



**economics**

Report to:

**CIAL**

**INVESTIGATION ON CHC AIR CARGO MISSED  
OPPORTUNITIES - SUMMARY**

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# Investigation on CHC Air Cargo Missed Opportunities

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# 1 Summary

Christchurch International Airport Limited (CIAL) commissioned BERL to investigate whether it is possible to quantify the opportunity to increase airfreight into and dispatched from Christchurch Airport (CHC). In particular, the report provides a preliminary examination of whether there is suitable data to determine what the gap is between the current level of international air cargo and the potential to/from Christchurch Airport's catchment (potentially all of the South Island plus some of the lower North Island).

The scoping study found that around 2 million tonnes of freight move by road or sea between Auckland and the South Island. Based on this figure, we estimate the leakage from Christchurch Airport could be somewhere between 5,000 to 8,500 tonnes per annum between Auckland and the South Island. This level could be even higher if the Lower North Island were included in the Christchurch Airport's catchment. These volumes represent between one fifth (20 percent) and one third (33 percent) of the cargo currently flying into and out of Christchurch Airport. The fraction of this that is economic to airfreight through Christchurch Airport is the 'missed freight opportunity'.

We believe we can improve the estimate of the freight leakage between the South Island and Auckland Airport. The accuracy of this estimate will depend on which approach CIAL might like us to use. In our main report we suggest three options to refine the estimated leakage, shed light on the drivers for freight choice and quantify the missed cargo opportunity.

## 1.1 Findings

The scoping study has identified three data sources relevant to estimating freight leakage.

- StatsNZ data on exports and imports by country, commodity and port.
- The National Freight Demands Study, which gives a recent and comprehensive estimate of road, rail or sea freight volumes around New Zealand by region and commodity.
- National and regional production and export data held by BERL.

This report provides:

- the current level of exports/imports from Christchurch Airport and Auckland Airport (AKL) by commodity and country of destination/origin in 2009 and for the five year period between 2005 and 2009.
- the pattern of surface freight by commodity and origin/destination within New Zealand.
- an estimate of the export potential by commodity for the Canterbury region.
- an estimate of the leakage between Auckland and the South Island of somewhere in the order of 5,000 to 8,500 tonnes per annum.

## 2 Introduction and background

CIAL is interested in the share of export and import freight to its catchment that is not passing through the Airport (i.e. leakages) and what it might attract to its facilities (i.e. the missed opportunity). This scoping study aims to determine if it is possible to quantify these leakages and how this could be done.

At present, Christchurch Airport's international cargo movements are made up of air cargo uplifted from Christchurch Airport plus cargo transported to, and uplifted from, Auckland. In addition to these flows, there may be cargo that does not pass through Christchurch Airport, but is transported directly by truck, rail or sea to other airports (primarily Auckland). CIAL is interested in the magnitude of these leakages, and whether it would be economically attractive to re-route a greater proportion of these flows to be uplifted from Christchurch Airport, and what would be required to attract this business.

Currently, CIAL is aware of:

1. the total volume of cargo AirNZ declares as airfreight at Christchurch Airport
2. the total volume and value, by commodity, that is lifted from Christchurch Airport based on Customs data.

In terms of the freight opportunity, CIAL wants to quantify the total value or volume of freight that goes directly to other ports that could be airlifted from CHC.

Christchurch Airport's catchment is potentially all of the South Island plus some of the lower North Island. We have not limited ourselves with a strict catchment definition in this scoping project. Rather, we have used wide-ranging data where possible and have only used limited data where that was all that was available within the project's timeframe.

## 2.1 Background

The share of the total volume of international freight in New Zealand that is airfreighted is relatively small. It amounts to around 0.4 percent of exports and 0.5 percent of import volumes, with a small imbalance in terms of inward movements. However, in value terms, the airfreight's share of total exports is around 13.5 percent and imports around 21 percent.

