Immigration by the numbers

April 2022

NEW ZEALAND
PRODUCTIVITY COMMISSION
Te Kōmihana Whai Hua o Aotearoa

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The New Zealand Productivity Commission
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Contents

Overview

Today, more people than ever live in a country other than the one in which they were born. While many migrate to escape war or persecution, nearly two-thirds are labour migrants. Most of these migrants move to high-income countries.

Migration has become more important for New Zealand. While most population growth in the last century-and-a-half has come from natural increase (births less deaths), the contribution of immigration has increased in recent years.

The sources of immigrants to New Zealand have diversified from the long period dominated by the United Kingdom and Europe following the signing of Te Tiriti o Waitangi through to the last few decades, which have seen an increase in arrivals from Asia. This appears to have been driven by immigration policy changes in the 1990s.

New Zealand has high emigration and a large diaspora relative to other Organisation for Economic Co-operation and Development (OECD) countries. New Zealand emigrants are drawn to English-speaking and richer countries. Many of these emigrating New Zealanders have moved across the Tasman. Migration of New Zealanders to Australia picked up as Australia's economic performance began to outpace New Zealand's from the 1970s. Net migration flows between New Zealand and Australia are dominated by departures from New Zealand to Australia. The reverse flow has remained steady for decades.

The main economic contribution migrants make to the New Zealand economy is what they bring to the country's workplaces. Gains arise from workers moving to where they can make the most impact, and from firms bringing the best workers from wherever they can be found. There are several reasons why migration can be welfare-enhancing for both the migrant and the country to which they are moving. Migrant workers can fill gaps where skills are unavailable and they can bring ideas – knowledge of foreign markets, of new things to do and new ways to do them. They will often have overcome financial and social costs and taken risks to make the move, and so can be expected to be highly motivated to succeed. Migration can also have negative impacts on migrants and their destination. Life may not turn out quite how it appeared it to the migrant before moving. Also, like any increase in population, migration may have negative impacts if resources are constrained.

At the national level, immigration can raise the average output per person of the whole economy because migrants are more likely to be of working age. Migrants make up a comparatively large share of New Zealand's population and labour force. In 2020, more than one-quarter of New Zealand's population was foreign-born. In addition to increasing the total production of the whole population, more migrants will also lead to an increase in the tax base.

If migrant workers are more productive than local workers, this will raise the average productivity of the workforce. Conversely, some migrant workers may lower productivity if they do not understand the local language, culture and norms. We know that migrants to New Zealand tend to be better qualified on average than locals. Overseas-born adults in the working age population are more likely to have a degree or postgraduate qualification, and are less likely to have no qualifications at all.

According to the OECD's Survey of Adult Skills, overseas workers in New Zealand are some of the most literate in the OECD. Migrants to New Zealand from other English-speaking countries have higher average literacy scores than the native-born and, along with migrants to Australia and Finland, are among the highest-literacy migrant groups across the OECD. Although migrants from non-English speaking backgrounds score lower than the New Zealand-born on average, they also have a higher second-language proficiency than equivalent non-native speakers resident in other countries. The survey finds similar results for their functional numeracy and "problem solving in technology-rich environments".

The rapid increase in migrant arrivals since the 1990s has come from higher temporary work and study visas, rather than resident visas. The number of temporary migrants in New Zealand more than doubled in the decade before the Covid-19 pandemic, vastly outstripping growth in the wider labour market. This occurred over several visa types, including Essential skill, Study to work and Work to residence visas.

Migrants are active contributors to the New Zealand labour market. They are, on average, younger than New Zealanders and are more likely to be in the core working age range of 25 to 55. Migrants on skill-based visas are more likely to work, and to work full time, than other migrants. Overall, migrants have similar employment rates to New Zealanders. Earnings levels among recent migrants are closely comparable to those of the native-born. Among low-skilled occupations, migrant earnings are very similar to, or slightly below, those of the native-born. At higher skill levels there is greater diversity, with median earnings among migrants often above those of New Zealanders in the same occupational skill group.

Migrants work right across the New Zealand economy, but are concentrated in some places more than others. Migrant employment is concentrated in regions with cities and in areas with substantial agricultural employment.

Net international migration has been zero or negative across most New Zealand regions in recent decades, with the exception of Auckland. However, the pick-up in immigration since 2012 can be seen across all regions, with areas like the Bay of Plenty and Northland moving from net out-migration to net immigration

There is a group of low-productivity industries that have a higher share of migrants. Several high-productivity industries also rely on migrant labour. Industries employ a wide variety of types of migrants, as measured by their visa category. For example, recent migrants on skilled resident visas are important for the telecommunications sector and for professional, scientific and technical services, whereas most of the migrants working in horticulture and accommodation are on non-skills-related non-resident schemes.

This heterogeneity is important for understanding the impact of migration on New Zealand's economy.

The economy requires more migrants when it is expanding. The period from 2000 was one of declining unemployment and increasing labour participation. In such a tight labour market, the expansion in jobs created by the economy needed to be met from elsewhere. This suggests that on average migrant labour has not displaced domestic workers, but rather has been driven by net job creation in the economy.

This relationship also exists within each region, and there is a less-strong relationship in individual industries. This may be because domestic labour is more mobile between industries than it is between regions.

For many firms hiring migrants is a response to difficulties they find in recruiting staff. Immigration tends to be higher in periods where businesses report labour shortages.

The relationship between migration and productivity in the economy is strongly influenced by the industries where migrants work.

Our research suggests skilled and long-term migrants make contributions to output that exceed moderately-skilled NZ-born workers, and that that higher contribution is likely due to a mix of skill differences and/or hours worked that is largely reflected in higher wages. Conversely, migrants that are not on skilled visas are associated with lower output and lower wages than moderately-skilled NZ-born, also consistent with a skills/hours narrative.

There is no single, simple story for how and where migrants contribute to economic activity in New Zealand. Firms employ migrants in response to their business need, and there is no reason to expect these requirements to be the same across the economy. Immigrant workers fill gaps where people and skills are unavailable, and bring with them knowledge of foreign markets, of new products, services and business models. The overall impact of immigrants is a product of the skills and knowledge the migrants bring with them and the firms and sectors in which they work. There is a group of low-productivity industries that are intensive users of migrants, in particular those that are temporary and whose visas do not depend on the applicant's skills. There is a group of high productivity industries that are dependent on skilled migrants. In order to best support productivity growth, policy prescriptions need to be focused where they benefit the latter relative to the former.

The fact that businesses in many sectors are willing to cut their rates of profit to pay higher wages to attract migrant workers suggests that shortages exist of local labour with appropriate skills, that are not solved by paying higher wages or training domestic workers.

In some sectors, however, low-skilled migrants have relatively low productivity and low wages, suggesting that firms may also benefit from migration through access to a low-skill, low-cost, flexible workforce. As long as the wider economy is able to accommodate rapid population and labour force growth, the net benefits of firms being able to access migrant labour are expected to be positive, as firms weigh the benefits and costs of employing additional migrants. In the past decade, the country has welcomed a relatively large number of migrants at a time with low unemployment and high labour force participation. The labour market appears to have absorbed them well.

However, if there are other constraints – housing and infrastructure, social cohesion, cultural factors or environmental costs – the nation has to make a choice. In trading off the skill and labour needs of firms against these other considerations, it is useful to consider the evidence on the existence and size of the perceived costs.

Over the last half-century, immigration does not appear to have caused "capital dilution". New Zealand has been capital shallow for a long while. The economy appears to have been able to meet increases in immigrant labour with increased investment in capital, except when the numbers increased rapidly as they did in the last few years.

There is also little reason to believe that migrants are a primary cause of house price inflation. The price of housing was increasing long before net migration rose in the late 2000s, and when net migration plummeted during Covid-19, and went negative, house prices actually accelerated.

Part 1 Introduction

"Since the earliest times, humanity has been on the move. Some people move in search of work or economic opportunities, to join family, or to study. Others move to escape conflict, persecution, terrorism, or human rights violations. Still others move in response to the adverse effects of climate change, natural disasters, or other environmental factors."

United Nations Global Issues: Migration website

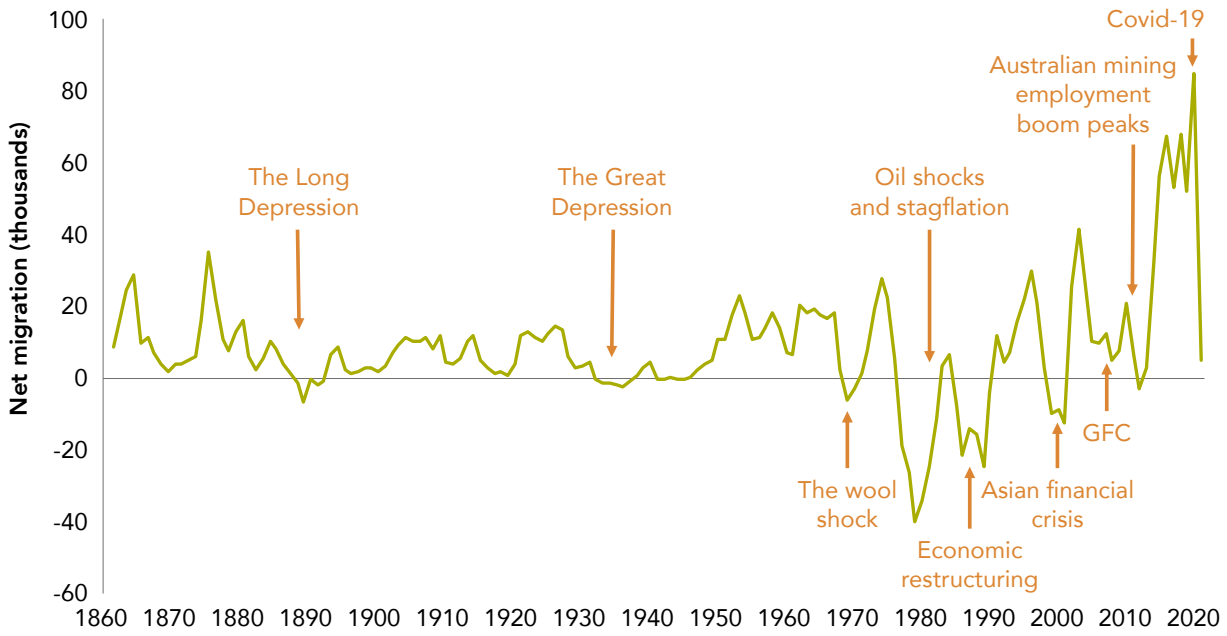
Immigration is undoubtedly an important element in the functioning of the New Zealand economy. It is the subject of much public debate, often contentious. This debate is often based on partial data, or a partial understanding of the data and what it says. Because immigration is complex in its causes and effects, this requires information to be gathered from a range of sources. The interested reader is required to navigate numerous websites of national statistical agencies, government departments and multinational agencies in search of information. They are often confronted by multiple sources of what are apparently the same data, or data that differ for incomprehensible reasons, or are subject to obscure provisos. This report brings together information from a range of national and international sources, alongside recent research, to provide an easy-to-understand resource to inform the debate. This is both to inform our inquiry and the public debate.

The next part starts from a wide viewpoint, looking across the world and into history, to help our understanding of how we got to where we are today, and how New Zealand's current experience mirrors or contrasts with other countries and times.

To state that Aotearoa New Zealand is a country of migrants and their descendants is to state the obvious, but often what goes without saying is never heard or considered. As the quotation above points out, people move for many reasons. Ultimately, people have moved to New Zealand – whether temporarily or permanently, or for a short stay that turns into a lifetime – for a better life, or at least a good one. The likelihood of moving will depend on the potential migrants see in New Zealand relative to their home country. Therefore, the performance of the economy is an important determinant in the likelihood of them migrating.

Image credit: Immigrants arrive in Wellington. Archives New Zealand.

Figure 1.1 Net migration and economic shocks, 1861–2018



Source: NZPC analysis of Data1850 (2019), updated with SNZ, National population estimates: at 30 June 2021.

Net migration to New Zealand has tended to be low when the economy has been weak. Net migration was low and even negative (ie, a net *outflow* of people from New Zealand) during the Long Depression in the 1880s, the Great Depression of the 1930s, the wool shock in 1970, and the oil shocks of the 1970s and 1980s. There was a net outflow of people from New Zealand during the economic restructuring of the late 1980s, followed by an inflow of migrants until the Asian financial crisis of 1997. However, it has not just been worldwide or New Zealand-specific shocks that have impacted the numbers of people migrating into and out of Aotearoa. When Australia's mining boom hit its peak, there was net emigration from New Zealand. The most recent years have seen net migration soar to levels unseen for many years, if at all.

Who are these people? From where did they come and where do they go? We consider these factors in Part 3. In Part 4, we follow these people as they enter the labour market. We look at their labour market experiences, as well as where they work (which regions and industries). Part 5 examines the impact that migrants make to the New Zealand economy. We look at the context around their employment and in more detail at the industries in which they work, and their impact on firms, capital, housing and the public purse.

Part 2

Migration trends in New Zealand and across the world

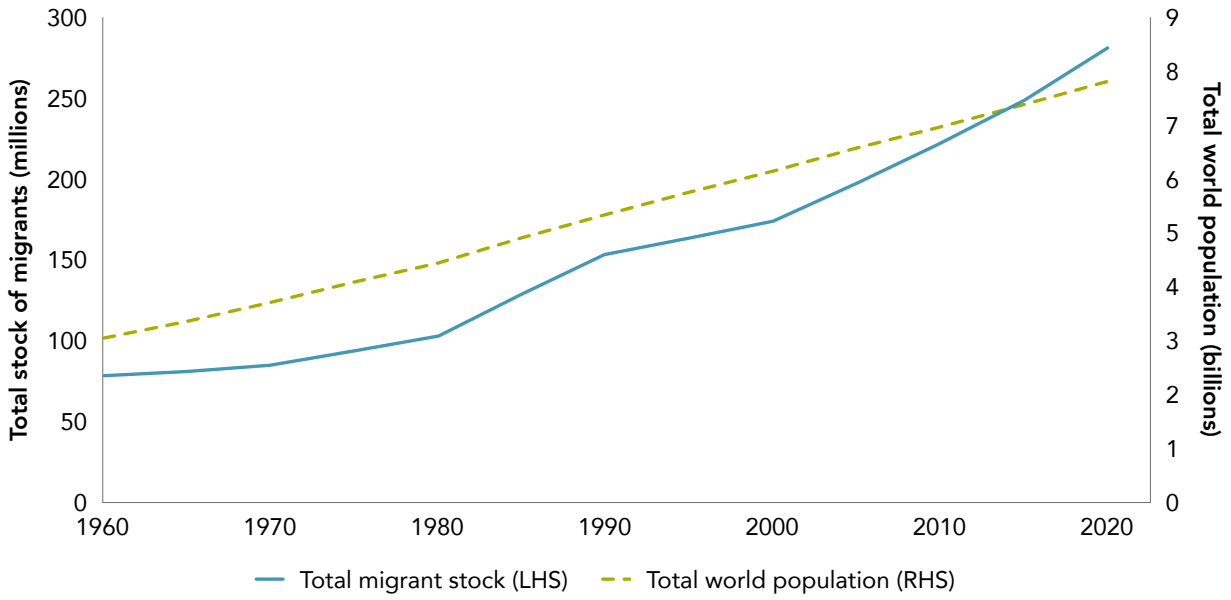
Key points

- International migration has grown faster than the world's population.
- Most migrants move to high-income countries, including New Zealand.
- As migration has increased, both immigration to and emigration from New Zealand has grown.
- The sources of immigrants to New Zealand have diversified from the long period dominated by the United Kingdom and Europe following the signing of Te Tiriti o Waitangi through to the last few decades, which have seen an increase in arrivals from Asia.
- Most of New Zealand's population growth in the last century-and-a-half has come from natural increase (births less deaths), but the contribution of immigration has increased in recent years.
- New Zealand has high emigration and a large diaspora relative to other Organisation for Economic Co-operation and Development (OECD) countries.
- New Zealand emigrants are drawn to English-speaking and richer countries.
- Net migration flows between New Zealand and Australia are dominated by departures from New Zealand to Australia. The reverse flow has remained steady for decades.
- Migration of New Zealanders to Australia began to pick up as Australia's economic performance outpaced New Zealand's from the 1970s.

Trends in international migration

Today, more people than ever live in a country other than the one in which they were born. According to the United Nations, in 2020, nearly 281 million people were living in another country. As we can see from Figure 2.1, migration has more than kept pace with the steady increase in the world's population. In 1960, the stock of international migrants represented 2.6% of the world's population. This fell to 2.3% in the 1970s and early 1980s, but since then has risen to 3.6%. While many migrated to escape war or persecution, which is beyond the scope of our inquiry and this report, nearly two-thirds were labour migrants.

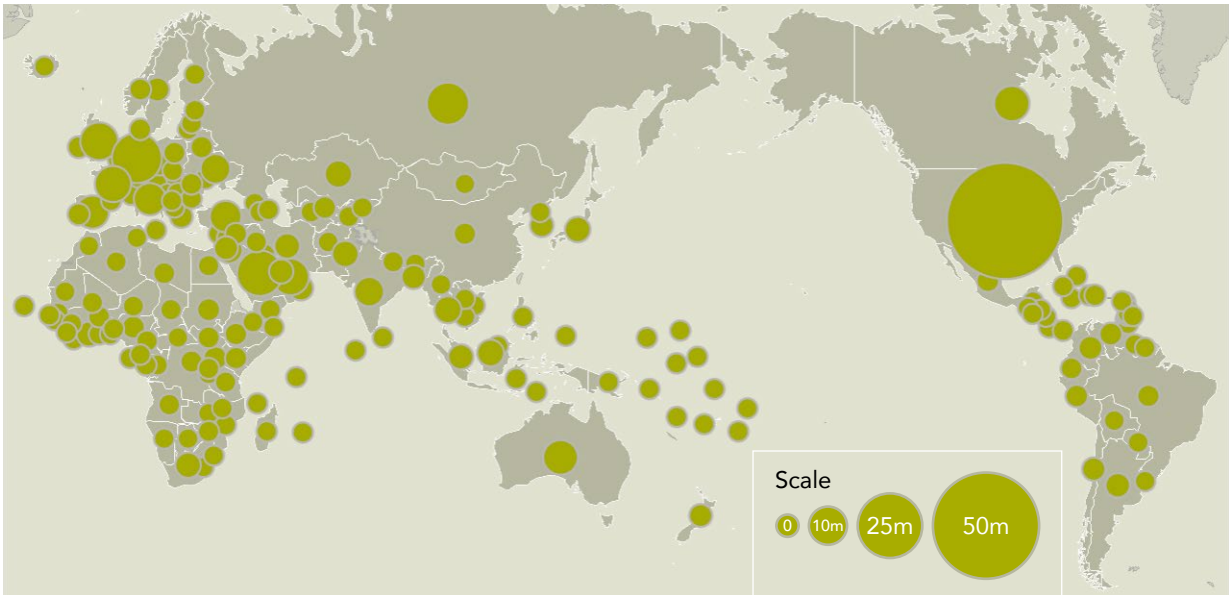
Figure 2.1 The growth in migrants has been faster than that of the world's population
World population and international migrant population, 1960–2020



Source: Migration Policy Institute tabulation of United Nations Population Division data.

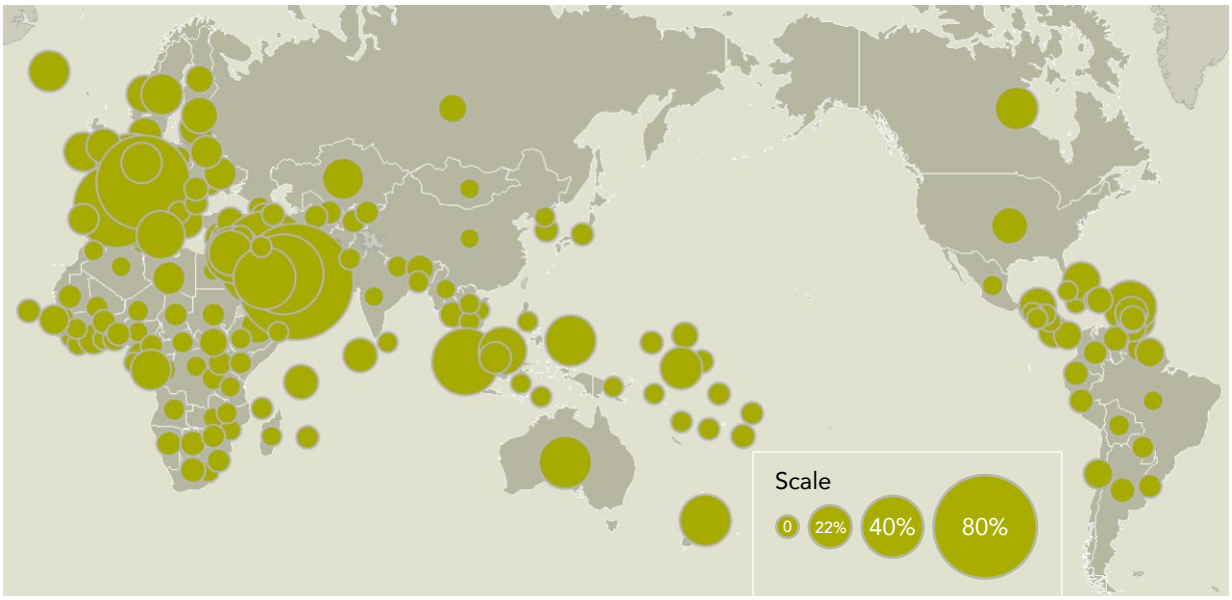
These migrants are not spread evenly across the world (Figure 2.2). The largest single destination of migrants is the United States. There is considerable migration within the European Union (EU) and to the Middle East. Despite their relatively small populations, Australia and New Zealand host a relatively large proportion of migrants, as we can see from Figure 2.3 (these proportions are presented for a range of economies in Figure 2.19).

Figure 2.2 Where do migrants go?
Total number of international migrants within each country



Source: Migration Data Portal, www.migrationdataportal.org/.

Figure 2.3 Where do migrants contribute the greatest share of the population?
Migrants as a proportion of the total population



Source: Migration Data Portal, www.migrationdataportal.org/.

Box 2.1 **Why people move**

People migrate for many reasons. Migrants are usually classified into one of two groups:

- Economic migrants, including family reunification.
- Forced migrants, such as refugees and asylum seekers.

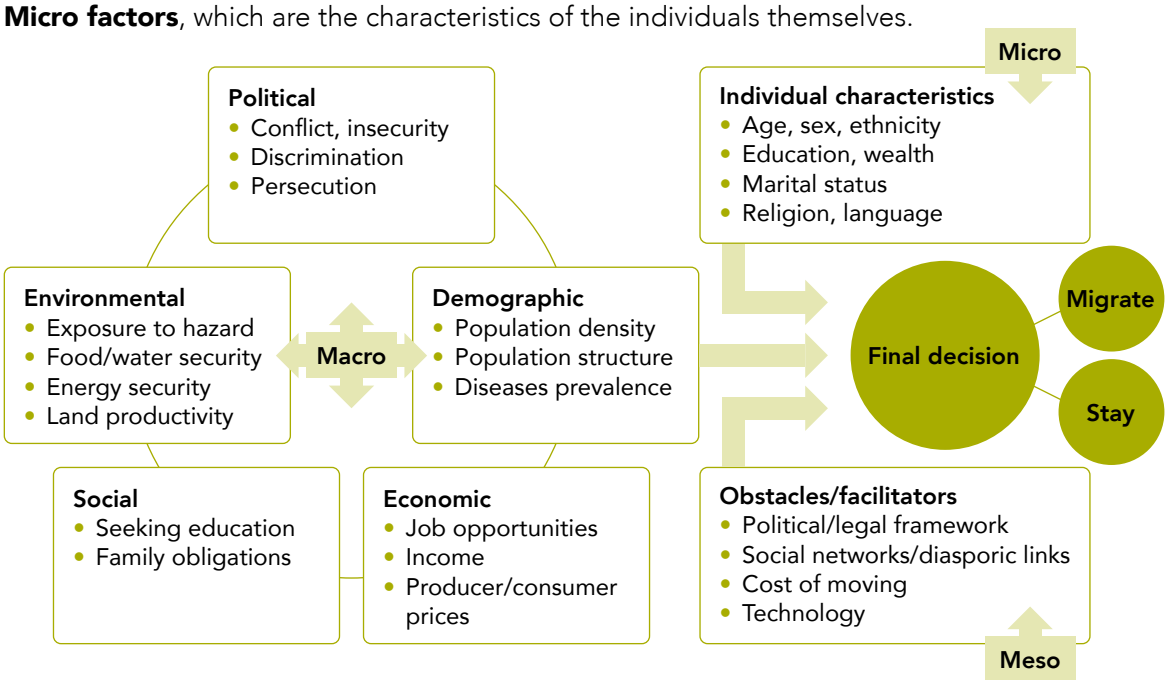
The focus of this inquiry is on economic migrants. Economists focus on migration as a reallocation of resources, where benefits to migration depend on the benefits to migrants of moving relative to staying put, and those to employers and societies of drawing their employees or populations from a broader group than those who were born within their country's borders.[1] This leads to a focus on the relative economic performance of host and source country, and hence the benefits the host can offer potential recruits, the complementarities between the economic activity and the skills and capability of potential immigrants, and the cost – financial and psychological – of moving for the migrant. This also puts a focus on the requirements of businesses, the skills of immigrants, the impact on the host country, and on economic activity and resources.

Castelli (2018) provides a slightly different perspective by dividing the factors influencing the decision to migrate into three broad groups:

Macro factors, which include the political, demographic, socio-economic and environmental contributors. These are largely out of individuals' control and are major drivers of forced migration.

Meso factors, which relate to links between the source and host countries, such as communication (real or false) and diasporic links (ie, links between migrants and their host country).

Micro factors, which are the characteristics of the individuals themselves.

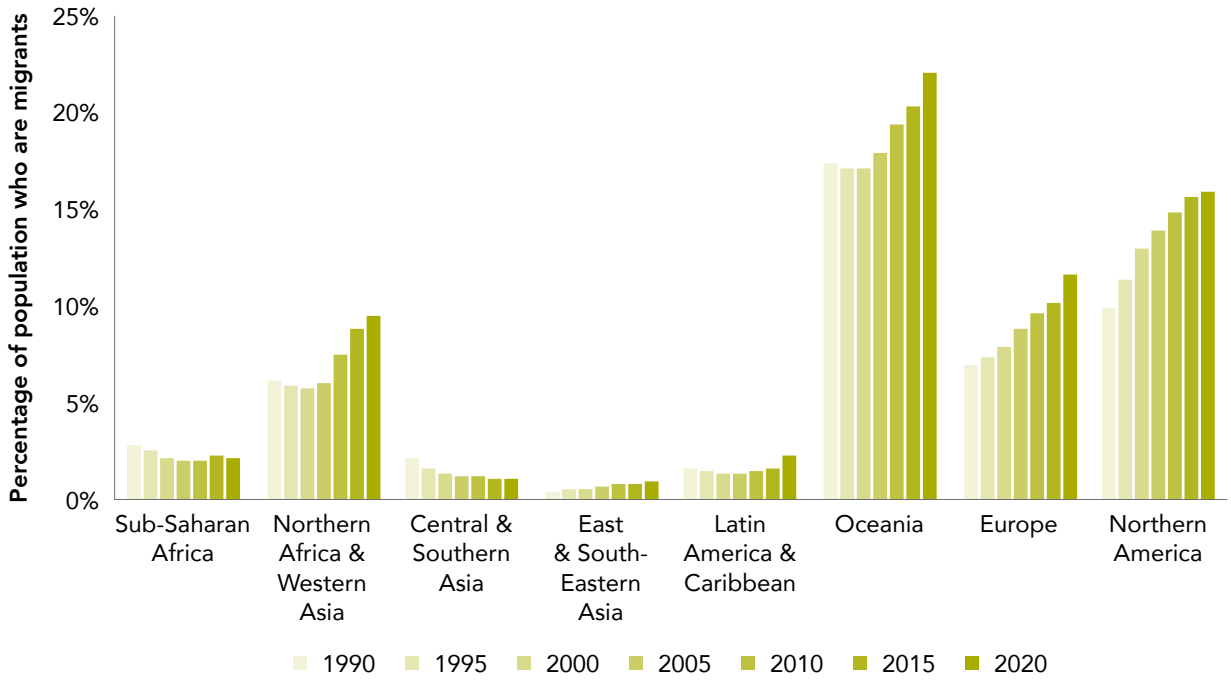


Source: Castelli (2018).

1 Economic theory has evolved from earlier extensions of trade theory, such as the Hecksher-Ohlin and factor-price equalisation theorems, to a more labour-economic approach of 'immigration markets' (see, for example, Borjas (1989)).

New Zealand is one of a number of advanced economies that have seen an increase in immigration. Inward migration has been high and growing in Oceania, North America and Europe over the past 30 years (Figure 2.4). It is also relatively high in Northern Africa (eg, countries such as Egypt, Morocco and Libya) and Western Asia (eg, Georgia, Saudi Arabia and Turkey), where the migrant share was relatively flat in the 1990s and early 2000s before picking up from the latter half of the 2000s.

Figure 2.4 The changing importance of migration
Trends in the percentage of population who are migrants

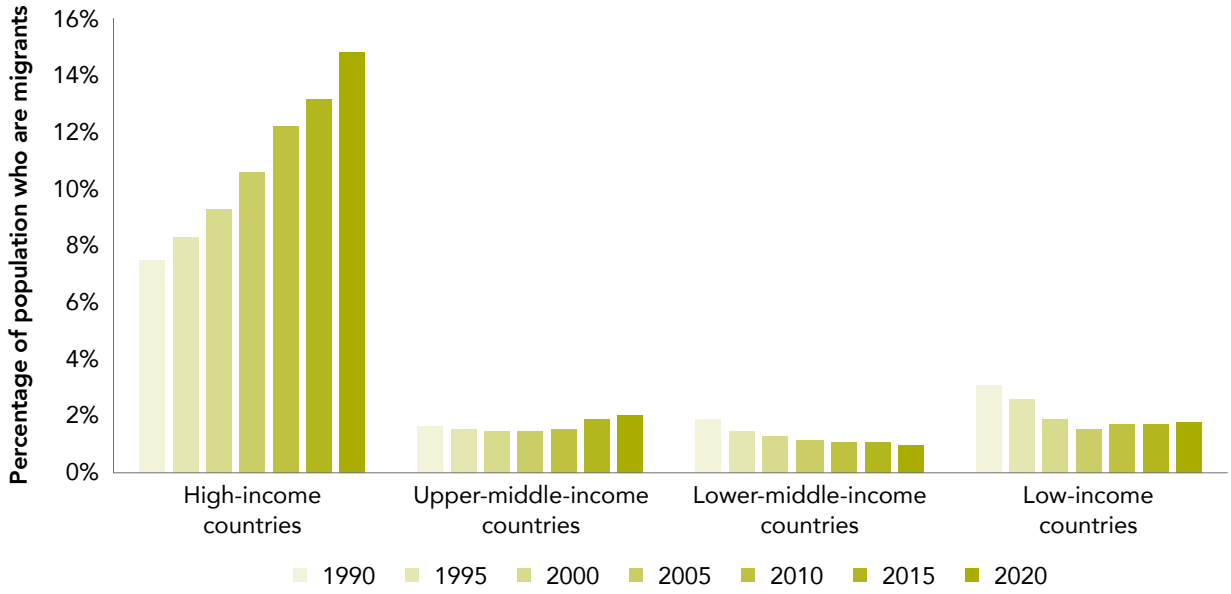


Source: United Nations Department of Economic and Social Affairs, Population Division (2021). International Migrant Stock 2020.

Notes:
1. Most of the data used to estimate the international migrant stock by country or area were obtained from population censuses. Population registers and nationally representative surveys also provided information on the number and composition of international migrants.
2. In estimating the international migrant stock, international migrants have been equated with the foreign-born population whenever this information is available, which is the case in most (80%) countries or areas. In most countries lacking data on place of birth, information on the country of citizenship of those enumerated was available and used as the basis for the identification of international migrants, therefore effectively equating (in these cases) international migrants with foreign citizens.
3. For more information, see the documentation produced by the UN Population Division, downloadable from: https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/undesa_pd_2020_international_migrant_stock_documentation.pdf.

The pattern becomes much clearer if we classify countries by their national income (Figure 2.5). It is only really the high-income countries (the top quartile of per capita income) where significant proportions of the population are immigrants. In these countries, the proportion of the population born in another country rose from 7.4% in 1990 to 14.7% in 2020. Conversely, those in upper- and lower-middle-income countries have remained relatively constant (rising from 1.6% to 2% and falling from 1.8–1%, respectively). In the countries with the lowest income, the proportion of the population born overseas actually fell between the end of the last century and the beginning of this century (from 3% in 1990 to 1.6% in 2005) before rising a little to 1.8% in 2020.

Figure 2.5 Migrants prefer high-income countries
Migrants as a percentage of population, by national income (GNP) per capita

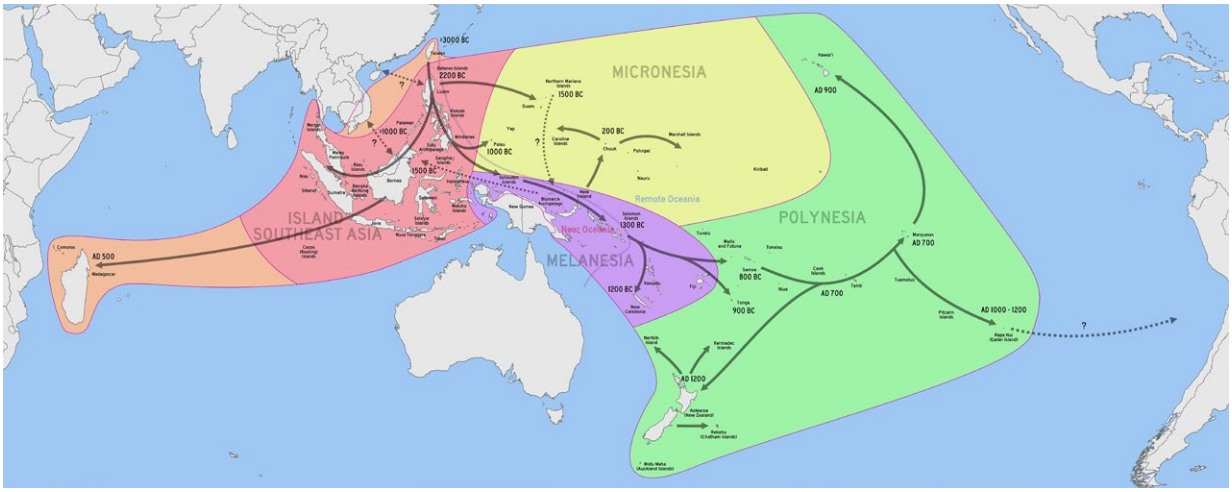


Source: United Nations Department of Economic and Social Affairs, Population Division (2021). International Migrant Stock 2020.
Notes: 1. Income level based on gross national income (GNI) per capita as reported by the World Bank (June 2020). These income groups are not available for all countries and areas. Further information is available at: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lendinggroups.
2. See also notes to Figure 2.4.

New Zealand's migration history

Aotearoa New Zealand is a country of migrants. It was the last major area of the planet to be populated. It is hard to be precise, but historians place the arrival of the Polynesian seafarers who would become Te Tangata Māori at around 1200 CE (Figure 2.6).

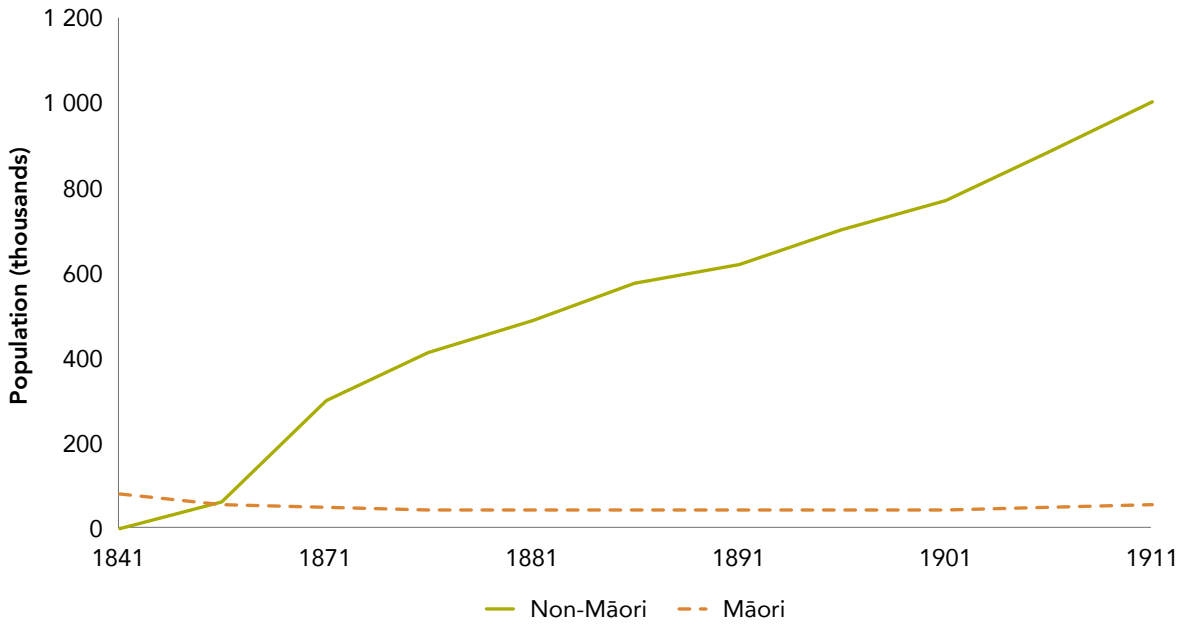
Figure 2.6 The first migration to Aotearoa New Zealand



Source: Benton et al. (2012); Soul (2020).

By the time Europeans started arriving in the 19th century, the population of Tangata Whenua was around 100 000. This was soon overtaken by the rapid influx of European settlers after the signing of the Treaty of Waitangi | Te Tiriti o Waitangi in 1840 (Figure 2.7).

Figure 2.7 The arrival of Europeans in Aotearoa New Zealand
Comparison of the Māori and non-Māori populations post-Te Tiriti, 1841–1911

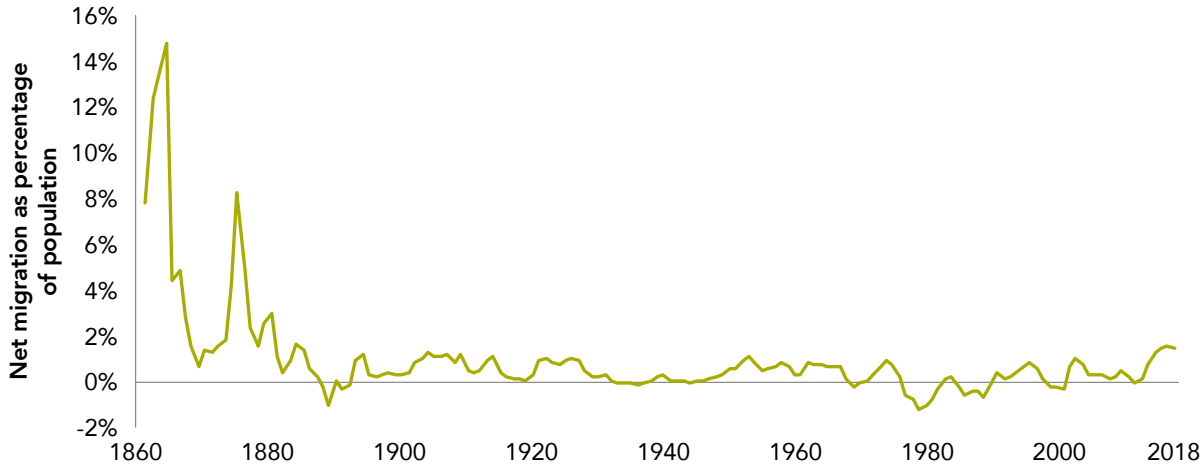


Source: Papps (1985); Poole (2021).

This rapid growth in the non-Māori population in the decades following the signing of Te Tiriti was the result of large net immigration relative to the population in the 1860s and 1870s (Figure 2.8). This led to the five-fold increase of the non-Māori population between 1856 to 1871 (from 59 000 to 299 000, according to Papps, 1985), a period when the Māori population was falling. After this period of rapid growth, net migration fell at the end of the 1880s and the beginning of 1890s.

