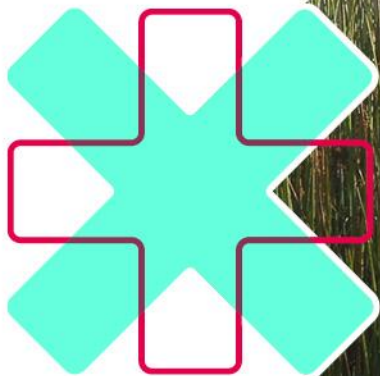
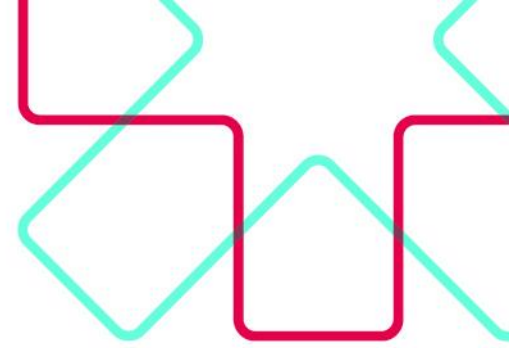


ARATAKI - POTENTIAL IMPACTS OF COVID-19

Final Report

27 May 2020





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PREFACE

This report has been prepared for the New Zealand Transport Agency by Stephen Knuckey and Sam Ponniah from MartinJenkins (Martin, Jenkins & Associates Limited) and Gareth Kiernan and Adolf Stroombergen from Infometrics.



EXECUTIVE SUMMARY

New Zealand's economy is currently undergoing an exceptional shock due to the global Covid-19 pandemic and the effects of the resultant public health response. Although current forecasts suggest a deep, V-shaped global recession this year with a sharp rebound in 2021, a longer recession and recovery period, with world GDP not recovering to pre-Covid levels for several years, is likely.

At the global level, the restrictions put in place across countries means that international travel is likely to be heavily restricted for at least 18 months. Global supply chain disruptions resulting from trade restrictions and reductions in airline capacity are likely to continue in the short to medium-term. As a result, world trade in goods and services will also be significantly impacted, with expectations that world trade could decline by 10-20 percent over 2020/21. Trade volume growth may not return to its previous level over the long-term, as Covid has resulted in further trade restrictions and protectionist policies are likely to continue. In addition, supply chain restructuring is likely in the longer term, with manufacturing moving both closer to domestic economies and diversifying across source markets.

These factors will contribute to a substantial contraction in New Zealand's export and import volumes over the short-term (except for food), with only a slow recovery of volumes likely over the medium-term. On the positive side, key New Zealand trading nations in Asia-Pacific are recovering early (e.g., Australia, China, Korea, emerging Asia economies) and may support an earlier export recovery.

The impact of Covid-19 will be affected by our recovery trajectory relative to Australia and the ability to free up travel between the economies. The opening-up of the Trans-Tasman bubble will cushion the hits to tourism and related service industries. However, any sizable divergence between the unemployment rates on either side of the Tasman has the potential to move net migration flows by as much as 30,000 people per annum.

Domestically, almost all industries and productive activity have been negatively impacted by the containment measures imposed during Covid Alert Levels 4 and 3, and many businesses and industries continue to be affected by the restrictions in place at the lower Covid Alert Levels. International visitors have effectively ceased, business confidence and investment intentions have fallen, jobs have been shed and there has been an increase in the proportion of the labour force on the jobseeker benefit. There will be a significant and sharp hit to employment and GDP this year.

There may also be a lengthy and lagged effect of Covid-19 on GDP, employment and unemployment, lasting several years. Although the government's fiscal and monetary stimulus has improved the outlook compared to what otherwise would have been the case, a slower domestic recovery scenario is likely due to:

- The severe ongoing impacts on tourism-related industries due to the extended closure of New Zealand's borders, which is likely to continue into 2021, notwithstanding the possibility of a Trans-Tasman (and Pacific) bubble.
- Second-round effects of business closures on incomes and investment (noting that some lagged impacts were evident from the GFC).
- A rise in under-employment and a fall in labour force participation.
- The impact of the recession on the ability of businesses to retain and attract skills, access capital, invest in R&D and connect with markets and expertise.



The structure of the economy, in terms of the relative contribution of different industries, will alter in the short to medium-term due to the significant negative impact of Covid-19 on key service industries, such as tourism, retail and professional and personal services, while other industries such as dairy and health are insulated.

Considerable uncertainty remains about the medium to longer-term economic ramifications of these events. This uncertainty emanates from several factors: a lack of clarity about the size of the global downturn and how quickly the international economy might recover; differing views about the ability of the New Zealand economy to bounce back; and the possibility of a further wave of Covid-19 cases within New Zealand that might necessitate a return to Alert Levels 3 or 4.

Against this backdrop of uncertainty, Infometrics modelled the effects of different Treasury scenarios on employment and GDP across New Zealand's industries and regions. At an industry level, the projections suggest that:

- The loss of jobs in tourism-related and other service industries creates opportunities for labour to be redeployed into other industries over the medium-term. The industries that generally benefit the most tend to be agriculture, forestry, parts of the manufacturing industry, and construction. How much of this excess labour these industries can pick up will depend on the strength of the global economy and the demand for New Zealand exports.
- Over the long-term:
 - Several construction, manufacturing and primary industries are expected to have higher shares of employment relative to what they otherwise would have under a business as usual scenario.
 - Most key transport industries (e.g., meat, forestry, manufacturing, construction, retailing, logistics) are expected to have recovered close to or be ahead of business as usual projections.
 - There is likely to be a decline in tourism's contribution to the economy and a slowing of the decline of the contribution of manufacturing to the economy, but not necessarily significant structural change.

The impact of Covid-19 will also fall unevenly across regions and groups. At a regional and district level, the projections suggest:

- Areas reliant on tourism will be hit the hardest, particularly areas in the South Island that are primarily focused on international visitors and have limited other industries, for example Queenstown-Lakes, Mackenzie, Central Otago. Even in scenarios where international tourism activity has recovered by 2025 or 2031, the projections suggest that employment and GDP in these areas will remain well below pre-Covid trends. This persistence of weaker outcomes reflects a loss of capacity in the economy and workforce in these areas that cannot be easily rebuilt.
- Parts of the upper North Island may also not return to their pre-Covid trends over the medium to long-term. Projections of slower population growth and a sluggish Auckland economy may have spill-over effects into some other parts of the Golden Triangle, with growth prospects in areas such as Waipā, Tauranga, and Waikato District being negatively affected over the medium term.



- The movement of workers towards primary industries or manufacturing will benefit several provincial areas in the medium-term where employment is projected to be above its pre-Covid trend, e.g., Kawerau, Rangitikei, Waimate, and Whanganui. Dairy, horticulture and forestry dominated districts will also tend to have strong employment results in the long-term.
- Much of the lower North Island is also expected to hold its own over the medium term. This outcome reflects the relatively high levels of public sector employment in Wellington, which will naturally be more resilient in the face of the economic downturn than private sector employment. Although Wellington will not escape the effects of the pandemic, the region's decline in overall employment will be relatively mild, and it will thus have less negative flow-on effects for other outcomes such as consumer spending, the housing market, and construction. This resilience is expected to benefit areas such as Upper Hutt, Kāpiti Coast, and parts of the Wairarapa.

The differential impact across regions will likely result in greater local mobility within and between regions and across the country. Travel demand to places where there are employment opportunities and training and education is likely to increase as individuals in affected sectors seek to redeploy or reskill. At the same time, reduced tourism will relieve pressure on transport networks in tourism dependent regions.

In terms of the impact of Covid-19 on different communities:

- Migrant workers will be significantly affected over the short to medium-term. Many are in affected industries (hospitality, construction, retail). Not only will the demand for skills-based migrant labour and opportunities for working holidaymakers fall, but many are non-standard workers and have fewer employment protections. Demand for migrant workers over the long-term will be dependent on the ability and willingness of sufficient numbers of local newly unemployed/underemployed to be redeployed and/or retrain in relevant occupations (e.g., construction, manufacturing, agriculture).
- Young people are likely to be particularly affected by the crisis – they are more likely to be in casual employment and heavily affected industries (e.g., food services, retail). Businesses in more resilient sectors will be reluctant to take on new, younger workers. There is likely to be a sharp increase in youth Not in Employment, Education and Training (NEET) in the short-medium term, which will particularly impact areas where NEET is already relatively high, e.g., Northland, Gisborne, Bay of Plenty, South Auckland.
- Historically, economic shocks have had a disproportionately negative impact on Māori and Pasifika (due to both concentration in lower-skilled occupations and self-employment in vulnerable industries). There is expected to be a large increase in Māori unemployment (potentially doubling in 2020/21), concentrated in Auckland, Bay of Plenty, Waikato and Canterbury.



BACKGROUND

The Covid-19 pandemic is a 'once in a century' public health shock that is also having a profound impact on economic and financial systems around the world and in New Zealand. The impact of Covid-19 and related response measures on the New Zealand economy is highly uncertain. To reflect this uncertainty the Treasury has released several alternative paths that the economy may take. Scenarios include significant falls in annual Gross Domestic Product (GDP) and increases in unemployment. All scenarios anticipate the impacts will last four years before returning to pre-Covid-19 levels.

The impacts of Covid-19 are likely to extend to many different regions and sectors, including the main urban areas. It is necessary, therefore, to reorient Waka Kotahi's 10-year planning in Arataki to reflect the Covid-19 economic recovery, the range of levers needed to maximise the benefits of recovery activities and, over the remainder of the decade, optimise transport's role in enabling community wellbeing.

Waka Kotahi commissioned MartinJenkins and Infometrics to describe and, where possible, quantify the potential impacts of the Covid-19 pandemic over the next ten years on two of the key drivers identified in Arataki – changing economic structure and demographic change – in so far as they are relevant to the land transport system at a national and regional scale. The analysis will be used by the Agency to assess the impacts of Covid-19 on the land transport system and to identify the post-Covid-19 opportunities over the next 10 years.

The analysis was to focus primarily on the potential impacts over the next 4 years (as New Zealand recovers from the initial pandemic and subsequent economic slow-down), but with estimates of what could happen between years 5-10 in terms of the 'direction of travel'.

Requirements

The key outputs and approach for this project were:

- 1 A review of available research, data and forecasts by MartinJenkins to provide commentary on:
 - a Global trends and responses that will shape New Zealand's economic outlook and trade, drawing on OECD, IMF, World Economic Forum and other internationally reputable assessments and commentaries.
 - b The likely impact of Covid-19 on New Zealand's economic structure in the medium and long-term. This included reviewing the impact of the GFC on New Zealand industries as a basis for determining the potential impact of the Covid-19 crisis as well as current surveys and statistics on the impact of Covid-19 on industries.
 - c The likely impact of Covid-19 and New Zealand's recovery on immigration and population growth nationally and in the major urban centres. This involved drawing on evidence on the impact of the GFC on population growth and immigration to inform this, as well as on current immigration data (e.g., work visa data) and population trends.
- 2 Drawing on this background, the development of three scenarios by Infometrics that reflect low, moderate and high levels of Covid-19 impact on the economy. The Treasury economic scenarios were the starting point. This output included:



- a Describing and quantifying the economic and employment impacts on industry sectors that will be most impacted by the economic slowdown and how these sectors are expected to perform during years 0-4 and 5-10.
- b Describing and quantifying which regions and/or groups of regions are likely to be most impacted during years 0-4 and 5-10, due to their reliance on the industry sectors identified above and the likely flow on effects on factors that influence land transport.
- c Describing and quantifying the community customer groups of the land transport system (e.g., Māori, those in lower socio-economic communities) that will be most impacted by Covid-10 in years 0-4 and 5-10.

Infometrics used a multi-industry general equilibrium (GE) model to produce macroeconomic and industry projections for the Treasury scenarios. The scenarios were underpinned by explicit assumptions about inputs into the model, reflecting the findings of the research undertaken for Output 1.

Structure of report

This report is structured in the following three parts in response to the requirements of the project:

- 1 A review of the available information on the global impacts of Covid-19, responses that economies and businesses are making, and the likely scale, nature and timing of the recovery pathway.
- 2 A look at the local impacts of Covid-19 given the global trends and estimates of how different industries and regions may be impacted across different scenarios.
- 3 An initial assessment of the potential impacts of Covid-19 on population and migration flows in New Zealand, including differential impacts across regions and vulnerable workers.



GLOBAL IMPACTS & RESPONSES

Introduction

The International Monetary Fund (2020) characterises the Covid-19 crisis as like no other for three reasons:

- 1 The shock is large. The loss of output associated with the pandemic and related containment/elimination measures is likely to dwarf that experienced in the global financial crisis, more closely resembling the impact of the Great Depression. The oncoming global recession is anticipated to shrink the global economy considerably – by 3 percent in 2020.
- 2 There is prolonged and severe uncertainty about the length and scale of the impacts. The impacts of the pandemic and global response will depend on the interaction of many variables, including the pathway of the pandemic, the intensity and efficacy of containment efforts, the extent of supply disruptions, shifts in spending patterns and behavioural changes.
- 3 Third, traditional economic policy geared towards stimulating demand is more challenging and for the most affected sectors like tourism, difficult. A broad range of financial and economic policy measures, targeted to heavily affected sectors, will be required to maintain and stimulate activity as the economy recovers.

Assessments and commentaries that focus on the impact of Covid-19 and measures to limit its spread converge on the following key implications:

- 1 Over the immediate to medium-term (0 to 4 years):
 - a Uncertainty about the length and nature of the global economic recovery will influence the level of goods and service trade we experience, with the prospect of a prolonged recession the longer that containment measures are deemed necessary.
 - b Reduced labour mobility internationally, coupled with shifts in the local labour market, will require greater local mobility within and between regions and across the country. Travel demand to places of training and education is likely to increase as individuals in affected sectors seek to reskill.
 - c Reduced trade flows will place a greater strain on local freight and distribution networks, particularly the ease of access to and from freight and manufacturing hubs to ensure these are operating efficiently.
 - d Reduced tourism will relieve pressure on transport networks in tourism dependent regions. As tourism and travel recovers globally, international visitors to New Zealand are likely to originate primarily from Australia and potentially the Pacific Islands in the short term.
- 2 Over the medium to long-term (5 to 10 years), global supply chains may change depending on the approach countries take to trade and the efforts of global firms to diversify and manage their supply chains. It will be important that the local freight and distribution network is mature and adaptive to respond to future changes.

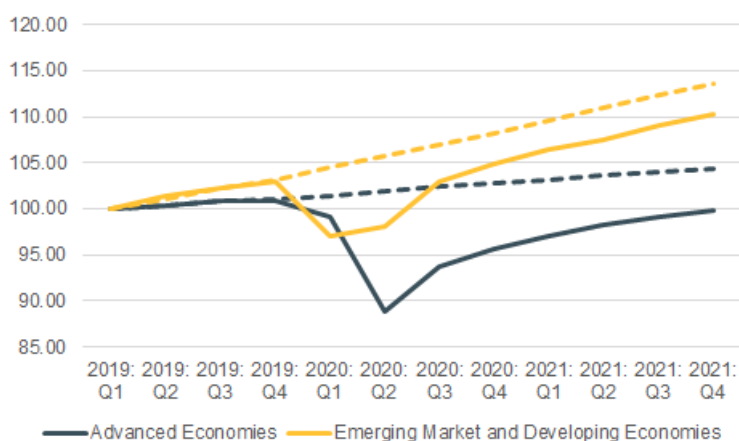


Short to medium-term global impact and responses

The short to medium term recovery will reflect the immediate responses taken by economies to contain the spread of the virus and short term economic and financial policy measures to enable a swift economic recovery. The threat of recurrence will continue to hang over countries until a vaccine is developed (estimated to take between 12 to 18 months) and will shape the way they respond.

The global economy is projected to contract sharply in the immediate aftermath of the pandemic – a contraction of 3 percent in 2020, the largest slump in activity seen since World War II (May, 2020; IMF, 2020). The immediate global impact is illustrated in the graph below using estimates from the International Monetary Fund. This assumes that the pandemic fades in the second half of 2020 and widespread economic and financial policy actions are taken to prevent large scale bankruptcies, extended job losses, and system-wide financial strains. Even under this optimistic scenario, the level of global GDP in both advanced and emerging market and developing economies is expected to remain below anticipated levels pre-pandemic.

Figure 1: Quarterly world GDP (2019: Q1 = 100, dashed lines indicate estimates from January 2020)



Source: International Monetary Fund, 2020

The above represents a ‘V-shaped’ recovery curve – a sharp contraction followed by a rapid rebound. This is optimistic but is consistent with the economic recovery curves that followed prior pandemics including the Spanish, Asian and Hong Kong flus in 1918, 1958 and 1968 respectively and SARS more recently (Carlsson-Szlezak, Reeves & Swartz, 2020).

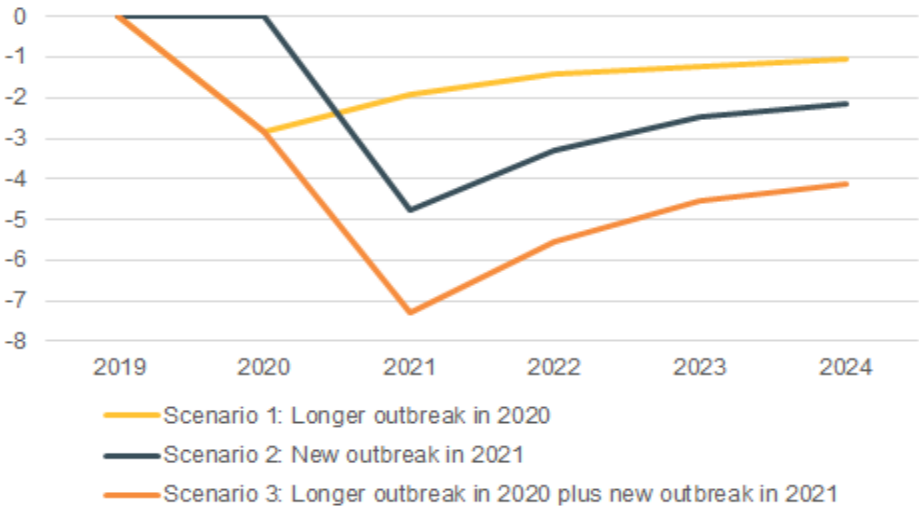
A significant downside risk

However, according to the International Monetary Fund, there is a “severe risk of a worse outcome”. A prolonged pandemic and containment measures could prolong and worsen the impacts on economic activity and financial markets, with emerging and developing economies more severely hit, tight financial conditions persisting, widespread firm closures and extended unemployment. Indeed, there are reasons to believe that the COVID-19 shock may be even greater than previous pandemics given the widespread restrictions on movement and shut-downs of whole sectors which has affected labour supply, travel and trade in ways not seen in previous crises.

The prospects for global GDP in three different scenarios developed by the IMF are shown below.



Figure 2: World real GDP percentage change



Note: Scenario 1 assumes the spread of the virus lasts 50% longer than baseline; Scenario 2 assumes there is a second outbreak in 2021 that is roughly two-thirds as severe as the first; Scenario 3 combines the conditions assumed in scenarios 1 and 2
 Source: International Monetary Fund, 2020

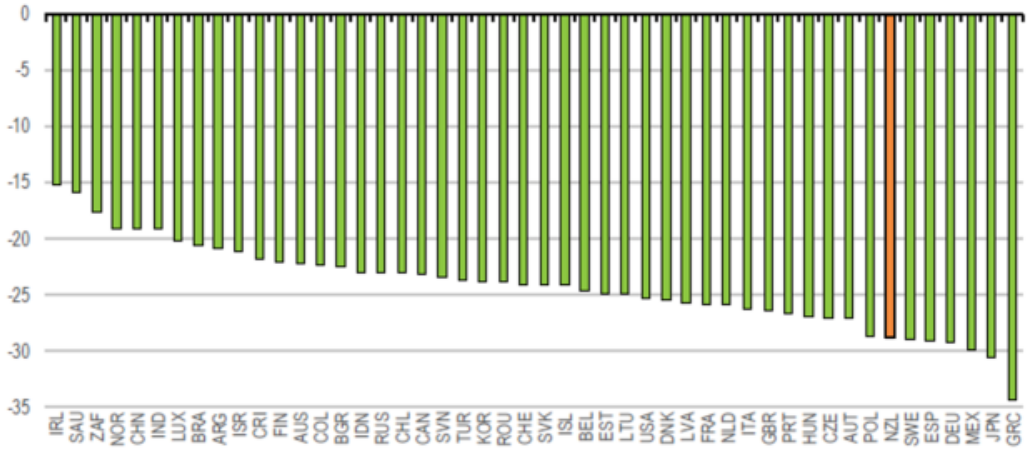
The Organisation for Economic Co-operation and Development estimates that for each month the necessary containment measures continue, the drop in output is equivalent to a decline in annual GDP growth of up to 2 percentage points (OECD, 2020). In total it estimates the initial direct impact of containment measures could be a decline in global output of 20 to 25% and consumer expenditure dropping by around one-third.

Breaking down the impact by the industrial composition of economies

The majority of the impact on most economies comes from the slump in output in retail and wholesale trade, professional and real estate services (OECD, 2020). There are cross-country differences related to the different industrial and output composition of economies. Countries where tourism is important will be affected more severely in the immediate term while countries with bigger agricultural and mining sectors, including oil production, may experience smaller but more prolonged impacts as a result of reduced global commodity demand. This is illustrated in Figure 3 below.



Figure 3: Potential initial impact of partial or complete shutdowns on activity in selected advanced and emerging market economies (percent GDP at constant prices)



Source: OECD, 2020, p.4

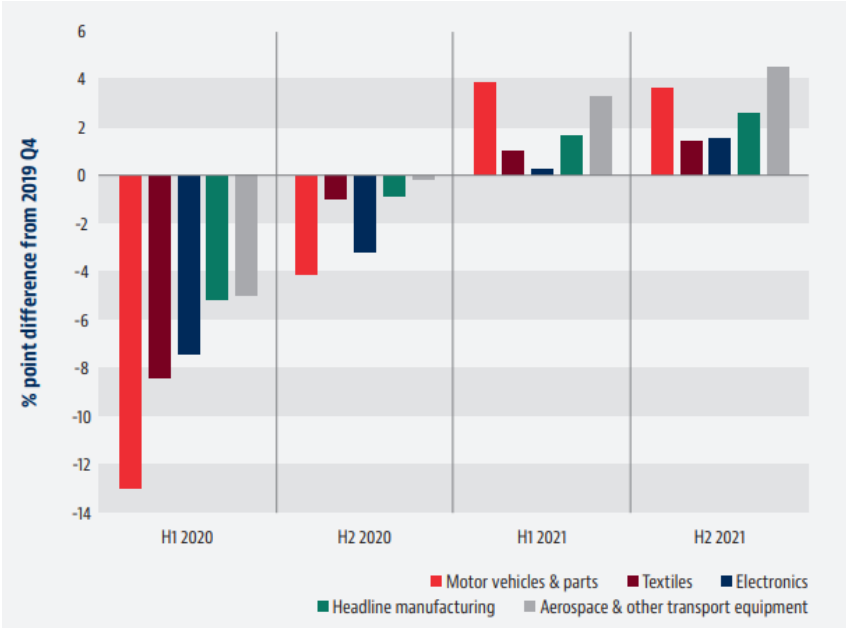
Mann (2020) argues that the real economic impact will need to be assessed through multiple data lenses:

- Manufacturing supply chains. Factory closures in the short term will cause a sharp drop in production but this will need to rebound to restock inventories when containment measures end. While individual sectors and some countries may recover quickly (the ‘V-shaped’ recovery), the global recovery may take a while to show signs of increased activity (a ‘U-shaped’ recovery).
- Tourism, transport and services relationships. The shock to tourism, transport services and domestic activity may not be recovered (a ‘L-shaped’ recovery) and the projected slowing of global growth will further hinder demand for these non-storable tradeable services.
- Energy and commodity demand and prices. These are already starting to pivot, and the impact on national economies will depend on their structure of production, consumption and trade. Falling energy and commodity prices are negative for investment and GDP growth in exporting countries but are positive for importers, business users and consumers.

Baker McKenzie and Oxford Economics (2020) forecast global output to drop 13% for automotive, 8% for both textiles and electronics and 5% for headline manufacturing, and aerospace and other transport equipment, as compared with the last quarter of 2019 (Figure 4). The hardest hit sectors are also the most likely to see a strong recovery as repressed demand releases in line with a recovery in confidence and production. In their forecasts, all five sectors experience a recovery in the second half of 2020 while electronics takes more time to rebound.



Figure 4: Global sectoral output



Source: Baker McKenzie & Oxford Economics, 2020, p.12

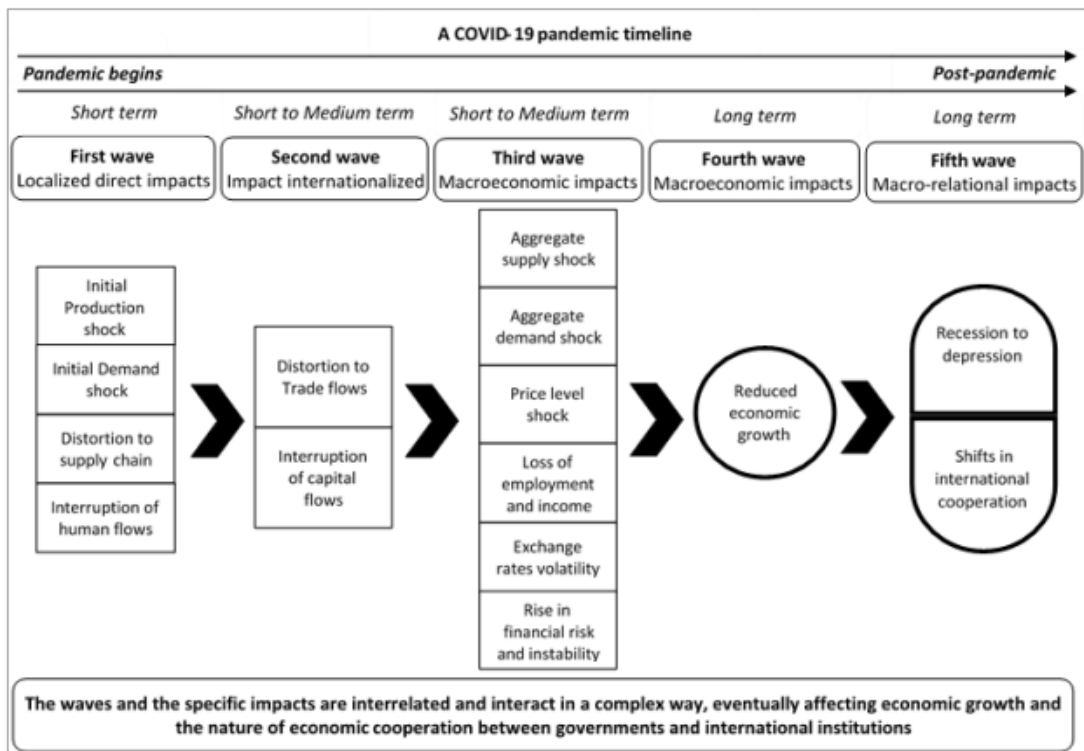
Mapping out the recovery

The length and nature of the recovery will depend on a number of factors, including the actual and perceived threat of infection, the intensity and efficacy of containment efforts, the extent of supply disruptions, shifts in spending patterns and behavioural changes, and the nature, timeliness and efficacy of government interventions.

The common consensus across studies undertaken to date is that uncertainty over the end to the pandemic and containment measures is causing a loss of consumer and producer confidence, while the immediate impact of the pandemic has been a disruption to global supply chains that depend heavily on the countries most affected.

Barua (2020) presents a general mapping of the likely timing of economic impacts following Covid-19. He argues that the macroeconomic impacts in any one economy are likely to worsen those felt across multiple economies, if consumer and producer confidence is lost and a powerful demand shock coupled with massive supply-side supports cannot be implemented in a timely manner.





Source: Barua, 2020, p.9

The speed with which different major economies are expected to recover also varies widely. In its baseline scenario, the International Monetary Fund forecasts many Asian economies to recover strongly. China and India are projected to grow by 9.2% and 7.4% respectively. ASEAN economies are also forecast to grow collectively by 7.8%. All of these economies are projected to grow at a rate higher than the global average of 5.8%.

Reduced movement of labour internationally

The International Labour Organisation indicates that the pandemic has caused an unprecedented reduction in working hours in the first quarter of 2020 compared to pre-pandemic in the fourth quarter of 2019 – a reduction of 4.5 percent or approximately 130 million full time jobs (ILO, 2020). The decline in the second quarter is estimated to be worse at 10.5 percent lower than the last pre-pandemic quarter. Some 436 million businesses, and 54 percent of employees are working in the hardest hit sectors – manufacturing, accommodation and food services, wholesale and retail trade, real estate and business activities.

The limits placed on travel and the loss of employment opportunities through economic contraction will have an impact on the global movement of labour, with reduced migration flows likely for the short- to medium-term (discussed later). Skills shortages will be filled locally, with the need for greater mobility within and between regions and across the country.

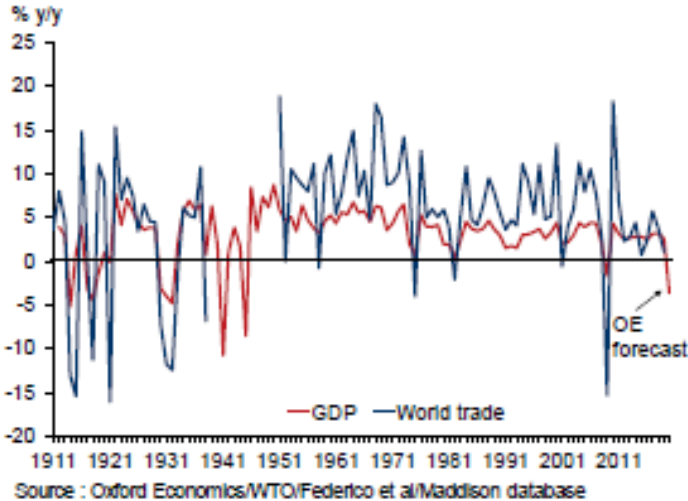


Reduced trade in goods and services and disruption to global supply chains

The impacts on global trade are profound. The costs of international trade are rising due to increased border controls, trade restrictions, travel restrictions reducing the supply of air cargo and increasing the costs of delivery services (WTO, 2020a). Companies working with complex value chains are having difficulty managing their production as plants in different parts of the world are closed at different moments in time while supply shortages and trade restrictions create uncertainty over the delivery of production inputs.

In any crisis, trade tends to perform worse than GDP, declining at two to four times the rate of GDP (see Figure 6) (Slater, 2020). One of the reasons is that industrial output tends to fall faster than GDP in a recession, and most trade is in industrial goods. The impact of globalisation has also created more complex supply chains with a higher rate of imports. Finally, recessions are usually accompanied by a rise in trade barriers and costs, trade finance barriers and reductions in inventory that magnify the impact on trade from falling demand.

Figure 5: World goods trade and GDP



Source: Slater, 2020, p. 2

The World Trade Organization expects world trade to fall by between 13% and 32% in 2020, with nearly all regions suffering double digit percentage declines in trade volumes, with exports from North America and Asia the hardest hit (WTO, 2020a). Oxford Economics estimates that total world trade in goods and services could fall by 10%-15% in 2020, compared to a 10% decline in 2009 during the global financial crisis (Slater, 2020).

Services trade, which accounts for 20% of world trade, is most directly affected by the Covid-19 pandemic as a result of transport and travel restrictions and the closure of many retail and hospitality businesses. Forecasts suggest it is likely to slump by 18% in 2020 (Slater, 2020). Unlike trade in goods, there are no inventories of services to be drawn down today and restocked later. This means losses in services trade during the pandemic will take much longer to recuperate.



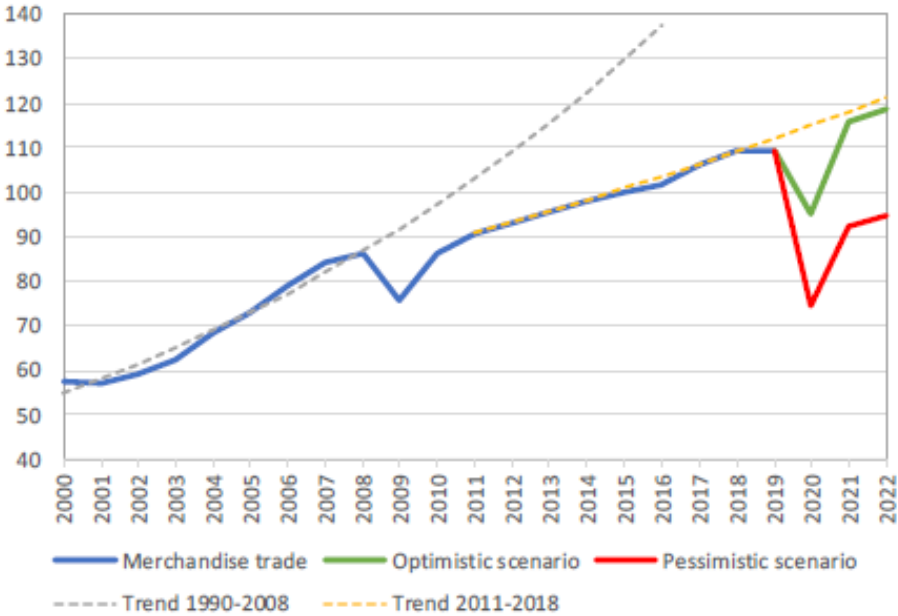
New Zealand's trade risks

In New Zealand's core primary sectors – meat, dairy, fisheries, wine, forestry and horticulture – between 70 to 90% of produce is exported. Services make up a significant portion of our exports, at around 30% or valued at \$26 billion. These include tourism, transport, education and commercial services.