**Table 2.1 Trade movements by port – volume and value (2009)**

<b>2009 (calendar year)</b>	<b>AKL</b>	<b>CHC</b>	<b>All ports</b>
Exports by weight (tonnes)	76,313	15,150	25,419,022
Imports by weight (tonnes)	80,247	7,579	17,437,580
<i>X - M (tonnes)</i>	<i>-3,934</i>	<i>7,571</i>	<i>7,981,442</i>
Exports by value (\$000s)	4,621,549	1,204,875	43,520,081
Imports by value (\$000)	8,700,532	546,662	45,316,319
<i>X - M (\$000)</i>	<i>-4,078,983</i>	<i>658,213</i>	<i>-1,796,238</i>

Source: StatsNZ

In terms of the distribution of airfreight by airport, Auckland Airport handles around 90 percent of the airfreighted imports and Christchurch Airport around 9 percent. This reflects the distribution of New Zealand's population, and the predominance of retail goods distributed to the North Island. In contrast, around 80 percent of airfreighted exports are handled by Auckland and 16.5 percent by Christchurch. This reflects the greater share of export production in the South Island, particular of primary commodities.

It is likely that Christchurch Airport already captures the most time sensitive and high value trade flows in its catchment. Therefore, the missed cargo opportunity that could be economically captured by Christchurch Airport is likely to be less than the leakage.

However, the statistics above show that the value per volume for airfreighted cargo is high. As such, even modest increases in volume through Christchurch Airport could have a reasonably high value-added component. Freight handlers may find it cost-effective to use an expanded airfreight service at Christchurch Airport to reduce the total transport time or avoid the road freight costs. Similarly, businesses that currently move freight directly to/from Auckland or other ports may be willing to pay for reduced transport times or increased movement frequency through Christchurch Airport.

### 3 Data sources and findings

Over the next 15-20 years domestic cargo moving between Auckland and the South Island will double in volume, putting huge pressure on road and rail infrastructure and the environment. In addition, international shipping services will use large (6000 TEU [twenty-foot equivalent unit] plus) vessels for the New Zealand trade, effectively reducing the number and frequency of port calls for the country's import and export cargoes. <http://www.pacship.co.nz/page1101522.aspx>

As this quote acknowledges, there will be increased demand for freight movements between the North and the South Islands. This could be reinforced by changes in international shipping services. Combined with changing trade and tourism (passenger movement) patterns, there are a range of opportunities for Christchurch Airport to expand the share of freight passing through its facilities.

Below we outline the data available from three data sources identified for this study.

- Customs data (from StatsNZ) on exports and imports by country, commodity and port.
- The National Freight Demands Study, which gives a recent and comprehensive estimate of road, rail or sea freight volumes around New Zealand by region and commodity.
- The BERL regional database, which has production by region and high level commodity group, and more detailed production on the Canterbury region. This is used to provide a sense of what key commodities produced in Canterbury might be 'exported' to domestic markets and what is exported to international markets.

We also note the data that CIAL has available to it from its own operation statistics and received from AirNZ.

#### 3.1 Data available to CIAL

CIAL has a number of operational performance measures and access to other data that could be used to inform the missed opportunity estimation. This information includes:

1. The number of aircraft movements by airport.
2. Total international air cargo declared (and uplifted) from Christchurch Airport and dedicated freighter aircraft capacity.
3. AirNZ air cargo volumes declared at Christchurch Airport; some of this is freighted to Auckland Airport.

The second set of measures provides some sense of what cargo must be freighted out of Christchurch Airport on passenger aircrafts.

Comparing the second and third measures, however, does provide a sense of part of the leakage. For example, AirNZ's cargo volume was 32,350 tonnes but declared volume was 26,987 tonnes in 2005. This indicates a gap of about 5,450 tonnes or 20 percent of the declared cargo moving through Christchurch Airport in 2005. It is unclear how the overall leakage will have changed over the past three to four years, with the introduction of a second freight handler at Christchurch Airport and the overall slowdown in trade associated with the global recession in 2008/09.

### 3.2 Exports by airfreight

Table 3.1 shows the major destinations for exports currently lifted from Christchurch and Auckland Airports. Similar data are available for other New Zealand air and sea ports, and for total international trade flows.

The top eight countries account for just under 85 percent of outward air cargo through Christchurch Airport. The top eight represent a larger fraction of total exports for Christchurch Airport than for Auckland (just under 80 percent) or all New Zealand ports (just over 60 percent), indicating a greater degree of market concentration.