Since then, net migration has generally been positive, or only negative by 1/10th of a percent, for most of the following century. From the latter part of the 1970s through to the early 1990s, net migration was negative for all but two years. This was a period of major economic restructuring and upheaval in New Zealand.

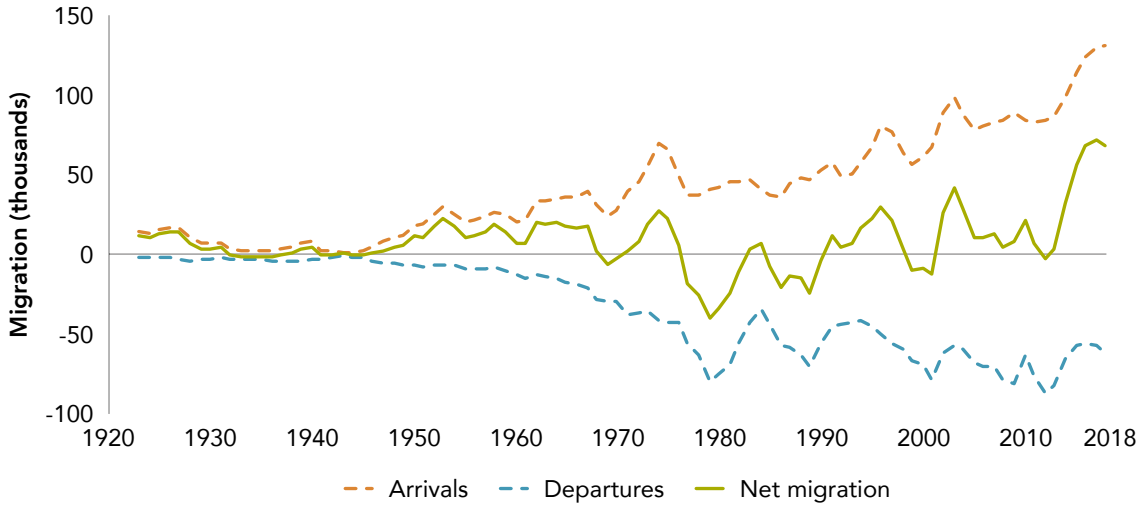
Figure 2.8 Net migration as a share of the New Zealand population, 1861–2018



Source: NZPC analysis of Data1850 (2019).

Before continuing, it is important to note that net migration is actually quite small, when compared to the numbers of arrivals and departures (ie, the two large numbers of which it is a product). People flow in both directions, and immigration and emigration often cancel each other out (Figure 2.9). Indeed, the demand for migrant workers will often be a function of the outflow of New Zealand-born people. The volume of both have increased a great deal since the end of WWII. Immigration began to rise first in the 1950s, whereas emigration did not start to pick up until a decade or so later. Large shifts in net migration tend to be a function of just one of the two. For example, the peaks and troughs in the 1960s and early 1970s appear to be driven mainly by spikes in arrivals, whereas those of the 1980s were primarily peaks in departures. In the 21st century the two appear to be more negatively correlated, with high arrivals tending to occur in years where departures are low. The surge in net migration between 2012 and 2018 was driven by a jump in the growth of arrivals, which occurred at the same time as a decline in departures.

Figure 2.9 Migration as a share of the New Zealand population, 1920–2018



Source: NZPC analysis of Data1850 (2019).

Box 2.2 **Official measures of migrant flows**

Migration across New Zealand's borders has historically been measured using the stated intentions of passengers on arrival and departure cards. The removal of departure cards from New Zealand airports and seaports in November 2018 led to the adoption of a new method for measuring international migration, one based on the outcomes of passenger movements.

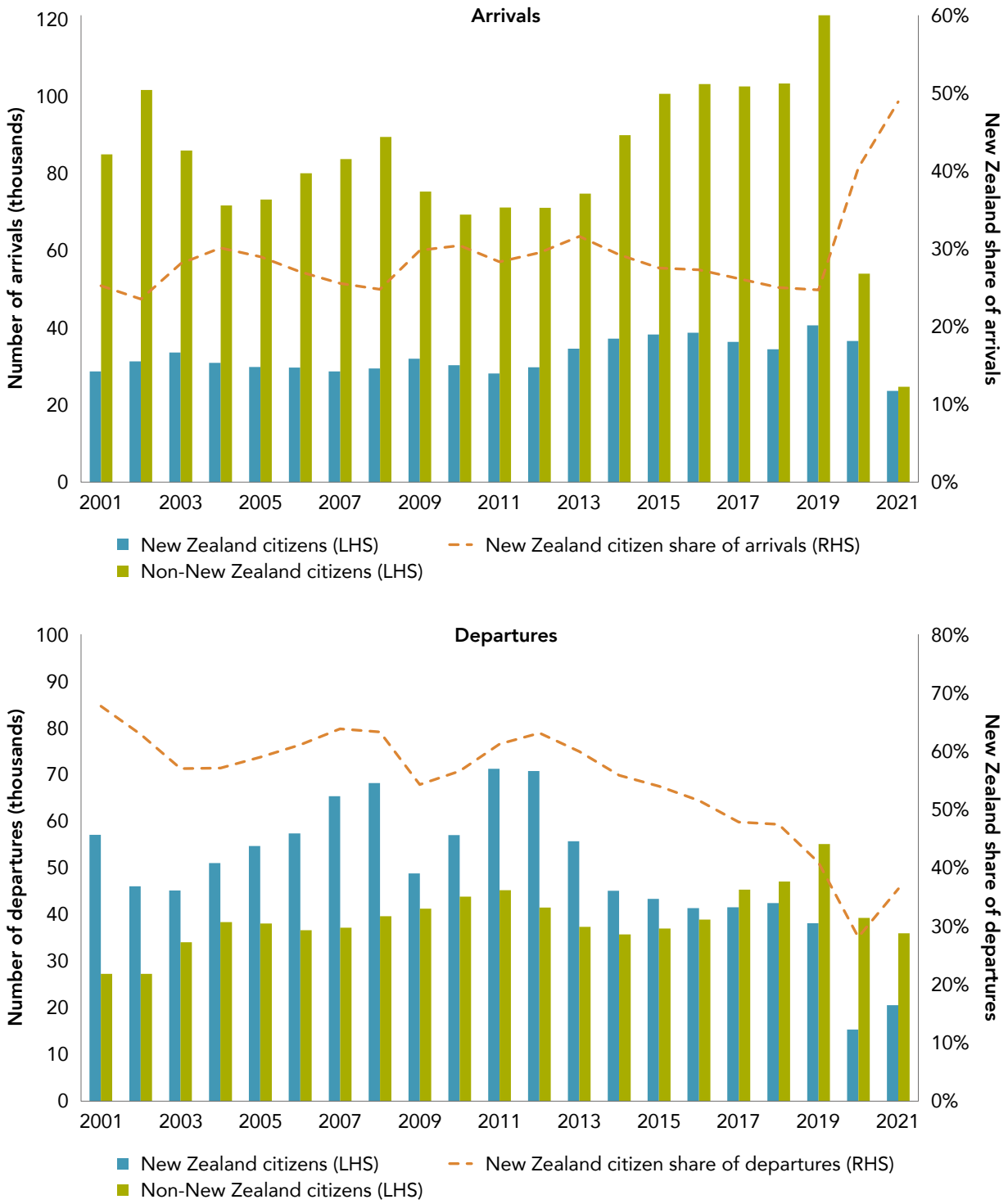
The new method adopted by Stats NZ defines a person's migrant status by the time they spend in and out of the country. It is called the '12/16-month rule' because it relates to spending 12 out of the 16 months following their travel in or out of the country. That is:

- If an overseas resident travels to New Zealand and spends at least 12 months of the following 16 months in the country, they are counted as a migrant **arrival**.
- If a New Zealand resident leaves New Zealand and spends at least 12 months of the following 16 months out of the country, they are counted as a migrant **departure**.

Source: Stats NZ, Measuring international migration in New Zealand – from intentions to outcomes, https://www.stats.govt.nz/assets/Consultations/migration-data-transformation/MDT-Project-fact-sheet-1.docx.

While migration is often thought of as a function of the flow of foreign nationals into New Zealand, and a corresponding flow of New Zealanders moving abroad, a large proportion of the overall inflows and outflows reflect temporary movements or return and onward migration. In Figure 2.10, we set out arrivals and departures to and from New Zealand by citizenship using Stats NZ's international travel and migration data. This enables us to distinguish permanent and long-term migration from shorter-term visits (for more on the data see Box 2.2). From this we can see that between 2002 and 2020, New Zealanders consistently made up one-quarter of all migrant arrivals, and between 40% and 60% of departures. These long-term trends have been significantly disrupted by the border closures and changing migration patterns due to the Covid-19 pandemic. Non-New Zealand-born arrivals plummeted from over 120 000 in 2019 to around 50 000 in 2020, and less than half of that again in 2021.

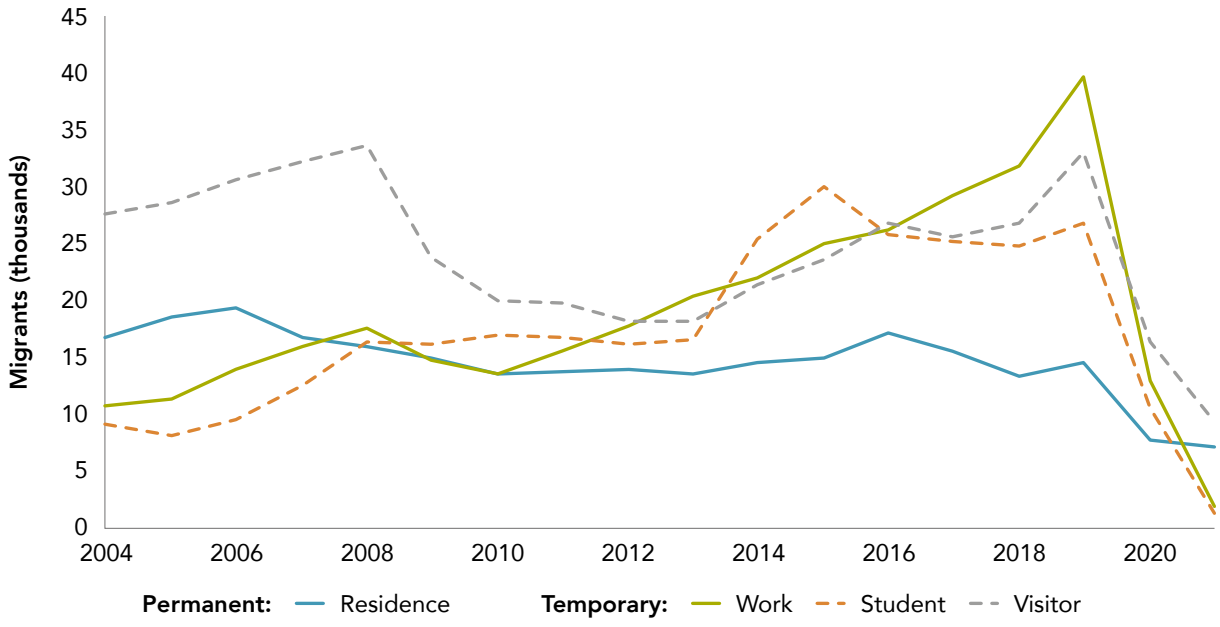
Figure 2.10 Migrant arrivals and departures by citizenship, 2001–21



Source: Stats NZ Infoshare, International Travel and Migration.
Notes: 1. Estimated migration by direction and country of citizenship based on the 12/16-month rule (Annual-March).
2. For more information on the measure see Box 2.2.

This increasing circulation across borders also reflects the changing composition of migrants to New Zealand. While the number of migrants arriving on a permanent residence visa fell from around 16 700 to 14 500 per year between 2004 and 2019 (Figure 2.11), temporary resident arrivals under the three main visa types (student, visitor and work visas) more than doubled prior to the Covid-19 pandemic. The number of temporary arrivals on visitor visas tends to be fairly cyclical, fluctuating with the world economy. The number of arrivals on student visas increased steadily over the period, especially since 2014. This was a period when the National Government pushed to grow international education; (the Pathway Student Visa was introduced in December 2015). The number of migrants arriving on a work visa increased fairly consistently from the early 2000s before the sudden drop in arrivals due to the Covid-19 border closures. The numbers of temporary migrants arriving on student and work visas fell to 5% of their 2019 number by 2021, and those of visitors to 28% of their pre-Covid-19 peak.

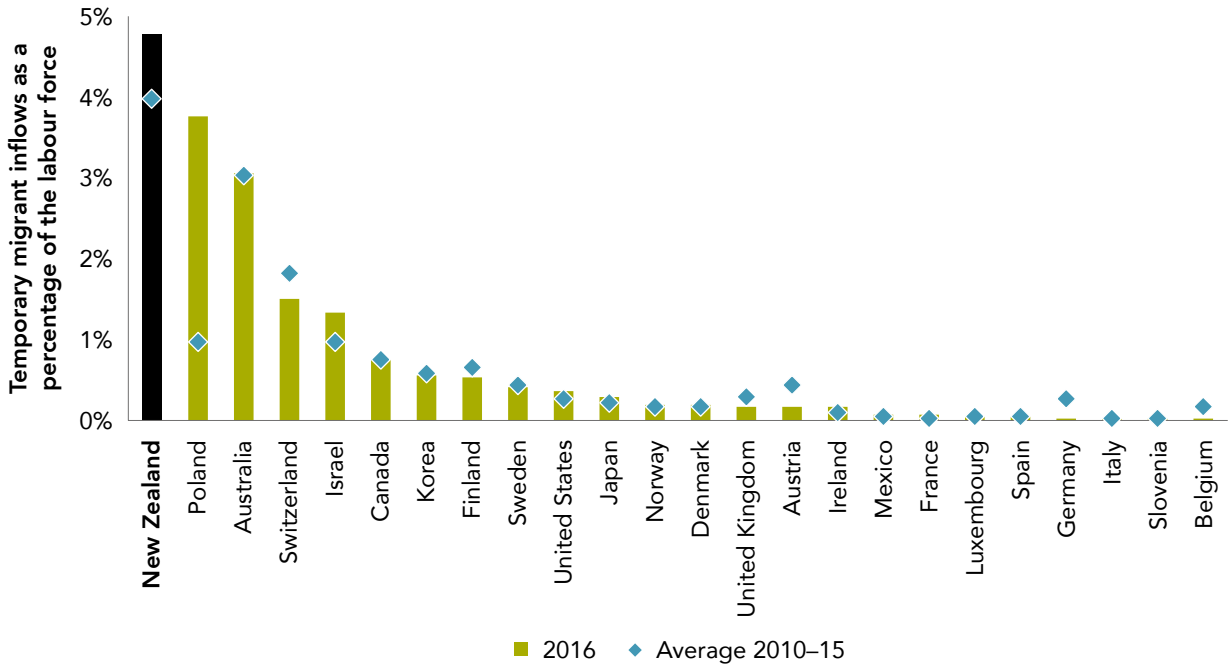
Figure 2.11 Permanent and temporary arrivals by visa type, 2004–21



Source: Stats NZ Infoshare. International Travel and Migration.
Notes: 1. Estimated migrant arrivals by visa type. Migrant status determined by 12/16-month rule.
2. Excludes New Zealand and Australian citizens and 'Other' visa types.

Strong growth in temporary migrant arrivals over the latter half of the 2010s has led to a relatively high share of temporary workers in the New Zealand labour force. Figure 2.12 compares the share of temporary workers in the New Zealand labour force with that in selected other OECD economies, in the years from 2010 to 2016. At 4.8%, temporary migrants play a more significant role in the New Zealand economy than in Australia (3.1%), or other traditional migrant destinations, such as Canada and the United States. Given the large rise in inflows of temporary workers in New Zealand, more recent data would be expected to show an even more stark picture.

Figure 2.12 New Zealand is an intensive user of temporary migrants internationally
Temporary migrant inflows as a percentage of the labour force in OECD countries

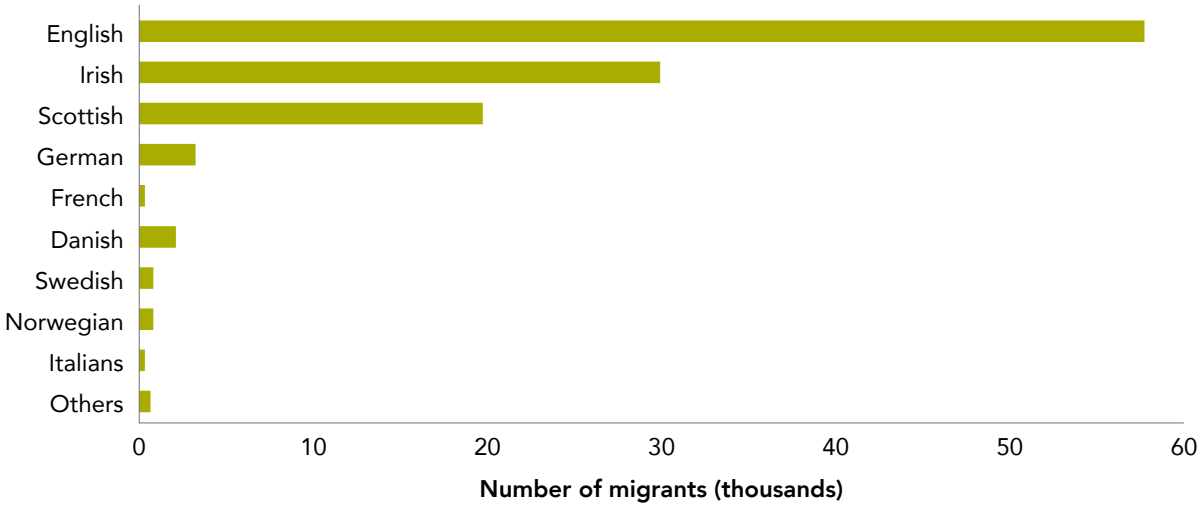


Source: OECD, International Migration database and Annual Labour Force Statistics database.
Note: The data consist of inflows of seasonal and non-seasonal (interns, intra-company transfers and working holidays) foreign workers who obtained a working visa.

Sources of migrants

The sources of New Zealand's immigrants have changed over time, reflecting historical, political, social and economic relationships. At the end of the 19th century, migrants were almost exclusively European, with most coming from the United Kingdom, which then included what is now the Republic of Ireland (Figure 2.13).

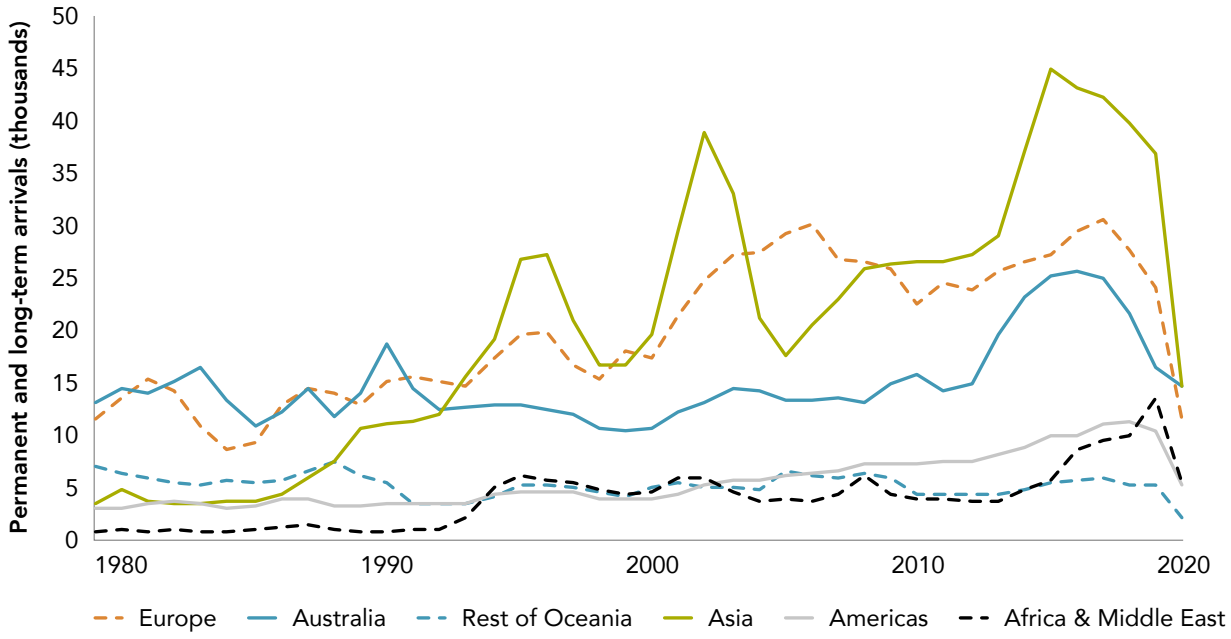
Figure 2.13 Sources of migrants to New Zealand,1871–92



Source: Dominion Population Committee report (1946), p. 28.

Figure 2.14 shows the changes in the continents from which New Zealand immigrants have journeyed over the past 40 years. European migration to New Zealand continues to be a major source of migrants, but rapid growth in Asian migration (particularly from China and India) has substantially diversified the migrant population since 1980.

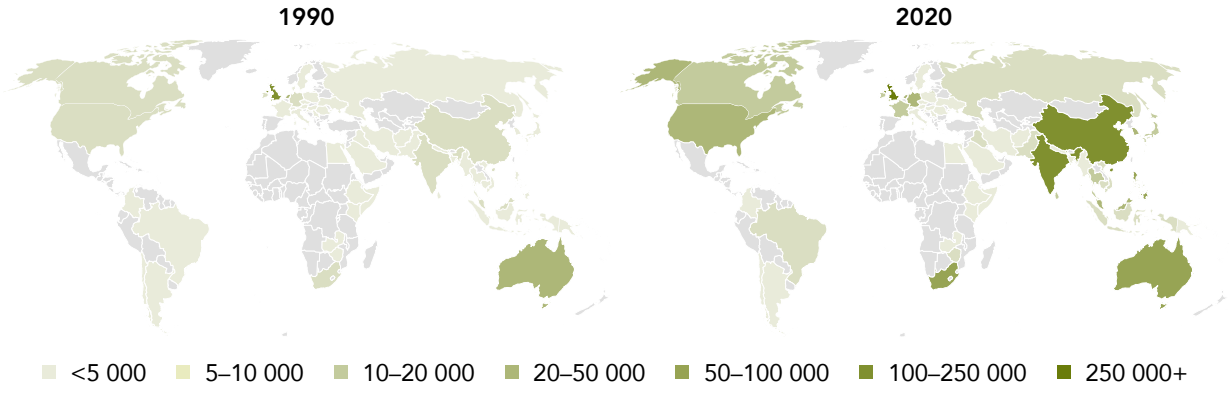
Figure 2.14 Permanent and long-term arrivals of non-New Zealanders by origin continent, 1980–2020



Source: NZPC analysis using Stats NZ data.

The outcomes of these changes can be seen in the two maps in Figure 2.15. As recently as 1990, we can see the sources of our migrants were concentrated in two countries (the United Kingdom and Australia). By 2020, the map had changed considerably, with the darker areas showing the importance of China and India, as well as South Africa and the United States.

Figure 2.15 The sources of migrant population in 1990 and 2020
New Zealand immigrant population by source country

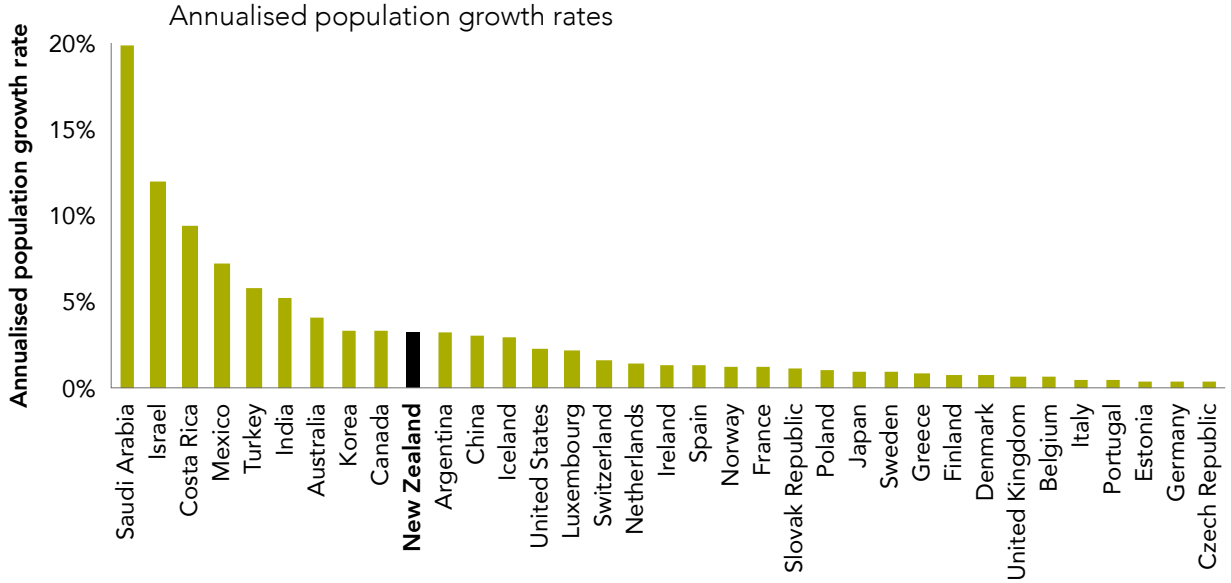


Source: NZPC analysis using UN-DESA 2020 – International Migrant Stock 2020.

Migration and New Zealand's population

New Zealand's population has grown comparatively rapidly over last 30 years (Figure 2.16). New Zealand sits in a group of countries whose population has grown at around 2.5% per year over the last 30 years, which is relatively high for a developed nation. The OECD average growth has been 1.55% per year, and most European countries have grown by around 0.5%.

Figure 2.16 Population growth by country, 1990–2020
Annualised population growth rates



Source: OECD (2022), Population (indicator). doi: 10.1787/d434f82b-en (Accessed on 22 March 2022).

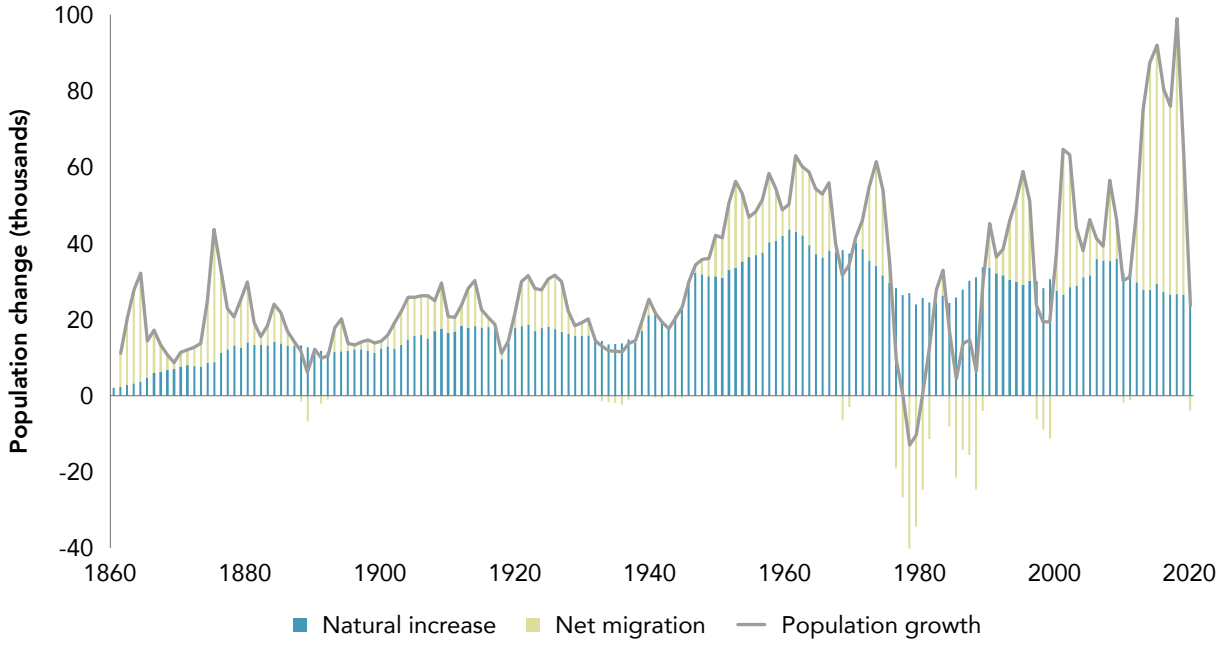
Migration's contribution to changes in the New Zealand population

Most of New Zealand's population growth in the last century-and-a-half has come from natural increase (births less deaths) (Figure 2.17). Since 1861, New Zealand's population has grown by 4.87 million. Of this, 3.58 million has been due to natural increase and 1.29 million has come from net migration. There have been a number of periods where the contribution of net migration was negative, particularly in the 1980s. This period included three years (1979–81) when net emigration was so high that New Zealand's population actually shrank.

Since the net emigration during the 1980s, migration has made a net contribution to population growth. In more recent years, this has been particularly large. Between 2014 and 2020, migration made its biggest contribution to population growth since the end of the 19th century. Not only was it the first sustained period since the 1800s that migration had contributed more than half of population growth (with the exception of 1996 and 2002–03), but it actually contributed two-thirds of the growth. The last decade has been both a time of increased net immigration and a continuation of the decline in the birth rate. The birth rate in New Zealand has been declining steadily since the 1950s, falling from 2.6% in 1955 to less than half that in recent years. The death rate has fallen, but at a slower rate, from 0.9% to 0.7%.

What is also clear from Figure 2.17 is that migration has always been more volatile than changes in population due to natural increases. If the birth rate continues to decline, the relative contribution (positive or negative) of migration will only grow in importance.

Figure 2.17 Changes in New Zealand's population due to natural increase and net migration, 1860–2020

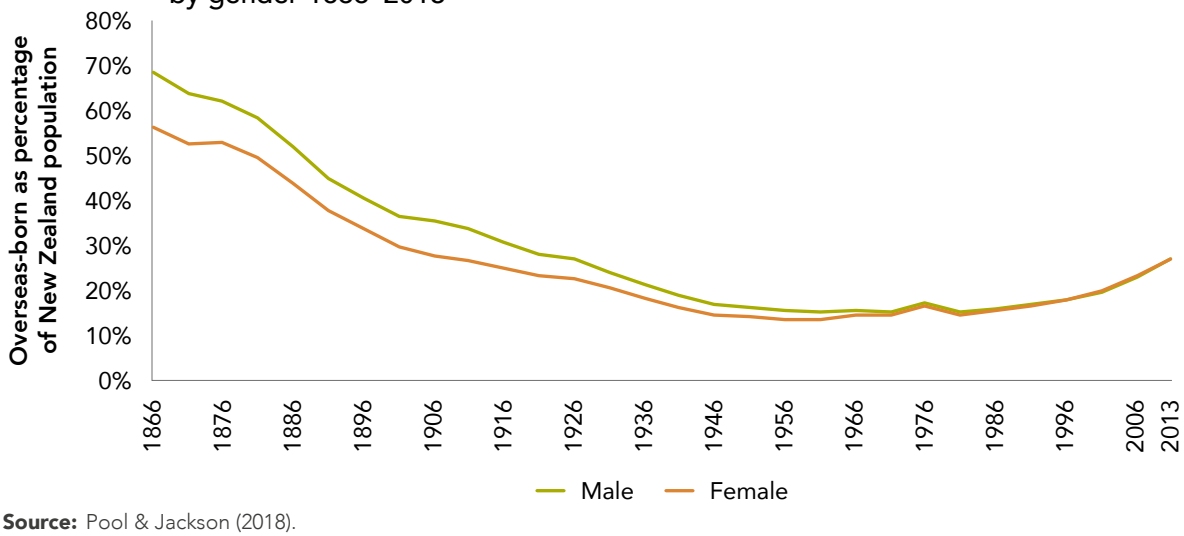


Source: Data1850 (2019); Stats NZ Infoshare.

The nature of New Zealand's patterns of immigration and natural increase since the mid-19th century have been such that the proportion of the population born overseas was extremely high after the first burst of migration (Figure 2.18). As the rate and composition of immigrants changed and children were born to migrants, the portion of the population born overseas fell.

Years of net immigration in the post-WWII period eventually turned the tide, causing the stock of the foreign-born to rise relative to the overall population. In the early years, immigration (and hence the overseas-born population) was more likely to be male. As society has changed, the proportions of men and women born overseas have equalised.

Figure 2.18 Overseas-born as a proportion of the New Zealand population over time, by gender 1866–2013

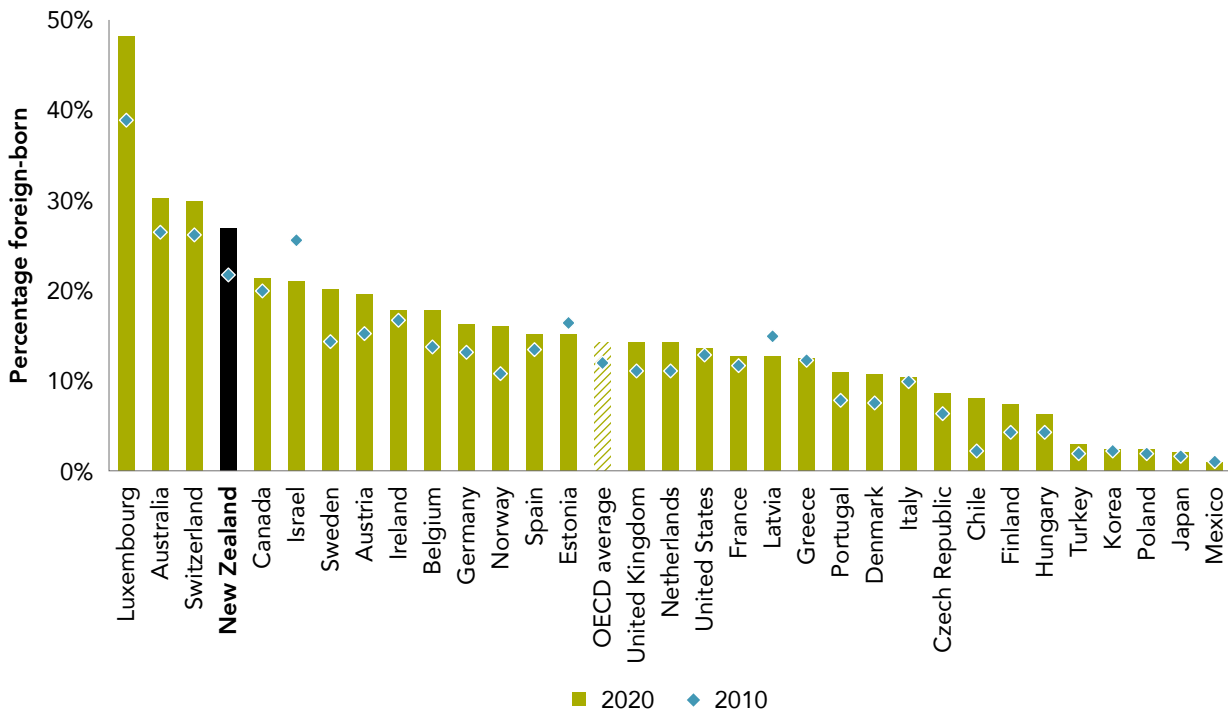


Source: Pool & Jackson (2018).

The proportion of foreign-born people in New Zealand has continued to increase (Figure 2.19). Moreover, it is high internationally, being almost twice the OECD average. Very few advanced economies have such a large portion of their population born overseas. Australia and Switzerland have foreign-born populations around 3% higher than New Zealand, at 29.9% and 30%, respectively. Highest of all in the OECD is the Grand Duchy of Luxembourg, a country of 633 000 people, and the location of the signing of the Schengen Agreement in 1985, creating a single jurisdiction for international travel purposes of over 400 million people.

Most OECD countries, like New Zealand, have experienced growth in the proportion of their population born abroad. Two exceptions to this trend are Estonia and Latvia, two former Soviet Union countries, which experienced low inflows of foreign-born people in the decade since they implemented the Schengen Agreement themselves at the end of 2007. This was a period of falling population for both countries due to emigration. Another exception is Israel, which has some fairly unique immigration arrangements, including the Law of Return for immigrants with Jewish origin or ties (OECD Immigration Outlook, 2015, p. 214).

Figure 2.19 Proportion of foreign-born population across selected OECD countries, 2010 and 2020



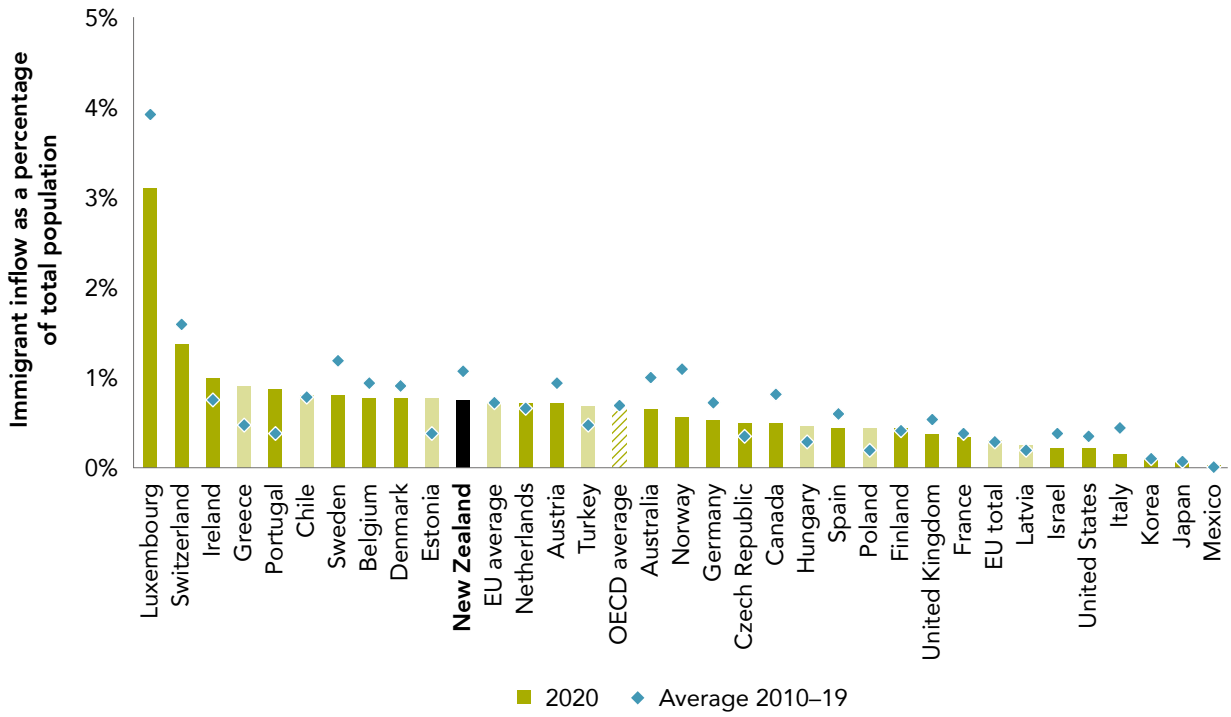
Source: OECD (2021). International migration outlook 2021, Figure 1.12.

Notes:
1. Foreign-born residents are all persons who have ever migrated from their country of birth to their current country of residence, including those born abroad. This includes the children of New Zealand diaspora who have returned to this country.
2. Data refer to 2010 or the closest available year, and to 2020 or the most recent available year.
3. The OECD average is a simple average based on countries presented. For Japan and Korea, the data refer to the foreign population rather than the foreign-born population.
4. Data available from OECD International Migration Database, https://doi.org/10.1787/data-00342-en.

We have previously mentioned the impact of Covid-19 on migration. We look at this from an international comparative perspective in Figure 2.20. In the figure, we compare flows of permanent immigrants into OECD countries in 2020 with the average annual flows over the previous decade (2010–19). There have been quite a variety of experiences in the various OECD member countries. The average impact on OECD countries has been a drop of 4% in inflows of foreign-born people in 2020 relative to the previous decade, but this hides considerable variation. Countries such as Italy, the United States, Israel, Norway, Australia and New Zealand saw inflows drop to between a one-third and one-half of the levels seen in the previous decade. Conversely, countries such as Estonia, Greece, Poland and Portugal saw inflows double. These countries all saw growth from major source countries from outside the EU, such as the Ukraine (for Estonia and Poland) and Brazil (for Portugal).

