FORSYTH BARR

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Transport Trends
The Biggest Black Swan

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COVID-19 has, and will continue to, impact all transport sector players to varying degrees; the near term outlook looks bleak. Hardest hit will be international aviation given border closures for the foreseeable future. This will have a knock-on impact on domestic aviation, as will the domestic lock down, which will also impact other industry segments. Freight for non-essential services essentially stops for the lock-down period. Essential services freight will ensure that freight forwarders, logistics companies and ports will remain operational but at vastly reduced activity levels. Industry profitability will be hit hard; dividends will suffer as a result. Earnings guidance has been uniformly suspended. The balance sheets of the listed players are in reasonable shape, however Air New Zealand (AIR) is most at risk of requiring recapitalisation. We have a preference for Mainfreight (MFT) and Freightways (FRE) in the sector, albeit we recognise that both likely face a meaningful contraction in earnings over the next 12 months.

Key transport trends and themes

We acknowledge that most historic data sets are now largely redundant, and therefore key themes across airports and airlines, roads and rail, and ports and shipping identified in this edition of Transport Trends focus on very recent changes in operating conditions:

- **Air passenger capacity and traffic** has fallen by previously unthinkable rates. The outlook is grim for airlines in light of border closures, domestic lock-downs and potential heightened consumer apathy to air travel. It not much better for airports, albeit they are typically subject to less balance sheet stress.
- **Domestic freight** growth had recovered through the December quarter and early 2020, but now it faces a lock-down activity drop, despite some exposure to essential services, and medium term challenges from economic headwinds both domestically and offshore.
- **Air freight** has piggy-backed the boom in passenger travel in recent years but now faces steep rate increases from constrained capacity as the holds of passenger-less aircraft are being used as freighters. This provides a marginal benefit to airlines that are otherwise haemorrhaging cash given their heavy fixed overheads.

Sector preferences

We summarise our sector stock ratings as follows:

- OUTPERFORM: n/a
- NEUTRAL: Auckland Airport, Freightways, Mainfreight, Napier Port
- UNDERPERFORM: Air New Zealand, Port of Tauranga

A summary of Transport Trends

In each edition of Transport Trends we provide the latest available transport sector statistics and industry data. We extract and analyse the data to determine the impact and implications for companies under our coverage.

Key trends discussed

In this edition of Transport Trends we highlight several key trends, that are unsurprisingly COVID-19 related, shaping the broader transport industry that are relevant to one or more NZX listed transport companies:

- Trend #1: Air passenger capacity grounds (almost) to a halt
- Trend #2: Domestic freight to stall
- Trend #3: Air freight price surge

Stock preferences

The transport sector is as exposed as any to the impact of COVID-19. Some players may navigate the next few years with relative ease, notwithstanding short term challenges given the lock down. However, the potential for GFC-type recession will weigh on industry growth for a number of years. We retain an underweight position for the sector.

NEUTRAL: Mainfreight (MFT), Freightways (FRE), Auckland Airport (AIA), Napier Port (NPH)

- **MFT**'s positive trading through the seasonal peak will provide sufficient buffer for the early impact of COVID-19 on its FY20 result (March year-end). However, FY21 will be significantly impacted as supply chains are impacted and economic recession dampens consumer and therefore customer demand.
- **FRE** takes ownership of Big Chill today, which should provide a welcome earnings boost in a period of subdued trading for the existing business. FRE has some exposure to essential services through key customers, including Countdown and EBOS. However, the majority of its operations will be hard hit.
- **AIA**'s commercial and aeronautical income streams will be severely impacted by the border closure and grounding of the domestic fleet. While domestic services will likely recommence at the conclusion of the lock-down, the more lucrative international passengers are likely to be absent for an extended period of time and may take years to recover to pre-COVID-19 levels.
- **NPH** is heavily reliant on forestry and pip-fruit exports. While the latter is considered an essential service, the former has stopped during the domestic lock-down. The company has withdrawn its FY20 (September year end) prospectus forecasts. Given its export focus of primary produce we expect a rapid recovery in FY21.

UNDERPERFORM: Air NZ (AIR), Port of Tauranga (POT)

- COVID-19 will impact **AIR** more than any other listed company. Its revenue run-rate has fallen by >90% and it has a monthly cash burn of >NZ$150m. A debt facility from the government provides near term operating certainty but a debt for equity swap will be necessary at some stage. With New Zealand looking physically isolated for passenger travel for the foreseeable future, the outlook for AIR appears extremely challenging.
- **POT** will be temporarily impacted by the international lock-down with various export and import trades constrained. COVID-19 will mean the Upper North Island Supply Chain Study will be gathering dust through this year's election. Unless NZ First is re-elected and helps form a second coalition government it is likely to be replaced by more pressing infrastructure developments, in our opinion.

Figure 1. Valuation summary as at 31 March 2020 (NZ$)

			Share	Target	Gross yld	PE		EV/EBITDA	
Company	**Code**	**Rating**	**price**	**price**	**FY20**	**FY20**	**FY21**	**FY20**	**FY21**
Air New Zealand	AIR	UNDERPERFORM	0.85	1.00	18.0%*	-8.2x	-10.4x	3.5x	3.3x
Auckland Airport	AIA	NEUTRAL	4.99	7.10	3.7%	37.4x	39.2x	20.3x	20.1x
Freightways	FRE	NEUTRAL	5.50	8.00	7.7%	14.9x	13.5x	7.0x	6.6x
Mainfreight	MFT	NEUTRAL	34.55	39.00	2.5%	22.1x	20.0x	12.7x	11.6x
Napier Port	NPH	NEUTRAL	2.85	3.05	3.7%	28.1x	23.5x	13.1x	11.6x
Port of Tauranga	POT	UNDERPERFORM	6.05	5.20	3.1%	39.5x	39.5x	27.0x	24.9x

Source: Forsyth Barr analysis NOTE: *Please be aware that given the rapid escalation in the COVID-19 crisis and the substantial uncertainty it represents for the economy and businesses the underlying forecasts which drive the valuation multiples above may not have been updated to reflect current economic and market conditions. A greater degree of caution needs to be applied to these multiples than usual. *reflects the interim dividend already paid. This falls to 0% on a forward run-rate basis.*

Key trends identified

Trend #1: Air passenger capacity grounds (almost) to a halt

The global airline industry is experiencing its worst ever downturn as a result of COVID-19. Total airline capacity for the week beginning 23 March was down -29%. Capacity is likely to reduce more over the coming weeks as COVID-19 restrictions and consumer behaviour impact supply and demand in less impacted markets to date, in particular the US. Moreover, the relaxation of landing slot rules by regulators mean airlines are more likely to be more flexible with capacity adjustments than would have been the case several weeks ago.

Over the past week:

- Singapore Airlines has cancelled nearly all of its services
- Emirates and Etihad suspend almost all operations
- India's domestic aviation market has closed down
- Qantas and Air New Zealand have suspended all international flying

Figure 2. Weekly changes to airline capacity by country/region in 2020

Country	06-Jan	13-Jan	20-Jan	27-Jan	03-Feb	10-Feb	17-Feb	24-Feb	02-Mar	09-Mar	16-Mar	23-Mar
ALL	1.5%	1.3%	0.5%	0.1%	-3.6%	-10.0%	-10.7%	-10.1%	-7.9%	-10.1%	-12.4%	-28.7%
China	7.8%	8.8%	1.6%	-0.5%	-22.7%	-63.3%	-70.8%	-62.3%	-41.6%	-42.9%	-38.7%	-37.5%
South Korea	1.8%	2.1%	3.4%	1.4%	-3.4%	-9.3%	-15.7%	-17.9%	-34.1%	-52.1%	-56.1%	-55.7%
Singapore	-1.1%	-0.1%	1.2%	-0.3%	-8.2%	-15.4%	-18.5%	-22.4%	-25.4%	-35.7%	-35.5%	-76.9%
France	0.5%	-2.3%	-2.7%	-2.1%	-1.1%	-0.2%	0.8%	-1.3%	-2.8%	-3.8%	-13.7%	-41.3%
Germany	-8.6%	-8.8%	-8.4%	-8.5%	-7.9%	-8.0%	-6.6%	-5.1%	-5.0%	-15.4%	-30.2%	-71.9%
UK	-1.8%	-4.1%	-4.2%	-5.1%	-4.3%	-4.0%	-3.0%	-1.9%	-2.7%	-15.5%	-19.3%	-53.5%
Italy	0.8%	-5.0%	-4.2%	-4.8%	-4.3%	-3.5%	-2.8%	-6.2%	-8.8%	-21.6%	-73.9%	-88.0%
Spain	-1.1%	-4.6%	-4.8%	-4.5%	-3.8%	-2.5%	0.6%	-1.6%	-1.4%	-2.9%	-13.7%	-74.3%
Canada	-5.5%	-6.3%	-6.2%	-5.7%	-5.2%	-5.7%	-6.4%	-6.6%	-6.9%	-9.0%	-9.4%	-39.5%
Caribbean	3.0%	1.1%	0.8%	0.7%	1.7%	1.8%	2.1%	3.3%	1.8%	1.0%	0.6%	-18.8%
USA	1.6%	1.3%	1.5%	2.2%	1.5%	1.3%	1.5%	0.6%	-2.1%	-1.3%	-0.5%	-4.8%

Source: OAG, Forsyth Barr analysis

While the capacity moves are progressively getting worse, the backdrop for capacity in China and South Korea has started to improve.

Implications for Air New Zealand (AIR) and Auckland Airport (AIA)

With our border closed to non-residents, and Air New Zealand and Qantas ceasing virtually all services, the aviation industry in New Zealand is in hibernation. Despite the prospect of government support both AIR and AIA will be generating losses currently, given limited revenue and fixed costs to service.

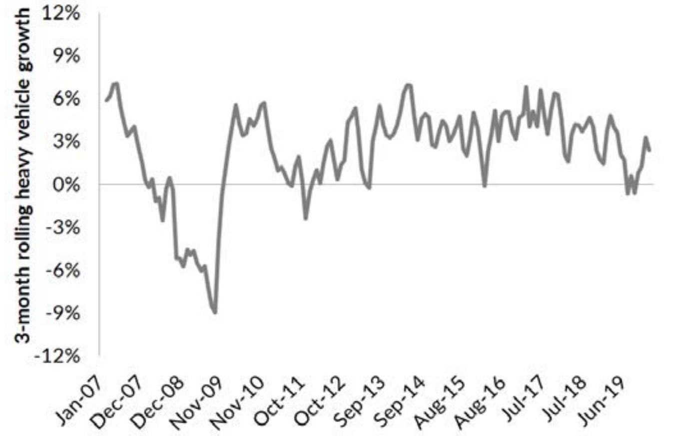
AIR has outlined that it intends to begin a "*large scale reduction*" of its workforce in the international regions, followed by New Zealand in the coming days. It acknowledges that it will be a smaller airline after COVID-19 than pre COVID-19. This has implications for AIA, which will have medium term aeronautical income protection from the FY23 price reset, but potential longer lasting implications for its commercial operations given lower pax numbers.

Trend #2: Domestic freight to stall

NZTA heavy vehicle data shows overall country volumes fell -1% in February 2020 but were still up +2% for the past three months. While North Island data showed flat activity in February, the South Island was markedly weaker, down -5% year on year. We attribute the South Island decline to the early impact on port forestry volumes in light of the temporary closure of Chinese ports (port data shows a sharper decline for South Island ports than North Island ports; moreover, Hawkes Bay and Bay of Plenty heavy vehicle traffic is also down) and a sharp reduction in Chinese tourism (buses are encapsulated in heavy vehicle data).

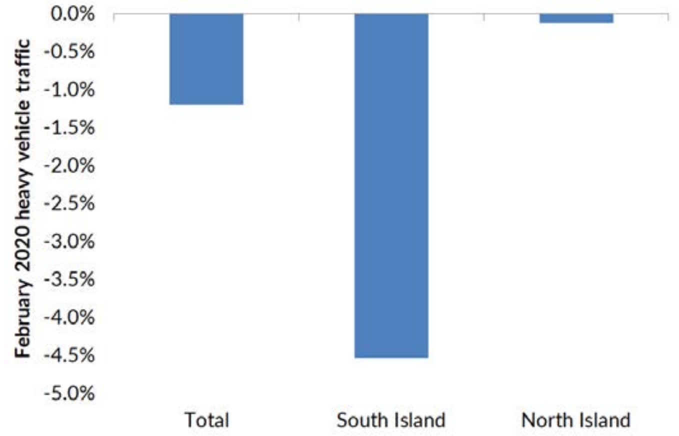
The March data when available next week will show far more subdued activity levels, in our opinion. Essential items (including the export component) contribute an estimated ~35% of total freight tonnes-km in New Zealand. An even sharper fall is likely in April.