The immediate impacts of Covid-19 on trade are already apparent. In the year ending March 2020, New Zealand's exports to China and Australia slumped 11 percent and 9 percent respectively, a combined total loss of \$243 million. While total exports and imports were up, these results were before the full toll of the virus took effect in Europe and the United States, with whom trade is beginning to slump even as trade with China and Australia begins to pick up again.

Trends in merchandise trade volumes and prospects for recovery are illustrated in Figure 6. Notably, the graph illustrates how trade never returned to its previous trend after the Global Financial Crisis.

Figure 6: World merchandise trade volume 2000-2022 (Index 2015 = 100)



Source: World Trade Organisation, 2020, p. 2

During the GFC, trade responded very heavily to the drop in GDP for three reasons (WTO, 2020a):

- 1 Consumer spending on durables and business investment, both of which are highly tradeable, stalled as a result of heightened economic uncertainty
- 2 Companies reduced the size of their inventories in response to reduced economic activity, leading to a magnified impact on trade from falling demand
- 3 Trade finance became more expensive, although the overall impact of credit constraints on trade was limited.



The World Trade Organisation notes two important differences between the GFC and Covid-19 (WTO, 2020a). First, social distancing and containment measures are affecting sectors that are mainly non-tradeable (apart from travel and tourism), which could alleviate the potential slump in trade. Second, however, trade costs are rising and this could further exacerbate the loss of trade, due to the rising costs of air cargo, border restrictions and the threat of increasing trade restrictions (moving beyond medical equipment and pharmaceutical products to other sectors).

The recovery in trade will be driven primarily by the length of the pandemic and the approach countries take to international trade. If the crisis passes relatively soon, tradeable sectors of the economy could recover quickly and losses would largely remain with the directly affected sectors (non-tradeable). If the crisis lasts longer, savings will increase while consumption of durables and business investment reduce, leading to reductions in trade volumes.

Business and consumer confidence will also matter. If the pandemic is viewed as a one-time shock, a strong rebound is likely with spending on consumer goods and investment resuming at close to pre-pandemic levels. However, if confidence is low, for instance because the outbreak is prolonged or uncertainty persists, households and businesses are likely to spend more cautiously, leading to further reductions in trade (WTO, 2020a).

Disruption to global supply chains

A survey conducted by the Institute for Supply Chain Management found that nearly 75 per cent of companies reported supply chain disruptions in one form or another due to coronavirus-related transport restrictions. This should come as no surprise considering that 6 of the hardest hit nations - China, Korea, Italy, Japan, US, and Germany – account for (Baldwin & Tomiura, 2020):

- about 55% of world supply and demand (GDP)
- about 60% of world manufacturing, and
- 50% of world manufacturing exports.

In addition, the manufacturing sectors of these nations are key hubs for international supply chains, supplying industrial inputs to each other and third countries. A supply shock in one or more of these six nations would trigger a 'supply side contagion' that creates shocks in multiple nations irrespective of the spread of the virus. Indeed, this was what happened following the global financial crisis (WTO, 2020a).

In looking at how firms can restart and synchronise supply chains in response to the COVID-19 pandemic, Deloitte highlights the need for more proactive and dynamic management of inventories, distribution networks, logistics capacity and supply chains in response to volatile movements in supply and demand (Deloitte, 2020). Businesses will need a clear plan that understands the length and nature of impacts on their supply chain, how quickly, where and how much capacity they need to build and what products to focus on. The impacts on consumers are likely to include shortages, longer delivery times and smaller product variety (Simchi-Levi, 2020).

The impacts of the pandemic and how organisations respond will place greater strain on local freight and distribution networks, particularly the ease of access to and from freight hubs to ensure these are operating efficiently. Local manufacturing hubs are likely to experience an increase in demand while global supply chains are disrupted, placing a greater importance on the levels of access these hubs have to logistics and distributions networks.



Reduced tourism world-wide

It seems likely that border restrictions will remain in some form at least until it is safe to begin restoring access to safe international zones or when a vaccine is developed. This is likely to mean significantly reduced world travel in the short term.

The World Travel and Tourism Council has estimated that around 100 million jobs are at immediate risk in global travel and tourism due to the COVID-19 pandemic. The loss of GDP globally could be up to US\$2.7 trillion in 2020, with the Asia-Pacific region experiencing the hardest hit followed by the Americas (WTTC, 2020). In March, they estimated it could take up to 10 months for the industry to recover. That estimate may be slightly optimistic given the way the virus has continued to spread and the wide adoption of containment measures in the last 2 months. It seems likely that global tourism in some shape or form will be unlikely to return for at least a year, maybe more. The loss of international tourism will be a considerable challenge for local operators, many of whom may not survive. This will also mean less pressure on transport networks in regions that are heavily dependent on international tourism, like Queenstown (depending on the domestic tourism response).

This may be partly mitigated by regional agreements to support the tourism and travel industry. For instance, the New Zealand and Australian governments have announced their commitment to introduce a trans-Tasman Covid-safe travel zone when it is safe to do so.¹ It is likely that Pacific nations would be included in any arrangements in the short term to support their development goals. Such agreements will help to stimulate some international visitor activity, particularly given Australia accounts for almost half of New Zealand's international visitor arrivals (Tourism New Zealand, 2020).

International restrictions are likely to begin to lift within 18 months, possibly sooner if safe travel initiatives are implemented, for instance Covid-19 free certificates that allow people to travel overseas (Kravchenko, 2020). The nature of the mid-term recovery in tourism will depend on a range of factors, including the extent to which the chain of transmission has been stopped in New Zealand's main tourism markets (primarily Australia, China, USA, the UK, Germany, Korea and Japan), how safe New Zealand is at the time, the likely profile of travellers (younger travellers versus older, low versus high value) and the ease with which tourists can travel.

¹ Prime Ministers Jacinda Ardern and Scott Morrison announce plans for trans-Tasman COVID-safe Travel Zone. Press Release. Available at <https://www.beehive.govt.nz/release/prime-ministers-jacinda-ardern-and-scott-morrison-announce-plans-trans-tasman-covid-safe>



A perspective on Australia's relationship with New Zealand

Australia represents 16% of New Zealand's total export markets. Australia is a particularly important market for New Zealand in terms of services, making up 20% of services exports during 2019. Personal and business travel made up over half of these services exports, but other business services and transportation services were also significant contributors.

Notable goods export categories to Australia included preparations of milk, cereals, flour, and starch; precious metals, jewellery, and coins; mechanical machinery and equipment; and crude oil.

The services exports and machinery and equipment exports are likely to be most sensitive to economic conditions in Australia. Much of the services exports are tourism related and are therefore captured in broader discussions about border closures and other restrictions on travel, which are likely to have a far greater effect on outcomes than more graduated changes in Australia's economic performance. Other business services are likely to be concentrated in urban areas (primarily Auckland), while transportation services will be linked to trade flows through seaports and, to a lesser extent, airports.

Areas within New Zealand with a relatively high concentration of machinery and equipment manufacturing include parts of Waikato, Manawatū-Whanganui, the Hutt Valley, and Greater Christchurch. Although these businesses will also be supplying into the domestic market, they will also be reliant on demand from Australia to varying degrees. As a result, Australia's economic prospects will influence business conditions and performance in these parts of the country.

Australia's mix of exports is more heavily weighted towards industrial commodities than New Zealand's more agriculturally based exports. In general, Australian exporters are thus more exposed to the downturn in demand for Chinese manufactured products resulting from the Covid-19 pandemic and its negative effect on economic activity in much of North America and Europe. Although demand for food is likely to hold up reasonably well throughout the downturn, weaker industrial production in China will weigh on prices and volumes for Australian mineral exports. This factor could weigh on Australia's economic recovery over the next 1-2 years.

The other key area where Australia's economic performance affects New Zealand is through net migration flows and population growth. New Zealand's low unemployment rate relative to Australia's rate over recent years has been a major contributor to high net migration, with fewer Kiwis emigrating across the Tasman given relative lack of available job opportunities. Prior to the Covid-19 pandemic, there were signs that this outflow was starting to pick up as New Zealand's economic growth slowed.

The economic outlook and path of recovery for both economies over the next 1-2 years is obviously highly uncertain. However, a close watch should be kept on Australia's labour market performance – any sizable divergence between the unemployment rates on either side of the Tasman has the potential to move net migration flows by as much as 30,000 people per annum.



Medium to long-term implications

The medium to long-term is steeped in further uncertainty and will be shaped by the nature of the global recovery in the short to medium term. It is unlikely that we will see a full return to the pre-pandemic global order and way of operating. In particular, global suppliers and governments will be looking at how they build greater resilience in their supply chains, decisions New Zealand will need to react to.

The choice between protectionism and globalisation

As economies recover from the impact of the pandemic, governments will be faced with a choice about how they wish to mitigate the impact of future shocks: strengthen and diversify global trade and supply chains or disengage with foreign markets and protect and strengthen local markets (or a combination in different markets). The likely path will be determined by how economies evolve in the wake of the pandemic and how quickly equilibrium is restored in global markets (Kerr, 2020).

Protectionism has been on the rise and could be accelerated

After many decades of increasing international trade liberalisation, protectionist policies have emerged over the last decade and particularly over the last two years. Since 2009, the number of new protection measures across world economies has exceeded the number of liberalising measures (Australian Productivity Commission, 2020). The United States has introduced a range of trade barriers since 2018, including tariffs on imports of steel and aluminium, resulting in retaliatory measures by trading partners such as China and the EU. Public support for trade liberalisation has also declined in several economies, as evidenced by the US withdrawal from the Trans-Pacific Partnership, Brexit, and opposition in Europe to the Trans-Atlantic Trade and Investment Partnership.

The Covid-19 pandemic could accelerate greater protectionism with the US' ongoing trade war against trading partners, particularly China and a push to nationalise supply chains in response to the disruptions caused by Covid-19 (Baldwin & Tomiura, 2020). In addition, many countries have introduced a growing number of trade restrictions. The World Trade Organization reports that 80 countries and customs territories so far have introduced export prohibitions or restrictions as a result of Covid-19, albeit mostly focused on medical supplies, pharmaceuticals and medical equipment (WTO, 2020c).

The World Trade Organization also reports on the tightening of trade in the world food market following the GFC. In the period between 2007 and 2012, 251 export-restrictive measures were introduced, of which 88 remained in place beyond this period some lasting almost twice as long as the average duration of measures during the crisis itself. This extension of protectionist policies occurred despite the market no longer facing a critical shortage.

If the restrictions imposed during the current pandemic became more widespread, it may trigger a domino effect as countries are compelled to close themselves to unpredictable and insecure access to imports and pursue domestic production instead. Ultimately, the higher cost of manufacturing locally will lead to a higher price for consumers and lower supply over the long-run.

The potential for more protectionist policies would place a greater strain on local producers, and by extension local distribution networks.



Relaxing trade restrictions will enable a quicker recovery but this requires greater international co-operation that has been lacking to date

Greater protectionism may be more detrimental in the longer-term, undoing the productivity gains brought about by efforts to internationalise supply chains and incurring greater risks from the use of exclusive supply lines, be they local or abroad.

The New Zealand Initiative argues that the approach to an international event like Covid-19 needs to involve international co-operation not a retreat from the open trading system that has been built over decades (Smith & Wilkinson, 2020). Protectionist policies stifle international competitiveness and encourages less viable, unproductive businesses to continue. This will prevent the global economy from recovering as quickly as it could in an open market. They point to the lessons learned from the Great Depression where governments withdrew co-operation in favour of policies that favoured local business to protect local jobs and companies. In the years that followed, the opportunities for mutually beneficial trade, job and income creation were severely limited, which led to significant unemployment.

The success of the global health response to Covid-19 will depend on how quickly global production of essential medical supplies increases (WTO, 2020b). Well-functioning value chains can enable a quick increase in production while keeping costs contained. However, trade will be essential to move supplies from where they are abundant to areas of need, responding to peaks in different times and locations. A lack of international cooperation will significantly hamper the health response.

Trade restrictions applied to other goods may lower prices and increase their availability domestically in the short term. However, these also reduce global supply and importing countries that are not able to manufacture these products suffer, with exporters at risk of losing out in the long-run. Lower prices will reduce the incentive to produce goods while the greater need and willingness to pay a higher price overseas due to shortages may lead to greater illegal trade, both of which reduce rather than increase the domestic availability of products.

While this points to the need for a globally co-ordinated solution, there has been a lack of clear multi-lateral action in the face of the pandemic. The World Trade Organization entered 2020 in an already weakened state as a result of an inoperable disputes mechanism. In the short to mid-term, it is likely that countries will co-ordinate responses bilaterally or in regional blocs. In the longer term, strengthened or new institutions will be required to enable and encourage global trade relationships built on openness and mutual benefit.

The Economist goes a step further in its projections, suggesting that the aftermath of the pandemic might accelerate existing geopolitical trends (Economist Management Unit, 2020). The rivalry between the United States and China shows no signs of abating but has instead intensified in the aftermath of the virus. The shift in the economic balance of power from the west to the east could also accelerate. Established western economies in Europe and the US will take extraordinary fiscal and monetary measures to counter the pandemic, which will raise the risk of sovereign debt crises and contribute to years of slower growth. Meanwhile, China and other fast-growing economies in Asia are likely to experience a faster recovery based on their underlying advantages in terms of strong investment, innovation and productivity growth.

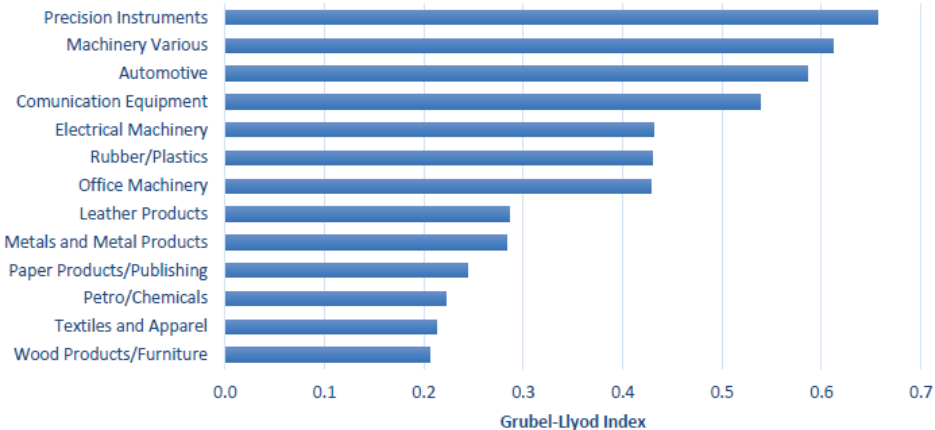
Over the medium to long-term it seems likely that a re-commitment to global, multilateral trade will emerge, but the question remains who may lead the charge and therefore what the future of New Zealand's trade relationships looks like. The likely path will have significant implications for our trade flows and how we organise our local freight, logistics and distributions networks.



Greater diversification and dynamic management of supply chains

The pandemic has exposed the vulnerability of existing supply chains, including issues around single-sourcing arrangements and low inventory stocks in pursuit of lean and just-in-time manufacturing processes (UNCTAD, 2020). The rise of China’s importance as a manufacturer and exporter of consumer products as well as the supply of intermediate goods for manufacturing companies has also been exposed (see Figure 7 below).

Figure 7: China integration in global value chains by sector



Source: United Nations Conference on Trade and Development, 2020, p. 5. The Grubel-Lloyd Index measures intra industry trade. A higher value (closer to 1) means there is a good level of intra-industry trade

A significant supply chain restructuring is expected in the longer-term. This process had already begun in response to the US-China trade war and is likely to be accelerated following the pandemic. For example, fashion retailers are likely to move manufacturing to countries like Vietnam, Cambodia and Malaysia and high-tech companies may choose to move production closer to market demand, serving demand in North America from hubs in Mexico and Brazil, or the EU from hubs in Eastern Europe (Simchi-Levi, 2020). This may not have a significant impact locally but could contribute to greater resilience in the face of future shocks.

Some recentralisation of manufacturing capacity is also likely, with companies seeking to bring production home (World Economic Forum, 2020). This is apparent with automation and small batch production becoming increasingly cheap that countries are pressured to consider if certain products need to be manufactured offshore. New technology such as artificial intelligence and the internet of things, and digitisation of the paperwork that accompanies global trade will make identifying, recruiting and switching to alternative suppliers much more dynamic in the face of future shocks and disruption.



Key take-outs from the research review on global impacts and responses to Covid-19

- Although current forecasts suggest a deep, V-shaped global recession this year with a sharp rebound in 2021, a longer recession and recovery period, with world GDP not recovering to pre-Covid levels for several years, is a more realistic scenario.
- World trade in goods and services will be significantly impacted over the next year, with expectations that world trade could decline by 10-20 percent over 2020/21. Trade volume growth may not return to its previous level over the long-term, particularly as Covid has resulted in further trade restrictions and protectionist policies are likely to continue.
- Key New Zealand trading nations in Asia-Pacific are recovering early (e.g., Australia, China, Korea, emerging Asia economies) and may bolster New Zealand's export recovery
- International tourism is not likely to recover for at least 18 months beyond what is possible through an Australasian-Pacific bubble.
- The impact of Covid-19 will be affected by our recovery trajectory relative to Australia and the ability to free up travel between the economies. The opening up of the Trans-Tasman bubble will cushion the hits to tourism and related service industries. However, any sizable divergence between the unemployment rates on either side of the Tasman has the potential to move net migration flows by as much as 30,000 people per annum.
- Global supply chain disruptions resulting from trade restrictions and reductions in airline capacity are likely to continue for the medium-term. A supply chain restructuring is likely in the longer term, with manufacturing moving both closer to domestic economies and diversifying across source markets. This may impact on trade flows between New Zealand and other markets over the long-term.



IMPACT OF COVID-19 ON THE NEW ZEALAND ECONOMY

Introduction

Determining the medium and long-term economic impacts of Covid-19 on the New Zealand economy with any precision is difficult, if not impossible. The ultimate effects will depend on a combination of:

- Global factors, as discussed in the earlier section, including the interplay between public health and economic responses and various political responses; the extent to which global travel can safely be opened up; whether countries can sustain opening up their economies without leading to second waves of the virus; how quickly a vaccine can be made available worldwide; and the significance of stimulus across economies and the ability of economies to manage increased public debt levels.
- Domestic factors such as the effectiveness of existing fiscal stimulus and additional stimulus that might be made available to support business recovery and the re-deployment of talent; the potential for joint early recovery with Australia and Pacific nations; further monetary policy responses, and how well New Zealand maintains its strong health response and controls any new outbreaks of Covid-19.

However, insights about the potential impact can be gleaned from the impact of past significant economic crises. The most recent crisis, the Global Financial Crisis (GFC) over 2008-2009, provides some clues and Appendix 1 provides a review of the economic impacts of the GFC. The key points from the review are:

- The first year of the GFC saw a sharp decline in GDP, business and consumer confidence, retail sales and investment. Although growth resumed in the second year of the crisis, it took another two years for real GDP to reach the pre-crisis level.
- There was a lengthy and slightly lagged impact on unemployment, with unemployment rising after six months and continuing to remain relatively high for several years (although the Canterbury earthquakes also played their part). This and the point above illustrate the time it can take to recover from a recession.
- There was a sharp drop in trading activity in the first year, which quickly rebounded in the second year. The real value of imports fell more significantly than exports and capital imports declined by a third over an 18-month period.
- Industries that were most significantly impacted in terms of a decline in employment, business numbers and/or real GDP were manufacturing, administrative and support services, rental and real estate services, wholesale trade and transport & warehousing. Sectors that were resilient were health care, public administration, education & training and professional & technical services. There was mixed impact on information media and telecommunications. The impact of Covid-19 will likely have a similar impact on different industries.
- The GFC did not result in any significant change in New Zealand's industrial structure – although the contribution of services to the economy grew over the period and the contribution of manufacturing declined, this was a continuation of a long-term trend. However, there was a slightly greater fall in the contribution of manufacturing during the crisis than had been usual in



the lead up to the GFC and it is possible that the GFC accelerated the long-term structural change that was occurring.

These are pointers and it is important to note that the nature of that crisis was quite different to the current situation. It was demand-side driven based on excessive householding lending and spending, high levels of corporate debt and an over-leveraged financial sector. Covid-19 is impacting both the supply-side – due to business shutdowns and restriction on travel and the flow of goods – and the demand-side, by impacting on the ability of individuals to spend (due to lockdowns and employment/income impacts).

The following sections describe what is known about the immediate and likely short-term impacts of Covid-19 and, based on this and the GFC lessons, assess what the medium to long-term impacts could be.

Economy-wide impacts of Covid-19

The consensus outlook for New Zealand post-Covid-19 is for the initial recession to be much more severe than the GFC. There is more debate about how prolonged the impact on New Zealand will be (as there is about the impact on the global economy). Forecasts and scenarios are speculative and the length of impact will be dependent on a combination of how well economies manage the spread of the virus, the extent of containment measures that continue, fiscal and monetary stimulus across economies and the time it takes for a vaccine to be found.

What are the immediate and expected short-term impacts?

The Reserve Bank of New Zealand, in its May Monetary Policy Statement, has estimated that as a result of the lockdowns, domestic output fell by 37 percent during Alert Level 4 and by 19 percent reduction at Alert Level 3, for a combined loss of \$12 billion in the value of output or 4 percent of annual GDP (RBNZ, 2020). Other key impacts are described below.

The border restrictions introduced in March resulted in a fall of international visitors to practically zero by the end of March. The subsequent lock-down also resulted in a significant decline in vehicle movements, with heavy traffic counts reducing from over 12,000 to around 4,000 per week.

Figure 8: Visitor arrivals to New Zealand and Heavy Traffic in New Zealand, 3 February to 17 April 2020



Source: The Treasury, 2020c from NZ Custom Service, NZTA

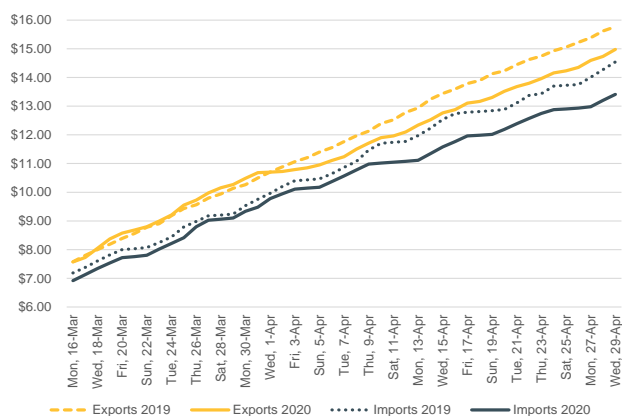


The cumulative values of exports and imports have declined since the lockdown, compared to the same period last year. Over 1 Feb to 29 April, the value of exports in 2020 was around \$790 million less than the same period in 2019 and the value of imports was down \$1.1 billion. This is not only due to a fall in demand and volumes but also a fall in export and import prices (although the prices of fruit and dairy exports have held up reasonably well and the impact is being somewhat offset by a depreciating New Zealand dollar). The ANZ Business Outlook in April found that a net 42 percent of respondent firms expected to reduce exports.

Business confidence and investment is falling, due to lower revenue and demand and much more economic uncertainty. The April ANZ Business Outlook indicated that a net 67 percent of firms expected a deterioration in activity and a net 45 percent of firms expected to reduce investment. The Outlook shows a sharp drop-off in business investment intentions from March.

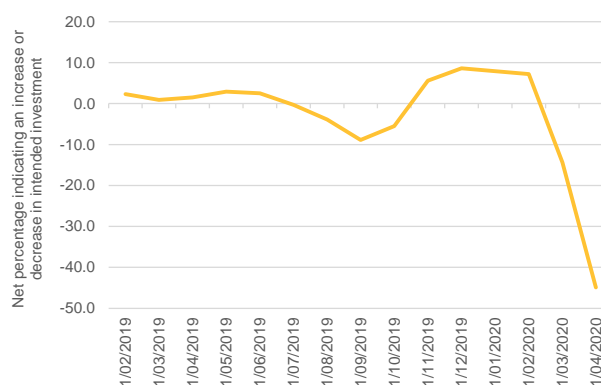
Although the Government's wage subsidy has enabled many businesses to retain workers, employment has fallen as businesses have ceased or reduced trading activity and as they focus on controlling costs. The unemployment rate and the proportion of the labour force on the jobseeker benefit increased over March and April. A net 51 percent of business respondents to the ANZ Business Outlook survey in April intended to reduce employment.

Figure 9: Cumulative total export and import values (\$b) 15 March to 29 April, 2019 and 2020



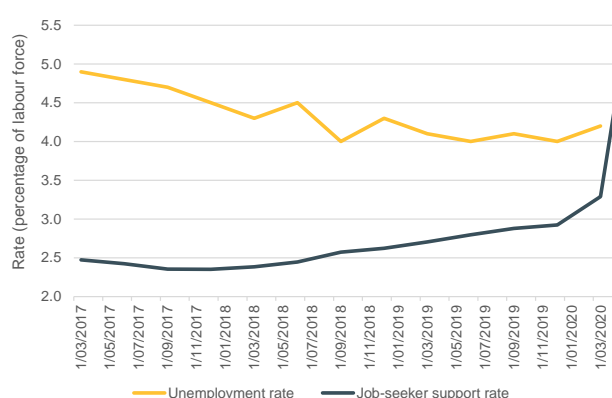
Source: Statistics New Zealand, Effects of COVID-19 on Trade data

Figure 10: Business investment intentions



Source: RBNZ, 2020 using ANZ Business Outlook Data

Figure 11: Unemployment and Job Seeker Support rate

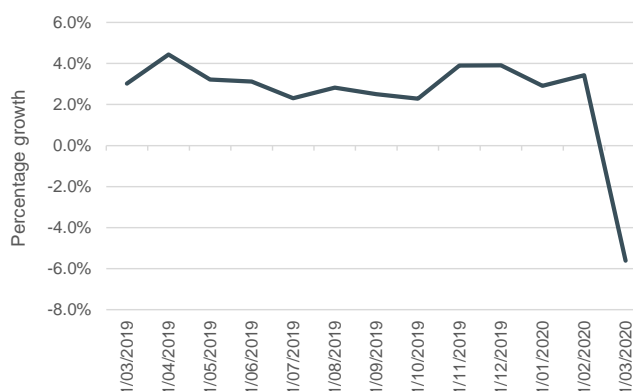


Source: RBNZ, 2020, using Stats NZ, Ministry of Social Development data



Household spending has naturally declined due to a combination of restrictions on shopping, lower wages, reduced hours and/or unemployment. Electronic card transactions rapidly declined in March.

Figure 12: Electronic card transaction growth



Source: RBNZ, 2020 using Stats NZ data

Industry impacts of Covid-19

Consistent with global impacts and the GFC, there have clearly been quite different immediate impacts on different domestic industries and some divergences within industries, with sectors reliant on face-to-face contact and travel such as tourism, retail, manufacturing, transport and construction generally being significantly affected by Levels 4 and 3 and the primary sector less affected.

Table 1 summarises the likely broad impact on key sector output over the two months and first year and what factors are primarily underpinning these impacts. Most sectors have naturally been highly impacted in the first couple of months of lockdown, with many likely to experience more moderate reductions in activity over the rest of the year to March 2021. Some of the key points are:

- Tourism and related sectors (e.g., arts, recreation, hospitality, international education) will be the most significantly affected this year. International tourism and related spending will only be a small proportion of its usual level (even with a Trans-Tasman bubble). Some segments, such as cafes and restaurants that can significantly cater for residents and domestic visitors, will be somewhat insulated although will be affected by reduced discretionary spending across New Zealand residents. Although there may be an initial surge of domestic tourism, overall domestic visitor spending is likely to be lower than typical. The travel restrictions also have and will continue to impact international student numbers and related revenue (universities have indicated they are facing up to a 33 percent reduction in numbers this year).
- Construction and manufacturing have been able to resume activity but ongoing health and safety requirements (e.g., distancing) will impact on productivity and reduced demand and cashflows will mean a more muted response over the year. Residential construction will be hit by a housing market downturn although civil construction will be initially stimulated through the government's focus on getting 'shovel-ready' projects accelerated. Non-food manufacturers will also continue to be hit by a reduction in international demand.
- Some sectors, such health and those servicing the public sector will continue to do reasonably well.
- Agriculture is also expected to do well with demand for food exports holding up and farming able to continue during the lockdown.



- Forestry has been affected by the closure of ports in China and will continue to be impacted by the stockpiles of logs and reduced international demand.

Table 1: Estimated short-term industry impacts and key drivers

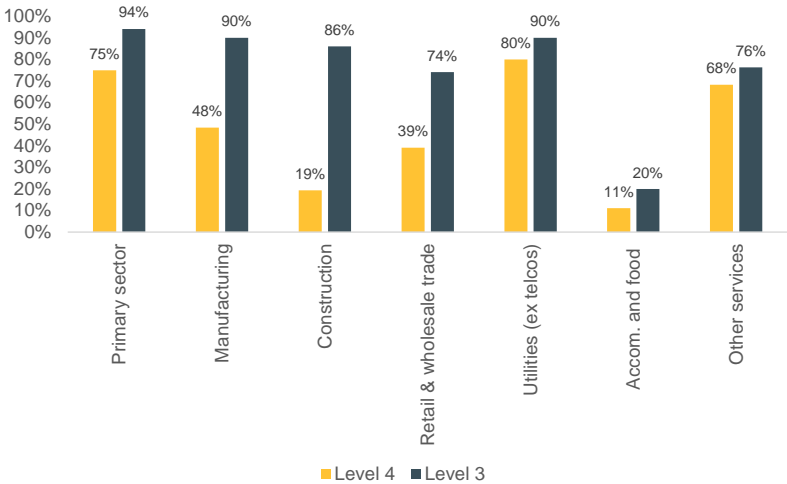
Selected Sectors	Immediate impact (2-3 months)	2020/21 impact (yr end March)	Key Drivers			
			Travel restrictions	Supply chain interruptions	Reduced consumption	Working capital pressure
Tourism (accommodation, food)	H	H	X		X	X
Education	H	L	X			
International Education	H	H	X		X	
Retail	H	H	X	X	X	X
Construction	H	M	X	X	X	X
Manufacturing	H	M		X	X	X
Agriculture (dairy, hort, meat)	L	L		X		
Forestry	H	H	X		X	
Wholesale	M	M	X	X	X	
Utilities	L	L	X		X	
Professional Services	M	M	X		X	
Information Media & Telecommunications	H	M		X	X	
Transport & Warehousing	H	H	X	X		
Health Services	M	L	X		X	
Financial services	H	M			X	
Rental & Real Estate Services	H	M			X	X

Source: MartinJenkins assessment based on Deloitte, 2020; Infometrics (2020); and KPMG (2020)

The Reserve Bank has estimated what the impact of the initial Alert levels could be on the value of output of different industries. As shown in Figure 13, production across all activities is affected, with accommodation and food services (a fall in the sector's GDP by 89 percent), construction (81 percent fall in GDP) and manufacturing (52 percent fall in GDP) the most significantly affected under level 4 and accommodation and food services (80 percent fall in GDP) and wholesale and retail trade (a 26 percent fall in GDP) experiencing the largest impacts in level 3.