Figure 2.20 The impact of Covid-19 on immigration

Average annual inflows of permanent immigrants to OECD countries as % of total population, 2020 and 2010–19



Source: OECD (2021). International migration outlook 2021, Figure 1.2.

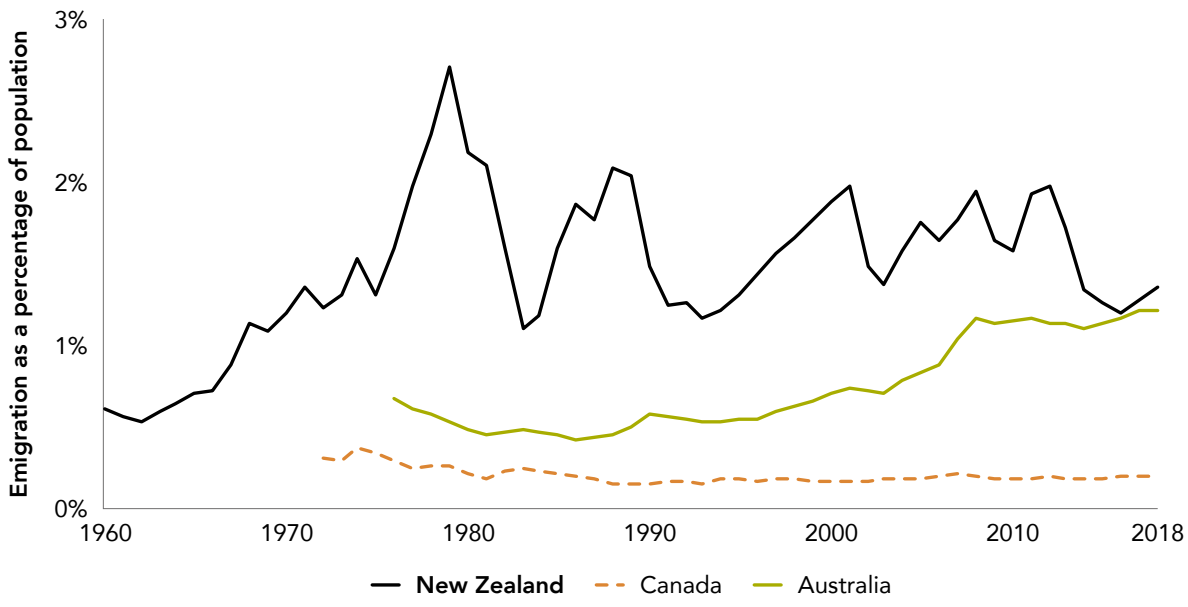
Notes: 1. Inflows include status changes (persons in the country on a temporary status who obtained the right to stay on a longer-term basis).
2. Only countries for which an estimate of 2020 inflows is available.
3. Data for countries in light green are not standardised.
4. EU average is the average of EU countries presented in the original chart.
5. EU total represents the entries of third-country nationals into EU countries for which standardised data are available, as a percentage of their total population.

Emigration

Immigration is part of a two-way flow, not just of foreign-born people, but also New Zealanders. Immigration is just part of the story of the impact of migration on New Zealand and its economy. Emigration has a direct impact on New Zealand because of the productive capacity and skills emigrants take with them, but also the impact on immigration as employers look abroad to replace them. Up until now, we have mainly considered emigration through its impact on net migration to New Zealand. In this section, we focus on it explicitly.

If we compare New Zealand's recent experience to two other English-speaking advanced economies (Figure 2.21), we can see how different this country's emigration experience has been. Emigration from Canada has been consistently below 0.5% since 1972. Emigration from Australia, on the other hand, has scarcely fallen below 0.5%. Emigration from Australia has been on the increase since the mid-1980s, reaching 1.2% in 2008 and remaining at a similar level ever since. In contrast to both the stable emigration rate of Canada and the steady increase in Australia, emigration from New Zealand has been highly cyclical. More than 1% of people in New Zealand, and often double that, emigrate in any given year and have done so at least since the 1970s.

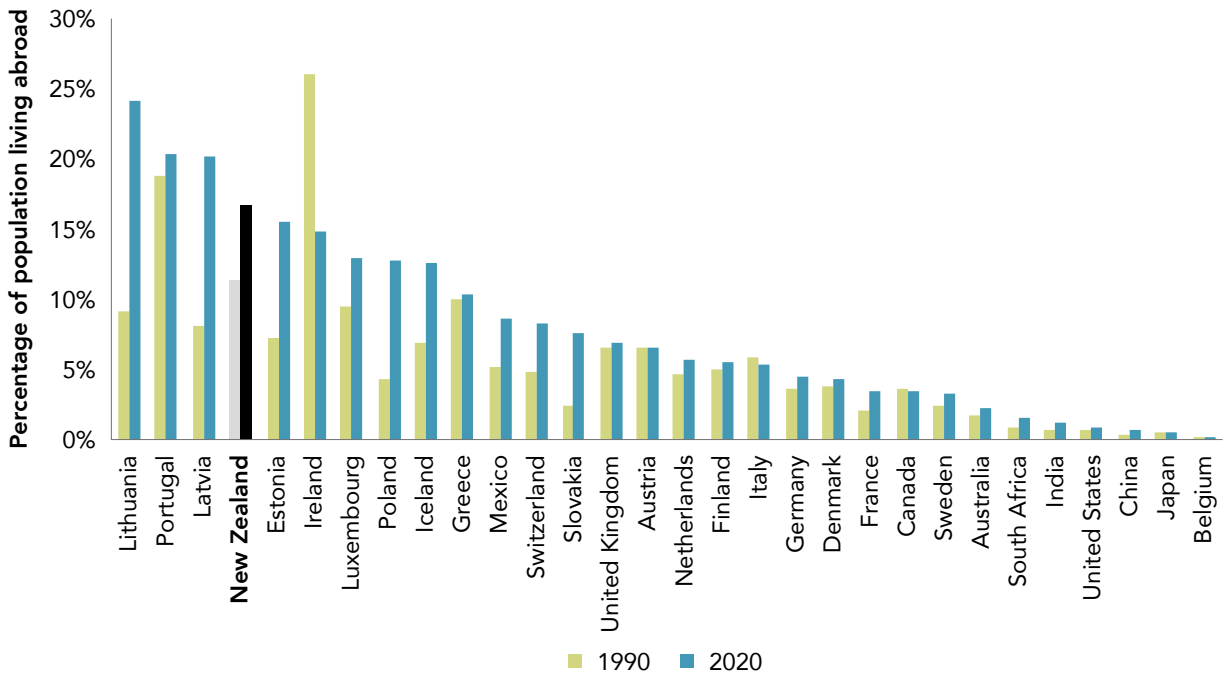
Figure 2.21 Annual emigration from New Zealand is high as a percentage of the population 1960–2018



Source: Carey (2019).

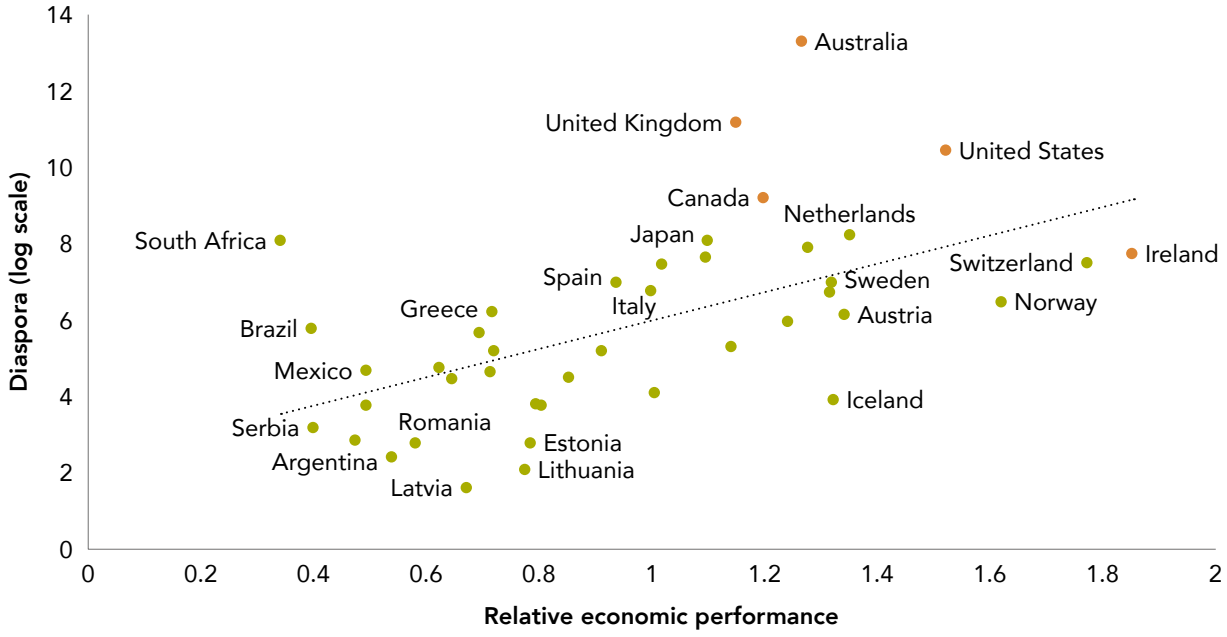
We can get a picture of the impact of this on the size New Zealand's diaspora from Figure 2.22. New Zealand has one of the largest diasporas in the world as a share of population, and it is growing. According to United Nations data, it has risen from 11% in 1990 to 17% in 2020, which is an unusually high proportion for an advanced economy.

Figure 2.22 Selected countries' diaspora, percentage of the resident population, 1990 and 2020



Source: NZPC calculations based on United Nations Department of Economic and Social Affairs, Population Division (2020). International Migrant Stock 2020.

Figure 2.23 New Zealand emigrants prefer English-speaking and richer countries
Stock of New Zealanders working in each country by relative GDP per head, 2015



Source: NZPC calculations based on Penn World Table 10.0; for more information see Feenstra et al. (2015).
Notes: 1. Relative performance measured by GDP of country relative to that of New Zealand.
2. Orange dots indicate English-speaking destinations.
3. Dotted line indicates line of best fit, R^2= 32.6%.

There are a number of countries in Europe with high diasporas. Lithuania, along with Estonia and Latvia, joined the EU in 2004 and implemented the Schengen Agreement in December 2007. With impediments to the free movement of labour removed, labour has moved from the poorer accession countries to the wealthier members of the EU. Since that time, Lithuania's diaspora has increased from less than 10% in 1990, to almost one-quarter of its population in 2020. Latvia and Estonia's diaspora grew from 8% to 20%, and from 7% to 16%, respectively. Over this period, Ireland experienced a large decline in diaspora as emigration declined and returning Irish nationals represented the largest group of immigrants (OECD Migration Outlook, various years). New Zealand looks more like Poland and Latvia than Australia (similar to the United States and small EU countries) or Ireland.

Emigrants from New Zealand tend to move to other English-speaking countries, such as Australia, Canada, the United Kingdom and the United States (the orange dots in Figure 2.23).[2] There is also a clear relationship between the economic performance of a country relative to New Zealand (the horizontal axis) and the number of New Zealand emigrants (the vertical axis, in log form). The dotted line in the figure shows the estimated 'line of best fit' for this relationship. Given that the drivers of emigration are complex, an R^2 of 32.6% for this is very high.

It is the more highly educated who have left New Zealand (Figure 2.24). From the perspective of the migrants, this is what one would expect, given the premium they can obtain by moving will be larger for more highly-educated emigrants and the barriers to entry lower for many destinations. If the cost of moving is similar, and the benefits higher for more highly-qualified New Zealanders, one would expect them to be more likely to emigrate. Also, for a given level of education, one would expect the flows of migration to depend on the cost of migration. In particular, one would expect less-qualified people to be more likely to migrate as costs reduce. It is no surprise, therefore, to learn that New Zealanders working in our nearest neighbouring country, Australia, are less likely to be highly educated than those in other countries (one exception is the Netherlands).

Figure 2.24 Many New Zealand emigrants are highly educated

Percentage of New Zealand diaspora age 15 years and over with tertiary qualifications

Source: Database on Immigrants in OECD Countries (DIOC).

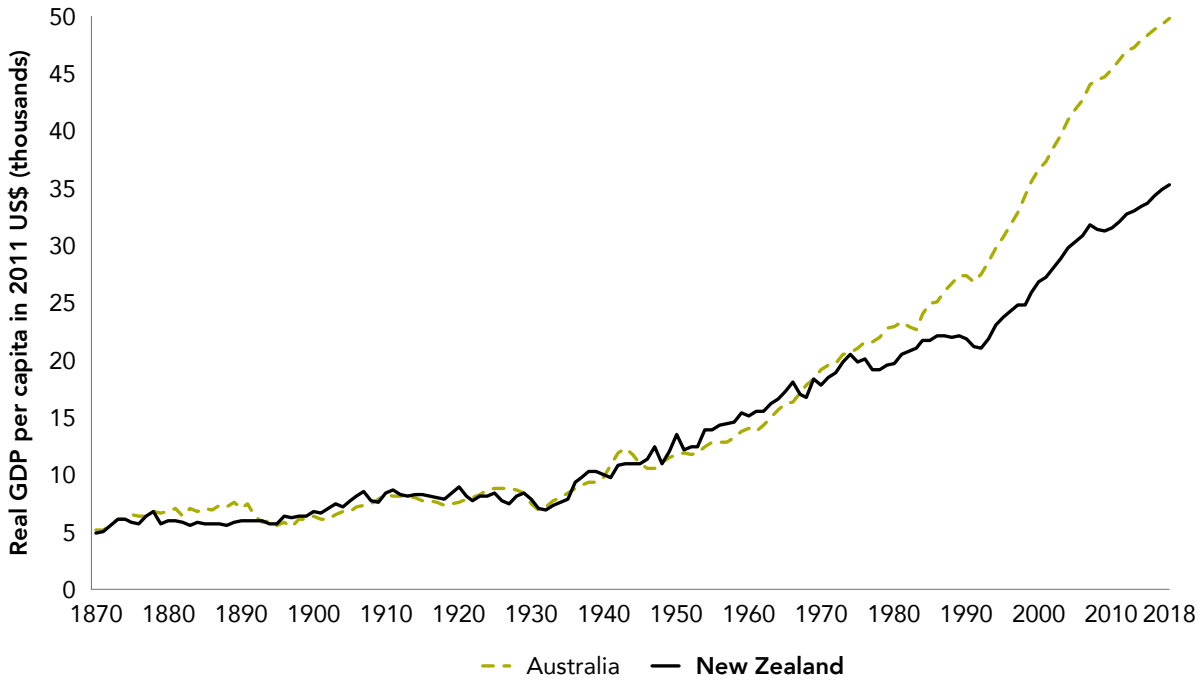
2 The one exception is Ireland, whose relative economic performance is likely inflated by the large number of multinational corporations which have relocated their economic activities to Ireland. This means that income generated from the use of intellectual property across the world contribute to Ireland's GDP, even though it was not necessarily 'produced' there.

Visiting cousins

While both New Zealand and Australia impose both numerical limits and careful selection criteria for prospective migrants from other source countries, prospective trans-Tasman migrants have long held a privileged position under bilateral entry regulations (for more on this topic see APC & NZPC, 2012; Carmichael, 1993; Poot, 2010). Formalised through the Trans-Tasman Travel Agreement (TTTA) in 1973, these arrangements allow New Zealand and Australian citizens to freely travel, work and live indefinitely in either country without being required to apply for entry permission or residency. Before 1973, neither New Zealand nor Australia exercised systematic control over immigration from the main Commonwealth countries (mainly the United Kingdom and Canada), and New Zealanders and Australians were thus free to move between each country under informal arrangements.[3]

The combination of unrestricted entry and (relative) geographic closeness has led to significant bilateral migration flows, strongly influenced by relative economic conditions in the two countries (Lidgard, 1992; Sanderson, 2009). Looking at the economic performance of the two countries (Figure 2.25), we see that Australia and New Zealand's economies performed remarkably similarly for over a century. In the middle of the 1970s, the two economies began to part company. New Zealand's real GDP per capita stagnated from the mid-1970s to the mid-1990s, whereas Australia's continued and then accelerated its upward climb. From the mid-1990s, New Zealand's economy picked up, but has continued to lag behind that of Australia.

Figure 2.25 The relative performance of the Australian and New Zealand economies, 1870–2018
Real GDP per capita since 1870, 2011 US$ (thousands)



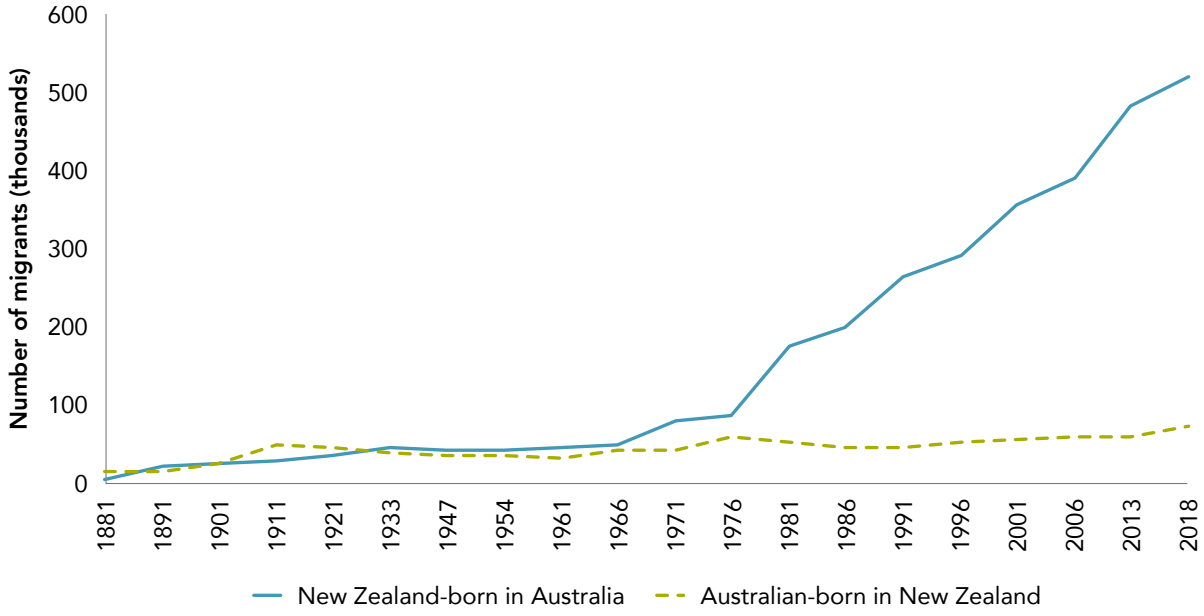
Source: NZPC (2021b).

3 The Immigration Act 2009 allowed Australians to be automatically granted an electronic visa on arrival to New Zealand without requiring completion of visa application forms.

This economic divergence is closely mirrored in the migration figures. Figure 2.26 shows the stock of trans-Tasman migrants since 1881. The numbers of New Zealanders living in Australia and Australians living in New Zealand remained relatively flat, and nearly identical, for almost a century. The 1967–68 period has been identified as an important turning point in the New Zealand economy (Gould, 1982; Hawke, 1985; Poot, 2010). New Zealand faced its first major post-WWII recession and a large devaluation of its currency.

As the performance of the two economies diverged, and Australia's GDP per head began to increase relative to that of New Zealand, the number of New Zealand-born people living in Australia began to rise rapidly, from 80 000 in 1971 to over half a million in recent years. Conversely, the number of Australians living in New Zealand has stayed fairly static. While transport costs declined over this period, it does not appear to have acted symmetrically on Australians and New Zealanders (Poot, 2010).

Figure 2.26 Stock of trans-Tasman migrants, 1881–2018



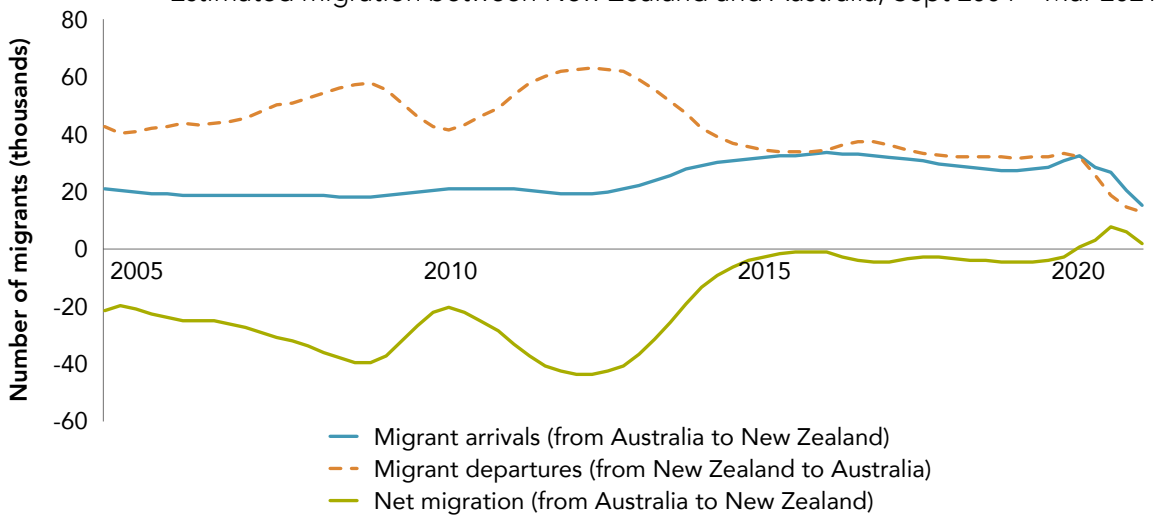
Source: Australian Bureau of Statistics – Australian Census of Population and Dwellings, Stats NZ – New Zealand Census of Population and Dwellings. Compiled by Jacques Poot.

Notes: Before 2011, Australian and New Zealand censuses were conducted in the same years. The New Zealand 2011 census was delayed by two years due to the Canterbury earthquakes. Since then, the New Zealand census has been held two years later than the corresponding Australian census.

We look in more detail at recent flows between New Zealand and Australia in Figure 2.27. Here we plot migrant arrivals from Australia to New Zealand and departures from New Zealand to Australia alongside net migration between the two countries. As one would expect, given what we have just seen about the stocks of trans-Tasman migrants, net migration flows are dominated by departures from New Zealand to Australia. Flows from Australia to New Zealand are much more static. Since 2015, the two series have come together, as flows from New Zealand to Australia have fallen. This was a time when unemployment was rising in Australia, but falling in New Zealand (ie, the labour market in New Zealand was strong relative to Australia) (Armstrong & McDonald, 2016).

Figure 2.27 Flows between New Zealand and Australia

Estimated migration between New Zealand and Australia, Sept 2004 – Mar 2021



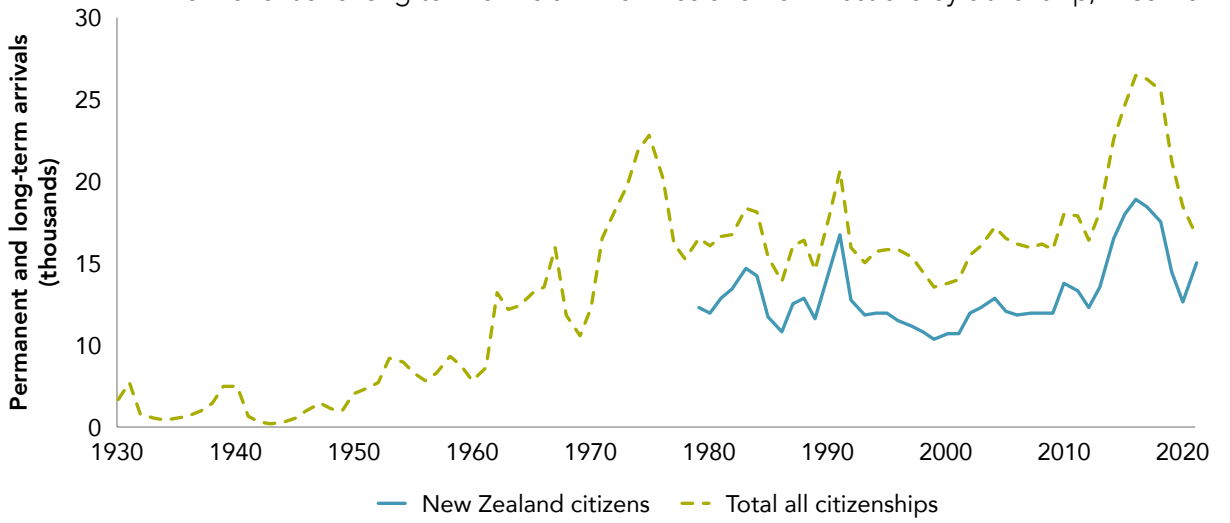
Source: Stats NZ calculations based on Stats NZ and Australian Bureau of Statistics data.

Figure 2.27, however, includes all migration between the two independent countries. Two integrated economies, with a common language and similar culture, and mutual working rights start to look more like a single economy (Gorbey et al., 1999; Grimes, 2004; Poot, 2010). In this situation, people born in both countries may flow back and forth in response to changing work opportunities or family events, just as New Zealanders move between cities within this country. Certainly, researchers such as Sanderson (2009) found that repeat and return migration and ongoing mobility are an important part of actual trans-Tasman migration experiences.

Looking at Figure 2.28, we can see that migration to New Zealand from Australia is mainly the remigration of New Zealand citizens. Since 1980 (when it became possible to identify nationality), fully two-thirds of the people arriving in New Zealand from Australia, with the intention of staying for more than a year, were New Zealand citizens.

Figure 2.28 Migration from Australia is primarily the (re)migration of New Zealand citizens

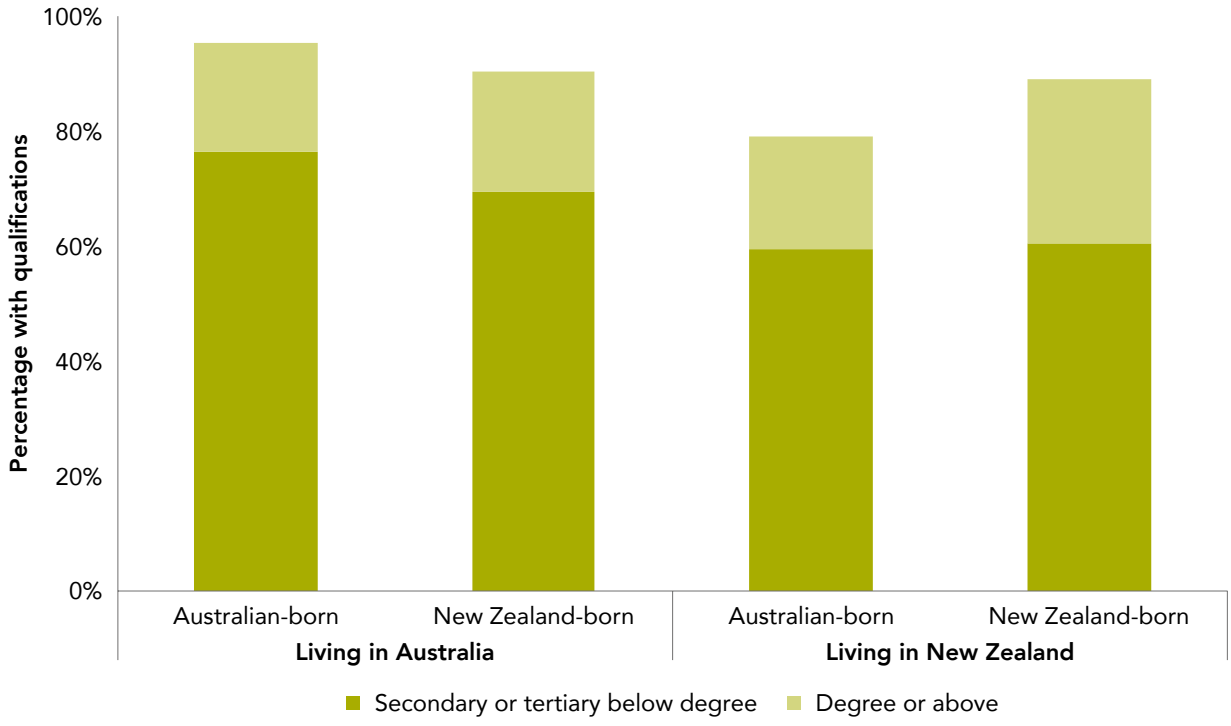
Permanent and long-term arrivals in New Zealand from Australia by citizenship, 1930–2021



Source: Stats NZ, Infoshare.

A second consequence of the close and unconstrained travel and migration between the two countries is that the composition of trans-Tasman migrants – by age and qualifications/occupation – is much less selective than that of New Zealand's other large migration flows. We saw earlier (Figure 2.24) that New Zealand emigrants are highly educated, but that those to Australia are less so. We look in more detail at the 'brain exchange' between New Zealand and its nearest neighbour in Figure 2.29. This comparison shows that the New Zealand-born living in Australia are slightly less likely to have a degree-level qualification or above than those who remain in New Zealand. Compared to their Australian hosts, trans-Tasman migrants from New Zealand are similarly likely to hold a degree or higher qualification, but less likely to have a secondary qualification. Australian-born people living in New Zealand are less likely to hold secondary qualifications than those who remain in Australia, despite being equally likely to have a degree or higher qualification. In both cases, this may reflect the fact that higher-qualified people who choose to migrate also have a higher likelihood of going further afield (Figure 2.24), as they are better able to bear the costs and are less limited by restrictive immigration policies in destination countries. It is also reflective of the relative age structures of the four population groups (Figure 2.30).

Figure 2.29 Losing our most qualified to Australia?
Qualifications of New Zealanders and Australians age 15 and over



Source: NZPC calculations based on Australian Bureau of Statistics Census 2016, SNZ Census 2018.
Notes: 1. Secondary or tertiary below degree from the New Zealand Census includes: Level 1 – Level 4 certificate; Level 5 diploma; and Level 6 diploma; Overseas secondary school qualifications.
2. Secondary or tertiary below degree from the Australian Census includes: Certificate I & II Level; Secondary Education – Years 10 and above; Certificate III & IV Level; Advanced Diploma and Diploma Level.
3. 'Secondary Education – Years 9 and below' in Australia is included in the 'no qualification' (the omitted category in the figure).

Figure 2.30 Few young New Zealand-born living in Australia
Population age profiles in New Zealand and Australia, 2016 and 2018

Source: Australian Census of Population and Housing, 2016; New Zealand Census of Population and Dwellings 2018.

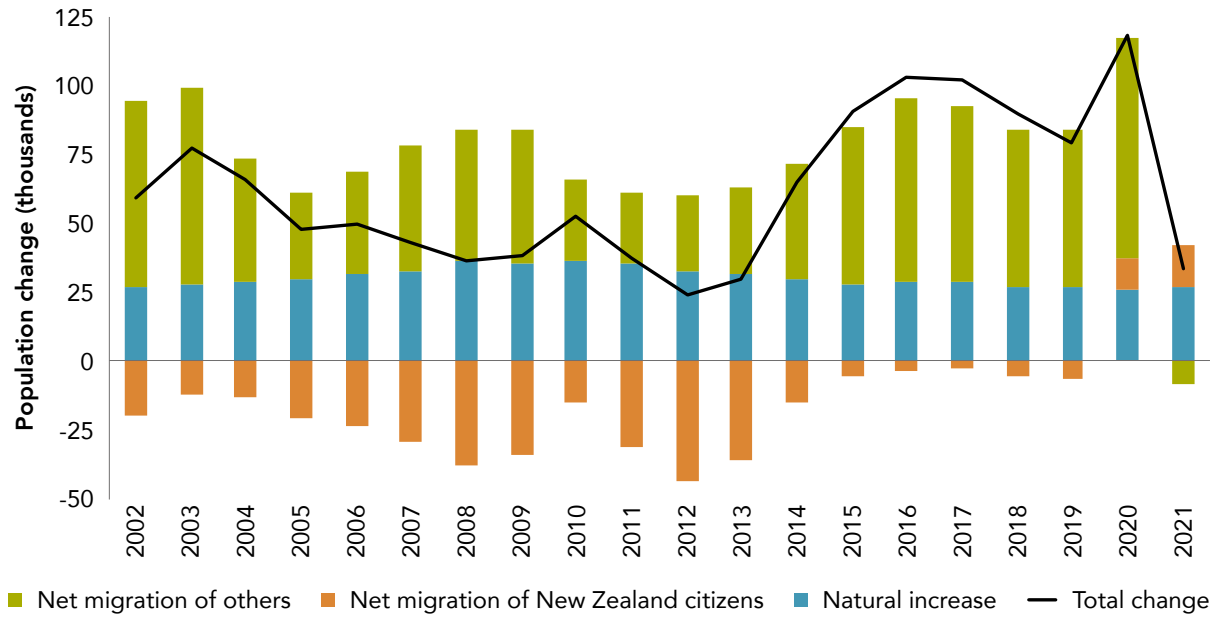
Figure 2.30 shows the age structure of the population age 15 and over for the four groups shown in Figure 2.29. While the native-born populations in each country look relatively similar, aside from the more pronounced dip among New Zealanders aged 30 to 49 (which may reflect high, possibly temporary, emigration of working-age New Zealanders), the age structures of current trans-Tasman migrants are very distinctive. Among New Zealanders living in Australia there is a pronounced lack of younger adults (age 15 to 24) and a heavy concentration of mid-aged (age 35 to 55). In contrast, the population structure of the Australian-born in New Zealand is shaped much more like the traditional pyramid, with many young and mid-aged adults and relatively fewer over the age of 50. High shares of young Australian-born in New Zealand again reflects the composition of net migration from Australia, with many New Zealand-born parents returning with their Australian-born children (Bedford and Ho, 2004).

This age structure helps to explain the low proportion of the Australian-born in New Zealand having higher qualifications in two ways. Those under the age of 25 are less likely to have completed a degree yet, while older adults studied at a time when university education was less common. However, it also suggests that New Zealanders living in Australia may be less representative of the New Zealand population as a whole than is suggested by Figure 2.29, as the relatively low share of degree and higher qualifications cannot be explained by a large share of high school and university age adults.

New Zealand's population in a global world

In Figure 2.31 we decompose the contribution of net migration into that of New Zealand citizens and others to population growth, along with natural increase for the last couple of decades. As we saw in the longer view (Figure 2.17), the contribution of natural increases to population is much more constant, and the variation in New Zealand's population growth is driven by migration. Over almost the entire period, the migration of non-New Zealand-born people has had the effect of growing the population, with the exception of the last year. Net immigration of non-New Zealanders rose in 2020 after the lockdowns, as some temporary visitors extended their visits, as was the case for Regional Seasonal Employers (RSE) workers. Many of these people did eventually leave, so that the net migration of non-New Zealand citizens was negative in 2021. Conversely, in 18 out of the last 20 years, the flow of New Zealand citizens out of the country has exceeded those returning. This changed as the Covid-19 pandemic hit, with reductions in New Zealand citizens emigrating and an increase in those returning.

Figure 2.31 Contributors to New Zealand's population growth, 2002–21



Source: NZ (2019). International migration estimates extended back to 2001; Stats NZ (2021). Estimated Resident Population Change by component; Stats NZ (2021). International migration: March 2021.

Notes: 1. Years ending 31 March.
2. The difference between population change, and the sum of natural increase and net migration is due to adjustments between censuses.

The temporary emigration of high-skilled New Zealanders may have benefits in the longer-term. New Zealand's position as a low-productivity country may reflect that it does not use best practice ways of doing business. In moving to these high-productivity countries, New Zealand emigrees may have access to new products and services and ways of working that are unfamiliar or uncommon in this country. Certainly, McLeod et al. (2014) found that New Zealand firms with a higher share of high-skilled returning New Zealanders were more likely to report introducing new organisational and managerial practices, and (as with migrants) goods and services new to this country.

Part 3

Who are the migrants?

Key points

- Migrants to New Zealand now arrive from a more diverse set of countries, driven by immigration policy changes in the 1990s.
- The rapid increase in migrant arrivals since 1990s has come from higher temporary work and study visas, rather than resident visas.
- The stock of temporary work visas approximately doubled between 2009 and 2020, driven by several visa types, including Essential skills, Study to work and Work to residence visas.
- Migrants to New Zealand tend to be younger than the New Zealand-born population and more highly qualified.
- Over the last decade the share of temporary work visa approvals for migrants in medium and low-skilled occupations has increased.
- Skilled resident visas holders are in more skilled occupations than other visa types.

In this part we look at the migrants themselves. In the next section, we look at how they got to be in New Zealand – their countries of origin and their routes of entry. There are a wide range of visa categories by which migrants can live and work in New Zealand. These all serve different purposes and provide different rights to the migrants. We shall be drawing from a range of data, with a myriad of definitions, so we shall use boxes below (eg, Box 3.1) to provide background details.

Box 3.1 **Classifying migrants in the data**

New Zealand has a range of data on migrants. The three main sources are:

1. Arrival and departure information.
2. Administrative data on visas.
3. The census.

Box 3.1 continued

Arrival and departure records at the border

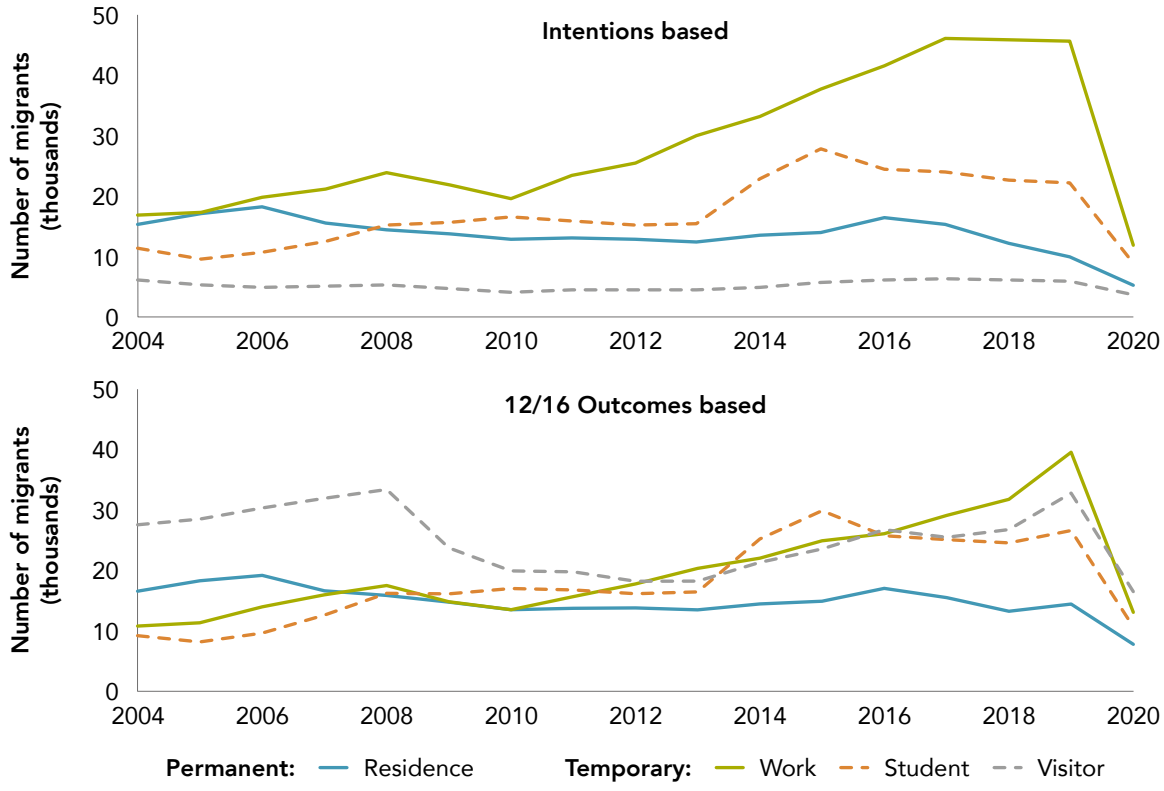
Foreign visitors are required to state the reason for and the intended length of their stay. These data have historically been used to identify **Permanent and Long-term** (PLT) migrants – those who intend to stay for 12 months or longer.