Figure 3. Heavy vehicle traffic was recovering pre COVID-19



Source: NZTA, Forsyth Barr analysis

Figure 4. South Island vs North Island in February 2020



Source: NZTA, Forsyth Barr analysis

Implications for Mainfreight (MFT) and Freightways (FRE)

MFT and FRE will both be significantly impacted by the domestic lock-down and face significant challenges in their offshore operations. The variable cost nature of owner driver relationships will provide some protection, but as responsible corporates they may need to support their contractors through periods of limited activity. The impending global and domestic recession will have ongoing implications for both companies, albeit activity levels will initially rebound strongly given a release of pent up consumer demand and stimulatory retailer promotional activity.

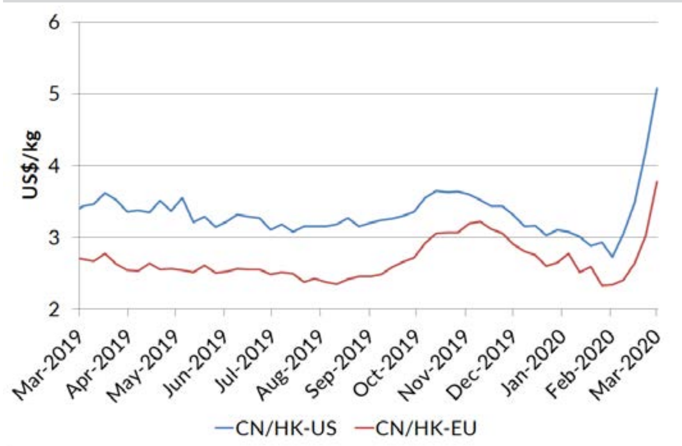
Trend #3: Air freight price surge

In recent weeks there has been a sharp increase in the price of air freight. This reflects reduced international airline capacity as a result of COVID-19. Dedicated freighter aircraft account for around half of the global airfreight market, which means a substantial part of the market is still carried on passenger aircraft. With a significant reduction in air passenger capacity with border closures and reduced consumer demand, the amount of airfreight capacity in the belly of passenger planes has fallen materially.

The actual net price (ANP) for air freight from China/Hong Kong to the US is ~US$5.72/kg for the week starting 30 March 2020, up +12% on the prior week, and follows two consecutive weeks of ~+20% week-on-week price growth. Prices to Europe from China tell a similar story, up in excess of +20% in each of the past two weeks to now sit at US$4.48/kg. Rates for China/Europe and China/US air freight are more than +60% higher than they were at the same time last year.

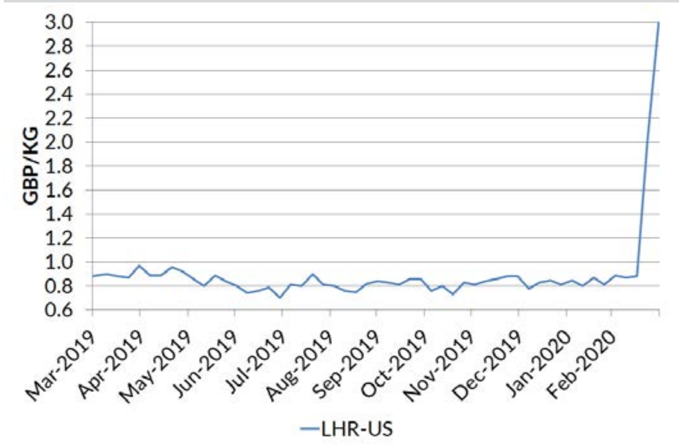
Other airfreight lanes have also experienced substantial rate increases. Figure 6 shows air freight rates between London and the US have sharply increased, up to ~GBP2.99/kg after averaging around ~GBP0.83/kg for the 12 months leading up to March.

Figure 5. Hong Kong air freight to US and Europe



Source: TAC Index, Forsyth Barr analysis

Figure 6. London air freight to the US



Source: TAC Index, Forsyth Barr analysis

Implications for Mainfreight (MFT)

MFT's air and ocean (A&O) business will have limited direct exposure to higher airfreight routes as its gross margin is typically dollar rather than percentage based. However, available airfreight capacity and the broader impact on customer supply chains of countries being in lock-down will have an impact on divisional volumes. Consequently, we believe A&O will have experienced a sharp downturn towards the end of FY20 (March year-end), which will have taken the gloss off of otherwise robust full year earnings growth. We expect MFT to provide a trading update over the next week to coincide with its financial year end.

Implications for Air New Zealand (AIR)

AIR is now largely an air freight company, given little passenger travel and with the government support package assisting key air freight routes to support exporters. While higher airfreight rates will help AIR in recovering the variable cost of flying and contribute to the groups fixed costs, we expect the overall impact to be negligible on the company's on-going cash burn.

Operating statistics and industry data

Airports and airlines

Data in this section is relevant to listed companies including Auckland Airport (AIA), Infratil (IFT) and Air New Zealand (AIR). Statistics principally reflect passenger movements but also cover seat capacity changes and other key airline specific data.

Airports

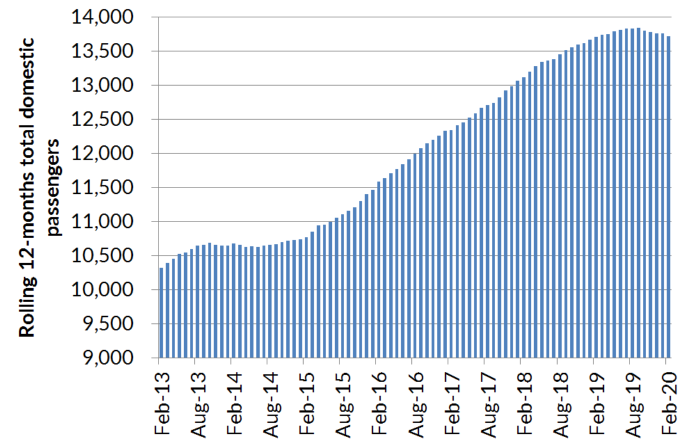
Domestic passenger movements within New Zealand

Monthly domestic passenger data for all NZ airports is not publically available. While Air NZ provides monthly statistics, Jetstar has historically provided six-monthly summaries (at financial result time). As a result, we have built our own domestic passenger series using available airport and airline data. We show the assumed number of passengers in Figure 8.

Figure 7. Total domestic passenger growth

Source: Company reports, Forsyth Barr analysis

Figure 8. Total domestic passengers ('000)

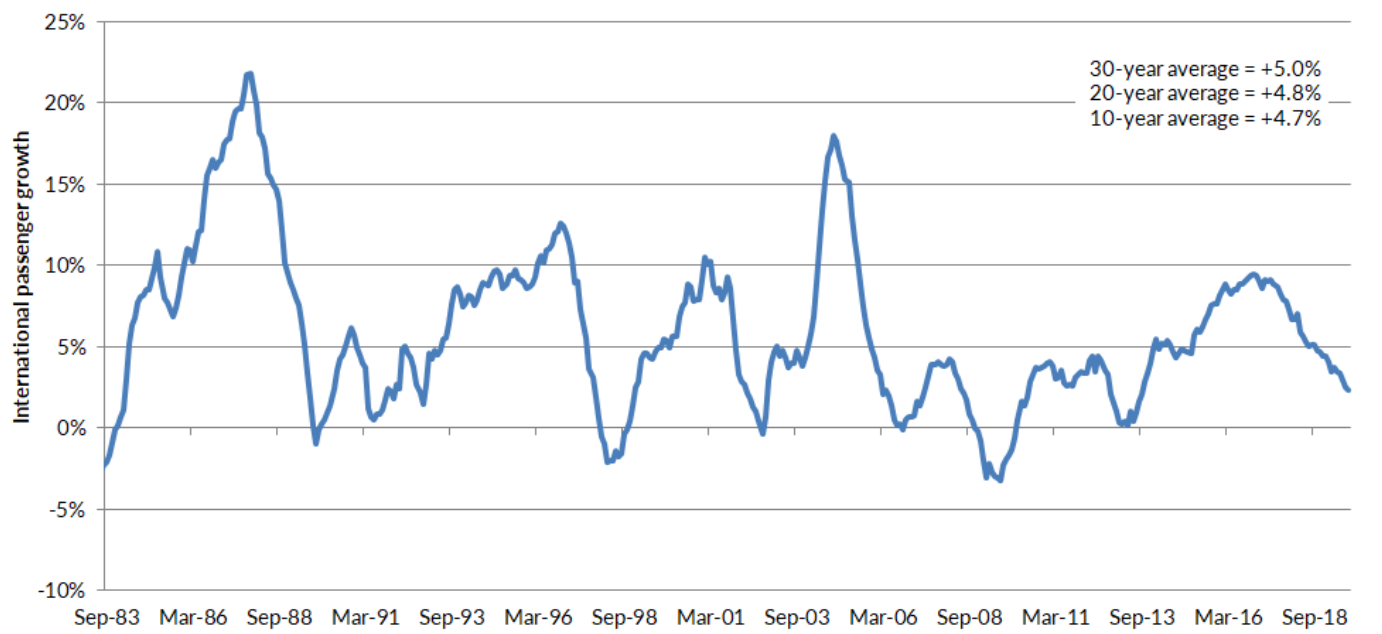


Source: Company reports, Forsyth Barr analysis

International passenger movements into New Zealand

In Figure 9 we show total international passenger arrivals across all New Zealand international airports (including Auckland, Christchurch, Wellington, Queenstown and Dunedin). Average annual international passenger growth for the past 30-years amounts to +5.0%.

Figure 9. Total international pax arrivals across all New Zealand airports (12 months rolling)

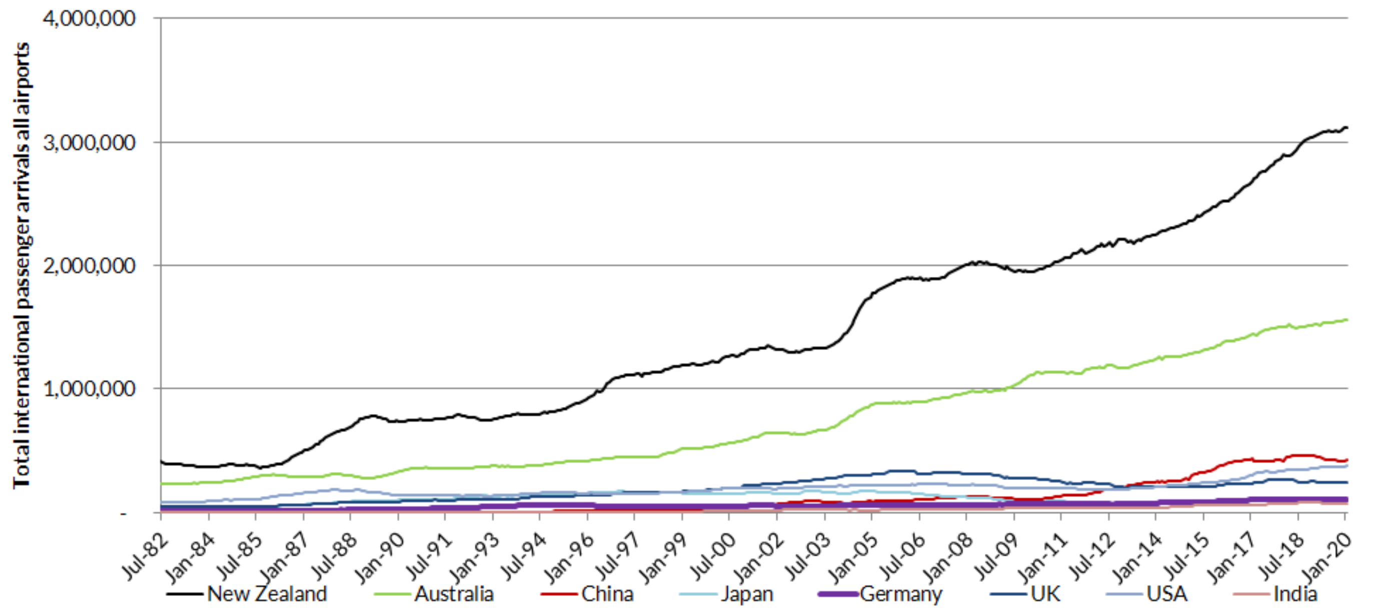


Source: Forsyth Barr analysis

The origin of International passenger arrivals

New Zealanders travelling overseas account for the largest proportion of international travellers. Australians represent the next biggest segment of the market. China has risen rapidly in recent years overtaking more traditional visitor countries.