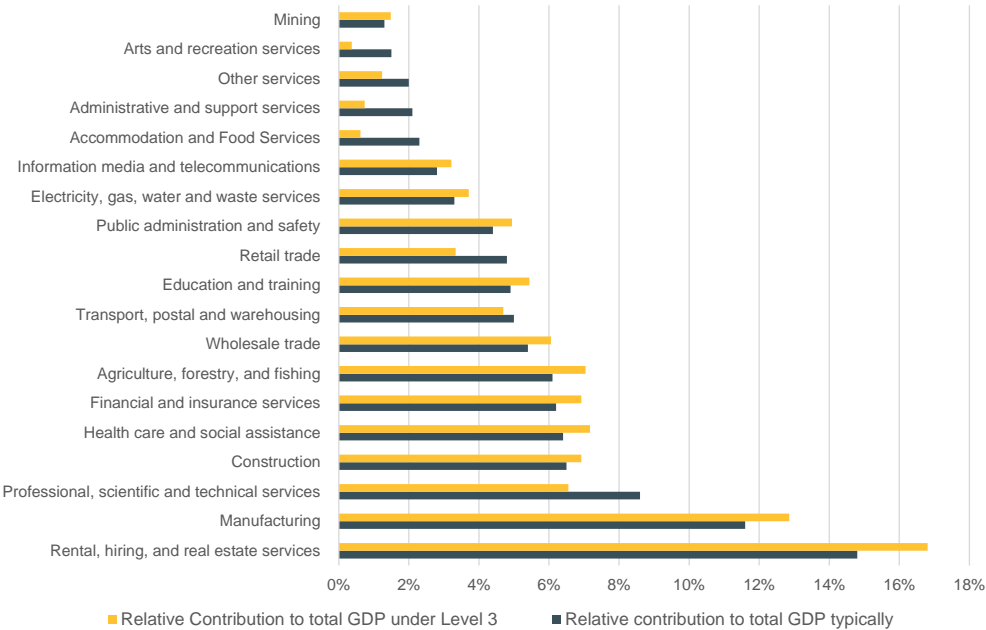
Figure 13: GDP by industry during lockdown levels as a percentage of the pre-Covid level



Source: RBNZ, 2020

The Reserve Bank’s assessments suggest quite a change in the relative contribution of different sectors to total GDP over the lockdown periods and likely extending into the first year. The relative contribution of accommodation & food services, administrative and support services and arts and recreation services are expected to fall from around 2 percent of GDP each to around 0.5 percent each in Level 3. The relative significance of retail trade falls (from 4.8 percent of GDP to 3.3 percent) as does professional and technical services (from 8.6 percent of GDP to 6.6 percent), while the contribution of the manufacturing sector (from 11.6 percent to 12.9 percent of GDP) and rental and real estate services (from 14.8 percent of GDP to 16.8 percent of GDP) grow.

Figure 14: Contribution of each Industry to total GDP typically compared to Level 3



Source: MartinJenkins based on RBNZ



What could be the medium-term impacts on the economy?

Scenarios developed by the Treasury are the current government benchmark for estimating the future impact on GDP and employment. In April, Treasury previously presented various scenarios based on different assumptions about the length of lockdown at different levels, the impact of Covid-19 on the global economy and different levels of fiscal stimulus, with updates provided in the May Budget 2020 Economic and Fiscal Update (The Treasury, 2020d). These scenarios include the Budget forecast, a full Covid-19 Response and Recovery Fund (CRRF) forecast, a Slower recovery Scenario, and a Moderated Impact from Covid-19 Scenario.

In our view, the most relevant scenarios for comparison purposes, given what has happened with the Alert Levels to-date, consensus economic forecasts and the preceding discussion on global impacts are what are now the Budget Scenario (or what can be considered a Faster Recovery Scenario) and the Slower Recovery Scenario. The assumptions for these scenarios are as follows:

Budget or Faster Recovery Scenario	Slower Recovery Scenario
Level 4 – 1 month (Level 4 reduces output by 40% from normal) Level 3 – 1 month (Level 3 reduces output by 25% from normal) Level 2 and 1 – 10 months (Level 2 reduces output by 10-15% and Level 1 reduces output by 5-10% from normal) Borders assumed closed to foreign visitors for up to 12 months. World annual average real GDP falls by -2.2 percent in 2020 calendar year with a strong recovery in 2021 (7.1 percent growth) \$35 billion fiscal response	As in Scenario 1 except: <ul style="list-style-type: none"> World annual average real GDP growth is -5.9 percent in calendar 2020 with further contractions over 2021 (-1.2 percent) and 2022 (-0.8 percent) \$62 billion fiscal response

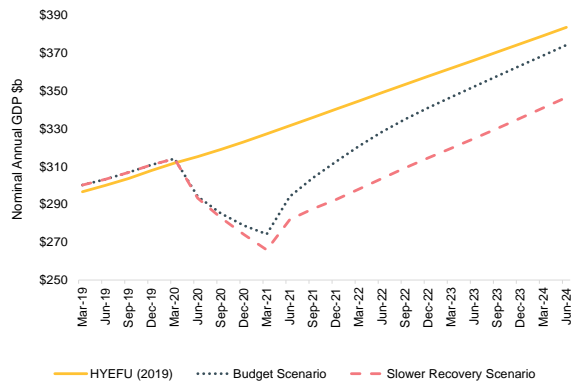
Based on the Budget/Faster Recovery Scenario, the Treasury estimates a major contraction over 2020 with a recovery from 2021 onwards. Real GDP contracts by almost 25 percent in the June 2020 quarter but recovers somewhat as restrictions are lifted, so that real GDP is around 10 percent lower for the full year (ending March 2021) than in the Half Year Economic and Fiscal Update (HYEFU) and relative to 2019. Real GDP growth is expected to be -4.6 percent for the full year. This is significantly larger than the decline in activity and GDP over the period of the GFC.

Over the entire forecast period, real GDP is around 5 percent lower than HYEFU and nominal GDP is around \$100 billion lower over the five years to June 2024. This Scenario suggests a recovery from the second half of 2021 (-1 percent real GDP growth for the year) and an extremely strong rebound in 2022 (8.6 percent growth). The unemployment rate rapidly reaches 9.8 percent for the September 2020 quarter before easing back in subsequent years (to 7.6 percent in year ended June 2021 and 5.7 percent in 2022) and getting back to pre-Covid levels in 2024.

The Treasury also estimates that, under the Budget scenario, the value of exports falls by 8.7 percent in 2020 and 16.1 percent in 2021, with imports falling by 7.7 percent and 5.9 percent in the same years. Exports and imports are expected to recover strongly in 2022. The cessation of international visitors results in service exports being around 20 percent below the level estimated in the HYEFU by June 2023.

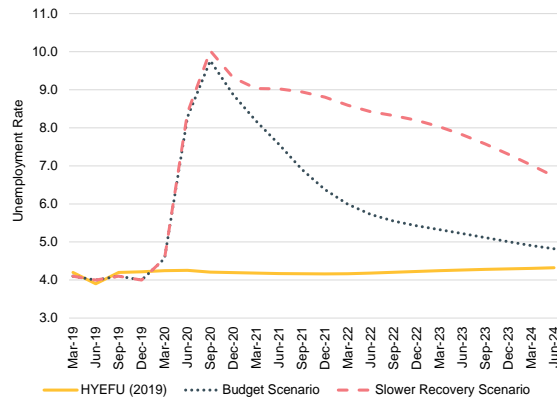


Figure 15: Estimated annual nominal GDP, Faster Recovery and Slower Recovery Scenarios



Source: The Treasury, 2020d

Figure 16: Estimated unemployment rate, Faster Recovery and Slower Recovery Scenarios



Source: The Treasury, 2020d

Under the Slower Recovery Scenario, where there is a larger fall in world output and a more gradual recovery but additional fiscal stimulus to cushion the impacts, nominal GDP reduces by a further \$90 billion over the forecast period relative to the Budget Scenario. As well as the decline in 2020, real GDP continues to fall in 2021 before a more moderate, albeit still strong, recovery in 2022 (5.9 percent real GDP growth). Unemployment is higher for longer, reaching 9 percent in the year ended June 2021 and remaining over 8 percent in 2022.

A more pessimistic than optimistic outlook?

The Treasury Budget or Faster Recovery Scenario predicts a fairly quick and strong recovery beginning from the end of 2021, with economic activity back to pre-Covid levels in 2022, and some bank forecasts (e.g., RBNZ baseline scenario, Westpac) suggest a similar trajectory. Others, e.g., Infometrics, BNZ, consider this is optimistic and that the hit will be larger and recovery longer, i.e., that there will be a deeper 'U' shaped or even an 'L' shaped recovery. This seems more realistic for the following reasons:

- Tourism and tourism supporting industries are likely to continue to be significantly affected for two years or more. The government has indicated that New Zealand's borders are likely to remain closed except to Australia and selected Pacific nations (with these potentially opening up in the next few months) until a vaccine is available. Even if New Zealand develops several international travel 'bubbles' in the medium-term, airline capacity is going to be significantly below previous levels, airfares are likely to be higher than pre-Covid-19 levels as a result, people will be wary of travelling and many will not be able to afford long-haul travel.
- Beyond the initial business closures resulting from a lack of trading activity during Alert Levels 2-4, there will be second-round effects resulting from the impacts of these closures on households and other businesses. Many businesses that survive the first few months with the wage subsidy will have to borrow to continue operating and will avoid discretionary spending and investment. Reduced levels of household income and spending and business investment will result in supplying businesses cutting back costs and staff over time. As noted, there were some lags in the impact of the GFC on employment and enterprise numbers across different industries.
- Relatedly, there will be a rise in under-employment and a fall in the labour participation rate, in addition to a rise in unemployment, as many workers will be forced to cut back hours or leave the labour force (e.g., re-enter education, retire early, give-up) as it becomes difficult to find work.



- Unemployment will impact on some people's skill levels, entrepreneurs will find it difficult to raise capital (investors and banks will be cautious and credit availability will be affected by lower incomes and asset/housing values), some businesses will defer R&D spending and find it more difficult to connect with technical expertise offshore, and it will be more difficult for businesses to attract higher skilled migrants. All of this will impact on productivity.

Given this, it seems reasonable to expect that a recovery from 2022 would be more muted and unemployment will not return to pre-Covid levels until 2024/25. It is also at this stage that a vaccine is likely to have been disseminated widely, with tourism and trade opening back up, and businesses will become more confident and increase investment and employment. This is more in line with the shape of Treasury's Slower Recovery Scenario.

It is worth emphasising that even with a reasonably strong recovery from 2022/23, it is quite possible the economy will still be smaller in 2025 than it would have been in the absence of Covid-19.

As noted, all of this is reasonably speculative and depends on how a range of factors play out, including the extent of the initial impact on business and household spending, recoveries in major trading partners, the speed with which international travel and airlines recover and relatedly the introduction of a vaccine, subsequent rounds of government stimulus etc.

What does this mean for trade (and related transport flows)?

New Zealand's tourism exports totalled \$16.2 billion during 2019, representing about 19 percent of total goods and services exports. As noted earlier, international visitation is likely to be virtually non-existent for the next 12 months, with 14-day quarantine requirements or closed borders likely to discourage or prevent visitors from coming here.

Primary exports will be less heavily affected as key exports (dairy, horticulture) are part of essential food supplies, although there was an initial decline in exports to China in early 2020 as their ports were largely shut down. As discussed earlier, forestry (log and wood product) exports will be hit, due to backlogs at ports and softer demand due to the global economic downturn and non-food manufactured exports will also fall in the short-term due to the pause in production during the lockdown. Consistent with the Treasury's forecast fall in trade, this suggests a substantial contraction (e.g., up to 20 percent) in export volumes over the next year.

Over the medium-term, there will still be softer demand for international tourism (as noted, due to reduced airline capacity, willingness and ability to afford travel) and goods and services due to lower income, spending and investment world-wide. The expectation is for export volumes to also follow a deeper U-shaped curve over the next five years, with export volumes to be still below the levels they would have reached in the absence of Covid-19.

Imports will be similarly affected, with lower household spending reducing the demand for consumption goods imports (currently just over 20 percent of total imports) and reduced business investment impacting on capital imports (as occurred during the GFC). A contraction of import volumes of around 10-20 percent could be expected over the next year. Again, import volumes are likely to follow the typical curve over 2021-2025 and not reach pre-Covid levels, with international travel taking a long-time to recover and businesses' willingness and ability to invest remaining weak for several years.



What are the potential medium to long-term industry impacts?

Given the many uncertainties associated with the impact of Covid-19 and recovery trajectory globally and in New Zealand, it is extremely difficult to postulate how the nature of New Zealand's economy will change over the next 4-10 years. However, the preceding analysis and New Zealand's experience to date with Covid-19 provides some pointers for the medium term:

- As noted, there has been growing protectionism across the globe and the Covid-19 pandemic is likely to further strengthen that, with increasing measures across economies to protect and/or develop the domestic production of essential goods such as food and health products.
- The previous significant crisis, the GFC, did appear to slightly accelerate the evolution of the economy towards services. The current crisis is much more significant.
- In the short-term a substantial change is emerging in the make-up of the economy as travel and health restrictions significantly constrain tourism and hospitality sectors and will continue to do so for at least a couple of years.
- Covid-19 has resulted in an acceleration of the use of digital technologies to conduct business and to enable people to work from home. This, in combination with the growing dissemination of Industry 4.0 technologies, will see greater levels of 'servitisation' or the expansion of manufacturing into operational, information, financial, consulting, design and engineering services.
- The government's stimulus measures include substantial investments in infrastructure, education and health and there will be significant flow-on demands for greater activity in related sectors. There will also be greater demand for education from people that have lost their jobs and want to retrain.
- The Government's Budget includes measures to retrain and re-deploy workers away from tourism into construction and conservation projects
- There was already significant and growing pressure for several sectors to move to circular economy models of production/service and to constrain activity to sustainable levels, due to environmental regulation and consumer demands. This included tourism and elements of manufacturing. Covid-19 provides the opportunity for sectors, regions and the government to enable and accelerate this change.

All of this suggests that the New Zealand economy is likely to look a little different in the medium-term (3-4 years). This may actually serve to slow-down the transition of the economy away from manufacturing to services over the long-term. However, over the longer-term (5-10 years), the global recovery and rising investment and incomes will tend to reassert demand for international services and goods and this would tend to drive New Zealand back towards the normal, pre-Covid economic structure.

The extent to which there is some variation will depend on the length of the effects of Covid-19 on global economic growth and spending (for example, ongoing health concerns over several years) and on migration and New Zealand's population growth, particularly as it affects sectors whose growth is fuelled by face-to-face contact and population such as tourism. Table 2 provides a broad assessment of the potential impacts on selected sectors under Faster and Slower Recovery scenarios, relative to what would have been the case in the absence of Covid-19, and key factors that will determine more or less positive impacts.



Table 2: Estimated medium to long-term impacts and key drivers

Selected Sectors	Faster Recovery	Slower Recovery	Key Drivers
Tourism	M	H	Reduced capacity in tourism services; reduced airline capacity; affordability of travel, ongoing Covid-19 concerns (e.g., vaccine takes many years to become widely available) and ongoing border controls
Education	+ve	+ve	Increased demand for training and retraining due to job losses and level of government training support
International Education	M	M	Ongoing Covid-19 concerns and border controls; incentives for international students provided by competing nations
Retail	M	M	Speed of recovery of jobs and incomes and hence consumer spending in New Zealand
Construction	+ve	M	Extent of deferment of construction projects in affected sectors (e.g., accommodation, airports) compared to central and local government spending on infrastructure; availability of labour; speed of recovery of jobs, incomes and net migration in New Zealand, and flow-on impacts on residential building
Manufacturing	L	M	Productivity growth driven by increased adoption of digital tech/Industry 4.0; differential effects on sub-industries (for example, increased demand for food product manufacturing versus reduced production in segments impacted by climate change regulation); changes to global supply chains
Agriculture	M	M	Global demand for food; extent to which key markets attempt to develop and protect their own food sources
Forestry	L	M	Speed of global recovery and construction activity and demand for logs in key markets
Wholesale	M	M	Speed of recovery in value chain industries, such as manufacturing and retail
Utilities	+ve	L	Impact on net migration and population growth; impact on demand from key sectors and customers
Professional Services	M	M	Differential effects on sub-industries; length of impact on net migration and population growth.
Information Media & Telecommunications	M	M	Speed of recovery in local and global economy and business investment intentions (e.g., demand for hardware); ongoing demand for remote/cloud-based technology; global supply chain disruptions; local and central government procurement; impact on net migration and population growth
Transport & Warehousing	M	M	Length of impact on air transport; extent of global supply chain rationalisation; central and local government investment in roads, rail and alternate transport
Health Services	L	L	Flow-on impacts of increased government investment in the health sector; length of time that Covid-related health issues continue
Financial Services	L	L	Extent of loan defaults and government fiscal and monetary support
Rental & Real Estate Services	M	M	Speed of recovery in related services (e.g., tourism for rental services)

Source: MartinJenkins assessment



Estimating industry impacts

Infometrics has modelled the effects of Treasury's scenarios on employment and GDP across industries. NZTA asked for the projections to be based on Treasury's original Scenarios 1, 4, and 5 published in April. The scenarios differ in terms of their assumptions about the amount of time spent in Covid Alert Levels 3 and 4 and the magnitude of the downturn in the global economy during 2020 and 2021.²

These scenarios were different to scenarios included in the Treasury's Budget Economic and Fiscal Update as discussed earlier. However, Scenario 1 is a reasonable approximation for the Budget Scenario impacts for the March 2021 year and Scenario 5 is a reasonable approximation for the outcomes of the Slower Recovery Scenario for 2020/21. By 2024, the CRRF forecasts resemble Scenario 1, while unemployment in Scenario 5 is close to Treasury's Slower Recovery Scenario (although GDP in the latter is significantly weaker than in Scenario 5).

Given this, in the discussion that follows, Scenario 1 is also referred to as the Faster Recovery Scenario and Scenario 5 as the Slower Recovery Scenario.

Assumptions used in the modelling

Infometrics have applied several key assumptions to model the Treasury scenarios, consistent with the key impacts and trends suggested by the preceding research review. These include:

- Foreign tourism demand is reduced by 91 percent in the March year 2021, 35 percent in the period to 2025 and by 10 percent in the period up to 2031 under the slower recovery scenario (with a 10 percent reduction in tourism demand in the medium-term and no reduction in the long-term under scenario 1).
- Domestic tourism demand reduces by 21 percent in the first year, but is higher than 'normal' by 6.2 percent in the period 2021-2025 and by 2.2 percent in the 2026-2031 period under the slower recovery scenario (with no increase in demand in the long-term under scenario 1).
- International education demand is reduced by 49 percent in the first year and 20 percent in the 2021 to 2025 period under the slower recovery scenario. Under scenario 1, it is 10 percent lower in the 2021-2025 period.
- The wage subsidy is provided to all industries except central and local government in the first year.
- Foreign demand for non-food manufactured goods is down by 16 percent in the first year. Demand for commodity exports is 5 percent lower under the slower recovery scenario than BAU.
- Spending on infrastructure increases by 15 percent in the period from 2021-2025 in both scenarios.

² Scenario 1 assumed one month at each of Level 3 and Level 4 and 10 months in total across Levels 1 and 2. Borders remain closed to foreign visitors for up to 12 months. World GDP growth is -2.9% in 2020 (six percentage points lower than Treasury's December 2019 forecast).

Scenario 4 assumed three months at each of Level 3 and Level 4 and six months in total across Levels 1 and 2. The other assumptions were the same as for Scenario 1.

Scenario 5 assumed world GDP growth of -5.9% in 2020 and -0.7% in 2021. The other assumptions were the same as for Scenario 1.



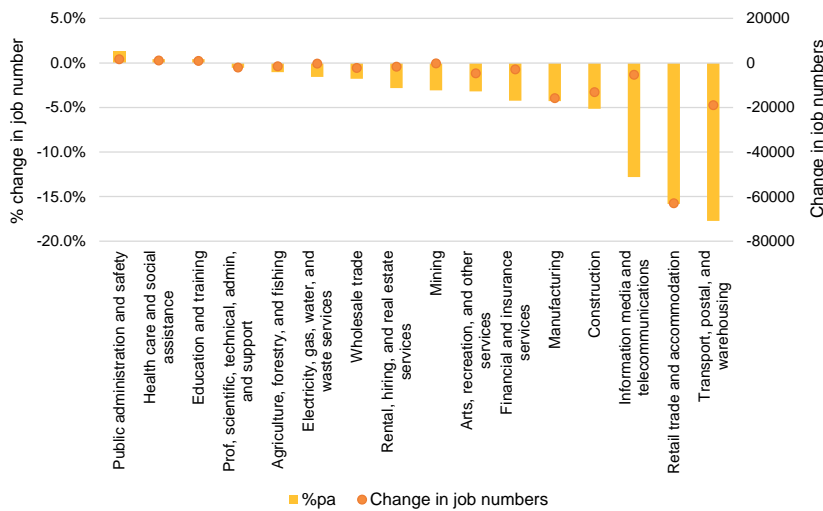
Faster recovery scenario

Short-term impacts

Infometrics forecasts suggest the following first-year impacts on sector employment and value added under a faster recovery scenario. Total filled job numbers are forecast to drop 4.6 percent, to be 6.4 percent below BAU. Nationwide GDP is expected to drop 13.4 percent under this scenario to be 16.2 percent below BAU in 2021.

Consistent with expectations, tourism related sectors are expected to be significantly impacted, which includes retail & accommodation (-63,000 jobs or a 15.8 percent fall; -\$4.5b in GDP or a 20.3 percent fall) and arts & recreation (-4700 jobs or a 3.2 percent drop; -\$1.3b in GDP or a 14 percent drop). Transport & warehousing, construction, information media & telecommunications and manufacturing are also highly impacted (see Figure 17 and Figure 18), consistent with the research review. Healthcare, education & training and agriculture are forecast to fare relatively well and be the least affected over the first year, as expected. However, Infometrics forecasts suggest a greater impact on utilities than the research review suggested.

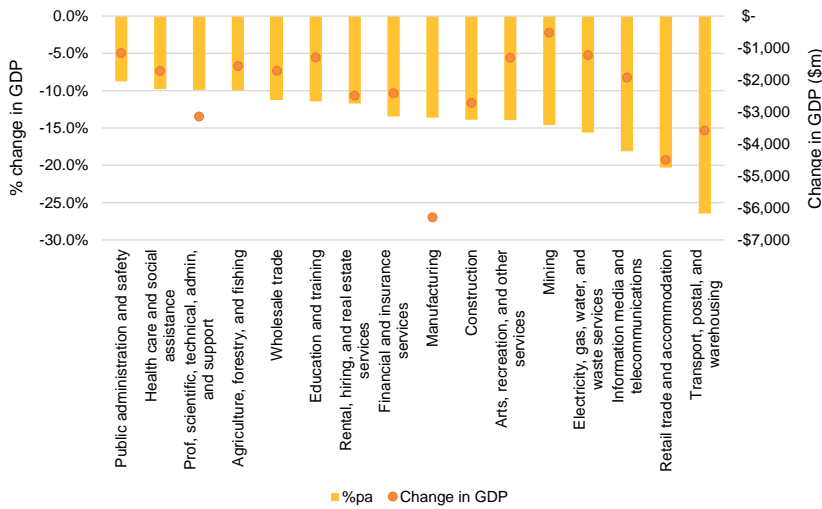
Figure 17: Forecast change in employment by industry over 2020-2021, Treasury Scenario 1



Source: Infometrics



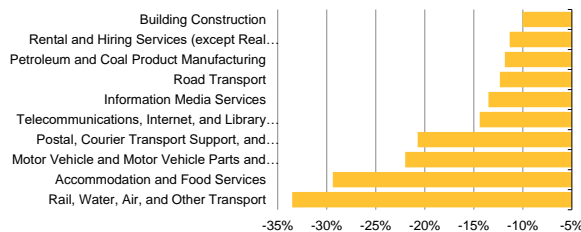
Figure 18: Forecast change in GDP by industry over 2020-2021, Treasury Scenario 1



Source: Infometrics

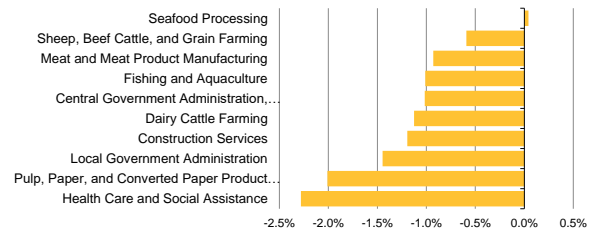
At a greater level of detail, the worst performing sub-sectors for employment compared to the BAU are expected to be rail, water & air transport; accommodation & food services; motor vehicles & parts; postal, transport & warehousing; telecommunications; information media services; and road transport.

Figure 19: Employment relative to BAU, 2021 – 10 worst performing industries, Scenario 1



Source: Infometrics

Figure 20: Employment relative to BAU, 2021 – 10 best performing industries, Scenario 1



Source: Infometrics

The best performing sub-sectors relative to BAU are expected to be seafood processing; sheep & beef farming; meat & meat product manufacturing, fishing & aquaculture; dairy cattle farming; and construction services.

Medium-term impacts

Under a Faster Recovery Scenario, total filled job numbers are forecast to increase at an average rate of 3.1 percent per year between 2021 and 2025. By March 2025, this growth would push total employment up by 7.8 percent from its 2020 level, implying average growth of 1.5 percent per annum over the five-year period. Employment would then be only 0.5% below the pre-Covid projections for BAU.



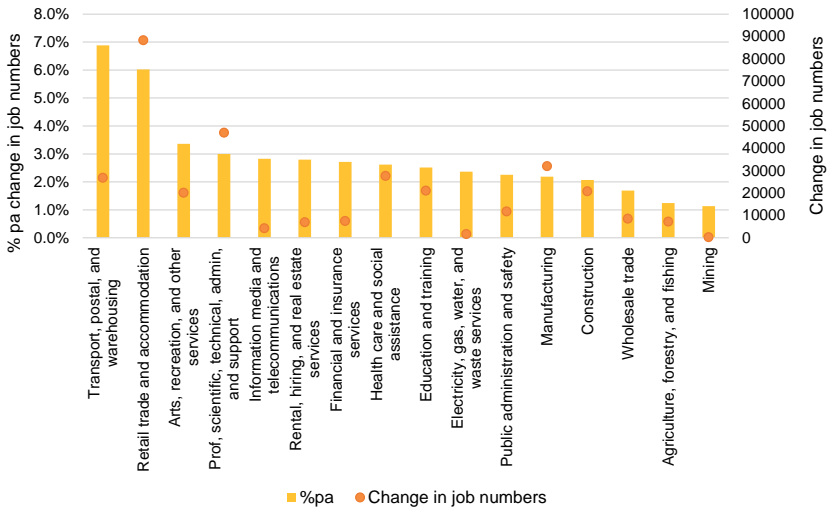
Total GDP is projected to increase at an average rate of 6.4 percent per year between 2021 and 2025. This growth would push average growth over the five years between 2020 and 2025 up to 2.1 percent per year, which would have been a reasonable performance even without any pandemic taking place. This scenario relies on the New Zealand economy being able to bounce back very quickly from the effects of Covid-19, without any structural limitations or systemic issues preventing a quick return to “normal” for the economy after the shock.

Broad industry impacts over the period are shown in Figure 21 and Figure 22 below. There is an element of “path dependency” that shows through in the projections by industry. The significant loss of capacity in tourism-related industries in the near term has implications for employment in those industries over the longer term. The persistent changes in these industries can be thought of as enforced rationalisation, productivity improvements, or a change in focus towards higher-value tourism.

Effectively there is a rebound in some of the most affected sectors, although employment and GDP is still less than would have been the case in the absence of Covid-19. The fastest growing broad sectors are:

- transport & warehousing (an additional 26,890 jobs over 2021-2025 and 6.9 percent per year job growth and 11.8 percent per year GDP growth)
- retail trade & accommodation (an additional 88,370 jobs and 6 percent per year job growth and 11.2 percent per year GDP growth)
- arts & recreation (an additional 20,200 jobs, 3.4 percent per year job growth and 5.6 percent per year GDP growth)
- professional, scientific and technical services (47,040 jobs, 3 percent per year job growth, 6.7 percent per year GDP growth) and
- information media and telecommunications (an extra 4,280 jobs, 2.8 percent per year job growth, 9.3 percent per year GDP growth).

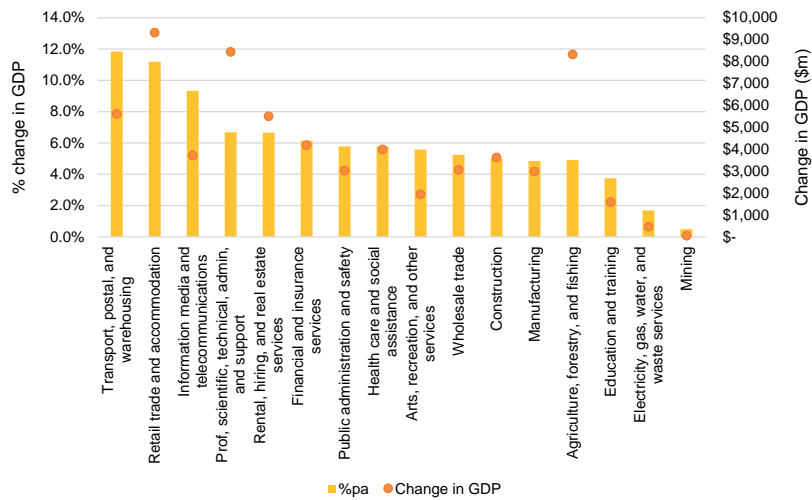
Figure 21: Forecast change in employment by industry over 2021-2025, Scenario 1



Source: Infometrics



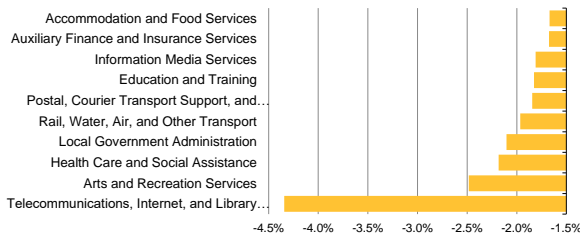
Figure 22: Forecast change in GDP by industry over 2021-2025, Scenario 1



Source: Infometrics

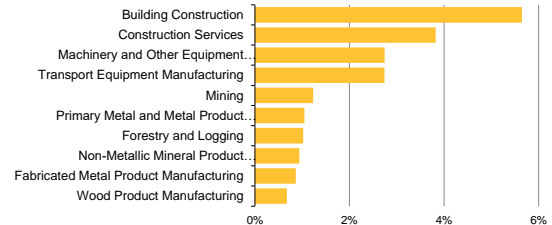
At a more detailed industry level, various manufacturing sub-sectors (e.g., machinery & equipment, transport equipment, metal product manufacturing) and construction sectors are expected to have the highest employment outcomes by 2025 than under BAU conditions (Figure 23). In contrast, tourism-related services, media, and arts & recreation are all anticipated to still have employment levels sitting 1.5% to 4.5% below BAU levels. Interestingly, by this time, health services and education & training are also expected to be some of the poorest performing sub-sectors relative to BAU.

Figure 23: Employment relative to BAU, 2025 – 10 worst performing industries, Scenario 1



Source: Infometrics

Figure 24: Employment relative to BAU, 2025 – 10 best performing industries, Scenario 1



Source: Infometrics

Long-term impacts

Employment is forecast to increase by another 1.6 percent per annum between 2026 and 2031. By 2031, total employment in the Faster Recovery Scenario is essentially in line with BAU projections. Figure 25 and Figure 26 show the forecast changes in employment and GDP over 2025-2031.

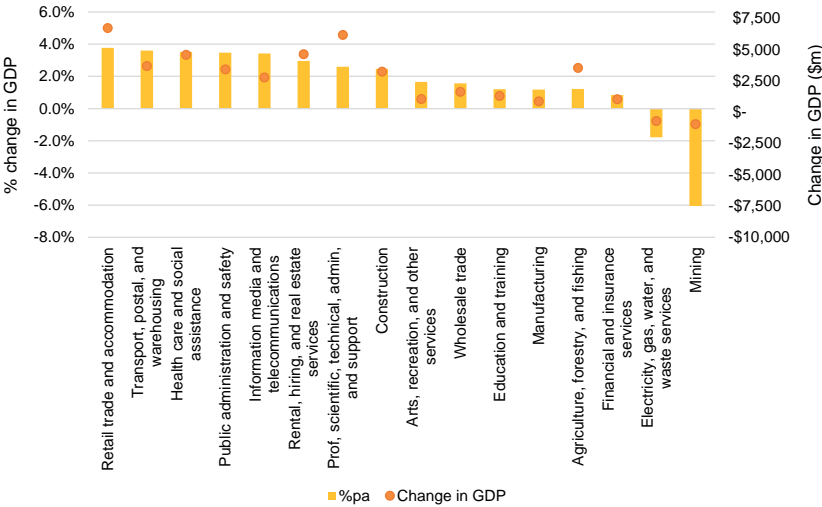


Figure 25: Forecast change in employment by industry over 2026-2031, Scenario 1



Source: Infometrics

Figure 26: Forecast change in GDP by industry over 2026-2031, Scenario 1



Source: Infometrics

Over 2025-2031, the sectors that are expected to grow the fastest in terms of jobs are:

- health care & social assistance (2.9 percent per annum growth over 2025-2031, generating an additional 53,580 jobs over the period)
- education & training (2.5 percent per year, 36,200 jobs), public administration & safety (2.4 percent per year, 20,760 jobs)
- arts & recreation (2.2 percent per year, 23,220 jobs) and
- construction (2.1 percent per year, 35,480 jobs).

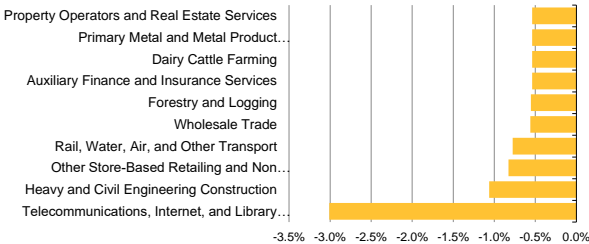
Two of these are also expected to experience relatively high GDP growth rates over the period – health care & social assistance (3.5 percent per year) and public administration & safety (3.5 percent



per year). Other broad sectors expected to achieve strong GDP growth rates over 2025-2031 are retail trade and accommodation (3.8 percent per year), transport & warehousing (3.6 percent per year) and information media & telecommunications (3.4 percent per year).