Stats NZ has recently changed this method and now uses a '12/16 rule' to create an outcomes-based measure (described in Box 2.2 on page 15 above). Whereas recent data have to be modelled (as it takes 17 months to assess whether the intentions matched the outcomes) and are therefore subject to revision, PLT data are available quickly and provide historic time series for analysis.

Intentions and outcomes

Comparison between the series from the 12/16 rule and migrant stated intentions highlights the differences between how migration is measured at arrival and how long migrants actually spend in New Zealand (Figure 3.1). While the resident and student series are very similar between the two measures, there are noticeable differences between stated intentions and observed outcomes for migrants arriving on work or visitor visas, indicating that the actual time in New Zealand is often longer (visitor visas) or shorter (work visas) than intended. There are a number of possible reasons for these differences, including incorrect reporting of intentions, changing plans, or arriving on a visitor visa and transitioning to a work, student or resident visa while here.

Figure 3.1 Permanent and long-term arrivals by visa type, 2004–20



Source: Stats NZ Infoshare. International Travel and Migration.
Notes: 1. Estimated arrivals by visa type.
2. Top panel, migrant status determined by declared intentions to stay in New Zealand for 1 year or more. Permanent and Long Term arrivals, series ITM184AA.
3. Bottom panel, migrant status determined by 12/16 rule, series ITM440AA.

Visa categories are described in Box 3.2 on page 37.

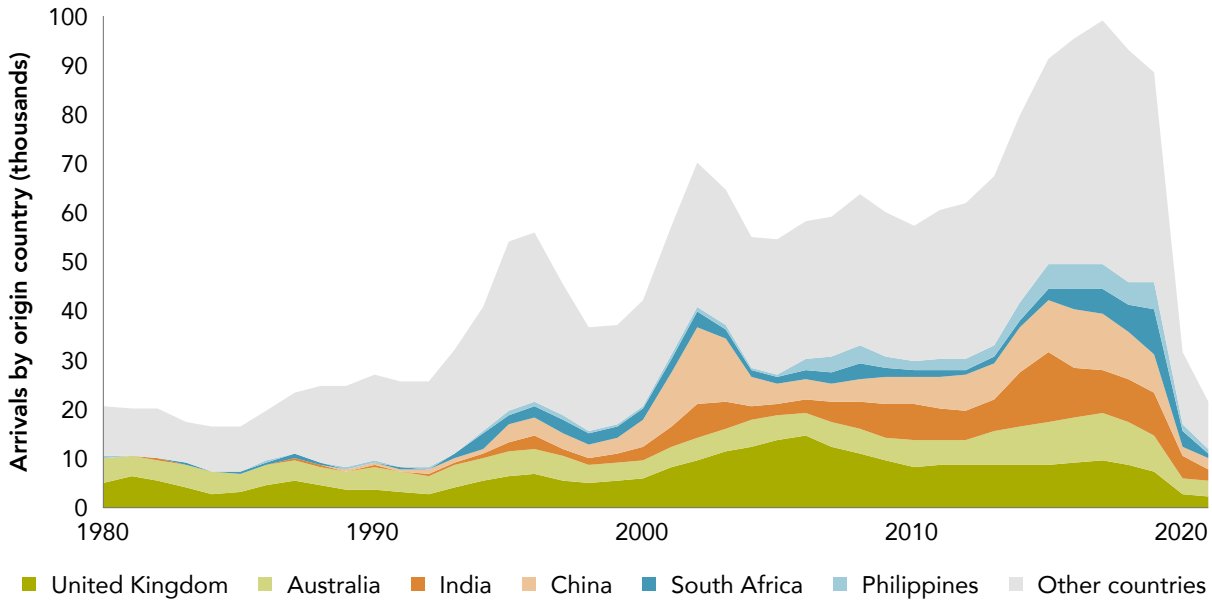
Where do migrants come from?

Country of origin and route of entry

Migrant arrivals to New Zealand have increased markedly in the period 1980–2020 as result of substantive policy changes designed to attract high-skilled migrants. Arrivals increased from 20 000 in 1980 to 99 000 at the peak in 2017 (Figure 3.2). In the early 1980s, one-half of all migrant arrivals came from Australia and the United Kingdom. Arrivals from these two countries remained stable through to 2000, but increasing numbers from a diverse range of countries reduced their share to 30% by 1990 and 25% by 2000.

The 1990s marked the first significant arrivals from India, China and South Africa, three countries that have since become a major source of new migrants to New Zealand. A boost in the number of arrivals from the United Kingdom in the mid-2000s briefly pushed the share of the two traditional source countries back to over one-third, but was soon overshadowed as arrivals from China and India continued to increase and the Philippines appeared as a new source of substantial numbers of new migrants. A rapid increase in the number of arrivals through the 2010s continued the diversification of migrant flows. However, despite the decreasing importance of the two traditional migrant source countries over time, prior to the Covid-19 border closures in 2020 roughly one-half of migrants arriving in New Zealand were still coming from a small number of countries.

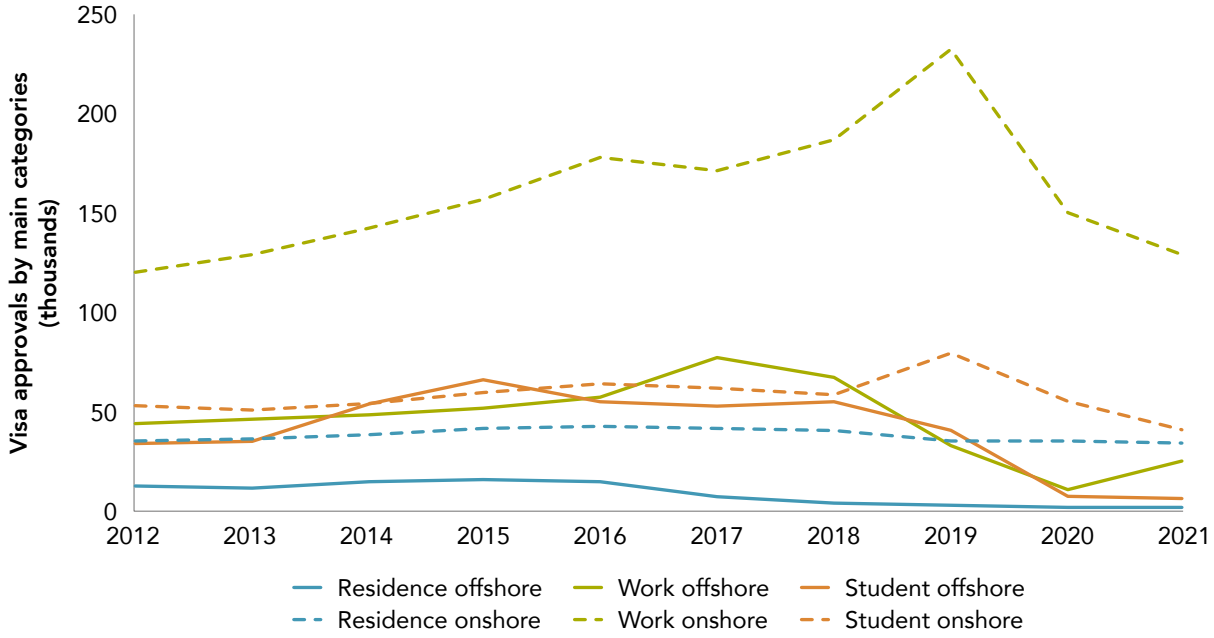
Figure 3.2 New Zealand's immigrants have become more diverse
Permanent and long-term arrivals of non-New Zealanders by origin country, 1980–2021



Source: Stats NZ.

The rapid increase in migrant arrivals in the 2010s was accompanied by a shift in the means by which migrants applied to live and work in New Zealand. Almost all of the growth in visa approvals over this time was for temporary work and study visas, rather than resident visas (Figure 3.3). Within each visa category there was also a significant shift towards onshore approvals, particularly after 2017. This reflects changing policies including giving increased weight to those with New Zealand work and study experience and visas that enable transitions eg, Work to residence and Study to work visas. Between 2012 and 2019 onshore approvals for temporary work visas almost doubled from 120 000 to 230 000, while offshore approvals fell from 43 000 to 32 000. While both onshore and offshore temporary work approvals were rising from 2012 to 2017, the peak in onshore approvals after 2017 was fully offset by a drop in offshore approvals. Student visa approvals did not see the same degree of growth over the period as temporary work visas, but exhibit the same shift from offshore to onshore approvals post-2017. Onshore approvals for residence remained steady over the 2010s, while offshore approvals fell to the low thousands from 2017, indicating the increased reliance on onshore applications or previous visas to gain residence. The approval rates of work visas have remained high, at 90% or above for the period 2012–21, while residence visa approval rates have remained static at or around 85%. Residence approval rates had increased in 2017 to 2019 (due both to changes in the points thresholds and selection pool processing[4]), but have fallen as results of suspension of approvals (due to Covid-19).

Figure 3.3 Visa approvals have shifted onshore
Visa approvals by main visa categories, 2012–19



Source: MBIE Migrant Data Explorer.

4 In 2016, there was a Cabinet decision to raise the points threshold for selection from the pool of Expressions of Interest, to give higher priority to higher-paid and higher-skilled migrants, and to strengthen the English language requirements (CAB-16-MIN-0500, 26 September 2016).

Box 3.2 **Migrant visa categories**

There are many visa types in the New Zealand immigration system with various categories and criteria for entry on a temporary or permanent basis. The nature and type of visa determines how long migrants can stay in New Zealand and if they can work while they are here. For our analysis we group categories to enable comparison across groups of visas and variables such as occupation, skills, employment and earnings.

Recent and long term residents

Resident visas give the right to permanent residence in New Zealand. We divide these into two, depending on how long they have been in this country. Recent residents are those who have been in New Zealand for less than five years. Long-term residents are those who have lived in New Zealand for five years or longer. We note that in some statistics, those who are long-term residents are included with New Zealand citizens in the source data. We will note when this is the case.

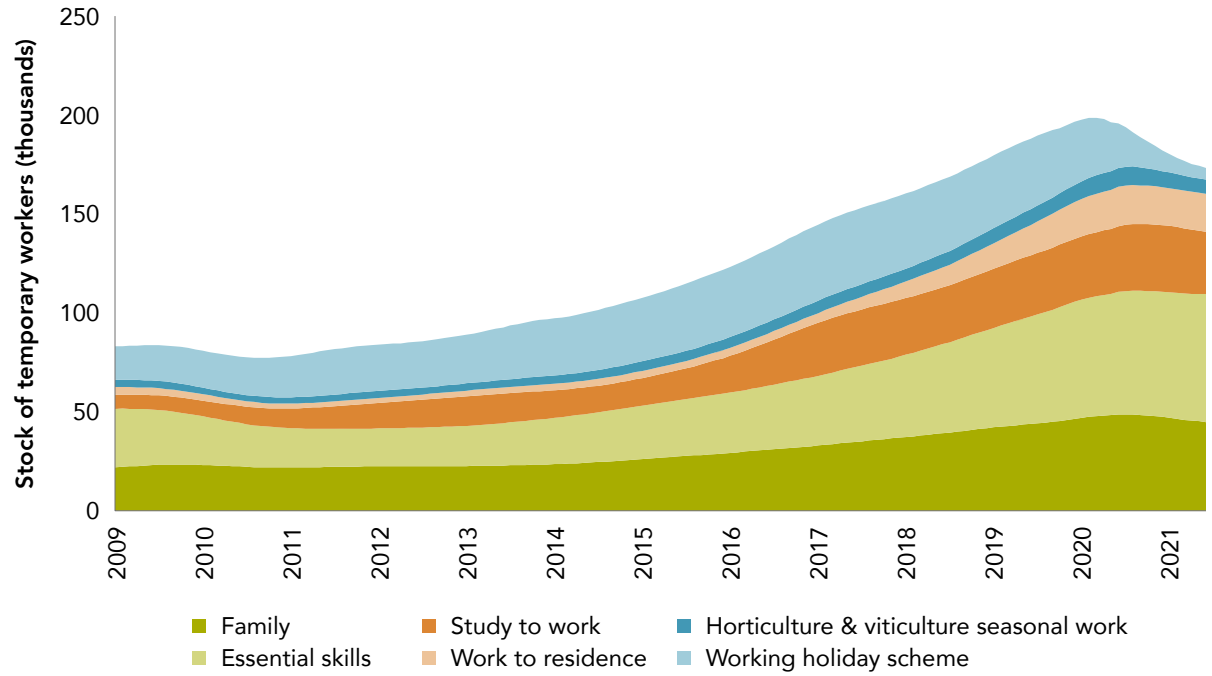
Table 3.1 Key visa categories

Entry type	Visa category	Subcategories	
Temporary visas	**Work visas** Visas to enable non-New Zealanders to work in New Zealand temporarily	**Essential skills work visa**	
		Work to residence: Long-Term Skill Shortage List; Talent (Arts, Sports and Culture); and Talent (Accredited Employer)	
		Study to work	
		Other	Family
			Recognised Seasonal Employer scheme Horticulture & viticulture seasonal work
			Working holiday scheme, post-study work
	Student	**Student visa**	
Permanent visas	**Resident visas**	**Recent resident** Those who have lived in New Zealand less than 5 years	Skilled resident, eg, Skilled Migrant Category, residence from work, investors, entrepreneurs
			Partner or secondary applicant
			Other, eg, Pacific Access, Samoan quota
		Long-term resident Those who have lived in New Zealand for 5 years or more	

For more details see Table 1 and Table 2 of New Zealand Productivity Commision, *Immigration, productivity and wellbeing*, Issues Paper, or the Immigration New Zealand website.

In line with increasing annual arrivals, the stock of temporary work visa holders living in New Zealand more than doubled between 2009 and 2020, rising from 83 000 to 198 000 (Figure 3.4). This dramatic increase was driven by several visa types. There has been steady growth in Essential skills visas, Study to work and Work to residence visas over the period 2009–21 (Figure 3.4). Family visas, linked either to New Zealand citizens or to partners or spouses of work visa holders, tracked steadily upwards with the increase in other visas issued. It is the large increase in temporary visas that has supported the increase employment growth in the last decade, with temporary migrants constituting 20% of labour market growth between 2012 and 2019. Overall employment grew by 15% for New Zealanders, while temporary migrant employment has increased by over 140% (NZPC, 2021a). Over this period, temporary visas made up 5% of the labour force of New Zealand, the highest share in the OECD (Figure 2.12) (OECD, 2019).

Figure 3.4 The number of migrants working on temporary visas has more than doubled
Stock of temporary workers by key visa types (12-month moving average) 2009–21

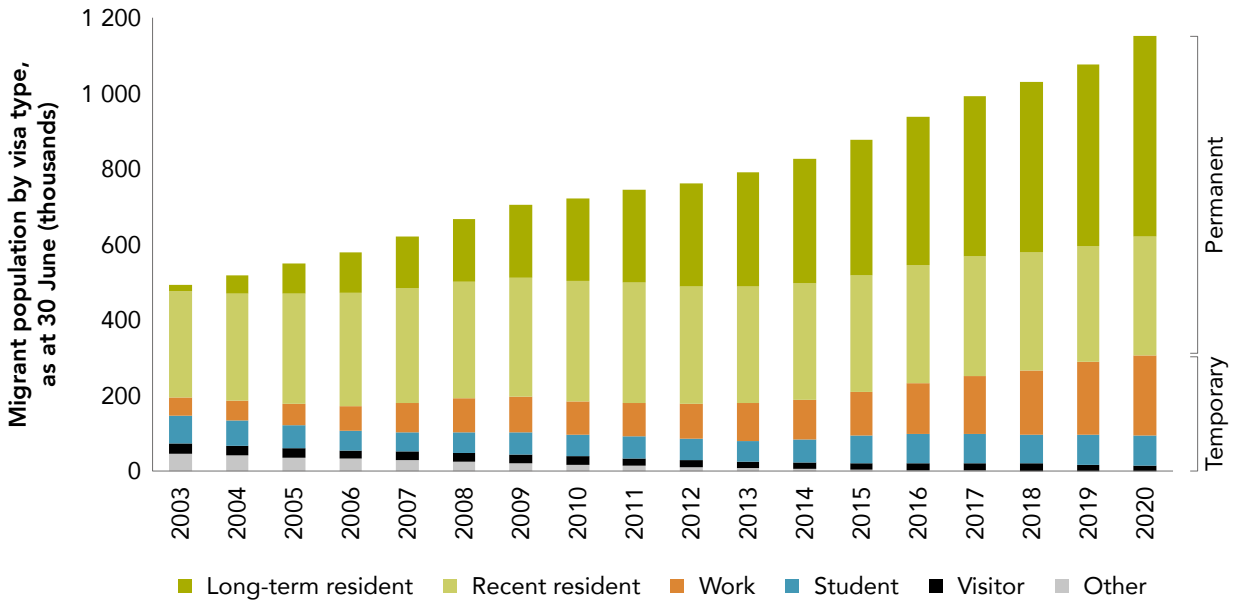


Source: MBIE Migrant Data Explorer.

Several of these categories are very seasonal with limited work rights, including Working holiday visas and Horticulture and viticulture seasonal work. The latter includes the RSE scheme, which is restricted to temporary workers from eligible Pacific Forum countries. Seasonal migrant numbers vary over the course of the year, to match with peak seasonal demands for labour between November and May (Maré et al., forthcoming). After rising consistently for several years, most categories of temporary workers have remained quite stable following the border closures in 2020, with repeated extensions to temporary visas enabling those who arrived before March 2020 to remain in the country if they wished. Stocks of working holidaymakers have declined since 2020, as those who chose to leave have not been replaced due to the border closures.

In addition to a doubling of the stock of temporary migrants over the last two decades, New Zealand also has a large and increasing resident migrant population, including those who have transitioned from temporary to permanent migrants (Figure 3.5). This has contributed to New Zealand's comparatively rapid population growth over the last two decades (Figure 2.15).

Figure 3.5 The number of permanent residents has also increased
Migrant population by visa type, as at 30 June in the years 2003–20

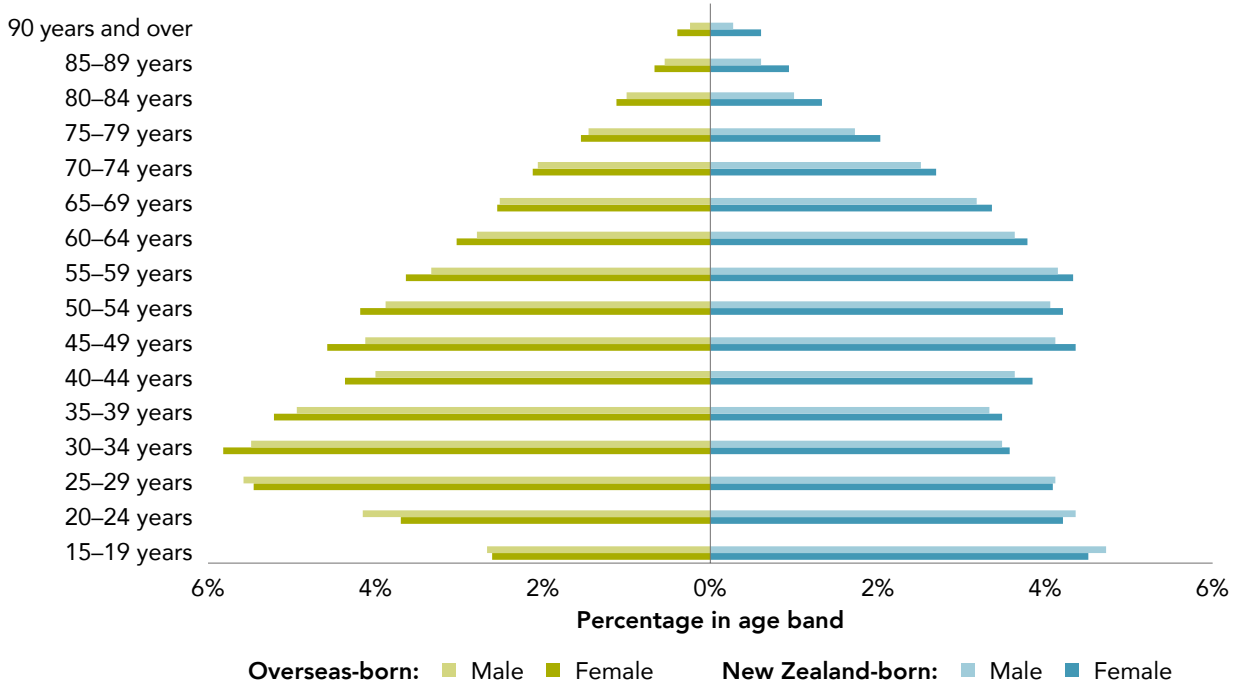


Source: NZPC calculations using Stats NZ IDI.
Notes: 1. Recent residents are people who have been approved for a residence visa within the previous five years. Long-term residents are people who have held a residence visa for longer than five years and may have transitioned to citizenship.
2. Long-term residents are identified only from 2003, five years from the start of the dataset in 1997.
3. The dataset does not identify migrants who became residents before 1997 and have not left and re-entered New Zealand after 1997.

Who migrates to New Zealand?
Demographic characteristics of immigrants

Consistent with migrant selection policies that favour young and highly-skilled migrants, along with the importance of student migration and working holiday visas, which are restricted to those under the age of 30 for most partner countries, the overseas-born tend to be younger than the New Zealand-born population (Figure 3.6). Within the working-age population (15 to 65 years) the largest numbers of overseas-born are in the 25–29-year range and 30–34-year range. The New Zealand-born population includes larger shares of both younger and older adults, with large groups younger than 25 and older than 45 years, particularly 65 years or older. By contrast, the 30–34 year and 35–39-year age groups are the smallest by proportion of the New Zealand-born, indicating perhaps a large proportion of these groups have emigrated (at least temporarily) overseas.

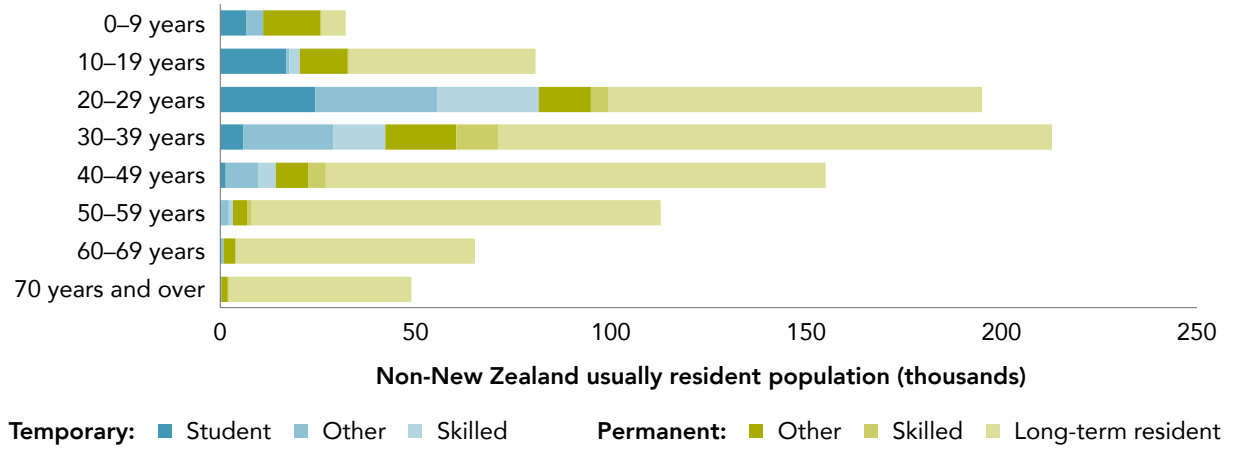
Figure 3.6 Age distribution of overseas- and New Zealand-born populations
Percent of age group, census usually resident population, aged 15 and over, 2018



Source: Stats NZ, Census 2018.

Comparing the types of visas held by different age groups shows that a substantial proportion of younger migrants hold temporary work and student visas, while older migrants are almost all classified as either recent or long-term permanent residents (Figure 3.7). In the 20–29-year age range, one-half of the overseas-born population are students or on a temporary visa and one-quarter of those aged 30–39 years are on temporary or student visas. Younger, more highly-educated and well-paid migrants have a higher net fiscal contribution as they are educated and possibly trained overseas (Hodgson & Poot, 2011).

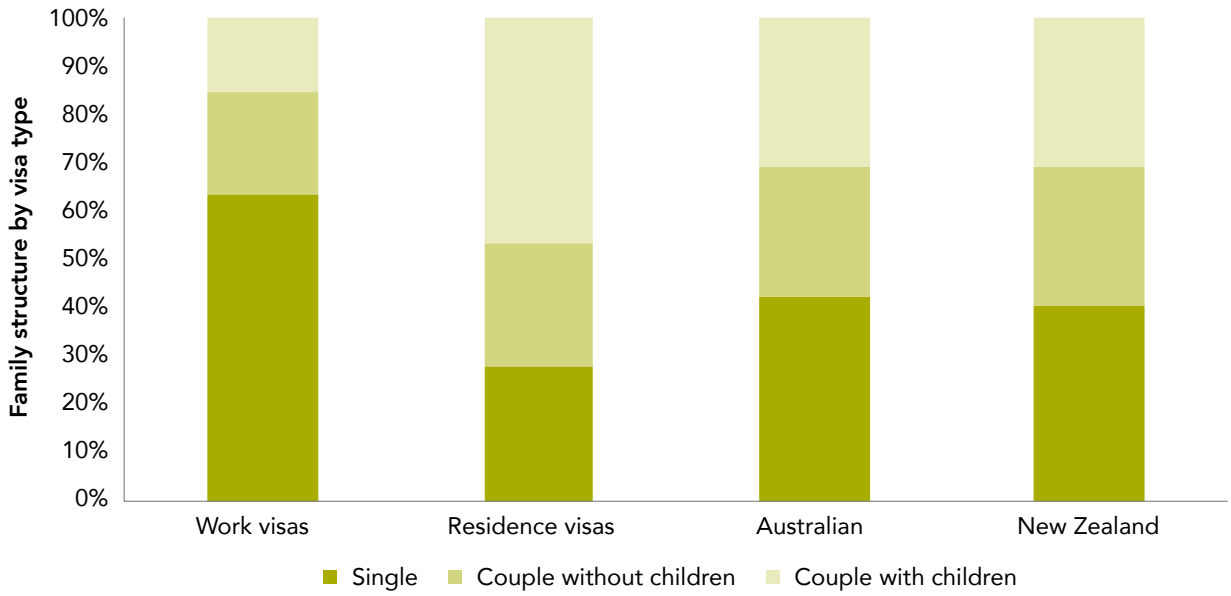
Figure 3.7 Age distribution of migrant types Census usually resident population, 2018



Source: NZPC calculations using Stats NZ IDI.

Migrants also differ in household characteristics. Compared to the New Zealand-born and Australian-born residents in New Zealand, temporary migrants are more likely to be single or a couple without children, while those on a resident visa are far more likely to be in a couple, particularly a couple with children (Figure 3.8). This highlights the differences in the selection of migrants who choose to settle in New Zealand from those who work, study or visit on a temporary basis.

Figure 3.8 Temporary migrants are more likely to be single
Proportion by visa type, 2018



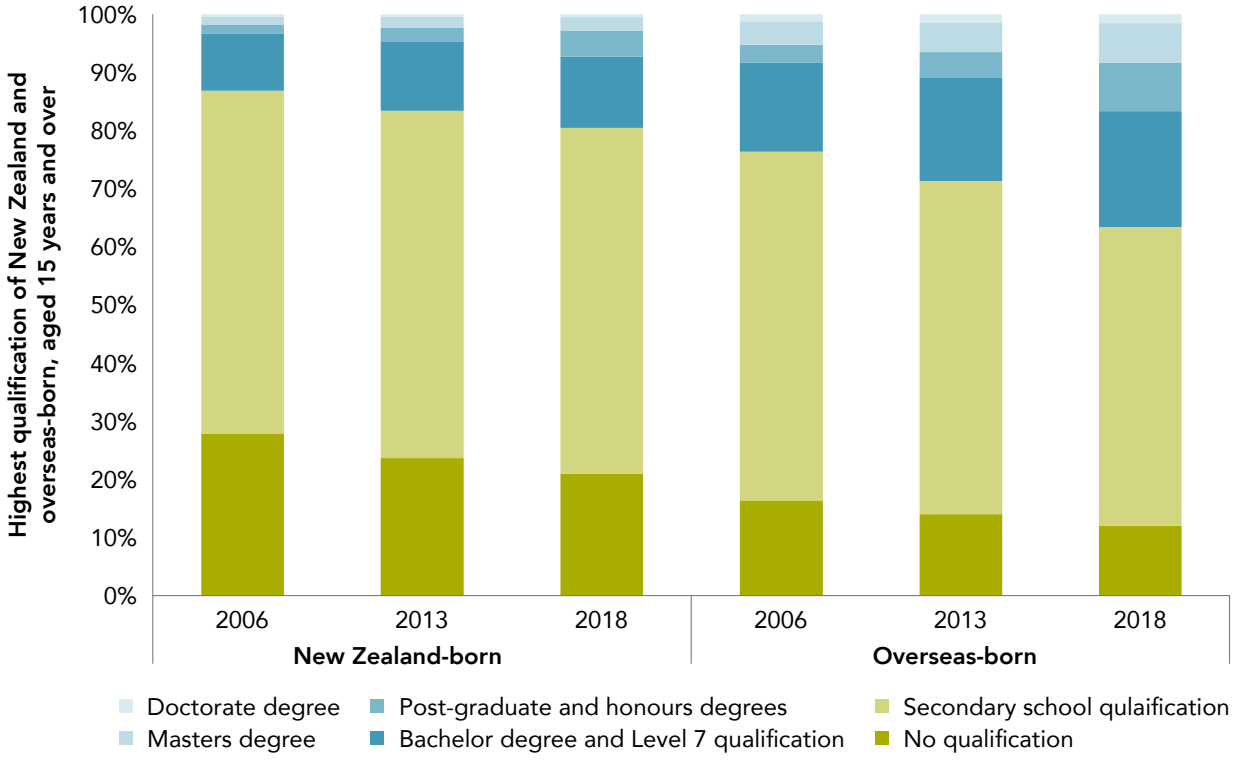
Source: NZPC calculations using Stats NZ IDI.

What skills do migrants bring?
Qualifications and skills

One of the most important aspects of migration for productivity is the skills of the migrant workforce. As Figure 3.9 shows, migrants in New Zealand aged 15 years and over have higher qualifications than their New Zealand-born contemporaries. Migrants are both less likely to have no qualifications and more likely to have degree or higher qualifications than New Zealand-born residents. This has been the case over the past three censuses (ie, since 2006). Part of this may be due to the large diaspora of New Zealanders being skewed towards those of degree-level or higher, suggesting that immigration may compensate for the departure of the highly-qualified New Zealand-born.

Higher-qualified migrants are expected to lift productivity in the long run (Fabling et al., 2022; Peri, 2012, 2016). However, it may be that for these qualifications to deliver their full potential, migrants must also obtain other complementary social and cultural knowledge. There is New Zealand evidence that suggests it can take several years for migrants' labour market outcomes to catch-up to the comparable New Zealand-born (Stillman & Mare, 2009). Nevertheless, there is evidence of more direct impact of migrants on firms. For example, McLeod et al. (2014) found that firms with a higher share of high-skilled recent migrants are more likely to report introducing new marketing methods, new goods and services, or goods and services new to New Zealand. Sin et al. (2014) also found an association between firms employing high-skilled employees from Australia, Europe and the Pacific and exporting (particularly to their home country).

Figure 3.9 Migrants have higher qualifications than New Zealand-born adults on average
Highest qualification of New Zealand and overseas-born, aged 15 years and over, 2006, 2013 and 2018

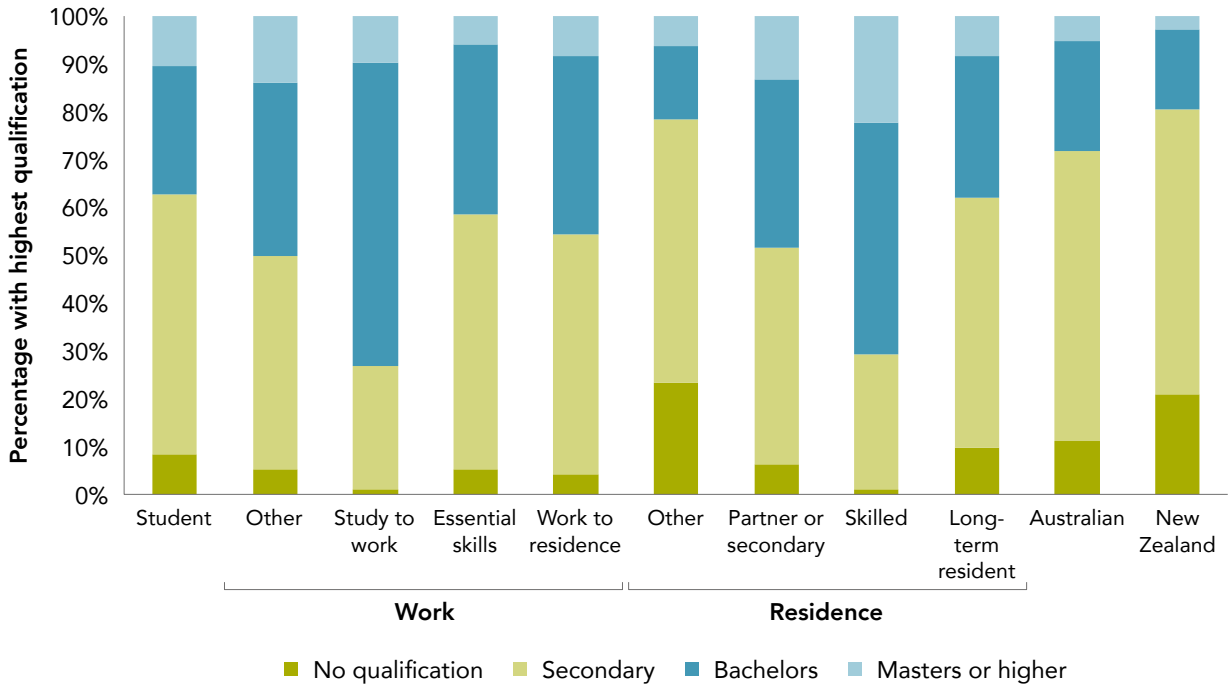


Source: Stats NZ Census.
Notes: Based on highest qualification and birthplace (New Zealand-born/overseas-born) published table for the 'Census usually resident population', aged 15 years and over.

Consistent with selection criteria, the level of qualifications held differs according to the types of visas migrants hold (Figure 3.10). Skilled resident visa holders are highly qualified, with 23% holding a master's degree or higher and a further 49% with a bachelor's degree. Similarly, long-term resident and partner or secondary residents (those linked to a skilled migrant or partners of New Zealand citizens) are also well-qualified with 40% and 50%, respectively, holding a university degree, bachelor's or higher. The other residence group is diverse, including both the Pacific resident category, family categories (including parents and humanitarian and refugee visas), giving a wide spread of qualifications from no qualification up to a master's degree or higher, not unlike the distribution of the New Zealand-born. Many temporary visa holders also hold a higher qualification. Across the work visa categories, 50% hold secondary school qualifications and 30% or more have a bachelor's or master's degree.

Figure 3.10 Migrant qualifications by type

Highest qualification of New Zealand and overseas-born, aged 15 years and over, 2018



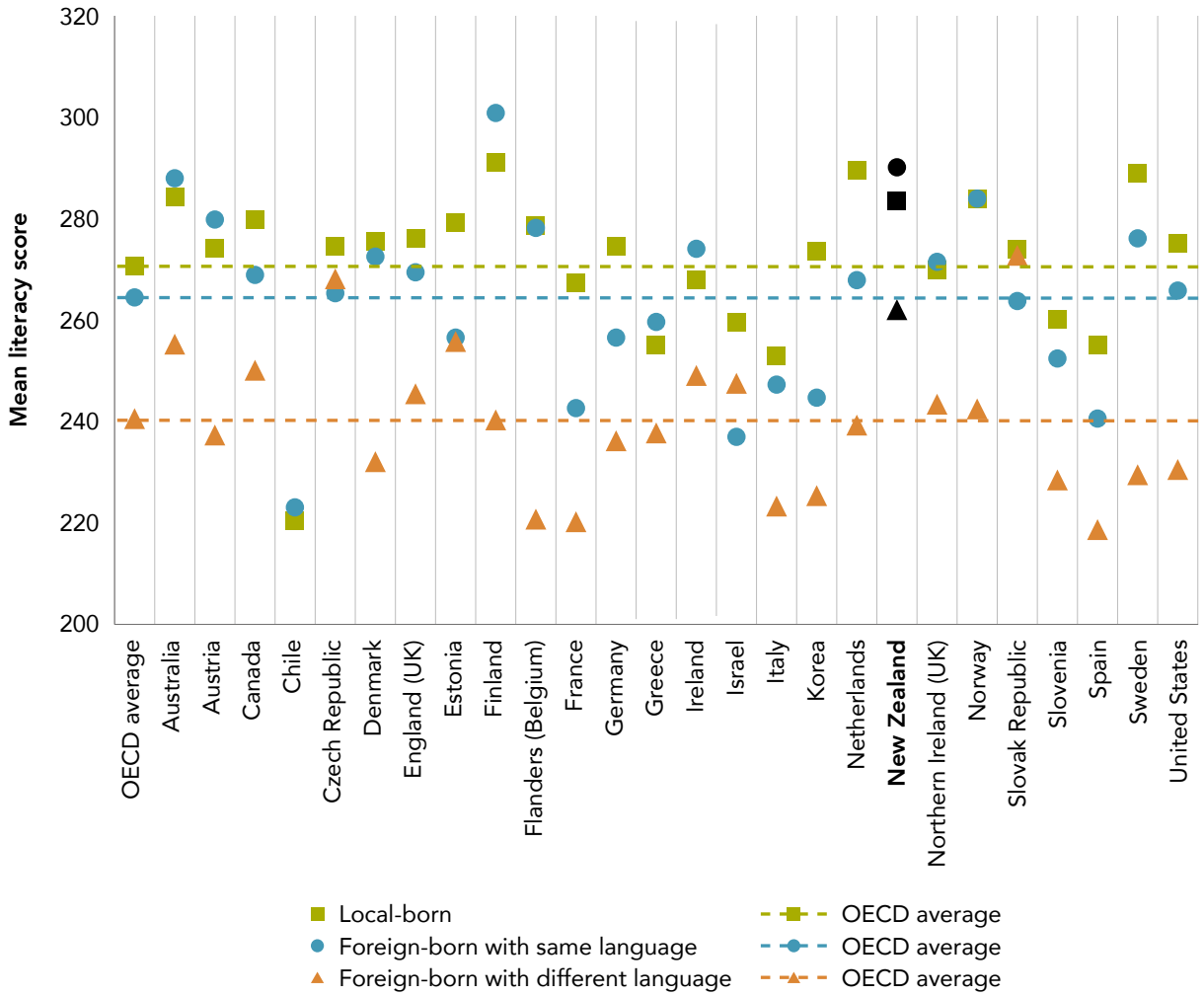
Source: NZPC calculations using Stats NZ IDI.

Migrants to New Zealand are on average more literate than the foreign-born in other OCED countries, as measured by the Programme for the International Assessment of Adult Competencies (PIAAC) (Figure 3.11).[5] The foreign-born in New Zealand with the same language (ie, native English-speaking migrants) have a higher literacy score than the local-born New Zealand population. Migrants in New Zealand who are not native English speakers have lower literacy scores (in English), but remain above the OECD average for non-native speakers when tested in the local language. Only the Czech Republic and Slovakia show higher literacy results (in Czech and Slovak) among non-native speaking immigrants, while non-native speakers in other English-speaking countries

5 OECD describes literacy as "the ability to understand, evaluate, use and engage in written text in order to participate in society, achieve one's goals, and develop one's knowledge and potential" (OECD (2016), p. 38).

(such as Canada, the United States and the United Kingdom) have notably lower literacy in English than those in New Zealand. The New Zealand results are similar to those for Australia for both local-born and foreign-born populations, while other high migrant-intensive countries by percent of population (such as Canada, Ireland, Israel and Sweden) tend to have lower foreign-born literacy scores. While language can often be a barrier to settling in a country, children of migrants in New Zealand do well regardless of their socio-economic background, with Programme for International Student Assessment (PISA) scores the same as their New Zealand-born counterparts (OECD, 2019). The survey finds similar results for their functional numeracy and "problem solving in technology-rich environments".