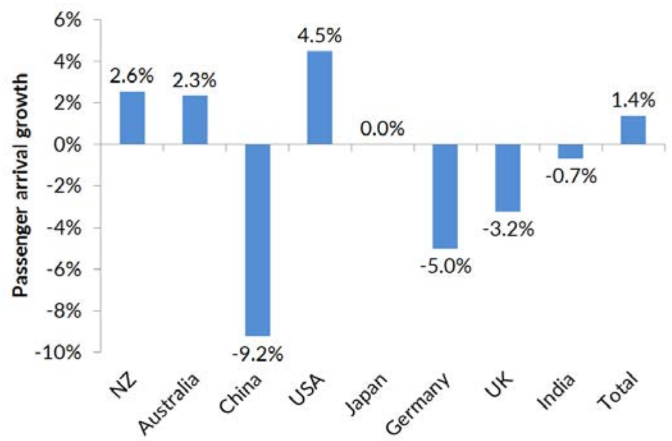
Figure 10. International passengers country of residence (12 months rolling)



Source: Statistics NZ, Forsyth Barr analysis

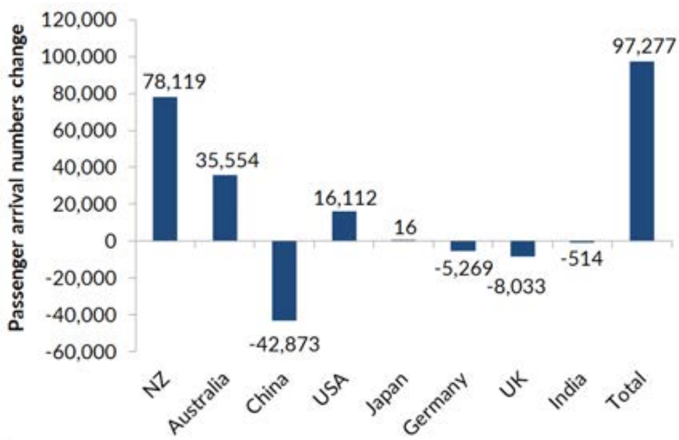
The year-on-year change in both percentage and absolute numbers for Figure 10 are shown in Figure 11 and Figure 12 respectively. Overall growth is being driven by a combination of nationalities but remains heavily reliant on more New Zealanders travelling offshore.

Figure 11. International arrivals growth (12m to January 2020)



Source: Statistics NZ, Forsyth Barr analysis

Figure 12. International arrivals change (12m to January 2020)

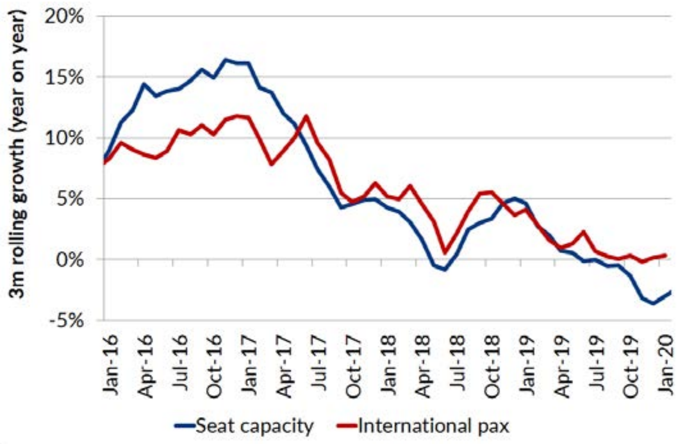


Source: Statistics NZ, Forsyth Barr analysis

International seat capacity compared to passenger data

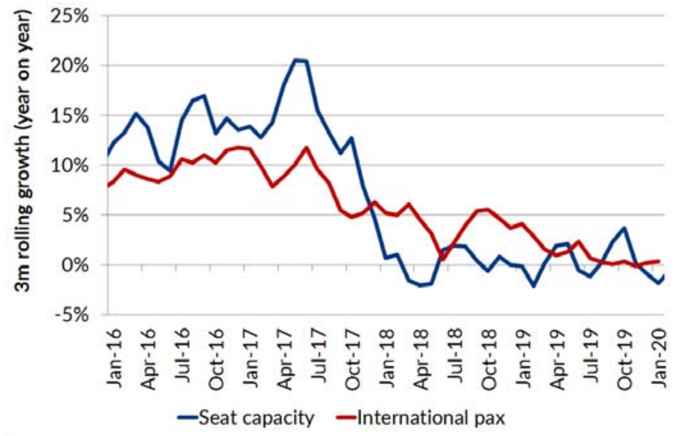
In Figures 13 and 14 we show scheduled international seat historic capacity growth for Auckland and Christchurch airports respectively over recent years and compare to international passenger data. Where gaps appear load factors will be changing.

Figure 13. AIA international capacity vs passengers



Source: OAG, NZ Stats, Forsyth Barr analysis

Figure 14. CIAL international capacity vs passengers



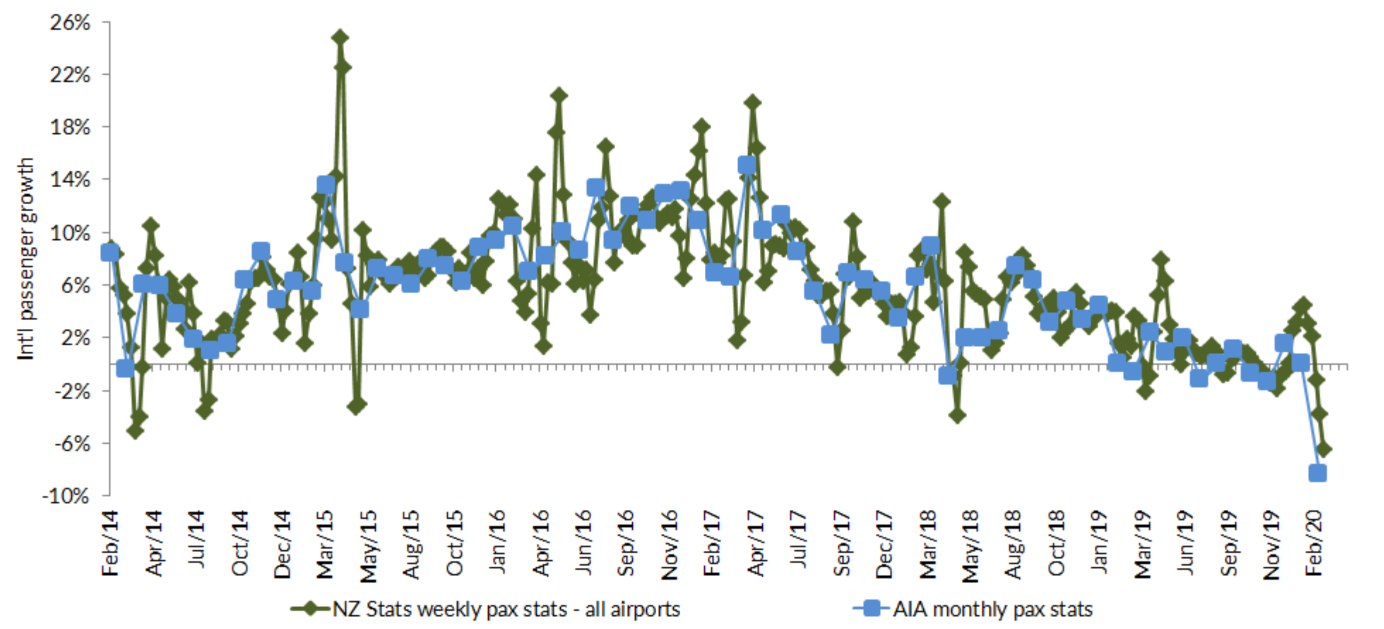
Source: OAG, NZ Stats, Forsyth Barr analysis

Auckland Airport

Weekly international pax data

NZ Statistics provides weekly international pax data based on New Zealand resident departures and overseas resident arrivals. While the data is for all New Zealand airports, AIA's ~75% share of international pax means the data offers a good forward proxy of its upcoming monthly releases.

Figure 15. AIA's international pax growth follows all airports pax data



Source: Statistics NZ, Forsyth Barr analysis

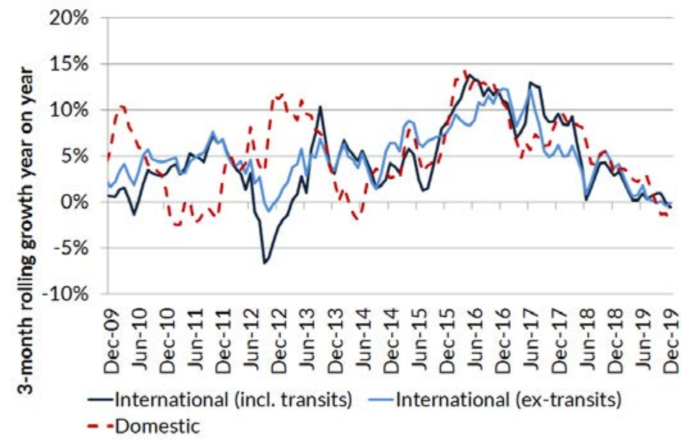
Monthly pax numbers

AIA reports monthly traffic numbers. We chart the airports passenger growth history since 2009 in Figure 16.

Queenstown Airport (24.99% AIA owned)

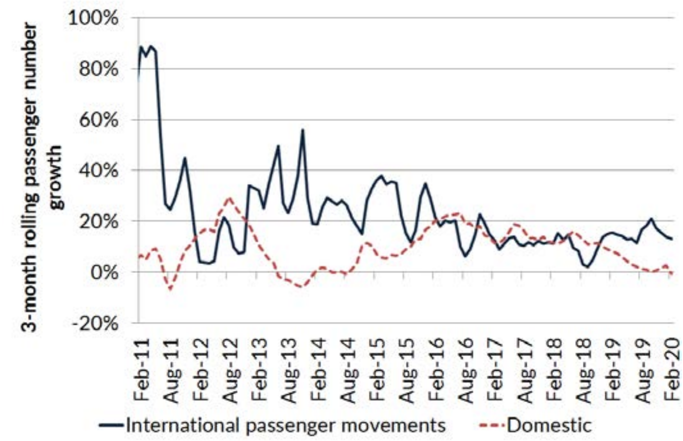
AIA acquired a 24.99% stake in Queenstown Airport in July 2010. Queenstown is the fourth busiest airport in New Zealand and is a key entry point for Australian visitors during the ski season. We show passenger growth trends in Figure 17.

Figure 16. Auckland Airport passenger number growth



Source: Company reports, Forsyth Barr analysis

Figure 17. Queenstown Airport passenger number growth



Source: Company reports, Forsyth Barr analysis

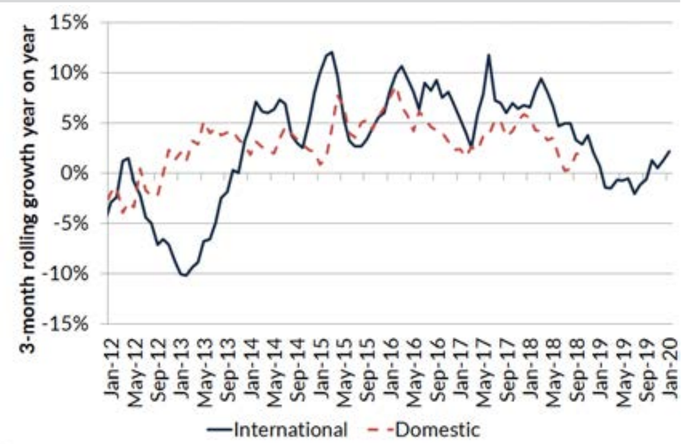
Wellington Airport

Wellington Airport is owned by Infratil (66%) and Wellington City Council (34%). It is the third busiest airport in New Zealand. Domestic passengers account for ~87% of all passengers. The relatively short length of the runway (~1.9km) limits the use of the airport for larger planes on long-haul services. We show recent passenger growth trends in Figure 19.

Christchurch Airport

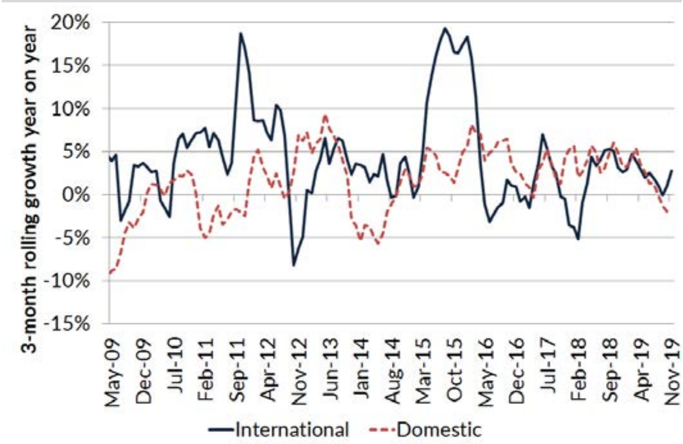
Christchurch Airport is 75% owned by the Christchurch City Council and 25% owned by the New Zealand Government. Since the 2010/2011 earthquakes Christchurch has lost share of international passengers to Auckland but experienced growth from late 2013. Christchurch Airport has not reported domestic passenger numbers since late 2018.