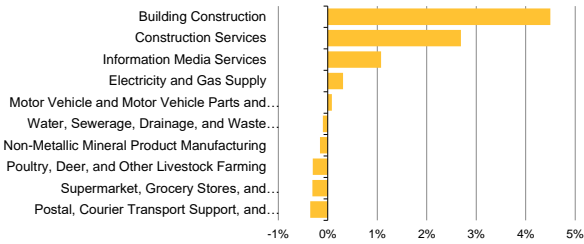
Several of the strong growing sectors are still well behind their expected BAU performance. The worst performing sub-sectors for employment compared to the BAU are forecast to be telecommunications, heavy & civil engineering construction, other store-based retailing, rail, water & air transport and wholesale trade.

Figure 27: Employment relative to BAU, 2031 – 10 worst performing industries, Scenario 1



Source: Infometrics

Figure 28: Employment relative to BAU, 2031 – 10 best performing industries, Scenario 1



Source: Infometrics

The research review suggested that civil construction could be better performing than suggested in these forecasts over the long-term, particularly given the signalled central government spending on infrastructure and the long-term pipeline of projects that exists (further commentary on the construction sectors is provided on the following page). However, there is no clear pattern to the industries with employment outcomes below BAU in the Infometrics’ forecasts. This may simply reflect a lack of any persistent effects of the current shock to the New Zealand economy in 10 years’ time.

The best performing sub-sectors in the long-term relative to BAU are expected to be building construction, construction services, information media services and utilities. These are consistent with the broad assessment provided earlier. In addition, parts of retailing and logistics have recovered from weakness early in the forecast period to be among the better performers. These industries look to have been buoyed by a persistent period of relatively strong spending growth as the labour market and consumer spending have recovered in the years after the shock of the pandemic.

Key transport industries

Under this scenario, there is a significant initial shock across key industries that rely heavily on transport and transport networks in the first year due to the lockdowns and loss of output. The forecasts then suggest that by 2025 most of these industries have recovered towards BAU (Table 3). This outcome is consistent with the absence of any permanent shocks or changes to the structure of the economy that persist over the longer term.



Table 3: Key industries for transport activity – Treasury Scenario 1 (2019, \$m)

	Mar 20	%pa	Mar 21	%pa	Mar 25	%pa	Mar 31
Sheep, Beef, and Dairy	9,074	-10.1%	8,160	3.7%	9,442	0.6%	9,766
Forestry	435	-15.7%	367	5.1%	448	-0.8%	427
Mining	3,525	-14.6%	3,010	0.5%	3,069	-6.1%	2,110
Food Manufacturing	9,007	-11.9%	7,931	4.4%	9,417	1.3%	10,155
Non-Food Manufacturing	19,246	-12.5%	16,848	6.0%	21,242	1.5%	23,172
Construction	19,540	-13.9%	16,822	5.0%	20,445	2.5%	23,674
Retailing	15,579	-13.7%	13,448	9.9%	19,636	4.3%	25,212
Road Transport	4,700	-18.9%	3,813	8.8%	5,343	2.4%	6,159
Logistics	5,960	-26.8%	4,362	12.1%	6,894	4.4%	8,947

Source: Infometrics

A Perspective on Construction

Beyond work that is already underway, prospects for residential and non-residential construction over the next couple of years are weak. High unemployment, slower population growth, falling house prices, and increasing reluctance to finance new subdivisions are likely to weigh on residential development. Business failures, weak investment intentions, and an oversupply of accommodation, retail, and office space will all drag non-residential construction lower.

Against this backdrop, the government has determined to increase its investment in infrastructure, backing up the NZ Upgrade Programme announced in January with another \$3b in spending that has so far been allocated to fast-tracking infrastructure projects. The timing on these additional projects is currently uncertain, but growth in infrastructure activity may accelerate by 2022.

In the interim, the economy's downturn is likely to result in considerable job losses throughout the broader construction industry. Although civil construction work may not experience the same fall in activity as other construction types, businesses throughout the economy are taking the opportunity to rationalise or streamline their operations and shed underperforming staff or less profitable parts of their business. As a result, falls in employment in civil construction are likely to occur in the near term as well.

There is some debate about the ability of workers from the residential and non-residential subindustries to transfer their skills across to civil infrastructure. Although the skills of specific residential-focused trades cannot be utilised in civil work, softer skills such as project and site management can potentially be brought across. For non-residential construction, some of the skills for trades, such as concrete work, can be more easily transferred.

Infometrics' view is that the development of spare capacity in the New Zealand labour market signalled by rising unemployment will outweigh any growth in demand for construction workers caused by the government's focus on infrastructure investment. However, in the short term, it is possible that the skill shortages that have been problematic for the industry in recent years re-emerge, with a mismatch between the skills of available workers and the skills required for specific projects. Current border closures have the potential to exacerbate this skills mismatch, particularly throughout the next year, given the important role that foreign labour has played in the construction industry during the Christchurch rebuild and subsequent broader construction boom.



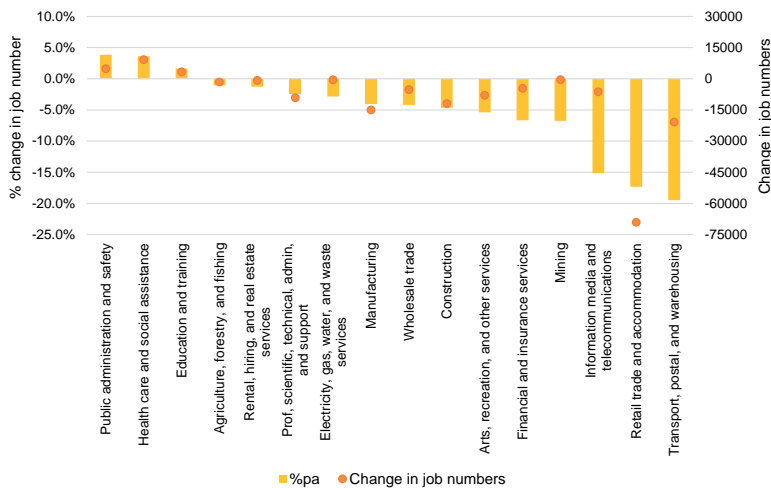
Slower recovery scenario

Short-term impacts

In the first year, there is no major difference between the Slower Recovery Scenario (Scenario 5) and the Faster Recovery Scenario – total filled job numbers are forecast to drop 4.9% to lie 6.7% below the pre-Covid BAU projections.

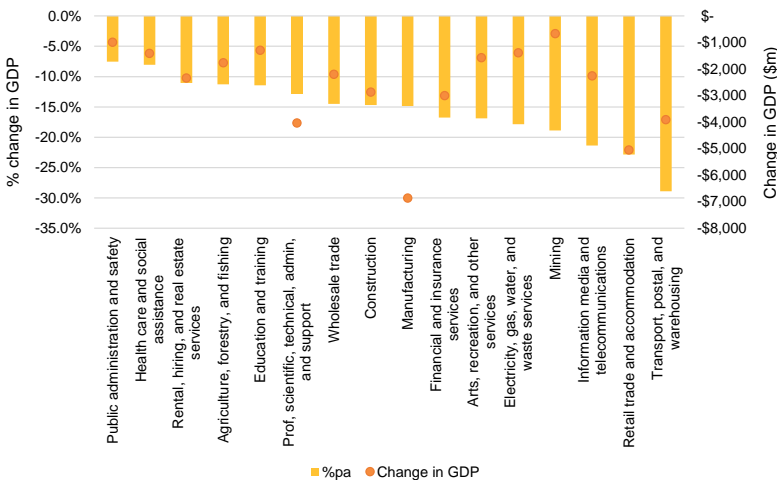
As shown in Figure 29 and Figure 30, almost all industries are expected to record a drop in employment except for the public sectors, health care & social assistance and education & training. Consistent with the previous scenario and expectations, the largest declines occur in transport & warehousing, retail trade & accommodation, information media & telecommunications, construction and manufacturing.

Figure 29. Forecast change in employment by industry, 2020-2021, Scenario 5



Source: Infometrics

Figure 30. Forecast change in GDP by industry, 2020-2021, Scenario 5



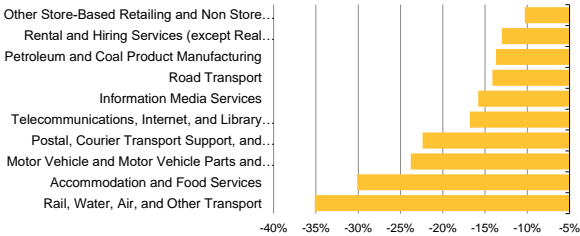
Source: Infometrics



Changes in GDP relative to the BAU projections generally mirror the employment projections, although the magnitude of the declines are larger. This larger fall primarily results from the Level 3 and Level 4 lockdown, which significantly reduced output but did not necessarily result in job losses. The gap also reflects that firms typically reduce worker hours before laying off staff in a downturn. Productivity is also likely to be lower in the near term as weaker demand conditions result in reduced workloads and less pressure for staff.

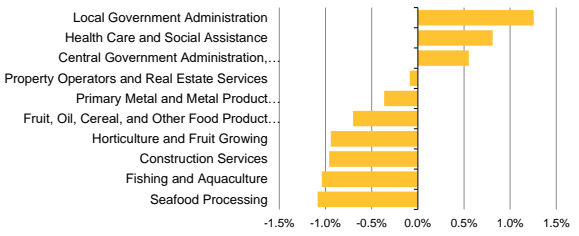
At a greater level of detail, almost all sub-industries are also expected to record a drop in employment, with the largest declines occurring in transport services, accommodation & food services, motor vehicles, telecommunications, rental services and retailing. In contrast, health care, food manufacturing, horticulture, seafood, and local and central government are expected to be less affected generally by the current economic shock. The least affected and most affected industries are shown in Figure 31 and Figure 32.

Figure 31: Employment relative to BAU, 2021 – 10 worst performing industries, Scenario 5



Source: Infometrics

Figure 32: Employment relative to BAU, 2021 – 10 best performing industries, Scenario 5



Source: Infometrics

Medium-term Impacts

Under the Slower Recovery Scenario, total filled job numbers are forecast to grow by an average of 2.7 percent per year between March 2021 and March 2025. This growth would place nationwide employment in 2025 up 5.6% from its 2020 level, implying average growth of 1.1 per annum over the five-year period. However, employment would still be 2.5% below pre-Covid projections for BAU.

Total GDP is projected to grow by an average of 6.1 percent per year between 2021 and 2025. This increase equates to average growth of 1.5 percent per annum between 2020 and 2025, but it would still leave economic activity 4.5% below BAU projections in 2025.

There are few differences in the key trends between GDP and employment by 2025. The main divergence is that a weaker outlook for economic activity compared with BAU is expected to weigh on energy prices, negatively affecting value-add in the petroleum and coal product manufacturing industry and the electricity and gas supply industry. The latter industry, in particular, is not labour-intensive, so the effect on employment is more muted.

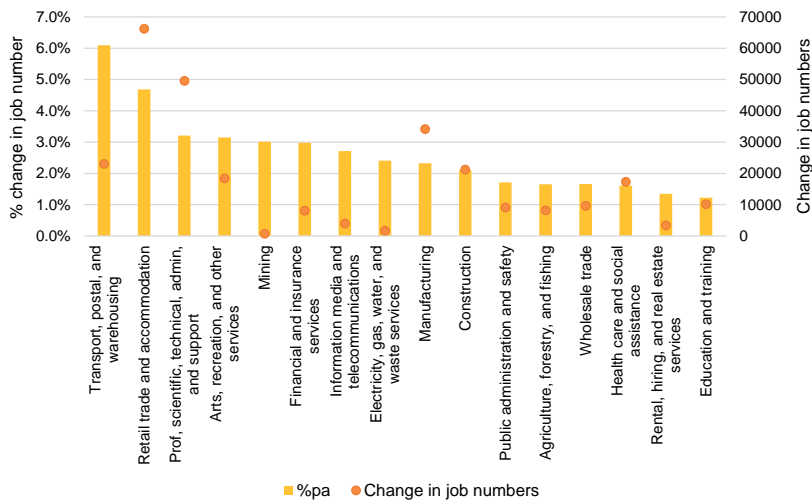
Broad industry impacts are shown in Figure 33 and Figure 34 below. The fastest growing broad sectors are similar to the Faster Recovery Scenario but generally achieve lower annual growth rates. They include:

- transport & warehousing (an additional 23,030 jobs over 2021-2015 and 6.1 percent per year job growth and 10.9 percent per year GDP growth)



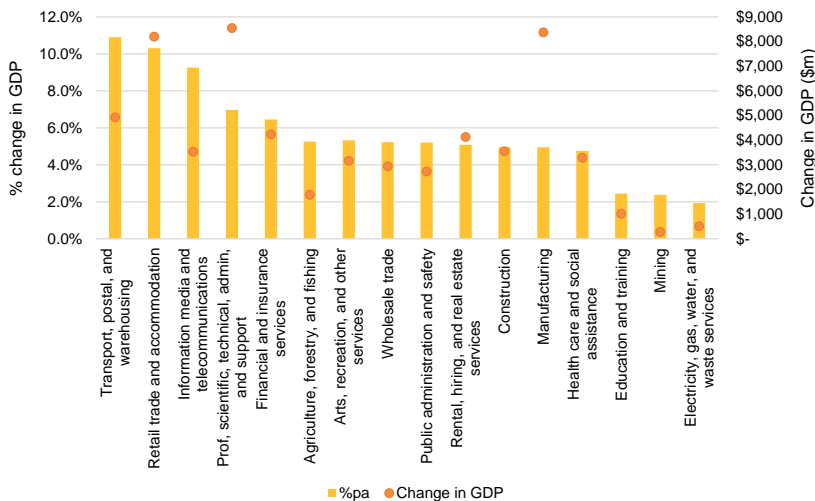
- retail trade & accommodation (an additional 66,210 jobs and 4.7 percent per year job growth and 10.3 percent per year GDP growth)
- professional, scientific and technical services (49,570 jobs, 3.2 percent per year job growth, 7.0 percent per year GDP growth)
- arts & recreation (an additional 18,410 jobs, 3.1 percent per year job growth and 5.3 percent per year GDP growth) and
- financial services (an extra 8080 jobs, 3.0 percent per year job growth; 6.5 percent per year GDP growth).

Figure 33: Forecast change in employment by industry over 2021-2025, Scenario 5



Source: Infometrics

Figure 34: Forecast change in GDP by industry over 2021-2025, Scenario 5

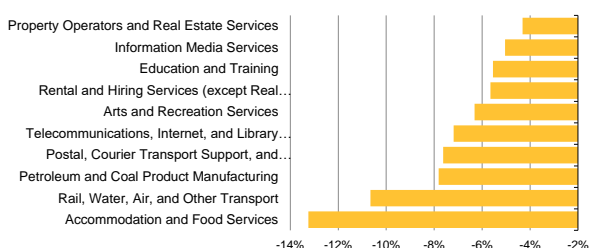


Source: Infometrics



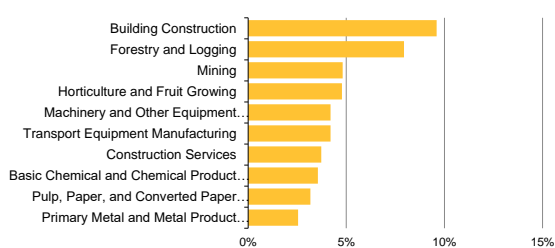
At a more detailed industry level, in this Scenario, some primary industries (forestry & logging, horticulture) are expected to do better than BAU, along with a range of manufacturing sub-industries and building construction (Figure 36). Despite weaker global economic conditions in this Scenario negatively affecting New Zealand's exports, the most significant effects show through in more sustained weakness in areas such as accommodation & food services, transport, telecommunications, arts & recreation and rental services (see Figure 35). Output in these industries is typically more reliant on labour, so the consequent drop in required workers frees up resources for other industries. Primary and manufacturing industries then become more willing to take on labour given that it has become relatively cheaper and more available due to the fortunes of service industries.

Figure 35: Employment relative to BAU, 2025 – 10 worst performing industries, Scenario 5



Source: Infometrics

Figure 36: Employment relative to BAU, 2025 – 10 best performing industries, Scenario 5



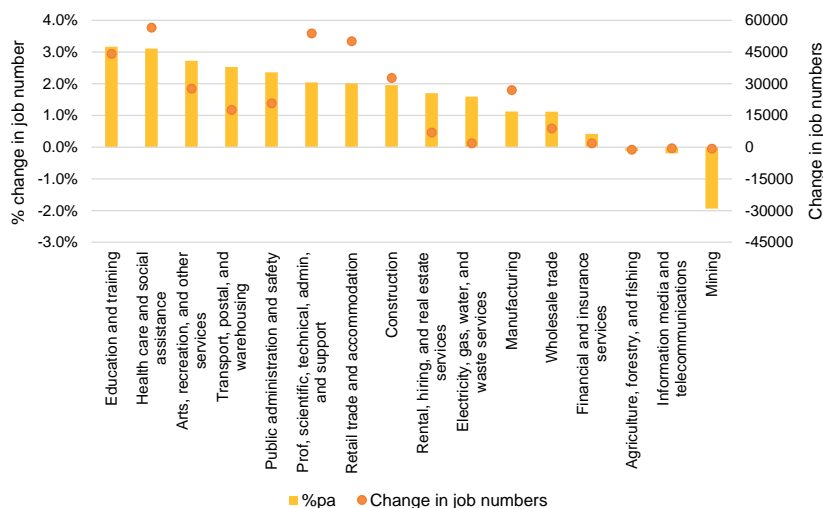
Source: Infometrics

Long-term impacts

Total filled job numbers are projected to grow by 1.9 percent per year between 2025 and 2031 under the Slower Recovery Scenario. This growth would result in total employment almost returning to pre-Covid BAU projections by 2031.

Forecast changes in jobs and GDP in broad industries over 2026-2031 are shown below.

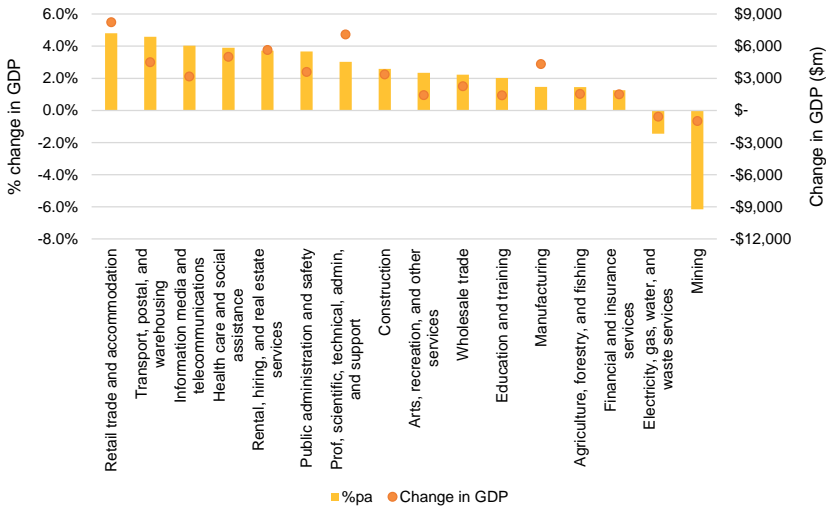
Figure 37: Forecast change in employment by industry over 2026-2031, Scenario 5



Source: Infometrics



Figure 38: Forecast change in GDP by industry over 2026-2031, Scenario 5



Source: Infometrics

Over 2026-2031, the sectors that are expected to grow the fastest under the Slower Recovery Scenario in terms of jobs are:

- education & training (3.2 percent per annum growth over 2025-2031, generating an additional 44,230 jobs over the period)
- health care & social assistance (3.1 percent per year, 56,570 jobs), arts & recreation (2.7 percent per year, 27,660 jobs)
- transport & warehousing (2.5 percent per year, 17,660 jobs) and public administration (2.4 percent per year, 20,810 jobs).

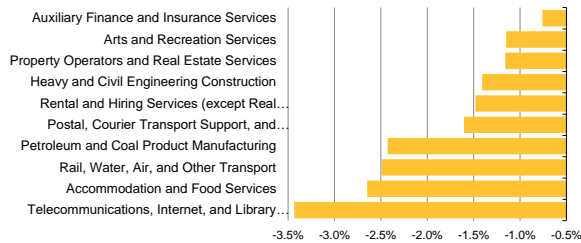
Three of these are also expected to experience relatively high GDP growth rates over the period – transport & warehousing (4.6 percent per year), health care & social assistance (3.9 percent per year) and public administration & safety (3.7 percent per year). Other broad sectors expected to achieve strong GDP growth rates over 2025-2031 are retail trade and accommodation (5.8 percent per year), information media & telecommunications (4.0 percent per year), and rental and real estate services (3.7 percent per year).

Although economy-wide employment is back at its BAU trend, an assumption of a permanent step down in demand for international tourism under this Scenario affects the industry mix of employment.

At a more detailed industry level, industry outcomes are very similar to the 2025 outcomes noted above. Building construction & construction services, some primary industries and several manufacturing industries are all expected to have higher shares of total employment (see Figure 39). A range of tourism industries are negatively affected by the weaker service export position, including rental & hiring services, arts & recreation and accommodation & food services, as well as transport services, petroleum & coal product manufacturing, civil construction and telecommunications (see Figure 40).

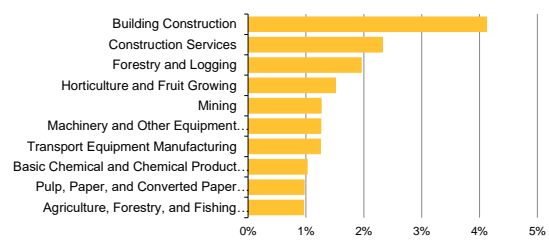


Figure 39: Employment relative to BAU, 2031 – 10 worst performing industries, Scenario 5



Source: Infometrics

Figure 40: Employment relative to BAU, 2031 – 10 best performing industries, Scenario 5



Source: Infometrics

With regards to GDP by 2031, parts of the retail industry are expected to be outperforming their BAU projections in the Slower Recovery Scenario. Motor vehicle retailing is strong, reflecting persistently lower fuel prices, and indicating there could be more private vehicle use under this Scenario. The other side of this outcome is that industries including mining, some areas of non-food manufacturing, and utilities could face lower value-add given the implied medium-term outlook for energy prices.

Key transport industries

In terms of key drivers for land transport activity, Table 4 shows that the biggest near-term effects of the Slower Recovery Scenario on value-add will be experienced by forestry, mining, retailing, road transport, and logistics. These declines reflect a range of factors, including weaker global demand conditions, an inability to work under the lockdown, and reduced consumer spending due to job losses and incomes cuts.

By 2025, forestry and construction are expected to be performing ahead of BAU. Retailing, road transport, and logistics are still projected to be operating at levels below BAU, although all three of these industries will have rebounded strongly from the sharp decline in activity during 2020/21.

By 2031, most key transport industries are expected to have recovered to close to BAU levels. Value-add for construction and retailing is projected to be 1.2-1.5 percent ahead of BAU. Mining is likely to be the biggest underperformer over the medium term, with low energy prices compounding the effects of probable environmental policies on the industry's activity between 2025 and 2031.

Table 4: Key industries for transport activity – Treasury Scenario 5 (2019, \$m)

	Mar 20	%pa	Mar 21	%pa	Mar 25	%pa	Mar 31
Sheep, Beef, and Dairy	9,074	-11.8%	8,001	3.9%	9,312	1.0%	9,863
Forestry	435	-17.6%	359	7.2%	473	-1.3%	438
Mining	3,525	-18.9%	2,860	2.4%	3,141	-6.2%	2,145
Food Manufacturing	9,007	-13.3%	7,813	4.3%	9,243	1.7%	10,221
Non-Food Manufacturing	19,246	-13.5%	16,657	6.1%	21,135	1.7%	23,429
Construction	19,540	-14.7%	16,668	5.0%	20,224	2.6%	23,582
Retailing	15,579	-16.7%	12,983	9.9%	18,907	4.9%	25,247
Road Transport	4,700	-21.5%	3,691	8.7%	5,144	3.0%	6,156
Logistics	5,960	-29.2%	4,219	11.0%	6,413	5.5%	8,831

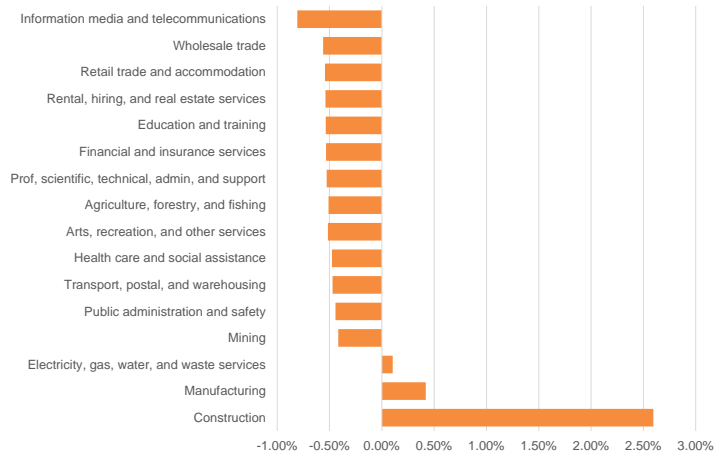
Source: Infometrics



Comparing the Faster and Slower Recovery Scenarios

As noted, under the Faster Recovery Scenario, most industries return to close to their pre-Covid levels over the long-term, albeit with many experiencing slightly lower employment levels. Construction enjoys the greatest level of employment growth relative to BAU.

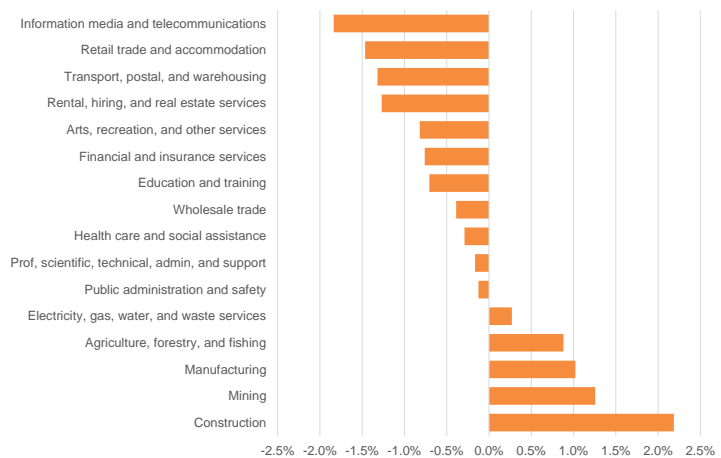
Figure 41: Employment relative to BAU, major industries 2031, Scenario 1



Source: Infometrics

Under the Slower Recovery Scenario, several industries are more negatively affected relative to BAU, particularly information media & telecommunications, retail trade and accommodation, transport & warehousing, and rental and real estate services. Construction, mining, manufacturing and agriculture achieve higher than BAU employment outcomes under this scenario.

Figure 42: Employment relative to BAU, major industries 2031, Scenario 5



Source: Infometrics



Key take-outs from the research review and modelling on the impact of Covid-19 on the New Zealand economy

- Almost all industries and productive activity have been negatively impacted by the lockdowns. There will be a significant and sharp hit to employment and GDP this year.
- There may also be a lengthy and lagged effect of Covid-19 on GDP, employment and unemployment, consumer spending and business investment lasting several years. There will be a substantial contraction in New Zealand's export and import volumes over the short-term (except for food), with only a slow recovery of volumes over the medium-term.
- Although the government's fiscal and monetary stimulus has improved the outlook compared to what otherwise would have been the case, a slower domestic recovery scenario is likely due to:
 - Tourism and supporting industries being significantly affected for two years or more.
 - Second-round effects of business closures on incomes and investment (noting that some lagged impacts were evident from the GFC).
 - A rise in under-employment and a fall in labour force participation.
 - The impact of the recession on the ability of businesses to retain and attract skills, access capital, invest in R&D and connect with markets and expertise.
- The structure of the economy, in terms of the relative contribution of different industries, will alter in the short to medium-term due to the significant negative impact of Covid on key service industries, such as tourism, retail and professional and personal services, while other industries such as dairy and health are insulated.
- Tourism-related and media-related job losses will free up labour for other industries over the medium-term
- Over the long-term:
 - Several construction, manufacturing and primary industries are expected to have higher shares of employment relative to BAU. A range of tourism industries are negatively affected as well as transport services.
 - Most key transport industries (e.g., meat, forestry, manufacturing, construction, retailing, logistics) are expected to have recovered close to or be ahead of BAU GDP levels
 - There is likely to be a decline in tourism's contribution to the economy and a slowing of the decline of the contribution of manufacturing to the economy, but not necessarily significant structural change.



POTENTIAL IMPACTS OF COVID-19 ON POPULATIONS & REGIONS

Introduction

New Zealand's experience with the GFC again provides some pointers about the potential impact of Covid-19 on different communities of interest. Appendix 1 provides a review of the impact of GFC on migration, population growth and vulnerable groups. The key points from the review are:

- There was a mixed impact on overseas arrivals – there was a large increase in arriving New Zealand and Australian citizens (which grew by 189,500 over the two years) but a large drop in overseas visitors. The demand for skilled migrant workers fell, while the number of seasonal migrant workers initially grew (due to more permissive immigration settings). There were no substantial changes in permanent residence flows over the period as the number of people granted residence remained within set targets.
- There were no travel restrictions during the GFC and international student numbers initially increased due to combination of a weaker New Zealand dollar and because of tighter student entry criteria in other countries. Student numbers then stabilised but the number of first-time students fell in the second year of the crisis.
- Overall, migrant arrivals fell by close to 8 percent per year over the two years but departures also reduced due to fewer New Zealanders travelling to live in Australia. Net migration started to fall from the second year of the crisis and continued to fall the following year.
- The GFC had a limited effect on population numbers, with population change at the time being largely generated by natural increase rather than net migration. There would have been a larger impact if net migration was more important.
- The GFC had a significant impact on youth in the labour market, with the number of young people enrolled in study rising nearly 10 percent over 2008-2010 and the proportion of youth NEET also rising sharply and remaining elevated over time.
- Māori and Pacific unemployment rose to high levels and, based on average declines in employment rates, Māori were three times more likely to be affected and Pasifika people were four times more likely to be affected than Europeans during the GFC.

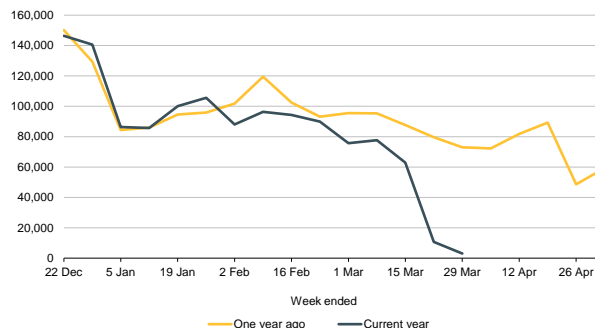
Covid-19's immediate impacts on migration

Not surprisingly, given the recent lock-down periods, the response to Covid-19 has had a dramatic impact on the number of visitors and migrants entering New Zealand. Overseas visitor arrivals in the year to March 2020 were down around 27,000 compared to the year ended March 2019 (175,500 compared to 202,700). This was due to a large fall in the numbers from key markets such as Australia (59,400 difference between 2020 and 2019), China (39,600) and the US (23,200).



Weekly visitor arrivals reduced from over 100,000 in two weeks of January to 75,000 at the beginning of March, to 3,050 in the last week of March. This represents a significant fall in numbers from the same weeks the year previous (e.g., around 70,000 less compared to the last week of March 2019).

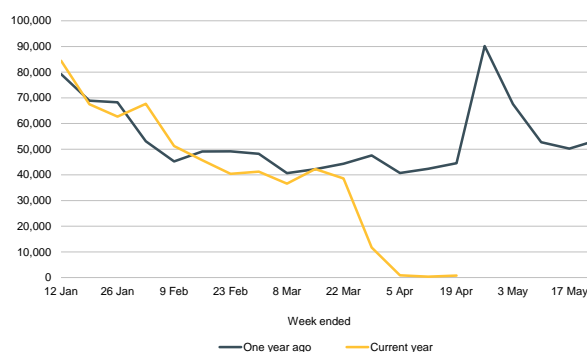
Figure 43: Provisional weekly visitor arrivals, December to May



Source: Statistics New Zealand, Provisional weekly overseas visitor arrivals

Weekly resident arrivals also fell from over 65,000 in several weeks of January to 40,000 at the end of February/beginning of March to a few hundred in April (over 40,000 per week less than the same weeks in March 2019).