**Table 3.1 Exports by port and destination (2009, \$m)**

Exports by country (fob NZ\$m)	Christchurch Airport	Auckland Airport	Total (all air and sea ports)
Australia	703.8	1,638.8	9,326.3
USA	110.3	720.4	4,251.4
Singapore	85.0	314.3	1,375.5
United Kingdom	59.4	163.9	1,747.6
Hong Kong	58.4	277.1	822.2
Japan	21.4	179.0	2,876.6
Germany	14.9	167.5	847.2
China	11.8	73.6	3,631.2

Source: Statistics NZ

Table 3.2 gives the value and share of total airfreight (% airfreighted) of selected commodities exported via Christchurch Airport. The table also includes the value of total exports (from all ports – sea and air) by commodity.

The selected commodities reflect where Christchurch Airport handles either a substantial proportion or very small proportion of the airfreight of a specific commodity. These commodities account for 90 percent of the value of exports through Christchurch Airport.

**Table 3.2 Exports of selected commodities by port – latest year (2009, \$m)**

Exports by port (fob NZ\$m)	Meat	Fish	Fruit	Vegetables	Live trees and bulbs
<b>Christchurch Airport</b>	53.5	101.0	19.6	0.9	0.5
Auckland Airport	62.3	245.2	36.4	51.4	45.5
Subtotal	115.9	346.2	55.9	52.4	46.0
CHC's share of air freight	46.2%	28.8%	35.0%	1.8%	1.2%
Total all ports	5,141.7	1,262.1	1,600.8	406.4	76.2
% air freighted	2.3%	27.8%	3.5%	12.9%	60.4%

  

Exports by port (fob NZ\$m)	Malt, starch, etc	Greenstone, gems, etc	Tools and machinery	Apparel	Total all exports
<b>Christchurch Airport</b>	0.3	450.4	469.8	27.6	1,254.8
Auckland Airport	0.2	358.7	2,386.6	172.9	4,435.9
Subtotal	0.5	809.1	2,856.4	200.6	5,690.7
CHC's share of air freight	60.3%	55.5%	16.3%	13.7%	21.9%
Total all ports	14.7	815.9	4,771.4	227.1	40,432.6
% air freighted	3.2%	99.4%	60.2%	89.0%	14.2%

Source: Statistics NZ

For example, in 2009 \$53.5 million of meat was exported via Christchurch Airport. This represented 46.2 percent of the meat exports freighted by air. However, only a relatively small proportion of total meat exports – in value terms – is airfreighted (2.3 percent). Hence, Christchurch Airport's share of total meat exports is about 1 percent.

Table 3.3 focuses on the selected exports by port over a longer period, 2005-2009. Some standout figures are:

- the levels and proportion of semi-precious stones, primarily greenstone, exported through Christchurch. Almost all of (97.3 percent) New Zealand's exports of these goods are airfreighted and almost half (48 percent) of the airfreight passes through Christchurch.
- Christchurch's share of airfreighted vegetables and apparel is small.
- Christchurch's share of seeds and grains, and milled products such as malt and starch is large.

**Table 3.3 Exports of selected commodities by port – five year total (2005-2009, \$m)**

Exports by port (fob NZ\$m)	Meat	Fish	Fruit	Vegetables	Live trees and bulbs
<b>Christchurch Airport</b>	228.3	474.5	72.8	4.8	4.4
Auckland Airport	316.4	988.8	183.8	243.6	290.6
Subtotal	544.8	1,463.3	256.6	248.4	295.0
CHC's share of air freight	41.9%	31.7%	28.4%	1.9%	1.5%
Total all ports	25,789.2	6,364.4	7,187.5	2,152.8	465.3
% air freighted	2.1%	23.5%	3.6%	11.5%	63.4%

Exports by port (fob NZ\$m)	Malt, starch, etc	Greenstone, gems, etc	Tools and machinery	Apparel	Total all exports
<b>Christchurch Airport</b>	2.1	1,337.5	2,811.3	76.6	5,694.8
Auckland Airport	0.4	1,423.7	12,974.1	1,065.5	23,518.6
Subtotal	2.5	2,761.3	15,785.4	1,142.1	29,213.4
CHC's share of air freight	83.3%	48.4%	17.7%	6.7%	19.4%
Total all ports	63.2	2,842.3	26,171.1	1,296.1	201,702.1
% air freighted	3.9%	97.3%	60.6%	88.5%	14.6%

Source: Statistics NZ

Table 3.4 shows Christchurch's share of the goods exported through either Christchurch or Auckland Airports, by commodity and destination. For example, in 2009, 46.2 percent of the meat exported via Christchurch or Auckland Airports to Australia went from Christchurch. Notably, few of the vegetable exported by air went via Christchurch, except for those destined for Germany.