Figure 18. Christchurch Airport passenger number growth



Source: Company reports, Forsyth Barr analysis

Figure 19. Wellington Airport passenger number growth



Source: Company reports, Forsyth Barr analysis

Airlines

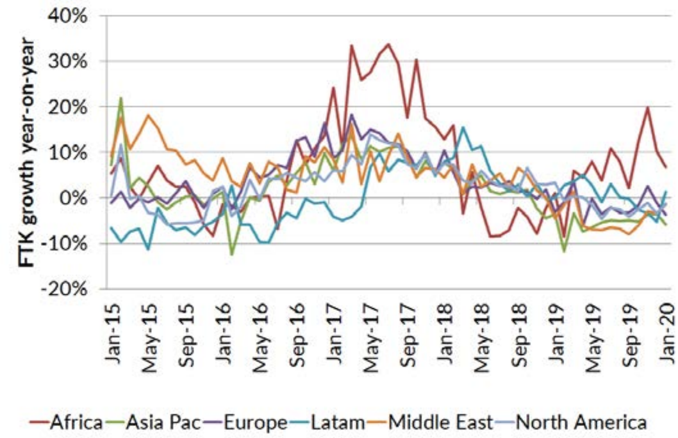
IATA global air freight data

IATA releases air freight tonne kilometres (FTKs) travelled monthly for all regions globally. FTK is a measure of the size of an airline's freight business and is calculated as freight tonnage multiplied by distance travelled.

IATA global air passenger data

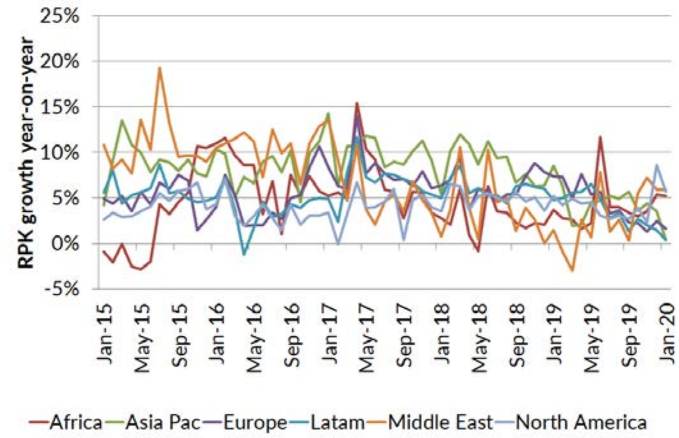
In Figure 21 we show IATA data for airline sector growth in revenue passenger km (RPK) across all regions. RPK is a measure of the passenger volume flown by airlines. It is calculated by multiplying the number of passengers flown by distance travelled.

Figure 20. Freight tonne kilometre (FTK) growth yoy by region



Source: IATA, Forsyth Barr analysis

Figure 21. Revenue per kilomtre (RPK) growth yoy by region



Source: IATA, Forsyth Barr analysis

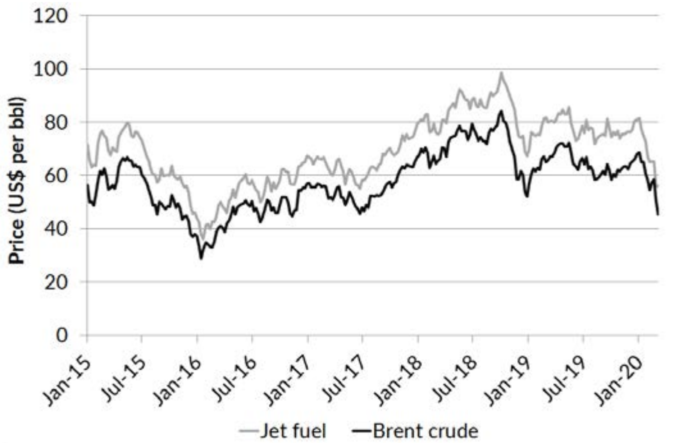
Jet fuel prices

Jet fuel is the largest single operating cost for airlines. Jet fuel prices have fallen significantly over the past two years as shown in Figure 22 but are now materially off these lows. The price of jet fuel acquired in New Zealand is likely to rise and close the gap to import parity prices over the near-term.

Brent and crack spread

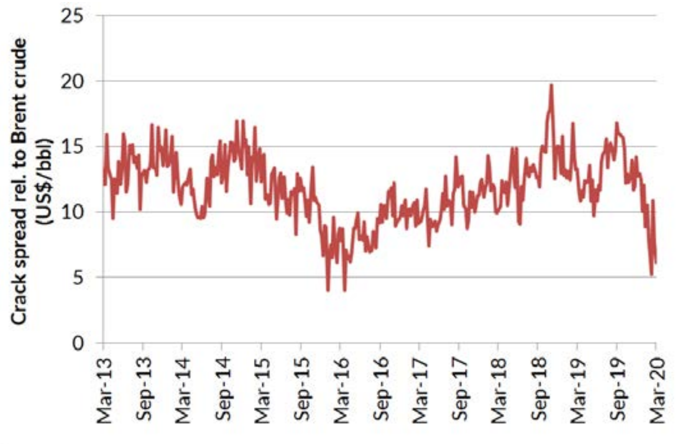
Jet fuel prices are a function of crude prices, the crack spread (the cost of converting crude oil into jet fuel), and into plane (supply chain) expenses. In Figure 23 we show the history of the crack spread relative to the Brent crude price.

Figure 22. Jet fuel price (spot)



Source: Bloomberg, Forsyth Barr analysis

Figure 23. Crack spread relative to Brent crude price



Source: Bloomberg, Forsyth Barr analysis

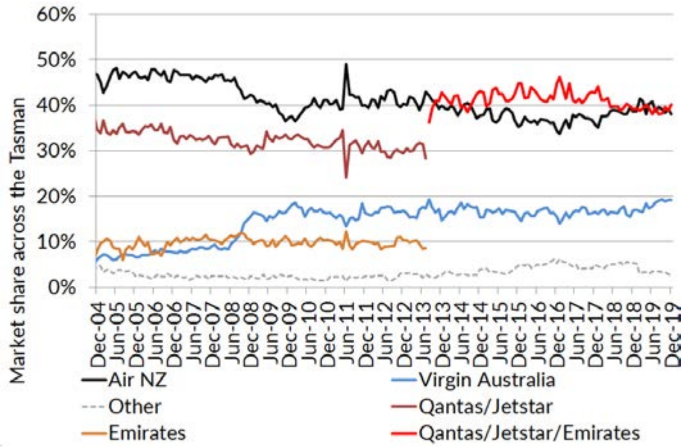
Trans-Tasman market share

In Figure 24 we show the historical market share development of trans-Tasman services. Air New Zealand currently has a ~39% market share, having recovered share from Qantas over the past two years. The Air New Zealand and Virgin Australia JV ended in late October 2018.

Tasman load factors

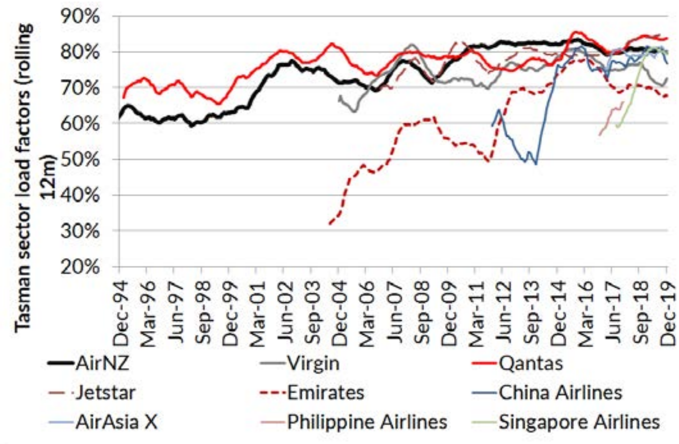
In Figure 25 we show trans-Tasman load factors by airline. Air New Zealand and Qantas enjoy the highest load factors, while fifth freedom carrier (the right to fly between two foreign countries on a flight originating or ending in one's own country) Emirates, the lowest.

Figure 24. Trans-Tasman market share



Source: BITRE, Forsyth Barr analysis

Figure 25. Trans-Tasman load factors (12-m rolling)



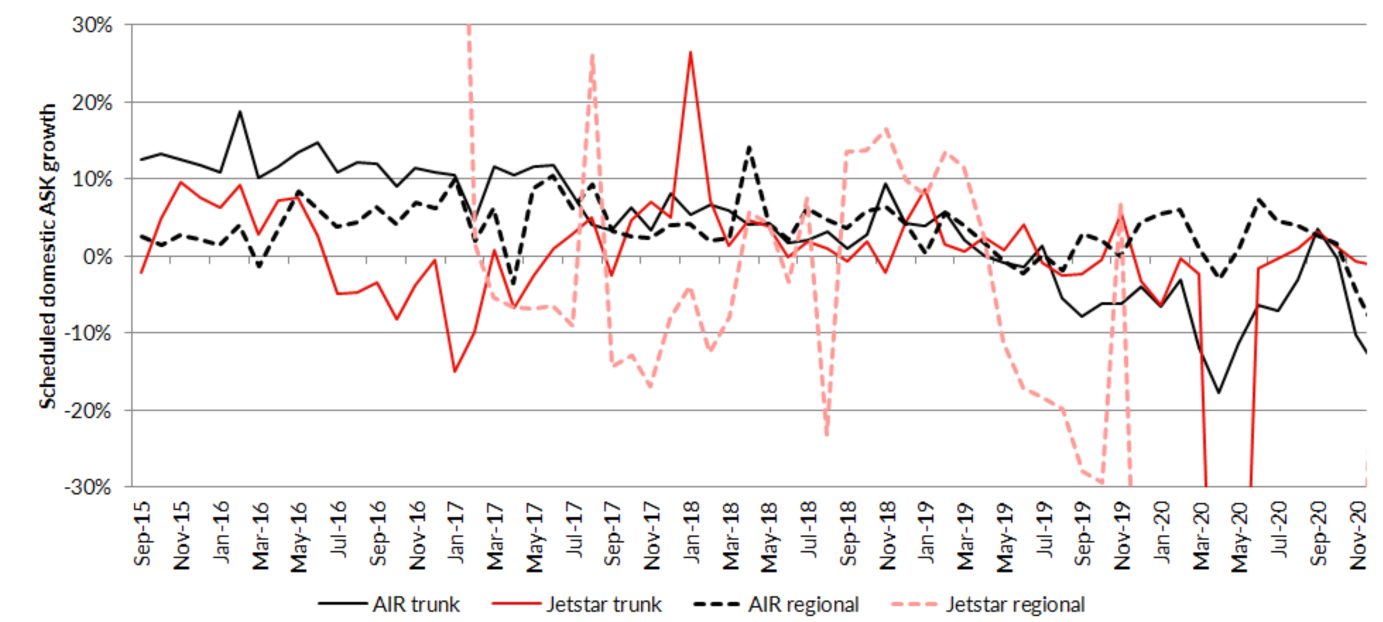
Source: BITRE, Forsyth Barr analysis

Domestic airline capacity outlook

Airline schedule data from OAG provides a picture of the capacity outlook. This is subject to change as airlines constantly amend their schedule to meet demand trends and capacity issues, the data is broadly consistent with capacity guidance issued by key airlines. In light of COVID-19 very little reliance can be placed on the forward schedules at this stage.

In Figure 26 we show the scheduled domestic capacity growth across both trunk (Wellington, Christchurch, and Auckland) and regional airports for Air New Zealand and Jetstar.