Figure 44: Provisional weekly resident arrivals, December to May

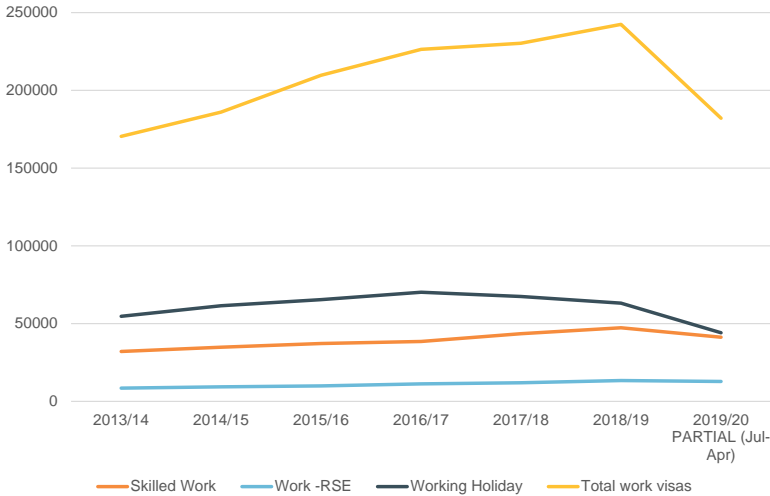


Source: Statistics New Zealand, Provisional weekly overseas visitor arrivals

In the lead up to this situation in 2020, temporary work migration was growing very strongly. Over 2013/14 to 2018/19, total work visa approvals increased by an average of over 7 percent per year or by 72,000 over the entire period. Approvals of skilled work visas had increased by an average of 8.1 percent per annum (from 32,080 to 47,340) and seasonal work visas increased by 9 percent per year (from 8,530 to 13,310). Working holiday visa approvals grew much more moderately over the period (by around 3 percent per year).



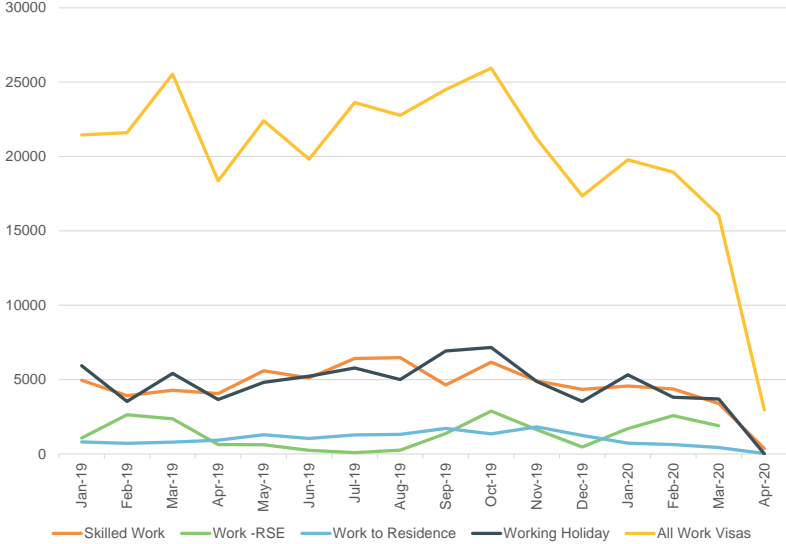
Figure 45: Number of approved temporary workers, 2013/14 to 2019/20



Source: MBIE Migration Data

Looking at the monthly data, the expected significant decline in temporary work visa approvals at the end of 2019 and early 2020 becomes apparent. Total work visa approvals declined from 26,000 in October to 16,000 in March, with an estimated 2,950 approvals in April. This included a decline in skilled work visa approvals (from 6,170 in October to 3,380 in March and an estimated 360 in April) and a decline in working holiday approvals (from 7,160 in October to 3,690 in March, with an estimated 9 in April). Only Recognised Seasonal Employee visa approvals held up over the period.

Figure 46: Number of approved temporary workers, January 2019 to April 2020



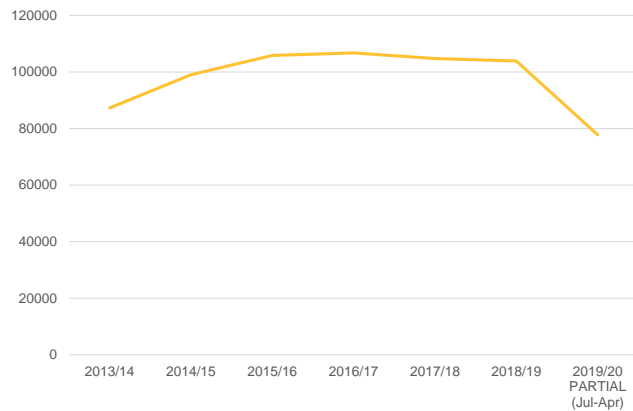
Source: MBIE Migration Data

Similarly, there has been a sharp drop in international student numbers.



In the years leading up to 2020, international student visa approvals had grown and plateaued. Over 2015/16 to 2018/19 approvals were sitting around 104,000 to 107,000 each year.

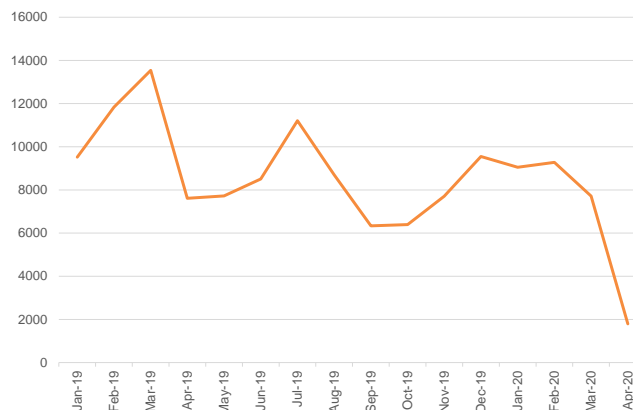
Figure 47: Number of international student visas granted, 2013/14 to 2019/20



Source: MBIE Migration Data

Looking at monthly data, since December 2019, approvals have declined, reaching 7,700 in March 2020 and dropping to 1,795 in April as the lockdown took effect.

Figure 48: Number of international student visas granted, January 2019 to April 2020

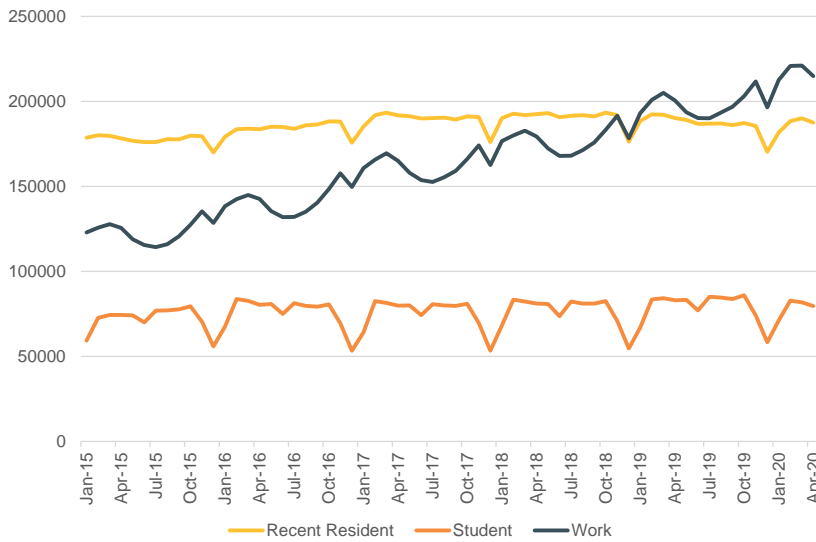


Source: MBIE Migration Data

As would be expected given these trends, the overall stock of recent migrants in New Zealand grew in the years leading up to Covid-19, largely driven by the increase in work visa migrants – by around 5 percent per year on average over the previous five years. Work visa migrants increased by around 11.5 percent per year on average over 2015 to 2020, reaching around 220,000 in March 2020.



Figure 49: Recent migrant population in New Zealand by visa type, January 2018 to April 2020

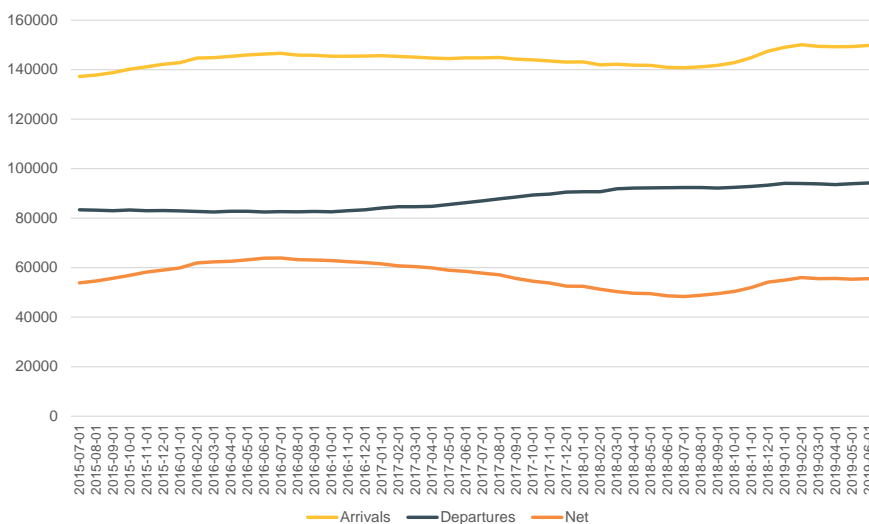


Source: MBIE Migration Data

As at the end of April 2020, MBIE estimated there were approximately 350,000 temporary visa holders onshore – 200,400 with work visas and 74,800 with student visas.

In addition, in recent years migrant arrivals have consistently exceeded departures. For example, in the year ended June 2019, there were an estimated 149,750 migrant arrivals, up 8,795 from the year ended June 2018. Migrant departures had grown only slightly from the previous year, reaching 94,200. As a result, net migration was around 55,550 people for the year.

Figure 50: Estimated migration, rolling year ended, July 2015 to June 2019



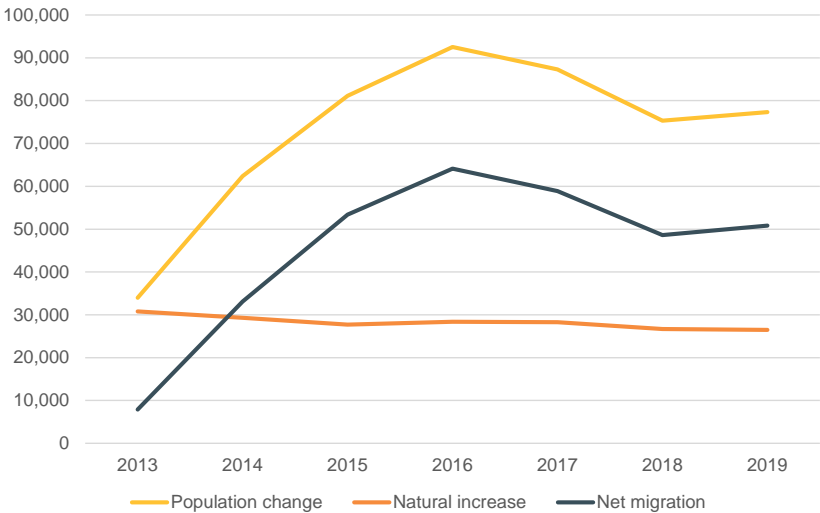
Source: Statistics New Zealand, Migration Estimates



Potential short-term impact of Covid on net migration

As a result, migration has become a more important driver of population growth in New Zealand, compared to years leading to and immediately following the GFC. On average, the population has grown by 1.8 percent a year since 2013. As can be seen by Figure 12, natural increase has remained constant at around 30,000 each year (although is slowly decreasing over time), so population growth has been driven by the relatively high levels of net migration. Covid-19 is likely to halt this trend in the short to medium-term, apart from an initial increase in net migration due to returning New Zealanders.

Figure 51: Estimated population change by component, 2013 to 2019



Source: Statistics New Zealand

Indeed, over the last half of 2019 to the first quarter of 2020, Statistics New Zealand estimated that net migration increased strongly, reaching 29,300 in the quarter ended March 2020 (compared to 16,400 in the March 2019 quarter). This was due to a combination of a large number of New Zealand citizens arriving in the December to March months (over 20,000), fewer New Zealand citizens departing due to the travel restrictions, and many visitors in New Zealand being unable to depart (Statistics New Zealand estimates around 135,000 to 155,000).

The Government has also extended visas of temporary migrants in New Zealand, including international students – those with visas expiring between 2 April and 9 July will have them automatically extended to 25 September. While this is likely to keep net migration up for several months, once travel restrictions ease, many of these visitors may want to or need to leave (e.g., because they cannot continue meeting the conditions of their visa) once the wage subsidy comes to an end. Migrant workers are also not eligible for the JobSeeker (unemployment) benefit.

In addition, with higher unemployment some temporary worker migrants will not be able to renew their visa (as occurred during the GFC). However, a process has been established for RSE workers to move to other employers or regions if their existing employment is coming to an end. In addition, the government has introduced a Bill to enable it to vary the conditions of groups of visa holders in New Zealand in order to respond to changes in demand.



Furthermore, it will be more difficult for many visitors, workers and students to come to New Zealand for the next 6-12 months – even when international flights resume, they will likely be required to be in quarantine for two weeks and that will deter many travellers.

Skilled migrants and some temporary migrants are likely to be more resilient to the recessionary pressures on employment and wage movements. However, the majority of temporary migrants, younger migrants and pacific migrants are likely to be more susceptible to these same pressures.

As a result, it can be expected that migrant numbers and net migration will be very low over the next 12 months. However, if an Australasian/Pacific travel bubble is established with more limited quarantine requirement, New Zealand could expect to see a reasonable proportion of arrivals from these countries.

What about the medium-term?

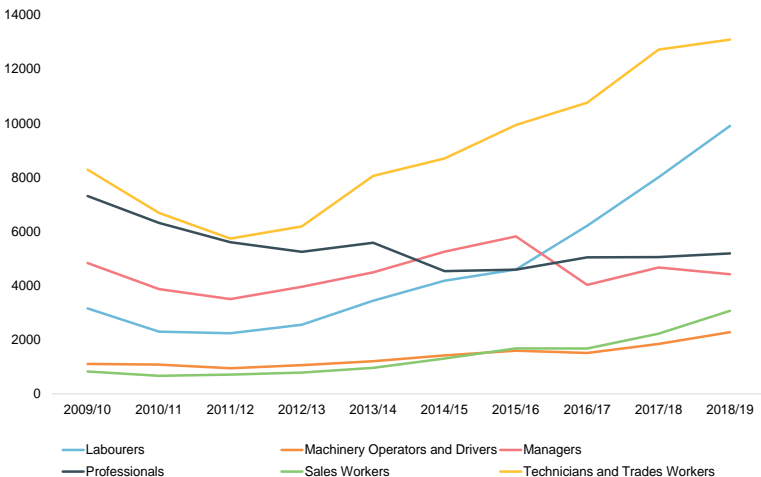
On the assumptions that travel will still be reasonably restricted for at least the next 18-24 months and that there will not be a huge influx of New Zealanders living abroad, migration is likely to stay lower than usual for several years. This will affect population growth and have flow-on impacts for demand (e.g., for housing).

Migrant student numbers may recover over the period but it is unlikely migrant worker numbers will, given the levels of unemployment forecast and regions and industries being affected.

Industry effects

In recent years, migrant labour has increased sharply to fill labourers, technicians and trades jobs, and to a lesser extent sales workers and machinery operators and drivers. For example, in 2019, 30 percent of migrants with work visas were for technicians or trade workers, 22 percent were for labourers, 8 percent were sales workers and 5 percent were machinery operators and drivers. Many of these jobs are likely to be at greater risk of losses and wage cuts during a recession. On the other hand, there has been a decrease in migrants taking managers jobs (10 percent in 2019) and a longer-term decline in those taking professionals jobs (11 percent in 2019).

Figure 52: Work visas by occupational categories, 2009 to 2019

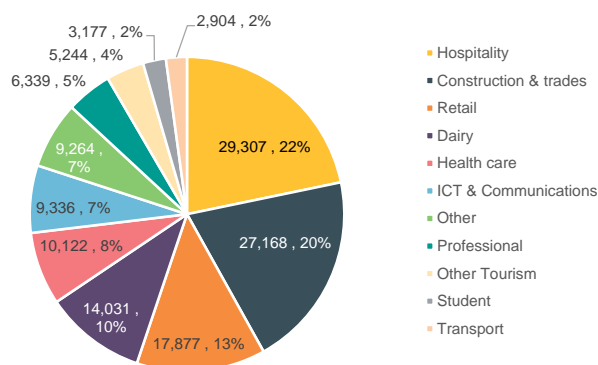


Source: Immigration statistics, Work occupations by standard major group



Looking at these occupations in more detail, the largest proportion of migrant work visas over 2017 to 2020 were for chefs (5 percent), followed by dairy cattle farm workers (4 percent) and retail supervisors (3 percent). Applying occupations to industries, an estimate of the industry share of temporary migrant workers across the top 50 percent of occupations over the last three years is shown in Figure 53.

Figure 53: Work visa holders, 2019, by occupation (top 50 percent of occupations over 2017 to 2019)



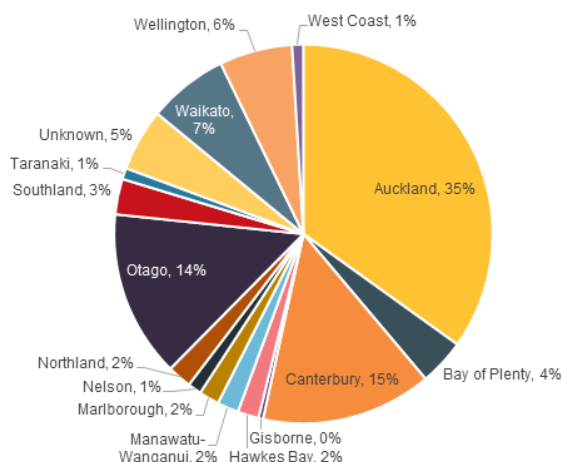
Source: MBIE Migration Data

The three largest industries in which migrant workers have been employed, i.e., hospitality, construction & trades and retail have been significantly affected by the lockdowns. As discussed, although construction is reasonably well positioned to recover, hospitality and retail will continue to be impacted over the next few years and this will impact on the demand for migrant labour. Positively, there are other key industries in which strong demand for migrant workers is likely to continue once travel restrictions ease, including health care and dairy. The balancing of these forces suggests that there may be a moderate rather than large fall in demand for migrant labour as a whole over the medium-term. However, this will play out differently across regions, depending on their industry mix.

Regional effects

As Figure 54 below shows, around half of migrants on work visas are based in Auckland (35%) and Canterbury (15%). A further quarter is made up of migrants based in Otago (14%), Waikato (7%) and Wellington (6%).

Figure 54: Share of migrants on work visa by region, 2018/19

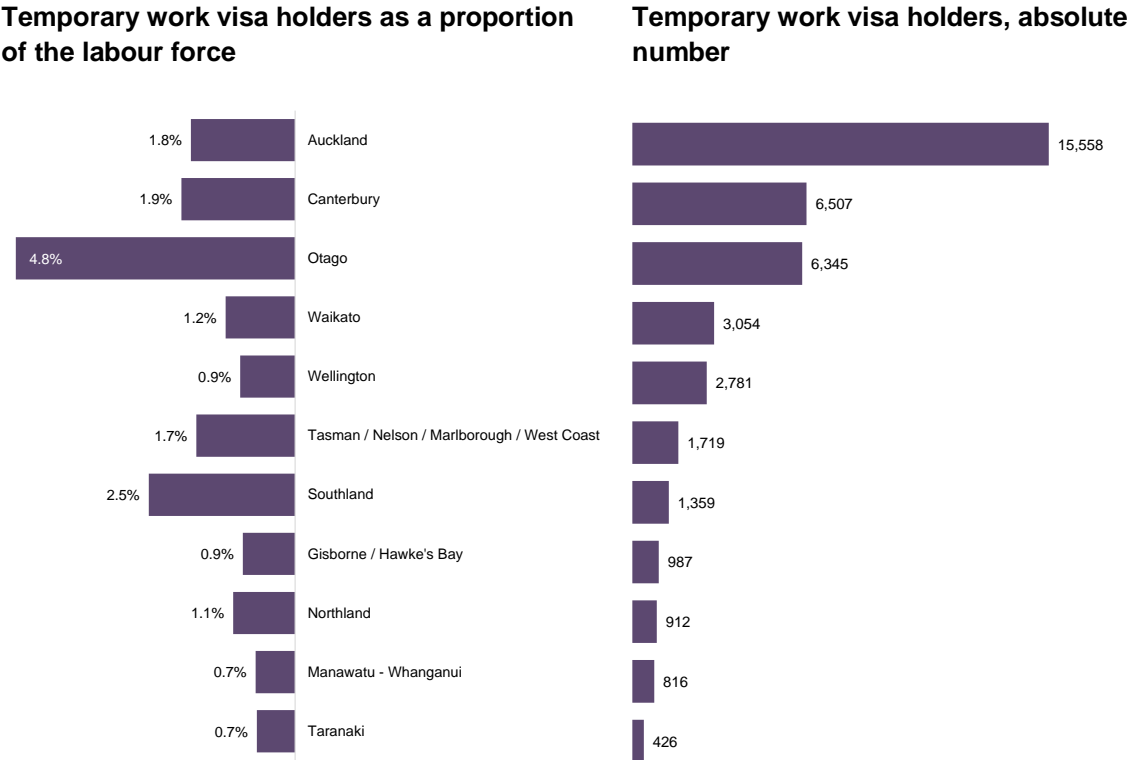


Source: Immigration statistics, Work occupations by region



However, although Auckland had the greatest absolute number of temporary work visa holders in 2018/19, Otago and Southland had the highest proportions of temporary migrant workers relative to the regional labour force (Figure 55). Queenstown (in the Otago region) and its migrant workers have been hit particularly hard because of the cessation of international visitors (McKenzie-McLean, 2020). The Top of the South/West Coast also has a relatively high proportion of migrant workers relative to its labour force.

Figure 55: Temporary work visa holders by region, 2019

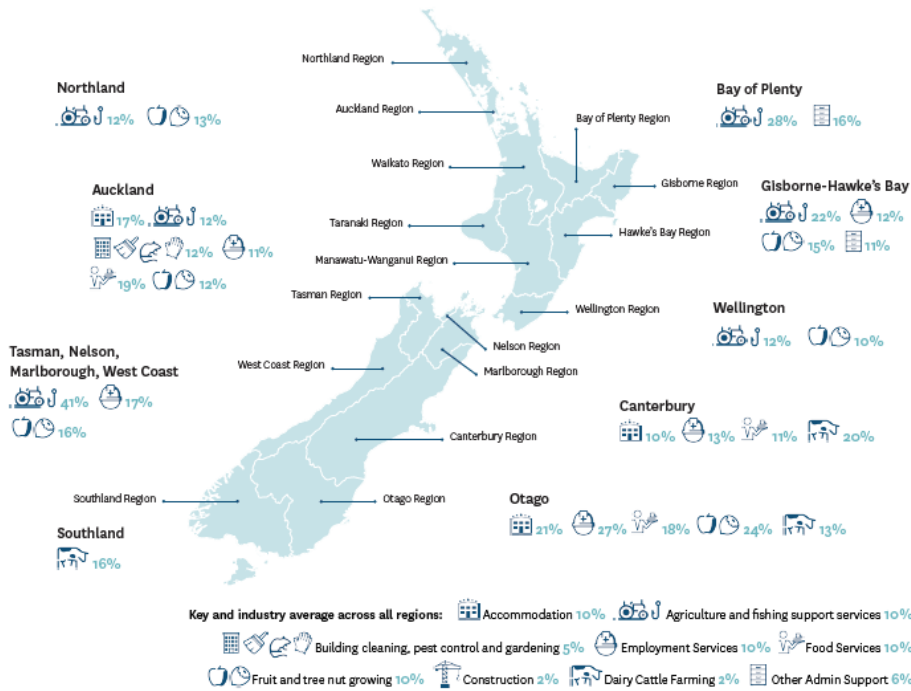


Source: MBIE Migration Data; Statistics New Zealand Labour Force Statistics

Figure 56 below illustrates how temporary migrants were employed in various regions by industry over the 2000-2015 period, and it is unlikely that this has changed significantly. A high proportion of workers employed outside of the main urban-regions are in the agriculture and fishing support services industries, which should be reasonably insulated from recessionary effects. In the main urban-regions, the affected accommodation, food and support services industries employ a higher proportion of temporary migrant workers.



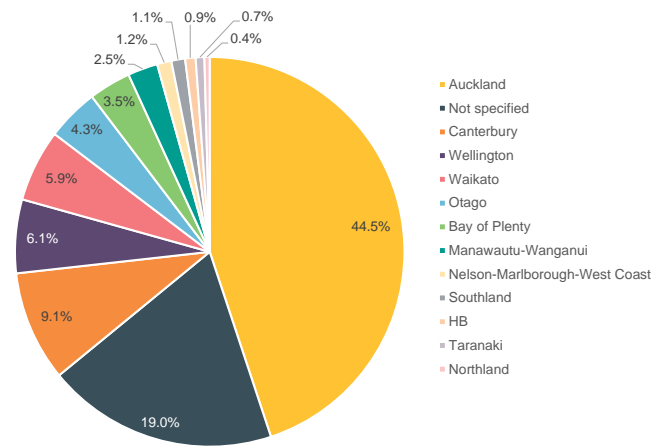
Figure 56: Regions with a high share of temporary migrant employment by industry 2000-2015



Source: MBIE, adapted by Wood, 2020, p.14

Considering the regional location of international student visas, it is clear Auckland gets the bulk of approvals at close to 45 percent in 2019 (or around 48,350 students). Canterbury (9 percent or 9,860), Wellington (6 percent or 6,580) and the Waikato (6 percent or 6,450) also get relatively large proportions.

Figure 57: Student visa approvals, 2019, by region

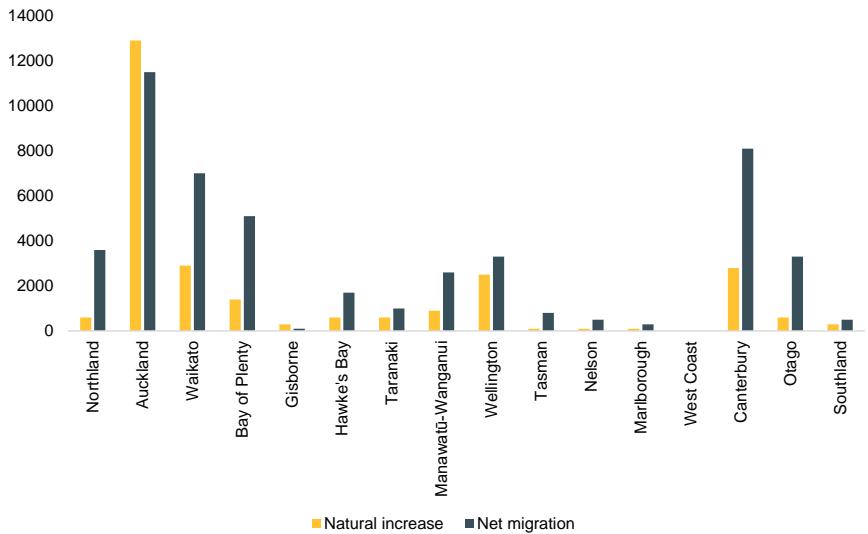


Source: MBIE Migration Data

Finally, the graph below breaks down the components of population growth between 2018 to 2019 by region. It shows that all regions except for Gisborne and Auckland had a higher share of population growth generated by net migration than natural increase. Only Auckland and Wellington had a close to even split. Regions like Northland, Waikato, Bay of Plenty, Canterbury and Otago in particular have a high share of population growth due to net migration.



Figure 58: Components of population growth by region, 2018 to 2019



Source: Statistics NZ, Subnational population estimates 2019

Migrant and population trends for each of the main urban-regions is provided in more detail in Appendix 2.

Some of the key points from the combined analysis are:

- Although Auckland’s population will be affected by Covid-19 because of the combination of a large number of international students and high volume of migrant workers (and because close to 30 percent of these are in accommodation and food service industries), its rate of natural population increase and the size of its labour market may mean its population size is not significantly reduced post-Covid. There may also be an increase in internal migration as residents in other regions seek to relocate to find employment opportunities in Auckland as well as a reduction in outward migration as the housing market and business relocations cool.
- The impact of Covid-19 is likely to reduce the migrant populations in the Waikato and Bay of Plenty in the short to medium term. This will likely slow down population growth in both regions. Over the mid to long-term it is unclear if their rates of growth are likely to return to pre-pandemic levels and will depend on a range of factors including the relative cost and standard of living, wage growth and employment opportunities.
- Covid-19 may further increase the negative trends seen in Wellington in relation to net migration. However, given the nature of the labour market and potential opportunities available for employment in government, there may be an increase in internal migration.
- The impact of Covid-19 may further increase the decline in net migration to Canterbury. Permanent visa approvals were appearing to reach pre-Kaikōura earthquake levels prior to the crisis but this may reverse.
- Overall, the Otago region is likely to be hardest hit in terms of net migration over the medium-term given that it has a high proportion of migrant workers relative to its labour force, a large proportion of these are in accommodation and food services, and a large proportion of its population growth relies on net migration. Permanent visa approvals may decline while the declining rate of student visa approvals may be further accelerated.



Regional employment impacts

Infometrics modelling also projected the potential impact of Covid-19 on employment in New Zealand regions under the different scenarios.

Faster recovery scenario

Short-term impacts

Infometrics forecasts suggest the following first-year impacts on regional employment under the Faster Recovery Scenario. Consistent with the preceding analysis, tourism and migrant dependent regions are particularly affected by the recession. Otago is projected to lose around 10,770 jobs over 2020 to 2021 (an 8.2 percent decline in employment); the West Coast 1105 jobs (-6.9 percent); Marlborough 1470 jobs (-5.3 percent); Canterbury 17,625 jobs (-5.3 percent), and Nelson 1560 jobs (-5.1 percent). Auckland is naturally the largest hit in absolute terms and is projected to lose 42,240 jobs (-4.6 percent). Provincial regions are less affected, such as Gisborne, Hawke's Bay and Manawatu-Wanganui, as is Wellington which is somewhat shielded by its large public sector.

Figure 59: Forecast change in employment by region over 2020-2021, Treasury Scenario 1

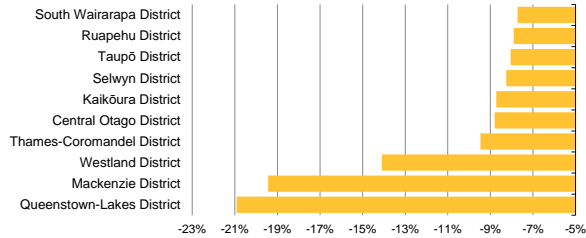


Source: Infometrics

At a territorial authority (TA) level, provincial areas reliant on agriculture tend to be less heavily affected by the downturn, with North Island areas dominating the best performers (see Figure 61). Tourism-dependent TAs will be hit the hardest over the next year, with employment in Mackenzie and Queenstown-Lakes forecast to drop by more than 20 percent (see Figure 60).

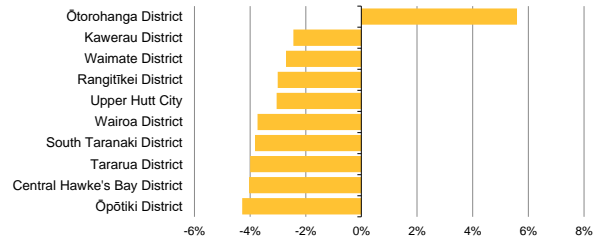


Figure 60: Employment relative to BAU, 2021 – 10 worst performing districts, Scenario 1



Source: Infometrics

Figure 61: Employment relative to BAU, 2021 – 10 best performing districts, Scenario 1

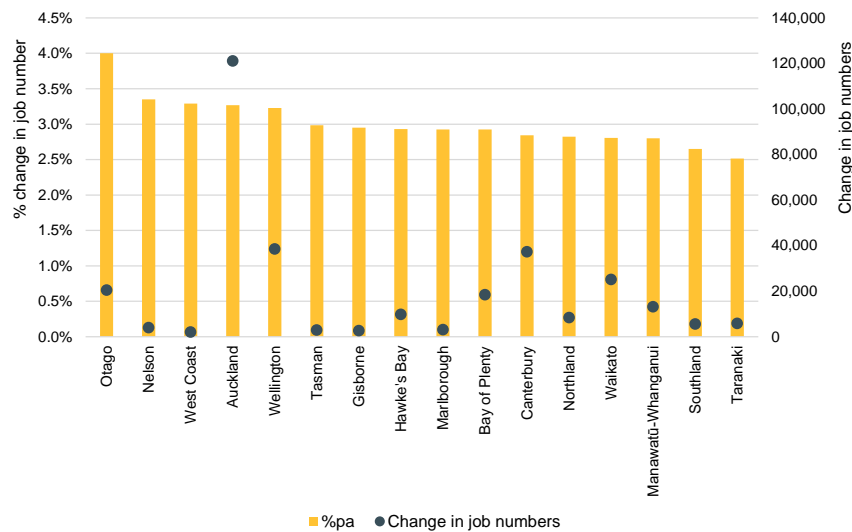


Source: Infometrics

Medium-term impacts

Projected regional employment impacts for the 2021-2025 period under the Faster Recovery Scenario are shown in the figure below. Regions that were more significantly affected in the short-term begin to bounce back over the medium-term. Relatively strong job growth is forecast for Otago (4.0 percent per year or an increase of 20,490 jobs over the period), Nelson (3.3 percent per year growth and 4,015 additional jobs), West Coast (3.3 percent growth and 2,070 jobs), Auckland (3.3 percent per annum growth and 121,100 jobs), and Wellington (3.2 percent growth and 38,570 jobs).