**Table 3.4 CHC's share of selected exports by commodity and destination (2009, %)**

CHC's share (versus AKL)	Meat	Fish	Fruit	Vegetables	Flowers and bulbs
Australia	46.2%	39.0%	9.1%	5.6%	0.5%
USA	22.5%	29.4%	17.3%	3.1%	0.0%
Singapore	41.1%	28.1%	25.7%	0.0%	0.0%
United Kingdom	34.1%	85.6%	36.8%	0.0%	0.2%
Hong Kong	73.6%	23.8%	36.5%	0.0%	0.0%
Japan	55.9%	32.2%	13.9%	0.0%	1.7%
Germany	31.5%	79.8%	96.0%	99.9%	1.2%
China	29.9%	23.5%	96.6%	0.0%	0.0%

CHC's share (versus AKL)	Malt, starch, etc	Greenstone, gems, etc	Tools and machinery	Apparel	Total all exports
Australia	1.9%	57.7%	19.7%	14.5%	30.0%
USA	32.6%	10.8%	13.2%	1.9%	13.3%
Singapore	0.0%	0.4%	22.1%	29.6%	21.3%
United Kingdom	100.0%	35.9%	33.6%	6.3%	26.6%
Hong Kong	100.0%	15.8%	2.9%	13.0%	17.4%
Japan	100.0%	0.0%	7.0%	5.0%	10.7%
Germany	100.0%	4.6%	2.7%	3.0%	8.2%
China	n.a.	0.0%	13.3%	40.2%	13.8%

### 3.3 Imports by airfreight

Table 3.5 shows the origins for imports landing at Christchurch Airport. For comparison purposes we use the same eight countries as used above for the export destinations. This indicates an imbalance in terms of the value of inward freight. It is unclear from the StatsNZ data whether this also manifests as a volume imbalance.

**Table 3.5 Imports by port and origin (2009, \$m)**

Imports by country (cif NZ\$m)	Christchurch Airport	Auckland Airport	Total (all air and sea ports)
Australia	87.8	1,322.9	7,388.2
USA	130.0	1,835.0	4,126.4
Singapore	15.5	182.8	1,635.9
United Kingdom	25.6	367.5	944.6
Hong Kong	3.3	69.6	158.2
Japan	17.7	354.5	2,984.9
Germany	24.3	435.7	1,684.7
China	63.9	1,579.3	6,051.7

Source: Statistics NZ

Table 3.6 gives the value and share of total airfreight (% airfreighted) of selected commodities imported through Christchurch Airport. These commodities account for just over 75 percent of the value of imports through Christchurch Airport.

**Table 3.6 Imports of selected commodities by port – latest year (2009, \$m)**

Imports by port (cif NZ\$m)	Meat	Fish	Fruit	Vegetables	Flowers and bulbs
<b>Christchurch Airport</b>	0.1	0.3	1.1	2.4	0.3
Auckland Airport	0.7	4.4	11.4	16.7	4.0
Subtotal	0.8	4.7	12.6	19.1	4.2
CHC's share of air freight	8.7%	7.0%	8.9%	12.6%	6.3%
Total all ports	183.8	81.7	323.6	97.7	11.9
% air freighted	0.5%	5.8%	3.9%	19.6%	35.5%

Imports by port (cif NZ\$M)	Pharmaceuti cals	Greenstone, gems, etc	Tools and machinery	Apparel	Total all Imports
<b>Christchurch Airport</b>	3.0	2.9	320.9	39.0	489.8
Auckland Airport	813.6	290.2	5,484.0	331.5	8,575.2
Subtotal	816.6	293.1	5,804.9	370.5	9,065.0
CHC's share of air freight	0.4%	1.0%	5.5%	10.4%	5.4%
Total all ports	1,171.5	310.5	11,209.1	1,193.7	39,403.2
% air freighted	69.9%	94.7%	52.0%	31.3%	23.1%

Source: Statistics NZ

Table 3.7 focuses on the selected imports by port over the longer period of 2005-2009.