Figure 26. Scheduled domestic capacity growth

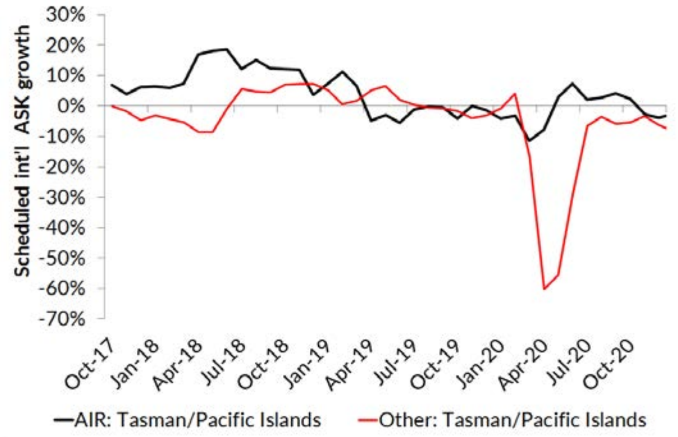


Source: OAG, Forsyth Barr analysis

International airline capacity growth

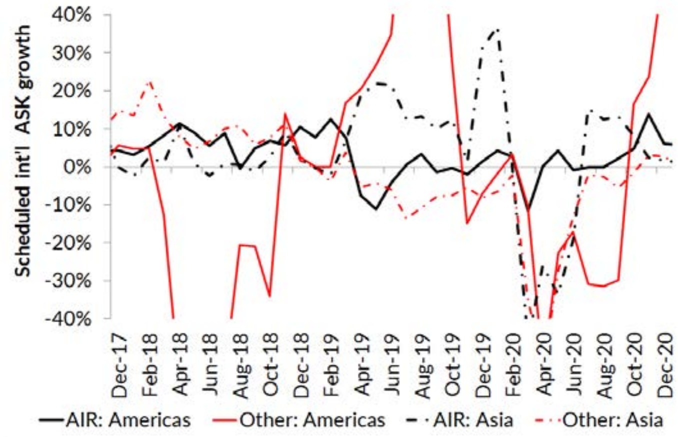
In Figure 27 and Figure 28 we show the scheduled international capacity growth across AIR's international regions. The data shows its increasing share of capacity in its Tasman and Pacific Island operations, but the opposite across Asia.

Figure 27. Scheduled Tasman & Pacific Island capacity growth



Source: OAG, Forsyth Barr analysis

Figure 28. Scheduled long-haul capacity growth



Source: OAG, Forsyth Barr analysis

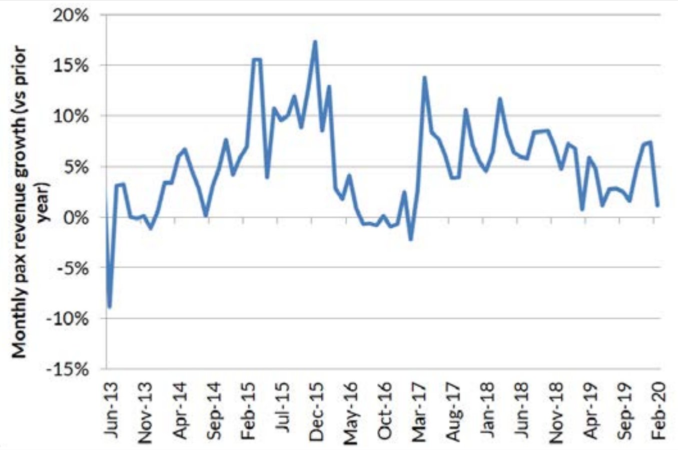
Air New Zealand

AIR publishes monthly operating statistics covering passenger numbers, Revenue Passenger Kilometres, load factors, and yields.

Revenue growth

We calculate AIR's monthly passenger revenue growth from its operating statistics releases as shown in Figure 29.

Figure 29. AIR's monthly pax revenue growth



Source: Company data, Forsyth Barr analysis

Figure 30. AIR's RASK growth (constant currency)

Source: Company data, Forsyth Barr analysis

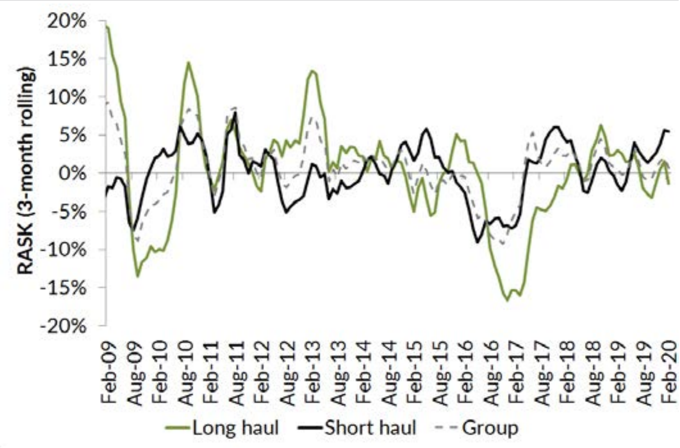
Operating statistics

RASK reflects the amount of revenue generated per ASK (available seat kilometre). Changes in RASK can reflect various drivers of demand and supply. The improving RASK highlights sustained demand and moderating capacity increases.

Long haul and short haul RASK growth are subject to different drivers. Long haul RASKs tend to be more indirectly impacted by oil prices, given the higher proportion of jet fuel burnt on long haul services compared to short haul.

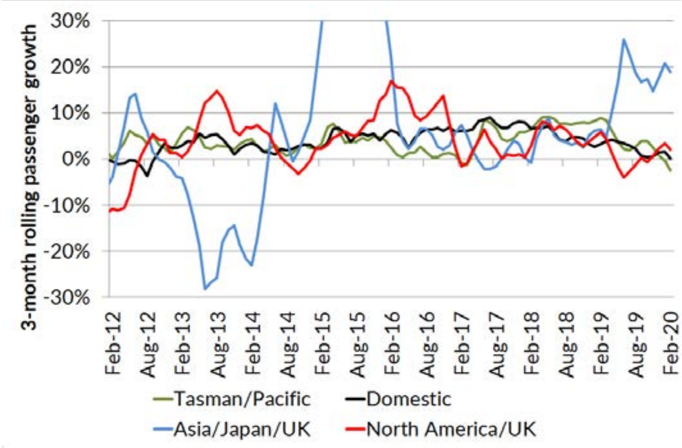
We show in Figure 32 growth in passenger numbers by region for AIR.

Figure 31. AIR's long haul and short haul RASK growth (NZD)



Source: Company reports, Forsyth Barr analysis

Figure 32. AIR's passenger growth (3-month rolling)



Source: Company reports, Forsyth Barr analysis

Revenue Passenger Kilometres (RPK) is a key measure of output for airlines. In Figure 33 we show the rolling annual RPK for AIR across each of its regions.

Load factors are a key measure of capacity utilisation. An airline's load factors equates to its RPK divided by its ASK (Available Seat Kilometres). Load factors at AIR have been stabilising in recent months as shown in Figure 34.

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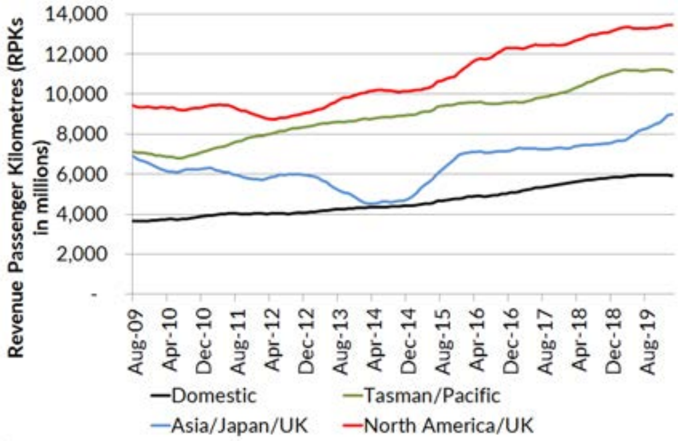
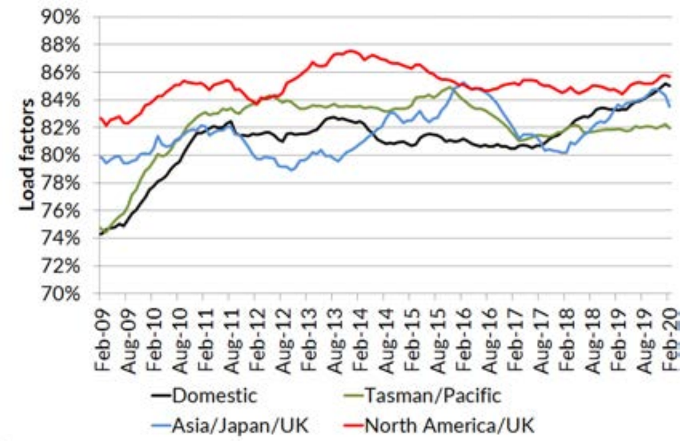
Figure 33. AIR's Revenue Passenger Kilometre (RPK)



Source: Company data, Forsyth Barr analysis

Figure 34. AIR's 12-month rolling load factors by region



Source: Company data, Forsyth Barr analysis

Road and rail

Road and rail data is most relevant to freight and courier related operators including Mainfreight (MFT), Freightways (FRE) and TIL Logistics (TLL). It may also be relevant to the ports in light of the competitive dynamics between road, rail and coastal shipping.

Road

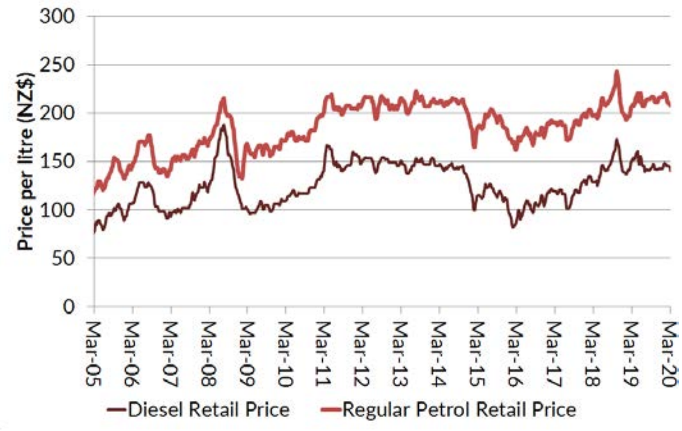
New Zealand retail fuel prices

Fuel price changes are typically passed on to customers via owner-operator models in NZ. Fuel prices may dictate the relative competitiveness of different transport modes.

New Zealand courier fuel surcharges

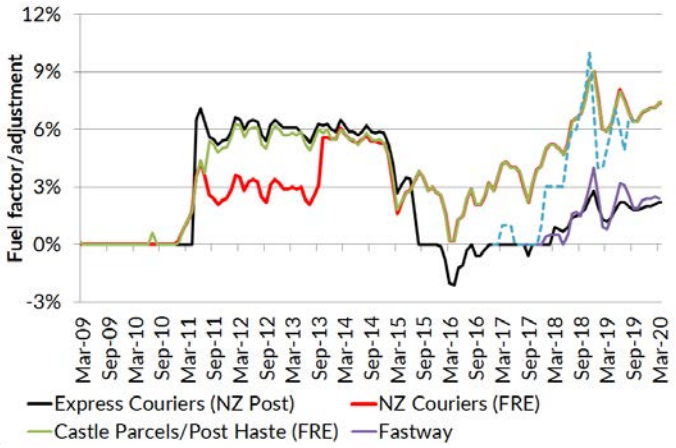
The major courier companies in New Zealand (Freightways and Express Couriers) both charge fuel surcharges on top of their base prices.

Figure 35. New Zealand retail transport fuel costs



Source: MBIE, Forsythyth Barr analysis

Figure 36. Courier company fuel adjustment levies



Source: Company websites, Forsyth Barr analysis

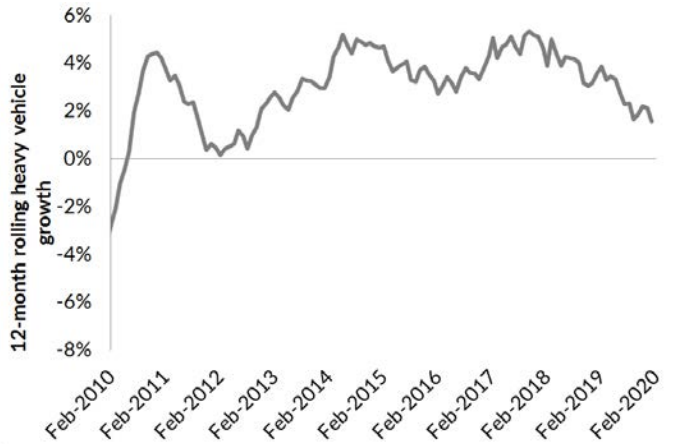
New Zealand heavy vehicle usage statistics

The NZTA publishes monthly data from 118 traffic counting sites throughout New Zealand along main state highways. Heavy vehicles are those categorised as >3,500kg. State Highways account for 10% of roads in NZ but represent 65% of heavy goods traffic.