Figure 62: Forecast change in employment by region over 2021-2025, Treasury Scenario 1



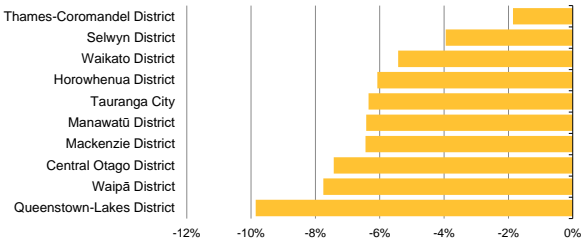
Source: Infometrics

At a TA level, many of the better-performing districts by 2025 have a strong forestry or wood processing industry. The lower North Island features strongly (Figure 64), and this result is likely to be a lagged effect of public sector resilience in Wellington leading to less downward pressure on the housing market in this part of the country. One of the implications of this outcome is that construction activity could be a contributor to the lower North Island's relative strength in terms of employment numbers.



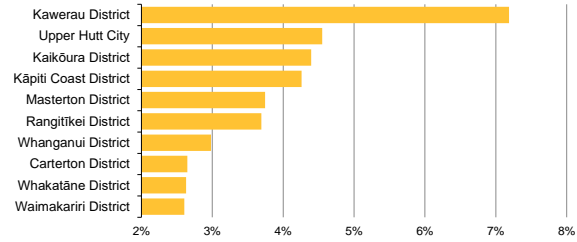
Parts of the Golden Triangle in the upper North Island and many tourism-dependent areas in the South Island are expected to struggle more (Figure 63). Employment in Queenstown-Lakes is forecast to recover by 5.9 percent per year between 2021 and 2025, taking total job numbers in the District back to pre-Covid levels.

Figure 63: Employment relative to BAU, 2025 – 10 worst performing districts, Scenario 1



Source: Infometrics

Figure 64: Employment relative to BAU, 2025 – 10 best performing districts, Scenario 1

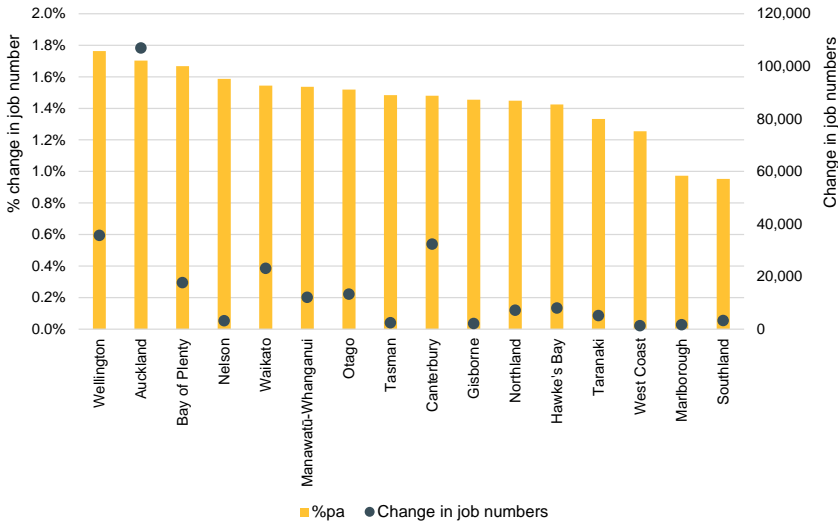


Source: Infometrics

Long-term impacts

The Faster Recovery Scenario suggests that several of the major urban-regions will lead the long-term recovery, with Wellington, Auckland, Bay of Plenty, Waikato and, to a lesser extent, Otago, achieving solid employment growth over 2026-2031. This reflects the recovery in tourism industries and relatively strong growth in other service industries over this period such as health care, education & training, public administration and construction.

Figure 65: Forecast change in employment by region over 2026-2031, Treasury Scenario 1

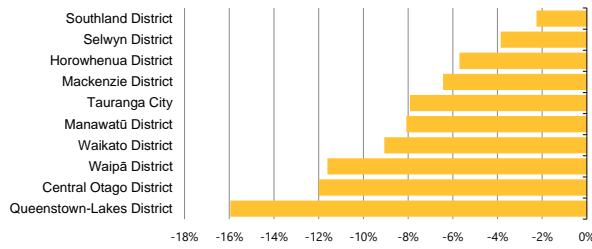


Source: Infometrics



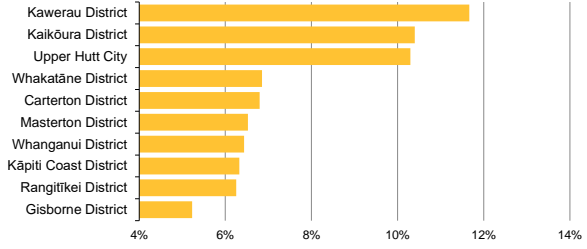
Employment and population trends from 2025 are persistent at a TA level. By 2031, many of the provincial and lower North Island areas that are forecast to hold up relatively well between 2021 and 2025 are expected to hold onto or extend their gains (see Figure 67). Similarly, employment numbers in parts of the upper North Island's Golden Triangle, along with many tourism-dependent areas in the South Island, are expected to remain well below their BAU levels (see Figure 66).

Figure 66: Employment relative to BAU, 2031 – 10 worst performing districts, Scenario 1



Source: Infometrics

Figure 67: Employment relative to BAU, 2031 – 10 best performing districts, Scenario 1



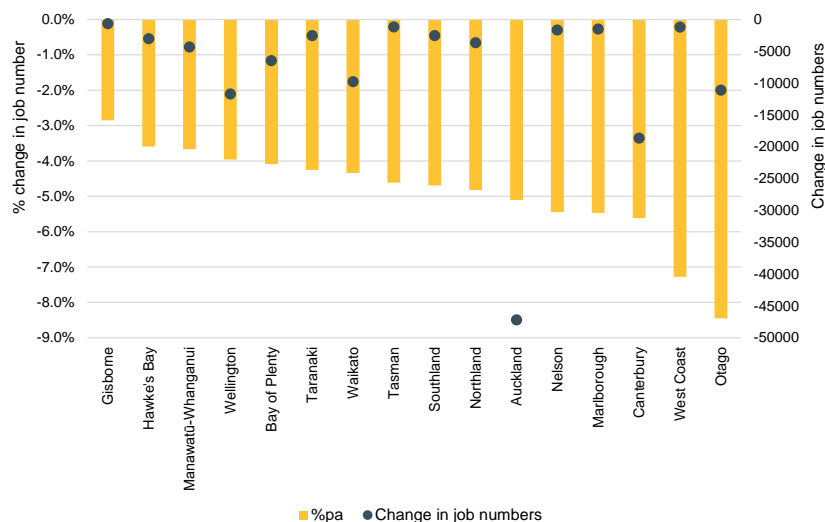
Source: Infometrics

Slower recovery scenario

Short-term impacts

There is no significant difference in the regional impacts between the Faster and Slower Recovery Scenarios in the first year, with the same regions projected to experience the strongest and weakest impacts. Otago is projected to lose around 11,100 jobs (an 8.4 percent decline in employment); the West Coast 1,170 jobs (-7.3 percent); Canterbury 18,640 jobs (-5.6 percent), Marlborough 1,500 jobs (-5.5 percent) and Auckland 47,190 jobs (-5.1 percent). At the other end of the scale, Gisborne is forecast to lose 630 jobs (-2.9 percent), Hawke's Bay 3,010 jobs (-3.6 percent) and Manawatu-Whanganui 4,300 jobs (-3.7 percent).

Figure 68: Forecast change in employment by region over 2020-2021, Treasury Scenario 5



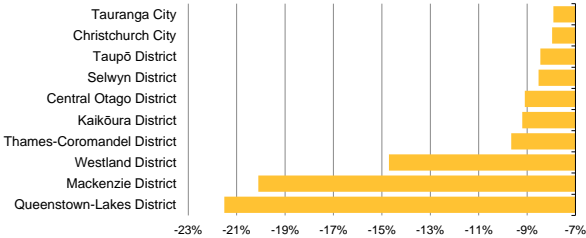
Source: Infometrics



Provincial areas that are mostly reliant on agriculture also tend to be the best performers under the Slower Recovery Scenario in the first year, with North Island areas dominating this grouping (see Figure 69). Ōtorohanga’s increase in employment results from two large construction projects in the District, which are likely to be able to more easily source workers given the projected downturn in the broader construction industry and economy overall.

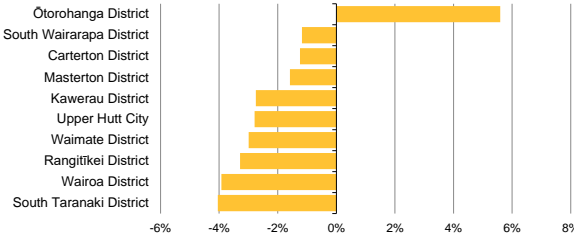
In contrast to the best performers, provincial centres and areas that are highly reliant on tourism are the most heavily negatively affected, right across the country. Christchurch also appears in the lowest performers, in part reflecting its role as a tourism gateway to other parts of the South Island.

Figure 69: Employment relative to BAU, 2021 – 10 worst performing districts, Scenario 5



Source: Infometrics

Figure 70: Employment relative to BAU, 2021 – 10 best performing districts, Scenario 5

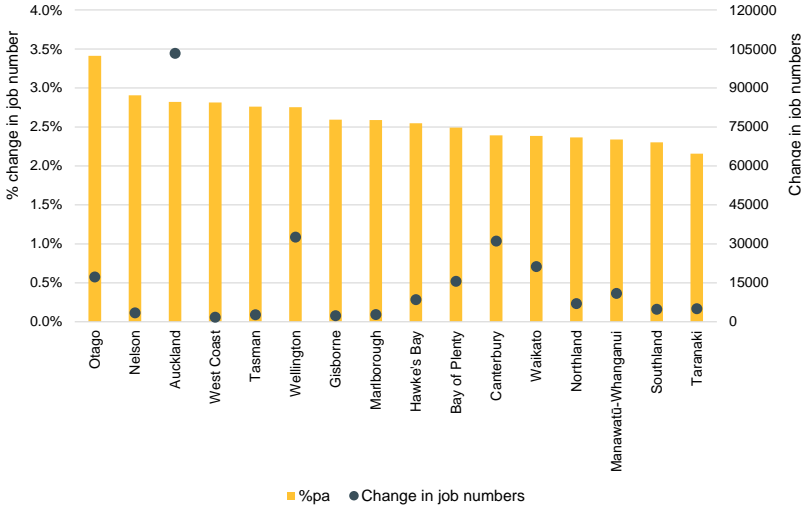


Source: Infometrics

Medium-term impacts

Regional employment impacts for the medium term under the Slower Recovery Scenario are shown in Figure 71 below. As with the Faster Recovery Scenario, regions that were more significantly affected in the short-term recover in the medium-term but at a more subdued rate through this middle period.

Figure 71: Forecast change in employment by region over 2021-2025, Treasury Scenario 5



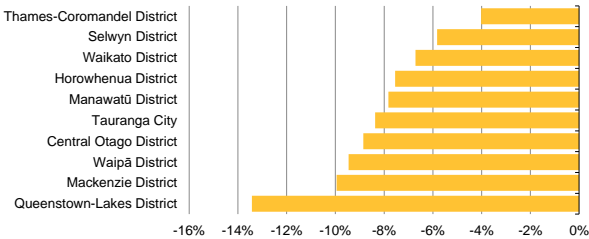
Source: Infometrics



Regions projected to have the strongest job growth over 2021-2025 are Otago (3.4 percent per year or an increase of 17,275 jobs over the period), Nelson (2.9 percent per year growth and 3,450 additional jobs), Auckland (2.8 percent per annum growth and 103,280 jobs), West Coast (2.8 percent growth and 1,750 jobs) and Tasman (2.8 percent growth, 2,750 jobs). Slower job growth is expected in Taranaki (2.2 percent per year), Southland (2.3 percent per year) and Manawatū-Wanganui (2.3 percent per year).

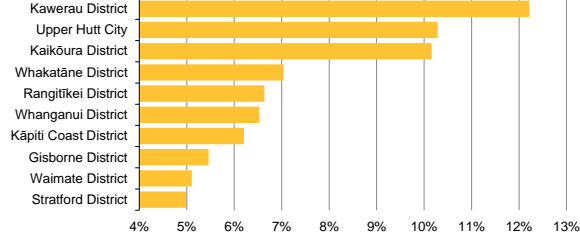
At a TA level, forestry and wood processing areas also tend to be the ones that show the most positive employment outcomes by 2025 relative to BAU under this scenario. This trend means that several North Island TAs appear in Figure 73. Parts of the lower North Island also show through as relatively good performers through to 2025, possibly reflecting spill-over effects of Wellington’s greater resilience to the economic downturn due to the significant presence of public sector workers in the region.

Figure 72: Employment relative to BAU, 2025 – 10 worst performing districts, Scenario 5



Source: Infometrics

Figure 73: Employment relative to BAU, 2025 – 10 best performing districts, Scenario 5



Source: Infometrics

Persistently lower service exports result in tourism-reliant areas continuing to struggle, particularly in the South Island. Note that although Queenstown-Lakes’ employment is forecast to rebound by an average of 5.0 percent per year between 2021 and 2025, it will still be 4.0 percent below its 2020 level. This outcome represents a sharp contrast from the 13.4 percent growth in job numbers that was anticipated for the district, prior to Covid-19, between 2020 and 2025.

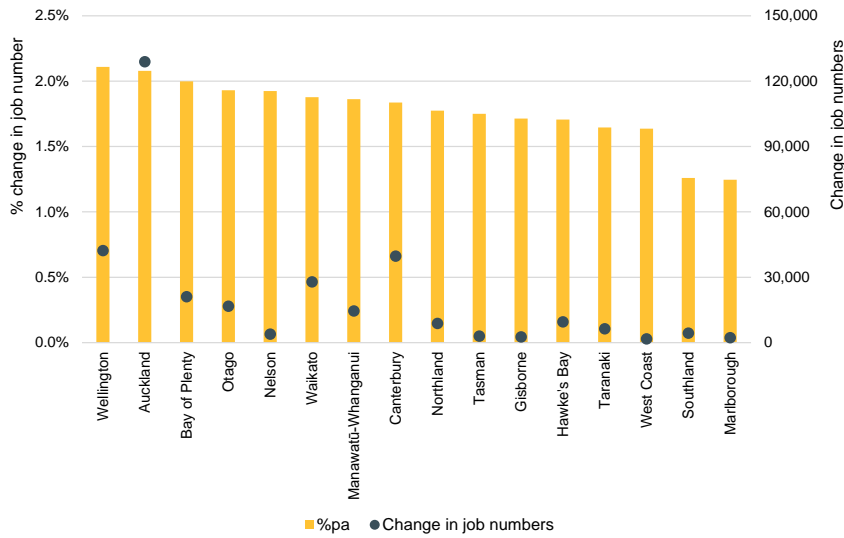
One of the other key trends to show through in the data to 2025 is the emergence of some relative weakness in parts of the Golden Triangle in the upper North Island (see Figure 72). Although underperformance in Thames-Coromandel could be linked to tourism, the Waikato and Waipā Districts, along with Tauranga City, are less expected. These results appear to reflect a spill-over from some weakness in Auckland, with lower net migration and less pressure on the housing market potentially slowing the drift of workers and businesses to neighbouring regions.

Long-term impacts

As with the Faster Recovery Scenario, the Slower Recovery Scenario suggests that the major urban-regions will lead the long-term recovery albeit achieving slightly higher job growth over 2026-2031 than in that scenario. Wellington, Auckland, Bay of Plenty, Otago, Waikato and, to a lesser extent, Canterbury, are expected to achieve solid employment growth over 2026-2031.



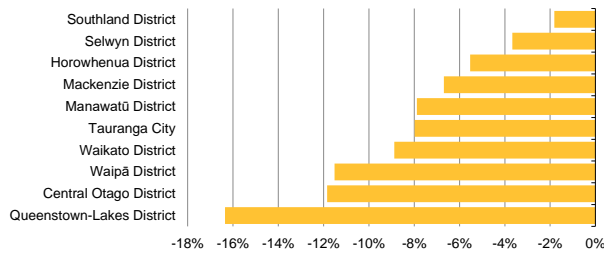
Figure 74: Forecast change in employment by region over 2026-2031, Treasury Scenario 5



Source: Infometrics

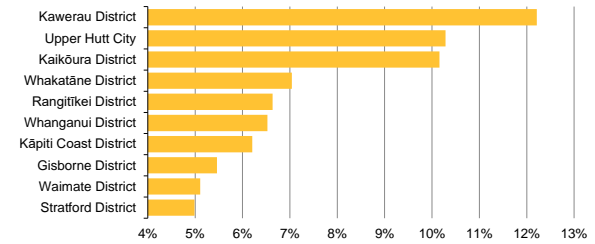
Geographically, the trends that had emerged by 2025 are expected to largely remain in place by 2031. Several forestry-dependent areas show through as relatively good performers, and parts of the lower North Island continue to appear with strong employment results relative to BAU (see Figure 75). Employment in some parts of the Golden Triangle in the Upper North Island remains a step below BAU levels, while the struggles also persist for areas reliant on tourism, particularly in the South Island (see Figure 76).

Figure 75: Employment relative to BAU, 2031 – 10 worst performing districts, Scenario 5



Source: Infometrics

Figure 76: Employment relative to BAU, 2031 – 10 best performing districts, Scenario 5



Source: Infometrics



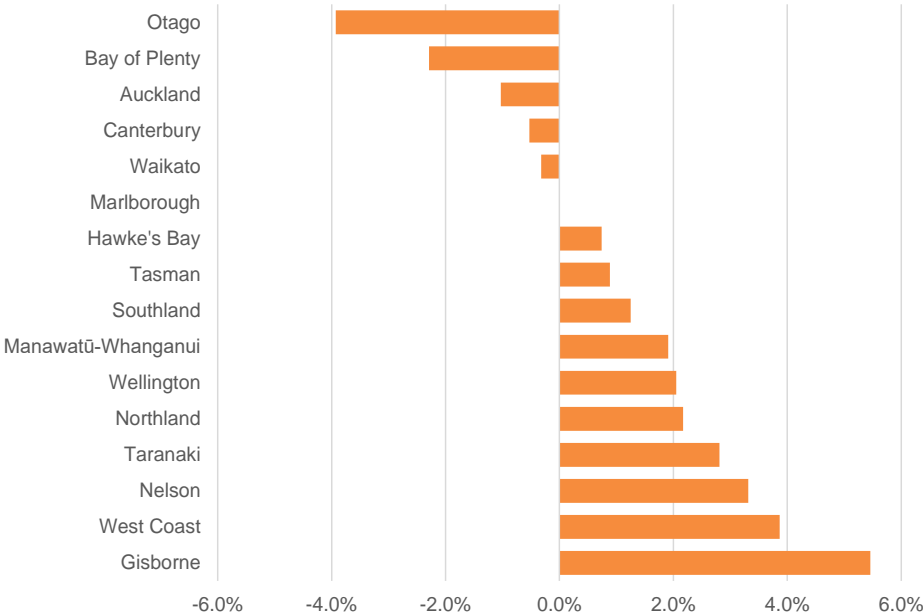
Impact on regions' contribution to the economy

There is limited benefit in comparing the long-term impact on regions relative to the BAU across the Faster Recovery and Slower Recovery Scenarios as the results of the modelling by 2031 are very similar.

Under the more realistic Slower Recovery Scenario, Figure 77 shows the potential impact on regions' employment relative to BAU. Not surprisingly, given the preceding discussion, Otago experiences a long-term negative impact on employment due to Covid-19, with employment levels close to 4.0 percent below BAU (a difference of 6,300 jobs). Other regions that are projected to be particularly negatively affected are the Bay of Plenty (employment 2.3 percent below BAU or a loss of 4,395 jobs compared to BAU) and Auckland (employment 1.0 percent below BAU or a loss of 11,530 jobs).

On the other hand, several regions are projected to end up with higher employment over the long-term than they would have achieved under BAU conditions. The modelling suggests that these will primarily include provincial regions such as Gisborne (employment 5.5 percent higher than BAU or an additional 1,370 jobs), West Coast (employment 3.9 percent above BAU or 685 jobs), Nelson (employment 3.3 percent above BAU or 1,150 jobs), Taranaki (employment 2.8 percent above BAU or 1,850 jobs) and Northland (employment 2.2 percent above BAU or 1,855 jobs).

Figure 77: Employment relative to BAU, all regions 2031, Scenario 5



Source: Infometrics



A perspective on New Zealand's Urban Areas

Auckland

Representing about 38% of the New Zealand economy, Auckland's size means that its performance is never going to vary too significantly from the nationwide average. Nevertheless, under the Slower Recovery Scenario, Auckland's employment results (relative to BAU) are slightly worse than nationwide outcomes. These results reflect a range of factors.

- Although tourism represents a smaller share of GDP in Auckland than nationally, international tourist spending makes up 53 percent of the total visitor spend in Auckland compared to 41 percent across all New Zealand. As a result, the border closures and loss of international tourism will have a greater effect on Auckland than many other parts of the country.
- Alongside international tourism, international education is another key sector for Auckland that has been heavily affected by the pandemic. The effects of the loss of students this year are likely to be felt throughout the next couple of years as well, particularly for those institutions providing multi-year courses of study. Those students intending to study in New Zealand from 2020 who did not arrive will effectively leave a hole in student numbers during 2021 and 2022 as well.
- Auckland's above-average population growth over the last 20 years has been largely driven by international migration and people arriving from other countries. Border closures over the next 9-12 months and prospects of net migration flows remaining below normal throughout the following 2-3 years are likely to limit Auckland's population growth, which will have flow-on effects for potential GDP and employment growth.

This last point has important implications for other parts of the upper North Island. In recent years, there has been an increasing outflow of people from Auckland to other regions such as Waikato and Bay of Plenty, in search of more affordable housing and better lifestyle opportunities. The current economic downturn and likelihood of slower population growth in Auckland will reduce demand pressures and take some of the heat out of the city's housing market. The rationalisation of business numbers during the downturn is also likely to alleviate some cost pressures for firms, such as rents or labour costs.

These factors are likely to temporarily slow the trend of business and population movements into other parts of the Golden Triangle. Although it could be expected that these cost pressures will reappear over the medium term, the pause in this trend suggests a possible step down in likely growth rates in some other parts of the upper North Island.

Hamilton

Notwithstanding slower growth in Waipā, the Hamilton urban area is expected to perform relatively well under each of the scenarios modelled. This outcome reflects a relatively low reliance on international tourism, the importance of agriculture in the surrounding area, and the city's role as a significant hub for education, healthcare, and other government services. The city also has an above-average proportion of employment in more highly skilled jobs, with people more likely to have been able to continue working during the lockdown.



A long-term trend of significant infrastructure improvements also stands Hamilton in good stead. The near completion of the Waikato Expressway has made the city an increasingly attractive and viable place for firms to site themselves. The establishment of facilities such as the Waikato Innovation Park and the Ruakura Inland Port further enhance the city as a place to do business. These provide a solid base and will dampen any effects over the medium term caused by any sluggishness in the Auckland economy.

Tauranga

Compared with Hamilton, Tauranga looks set to be more significantly affected by the current downturn. This result reflects the relatively high proportion of the city's economy that is made up of construction and retail trade, with both industries projected to experience significant job losses. A close look at Tauranga's workforce also reveals that it is less skilled on average than other parts of the country, with businesses and workers in the city hit by the lockdown and the continuing softening in demand conditions.

Furthermore, Tauranga has been a considerable beneficiary of the population drift out of Auckland over the last 25 years. Although these inflows initially largely consisted of older people, the last 10-15 years has seen the city attract a broader cross section of people as its economy has broadened. However, near-term job losses combined with reduced population and housing pressures in Auckland suggest that Tauranga will struggle to maintain such strong population growth over the next decade. This weaker population growth will naturally weigh on the city's employment and GDP growth.

The strength of Tauranga's port, as well as the performance of the horticultural sector in surrounding areas, present some upside risks to the city's growth potential. The chances of Tauranga surpassing the growth projections hinge most heavily on a relatively quick recovery in the global economy from the current downturn. Government decisions about the ports at Auckland and Whāngārei could also have significant implications for the Port of Tauranga.

Wellington

The prevalence of public sector employees in Wellington will help shield the region from the worst of the economic downturn. Increasing government spending in response to the pandemic necessitates a level of additional administrative support, while the public sector is also not subject to the same profit requirements that underpin private sector employment. Furthermore, there is likely to be an expanding government sector given the substantial support and stimulus response to the Covid-19 pandemic required from the government.

In addition, even in the private sector, Wellington's professional and service-orientated workforce is likely to be less affected by the downturn on average than the workforce in many other parts of the country.

A less sharp downturn in the economy in the near-term will stand the Wellington Region in good stead over the medium term. The flow-on effects into the housing market and residential construction activity are likely to be less severe than in other parts of the country, particularly when Wellington's shortage of housing prior to the pandemic is also taken into account.

The modelling suggests that this relative stability within the Wellington Region will have the most positive medium-term flow-on effects for the economy in the more peripheral parts of the urban area. The Kāpiti Coast, Upper Hutt, and parts of the Wairarapa are expected to perform well in the wake of Covid-19 relative to BAU.



Christchurch

The structure of Christchurch's economy is generally very close to the structure of the nationwide economy. As a result, one would generally expect its economic prospects to closely follow New Zealand's overall prospects. However, across the scenarios modelled, Christchurch is projected to fare slightly worse than the rest of the country.

There are two main reasons for this outcome. First, Christchurch's role as a gateway for international tourists to the South Island means that it could be disproportionately affected by the border closures. The direct spend of international visitors makes up 40 percent of overall tourism spending in the city, which is in line with the nationwide split of spending. But the flow-on effects for businesses connected with the airport and associated services are likely to result in a bigger hit to the economy than the international visitor spend on its own would imply.

Second, the city's construction industry entered the Covid-19 pandemic already in a state of vulnerability. Although building activity peaked 4-5 years ago, activity is still at elevated levels, particularly in terms of non-residential construction. Further declines in construction were already expected as activity retreats after the post-quake rebuild to more "normal" levels.

Note that construction makes up a significant portion of economic activity in the neighbouring Selwyn District. Weaker economic outcomes in the near term will also weigh on the volume of construction activity likely to take place over the medium term.

Queenstown-Lakes

Queenstown-Lakes is projected to be the local authority area most heavily affected by Covid-19 and its aftermath. The District has a major reliance on international tourism, with an estimated 63 percent of visitor spending coming from overseas people, compared with a nationwide average of 41 percent. Spending by New Zealanders will be unable to make up for the drop in international visitors over the next year. This conclusion is strengthened by the likelihood that there will be fewer and more expensive domestic air connections, some people will be reluctant to fly given health concerns, and declines in incomes and employment nationally will reduce people's willingness to spend on discretionary items such as holidays.

The District's workforce is significantly overrepresented in accommodation and food services, construction, retail trade, arts and recreation services. These industries will all struggle over the next 1-2 years given border closures and the broader economic downturn. The area is likely to suffer a severe loss of capacity across its tourism sector, and these businesses and jobs will not be quickly recovered.

Across both scenarios, total employment in Queenstown-Lakes is forecast to be below its pre-Covid levels by March 2025. Although the area is still expected to be one of the faster-growing parts of New Zealand over the longer-term, this growth is unlikely to return the District's economy to its pre-Covid trend. The modelling shows that activity is expected to be about 16 percent below BAU levels in 2031.



Potential impacts of Covid-19 on vulnerable parts of the population³

NZTA is also interested in the potential impact of Covid-19 on vulnerable parts of the population, as these groups tend to be regular users of public transport in urban areas and can have difficulty access private transport in rural areas. Vulnerable groups include:

- young workers – who are not entitled to the same rates of minimum wage as others and are more likely to face reduced hours and/or redundancy
- Māori and Pasifika – who may be more likely than others to face job instability and lower wages
- non-standard workers who tend to have limited job stability, for example, casual workers, temporary workers, part-time workers, contractors.

The International Labour Organization (ILO) recognised in their second ILO Monitor on Covid-19 that lockdown measures have had severe impacts on businesses, but that these impacts are particularly acute for unprotected workers and the most vulnerable groups in the informal economy (ILO, 2020).

There are risks that vulnerable workers may fall into poverty or disengage from the workforce, meaning that they will face greater challenges in regaining their livelihoods during the Covid-19 recovery period.

Young people

Young people are particularly vulnerable to the labour market impacts of economic shocks. Young people are more likely to be in casual or short-term employment or employed in cyclically sensitive areas like manufacturing and construction (for males) and retail trade and accommodation and food services (especially for females). These roles are at higher risk of not being renewed or extended – and these sectors are also particularly vulnerable to the current Covid-19 context. Junankar (2014) also notes that young people are more likely to lose their jobs under a ‘last in, first out’ perspective particularly during a recession. When employment opportunities are not apparent, some young people can opt to extend their studies, or undertake new study.

Young people typically enter the labour market in bulk through an annual cycle. In a recession, labour demand decreases just as young workers are entering the labour market, causing school-leavers and recent graduates to compete with a wider pool of jobseekers for fewer vacancies (Dal Bianco et al., 2015). In addition, firms become more cautious about hiring new workers. As many young people are first-time entrants into the labour market, they can find it more difficult to find work – especially when competing against a wider pool of workers with experience (Junankar, 2014).

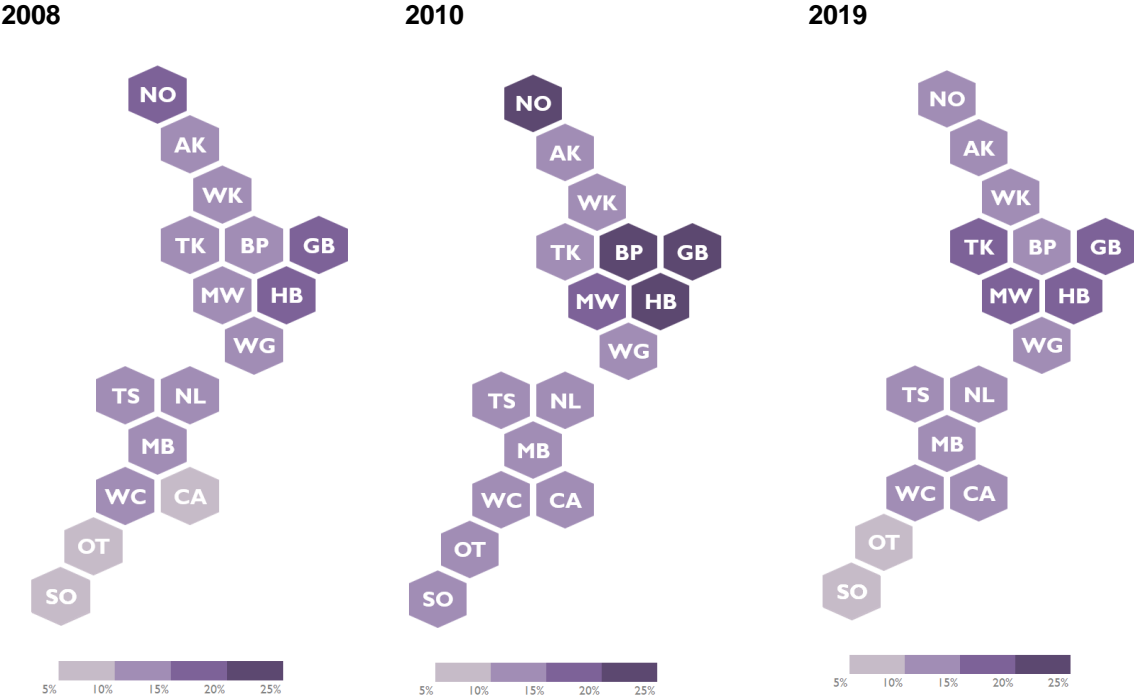
Youth unemployment rates vary significantly around the country. Following the GFC, in 2010, more than one in five young people aged 15-24 were NEET in Northland (23.5 percent), Gisborne/Hawke’s Bay (22.2 percent), and the Bay of Plenty (20.3 percent) (Figure 5). In 2019, these rates had recovered by at least 5 percentage points each, with Northland at 14.7 percent (-8.8 percent), Gisborne/Hawke’s Bay at 15.8 percent (-6.4 percent) and Bay of Plenty at 14.2 percent (-6.1 percent). However, these rates remain higher than the national NEET rate in 2019 of 11.9 percent.