Figure 3.11 Native- and overseas-born residents' literacy
Mean literacy score

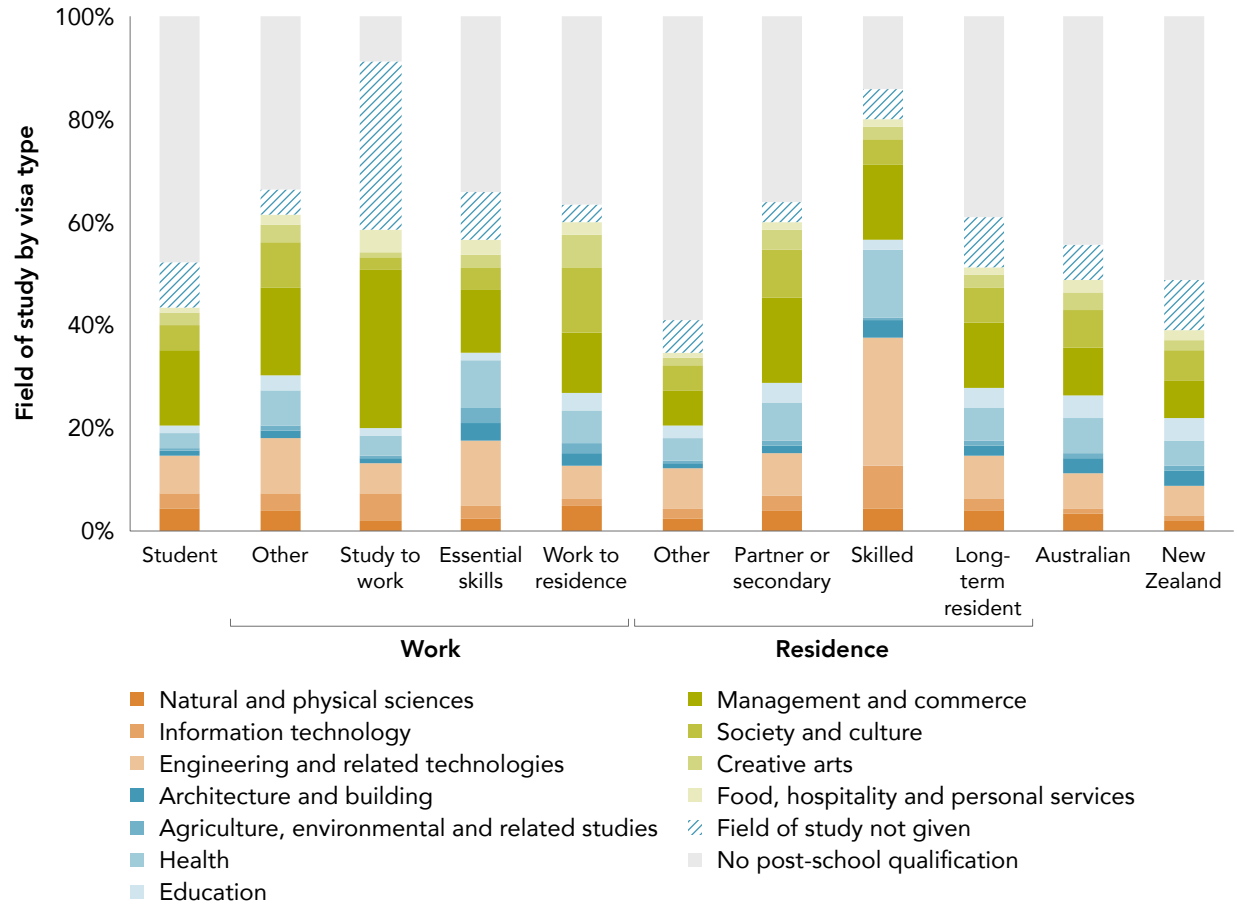


Source: OECD Survey of Adult Skills (PIAAC) (2012, 2015).

Notes:
1. The Survey of Adult Skills defines literacy as "the ability to understand, evaluate, use and engage in written text in order to participate in society, achieve one's goals, and develop one's knowledge and potential", OECD (2016) Skills Matter: Further Results from the Survey of Adult Skills, p. 38.
2. "Foreign-born with same language" refers to migrants whose native language is the same as that in which they take the test (the official or common language of their host country).
3. "Foreign-born with different language" refers to migrants whose native language differs from that of the host country (the test language).
4. Dashed lines represent the OECD average for each category.

The variety of migrants' field of study (Figure 3.12) and occupations (Figure 4.5) indicates the diversity of the skill needs of New Zealand employers and firms. Figure 3.12 shows the field of study of post-secondary school qualifications. The top grey bar reflects those who did not report having a post-secondary qualification in the 2018 Census, while the shaded blue lines are those who reported having a qualification but did not give a field of study. Among those with a reported field of study, natural and physical sciences account for a larger proportion for student visas and those on long-term residence and other resident visas. Information technology makes up 11% of skilled migrants and 9.5% of post-study visa holders, but is limited for other visa types. Engineering and other related technologies are a relatively large proportion of all visa types, including the Australian and New Zealand-born. Engineering-related qualifications are particularly strong for skilled resident migrants, accounting for 31% of those with a reported field of study. Health as a field of study makes up a large share, particularly of both skilled residents and Essential skills visa holders, reflecting the need for qualified migrants to fill skill shortages for both doctors and nurses. Management and commerce is a common field of study among visa holders, especially study to work visas where it accounts for 34% of those reporting a field of study. Only the Australian-born, New Zealand-born and skilled resident migrants have less than 20% of reported qualifications in Management and commerce.

Figure 3.12 Migrants' and New Zealanders' education field of study
Proportions by visa type including no qualification, 2018

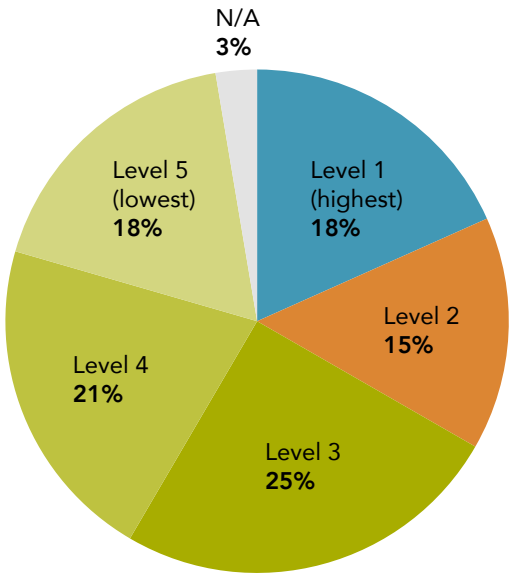


Source: NZPC calculations using Stats NZ IDI.

The variety in field of study for migrants is also evident in their skill mix. Figure 3.13 gives the skill mix of migrant approvals in 2019. The Australian and New Zealand Standard Classification of Occupations (ANZSCO) defines a five-point scale of occupational skill levels, which is currently used alongside wage, education and experience-based criteria to assess the skills of migrants applying for visas. Temporary work visa approvals in 2019 were relatively evenly distributed across the five skill levels, with a slightly higher proportion of approvals for jobs in the lowest two skill levels (39% for Levels 4 and 5 combined) than for those in the two highest categories (33% for Levels 1 and 2 combined). However, this hides considerable variation across visa types and across time.

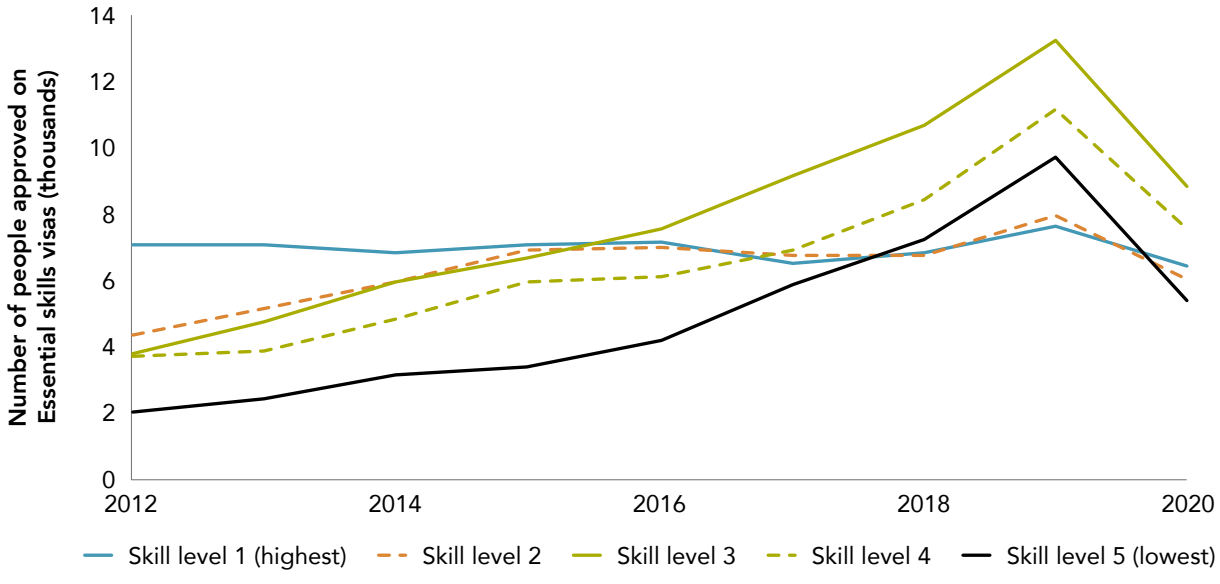
Figure 3.14 and Figure 3.15 look at skill levels of migrants from 2012–20 for the two largest temporary work visa categories, Essential skills visas and Work to residence visas respectively. Essential skills visa approvals have seen a rise in the proportion of migrants at lower skill levels (Levels 4 and 5) since 2012, overtaking the shares at higher skill levels (Levels 1 and 2), which have remained very stable in number over the same period (Figure 3.14). A similar pattern is observed in approvals for Work to residence visas (Figure 3.15).

Figure 3.13 Skilled workers by ANZSCO skill level, 2019 approvals



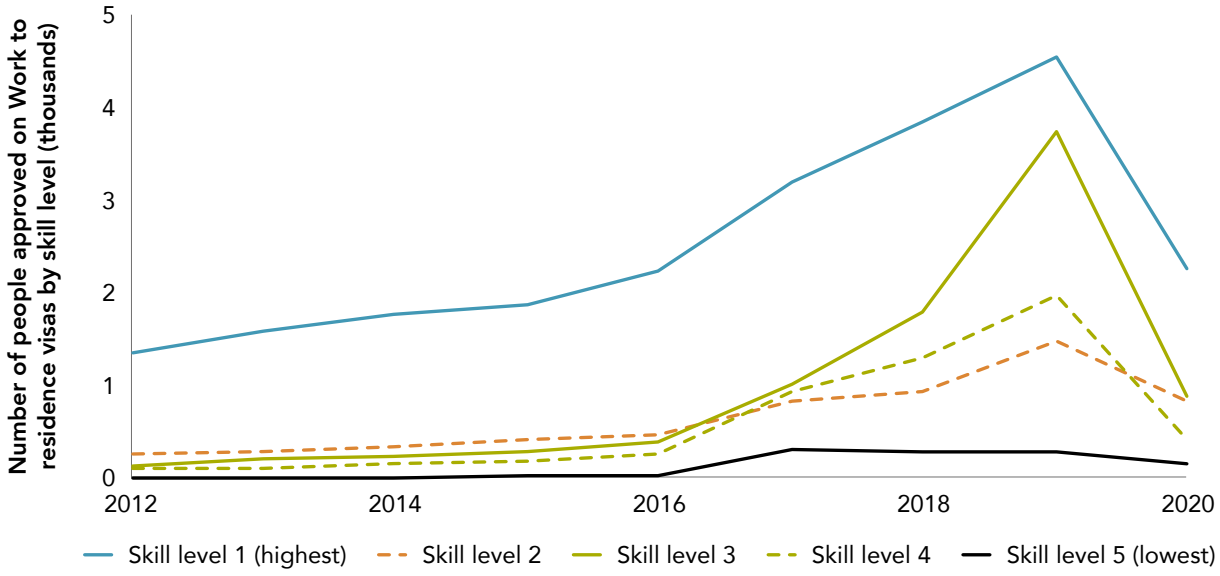
Source: NZPC calculations using data from MBIE Migrant Data Explorer.

Figure 3.14 Number of people approved on Essential skills visas, by skill level, 2012–20



Source: NZPC calculations using data from MBIE Migrant Data Explorer.

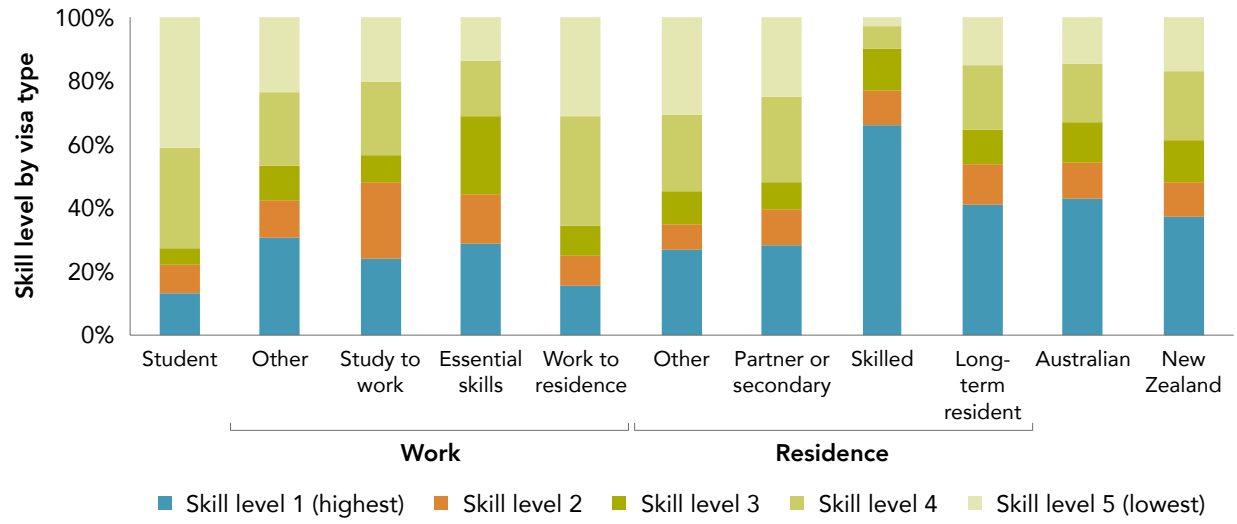
Figure 3.15 Number of people approved on Work to residence visas by skill level, 2012–20



Source: NZPC calculations using data from MBIE Migrant Data Explorer.

While skilled temporary migrant applications are assessed largely on the basis of a current job opportunity, prospective permanent migrants apply through the Skilled Migrant Category (SMC), which places weight on education and work experience (particularly experience and qualifications gained in New Zealand), as well as skill shortage lists and family connections already in this country. Figure 3.16 compares occupational skill levels across visa types based on 2018 Census data. Skilled resident visas holders are in more skilled occupations than all other visa types with 66% in skill level 1. Meanwhile students, work to residence and other permanent residence visa holders include a high share of low-skilled occupations.

Figure 3.16 Skill level by visa type
Proportions by visa type, 2018



Source: NZPC calculations using data from Stats NZ IDI Data.

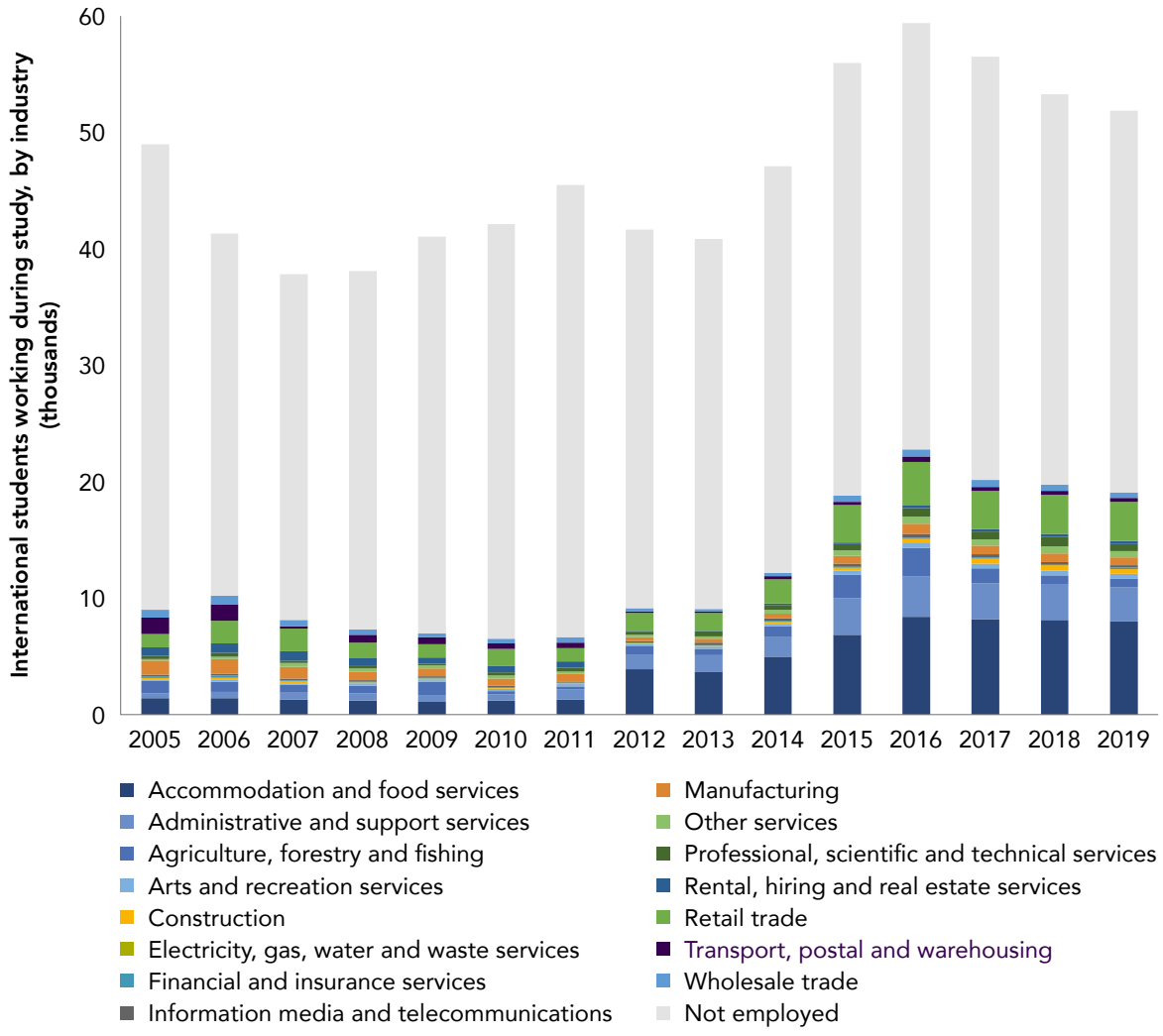
Box 3.3 International students to New Zealand: Visa pathways and employment

Trained in New Zealand and with an existing link to the community, international students can play an important part in the New Zealand labour market. However, more than two-thirds of students leave directly after graduation or remain only a couple of years in New Zealand (MBIE, 2018b, 2018a). Understanding labour market activities while they are in New Zealand is important to see who stays and what visas pathways they take.

Working while studying

Figure B3.3.1 shows on average 30% of international students work during study, the bulk of which is in Retail trade and Accommodation and food services. However, it is worth noting that although the share of students in work has risen since 2016, international students are less likely to work while studying compared to the New Zealand-born. This work can also be seasonal as students typically work more hours over the extended summer break (Universities New Zealand, 2021).

Figure B3.3.1 International students working during study, by industry



Source: NZPC calculations using Stats NZ IDI.

Box 3.3 continued

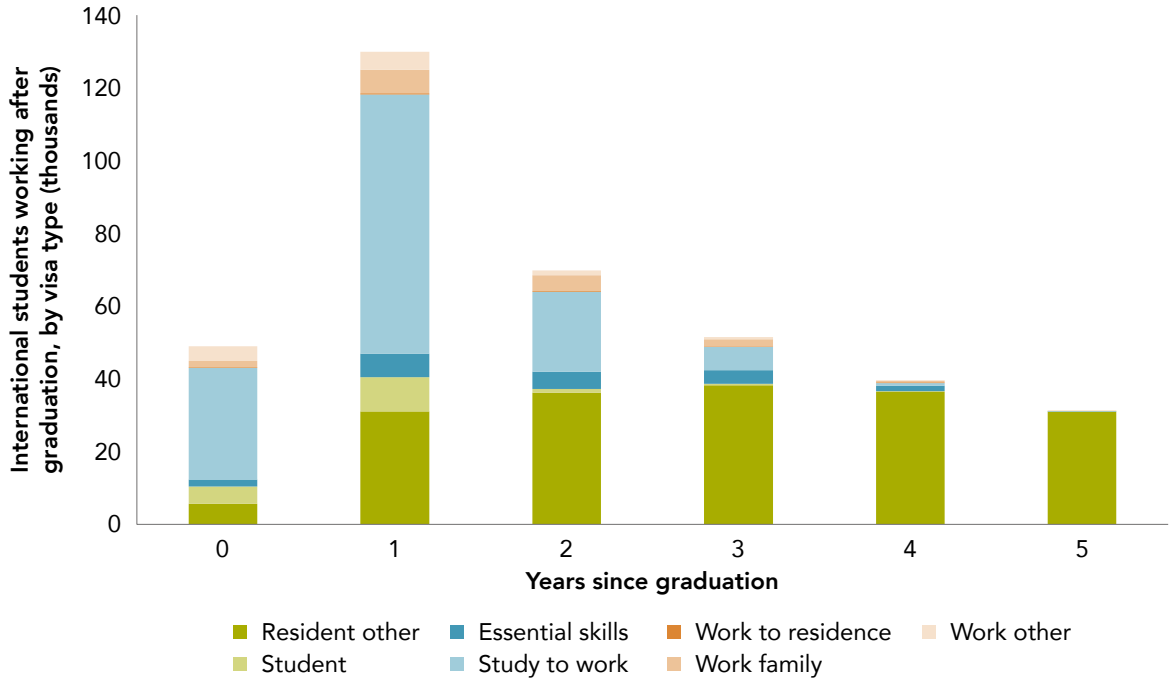
Post-study work

Figure B3.3.2 indicates most international students who stay in New Zealand post-graduation remain on a post-study to work visa, an open work visa that allows them to work for up to three years depending on their qualification.

From Figure B3.3.3 we see that most leave after two years and those who remain for five years or longer are on a residence visa.

Figure B3.3.4 depicts the counts of students employed in the year after graduation and five years after graduation, indicating a large fall, with less than half remaining after five years. Administration and support services and Retail trade remain largest employment industries, while proportionally Professional, scientific and technical services and Finance and insurance, as well as Manufacturing, have a larger share after five years. Median earnings of post-study employment show an increase for those who remained in New Zealand in those industries over five years. Retail trade and Administration and support have the lowest median earnings and account for the largest share of employment.

Figure B3.3.2 International students working after graduation, by visa type



Source: NZPC calculations using Stats NZ IDI.

Box 3.3 continued

Figure B3.3.3 International students median earnings by years after study and industry

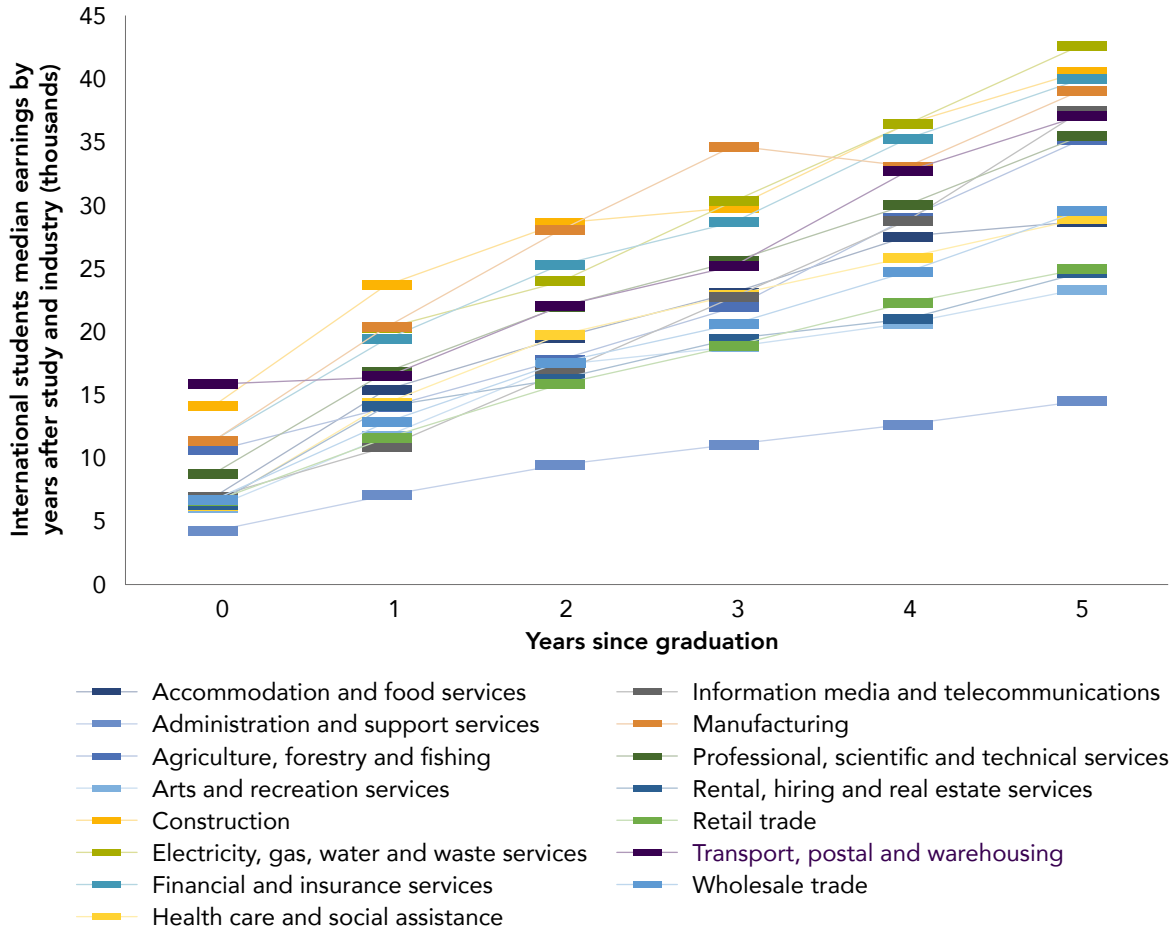
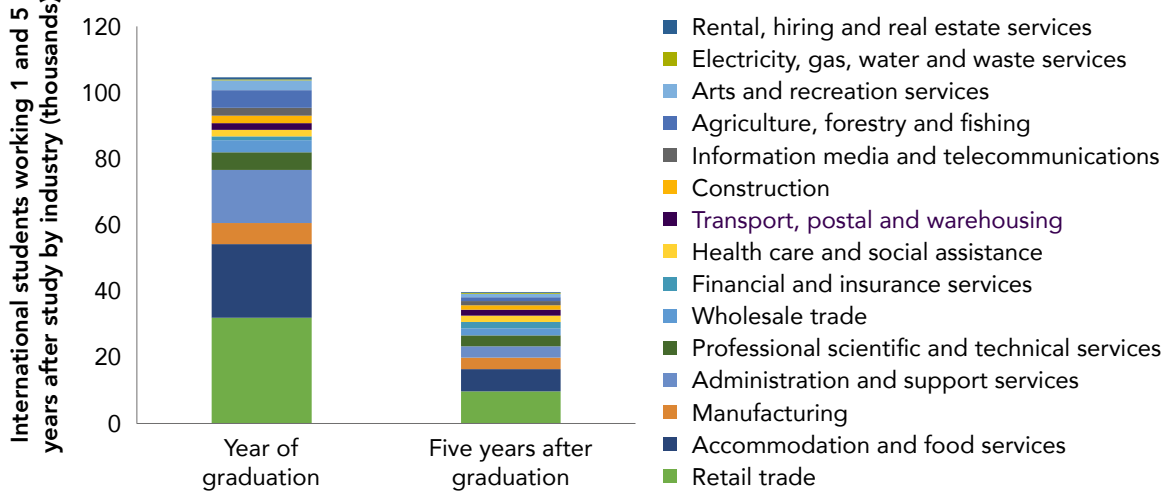


Figure B3.3.4 International students working 1 and 5 years after study by industry



Source: NZPC calculations using Stats NZ IDI.

Where do migrants go?
Do migrants stay in New Zealand or remigrate?

Where do migrants go? Do they stay in New Zealand or return to their home countries? After one year, of the over 110 000 migrant arrivals in 2010 (of which 20 000 were visitors), 56% had left New Zealand (Table 3.2). Temporary and time-bound visas are more likely to leave with 81% of Working holiday visa holders leaving within a year. The majority of Other workers, which includes family and RSE visas holders, had also left after one year (64%). Migrants on skilled visas, both temporary skilled workers and residence skilled visas, are more likely to have stayed with only 37% and 15%, respectively, departing within a year. In this first year there are only limited transitions between visas. However, 13% of students had transitioned to a Post-study work visa (included the Other work category) and 17% of skilled temporary visa holders had transitioned to skilled residence visas.

Table 3.2 Are migrants still where they came in? 2010 arrival cohort one year after arrival

			Temporary					Residence	
		Left NZ	Student	Skilled worker	Working holiday	Other worker	Visitor and other temporary	Skilled/ Business	Other resident
Temporary	Student	50%	33%	1%	0%	13%	1%	1%	0%
	Skilled worker	37%	0%	43%	0%	2%	1%	17%	0%
	Working holiday	81%	1%	3%	10%	3%	1%	0%	0%
	Other worker	64%	0%	1%	0%	27%	1%	3%	3%
	Visitor and other temporary	45%	7%	3%	3%	9%	27%	4%	3%
Residence	Skilled/Business	15%	0%	0%	0%	0%	0%	85%	0%
	Other resident	11%	0%	0%	0%	0%	0%	0%	89%

Source: NZPC calculations using data from Stats NZ IDI Data.
Notes: Left column denotes the visa migrant arrived in New Zealand on in 2010. The top row is the visa migrants were on after one-year. For example 50% of students arriving in New Zealand in 2010 had left after one year.

After five years, the picture had altered, with more transitioning from one visa type to another (eg, temporary work visa to residence visa) (Table 3.3). The pace of those leaving had slowed with only a further 11% of migrants having left New Zealand (a total of 70% of the cohort). Most temporary migrants (excluding visitors) (78%) had left New Zealand. For Students, 17% transitioned to residence visas within five years, while 68% had left New Zealand. Over one-third of skilled workers (37%) obtained a resident visa and 20% of skilled migrants left New Zealand within five years.

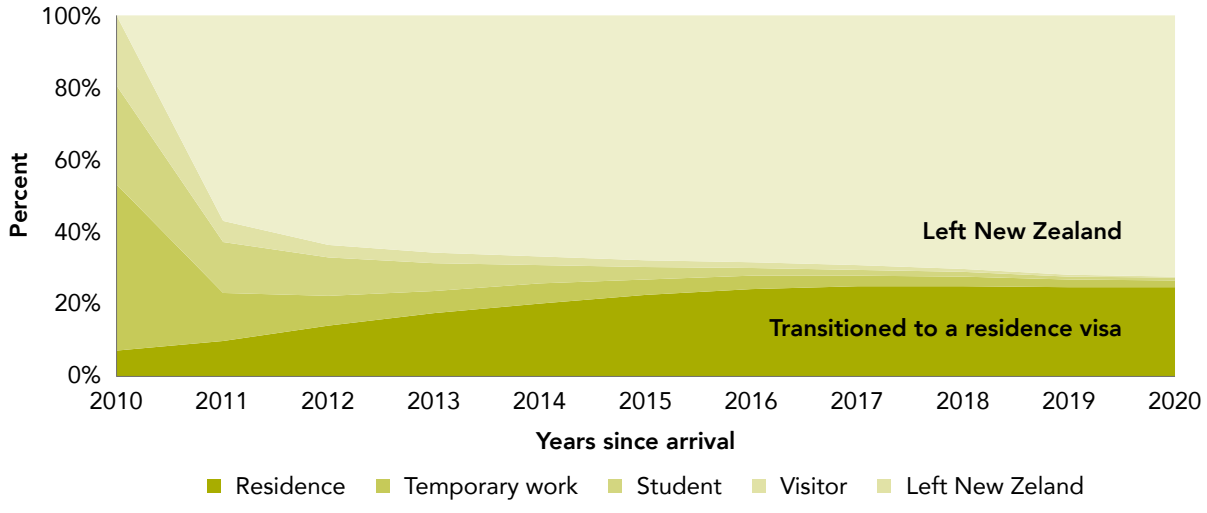
Table 3.3 Where do migrants go? 2010 arrival cohort five years after arrival

			Temporary					Residence	
		Left NZ	Student	Skilled worker	Working holiday	Other worker	Visitor and other temporary	Skilled/ Business	Other resident
Temporary	Student	68%	6%	3%	0%	4%	1%	13%	4%
	Skilled worker	55%	0%	7%	0%	1%	1%	34%	3%
	Working holiday	92%	0%	1%	0%	1%	1%	3%	2%
	Other worker	74%	0%	1%	0%	6%	1%	10%	8%
	Visitor and other temporary	47%	4%	2%	1%	4%	7%	15%	21%
Residence	Skilled/Business	20%	0%	0%	0%	0%	0%	79%	0%
	Other resident	18%	0%	0%	0%	0%	0%	0%	82%

Source: NZPC calculations using data from Stats NZ IDI Data.
Notes: Left column denotes the visa migrant arrived in New Zealand on in 2010. The top row is the visa migrants were on after five years. For example, 68% of students arriving in New Zealand in 2010 had left after five years.

Figure 3.17 follows the 2010 arrival cohort for 10 years after their arrival. Most visa holders leave New Zealand, with 73% having left by 2020 and the remainder transition into a residence visa. After large movements in the first year (Table 3.2) visa transitions of this cohort settle down after two-to-three years. Temporary and student visa holders leave after the first two-to-three years, and those temporary visa holders who remain transition to residence (18%). Residence visa holders increased from 7% of arrivals in 2010 to 25% by 2020, with all the additional approvals from other visa categories. While few temporary visas give the right to transition to a residence visa (eg, work to residence), temporary and student visas still make up a large share of residence approvals (70% by 2020).

Figure 3.17 Migrant pathways 2010 arrival cohort transitions 2010–20



Source: NZPC calculations using data from Stats NZ IDI Data.

Part 4

Migrants in the labour market

Key points

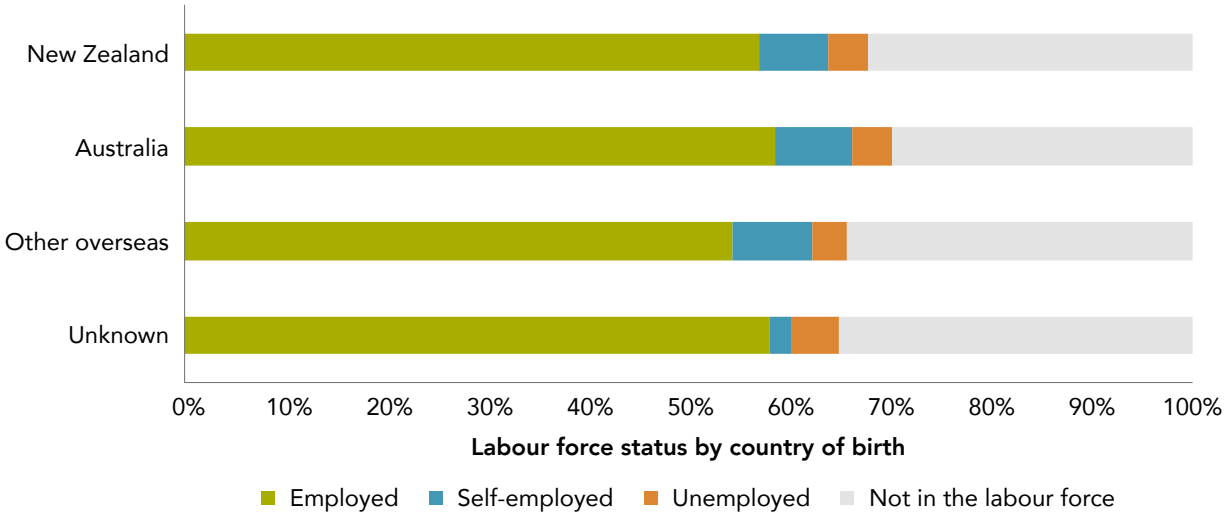
- Migrants are active contributors to the New Zealand labour market.
- Overall, migrants have similar employment rates to New Zealanders. They are more likely to be in the core working age range of 25 to 55.
- Migrants on skill-based visas are more likely to work, and to work full time, than other migrants.
- Migrant employment is concentrated in regions with cities, and areas with substantial agricultural employment.
- Migrant employment is unequally distributed across industries. By 2020, over 20% of jobs in the Agriculture, forestry and fishing, Accommodation and food services, and Administration and support services industries were held by recent migrants.
- In contrast, recent migrants make up less than 10% of jobs in Education and training, Public administration and safety, and Financial and insurance services.
- The main growth in migrant employment across regions and industries has occurred through temporary migration.
- Earnings levels among recent migrants are closely comparable to those of the native-born. Among low-skilled occupations, migrant earnings are very similar to, or slightly below, those of the native-born. At higher skill levels there is greater diversity, with median earnings among migrants often above those of New Zealanders in the same occupational skill group.

In this part we turn our attention from who the migrants are and where they come from to where they contribute to the economy.

The labour force status of migrants

Selection based on the age and skill of migrants into New Zealand over time has resulted in a diverse and highly-qualified population of migrants with a high proportion of whom are active. While the Australian-born have a slightly higher propensity both to be employed and to be in self-employment than the New Zealand-born, migrants from further afield have lower employment rates but are slightly more likely to be self-employed than both Australians and New Zealanders (Figure 4.1).

Figure 4.1 Migrants are active contributors to the labour force
Proportions by country of birth, 2018

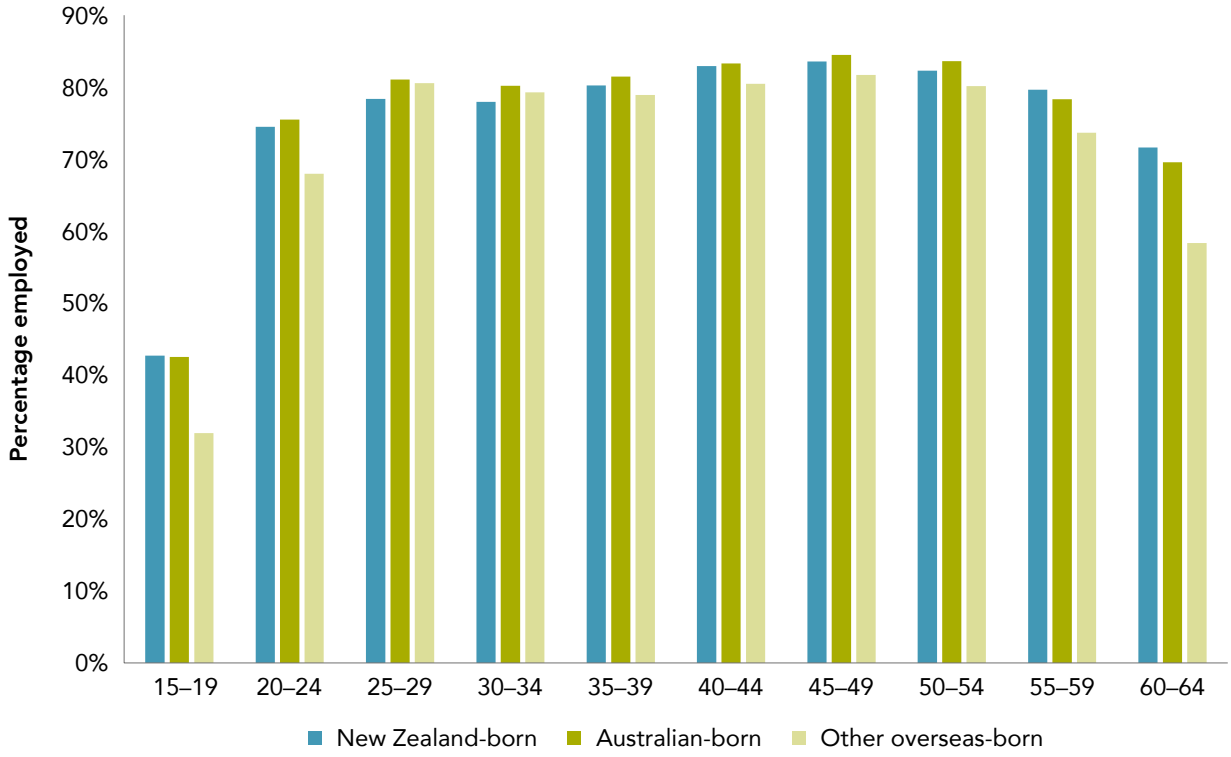


Source: NZPC calculations based on Stats NZ IDI and Census data.
Note: Unpaid family work included with "Not in the labour force".