New Zealand diesel consumption

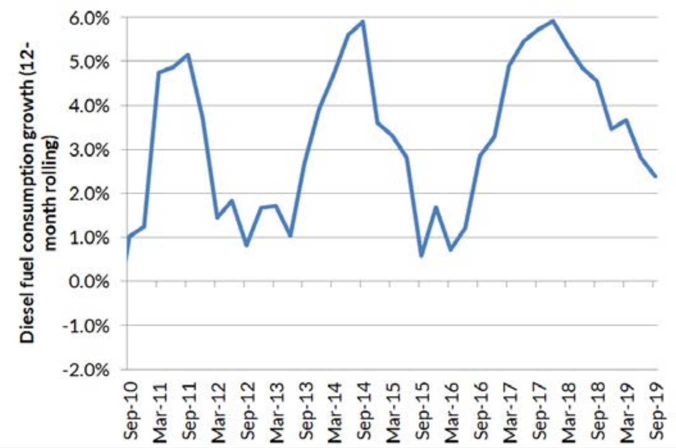
MBIE publishes quarterly fuel consumption data by fuel type as measured by million barrels. Heavy vehicles are predominantly diesel powered and therefore can be used as a reasonable proxy for total heavy vehicle traffic growth.

Figure 37. Heavy vehicle growth on state highways



Source: NZTA, Forsyth Barr analysis

Figure 38. Quarterly diesel consumption growth



Source: MBIE, Forsyth Barr analysis

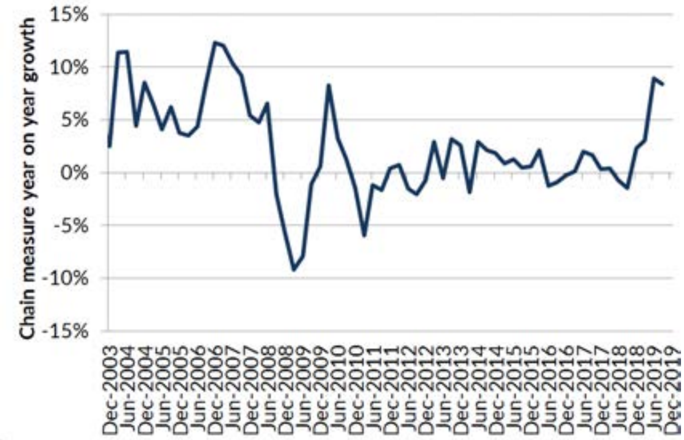
Australia road transport volumes

Timely data on the Australian freight transport industry is limited. In Figure 39 we show the growth profile of the road transport contribution to national accounts on a quarterly basis.

North American freight volumes

The Transportation Services Index (TSI), created by the U.S. Department of Transportation (DOT), Bureau of Transportation Statistics, measures the movement of freight. The index combines data on freight traffic that has been weighted to yield a monthly measure of transportation services output.

Figure 39. Transport, postal and warehousing national account*



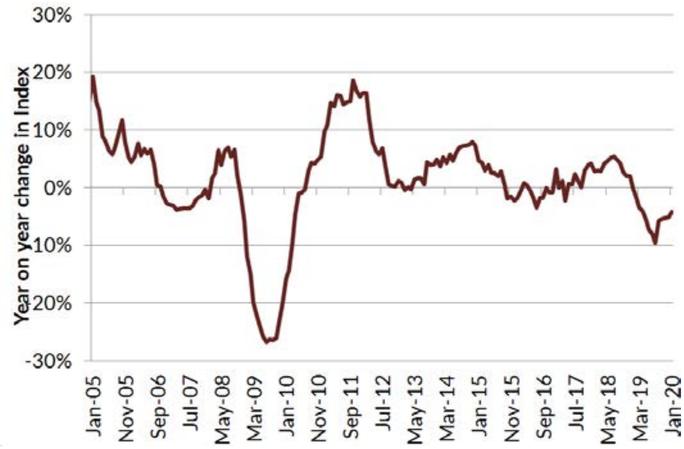
Source: ABS, Forsyth Barr analysis
*Road transport component

Figure 40. Transportation Services Index

Source: US Dept of Transport, Forsyth Barr analysis

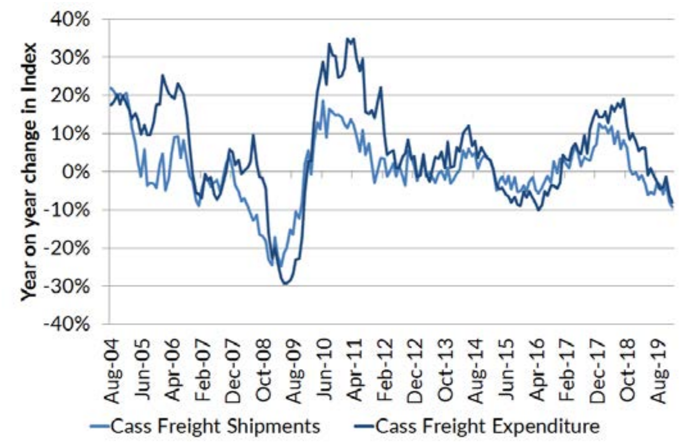
The American Trucking Association (ATA) provides a LTL (less than truckload) tonnage index which encompasses almost 70% of LTL tonnage carried by all modes of US freight transportation, including manufactured and retail goods.

Figure 41. ATA LTL truck tonnage index



Source: Bloomberg, ATA, Forsythyth Barr analysis

Figure 42. Cass freight indices



Source: Cass, Forsyth Barr analysis

The Cass Freight Index is a measure of North American freight volumes. The Index includes all domestic freight modes and is derived from US$22bn of freight transactions processed by Cass annually on behalf of large shippers. These companies represent a broad sampling of industries including consumer packaged goods, food, automotive, chemical, OEM, retail and heavy equipment.

Rail

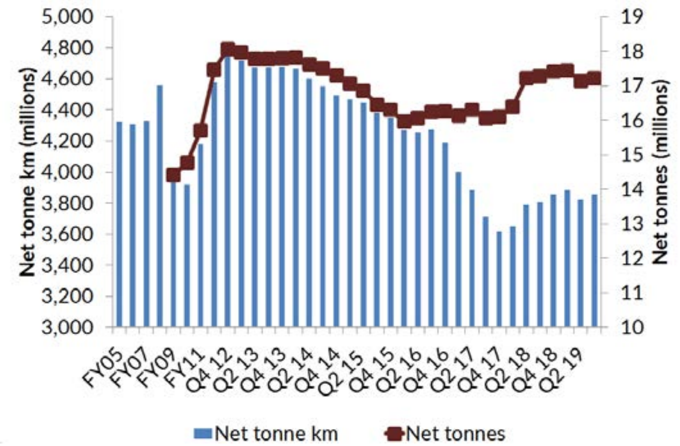
New Zealand rail volume

KiwiRail is state owned. It owns 4,000 kms of track, 198 mainland locomotives and 4,585 freight wagons. It operates around 900 freight trains each week and also owns/leases and operates the three Interislander ferries. The company provides data to the Ministry of Transports quarterly FIGS report. Rail competes with road and coastal shipping in transporting containers throughout New Zealand.

New Zealand rail volume by commodity

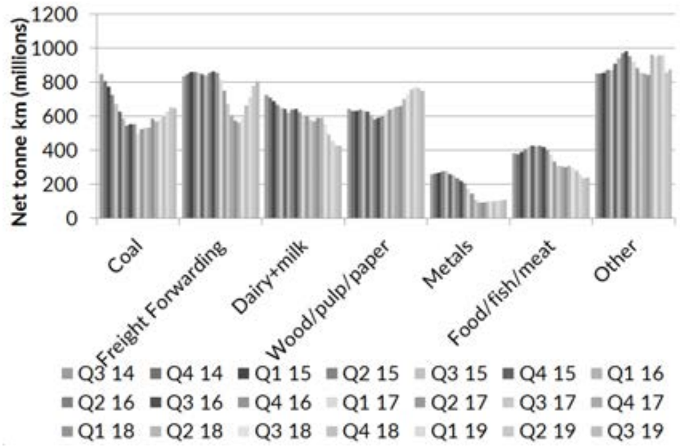
Coal, dairy, and wood products are the three largest commodities transported by rail in New Zealand. Refer to Figure 44.

Figure 43. KiwiRail volume (12-month rolling recent quarters)



Source: Ministry of Transport, Forsyth Barr analysis

Figure 44. 12-month rolling KiwiRail volume by commodity



Source: Ministry of Transport, Forsyth Barr analysis

Ports and shipping

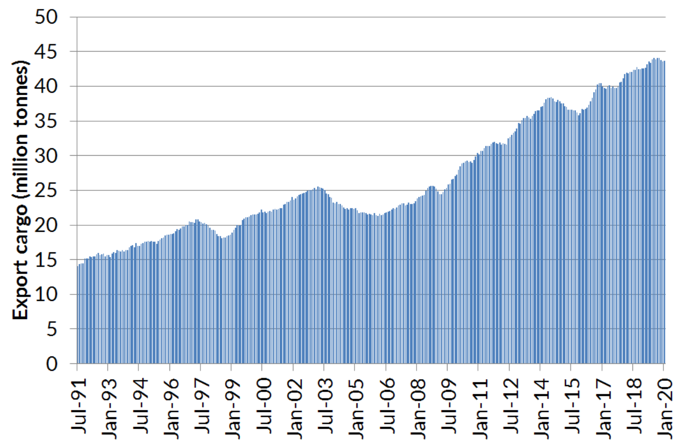
Data in this section is principally relevant to Port of Tauranga (POT) and Napier Port (NPH). It will also be relevant to other port stocks including Marsden Maritime Holdings (MMH) and Southport (SPN).

Ports

Total cargo volumes

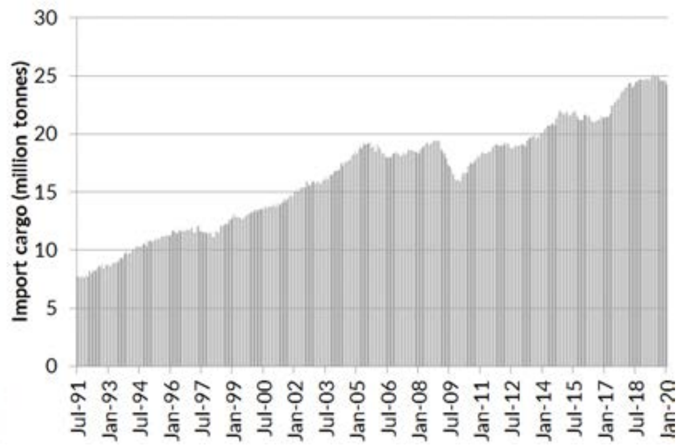
Statistics NZ provides monthly cargo data for all New Zealand seaports. We summarise the aggregated export and import data in Figure 45 and Figure 46 respectively. Over the past 25 years exports have grown at a CAGR of +3.9%, compared to imports at +4.0%.

Figure 45. Export cargo volumes (12-months rolling)



Source: Statistics NZ, Forsyth Barr analysis
Note: Data reflects 12-month rolling aggregates

Figure 46. Import cargo volumes (12-months rolling)

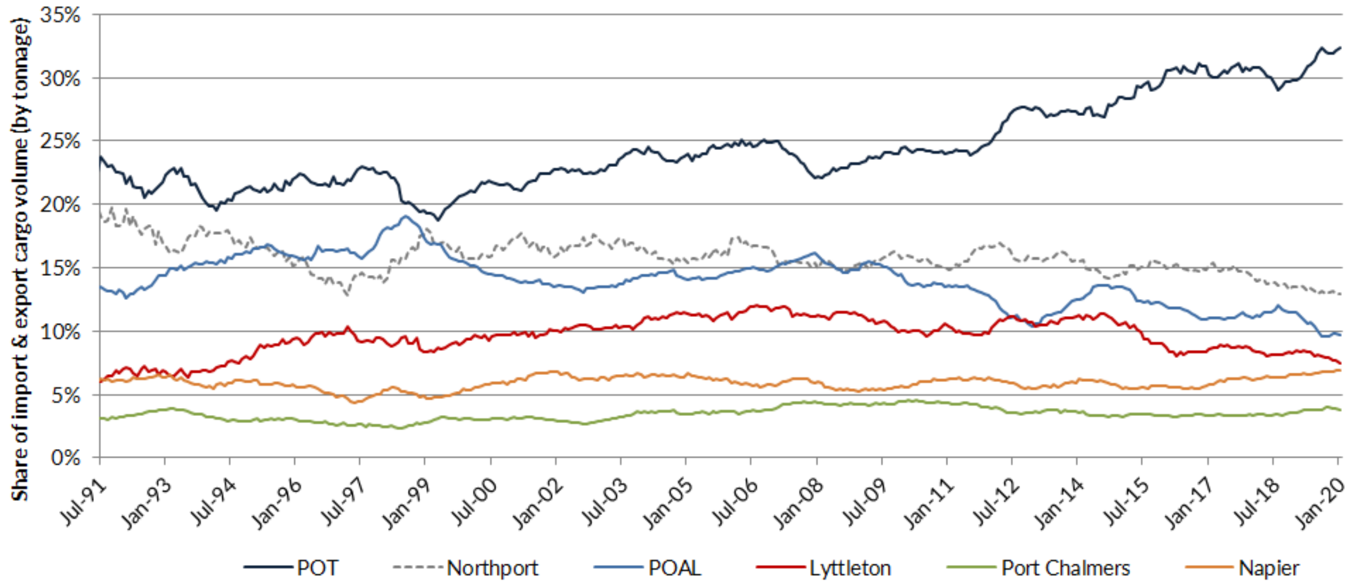


Source: Statistics NZ, Forsyth Barr analysis
Note: Data reflects 12-month rolling aggregates

Share of total cargo volume by port

Port of Tauranga is the largest port in New Zealand. We highlight its share of the leading ports in Figure 47. Imports and exports by port are defined by Statistics NZ as the initial port of entry and the final port of loading respectively.