**Table 3.7 Imports of selected commodities by port – five year total (2005-2009, \$m)**

Imports by port (cif NZ\$M)	Meat	Fish	Fruit	Vegetables	Flowers and bulbs
<b>Christchurch Airport</b>	0.8	2.1	6.8	15.2	1.4
Auckland Airport	4.5	25.6	68.8	101.6	23.5
Subtotal	5.4	27.6	75.6	116.9	24.9
CHC's share of air freight	13.6%	7.4%	9.0%	13.0%	5.7%
Total all ports	830.0	388.1	1,527.5	474.2	63.5
% air freighted	0.8%	7.2%	5.0%	24.7%	39.3%

Imports by port (cif NZ\$M)	Pharmaceuti cals	Greenstone, gems, etc	Tools and machinery	Apparel	Total all Imports
<b>Christchurch Airport</b>	14.0	21.8	1,771.2	200.0	2,679.1
Auckland Airport	3,884.7	1,302.3	27,288.7	1,710.0	42,809.6
Subtotal	3,898.7	1,324.1	29,059.9	1,910.0	45,488.7
CHC's share of air freight	0.4%	1.6%	6.0%	10.4%	5.8%
Total all ports	5,606.1	1,416.8	58,679.4	5,836.6	219,152.8
% air freighted	70.0%	94.1%	49.9%	33.0%	21.0%

Source: Statistics NZ

**Table 3.8 CHC's share of selected imports by commodity and destination (2009, %)**

CHC's share (versus AKL)	Meat	Fish	Fruit	Vegetables	Flowers and bulbs
Australia	3.8%	0.5%	7.3%	14.5%	5.6%
USA	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	0.0%	100.0%	0.0%	n.a.	0.0%
United Kingdom	0.0%	0.0%	0.0%	0.0%	0.0%
Hong Kong	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	0.0%	0.0%	0.0%	0.0%	0.0%
Germany	0.0%	0.0%	0.0%	98.6%	0.0%
China	0.0%	0.0%	0.0%	44.0%	0.0%

CHC's share (versus AKL)	Pharmaceuti cals	Greenstone, gems, etc	Tools and machinery	Apparel	Total all imports
Australia	2.0%	0.1%	7.2%	3.0%	5.1%
USA	5.3%	20.7%	63.3%	2.6%	52.8%
Singapore	0.0%	75.5%	79.1%	24.5%	68.3%
United Kingdom	5.3%	20.7%	63.3%	2.6%	52.8%
Hong Kong	0.0%	0.8%	3.6%	54.0%	1.2%
Japan	0.9%	0.0%	17.1%	6.4%	9.0%
Germany	2.4%	2.1%	11.9%	29.0%	12.7%
China	1.7%	88.2%	28.0%	98.6%	46.5%

### 3.4 Road, rail and sea freight

The National Freight Demands Study (RPC, 2008) provides a recent and comprehensive estimate of road, rail or sea freight volumes around New Zealand by origin and by destination/commodity.<sup>1</sup> It does not report cross-tabulations of freight by *both* commodity and destination/origin.

Although the regional movement figures have been put imputed from high level data, they may provide an order of magnitude estimate of the total freight moving between the South and North Islands. While some of this freight will be domestic, and some destined for export by sea freight, a portion of the estimated freight could be freighted by air. This data could be used to put some broad lower and upper limits on the potential airfreight opportunity.

Table 3.9 provides the total estimates of national freight for the commodities that are most likely to have potential to be airfreighted. This table provides an overall context to the following detailed tables. This is followed by information on the destination/origin of freight.

**Table 3.9 National freight demand by commodity (million tonnes, billion tonne-kms)**

Freight task by commodity	Product Tonnes (millions)	Tonne-kms (billions)
Food products	7.4	1.38
Other retail products	6.6	1.29
Horticultural products	4.2	1.07
Manufactured dairy products	3.8	0.37
Other minerals	2.0	0.19
Meat	0.9	0.24
Courier movements	0.4	0.22
Total selected products	25.3	4.76
% of total freighted cargo	16.6%	26.3%

Source: RPC (2008) National Freight Demands Study

<sup>1</sup> Richard Paling Consulting (2008) National Freight Demands Study. Report prepared for the Ministry of Transport, the Ministry of Economic Development and the New Zealand Transport Agency.