Similar overall employment levels between the New Zealand-born and Other overseas-born migrants reflect a combination of lower age-specific employment rates among migrants (Figure 4.2), and a higher share of working-age adults in the core working age bracket of 25 to 55 (Figure 3.6). Across most of this age bracket, employment rates differ only slightly between the three groups, with the Australian-born consistently having slightly higher rates than New Zealanders and other overseas-born generally slightly lower. However, the overseas-born have particularly low employment rates in the youngest and oldest working-age groups – over 10 percentage points lower than New Zealanders among 15- to 19-year-olds and 13 percentage points lower among 60- to 64-year-olds. While many migrants in New Zealand on a student visa have the option of working part-time, this is less common among migrants than the New Zealand and Australian-born population. Lower employment rates among older adults may reflect differing pension eligibility. In 2018, 28% of 60- to 65-year-old migrants (excluding the Australian-born) were from the United Kingdom and Ireland (Census 2018) and may have been eligible to access pensions from the age of 60, rather than 65, for New Zealand superannuation. The lower age-specific employment probability is partly offset, however, by a high concentration of adults in the core working age bracket – 58% of the overseas-born working-age population are between the ages of 25 and 55, compared to 46% among the New Zealand-born (Figure 3.6).

Figure 4.2 Employment rates differ most for younger and older adults

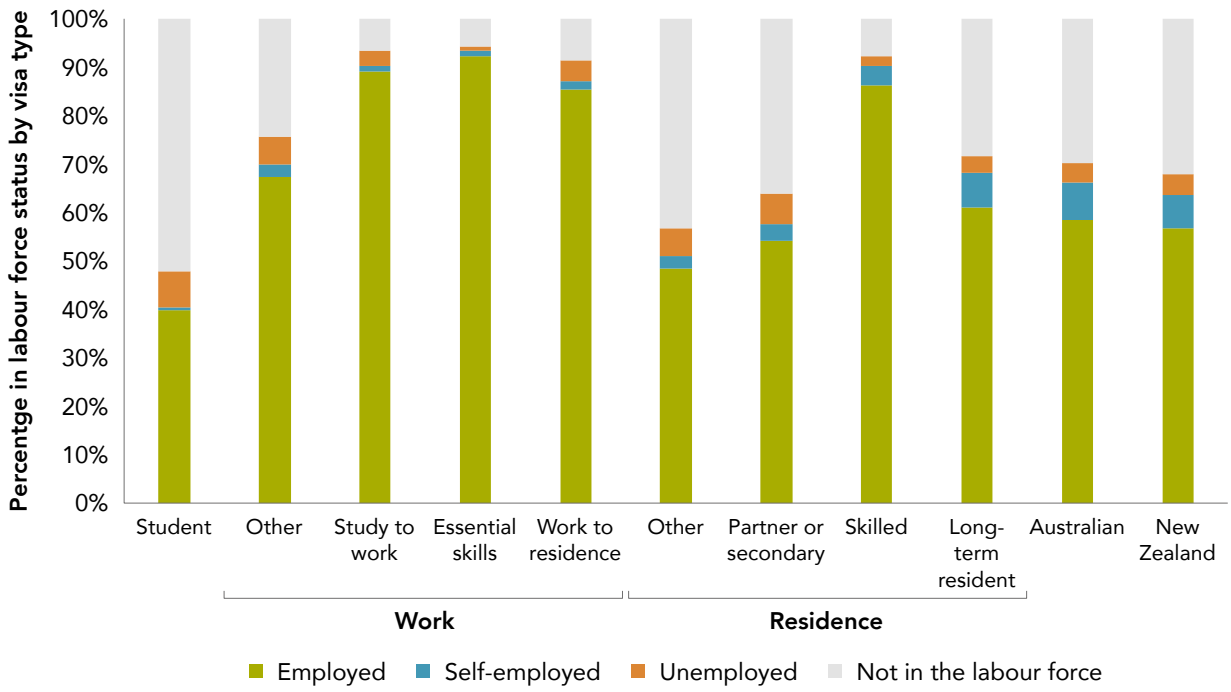
Percentage employed in usually resident population by age group and country of birth, 2018



Source: Stats NZ Census of Population and Dwellings, 2018.
Notes: 1. Includes both employment and self-employment whether full-time or part-time.
2. Census usually resident population count aged 15 years and over.

Among migrants, labour force status is closely related to the form of visa held (Figure 4.3). Employment rates are especially high among holders of the four key work visa types – Study to work, Essential skills, Work to residence, and Skilled residence – with over 85% of each group being either employed or self-employed at the time of the 2018 Census. In contrast, those on student visas and other recent residents have notably lower employment rates. Other temporary work visa holders are also relatively less engaged in the labour force, reflecting that around one-half of this category is made up of family members accompanying a temporary work visa holder. Longer-term residents (those who have been resident in New Zealand for five years or more) and the Australian-born again show broadly similar labour-force activity to the New Zealand-born. While these long-term residents are, on average, more highly qualified than either the New Zealand or Australian-born, Stillman and Maré (2009) found that it can take as long as 15 years for new migrants to reach employment levels of comparable local workers.

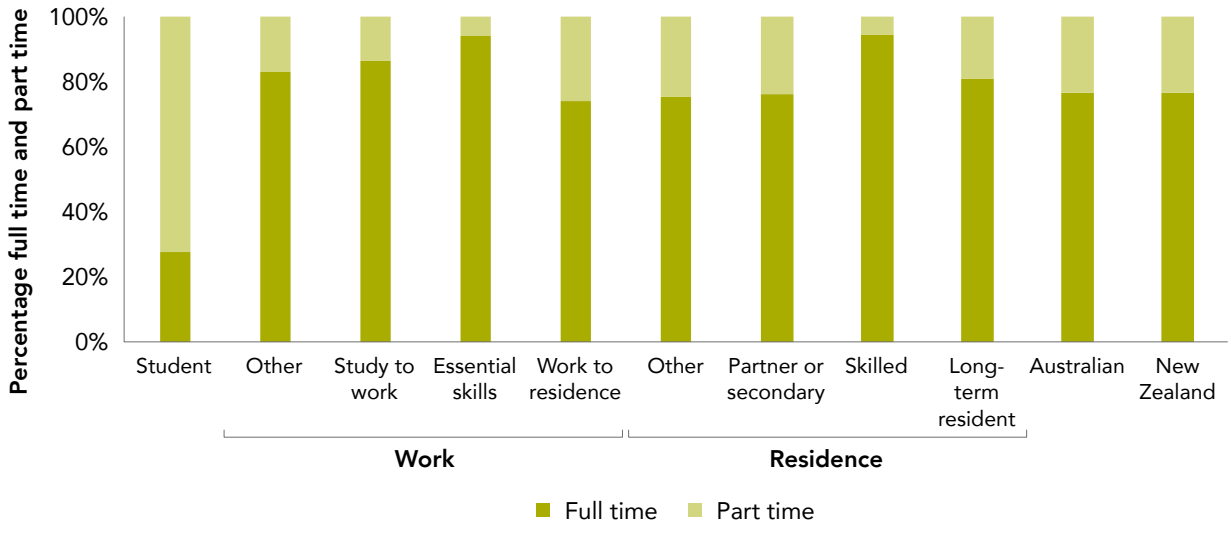
Figure 4.3 Labour force status by visa type, 2018



Source: NZPC calculations based on Stats NZ IDI data.
Notes: 1. Unpaid family work is included with "Not in the labour force".
2. Working age population, 15–64 years.

A similar pattern is observed for hours of work among the employed population (Figure 4.4), with Skilled resident, Essential skills and Study to work visa holders more likely to hold full-time positions, and students generally working part time. The latter reflects the conditions of the student visa, which allows most students to work no more than 20 hours a week during the term.

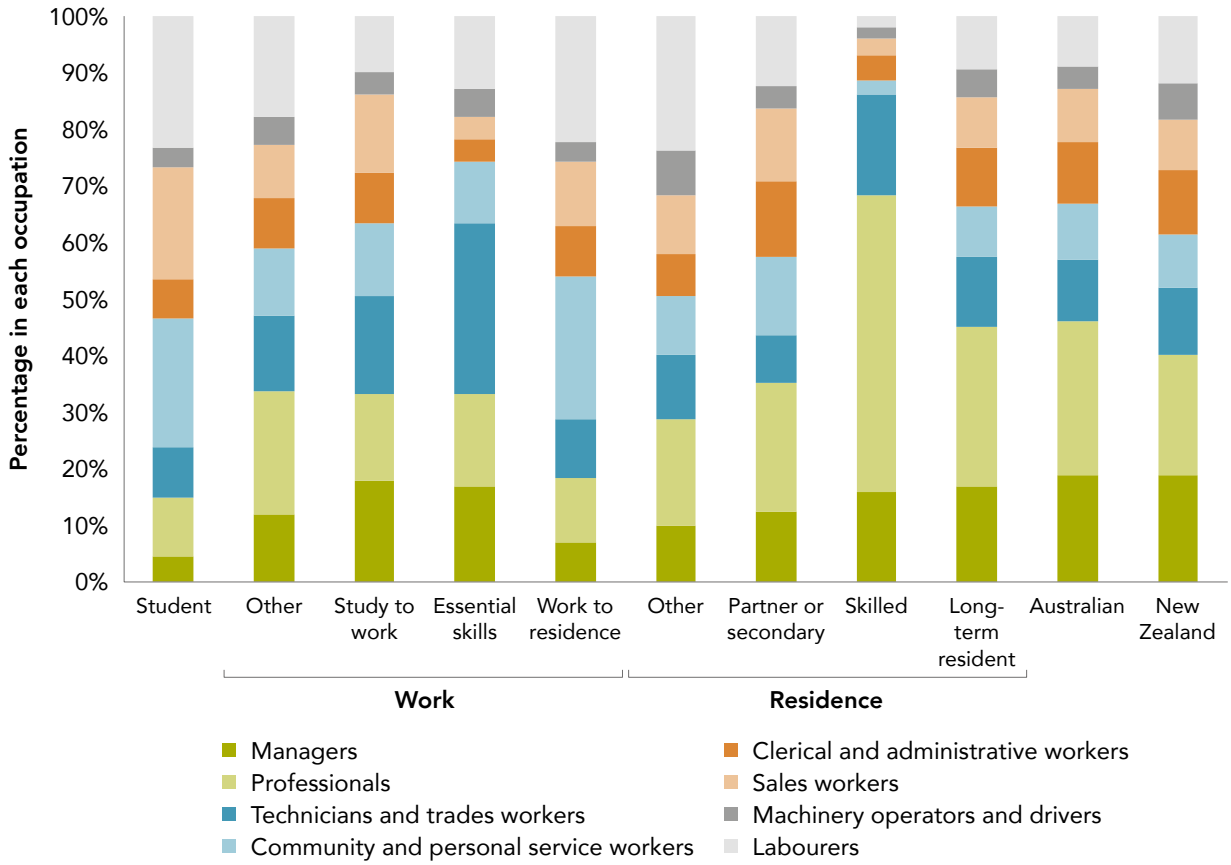
Figure 4.4 Full-time and part-time employment status by visa type, 2018



Source: NZPC calculations based on Stats NZ IDI data.
Note: Full-time employment is defined as working 30 or more hours a week.

Alongside differences in activity rates, visa holders are also concentrated in different occupations, reflecting the targeting of different visa categories. Figure 4.5 presents the mix of occupations reported by each group in the 2018 Census. The Skilled residence category is dominated by professionals in keeping with the weight placed on qualifications and skilled employment in the allocation of points under this category. In contrast, eligibility for the Essential skills visa category is conditional on a specific job offer, relies on the employer's confirmation that no suitable New Zealand candidates are available, and has a higher concentration of technicians and trades workers. The concentration of Community and personal services jobs among Work to residence visa holders may reflect the importance of medical workers, including nurses, on the long-term skill shortage list. Meanwhile, student visa holders tend to work in part-time (Figure 4.4), low-skilled jobs, including sales, labouring and hospitality (included within Community and personal service occupations).

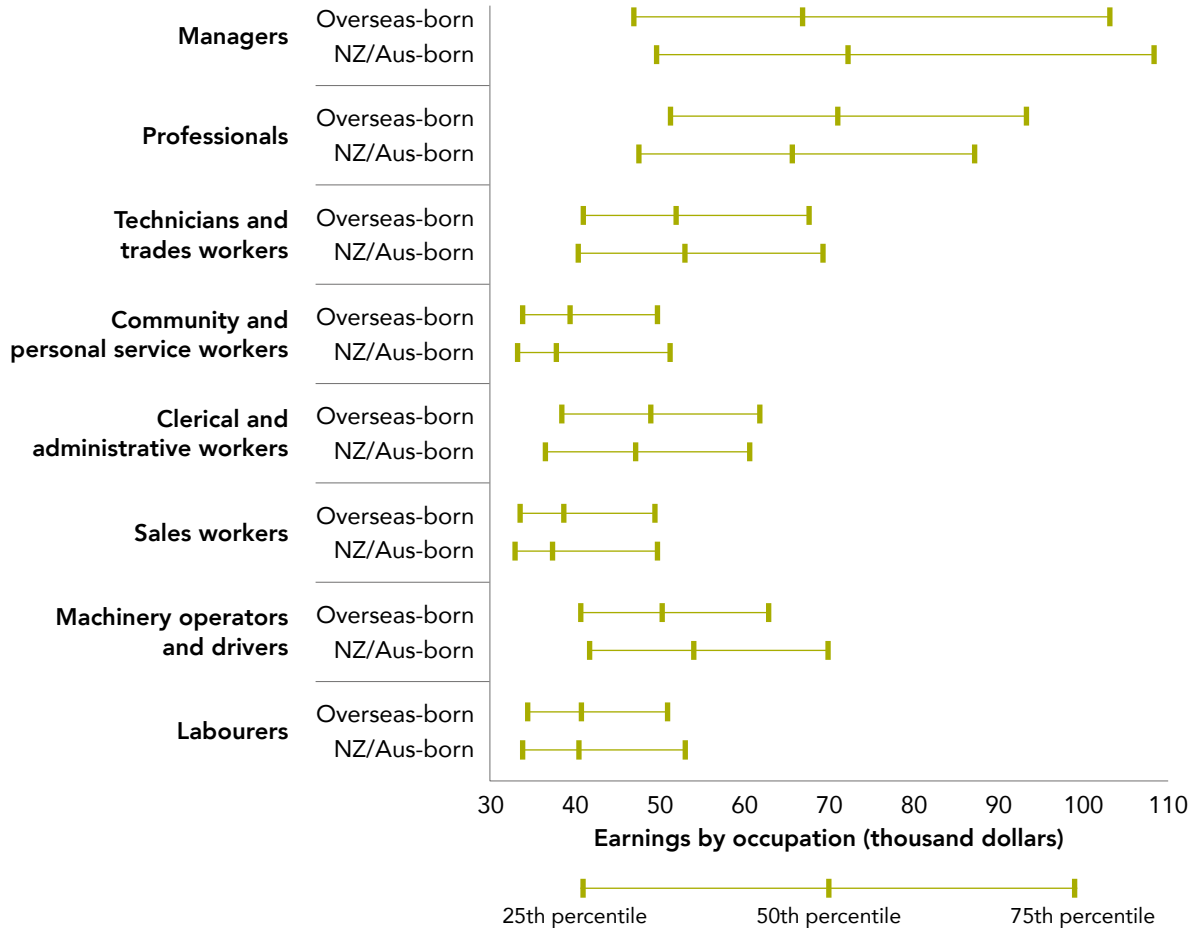
Figure 4.5 Occupational shares by visa type, 2018



Source: NZPC calculations based on Stats NZ IDI data.

Figure 4.6 presents the 25th, 50th and 75th percentiles of the annual earnings distribution for visa holders and for the New Zealand and Australian-born population by occupation. Within most occupation groups, median annual earnings are quite similar, but among higher income occupations there is both wider dispersion of annual earnings as a whole and a more pronounced difference between visa holders and the New Zealand and Australian-born. In particular, the median income among locally born managers is $5 300 higher than visa holders, while among Professionals the gap is reversed. Similar patterns are observed at the industry level as shown in Figure 4.12.

Figure 4.6 Earnings distribution by occupation, 2018
Median, 25th and 75th percentile annual earnings, nominal 2018



Source: NZPC calculations based on Stats NZ IDI data.

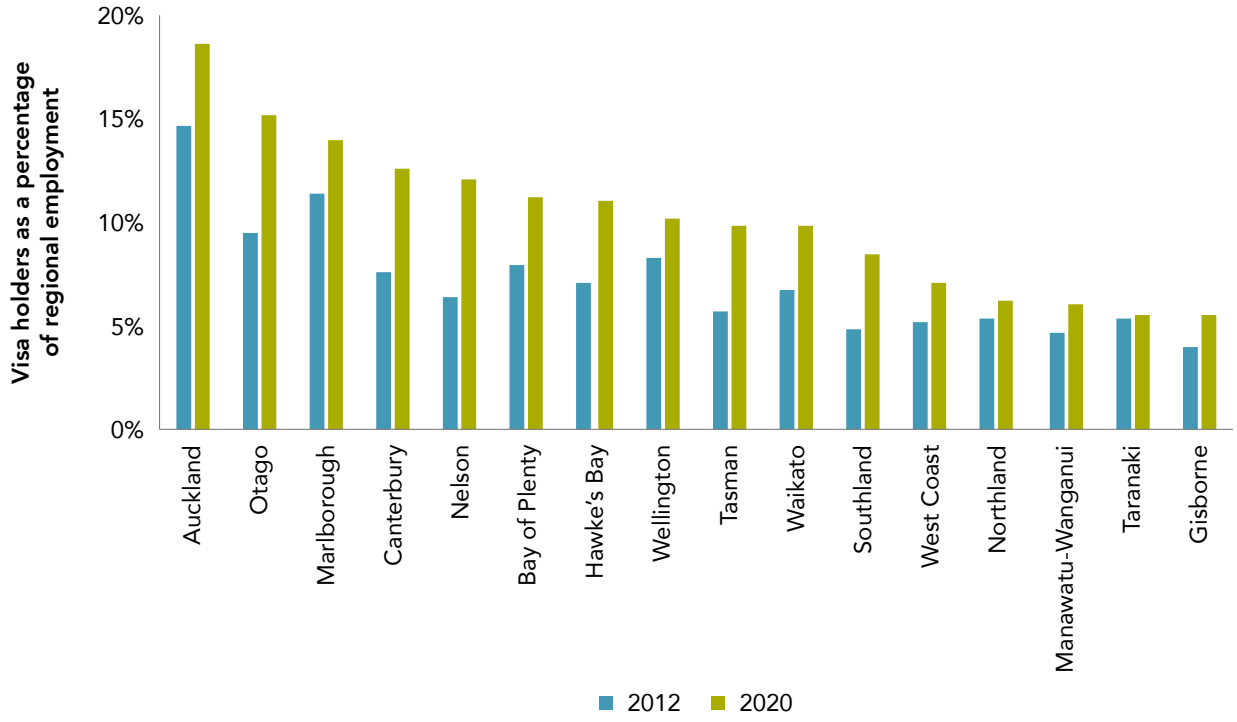
Migrants in the regions

The following sections explore employment patterns among recent migrants over the years 2012 to 2020 using data from MBIE's Migrant Employment Dataset. In the MBIE data, recent migrants are defined as those holding a current visa to live in New Zealand who have been resident here for five years or less. The analysis is therefore reflective of recent policy decisions and migration flows, but does not capture the full stock of overseas-born living in New Zealand.

Recent migrants are strongly over-represented in Auckland. In 2020, Auckland accounted for 34% of total employment, but 48% of employment among recent migrants. Recent migrants made up 19% of employment in Auckland in 2020, up from 15% in 2012 (Figure 4.7). Although migrants internationally tend to be concentrated in cities (United Nations International Organization for Migration, 2015), they are also a large part of the workforce in many of New Zealand's agricultural and horticultural regions (including Nelson, Marlborough and the Bay of Plenty), which offer opportunities for working holidaymakers and other temporary workers. More remote and rural areas (such as Northland, Manawatu-Wanganui, Taranaki and Gisborne) are much less reliant on recent migrants and have not experienced the rapid growth seen in the main centres.

Although Auckland has by far the largest number of migrants, other regions saw a proportionally stronger increase in migrant share. Job numbers for migrants roughly doubled in Otago, Nelson and Tasman over the eight-year period, while overall employment increased by between 10% and 25%, substantially increasing the share of jobs held by recent migrants.

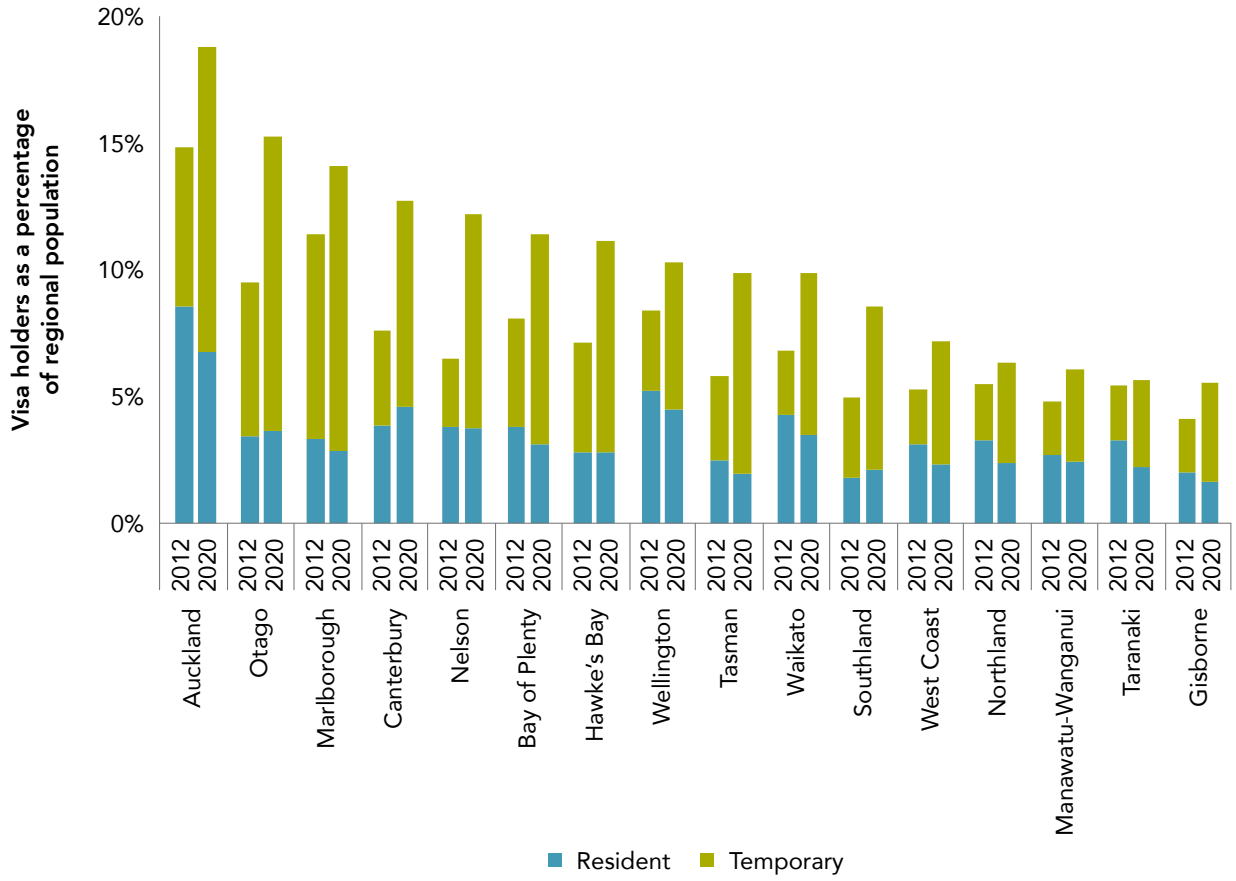
Figure 4.7 Visa holders as a percentage of employees by region, 2012 and 2020



Source: MBIE Migrant Employment Dataset, September 2021.
Note: Data includes only current visa holders who have been resident in New Zealand for less than five years.

Across all regions, the main driver of increased share of employment attributed to recent migrants was an increase in the number of temporary visa holders (Figure 4.8). Most regions experienced a decline or stagnation in the share of resident visa holders, with Auckland seeing a particularly large fall. This may reflect in part the definition of recent migrants applied by MBIE. The stock of recent residents may fall even as total resident numbers increase if inflows of new resident visa holders are lower than in the past, as more residents drop out of the definition of recent migrants than enter. However, this can account for only a small part of the difference because, at the national level, total resident arrivals in the years 2015 to 2019 were almost identical to 2007 to 2011, with both temporary and resident arrivals seeing a similar drop off in 2020 due to the Covid-19 border closures (Figure 2.11). Canterbury was the only region to see an increase in the share of employment held by resident visa holders, which may reflect recovery following the 2010 and 2011 earthquakes. In contrast, the share of temporary migrants in employment increased across all regions, in line with the growth in temporary migrant inflows since 2012.

Figure 4.8 Temporary and resident visa holders as a percentage of regional employment, 2012 and 2020

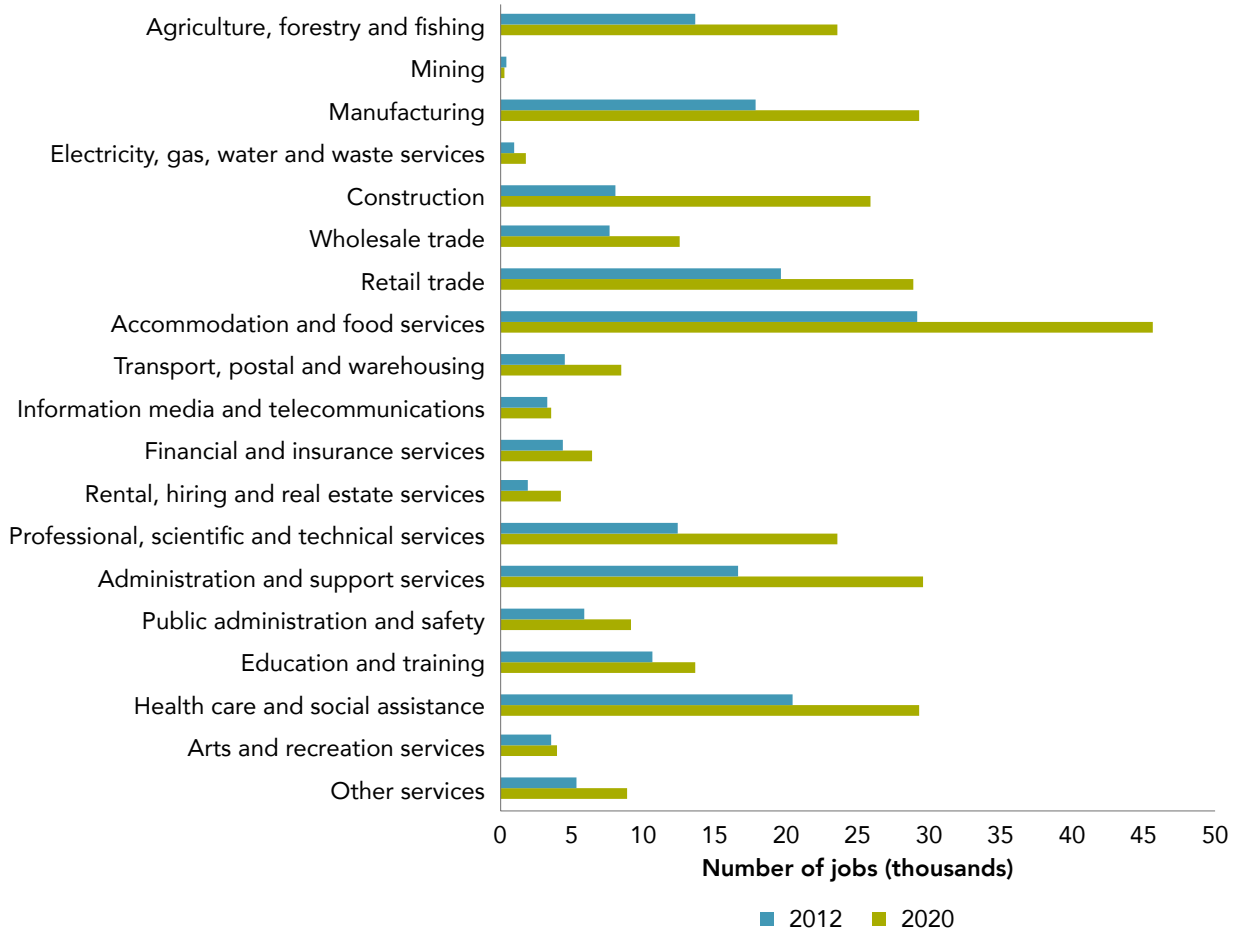


Source: MBIE Migrant Employment Data, September 2021.
Note: Data includes only current visa holders who have been resident in New Zealand for less than five years.

In which industries are migrants working?

Growth in migrant numbers over the 2010s was spread across a range of industries. Figure 4.9 shows employment numbers for recent migrants in 2012 and 2020. There has been a significant increase in migrant employment across almost all industries. In absolute terms, the greatest growth has been in Accommodation and food services, with an additional 16 400 migrant employees (increasing the total number of migrant jobs to 45 500 by 2020), and the Construction sector, with 17 800 more migrants in 2020 than in 2012. Construction has seen the greatest proportional growth, with recent migrant employment tripling over the period 2012 to 2020. Rental, hiring and real estate has also experienced very strong employment growth, with migrant employment in 2020 more than double its 2012 level.

Figure 4.9 Number of jobs held by visa holders by industry, 2012 and 2020
Average monthly employment counts by calendar year, thousands

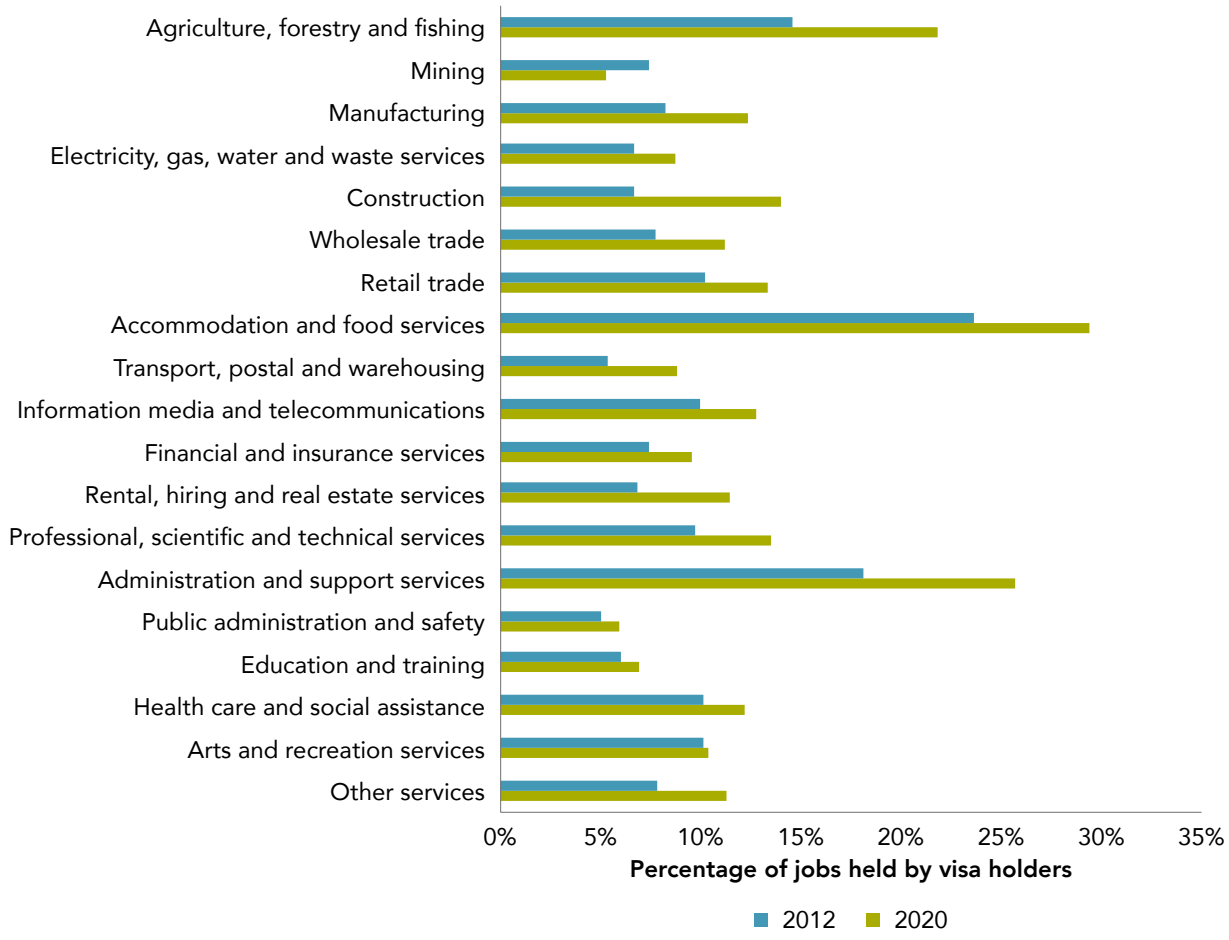


Source: MBIE Migrant Employment Dataset, September 2021.
Note: Data includes only current visa holders who have been resident in New Zealand for less than five years.

Increasing total numbers of migrant employment reflect both the strong net migration over the period, and strong jobs growth in particular industries. Figure 4.10 depicts the share of migrant employment in total industry employment in 2012 and 2020. By 2020, three industries – Agriculture, forestry and fishing, Accommodation and food services, and Administration and support services – had over 20% of jobs filled by recent migrants.

While Construction and Rental, hiring and real estate experienced proportionally higher increases in migrant employment numbers than other industries (Figure 4.9), total jobs growth in these industries was also strong, reducing the impact on the overall composition of the workforce. While migrant numbers in Construction tripled over the period, the share of migrants in employment doubled from 7% to 14%.

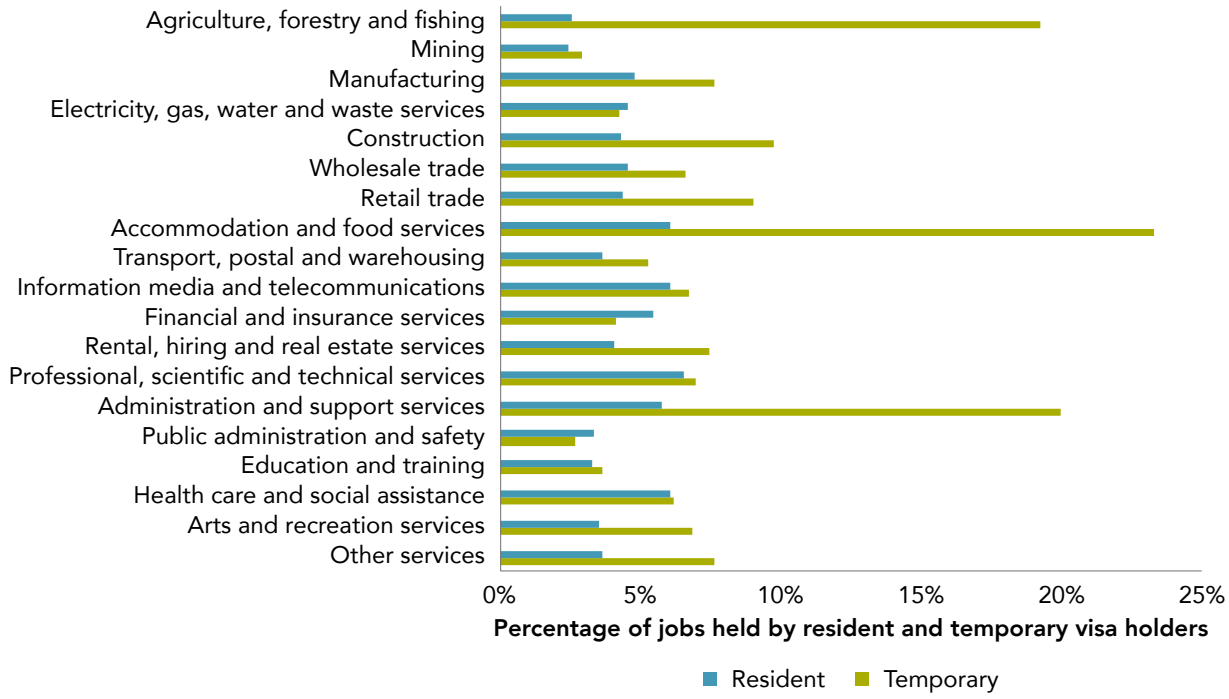
Figure 4.10 Percentage of jobs held by visa holders, 2012 and 2020
Average monthly employment counts by calendar year



Source: MBIE Migrant Employment Dataset, September 2021.
Note: Data includes only current visa holders who have been resident in New Zealand for less than five years.

Over the 2010s, temporary migration has been an increasingly large share of total migration flows (Figure 2.11). By 2020, most recent migrants working in New Zealand were on temporary visas (Figure 4.11). The important role of temporary migrants in the Agriculture, forestry and fishing industry is particularly notable, reflecting the growth in industry-specific temporary migration schemes such as the RSE scheme, as well as significant employment of Working holiday visa holders in seasonal agriculture industries. Temporary migrants also make up a very high share of employment in the Accommodation and food services and the Administration and support services industries.