Figure 47. Import and export cargo share (by weight) of leading ports

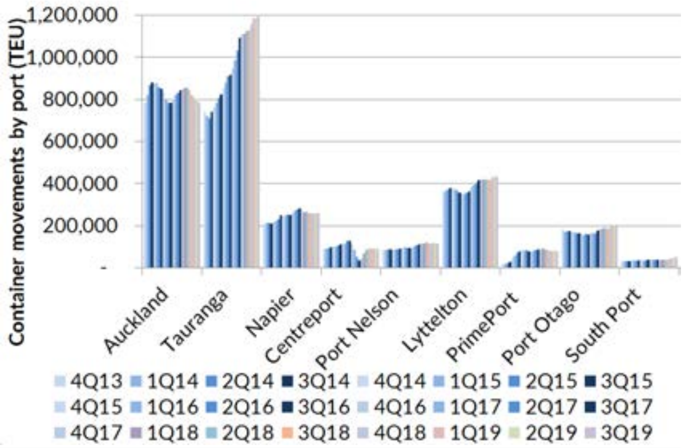


Source: Statistics NZ, Forsyth Barr analysis

Container volumes by port

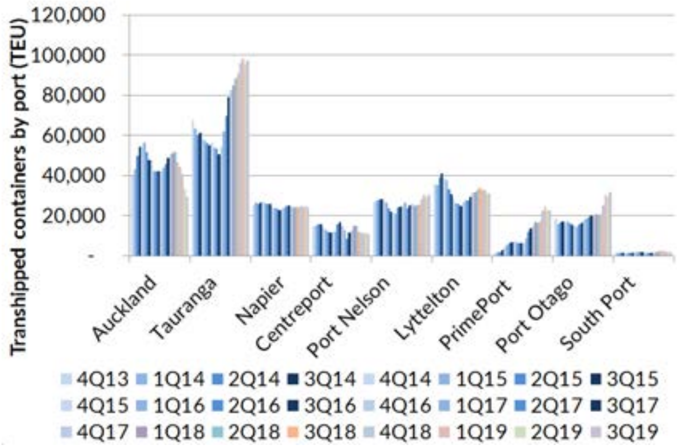
Quarterly container traffic data is available from the Ministry of Transport (MoT). This data is provided to the MoT by each container port. Rolling annual data has only been available since December 2012, which we present in Figure 48. Tauranga is the largest export port for containers, whereas Auckland handles the most import containers.

Figure 48. Rolling 12-month container volumes by port (TEUs)



Source: Ministry of Transport, Forsyth Barr analysis

Figure 49. Rolling 12-month transhipments by port (TEUs)



Source: Ministry of Transport, Forsyth Barr analysis

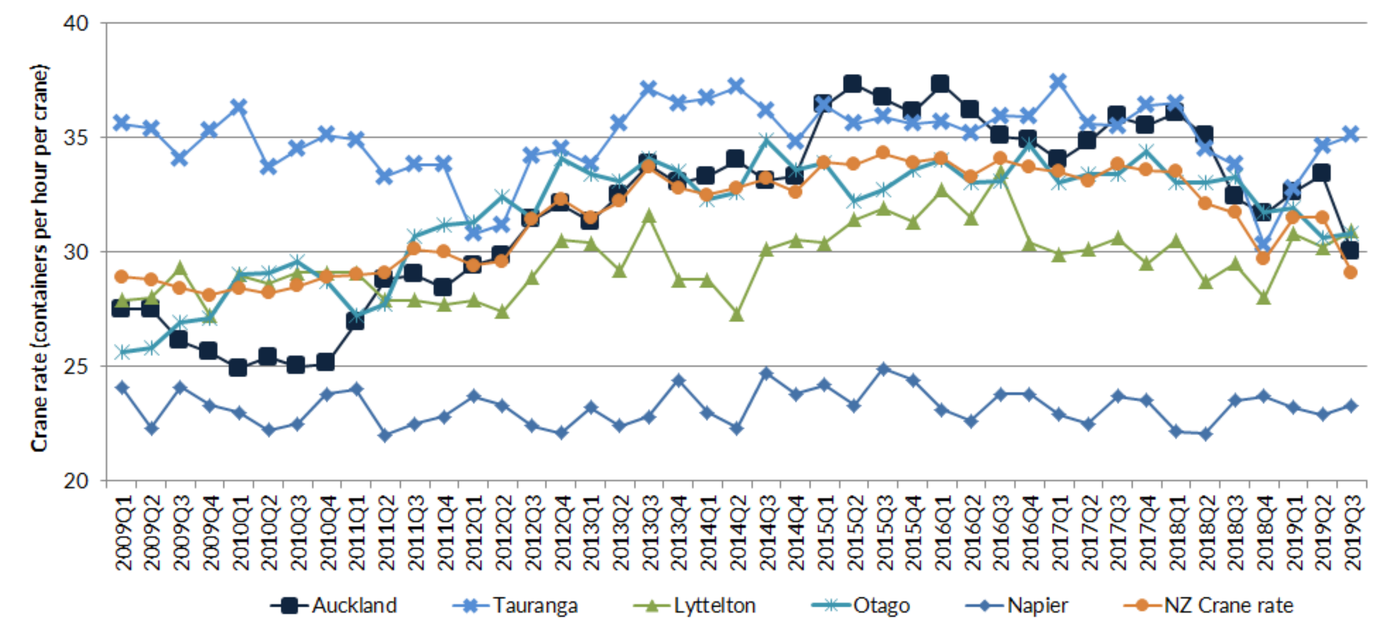
Container transhipments by port

The gradual structural industry shift to a hub and spoke network of ports in New Zealand will drive increased numbers of transhipped containers. Export transhipments reflect containers that are loaded onto a ship at one port, shipped to another port, discharged and then exported via a second ship. Import transhipments reflect containers that are imported and discharged at one port, then loaded onto another ship and shipped to a second port in New Zealand. Tauranga handles the largest number of export transhipments. Auckland handles the highest number of import transhipments.

Container port productivity

The Ministry of Transport compiles port productivity data in its quarterly produced Freight Information Gathering System (FIGS) and Port Productivity Study. In Figure 50 we show the crane rates of the four biggest container ports in New Zealand together with the national average. The crane rate is the best measure of internal efficiency at each port. It measures the number of containers handled as an average per hour for one crane.

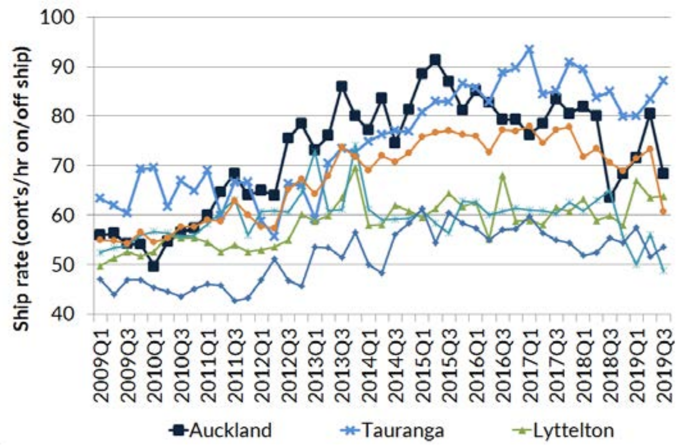
Figure 50. Crane rate



Source: Ministry of Transport, Forsyth Barr analysis

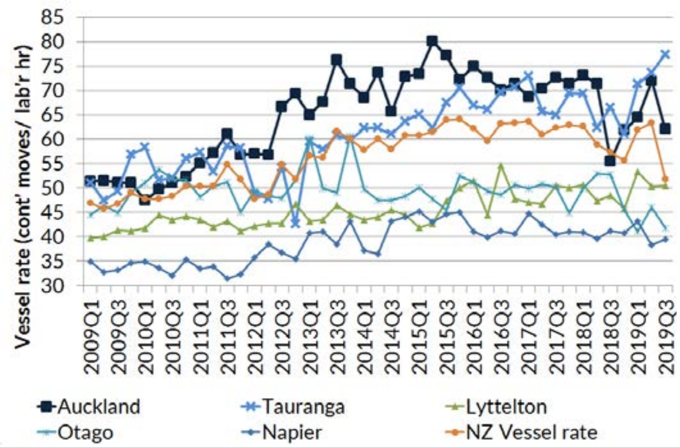
Other measures of port productivity include the ship rate and the vessel rate. These measures reflect the number of containers moved on and off a container ship in (1) an hour (ship rate Figure 51), and (2) an hour of labour (vessel rate Figure 52). The ship rate is the most important measure of port productivity for shipping lines.

Figure 51. Ship rate



Source: Ministry of Transport, Forsyth Barr analysis

Figure 52. Vessel rate



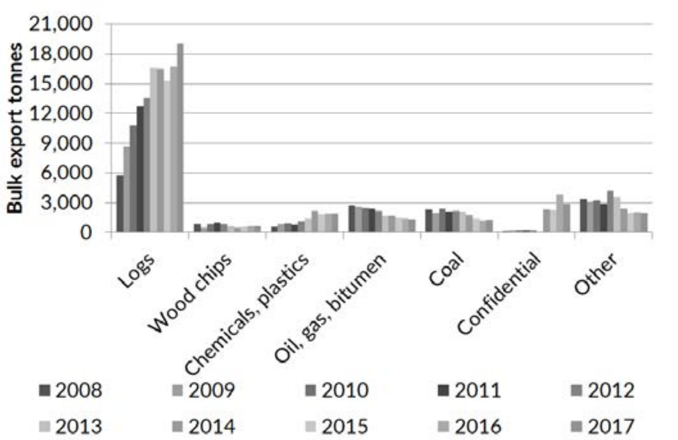
Source: Ministry of Transport, Forsyth Barr analysis

Key exported commodities

New Zealand exports more cargo than it imports. Dairy, meat and other foodstuffs generate the most export value. In contrast export volumes are dominated by wood, and mined commodities (minerals, coal and fuel).

Wood exports are dominated by logs. The industry also exports processed timber, pulp and paper, and wood chips.