Table 3.10 and Table 3.11 give breakdowns by region of total freight coming from the lower North Island/South Island or going to these destinations (in millions of tonnes of freight).<sup>2</sup> For example, an estimated 240,000 tonnes were freighted by road, rail or ship from Canterbury to Auckland in 2006/07. In contrast 940,000 tonnes were freighted by road, rail or ship from Auckland to Canterbury.

**Table 3.10 Freight from lower North and South Island origins (million tonnes)**

Destination	Origin							Total
	Manawatu Wanganui	Greater Wellington	Nelson Marlb Tas	West Coast	Canterbury	Otago	Southland	
Auckland	0.05	0.07	0.02	0.23	0.24	0.02	0.01	<b>0.64</b>
Other North Island	1.95	0.34	0.04	0.13	0.38	0.01	0.05	<b>2.9</b>
Manawatu Wanganui	7.74	1.3	0.08	0	0.34	0	0.01	<b>9.47</b>
Greater Wellington	1.65	7.74	0.09	0.15	0.29	0	0.02	<b>9.94</b>
Nelson Marlb Tasman	0	0.05	7.91	0.28	0.59	0	0.02	<b>8.85</b>
West Coast	0	0.01	0.18	3.62	0.21	0	0	<b>4.02</b>
Canterbury	0.18	0.01	0.99	4.45	22.32	0.76	0.41	<b>29.12</b>
Otago	0	0	0.06	0.18	1.26	8.45	1.01	<b>10.96</b>
Southland	0	0	0.04	0.02	0.36	1.07	6.69	<b>8.18</b>
<b>Total</b>	<b>11.57</b>	<b>9.52</b>	<b>9.41</b>	<b>9.06</b>	<b>25.99</b>	<b>10.31</b>	<b>8.22</b>	<b>84.08</b>

Source: RPC (2008) National Freight Demands Study

**Table 3.11 Freight to lower North and South Island destinations (million tonnes)**

Origin	Destination							Total
	Manawatu Wanganui	Greater Wellington	Nelson Marlb Tas	West Coast	Canterbury	Otago	Southland	
Auckland	0.72	0.85	0.16	0.05	0.94	0.28	0.11	<b>3.11</b>
Other North Island	2.30	1.21	0.38	0	0.58	0.4	0.26	<b>5.13</b>
Manawatu Wanganui	7.74	1.65	0	0	0.18	0	0	<b>9.57</b>
Greater Wellington	1.30	7.74	0.05	0.01	0.01	0	0	<b>9.11</b>
Nelson Marlb Tasman	0.08	0.09	7.91	0.18	0.99	0.06	0.04	<b>9.35</b>
West Coast	0.00	0.15	0.28	3.62	4.45	0.18	0.02	<b>8.7</b>
Canterbury	0.34	0.29	0.59	0.21	22.32	1.26	0.36	<b>25.37</b>
Otago	0.00	0	0	0	0.76	8.45	1.07	<b>10.28</b>
Southland	0.01	0.02	0.02	0	0.41	1.01	6.69	<b>8.16</b>
<b>Total</b>	<b>12.49</b>	<b>12</b>	<b>9.39</b>	<b>4.07</b>	<b>30.64</b>	<b>11.64</b>	<b>8.55</b>	<b>88.78</b>

Source: RPC (2008) National Freight Demands Study

In aggregate, these tables show that there is more southbound freight than northbound. The NFDS usefully notes that “the combined volumes of road freight carried in both directions between Wellington and Picton by the two ferry operators are known (with a reasonable degree of confidence) to be in the region of 2.0 to 2.5 million tonnes per annum - with slightly more southbound traffic.” (RPC 2008, p123)

The more recent NFDS (2008) report estimates that approximately 0.12 million tonnes of freight was moved from the Lower North Island and 0.52 million tonnes from the South Island

<sup>2</sup> These tables are based on the NFDS's Table 4.5 Estimated total movements 2006-2007 – expanded matrix (million tonnes).

to Auckland. Moving in the opposite direction, from Auckland, 1.57 million tonnes went to the Lower North and 1.54 million tonnes to the South Island.