Figure 4.11 Temporary and resident shares of employment by industry, 2020
Average monthly employment counts by calendar year

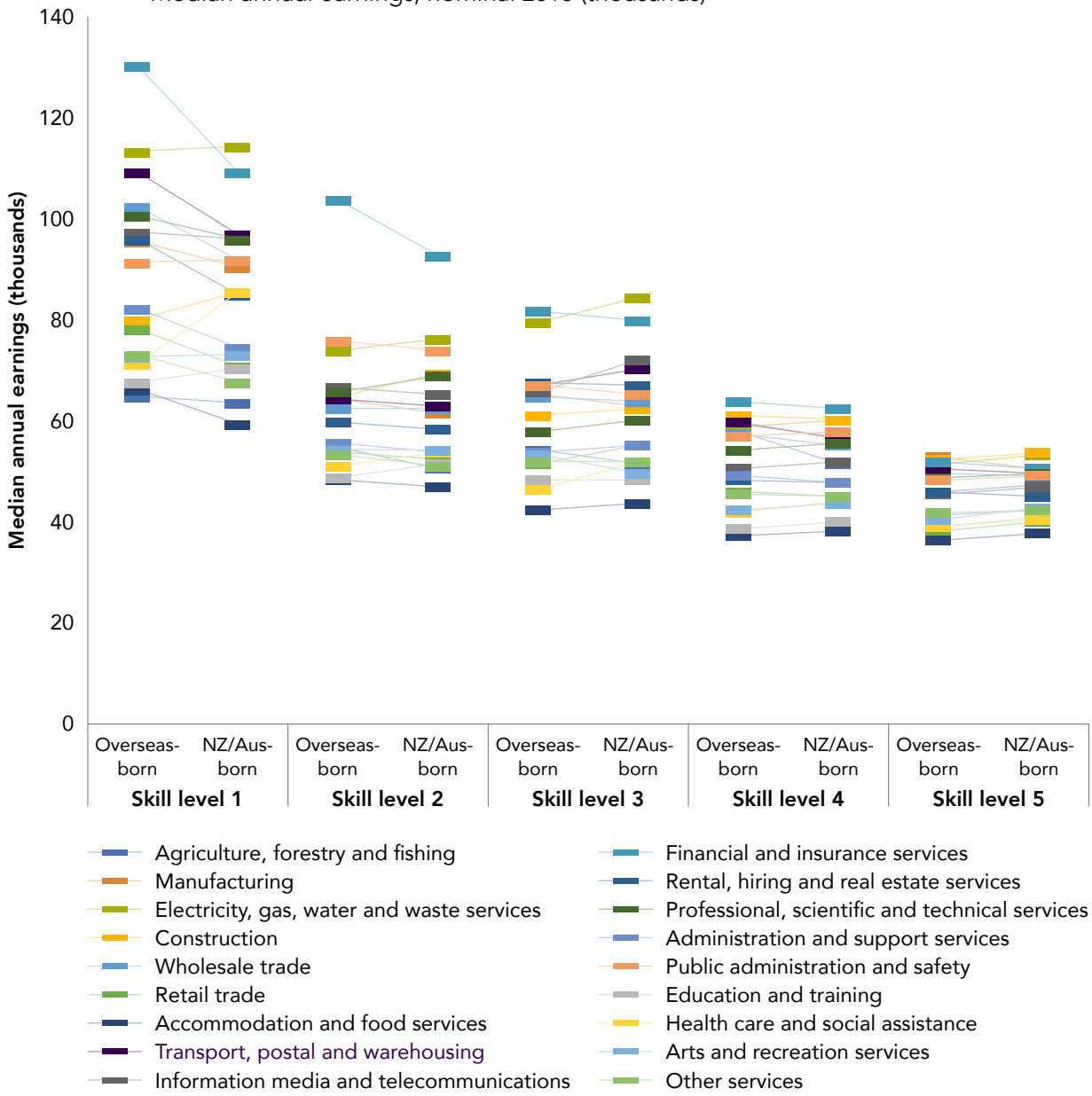


Source: MBIE Migrant Employment Dataset, September 2021.
Note: Data includes only current visa holders who have been resident in New Zealand for less than five years.

Although migrants, especially temporary migrants, account for a growing share of employment across almost all industries, earnings levels among recent migrants are closely comparable to those of the native-born. Figure 4.12 compares median earnings of the overseas born with those of Australian and New Zealand-born from the 2018 Census, distinguishing by both the skill levels of their reported occupation and the industry in which they work. While in the low-skilled occupations (Level 5), median annual earnings are slightly higher for locally-born employees than for migrants in most industries, but there is much greater diversity at higher skill levels. In the highest skill occupations, median earnings for migrants are often higher than those of the New Zealand and Australian-born, with high-skilled migrants in the Financial and insurance services industry having a median annual income $21 000 or 19% higher than that of New Zealanders in comparable occupations, and several industries – Wholesale trade, Transport, postal and warehousing, and Rental, hiring and real estate – all having a migrant premium of over 10%. In contrast, at $85 400, the median earnings of New Zealanders in high-skilled jobs in Health care and social assistance is around 20% higher than that for the overseas-born.

Figure 4.12 Median earnings by industry and skill

Median annual earnings, nominal 2018 (thousands)



Source: NZPC calculations based on Stats NZ IDI and LBD data.
Note: Skill level defined using the Australian and New Zealand Standard Classification of Occupations (ANZSCO) five-point scale of occupational skill levels. Skill level 1 is the highest level and level five the lowest.

As a large share of the population, and significant contributors to the labour market, migrants play a key role in the New Zealand economy. Part 5 explores the links between immigration and economic performance in more detail, examining the role of migrants in firm responses to labour and skill shortages, as well as wider impacts on housing, productivity and the fiscal balance.

Part 5

Migrants and the economy

Key points

- Migrants work right across the New Zealand economy, but are concentrated in some places more than others. There is a group of low-productivity industries that have a higher share of migrants. Several high-productivity industries also rely on migrant labour.
- Industries also employ a wide variety of types of migrants, as measured by their visa category. For example, recent migrants on skilled resident visas are important for the Telecommunications sector and for Professional, scientific and technical services, whereas most of the migrants working in Horticulture and Accommodation are on non-skills-related non-resident schemes (like the RSE scheme).
- This heterogeneity is important for understanding the impact of migration on New Zealand's economy.
- The economy requires more migrants when it is expanding. The period from 2000 until the Covid-19 pandemic was one of low and declining unemployment and increasing labour participation. In such a tight labour market, the expansion in jobs created by the economy needed to be met from elsewhere. This suggests that on average migrant labour has not displaced domestic workers, but rather has been associated with net job creation.
- This relationship between net job creation and migration is also apparent at the regional level, and there is a less-strong relationship within industries. This may be because labour is more mobile between industries than it is between regions.
- There is a positive relationship between immigration and reported labour shortages, but the latter also highlight the impact of emigration to Australia on the availability of labour.
- Net migration has been zero or negative across most New Zealand regions in recent decades, with the exception of Auckland. The pick-up in immigration since 2012 has taken place across all regions, with areas like the Bay of Plenty and Northland moving from net out-migration to net-immigration.
- The relationship between migration and productivity in the economy is strongly influenced by the industries where migrants work.

- Econometric analysis of the contribution that migrants make to the production and provision of goods and services shows that within the industries they work in, migrants generally look similar to New Zealand-born workers (it is the industries where they work that differs). Indeed, where they are different from their New Zealand-born colleagues, they are often more productive than those with medium skills.
- Our research suggests skilled and long-term migrants make contributions to output that exceed moderately-skilled NZ-born workers, and that that higher contribution is likely due to a mix of skill differences and/or hours worked that is largely reflected in higher wages. Conversely, migrants that are not on skilled visas are associated with lower output and lower wages than moderately-skilled NZ-born, also consistent with a skills/hours narrative.
- The share of employment for long-term migrants has grown over time (from 2005 to 2019), and we find that their relative contribution to output appears to be increasing over the same period. Finally, we present tentative evidence that high-skilled NZ-born workers make a stronger contribution to output when they work in firms with higher migrant shares, which is suggestive of complementarities between the two groups or, at least, positive mutual sorting of these groups into higher productivity firms.
- All other things being equal, we would expect the net benefits to be positive, as the benefits to firms outweigh the costs to them of hiring migrants. In the past decade, the country has managed to absorb a relatively large number of migrants at a time with low unemployment and high labour force participation. The labour market appears to have absorbed them well.
- However, if there are other constraints – housing and infrastructure, social cohesion, cultural factors or environmental costs – the nation has to make a choice.
- Over the last half-century, immigration does not appear to have caused "capital dilution". The New Zealand economy appears to have been able to meet increases in immigrant labour, except when the numbers increased rapidly as they did in the last few years.
- Two reasons to believe that migrants are not the primary cause of house price inflation are:
  - First, the price of housing was increasing long before net migration rose in the late 2000s.
  - Second, when net migration plummeted during Covid-19, and went negative, house prices actually accelerated.
- Migrants are less likely to be receiving benefits than the New Zealand-born. This is true across all age groups, except the over-60s.
- Our work suggests that the positive impact of migration – both through the direct impact on productivity and contribution to taxes, and indirect impact on knowledge, skills and innovation – is greater in high-skilled/high-productivity sectors.
- Our results also suggest that the set of skilled migrant visas does indeed appear to be attracting more productive staff who look more like the most skilled New Zealander workers. This will increase the returns to New Zealand firms, and does not appear to have reduced the jobs available for skilled New Zealanders. If we add to this the income earned by skilled immigrant workers that is spent in New Zealand, this is likely to lead to further increased output.

The main economic contribution migrants make to the New Zealand economy is what they bring to the country's workplaces. Gains arise from workers moving to where they can make the most impact, and from firms bringing in the best (or cheapest) workers from wherever they can be found. There are several reasons why migration can be welfare-enhancing for both the migrant and the country to which they are moving. Migrant workers can fill gaps where skills are unavailable and they can bring ideas – knowledge of foreign markets, of new things to do and new ways to do them. They will often have overcome financial and social costs and taken risks to make the move, and so can be expected to be highly motivated to succeed. Migration can also have negative impacts on migrants and their destination. Life may not turn out quite how it appeared to the migrant before moving. Also, like any increase in population, migration may have negative impacts if resources are constrained.

In this part we look in more detail at the industries and firms in which migrants work. We look at the contribution migrants make to the production and provision of goods and services when combined with local workers, with capital, machinery, technology and materials, and how this compares to domestic workers. We also look at the numbers relating to three areas of concern about migration and the economy, namely, capital dilution, the housing market, and benefit receipt.

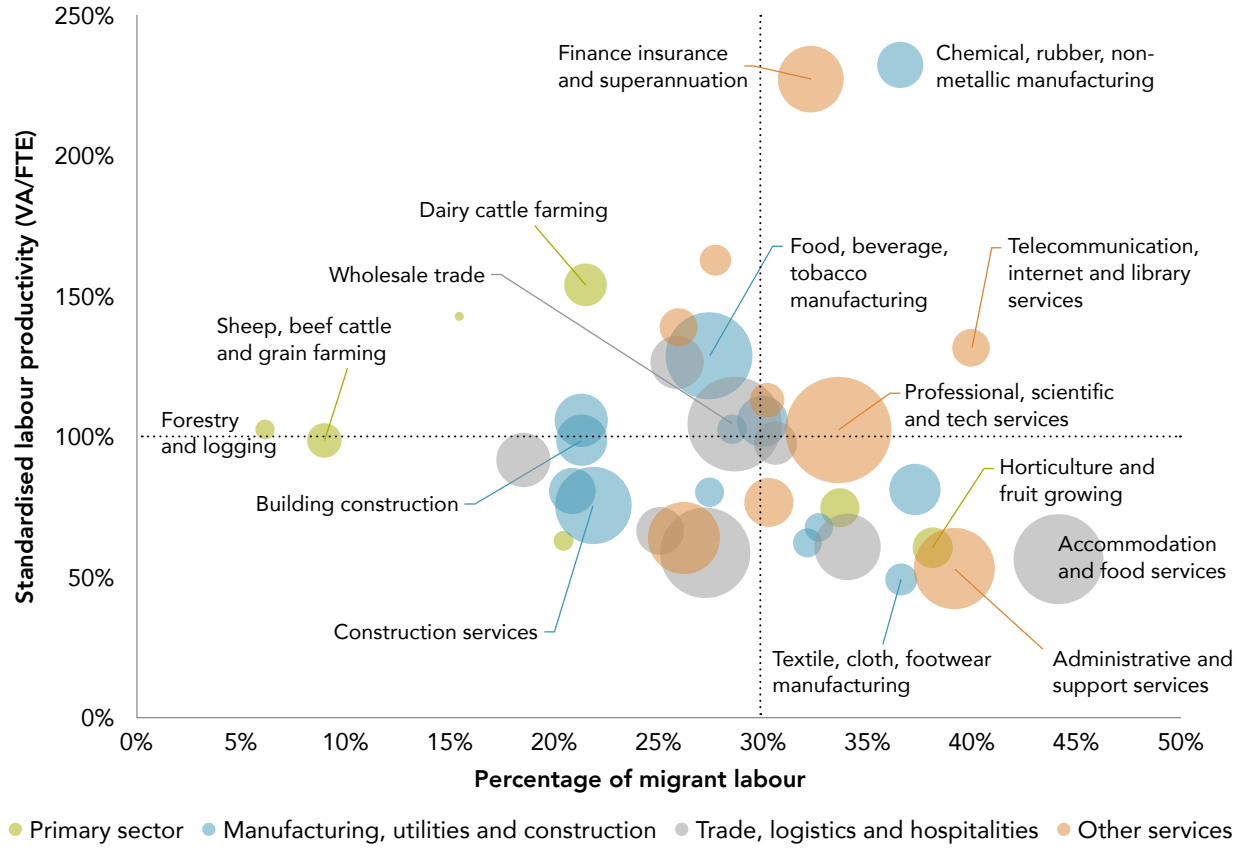
A lot of the analysis in this section is based on data in Stats NZ's Longitudinal Business Data (data on firms) and Integrated Data Infrastructure (data on people).[6] Because we have access to (anonymised) data from the Census, visa decisions and border movements, we can examine migrant workers in way that enables us to see how different types of migrants contribute to New Zealand firms. We set out more detail of this data and analysis in Box 5.1 and Box 5.2.[7]

The use of migrant labour by New Zealand firms

Earlier we saw that migrants are attracted to countries that provide strong economic opportunities (Figure 2.5, Figure 2.23). Similarly, migrant employment within New Zealand is also related to the opportunities available in different sectors. Figure 5.1 plots the relationship between the overall share of migrant employment in each industry against that industry's productivity,[8] averaged over the period 2005 to 2019. The size of the bubbles represents the size of each industry in terms of total employment. For ease of exposition, we report each industry's average labour productivity relative to the average labour productivity for the entire measured sector,[9] as indicated by the horizonal dotted line at 100% in Figure 5.1. Firms and industries producing above this line are more productive than average and those below, less so. The vertical dotted line denotes the overall share of labour input that is supplied by migrants.[10]

6 For more on these data, see Fabling et al. (2022); Fabling & Maré (2015), (2019); Fabling & Sanderson (2016).
7 Readers wanting even more detail can find it in Fabling et al. (2022).
8 Value added per full-time equivalent (FTE) employee.
9 For more on the population definition of the Fabling-Maré labour and productivity dataset, see Fabling & Maré (2015), (2019).
10 That is, total migrant FTE employment divided by total FTE employment.

Figure 5.1 Migrants' contribution to New Zealand industries
Industry intensity of migrant labour, labour productivity and total employment



Source: NZPC calculations based on the IDI and LBD.
Notes: 1. Size of bubble represents FTE employment in the sector.
2. Dotted lines represent the average proportion of migrant labour and of labour productivity in sample.
3. Productivity calculated using data defined according to Fabling & Maré (2015, 2019) method: Labour productivity = value-added/labour input (VA/FTE); Value added = gross output – intermediate consumption; Labour input is rolling mean employment adjusted to approximate a fulltime equivalent measure.
4. Labour productivity standardised by calculating it as a percentage to the average for the whole sample.
5. Two extremely high capital sectors (mining and utilities) are removed as they distort the chart. Both have below-average migrant labour shares.

Figure 5.1 confirms what we have seen in earlier parts, that migrants work right across the New Zealand economy, but are concentrated in some places more than others. There is a group of low-productivity industries that have high shares of migrants (the bottom right quadrant of Figure 5.1). Some of these – Accommodation and food services, and Administrative and support services – are large employers in the New Zealand economy.

Several high-productivity industries also rely on migrant labour (the top right quadrant). The Professional, scientific and technical services sector is a large employer of migrants, and its firms are, on average, a little more productive than average. This sector is a large and varied one, spanning as it does industries as diverse as scientific research, architectural and engineering services, advertising and veterinary services.

The relationship between productivity and the use of migrant labour is not a simple one. Industries also vary greatly in the types of migrants they hire.

Figure 5.2 depicts the composition of the migrant workforce in each industry, defined by their nationality and/or visa status. We describe each migrant group in Box 5.1 below.

Box 5.1 **Migrant groups used in our firm-level analysis**

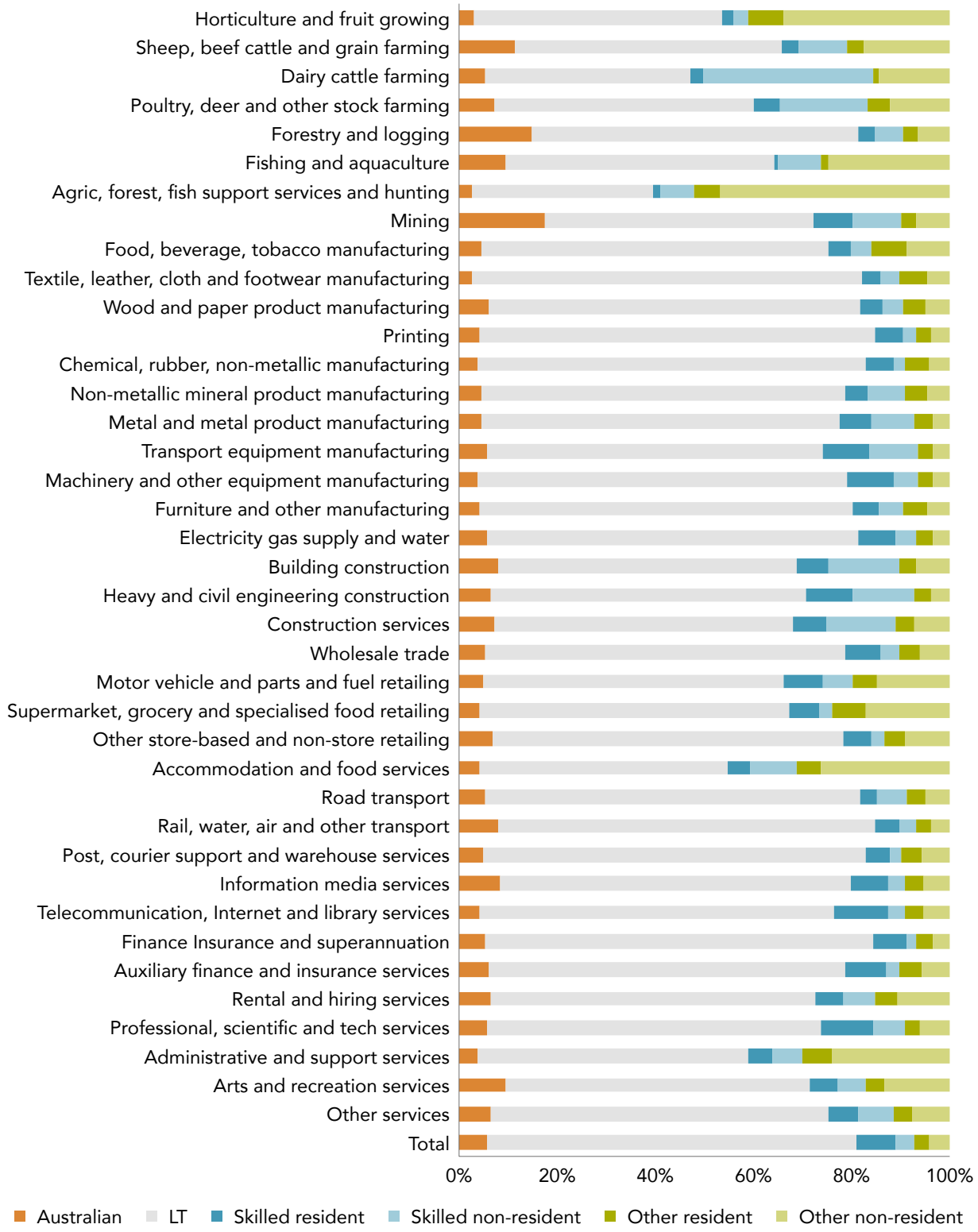
We use Ministry of Business, Innovation and Employment visa decisions and border movements data, Department of Internal Affairs birth records, and census (2013 and 2018) responses to identify workers' migrant status. We divide migrants into those who have been in New Zealand more than five years (whom we label 'long-term') and more recent migrants (< 5 years). Recent migrants are allocated to one of four groups based on visa decision data (based on 30 sub-streams):

- **New Zealand-born**
- **Long-term (LT) migrant** (5+ years) and **Australian**
- Non-Australian **Recent migrant** (<5 years), including:
  - **Skilled resident** eg, Skilled Migrant Category, Residence from Work, Investors, Entrepreneurs
  - **Skilled non-resident** eg, Essential skills, Work to residence
  - **Other resident** eg, Pacific Access, partners or parents of residents
  - **Other non-resident** eg, Recognised Seasonal Employer (RSE), Post-Study Work, Working Holiday Schemes, and partners of Worker or Student visa holders.

Long-term migrants are by far the largest migrant contributors to all but one of the 39 industries. The sole exception is Agriculture, forestry and fishing support services and hunting, where migrant labour is comprised of 12% long-term migrants and 16% on "other non-resident visas", such as the RSE or Working holiday schemes. Many of the primary industries rely more on more recent migrants, in particular those on other non-resident visas. Dairy cattle farming (and to a lesser extent Poultry, deer and other stock farming) is unusual in the types of migrants it employs, as it relies heavily on skilled (non-resident) work visa holders (Figure 5.2).

Recent migrants on skilled resident visas are important for the Telecommunications sector and for Professional, scientific and technical services, whereas most of the migrant labour for Horticulture and Accommodation and food services are on 'other non-resident' schemes (including the RSE, post-study work, and working holiday schemes).

Figure 5.2 There is a huge variation in the types of migrants that industries employ
Share of broad domestic and migrant groups, by industry (average over 2005–2019)



Source: NZPC calculations based on Stats NZ IDI and LBD.
Note: LT = long-term migrants. These are migrants who have been in New Zealand for more than five years.

Labour shortages and migration

It is relatively difficult and expensive to hire workers from another country. Why, then, do New Zealand firms employ migrants? An obvious reason is that they cannot find workers domestically. We have seen that this country has a large number of people living and working abroad, particularly those who are highly qualified. New Zealand businesses are competing with those in more productive countries, where New Zealanders can produce and earn more than they can at home. The Australian economy is more productive than the New Zealand economy (see Figure 2.25 and New Zealand Productivity Commission, 2021, for example), and we have observed large flows of New Zealand workers across the Tasman. These close links can mean that businesses in this country have to compete with their Australian counterparts for labour of all types.

Shortages of skilled labour are a normal part of economic life. They tend to rise and fall with the economic cycle, as demand for labour increases and declines. With imperfect markets for education and training, and non-zero costs to labour market adjustment, these can persist for longer than basic economic models might suggest. Economists tend to distinguish between all vacancies, vacancies that are hard-to-fill, and those that are hard to fill because applicants lack the qualifications, skills or work experience the business demands (Stevens, 2012, and references therein). The third of these excludes reasons like low wages or other benefits being offered, unsociable hours or seasonal work, etc.

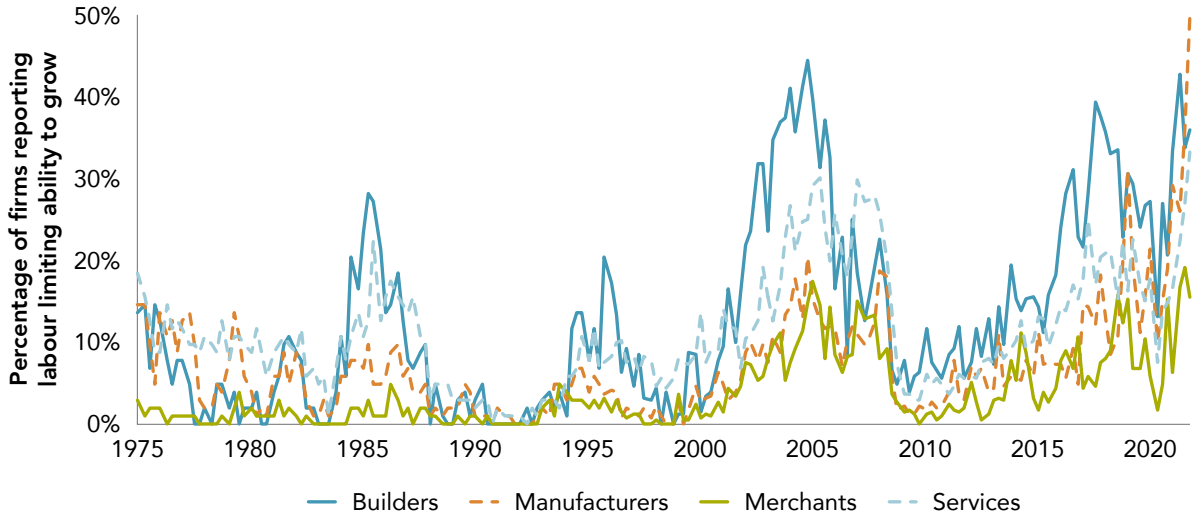
With the exception of a specific module focusing on this in the Business Operations Survey in 2008, most surveys measure hard-to-fill vacancies.

Figure 5.3 shows the variation in labour shortages, as reported by businesses in the NZIER Quarterly Survey of Business Opinion. Firms are asked what single factor, if any, is most limiting their ability to increase turnover. They are given a number of potential factors: orders/sales; materials/components; finance; labour; capacity; or "other". Figure 5.3 show the proportion of firms in four broad industry sectors who feel that labour is the biggest factor limiting their business's ability to grow, from 1975 to the present day. The portion of firms reporting this varies from almost zero in the early 1990s, to over 40% in some industries in the mid-2000s and then again in the last five years or so. These two most recent peaks are greater than the previous peaks in the mid-1980s and mid-1990s. As we saw in Part 2 (Figure 2.9), this was a time when both emigration and immigration were increasing.

It is builders who tend to find it difficult to find labour in these peak periods, followed by those in the service sector. After the Asian financial crisis, fewer building firms reported shortages and it was the services sector that found it most difficult to obtain staff. Post-Covid-19, there has been a considerable increase across all businesses in the reporting of shortages of labour, with the outlook for manufacturers being the starkest.

Figure 5.3 Labour shortages constrain firm growth, 1975–21

What single factor, if any, is most limiting your ability to increase turnover? Labour



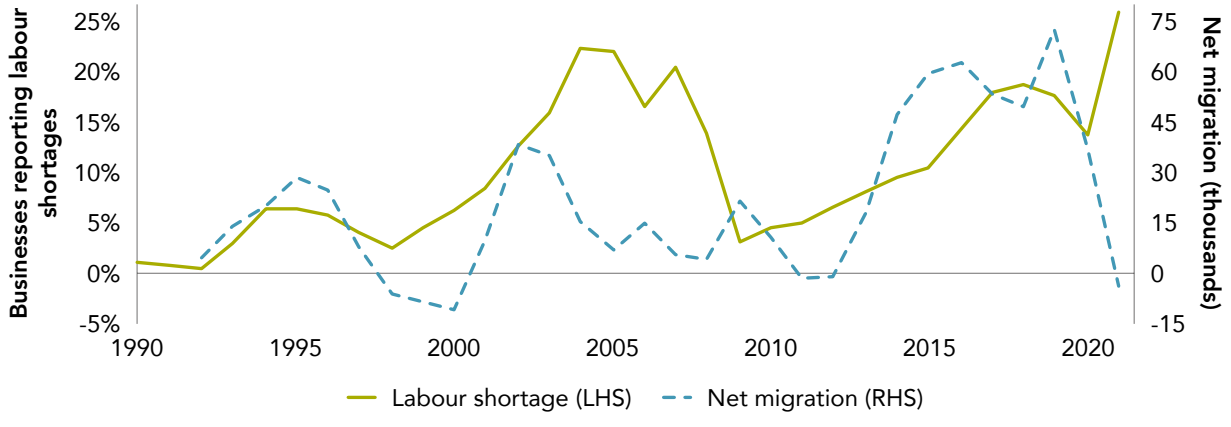
Source: Quarterly Survey of Business Opinion.

The increase over the past decade in firms reporting that shortages of labour were constraining their ability to expand has occurred at a time of falling unemployment and high labour force participation in New Zealand. As we have seen many times already, it was also a time when net immigration was increasing rapidly. Indeed, the last cycle saw an increase in net migration beginning a year or two after firms started reporting labour shortages, and then rising swiftly, a pattern that appears to have happened over both of the last cycles (Figure 5.4).

The one exception was in the mid-2000s, when net migration initially increased after increased reporting of labour shortages but fell off after peaking in 2002–03. We saw in Part 2 that this was a period when net migration from New Zealand to Australia was increasing (Figure 2.27), which may have exacerbated the reported labour shortages driven by businesses expanding, causing the subsequent increases in reported shortages, which remained high until the economic downturn following the GFC saw them tumble.

Figure 5.4 Labour shortages and net migration, 1990–2020

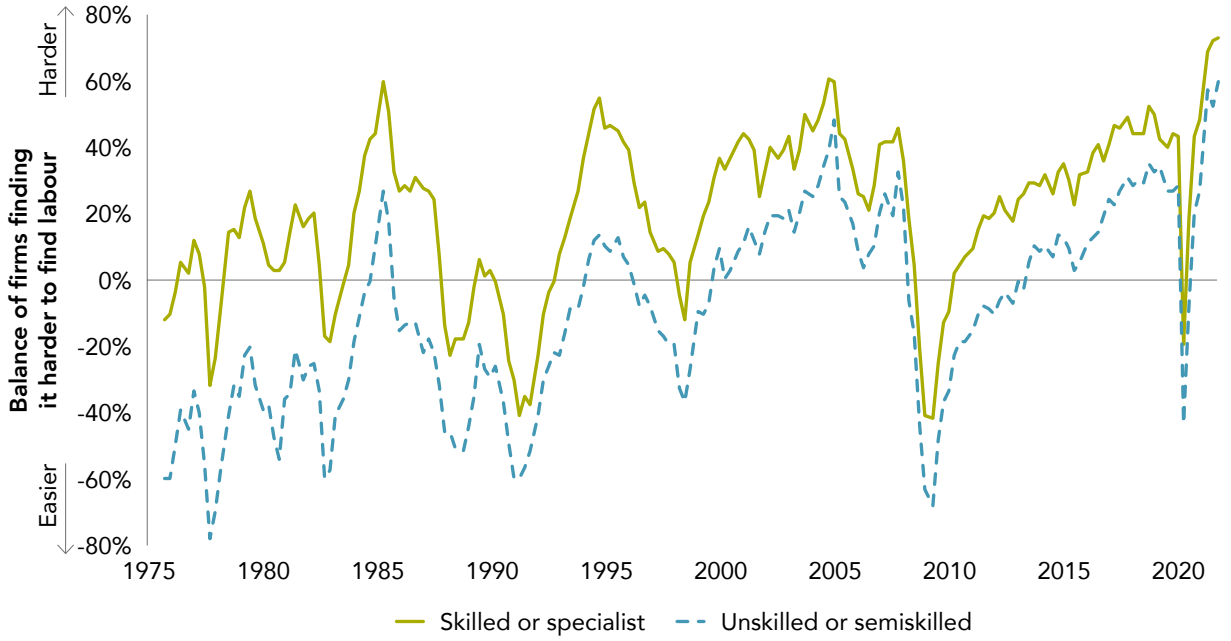
What single factor, if any, is most limiting your ability to increase turnover? Labour



Source: Quarterly Survey of Business Opinion and Stats NZ.

As one might expect, businesses find it harder to obtain skilled labour than unskilled labour (Figure 5.5). The two series follow a similar pattern, but the balance of firms reporting it harder to find unskilled or semiskilled labour is consistently below that reporting shortages of skilled or specialist labour. In the first half of the period for which we have data (ie, 1975–2000), the balance of firms found it easier to find unskilled or semiskilled staff.[11] The percentage of firms reporting it harder to find skilled and specialist labour has been positive for most of the period, but also shows signs of increasing since 2000. In particular, the impact of the Covid-19 pandemic saw the numbers reporting difficulties finding staff plummet, before rebounding to new heights in 2021. This temporary drop may reflect a shift in the demand for labour rather than an increase in the supply, as firms looked more to their survival than to hiring new staff.

Figure 5.5 Skill shortages, 1975–2021
Balance of firms finding it harder to find labour



Source: NZIER Quarterly Survey of Business Opinion.
Notes: 1. Question is: "In general, do you find that getting the labour you want today is easier, the same, or harder than it was three months ago?"
2. Response options are: Easier, Same, Harder and N/A.
3. Labour types are: "Skilled; specialist" and "Unskilled; Semiskilled"
4. Score is percentage of firms answering "harder" less the percentage answering "easier".

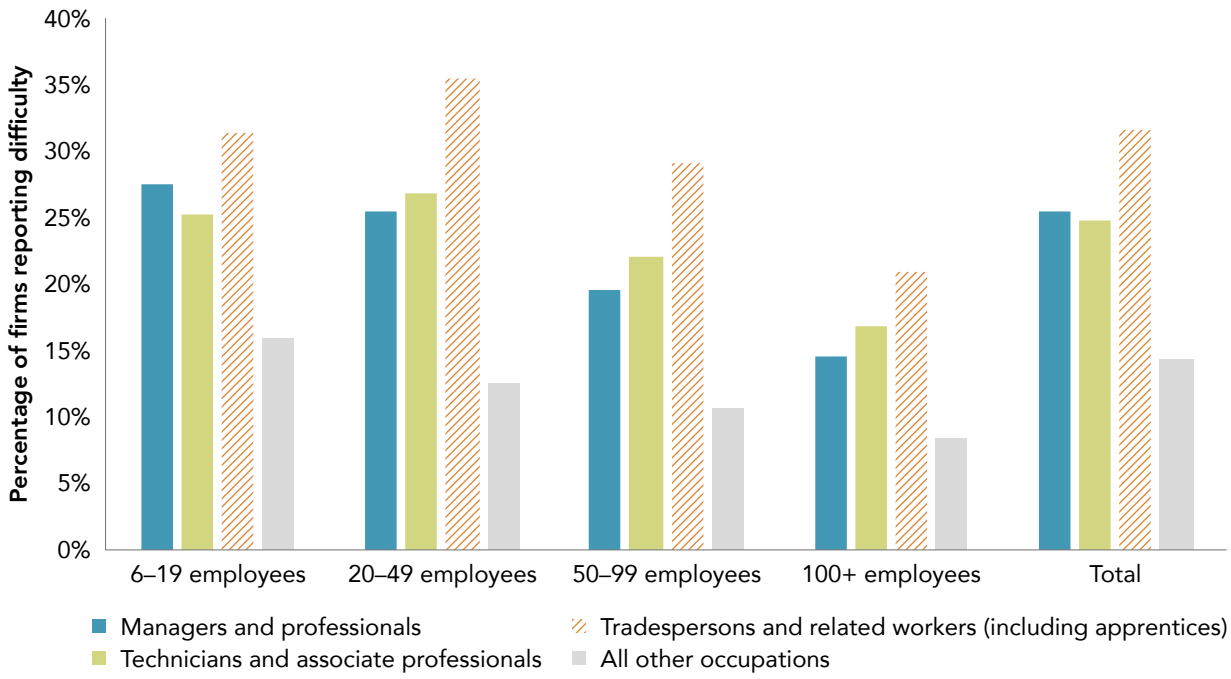
A different way to think about the skills that firms are looking for is to consider the occupations for which they are having difficulty hiring staff (Figure 5.6). The Business Operations Survey is an annual survey that goes to around 7 000 firms employing six or more workers. This survey asks respondents to what extent the business experienced difficulty in recruiting new staff for any of four occupational groups, with response options including "no difficulty", "moderate difficulty" and "severe difficulty".

11 Note that the question is "In general, do you find that getting the labour you want today is easier, the same, or harder *than it was three months ago?*" Given the nature of data, this appears that respondents are reporting as much or more about the *level* of skill shortages as its *change*.

Overall, it is tradespersons and related workers (including apprentices) that the most firms report severe difficulties in recruiting. These occupations include roles like electricians, mechanics, hairdressers and bakers. Next up are managers and professionals (eg, accountants, engineers, journalists and computer programmers), and technicians and associate professionals (eg, technical officers, building inspectors and legal executives). Least likely to be reported as being hard to recruit for are 'other' occupations, such as clerical, sales and service workers (eg, secretaries, receptionists, sales representatives, waiters), production and transport workers (eg bulldozer operators, bus drivers, store persons) and labourers (eg, cleaners, factory hands and trades assistants).

Larger firms are less likely to report recruitment difficulties. On the one hand, as larger organisations, they would be expected to have more vacancies to fill. On the other, their size will also mean they have a higher profile and ability to recruit new staff, as well as to promote, move or develop staff internally (meaning they can be more flexible in whom they hire). Larger firms also tend to be more productive and to pay higher wages and salaries, and may offer other benefits to potential employees.

Figure 5.6 Firms' recruitment difficulties across occupations
Year ending March 2020

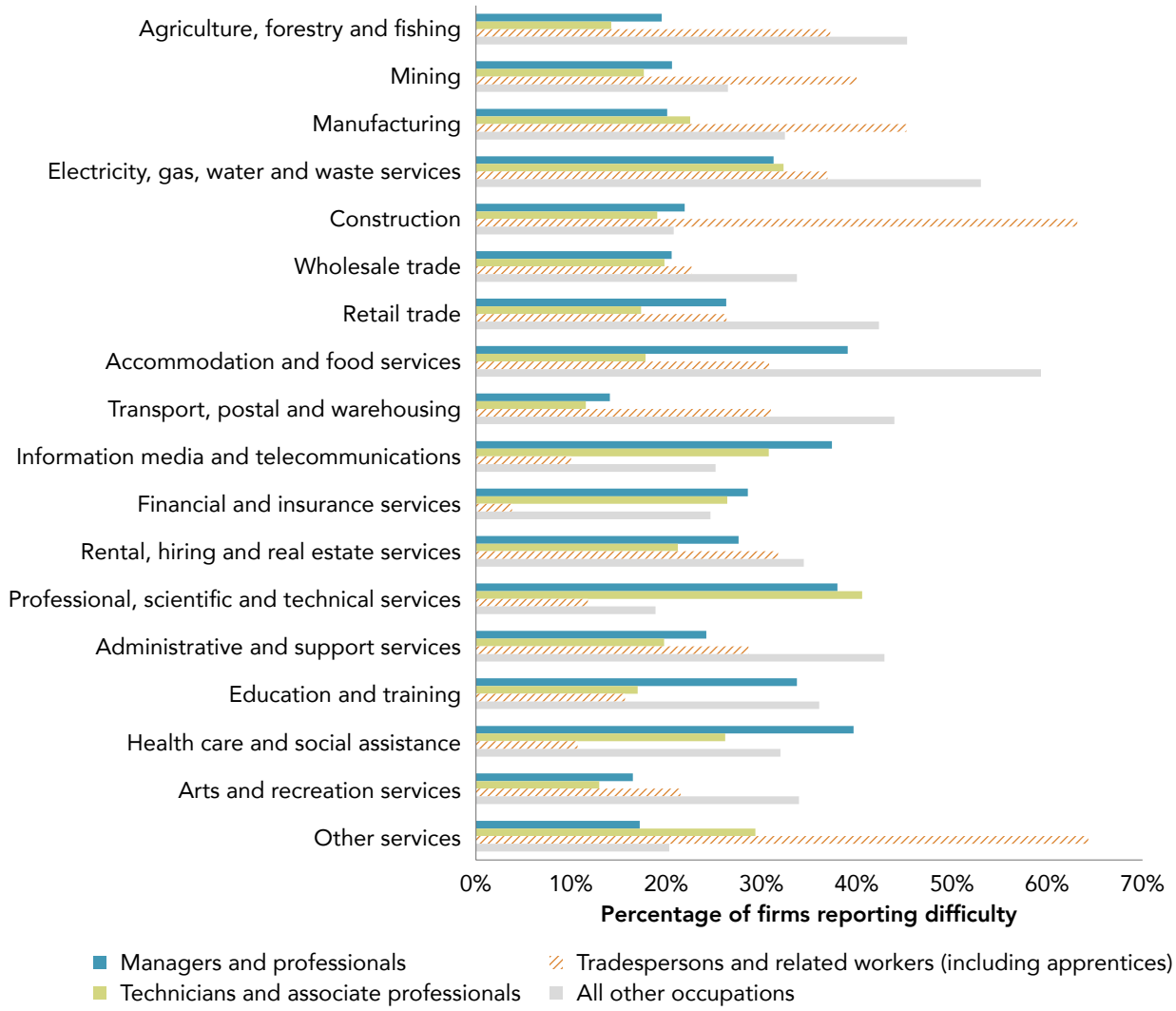


Source: Business Operations Survey.
Notes: 1. Question is: "Over the last financial year, to what extent did this business experience difficulty in recruiting new staff for any of the following occupational groups?"
2. Potential responses are: No difficulty; Moderate difficulty; Severe difficulty; Don't know; Not applicable.
3. Percentages are the number of firms answering: "severe difficulty" as a proportion of those who did not answer "not applicable".

Many of the skills firms are seeking will be industry-specific, and shortages will relate to whether the firm and/or industry is expanding. This is reflected in the pattern of firms reporting severe difficulty in recruiting new staff in the various occupations across industries (Figure 5.7). Tradespersons are the most likely occupation for firms to report recruitment difficulties in the Construction industry, as well as the Manufacturing, Mining and 'Other' services (including a variety of repair/

maintenance and personal, civic and religious services). Tradespersons are also a close second in sectors like Agriculture, forestry and fishing and Electricity, gas, water and waste services. Whilst overall, the 'All other occupations' group is least likely to be reported by firms as presenting recruitment difficulties, it is by far the most likely in Accommodation and food services, as well as the Transport, postal and warehousing, Administrative and support services, Arts and recreations services and Agriculture, forestry and fishing industries. There are many reasons why there is this variation between industries, such as the methods of production and provision, and local, national and international labour market conditions. One must be careful not to draw strong conclusions from aggregate numbers without digging a little deeper.