Figure 53. Bulk sea export commodities



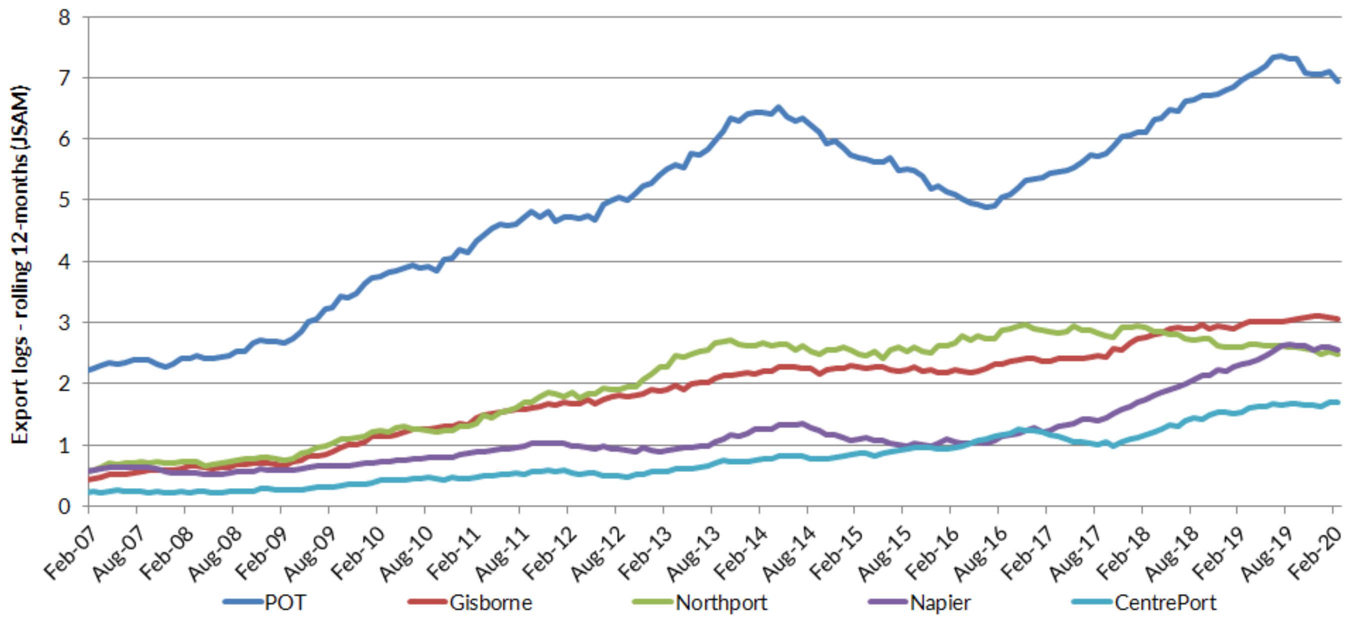
Source: Ministry of Transport, Forsyth Barr analysis

Figure 54. Export log prices (A-grade)

Source: NZX Agrifax, Forsyth Barr analysis

POT (~33% share) is the largest export port for logs in New Zealand followed by Northport (~15% share) and Port of Gisborne (~15% share).

Figure 55. Log exports at leading ports



Source: Statistics NZ, Forsyth Barr analysis

Port of Tauranga

We supplement the data already provided for POT with container services, container movement and log export statistics.

Regular container services

In Figure 56 we summarise regular weekly or fortnightly services at POT providing direct access to Australia, Asia and the Americas.

Figure 56. Regular container services currently stopping at POT

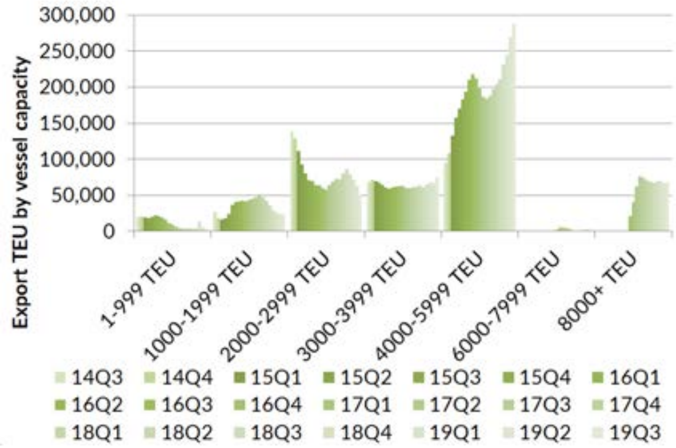
Shipping line	Service	POT code	POT service	Frequency	From	To
Pacifica	CFD	CFD	Domestic	Weekly	Domestic	Domestic
CMA-CGM/ PIL/OOCL/ COSCO	China New Zealand Service	AANZ	Export	Weekly	Lyttleton/Wellington/Napier	Hong Kong
Maersk	AC3	AC3	Export	Weekly	South America	Hong Kong
Hamburg-Sud	ANZL (Asia)	ANZL	Export	Weekly	Lyttleton/Napier	Tokyo
MSC	Capricorn	MSC	Export	Weekly	Bluff/Port Chalmers/Lyttelton/Nelson/ Tauranga	Tanjung Pelepas
PIL/CMA-CGM	New Zealand Service	NZS	Export	Weekly	Lyttleton/Wellington/Napier	Brisbane/Port Kelang
Hamburg Sud	OC1/Trident	OAES	Export	Weekly	Australia/Chalmers/Napier	Auckland/Panama
ANL	TTZ	TTAZ	Export	Weekly	Lyttelton/Nelson/Wellington	Sydney
Maersk	AC1	AC1	Import	Weekly	Hong Kong	South America
NPL	Fiji Feeder	NEP	Import	Weekly	Fiji	Auckland
Maersk	Southern Star	SSTR	Import	Weekly	Singapore/Brisbane	Lyttelton/Chalmers/Tanjung Pelepas
MSC	New Kiwi Express	KEX	Import/ Export	Weekly	Australia/Auckland	Australia
CMA-CGM	Panama Direct Line	PAD	Import/ Export	Weekly	Melbourne	Panama
Hapag Lloyd	US West Coast Australasia Loop 2	WAN	Import/ Export	Fortnightly	Oakland	Sydney
Hapag Lloyd	US West Coast Australasia Loop 1	WAS	Import/ Export	Weekly	Sydney	[Pappeete]/Oakland

Source: POT, Forsyth Barr analysis

Contained movements at POT

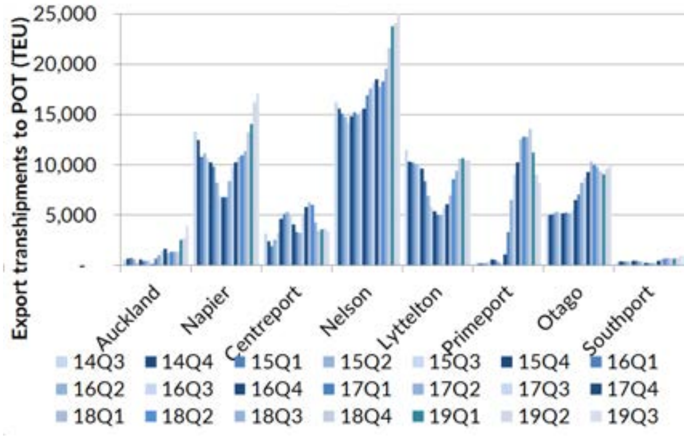
Cargo aggregation at POT was significantly enhanced following the Kotahi deal. More recently dredging has facilitated 8,000+ TEU ships.

Figure 57. 12m-rolling export TEU by vessel capacity



Source: Ministry of Transport, Forsyth Barr analysis

Figure 58. 12m-rolling export transhipments to POT



Source: Ministry of Transport, Forsyth Barr analysis

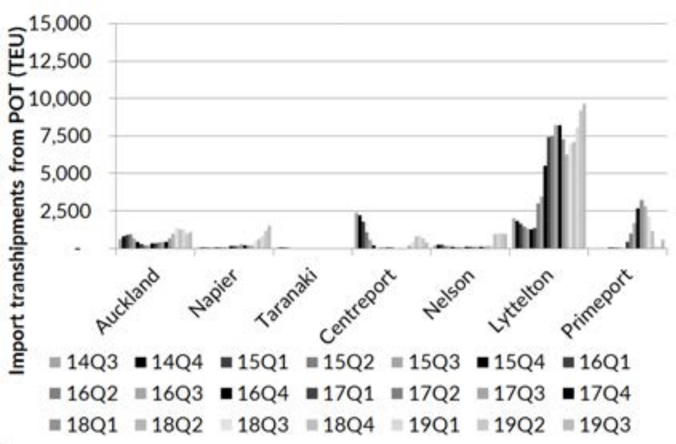
Transhipments at POT

POT operates a hub and spoke model with transhipments a key driver of growth. Further shipping industry consolidation will likely lead to rationalisation of shipping services, which we expect will increase transhipments. Lyttelton (imports) and Nelson (exports) are the largest spoke ports for POT.

Log exports at POT

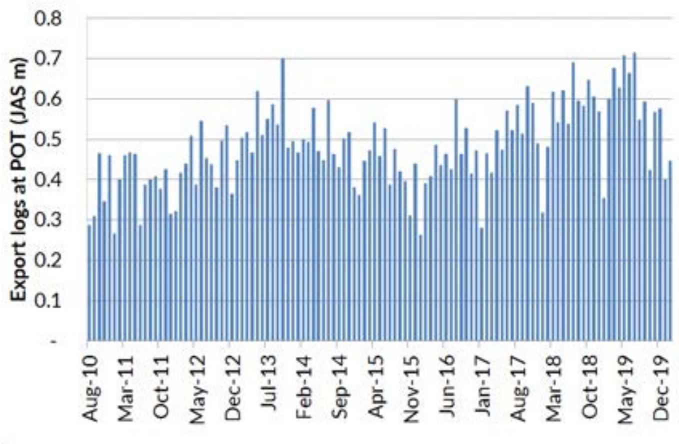
In Figure 60 we show monthly log export volumes through POT using data supplied by NZ Statistics. This data is consistent with the volumes reported by POT in its financial releases. It, therefore, provides a timely and accurate assessment of near term movements in its log export revenues.

Figure 59. 12m-rolling import transhipments from POT



Source: Ministry of Transport, Forsyth Barr analysis

Figure 60. Log exports at POT



Source: Statistics NZ, Forsyth Barr analysis

Napier Port

We supplement the data already provided for NPH earlier with container services, container movement and log export statistics.

Regular container services

We summarise in Figure 61 the regular weekly or fortnightly services that stop at NPH providing direct access to and from Australia, Asia and the Americas.

Figure 61. Weekly container shipping services currently visiting NPH

Shipping line	Service	Frequency	Origin/Destination	From	To
MSC	Capricorn	Weekly	Australia/South East Asia	South Port, Otago, Lyttelton	Tauranga, Auckland, Brisbane
CMA-CGM/PIL	NZ Service/KIX	Weekly	South East Asia	Brisbane, Auckland, Lyttelton, CentrePort	Tauranga, Brisbane
CMA-CGM	ANZEX	Weekly	North Asia	Brisbane, Auckland, Otago, Lyttelton	Tauranga
Maersk	OC1/Trident	Weekly	East Coast North America	Auckland, Sydney, Melbourne, Chalmers	Tauranga, Auckland
Maersk	Southern Star	Weekly	South East Asia	Brisbane, Sydney, Tauranga	Lyttelton, Otago
COSCO	Japan Conference	Weekly	Japan/Korea/China	Lyttleton	Tauranga

Source: Forsyth Barr analysis

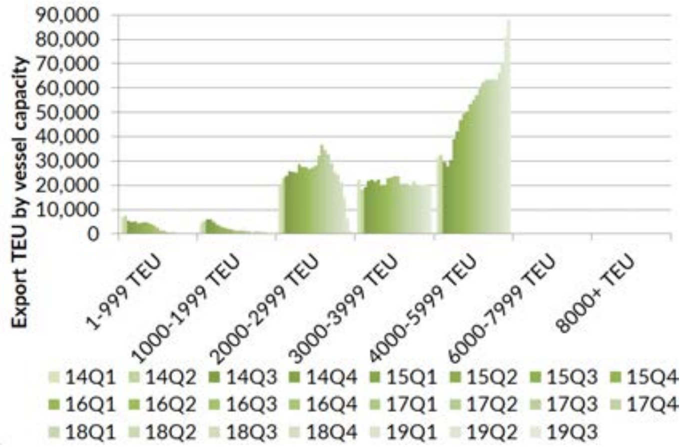
Container movements at NPH

NPH's exports are now really only departing the port on vessels that have capacity of 3,000 TEU or more.

Log exports at NPH

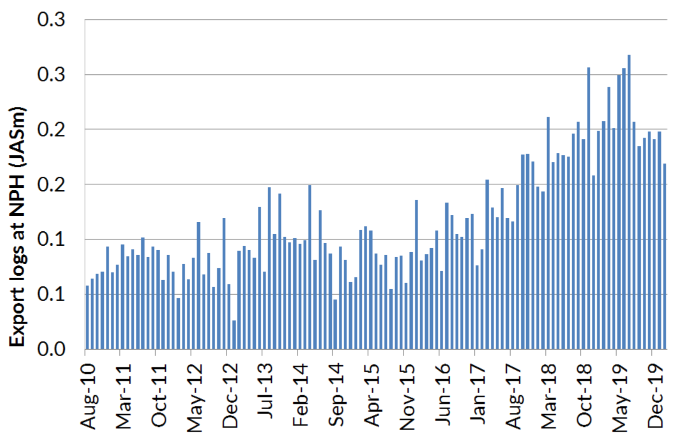
In Figure 63 we show monthly log export volumes through NPH using the same data set as above. This data is on average -9% lower than that reported by NPH in its financial releases.

Figure 62. 12m-rolling export TEU by vessel capacity



Source: Ministry of Transport, Forsyth Barr analysis

Figure 63. Log exports at NPH



Source: Statistics NZ, Forsyth Barr analysis

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