 Day Advance	non-refundable	non-changeable	Y	219
10 Day Advance	non-refundable	changes >7 days out from flight	Y	280
7 Day Advance	non-refundable	non-changeable	Y	360
Less than 7 Days	refundable	changeable	Y	440
Special each way	refundable	changeable	Y	518

TABLE 5: Rival air November fares and conditions

Return Fares	Fare Conditions	Changeable	Airpoints	Fare (return)
	non-refundable	non-changeable	Y	118
	non-refundable	non-changeable	Y	138
	non-refundable	non-changeable	Y	178
	non-refundable	changes >5 days out from flight	Y	238
	non-refundable	changes >5 days out from flight	Y	298
	non-refundable	changes >5 days out from flight	Y	378
	refundable	changeable	Y	418
	refundable	changeable	Y	518
	refundable	changeable	Y	796

CASE STUDY- Domestic Air Fares - SOLUTIONS

Summary of tables:

Table	XXXAir(0.75)	Rival Air (0.25)	Weighted average
1 - Surveyed Oct fares	508	205	432.25
2 - Surveyed Nov fares	391	318	372.75
3 - All XXXAir fares Oct	525		
4 - All Rival Air fares Oct		326	
All fares Oct			475.25
5 - All XXXAir fares Nov	316		
6 - All Rival Air fares Nov		342	
All fares Nov			322.50

$$\begin{aligned}
 1. \text{ Price movement (\%)} &= (\text{All fares Nov} / \text{All fares Oct} - 1) * 100 \\
 &= (322.50 / 475.25 - 1) * 100 \\
 &= -32.141\%
 \end{aligned}$$

Since the movement between two sets of averages is being used it is best to use all the available fares, instead of the sampled fares.

$$\begin{aligned}
 2. \text{ Baggage - change in value calculated by determining the proportion of people} & \\
 \text{affected by the change in the weight limit, and valuing it.} & \\
 \text{- the four percent that are already over will continue to be over.} & \\
 \text{- 5\% of passengers are affected} & \\
 \text{- value = charge for being over * change of limit * proportion affected} & \\
 &= \$5.60 * 5\text{kg} * 0.05 \\
 &= \$1.40
 \end{aligned}$$

Meals - use company refund = \$10.00

$$\begin{aligned}
 \text{Frequent flyer - not gaining 1000 pts on 1/3 of available fares} & \\
 \text{- value = points * proportion missing out * value of points * 2 (return)} & \\
 &= 1000 * 1/3 * 0.01 * 2 \\
 &= \$6.67
 \end{aligned}$$

No value associated with seat pitch, so is not adjusted for.

$$3. \text{ XXXAirfares} = \$316 + \$18.07 = \$334.07$$

$$\begin{aligned}
 \text{Nov average fare} &= \text{XXXAir} * \text{market share} + \text{Rival} * \text{market share} \\
 &= \$334.07 * 0.75 + \$342 * 0.25 \\
 &= \$336.05
 \end{aligned}$$

$$\begin{aligned}
 \text{Price movement (\%)} &= (\text{Nov average fare} / \text{All fares Oct} - 1) * 100 \\
 &= (336.05 / 475.25 - 1) * 100 \\
 &= -29.29\%
 \end{aligned}$$

Appendix 5: Commodity Price Survey Questionnaire



Price Index
Commodity Price Survey

PV/CP/01

PERSONAL AND IN CONFIDENCE

6676696 200409 1 3 3319258 1 GE70071824 847
Attn: The Manager "Business Direct"
XXX Air Ltd

For information and help:

Survey Help Desk
Phone: 0800 809 464
64 9 920 9193
Fax: 09 920 9195
Email: surveys@stats.govt.nz

12419

Please correct any errors in this panel

Page: 1

Due Date

Please fill in these pages and return in the post-free envelope to:
Statistics New Zealand, Freepost 10007, Private Bag 92003, Auckland, in time to reach us by

10 Sep 2004

- 1** Enter prices for the following goods and services at the date shown
Please exclude GST from prices unless stated otherwise

COMMODITY DESCRIPTION (PLEASE ALTER IF NECESSARY)	PRICING LEVEL	CURRENT PRICE AT 15/08/2004	COMPONENT NUMBER
AIRFARE: WELLINGTON - LOS ANGELES ECONOMY CLASS (LOWEST FARE) . ONLINE ONE WAY LOW SEASON 01APR -31MAY , 01OCT - 27 NOV	LOW SEASON	\$ _____	10010423 64010286
AIRFARE: WELLINGTON - LONDON (VIA ASIA) EPIC RETURN LOW FARES APPLY	LOW SEASON	\$ _____	10010433 6401028L
VIA THE STATES	LOW SEASON	\$ _____	10010434 6401028M
	HIGH SEASON	\$ _____	10010435 6401028N
AIRFARE: WELLINGTON - HONG KONG ECONOMY. (EXCLUDING DISCOUNTS) (VALID 12 MONTHS)	ONE WAY	\$ _____	10010447 6401029I
AIRFARE: WELLINGTON - HONG KONG ECONOMY. (EXCLUDING DISCOUNTS) (VALID 12 MONTHS) - RETURN	RETURN	\$ _____	10010448 6401029K

Please turnover for questions, and to sign



2 Are any current prices different from the previous prices for any goods or services listed on the front? No → Go to 3
Yes ↓

If YES, please give the reason for the change below or on a separate piece of paper.
 - If there is more than one change clearly state which good or service the change applies to.
 - A change in price could be caused by changes in

- | | |
|--|----------------------------------|
| a) the model or style | g) exchange rates |
| b) packaging or presentation | h) competition |
| c) components | i) adjustments to profit margins |
| d) labour | j) new taxes |
| e) supplier's or manufacturer's prices | k) to change market share |
| f) "specialing" | |

If the change is due to several causes, please indicate how much is due to each cause (e.g. \$3.00 new models, \$10 competition).

3 Do you still sell or handle all goods or services listed on the front? Yes → Go to 4
No ↓

If NO, then:

- a) for any listed good or service you no longer sell or handle please:
- change the description to that of a similar good or service
 - give the price of that good or service at both dates shown on the front.
- b) if you do not have a similar good or service please note whether:
- you expect to sell or handle such goods or services in the near future
 - you do not intend to sell or handle such goods or services

4 Please sign and date here:

Name: _____ Position: _____
 Signature: _____ Date: ____/____/____ Phone number: (____) _____
 Email: _____ Fax number: (____) _____

Why we need this information

These prices are used to calculate the Producers, Farm Inputs, Capital Goods and other similar Price Indexes.

Compulsory Requirement

The taking of this survey has been approved by the Minister of Statistics and the return of this questionnaire duly filled in and signed is a compulsory requirement under the Statistics Act 1975.

Confidentiality of information

Only people authorised by the Statistics Act 1975 are allowed to see your individual information, and they must use it only for statistical purposes. Your information will be combined with similar information to prepare summary statistics.



Brian Pink
Government Statistician

Thank you for your time and effort.
 www.stats.govt.nz has the main results of all our surveys™