³ The analysis in this section was drawn from MartinJenkins (2020). *The labour market – Impacts and responses in economic shocks, including recessions and pandemics. A rapid review, April 2020*. Rapid Review 04 – Impact on vulnerable workers.



Comparing regional NEET rates pre-GFC (2008) and 2019 shows a stark variation in those that have recovered and those that have not. Two regions currently have a NEET rate lower than they had in 2008 – Northland and Southland. All other regions have a NEET rate that is higher than in 2008, with the largest increase in Manawatū-Whanganui. Sub-regional data in Auckland also reveals a higher than national average NEET rate in South Auckland

Figure 78: Youth NEET, by region



Source: Stats NZ, Labour market statistics.

Notes: Stats NZ regional data groups together the following regions – Tasman, Nelson, Marlborough and West Coast, and Gisborne and Hawke’s Bay

Māori

Most labour market outcomes for Māori improved over the year to June 2019 (Ministry of Business, Innovation and Employment, 2019). However, the economic impacts of Covid-19 are expected to hit Māori one of the hardest. There are no official statistics available yet on labour market impacts, but the Māori Council is predicting that unemployment for Māori could be higher than 30 percent (Māori Council, 2020). This recognises that Māori are likely to have higher unemployment than the national average in the most severe Treasury scenario of 26 percent unemployment.

Historically, recessions and economic shocks have had a disproportionately negative impact on Māori. This is due to a combination of factors (Te Puni Kōkiri, 2009):

- Concentration in the labour market in lower-skilled, lesser paid occupations.
- Concentration in industry sectors that are vulnerable to international markets and effects of measures associated with pandemic influenzas, for example, construction, manufacturing and tourism.



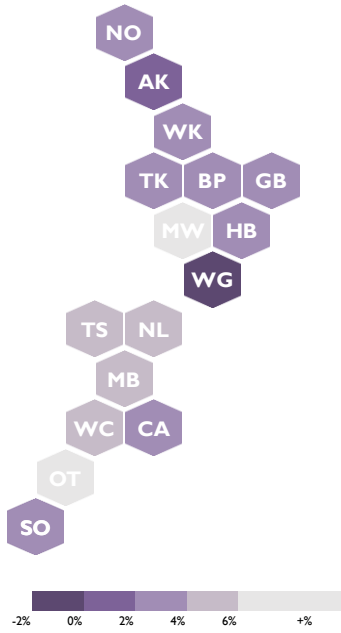
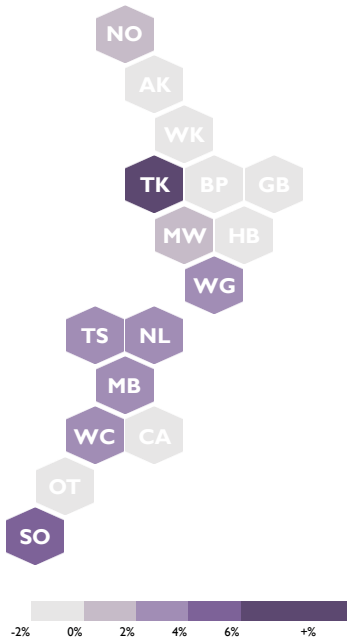
While there have been significant gains in Māori skills and education outcomes, if incomes decline in times of economic shocks, higher levels of education and training may be considered too costly.

If history is any guide, it also seems likely that retrenched Māori and Pasifika workers may struggle to re-enter paid employment once the immediate Covid-19 crisis is over. Despite being at the frontline of job losses, Māori and Pasifika people will be the last to return to employment during the eventual economic recovery

There are also regional differences. For example, growth in unemployment of Māori in Taranaki has been particularly challenging (Figure 79), with the unemployment rate growing by 11.4% between 2009 and 2019.

Figure 79: Māori regional unemployment rate growth, 2009 – 2019

Figure 80: Māori employed in labour force, by region, 2009 – 2019



Source: Stats NZ, Labour market statistics. Compound annual growth rate

Source: Stats NZ, Labour market statistics. Compound annual growth rate

Notes: Stats NZ regional data groups together the following regions – Tasman, Nelson, Marlborough and West Coast, and Gisborne and Hawke’s Bay

Notes: Stats NZ regional data groups together the following regions – Tasman, Nelson, Marlborough and West Coast, and Gisborne and Hawke’s Bay

In contrast, Māori unemployment has declined in the regions of Auckland, Waikato, Bay of Plenty, Gisborne/Hawke’s Bay, Canterbury and Otago. In relation to growth in the number of Māori employed, Wellington had less Māori employed in the last 10 years – falling by 0.1 percent per annum (Figure 80). Māori employment increased at a high rate in Manawatū-Whanganui and Otago, rising 5.0 percent and 6.2 percent per annum, respectively.



Infometrics' estimates suggest that the Māori unemployment rate could rise from an average of 8.2 percent over the last year to at least 16 percent during 2021/22. This deterioration implies that Māori job losses could total close to 40,000, a figure that dwarfs current Māori unemployment, which has averaged 28,750 people over the last year. Key industries where these job losses are likely to be concentrated are accommodation and food services; construction; manufacturing; transport, postal, and warehousing; retail trade; and administrative and support services.

On a geographic basis, the biggest contributors to the decline in Māori employment over the next two years are expected to be Auckland, Bay of Plenty, Waikato, and Wellington. This pattern largely reflects the regional spread of the Māori workforce and its concentration in North Island and urban areas. Auckland and Canterbury are expected to suffer slightly larger declines in Māori employment, reflecting that the mix of Māori employment in these regions is more exposed to industries that will be most affected by the downturn.

Pasifika communities are also vulnerable in recessions, for much the same reasons as noted above for Māori communities, although the impacts can be even more severe.

Non-standard workers

'Agency' work – often referred to as 'labour hire' for 'blue collar' roles and 'temping' for 'white collar' roles – is a form of 'non-standard' employment. Non-standard arrangements are varied, but they are more likely to be temporary, to involve work at multiple locations (or working off-site or away from the employer) and fewer entitlements and protections.

Agency workers and other non-standard workers are highly vulnerable in a crisis. They are a youthful workforce, more likely to be male, and minority groups are over-represented. A significant proportion of the non-standard workforce are migrant workers – they made up 41 percent of agency workers in 2018, compared to 13 percent in 2001. Those with work visas make up 51 percent of the industry's migrant workforce, and these are predominantly under the Working Holiday scheme. The data is difficult to obtain on the sectors agency workers work in, but market analysis suggests that construction and trades is the most common sector, followed by manufacturing, transport and logistics (Allday, 2018).

All 'non-standard' work is not necessarily vulnerable. For example, with employment and business models changing, and the rise of the contracting and gig economy, these types of arrangements can provide workers with the flexibility they require and want. In addition, not all 'non-standard' work is in lower-paid, lower-skilled roles. These arrangements also support businesses which need to deal with peaks and troughs in demand (either seasonal or economic), or to fill short-term vacancies and absences.

Previous work has found that the size of the non-standard workforce is much larger than previously thought (MartinJenkins, 2019). The Household Labour Force Survey, which is used to provide many of New Zealand's labour market indicators, suggested that there were about 10,400 workers in the industry. The previous research found that in 2018 there were 115,000 people working for at least one month in the industry – a ten-fold increase.

In New Zealand, the rise of the agency workforce post-GFC suggests a shift to a more contingent labour force. If history repeats, it is likely that while unemployment will increase rapidly during Covid-19 and associated lockdowns, employment during recovery may shift to a higher proportion of non-standard work. This will also be associated with employers and employees being more familiar with, and having experience of, remote-working.



Key take-outs from the research review and modelling on the potential impacts of Covid-19 on populations and regions

- There will likely only be very limited overseas and migrant arrivals over the next 12 months and a rise in migrant departures. However, visitor and migrant numbers over the next year and over the medium-term will be bolstered if an Australasian/Pacific travel bubble is developed.
- The demand for skills-based migrant labour and opportunities for working holidaymakers will fall over the short to medium-term. Demand for seasonal migrant workers may well be maintained. Demand for skilled migrants over the long-term will be dependent on the ability/willingness of sufficient numbers of local newly unemployed/underemployed to be redeployed and/or retrain in relevant occupations (e.g., construction, manufacturing, agriculture)
- International student numbers will fall over the short to medium-term, particularly first-time students.
- Migrant arrivals are expected to fall significantly over the next few years. Net migration will also fall although the decline will be tempered due to fewer departures. There will be limited if any population growth over the short to medium-term resulting from net migration.
- However, changes in immigration policies may have a significant positive impact on migration flows over the medium-term if freer travel resumes.
- Regions are impacted by a combination of industry and migration effects – those regions with a high proportion of affected service industries and a high proportion of international migrant flows (temporary workers, international students, recent residents) will be most affected.
- Several South Island regions and Auckland face the largest immediate declines in job growth, with the largest absolute declines in employment expected in the major urban-regions (not unexpectedly)
- Under a slower recovery scenario, areas of the lower North Island and dairy, horticulture and forestry dominated regions and districts will have strong employment results in the long-term relative to BAU. Employment in areas of the upper North Island and areas reliant on tourism remain below BAU.
- Major urban-regions are expected to recover over the long-term as service industries recover. There will be mixed impacts across these regions over the medium-term:
 - Auckland – its reliance on tourism and its gateway role, plus the large number of international students and high volume of migrant workers means it will face a large short-medium term impact. There may be an increase in internal migration as people seek employment opportunities from elsewhere as well as a reduction in outward migration as the housing market and business relocations cool.
 - Waikato – has more limited exposure to tourism and will be more insulated than Auckland because of the importance of agriculture, health and government services in the region plus the pipeline of infrastructure projects planned.
 - Bay of Plenty – Tauranga will be affected by its reliance on construction and retail, lower skills profile, and what will likely be less population drift from Auckland. The wider region will be hit by the decline in tourism but the Port and horticulture sector will provide a cushion.



- Wellington – will be shielded from the worst of the recession due to its dominant public sector and high prevalence of professional services. The region may experience an increase in internal migration due to employment opportunities in government.
- Canterbury – the region’s southern gateway role and the continued importance of construction activity will mean a medium-term hit. There is likely to be a reversal of recent growth in permanent migration to the region.
- Otago – will be the hardest hit due to its reliance on international tourism (domestic tourism will not make up for the shortfall), a high proportion of migrant workers in the labour force and its high reliance on net migration for population growth.
- Young people are likely to be particularly affected by the recession – they are more likely to be in casual employment and heavily affected industries (e.g., food services, retail). Businesses in more resilient sectors will be reluctant to take on new, younger workers. There is likely to be a sharp increase in NEET in the short-medium term, which will particularly impact areas where NEET is already relatively high, e.g., Northland, Gisborne, Bay of Plenty, South Auckland.
- Historically, economic shocks had a disproportionately negative impact on Māori and Pasifika (due to both concentration in lower-skilled occupations and self-employment in vulnerable industries). There is expected to be a large increase in Māori unemployment (potentially doubling from around 8% to at least 16% in 2020/21), concentrated in Auckland, Bay of Plenty, Waikato, Canterbury.
- Non-standard workers (agency workers, temps, contractors, labour hire) will also be vulnerable as they have fewer employment protections and tend to be youthful and migrant workers. Covid-19 may conversely result in a higher proportion of non-standard work over the long-term

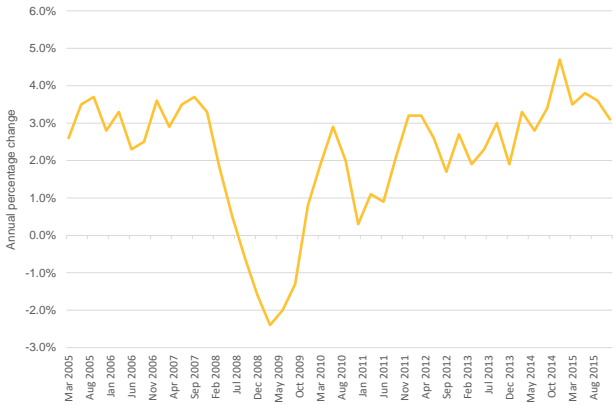


APPENDIX 1 – The impacts of the Global Financial Crisis (GFC)

The impact of the GFC on the New Zealand economy

The GFC resulted in a deep recession world-wide followed by a slow recovery. In New Zealand, the economy went into recession in the first quarter of 2008, which continued until the first quarter of 2009, accompanied by declines in business and consumer confidence, retail sales and investment (Fabling and Mare, 2012). Real GDP contracted by close to 3 percent overall between March 2008 and June 2009. Growth resumed in the second half of 2009 although it took until the first quarter of 2011 for Real GDP (seasonally adjusted) to reach the December 2007 quarter level.

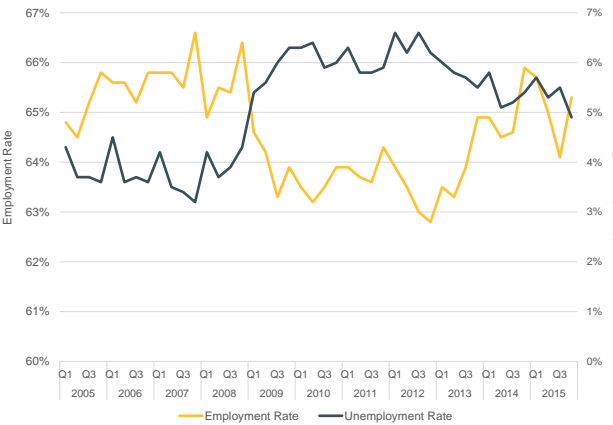
Figure 81: Annual change in real GDP 2005-2015



Source: Statistics New Zealand

As can be seen (Figure 82), there was a lagged effect on employment and unemployment, with a decline in the employment rate (from 66.4 percent to 63.2 percent) and a rise in the unemployment rate (from 4.3 percent to 6.4 percent) over the December 2008 quarter to the June 2010 quarter. The number of jobs contracted by around 39,000 over 2008-2010. It is notable that the employment rate remained at levels below the 2008 levels over 2010-2013 and the unemployment rate remained higher than pre-GFC levels, although the Canterbury earthquakes played a significant part from 2011.

Figure 82: Employment and Unemployment Rate, 2005-2015

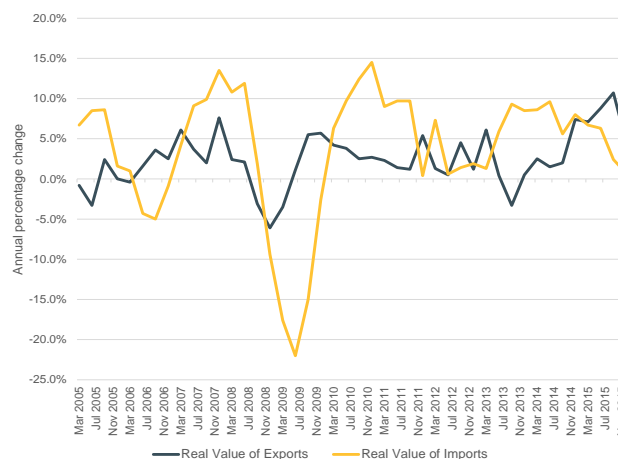


Source: Statistics New Zealand



There was also a drop in New Zealand's trading activity, with the real value of exports falling over the September 2008 to March 2009 quarters and the real value of imports falling significantly over December 2008 to December 2009 (Figure 95). Reflecting a major fall in business confidence and investment, capital imports declined 33% over an 18-month period.

Figure 83: Change in the real value of exports and imports, 2005-2015



Source: Statistics New Zealand

Figure 84 and Figure 85 shows the absolute and proportional fall in jobs, business numbers and value added across major industries during and post-GFC. Note that the assessment doesn't extend beyond 2010 because New Zealand was subsequently affected by the Canterbury earthquakes and it would not be possible to distinguish lingering GFC effects from the economic impacts of the quakes.

The industries that were most significantly impacted in terms of a decline in employment, business numbers and/or real GDP over 2007 to 2010 were manufacturing, administrative and support services, construction, rental and real estate services, wholesale trade and transport & warehousing. Sectors that were resilient and continued to grow over the period were health care & social assistance, public administration, education & training, professional & technical services. The number of information media and telecommunications businesses grew strongly but the sector's employment and GDP fell slightly. Tourism related sectors did not fare too badly, with retail trade only experiencing a relatively small decline in business numbers and employment (and slight growth in GDP) and accommodation and food services experiencing relatively limited changes in these indicators over the period, even if they experienced initial declines.

Although not apparent from the figures, for some industries changes in employment growth followed a similar path to output growth but with a lag.

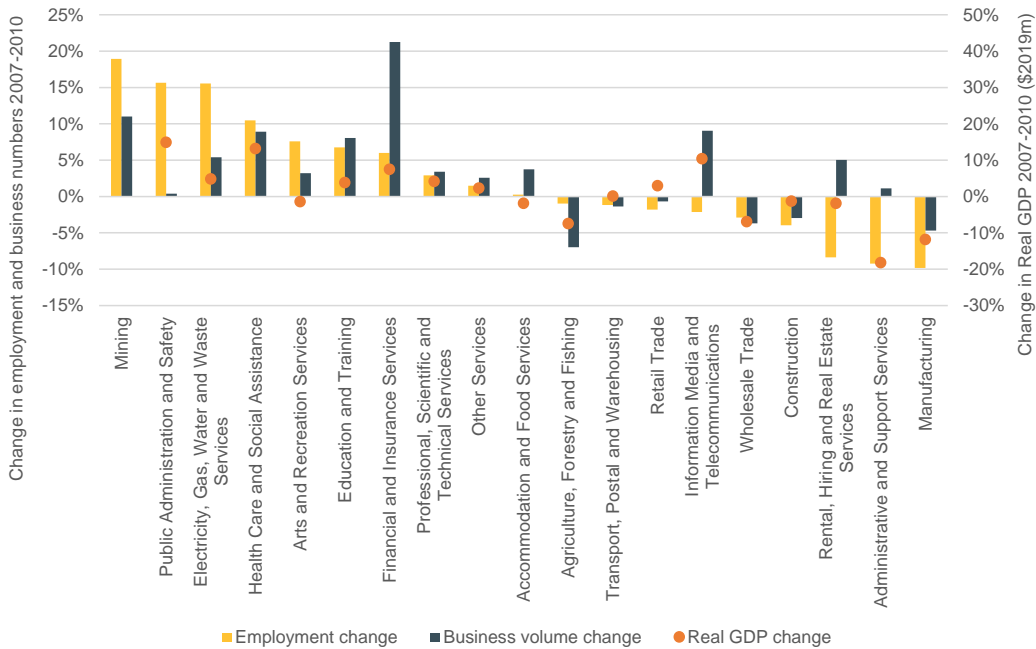


Figure 84: Value change in key indicators by industry, 2007 to 2010



Source: MartinJenkins calculations, using Infometrics data

Figure 85. Percentage change in key indicators by industry, 2007 to 2010

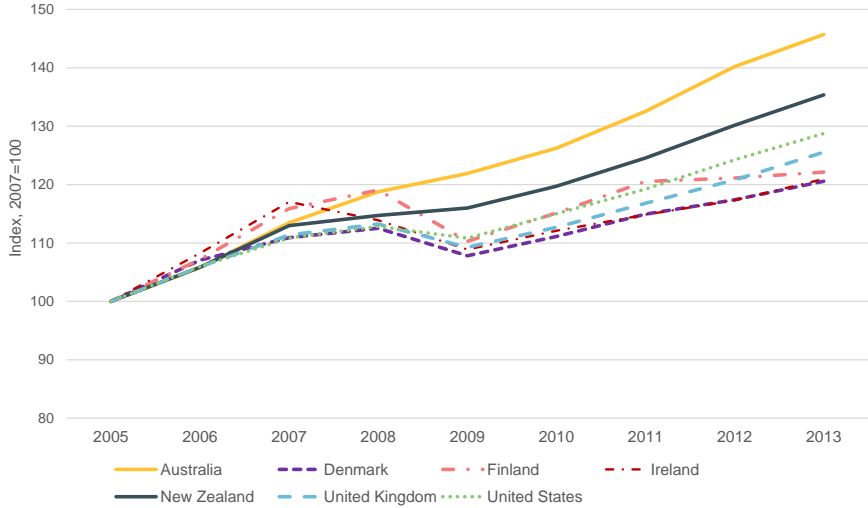


Source: MartinJenkins calculations, using Infometrics data



New Zealand was actually reasonably insulated from the worst of the recession due to strong government accounts and because Australia, our largest export market, recovered quite quickly (Fabling and Mare, 2012). As can be seen in Figure 86, the decline in real GDP following the GFC was less sharp in New Zealand relative to key trading partner and small open economies and the recovery was also faster.

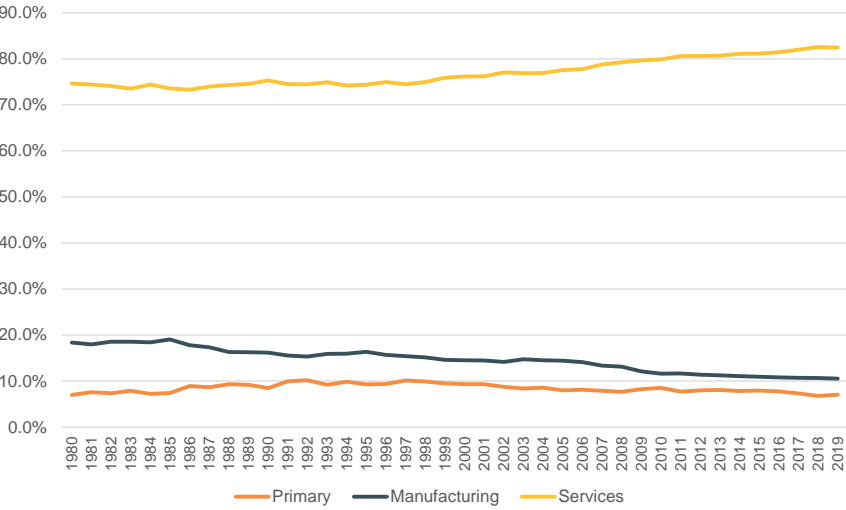
Figure 86: Change in Real GDP 2005 to 2010, selected economies



Source: IMF World Economic Outlook Database

The GFC did not result in any significant change in New Zealand’s industrial structure. The structural change that occurred post the crisis, i.e., growth in the contribution of services to the economy and decline in the contribution of manufacturing, was a continuation of a long-term trend as shown in Figure 87 (and similar trends are occurring across all advanced economies).

Figure 87: Major industry group share of real GDP (%), 1980-2019



Source: Statistics New Zealand

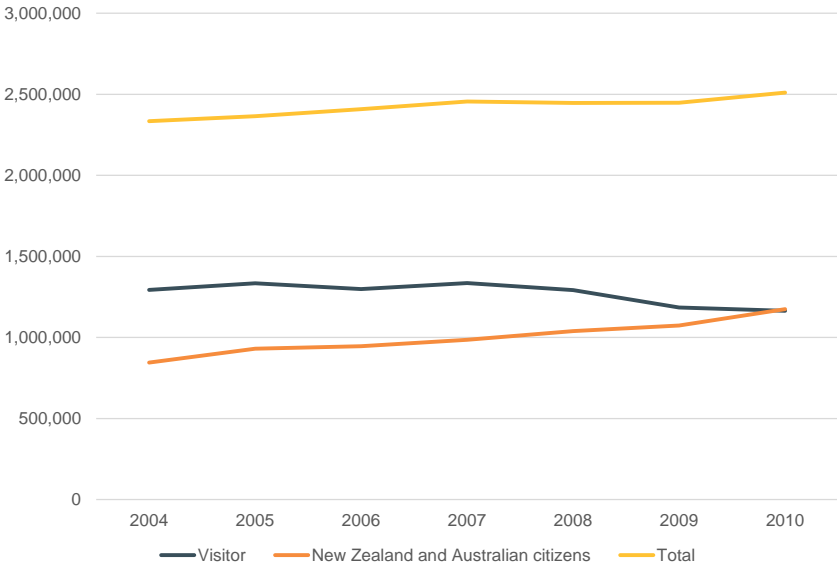


There was, however, a slightly greater reduction in the contribution of manufacturing during the crisis period than had been typical in the lead up the GFC (i.e., manufacturing’s share of GDP fell by 1.7 percent over 2007 to 2010, but had only fallen by 0.6 percent in the four years prior to 2007). Manufacturing industries that experienced a relatively large decline in their contribution to GDP over 2007-2010 were textiles, clothing and footwear, chemical and polymer product, and transport, machinery and equipment manufacturing. Hence it is possible that the GFC accelerated some of the structural change that was occurring (e.g., through faster firm exit in less efficient industries).

What happened to migration during the GFC?

During the GFC period (2008 to 2010), overseas arrivals to New Zealand as a whole continued to grow, albeit slowly, from around 2.47 million to 2.49 million people (an average of 0.4 percent per annum growth). As well as an increase in work and student visa arrivals (discussed below), a major contributor was an increase in arriving New Zealand and Australian citizens (which grew by 135,600 over the two years or an average of 6.3 percent per annum). However, overseas visitor visa arrivals declined over the period, from 1.292 million in 2008 to 1.165 million in 2010 – a drop of over 127,000 or by 5.1 percent per year.

Figure 88: Visitor arrivals by selected visa type, 2004 to 2010 (June year)



Source: Statistics New Zealand

Beyond the impact on visitor flows, the GFC had a significant impact on labour migration globally, with one report indicating that the global recession reduced the demand for labour migration in almost all OECD countries as unemployment rose (OECD, 2009 cited in IMSED, 2009).



Rising unemployment put pressure on governments to limit the inflow of foreign workers and many OECD countries responded by putting in place mechanisms to reduce temporary flows of migrant workers. This included adjusting numerical limits, strengthening labour market-tests, revising occupational shortage lists, and limiting the ability of migrants to change status or renew permits. Some countries did offer incentives for migrants to return home. Temporary worker migration flows into OECD countries, which had risen significantly in the years prior to the GFC, decreased 4 percent between 2007 and 2008 (IMSED, 2009).

There was not as significant pressure in New Zealand as our unemployment rate remained relatively low compared with other OECD countries. As noted earlier, the unemployment rate in New Zealand increased by around two percentage points from mid-2008 to mid-2010 to reach 6.4 percent by the end of June 2010. The average unemployment rate in the OECD reached 8.6 percent (IMSED, 2010).

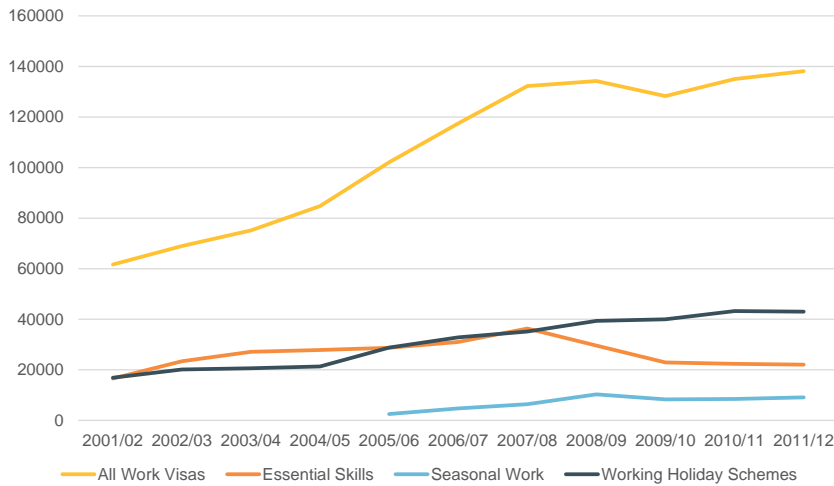
However, through the natural application of labour market policy, skills related migration became more restrictive in New Zealand. For example, requiring a job offer to obtain a work permit through the Essential Skills Policy meant that opportunities for migrants reduced as unemployment increased. The then Department of Labour reviewed skill shortages lists to ensure the listed occupations were still in shortage. In July 2009, 44 occupations were removed from the immediate skill shortage list and 8 from the long-term skill shortage list. In November 2009, 15 more occupations were removed from and 10 added to the immediate skill shortage list and 3 removed and four added to the long-term list. In addition, in July 2009 a policy change was introduced whereby work permits issued through Essential Skills for jobs at ANZSCO levels 4 and 5 (lower skilled occupations) were now issued for 1 year (higher skilled workers could still get a permit for up to 3 or 5 years).

As a result, the demand for migrant workers through the Essential Skills Policy fell from late 2008. This resulted in an 18 percent reduction in the number of people granted Essential Skills work permits over the year to June 2008 (from 36,33 to 29,626 people – a reduction of around 6,700). The demand for and granting of Essential Skills migrant visas continued to decrease, down to 22,947 in 2009/10 (a 23 percent or a 6,680 reduction in the number of people from 2008/09).

The decrease in skilled-based temporary migrants was initially offset by rising numbers of temporary working migrants in other categories. For example, the number of seasonal workers increased by 61 percent in the year ended June 2009 (from 6,410 to 10,330, or an increase of 3,920) due to the maximum number of Regional Seasonal Employer permits being increased from 5,000 to 8,000 per year. In addition, the number of working holidaymakers was up 12 percent (by 4,160) due to two new working holiday schemes being introduced that year. This demonstrates the importance of immigration policy settings over the period. The number of seasonal migrant workers then declined in 2009/10 (by 19 percent or 2,007 people) while growth in the number of working holidaymakers continued but slowed (just under a 2 percent increase).



Figure 89: Number of approved temporary workers, 2001/02 to 2011/12

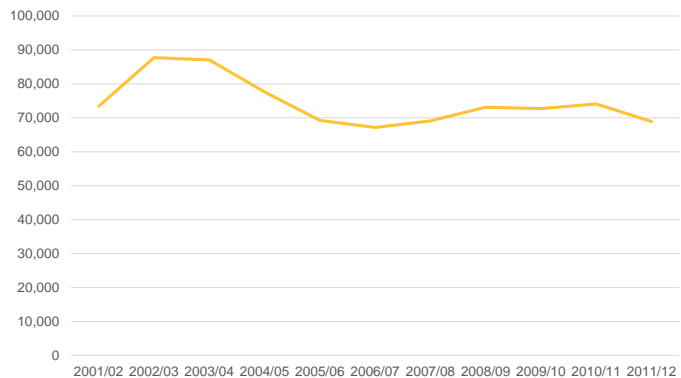


Source: MBIE Migration Data

Overall, the number of temporary work visa approvals increased slightly over 2007/08 to 2008/09 (by 2,360 or 1.8 percent). This was a significant slowing compared to the annual average 18 percent growth experienced in the previous decade. The number of approved temporary workers then fell over the year to June 2009/10 (by 6,380 or 4.7 percent).

International student numbers also increased over the first year of the GFC by around 6 percent (from 69,100 to 73,100). Although there was a continued reduction in student numbers from China, South Korea and Japan over the year to June 2009 (following a trend from 2003/04), this was offset by increasing numbers from India.

Figure 90: Number of international student visas granted, 2001/02 to 2011/12



Source: MBIE Migration Data

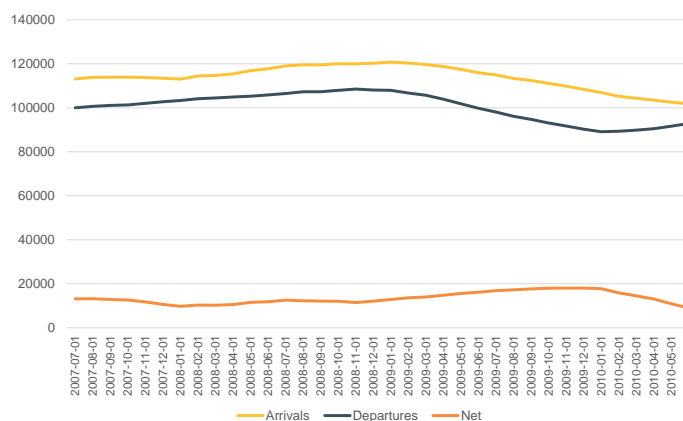
Increasing numbers were due to a combination of the weaker New Zealand dollar and tighter student entry criteria in other competing countries, such as Australia and the UK (IMSED, 2009). Over 2009-2010, international student numbers stabilised although the number of first-time students fell by 8 percent (likely due to a fall in temporary work approvals).

There were no substantial changes in permanent residence flows over the period, with around 46,000-47,000 people granted residence each year over 2006/07 to 2009/10. This was because the New Zealand Residence Programme target of 45,000–50,000 was maintained. Within this, skilled migrant numbers hovered around 25,000 to 27,000, which was consistent with the approval limits at the time.



By the end of June 2010, migrant arrivals for the year had fallen to 101,350 compared to close to 119,440 for the year ended June 2008 (a fall of 7.7 percent on average per year). However, departures had also reduced, to total close to 93,000 in the 2010 financial year compared to over 105,000 in the 2008 financial year. This was due to fewer New Zealanders travelling to live in Australia. Net migration started to fall from the end of the calendar year 2009 (where it reached more than 18,000 for the year) to less than 9,000 for the year ended June 2010.