Combining the northward and southward movements gives a total of 1.69 million tonnes of freight moved between Auckland and the Lower North Island and 2.06 million tonnes between Auckland and South Island in 2006/07.

Only some of this freight has the potential to be air cargo. It is difficult to determine – without further investigation – what proportion of the freight task that *could be* carried out by air *already is* being carried out by air. Suppose, for example, 0.25 percent of the 2 million tonnes of cargo moving between Auckland and South Island could be airfreighted. This would amount to around 5,150 tonnes in 2006/07 (i.e. just over 0.005 million tonnes). This level is very similar to the estimate based on the AirNZ/StatsNZ data (see page 6).

The proportion could be higher, if the domestic freight task mirrored the pattern of international freight movements – that is, the mix of freight moving by air and by other modes. We note from Table 2.1, that nationally 0.4 percent of total export volumes and 0.5 percent of total import volumes are airfreighted. The (volume weighted) average of these two is 0.42 percent. Applying this proportion to the cargo moving between Auckland and the South Island, just over 8,500 tonnes of cargo might be airfreighted. This level would be just over one third of Christchurch Airport's current volume.

### **3.5 Production and export potential – Canterbury region demonstration**

The section above used the NFDS to explore freight flows around the country. Some freight into and out of Christchurch Airport's catchment is sent by road, rail or sea. However, not all of this freight is relevant to this study. We are primarily interested in output destined for international markets, but which leaks out to be airfreighted from Auckland.

This section demonstrates a different approach to that used in the sections above. It focuses on production and export information to explore whether output in Christchurch Airport's catchment (by commodity) can be:

- (a) split up into domestic and international exports, and,
- (b) then split the latter into the portion that could potentially be airfreighted and portion that is likely to go by other freight modes.

BERL has detailed information on production by commodity in the Canterbury region. The following table uses the Canterbury region production information to estimate the region's total exports to consumers in other regions in New Zealand (i.e. domestic markets) and international markets. We focus on the key commodities that might be airfreighted.

**Table 3.12 Exports of key commodity groups from the Canterbury region (2009, \$m)**

Canterbury region (2009, \$m)	Export market		Total exports
	Domestic	International	
Horticulture and fruit growing	7.9	147.7	155.6
Meat manufacturing	96.9	826.5	923.5
Dairy manufacturing	25.3	766.0	791.3
Textiles and apparel manufacturing	66.1	286.5	352.7
Machinery and other equipment manufacturing	703.1	350.5	1,053.7
Sub-total	899.3	2,377.3	3,276.7
% of Canterbury's total exports	26.6%	31.6%	30.1%

Source: BERL

Exports to international markets from the Canterbury region are currently sent (a) direct from Christchurch Airport, (b) re-routed from Christchurch Airport by road to Auckland Airport, or (c) may go by road, rail or sea bypassing Christchurch Airport altogether. A further stage of research could acquire detailed production data for the entire South Island. This could be used to quantify the value of exports to international destinations from the South Island by all freight modes, and used to estimate the missed cargo opportunity.

### 3.6 Other factors

We believe another important factor CIAL may wish to consider is how (i.e. mode) and by how much passenger transport through Christchurch will change. For example, while budget carriers such as Pacific Blue may increase their share of the passenger market, they may have holds that are unsuitable for freight (Boeing 737s that are manually loaded or narrow body A320s) and rapid turn-around times. Therefore, alternative freight handling solutions may be required if CIAL wants to take advantage of the space these budget carriers might offer. This would require further technical and economic analysis to determine the practical and financial feasibility. It is likely, however, that a dedicated freight service with a Boeing 777 or the like would be a better solution.

Related to this is the role of domestic and international tourism. Christchurch acts as a hub for regional flights as well as a connection point for Auckland and for international origins/destinations. CIAL may be able to take advantage of increased passenger levels, whether this growth is secular or driven by the entry and expansion of low cost carriers into the market. By increasing the number and frequency of flights, CIAL may be able to play an increasing role as a hub for freight as well as for passengers. Again, the economies of this depend on the technicalities of using the range of passenger flights for freight purposes.

One aspect of this is to identify the growth in domestic and international tourism drawing on Christchurch's facilities. This could be an area for future research.

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