Figure 91: Estimated migration, rolling year ended, July 2007 to June 2010

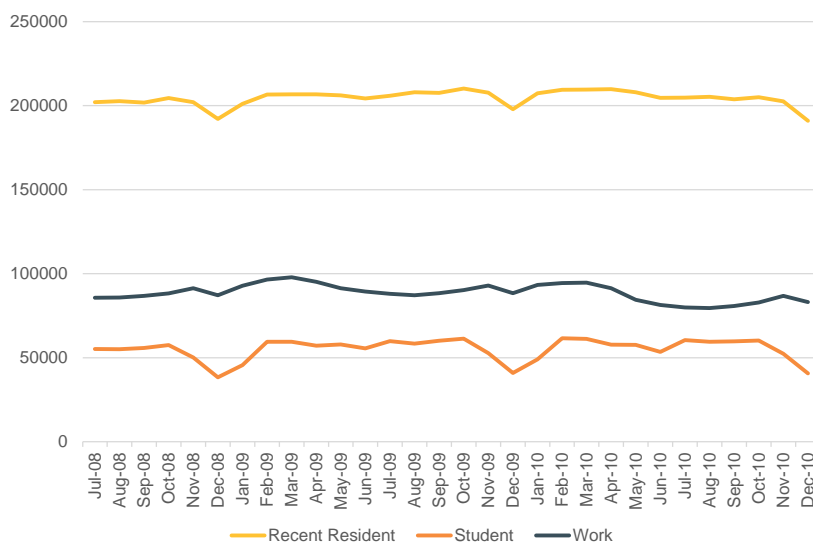


Source: Statistics New Zealand, Migration Estimates

Recent migrants most affected by the recession were young people aged 18–24, as evidenced by lower proportions of international students and working holidaymakers earning wages and salaries in 2009 and 2010. Pacific Category migrants were another group to bear the effects of the downturn more so than other migrant groups, with a large increase in the proportion receiving a benefit in 2009 and 2010.

Not surprisingly, given the migrant flows, the overall stock of recent migrants in New Zealand remained relatively stable over the 2008 to 2010 period – generally between 345,000 and 365,000 in any month (the obvious dips shown below in resident, student and work visa migrant populations at the end of 2008 and 2009 reflect seasonal trends).

Figure 92: Recent migrant population in New Zealand by visa type, July 2008 to December 2010

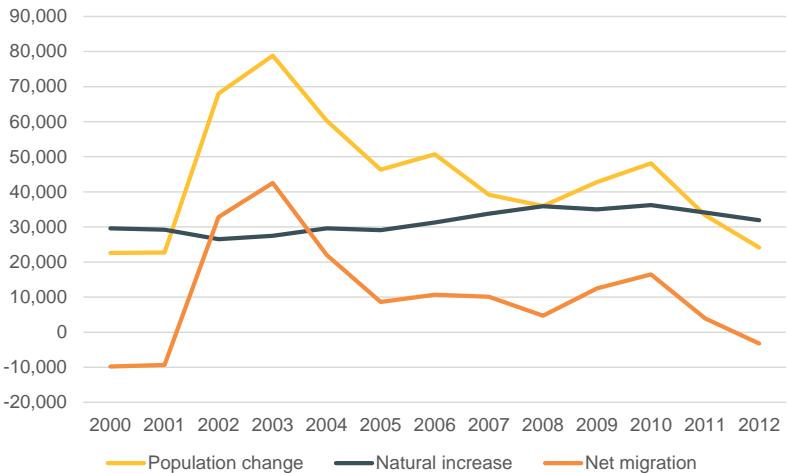


Source: MBIE Migration Data



As would be expected given these trends, the GFC also had a limited effect on population growth. In the years leading up to the GFC, most of New Zealand’s population growth was driven by natural increase (around two-thirds over the previous ten years) rather than net migration. Figure 4 shows that natural increase remained at over 30,000 per year over the period around the GFC, significantly higher than the net migration, although the population changed moved in line with the rise and fall of net migration.

Figure 93: Estimated population change by component, 2000 to 2012



Source: Statistics New Zealand

For example, population growth in 2007/08 was largely due to natural increase of 35,800 (88 percent), with net permanent and long-term migration of 4,700 representing 12 percent of the increase. Similarly, natural increase represented 74 percent of the population growth in 2008/09.

What was the impact of the GFC on vulnerable communities?

Youth

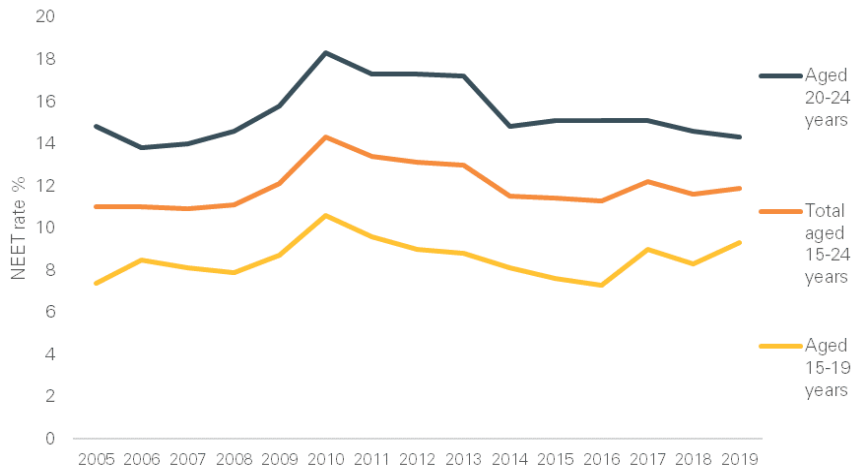
The GFC had a significant impact on youth in the labour market. In New Zealand, the number of 15-24 year-olds enrolled in study rose nearly 10 percent from 200,000 in 2008, to 216,690 in 2010 (Statistics NZ, 2012). However, the proportion of young people not in education, employment or training (NEET, a common measure to understand labour market disengagement for young people) also rose sharply, from 11.1 percent in 2008, to a peak of 14.3 percent in 2010. The rate remained elevated, and while the overall unemployment rate had returned to pre-GFC levels in 2019, the NEET rate was still elevated: 0.8 percent higher than in 2008 (Figure 3).

Fabling and Maré (2012) noted that for young workers unemployment rose while participation rates declined. This trend is shared with many other OECD countries.

The GFC also saw a structural shift in the make-up of the NEET population. While pre-GFC, the NEET population was distributed fairly evenly across the sub-categories of ‘unemployed’, ‘not in the labour force’ (NILF), and ‘caregiving’. Since 2008-2009, the unemployed and NILF sub-categories have increased (to about 40% each), while caregiving has trended down (Apatov, 2019). This suggests that the increase in the NEET population has been driven more by young people that want to be finding work.



Figure 94: Annual average youth 'not in education, employment or training' (NEET), 2005 – 2019

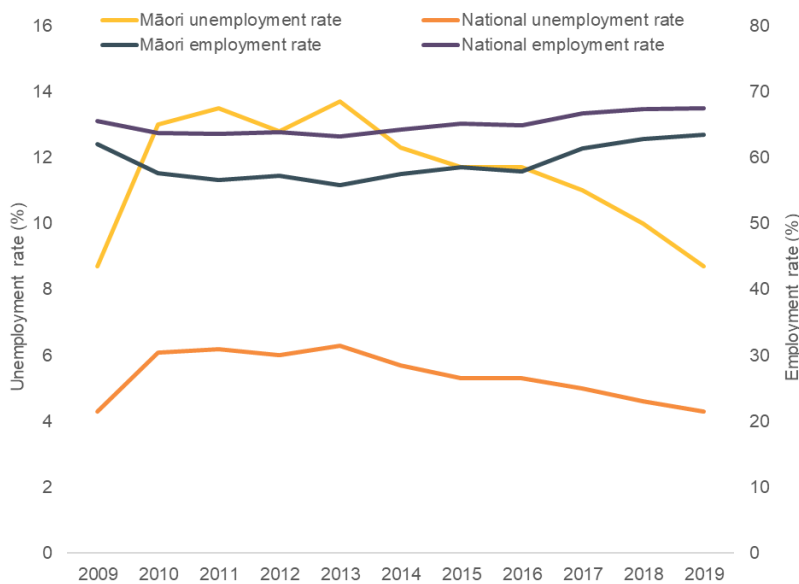


Source: Stats NZ, Household Labour Force Survey; Note: Annual data for the June year

Māori

A number of commentators have recognised that Māori, and Pacific, communities did not fare well in previous economic shocks. During the GFC, Māori were hit harder (Department of Labour, 2009 as cited in Haar & Brougham, 2011). As the labour force data shows, Māori unemployment during and after the GFC was consistently above national averages (Figure 95). At its peak, around 2013, Māori unemployment was 13.7 percent while New Zealand's unemployment rate was 6.3 percent. In 2013, Māori employment rates were 55.8 percent while New Zealand's was 63.2 percent.

Figure 95: Employment and unemployment for Māori, 2009 – 2019



Source: Stats NZ, Household labour force survey; Note: Annual data for the March year

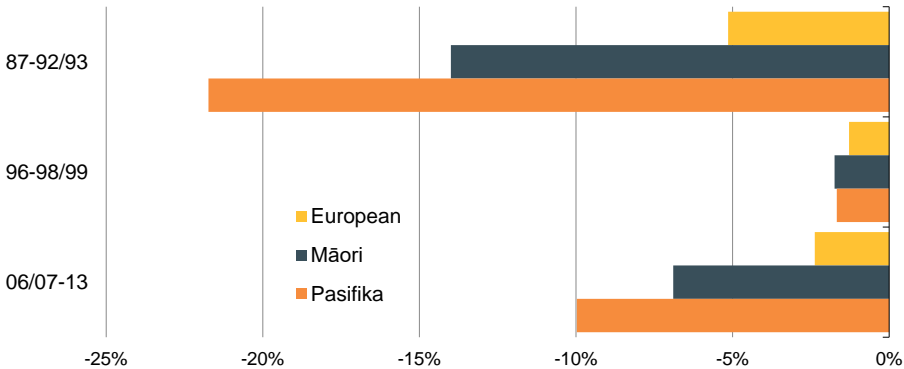


The number of Māori in business also suffered post-GFC, but there were industry differences. There were big declines in the number of self-employed Māori in wholesale, retail trade, accommodation and the food services industry (Ministry of Business, Innovation and Employment, 2014) – consistent with the general declines in these industries experienced by the New Zealand economy as a whole. Positively, the number of self-employed Māori in healthcare and social assistance, business services, utilities and construction actually grew between 2006 and 2013 (Ministry of Business, Innovation and Employment, 2014).

Pasifika

Figure 96 shows the change in the employment rate for European, Māori and Pasifika people during key economic downturns – the aftermath of the economic reforms of the late 1980s combined with a global recession in 1990/91, the Asian Financial Crisis in 1997/98 and GFC in 2008/09. In the 1990/91 recession, the proportion of working-age European people in employment fell by 5.1 percentage points over 1987 to 1993 and the Māori employment rate dropped 14.0 percentage points. In comparison, the Pasifika employment rate fell 21.7 percentage points (from 65.3 percent to 43.6 percent).

Figure 96: Impact of downturns on Māori and Pasifika (peak to trough changes in employment rate, annual average)



Source: Infometrics

This pattern of Pasifika people being significantly affected during a downturn is repeated during the Asian and Global Financial Crises. Although the falls in employment rates following the GFC were smaller than in the late 1980s and early 1990s, Pasifika people were four times more likely to be affected than Europeans.

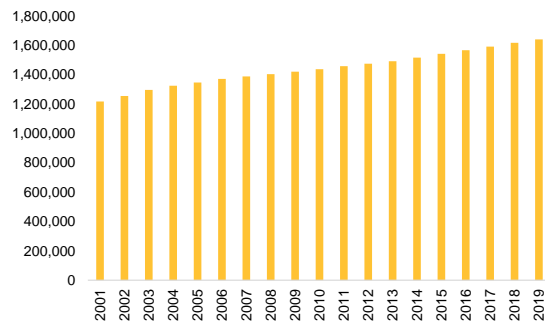


APPENDIX 2 – Regional Migration and Population Trends

Auckland

Auckland has experienced rapid population growth over the last two decades, although its growth has been overtaken in recent years by other regions like Waikato and Bay of Plenty. While the rate of growth might be slowing down, it is important to note that the actual growth in numbers continues to be high along with the growth in Auckland's working age population.

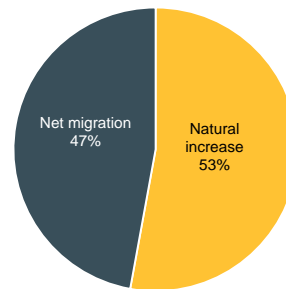
Figure 97: Population growth, 2001 to 2019



Source: Statistics NZ, subnational population estimates

Unlike many regions, Auckland is not heavily dependent on net migration for its population and labour force growth (see Figure 98). Auckland's population growth in 2019 was evenly distributed across natural increase, through higher birth rates, and net migration, through a higher number of migrants from other parts of New Zealand and overseas.

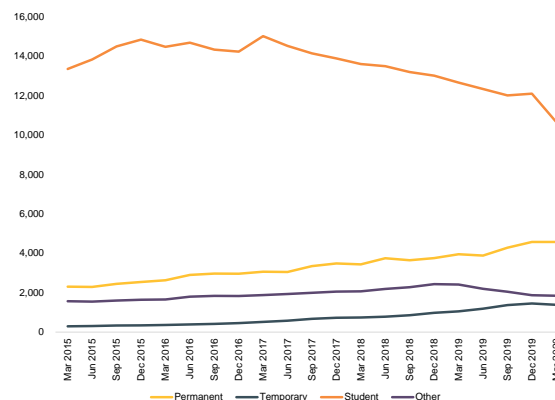
Figure 98: Population growth factors 2018 to 2019



Source: Statistics NZ, subnational population component changes

Auckland's migrant population is predominantly students (see Figure 99). Apart from permanent visas (mainly skilled visas), the general trend for visa approvals has been a decline over recent years, particularly for student visas. Permanent visas were increasing but stalled in the last two quarters, with the March quarter undoubtedly due to the initial impacts of Covid restrictions.

Figure 99: Rolling annual visa approvals 2015 to 2020

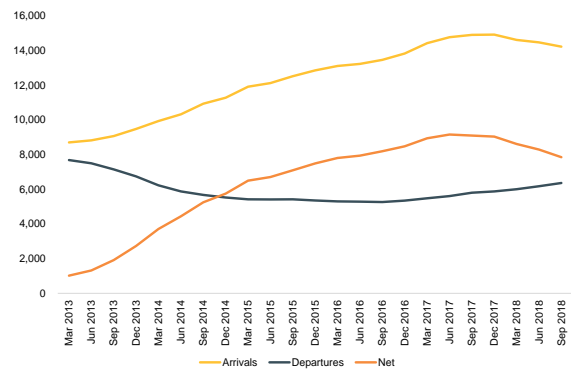


Source: MBIE, work and student visa approvals



Net migration has also slowed in recent years, driven by a steady increase in departures and a decline in arrivals.

Figure 100: Rolling annual permanent and long-term migration 2013 to 2018

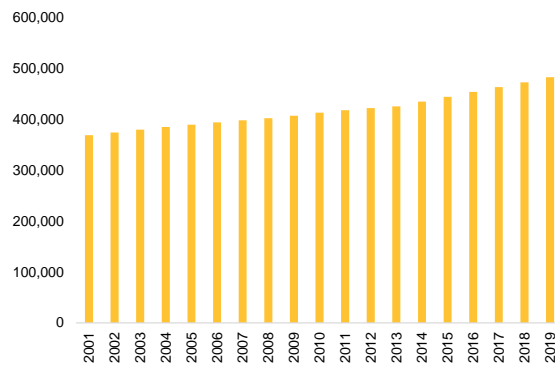


Source: Statistics NZ, permanent and long-term migration

Waikato

The Waikato's population has started to increase rapidly since 2013, outpacing the national average rate of growth (2.1% annual compound growth compared to 1.7% for the country).

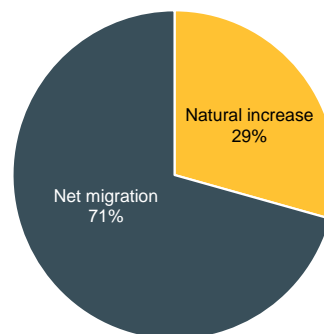
Figure 101: Population growth, 2001 to 2019



Source: Statistics NZ, subnational population estimates

In 2019, almost three-quarters of the Waikato's population growth was the result of net migration (see Figure 102).

Figure 102: Population growth factors 2018 to 2019

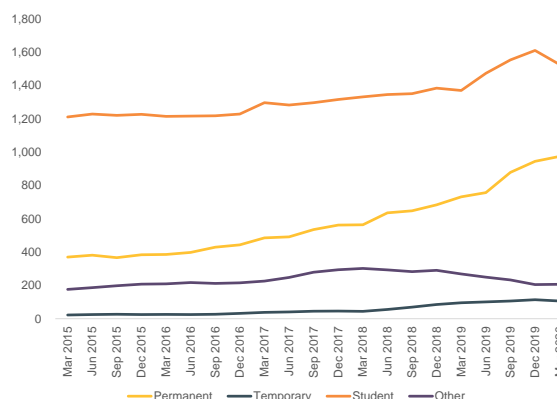


Source: Statistics NZ, subnational population component changes



Waikato has seen a significant growth in both permanent (skilled) and student visas, particularly over the last 2 years (see Figure 103). This rate of growth is likely to slow down following Covid-19, with a drop off in student visas in the March quarter 2020.

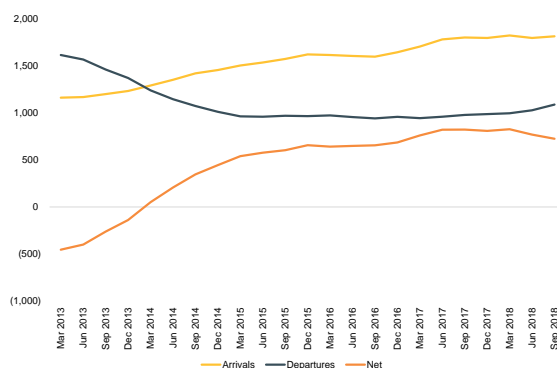
Figure 103: Rolling annual visa approvals 2015 to 2020



Source: MBIE, work and student visa approvals

Net migration has been positive since 2013, growing steadily as a result of a growth in arrivals and a plateau of departures. More recently, net migration has started to slow and declined in the last 2 quarters, driven by a steady increase in departures and a decline in arrivals.

Figure 104: Rolling annual permanent and long-term migration 2013-18

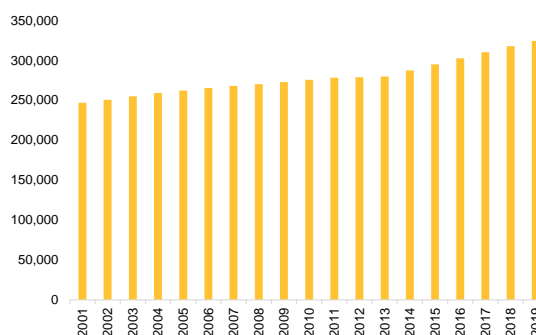


Source: Statistics NZ, permanent and long-term migration

Bay of Plenty

The Bay of Plenty has grown rapidly since 2013, also outpacing the national average rate of growth (2.5% annual compound growth compared to 1.7% for the country).

Figure 105: Population growth, 2001 to 2019

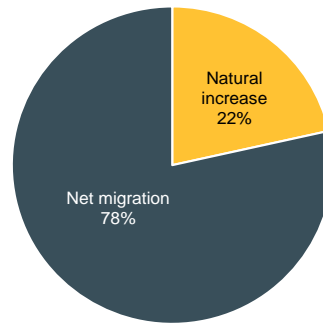


Source: Statistics NZ, subnational population estimates



In 2019, more than three-quarters of the Bay of Plenty region's population growth was the result of net migration (see Figure 106).

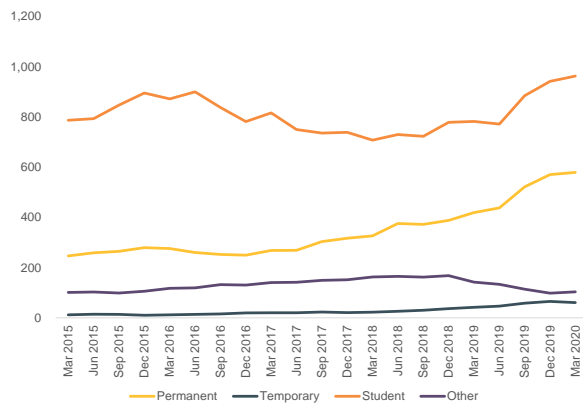
Figure 106: Population growth factors 2018 to 2019



Source: Statistics NZ, subnational population component changes

The Bay of Plenty has seen a growth in both permanent (skilled) and student visas, particularly over the last 2 years (see Figure 107). However, both permanent and temporary visa approvals declined in the last 2 quarters.

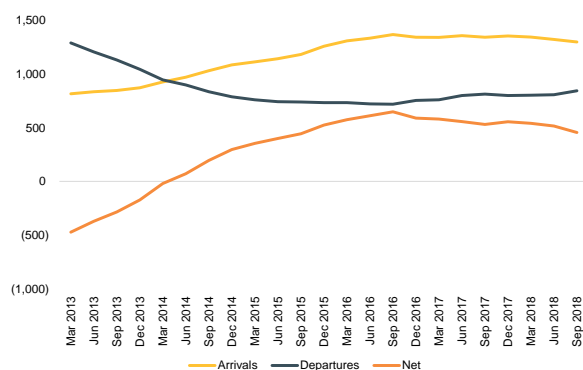
Figure 107: Rolling annual visa approvals 2015 to 2020



Source: MBIE, work and student visa approvals

Consistent with the higher rate of population growth in recent years, net migration has been positive since the start of 2014 but has been trending down following a peak at the end of 2018.

Figure 108: Rolling annual permanent and long-term migration 2013-18



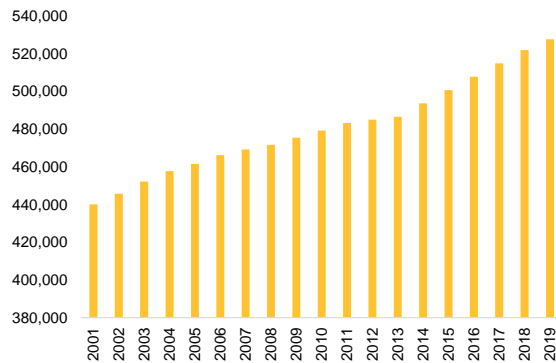
Source: Statistics NZ, permanent and long-term migration



Wellington

Wellington's population has been growing steadily but its rate of growth since 2013 (1.4%) sits below the national average (1.7%) and well below that of regions like Waikato and the Bay of Plenty.

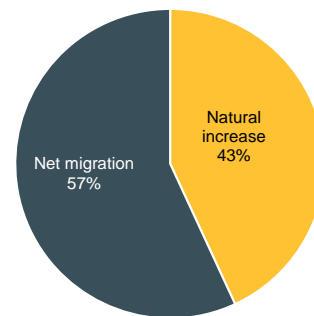
Figure 109: Population growth, 2001 to 2019



Source: Statistics NZ, subnational population estimates

While its population growth may not be as high as other regions, Wellington has a higher rate of natural increase, with a lower reliance on net migration for growth (although more than 50 percent of its population growth was from migration in the year to 2019).

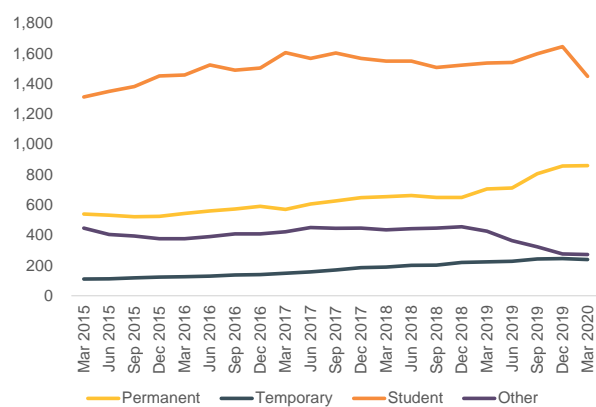
Figure 110: Population growth factors 2018 to 2019



Source: Statistics NZ, subnational population component changes

Students comprise a large proportion of visa approvals in Wellington. In recent years permanent and temporary visas have been increasing. However, both permanent and temporary visa approvals began to plateau in the December 2019 and March 2020 quarters while student visas dropped relatively sharply.

Figure 111: Rolling annual visa approvals 2015 to 2020

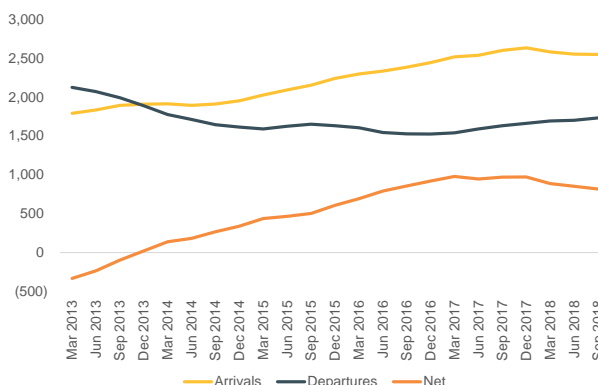


Source: MBIE, work and student visa approvals



As Figure 112 shows, net migration has been steadily declining following a significant growth period from the end of 2013.

Figure 112: Rolling annual permanent and long-term migration 2013-18

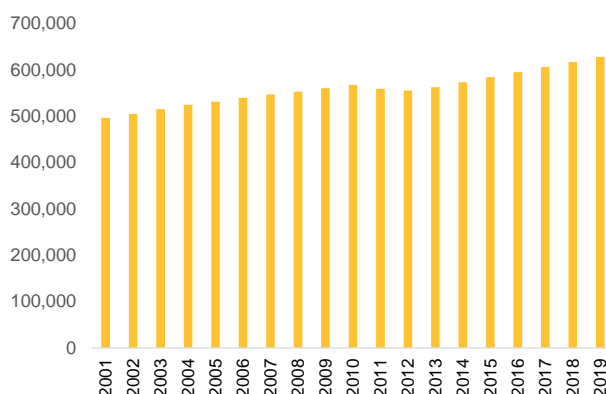


Source: Statistics NZ, permanent and long-term migration

Canterbury

The Canterbury region’s population dipped in 2011 and 2012 following the Christchurch earthquakes but has grown slightly faster than the rest of the country since 2013 (1.9% annual compound growth compared to 1.7% for the country).

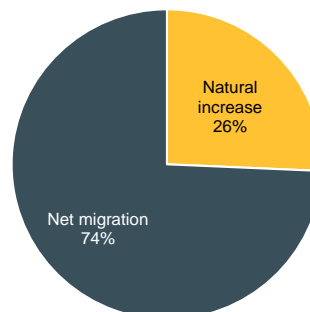
Figure 113: Population growth, 2001 to 2019



Source: Statistics NZ, subnational population estimates

As Figure 114 shows, much of Canterbury’s growth in 2019 was the result of net migration, accounting for around three-quarters of its population growth that year.

Figure 114: Population growth factors 2018 to 2019

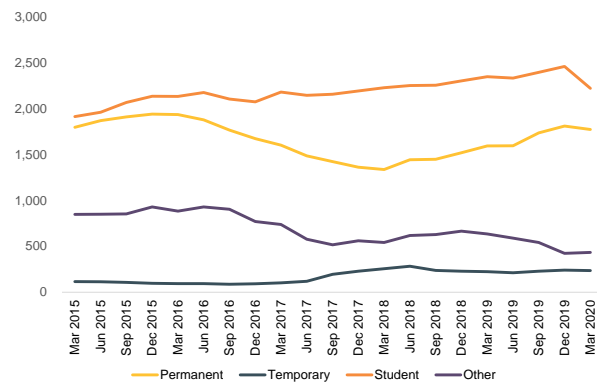


Source: Statistics NZ, subnational population component changes



Permanent visa approvals declined sharply from March 2016, potentially a response to the Kaikōura earthquake (see Figure 115). While permanent migration began to increase from mid-2018, growth in approvals began to slow in the December 2019 and March 2020 quarters, while student visas dropped relatively sharply.

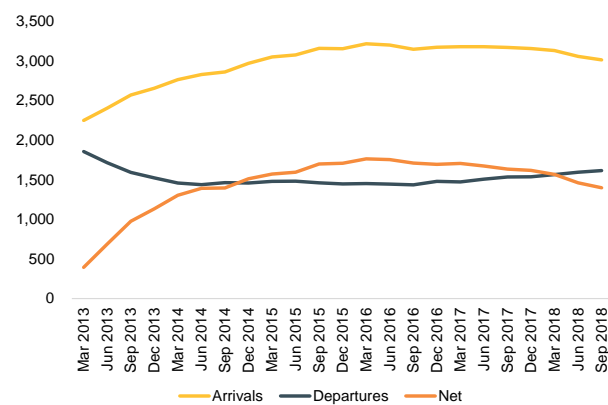
Figure 115: Rolling annual visa approvals 2015 to 2020



Source: MBIE, work and student visa approvals

Net migration was increasing rapidly up to March 2016, after which it has been on a steady decline. This appears to have followed the trend for arrivals as departures have been relatively stable.

Figure 116: Rolling annual permanent and long-term migration 2013-18

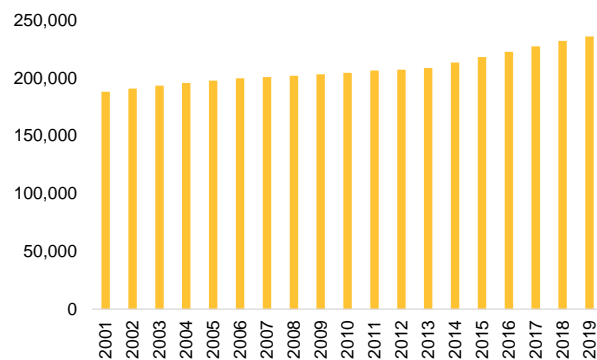


Source: Statistics NZ, permanent and long-term migration

Otago

Otago's population growth appears to have picked up in the last 5 years. Since 2013, it has grown faster than the rest of the country, (2.1% annual compound growth compared to 1.7% for the country).

Figure 117: Population growth, 2001 to 2019

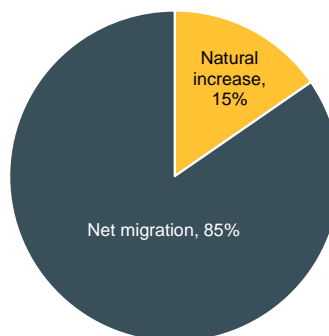


Source: Statistics NZ, subnational population estimates



As Figure 118 illustrates, Otago's growth in 2019 was driven primarily by net migration, accounting for 85% of its population growth that year.

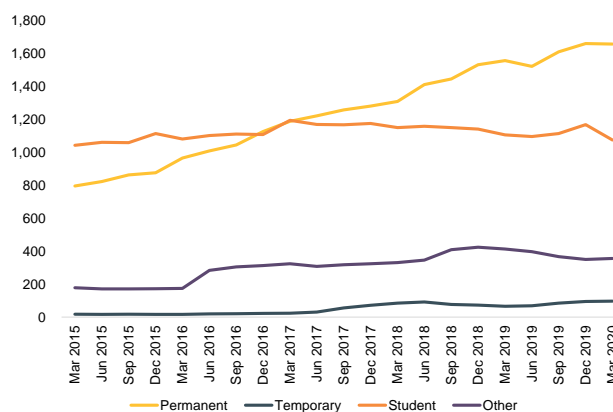
Figure 118: Population growth factors 2018 to 2019



Source: Statistics NZ, subnational population component changes

Unlike the other regions studied, Otago's visa approvals are primarily permanent (skilled), with student visa approvals remaining relatively constant over the last 5 years (see Figure 119). Consistent with recent trends in other regions, however, the growth in permanent visa approvals began to slow in the last 2 quarters while student visas dropped relatively sharply.

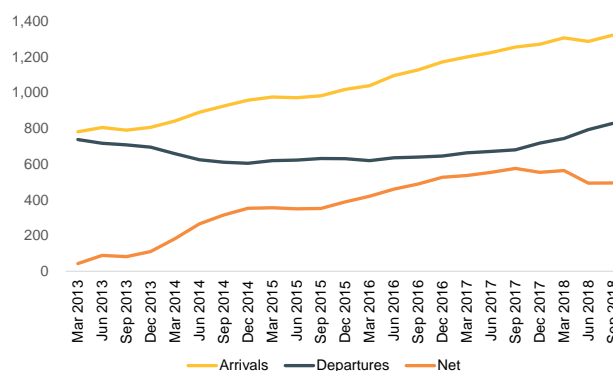
Figure 119: Rolling annual visa approvals 2015 to 2020



Source: Ministry of Business, Innovation and Employment, work and student visa approvals

Net migration has been increasing rapidly, albeit with low absolute numbers. More recently, an increase in departures has led to a decrease in net migration.

Figure 120: Rolling annual permanent and long-term migration 2013-18



Source: Statistics NZ, permanent and long-term migration



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