Figure 5.7 Recruitment difficulties, by industry
Year ending March 2020

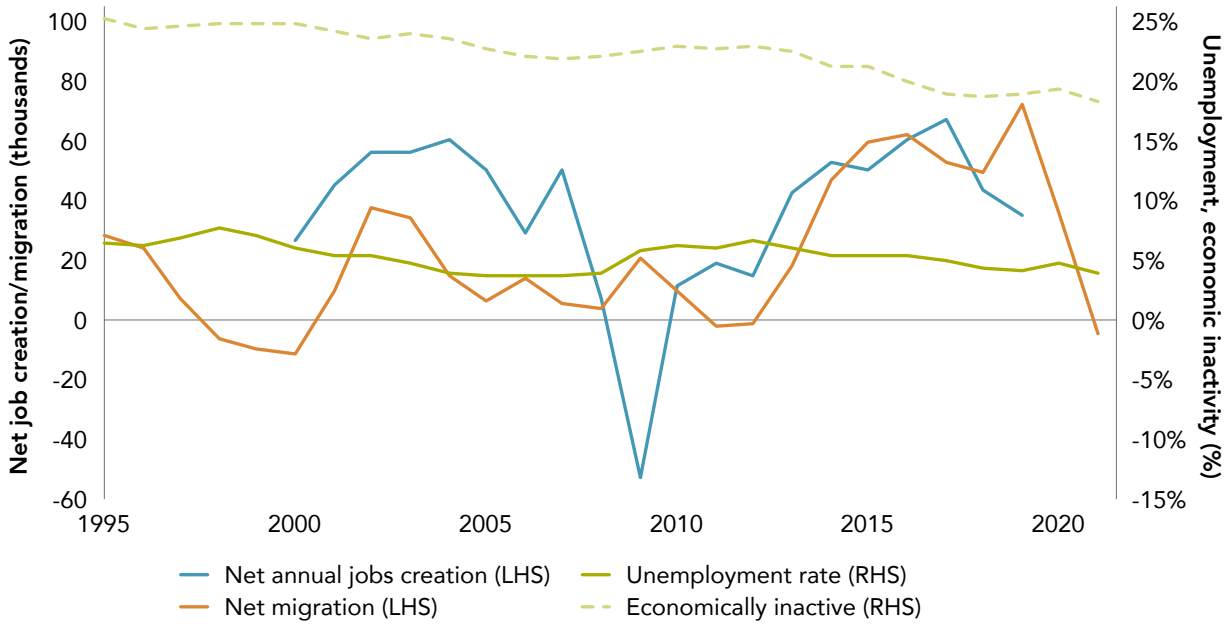


Source: Business Operations Survey.
Notes: 1. Question is: "over the last financial year, to what extent did this business experience difficulty in recruiting new staff for any of the following occupational groups?"
2. Potential responses are: No difficulty; Moderate difficulty; Severe difficulty; Don't know; Not applicable.
3. Percentages are the number of firms answering: "severe difficulty" as a proportion of those who did not answer "not applicable".

Job creation and migration

When firms report difficulty in recruiting workers, the question arises of why businesses were looking for labour in the first place. Is it because of high staff turnover, because the firm is not offering good pay and conditions, or because the business is expanding? If firms are expanding, and the pool of labour (particularly skilled labour) is relatively fixed, this will lead to firms experiencing shortages. Bidding up wages may help, either by enticing workers from competitors or from outside of the sector or region, but in the presence of an inelastic supply the end result may just be all firms having higher wage costs in the sector or region. If firms cannot find staff locally at reasonable wages, they will either curtail their expansion and turn down orders or look to other sources of labour. Over the longer term, they may look to train staff, but this takes time, and often requires existing staff to become less productive as they oversee the training. Furthermore, the costs of training may be wasted if upskilled staff are subsequently poached by other firms (who did not have to incur this cost themselves).

Figure 5.8 Migration accompanies job growth
Net job creation and migration, unemployment and inactivity, 1995–2021



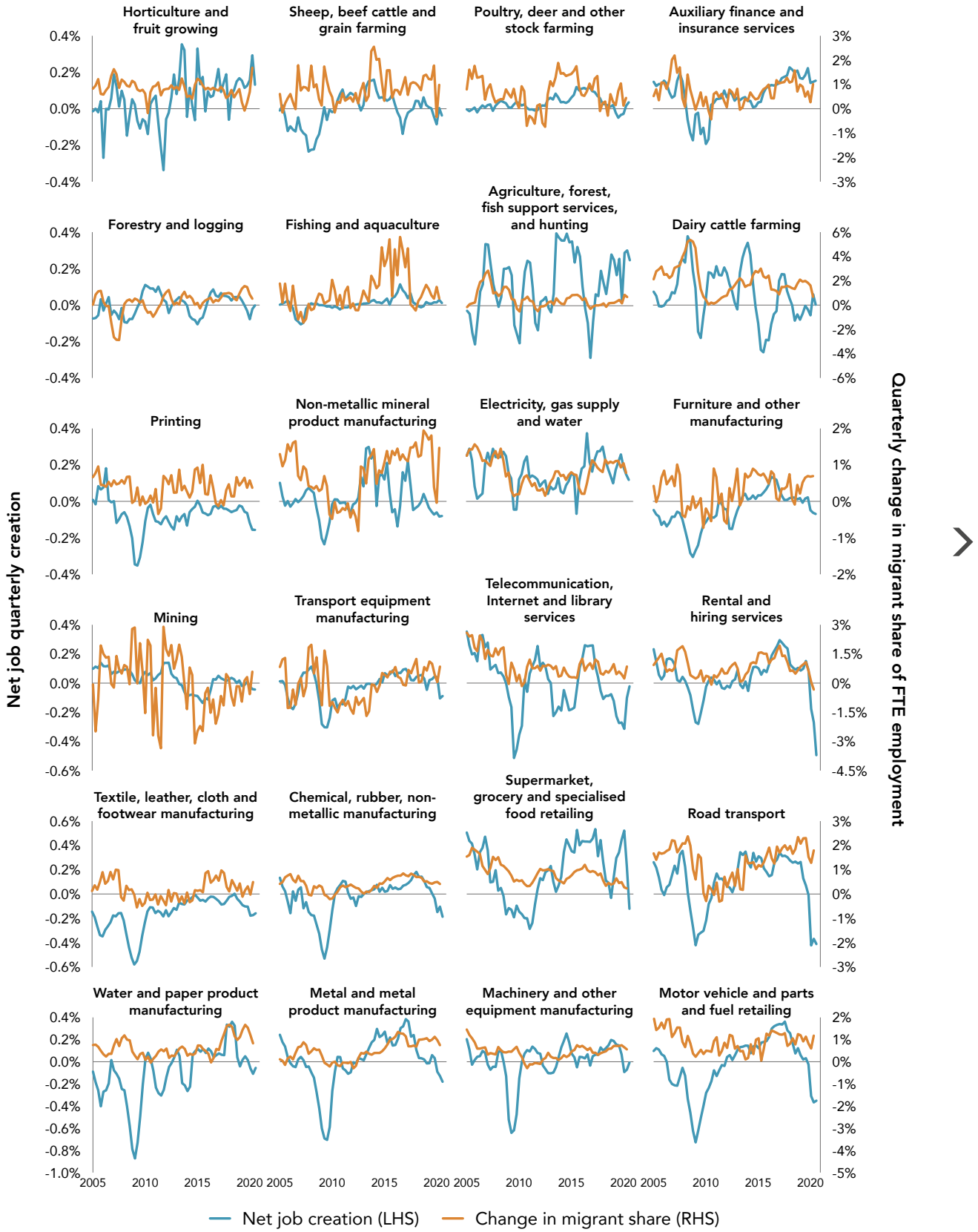
Source: NZPC calculations based on SNZ Household Labour Force Survey (HLFS)., Linked Employer-Employee Data (LEED) and population data.
Net annual job creation comes from LEED.
Unemployment and economic activity come from HLFS.
Net migration comes from SNZ Estimated Resident Population Change by component (annual, December year.)

There is a close relationship between net job creation and migration. As we can see from Figure 5.8, net migration does indeed follow the path of net job creation, with the exception of during the GFC in 2009 when net job creation was negative, but net migration actually increased. The period from 2000 was one of low and declining unemployment (except for an uptick in the early 2010s). Moreover, New Zealand was also experiencing high and increasing labour participation (ie, declining economic inactivity). In such a tight labour market, the expansion in jobs created by the economy needed to be met from elsewhere. This concurrence of job growth and net migration suggests that, on average, migrant labour has not displaced domestic workers. This may not always be the case, but appears to have been since the turn of the century.

Industry picture of job creation and the use of migrant labour

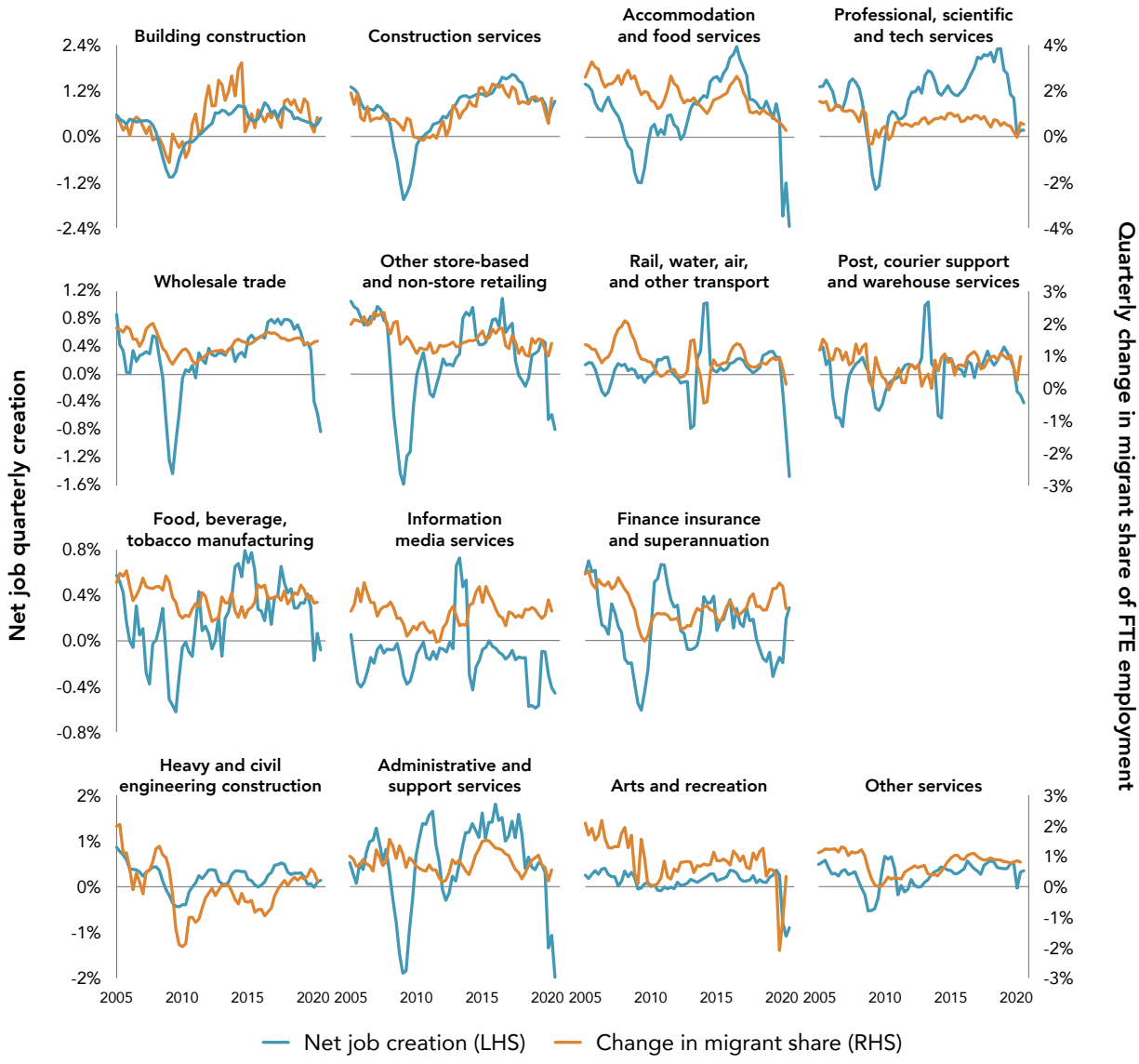
The aggregate, macro picture can often hide considerable heterogeneity at the industry or micro level. We have already seen that the types of skills for which firms experience recruitment difficulties vary quite markedly across industries. When we look at individual industries, we see that net job creation and net migration still appear to be related (Figure 5.9). When net job creation in an industry is high (blue line), firms rely more on migrants to meet labour needs, increasing the share of migrants in total employment (orange line). There are similarities, but also differences, in the job creation picture across industries. For example, most non-agricultural industries were affected by the GFC, but the size and length of the period of net job loss varied.

Figure 5.9 Net job creation and migration by industry, 2005–20



Source: NZPC calculations based on IDI and LBD data.

Figure 5.9 Net job creation and migration by industry (cont.)



Source: NZPC calculations based on IDI and LBD data.

Regional job creation and migrant workers

The relationship between net job creation and migration is closer when we look at the regional picture (Figure 5.10). This may be because a region (territorial authority) more closely represents a labour market than an industry. If a firm cannot find workers within its local region, it has to look elsewhere. Once it has made this choice, international markets may seem less of a step up.

Net (international) migration has been zero or negative across most of the regions of New Zealand over much of the period for which we have data, with the exception of Auckland. The pick-up in immigration since 2012 has been almost ubiquitous across all regions, with regions like the Bay of Plenty and Northland moving from net out-migration of 2% of their population previously to net immigration.

Note that the figures do not show internal migration. Many regions have achieved job growth with lower levels of international immigration because of internal migration, although some of the poorer regions have also achieved it with declining unemployment and economic inactivity.

Figure 5.10 Regional migration and economic conditions, 2000–19

Source: Calculations based on Stats NZ HLFS, LEED and population data. See also Figure 5.8.

Using microdata to understand workers and firms

We have seen in the previous sections that the relationship between economic activity and migration is complex. Aggregations like industries and regions provide more detail than national aggregates. However, industries and regions are also aggregates. Decisions to hire are not made at the region or industry level, they are made in firms. To better understand the role of migrants in the economy, the Productivity Commission has conducted research using the Integrated Data Infrastructure (IDI) and Longitudinal Business Database (LBD), to examine the relationships between migrants working in New Zealand businesses, productivity and wages for tens of thousands of New Zealand enterprises, between 2005 and 2019. These data include administrative data from the immigration system, and from the records of births and taxes, the census, visa decisions, and border movements to identify and classify workers according to their migrant status. This is linked with tax and administrative data on New Zealand firms.

This research asked three main questions:

1. How productive are migrant workers?
2. How well-paid are migrant workers?
3. How well-paid are they compared to how productive they are?

Basic economic theory suggests wages and the marginal product of labour will be equal in equilibrium. However, there are many reasons why productivity and wages can diverge. Firms may use different amounts of other factors of production (eg, capital) to do the same or similar things.

Different industries use production methods with different combinations of factors – capital, skills and labour. Migrants working on different visas will also differ. Some explicitly focus on worker skills, others less so. The wages of a particular type of labour will depend on many things, including the contribution they make to the firm's success (their productivity), the other opportunities in the market for both the worker (other places to work) and the firm (other workers to employ), as well as the market for the firm's products or services. Therefore, given that firms and workers are not homogenous, the work also considered the following questions:

4. How do these answers vary across different types of migrants?
5. How do these answers vary across different industries?
6. Have these answers changed over time?
7. Do migrant workers affect the productivity of New Zealand-born workers?

The migrant groups used in the analysis are those set out in Box 5.1, above. In order to take account of the differences in the make-up of the New Zealand-born staff working with migrants we divide them into three groups by level of skill. In what follows we will mainly compare the various migrant workers with the middle group of these, whom we call "medium-skilled New Zealand workers" or "medium-skilled New Zealanders" (the other two are, unsurprisingly, "high-skilled" and "low-skilled" New Zealand workers. For more details on how we define these groups see Box 5.2).

Box 5.2 **Calculating the market value of skills**

Because we do not have good measures of skills in the IDI or LBD, we follow the common method of calculating an inferred market valuation. This is done by estimating a two-way fixed effects wage equation as done by Maré and Hyslop (2006) and updated in Maré, Hyslop, and Fabling (2015). This model decomposes wages to three parts:

1. the **firm fixed effect:** that which can be explained by the specific firms (whoever is working in them)
2. the **worker fixed effect:** that which can be explained by the specific worker (wherever they work)
3. **worker characteristic** component: that which can be explained by their age and gender

The worker component is the combination of the second and third of these; the estimated worker fixed effect and the observable worker characteristic (age and gender) component.

The one-quarter of New Zealanders with the highest worker component are called "high skilled", those in the lowest quarter are called "low skilled" and the remaining 50% are called "medium skilled". This enables us to compare migrants with different types of New Zealand workers.

Modelling productivity and wages in firms with multiple types of labour

Our analysis is based on the model developed by Hellerstein & Neumark (1995, 1999, 2007, 2008) to understand the earnings paid to different ethnicities or to men and women by firms. This model jointly estimates the production function and wage bill equation at a firm level, to help understand whether wage differences can be explained by differences in productivity. If not, then it may be evidence of discrimination. We use this model slightly differently, in that we are interested primarily in migrants' productivity – the contribution they make to the New Zealand economy. We are also interested to see if migrants receive a premium (or otherwise) compared to some baseline New Zealand worker, and whether the wages that migrant workers receive reflect their productivity.

In perfectly competitive markets, the marginal product (the impact of one additional unit of an input on output) of one input relative to another will be equal to their relative prices. This would mean that if migrants are twice as productive as New Zealanders, they will be paid twice as much. If markets deviate from perfect competition, the two may deviate from each other. This deviation, therefore, tells us something about the way the labour market is functioning.

Unlike the other statistics reported on migration (and making up the earlier parts of this report), this analysis enable us to look at migration from the perspective of the direct contribution immigrants make to firm (ie, full-time equivalent employment or labour input). This is particularly useful when looking at the concentration of migrants across different sectors of the economy, as in some sectors such work is seasonal or part-time.

The migrant share in total labour input increases substantially over the fifteen-year analysis period, driven by growth in the number of long-term migrants (ie, migrants who have been in New Zealand for at least five years). Long-term migrants account for 15% of full-time equivalent employee labour input in 2004, rising to 24% in 2019.

For recent migrants, there has been a decline in the proportion of skilled residents (including skilled migrant and entrepreneur visa categories). At the same time there has been an increase in workers on skilled non-resident visas (such as essential skills), and other non-resident visas (including recognised seasonal employer, and working holiday scheme visas).

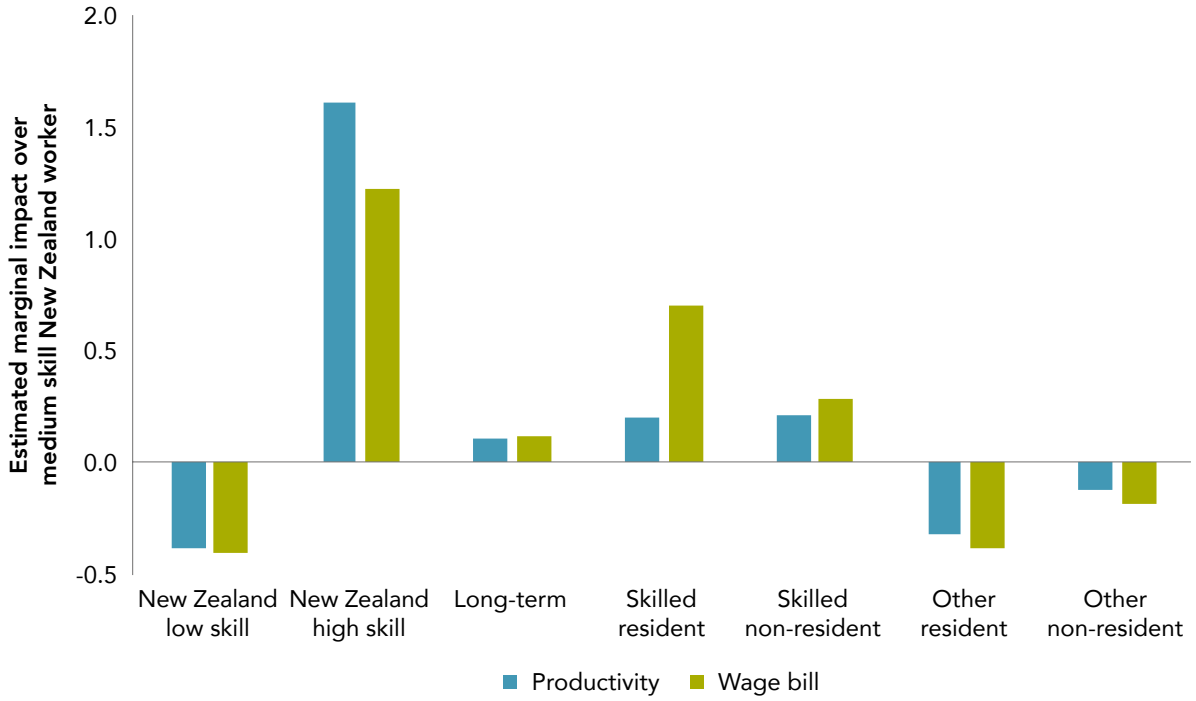
Industries such as Horticulture, Accommodation and food, or telecommunications rely on migrant workers for a third of their labour input, whereas for industries such as Road transport, and Forestry & logging the figure is more like 5–10%. There is also a wide variety in the migrant visa types that industries employ. As we saw in Figure 5.2, recent migrants on skilled resident visas are important for telecoms, and for professional, scientific & technology services, whereas the majority of the migrant labour for horticulture and accommodation are on other non-resident visas.

Treated as a homogeneous group, migrant workers appear to produce slightly less than the average NZ-born worker but capture a larger share of the firm-level wage bill. However, this simplistic comparison hides considerable heterogeneity between migrants. Migration is not a random flow of people into and out of the country. Firms employ migrants in response to business needs, and there is no reason to expect these requirements to be the same across all firms. The detailed administrative data available in the IDI allow us to examine this heterogeneity by visa type and by length of time within New Zealand. Once we account for this variation, we find that long-term and skilled recent migrants are generally more productive than moderately-skilled NZ-born workers, and that this higher productivity is largely accounted for by hours or skill differences – evidenced by wages also being higher for these groups, relative to moderately-skilled NZ-born.

The overall results are summarised in Figure 5.11. The figure shows the contributions of High and Low skill NZ-born workers, and various migrant types, relative to the medium skill NZ-born workers (as described in Box 5.2) to firms' production and to their wage bill. Low skill NZ-born workers are less productive and are paid less than medium skilled NZ-born workers, and High skill workers paid more, as one would expect. The results imply that a long-term migrant is equivalent to 110% of a medium skill NZ-born workers in terms of effective labour input into production. At the same time the average long-term migrant is paid 120% of the wages of the average medium skill NZ-born worker. Turning to recent migrants (fewer than 5 years), both sets of skilled migrants (both resident and non-resident) are more productive than medium skill New Zealanders on average. Conversely, 'other' migrants (eg, Pacific Access, Study to work, RSE or Working Holiday schemes) are less productive than medium skill NZ-born workers. These results are consistent with the idea that some groups – high-skilled NZ-born, skilled migrants and long-term migrants – on average, have more marketable labour market skills than the remaining groups (and moderately-skilled NZ-born workers).

For all visa groups, except for skilled residents, the estimated effects for wages are insignificantly different from the productivity, suggesting that the relative productivity of these groups is explained by skill and hours worked. Migrants on skilled resident visas have a substantial "productivity-wage-gap" compared to the base group; their productivity premium is 50 percentage points lower than their wage premium relative to medium skill New Zealanders). This sits in stark contrast to the positive gap for high-skilled NZ-born workers (ie their relative productivity is higher than their relative wages). All the other gaps are not statistically significant. A large negative gap could signal that the firm benefits from this work type in ways that are not reflected in contemporaneous output, such as through connections gained to international markets.

Figure 5.11 Estimated marginal impact of worker type on productivity and wage bills
Impact calculated relative to medium skill New Zealand-born workers.

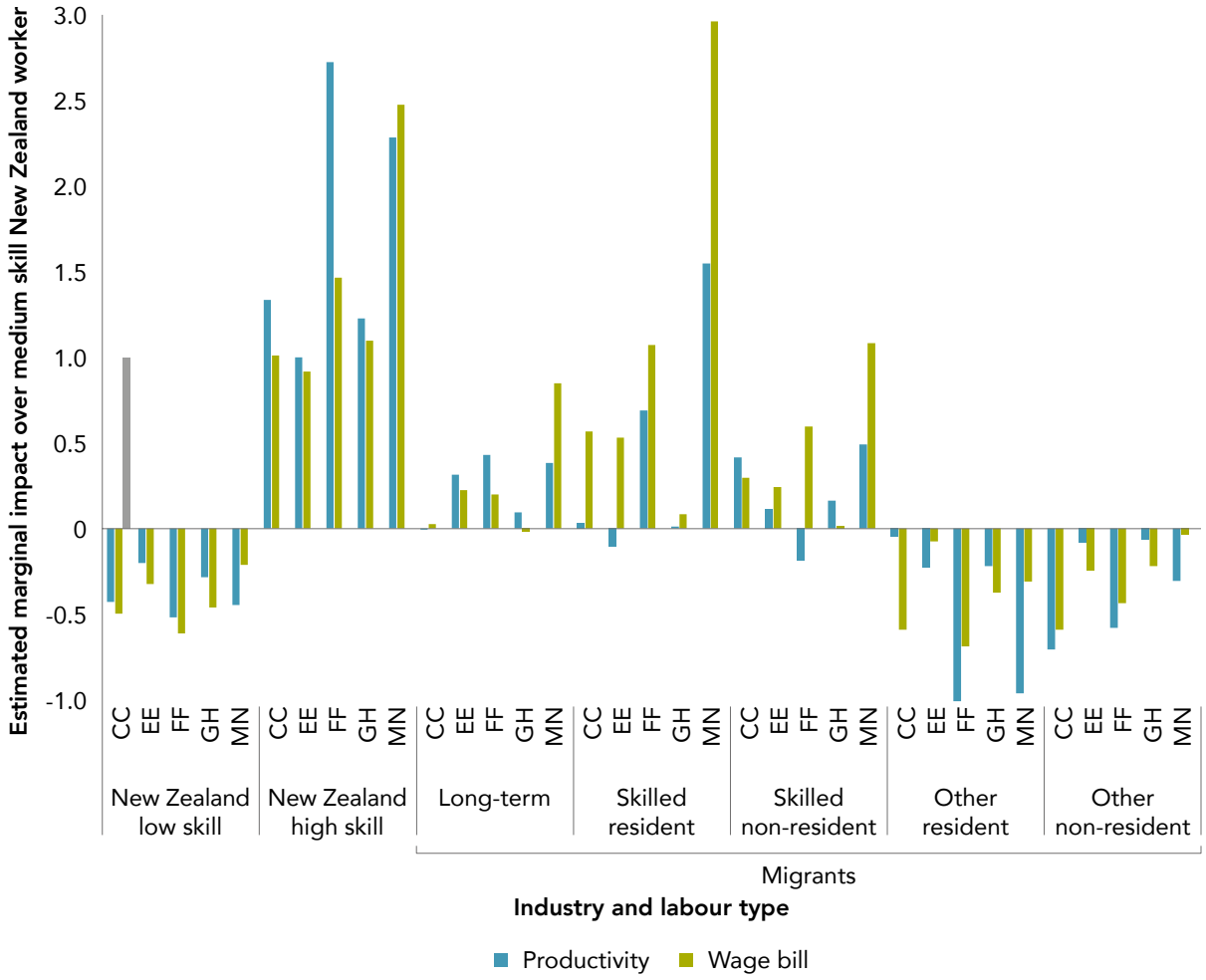


Source: Fabling, Maré and Stevens (2022).
Notes: 1. Impacts are measured relative to the group of medium skill New Zealand workers, described in Box 5.2.
2. Impacts estimated by translog production and wage bill equations, hence values approximate to proportional differences. Zero denotes that a particular labour type is as productive and contributes to total wages as medium skill New Zealand workers. A value of 1 means they are 100% more productive.

As the overall migrant share in the workforce and the composition of that share have both changed markedly over the last fifteen years, we also tested whether these changes affect the results. The analysis compared the first and last five years of our sample (ie, 2005–9 was compared with 2015–19). The results of this exercise suggest that the long-term migrant contribution to firm-level productivity has been increasing. Not only has this group been growing in numbers, but their productivity has also increased relative to medium skill NZers, whereas their relative wages have remained fairly static.

To further account for differences between industries, the research looked at a number of industry-specific models. We examined a range of specifications, but we focus here on models for the five largest industries: Manufacturing; Construction; Wholesale trade; Retail trade and accommodation; and Professional, scientific, technical, administrative and support services. These industries vary substantially in the composition of both their NZ-born and migrant labour input. The construction sector is less reliant on migrant labour than the others (22.8% of its labour compared with 37% in Professional, scientific, technical, administrative and support services). While there is more variability in the results, the industry analysis largely confirms the findings above (Figure 5.12).

Figure 5.12 Estimated marginal impact of worker type on productivity and wage bills, by industry
Impact calculated relative to medium skill New Zealand-born workers in same industry



Source: Fabling, Maré and Stevens (2022).

Notes:
1. Impacts are measured relative to the group of medium skill New Zealand workers, described in Box 5.2.
2. Impacts estimated by translog production and wage bill equations for each industry. Values approximate to proportional differences. Zero denotes that a particular labour type is as productive and contributes to total wages as medium skill New Zealand workers. A value of 1 means they are 100% more productive.
3. Industry groups are: CC Manufacturing; EE Construction; FF Wholesale trade; GH Retail trade and accommodation; MN Professional, scientific, technical, administrative and support services.

The sorting of migrants across firms with different characteristics (including industry) may reflect migration policy decisions, but it may also be influenced by complementarities between migrants and those firm characteristics, in particular, the prevalence of NZ-born workers at particular skill levels. To test this hypothesis, we estimated a model that examined how the estimates for NZ-born workers in production and wages vary by the proportion of migrant employment at the firm. The results of this analysis provide tentative evidence that migrant workers are complements to high-skilled NZ-born workers. The analysis is only suggestive of complementarities between NZ-born and migrants, and should not be over-interpreted. There are alternative potential explanations, including worker sorting due to the differences in firms observed by potential employees, which are not captured by the variables included in the analysis.

We have noted that migrant workers may provide something in addition to their direct labour input to firms that their employers value. For example, the knowledge they bring with them – be it knowledge of their home market, or of products and services and ways of working unknown to New Zealand firms – is an addition to the stock of intangible capital at the firm. As with other types of capital, the costs of investment are paid up front, but the benefits accrue over many years. Interacting an indicator for migrant-intensive firms with NZ-born worker employment shares we find preliminary evidence that high-skilled NZ-born workers do extract some of these potential benefits from working intensively with migrants.

It may be that the recourse to migrant labour is a sign of the difficulties the employer is having finding labour with the appropriate skills. With tight labour markets for certain types of labour, the supply of labour will be unresponsive to changes in the wages offered. This is what is sometimes called a "make or buy" decision. In the presence of skill shortages, does the firm train up its existing workforce, recruit under-skilled locals, or buy them internationally? There are a number of reasons why employing immigrants may be preferable for the firm. One is timing. Training takes time and may also involve a loss of output while it is happening. If the requirement for additional labour is driven by firm growth, the need for that labour is now. If a firm is entering a new market, it may need an experienced sales manager quickly, or the opportunity they have identified will be gone. We have heard concerns from the venture capital market, for example, that high growth start-ups may not only look abroad for staff, but also may move their operations abroad if they cannot find staff in New Zealand. This can particularly be an issue when the economy emerges from a downturn, like a pandemic, as this is when the economy restructures and new types of firms – with different skill requirements – replace the old. Another reason is that economists have long known that firms will tend to under-provide training of all skills that have some generality to them (ie, they are of use to other firms) because of the risks of staff leaving or being poached. There is a risk that they will pay the costs and other firms will get the benefits. In this case, what is best for the firm may not be best for the economy and society.

The fact that businesses in many sectors are willing to pay higher wages to attract migrant workers suggests that shortages exist of local labour with appropriate skills, that are not solved by paying higher wages or training domestic workers. In some sectors, however, low-skilled migrants have relatively low productivity and low wages, but these tend to be low-productivity sectors. If the economy can accommodate this growth, we would expect the benefits to be positive, or at worse balance the costs as in both of these are examples the benefits to the firms outweigh the costs to them of hiring migrants. In the past decade, the country has managed to absorb a relatively large amount of migrants at a time with low unemployment and high labour force participation. The labour market appears to have absorbed them well. However, there may be other constraints – housing and infrastructure, social cohesion, cultural factors or environmental costs. In such cases, the nation has to make a choice.

Capital and migration

One of the fears about migration has been one of capital dilution. The argument is that migration is like any other sudden increase in population. With fixed capital, this will lead to lower capital per worker, causing labour productivity to fall and the return to capital to increase in the short run. This assumes that the increase in migration is unanticipated. An alternative argument is that migrants are coming to New Zealand because the demand for labour has risen along with capital investment. Which of these holds the most water is an empirical question. If an increase in net migration is unrelated to economic activity in New Zealand, we would see the amount of capital per person falling when migration increases. If the two are related, we would see the capital per person remaining consistent despite net migration.

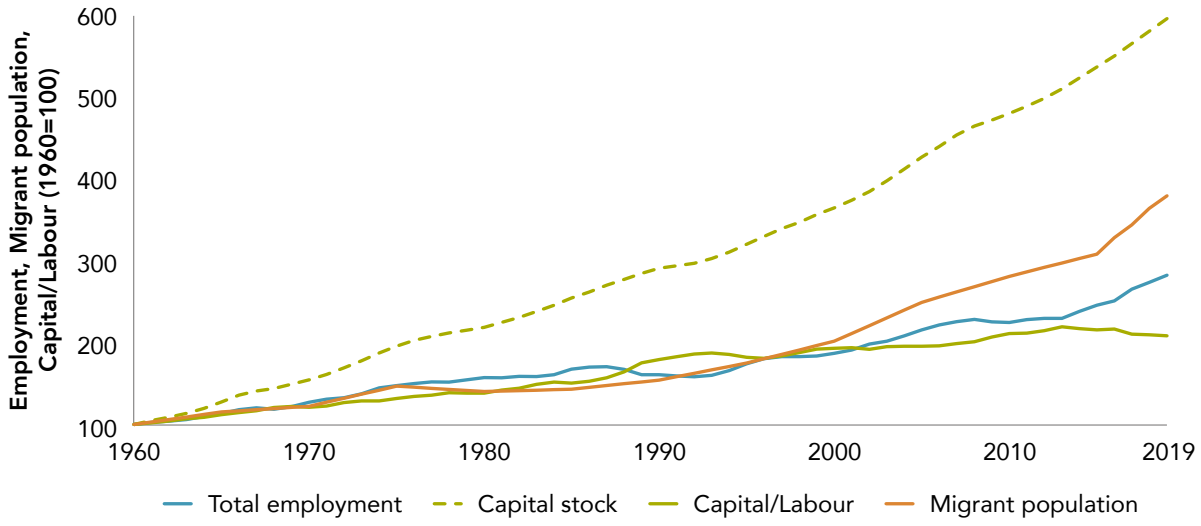
It has long been known that New Zealand uses comparatively little capital per worker, relative to other developed countries (Hall & Scobie, 2005; Mason & Osborne, 2007; New Zealand Productivity Commission, 2021a). This may be due to the industrial structure of the New Zealand economy, or institutional settings.

As we can see from Figure 5.13, total employment, the number of migrants and the capital stock have all been increasing for over half a century. Capital's rise has been due to technological change as well as population growth. Therefore, in Figure 5.13, we also present the capital/labour ratio (that is, the amount of capital per employee).

We can see that there is a relationship between total employment and the capital/labour ratio. The amount of capital per worker appears to be related to the size of the workforce. Both have been growing for most of the period, although both did occasionally experience dips (the migrant population in the mid-1970s and capital per worker in the early 1990s). When total employment shrinks or slows its growth, the capital stock follows, and vice versa. The decline in employment at the end of the 1980s/early 1990s, created an increase in the capital-labour ratio, followed by a slowdown in growth in the capital stock. A similar situation occurred at the end of the 2000s.

Generally speaking, it is the growth in total employment that relates to capital per worker, rather than the migrant population per se. The most recent increase in employment since the mid-2010s has been different. We know that population growth since 2013/4 has been driven by a fall in the net emigration of New Zealanders occurring at the same time as an increase in net migration of non-New Zealanders (see Figure 2.17 and Figure 2.31), rather than growth caused by a natural increase. The rapid growth in net migration and employment created a slowdown in the capital to labour ratio, which actually fell by almost 3% in 2017, the biggest decline in the entire period from 1960 (the previous largest decline was 2% in 1994).

Figure 5.13 Capital per worker relates to total employment in the economy
Employment, capital and migrants (1960=100), 1960–2019



Source: Employment and capital: University of Groningen and University of California, Davis, Capital Stock at Constant National Prices for New Zealand [RKNANPNZA666NRUG], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/RKNANPNZA666NRUG, February 26, 2022. Feenstra et al. (2015)
Migrant population: United Nations Population Division, Trends in Total Migrant Stock, updated with SNZ population estimates.

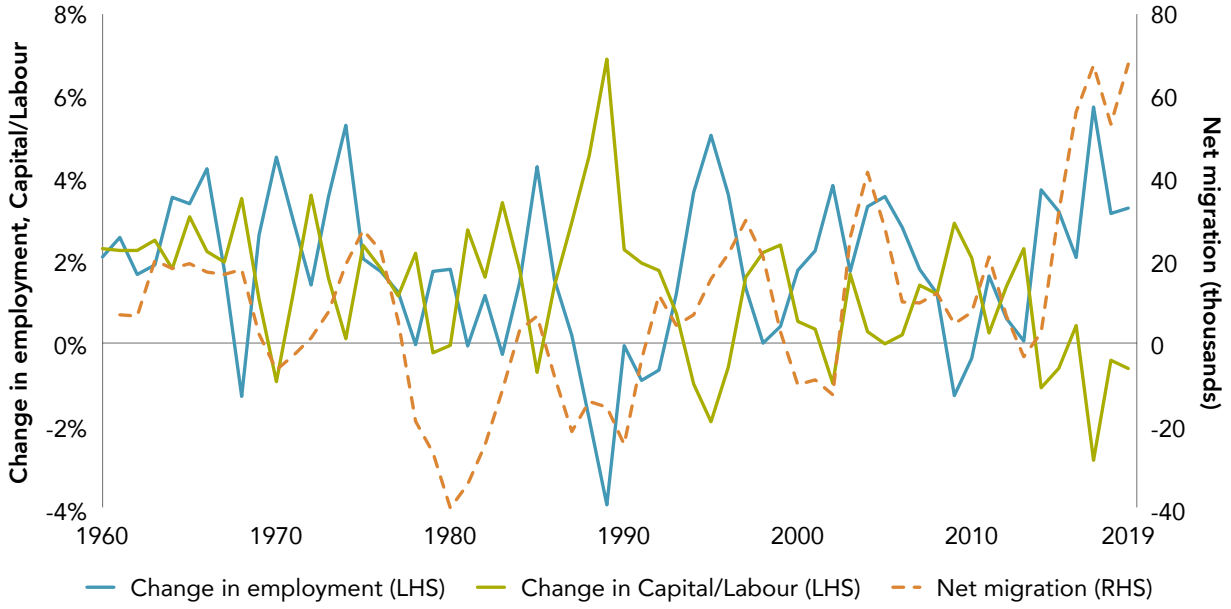
Notes: 1. Capital Stock at Constant National Prices for New Zealand, Millions of 2017 U.S. Dollars.
2. International migrant stock is the number of people born in a country other than that in which they live and also includes refugees.

This broad trends in stocks may be dominated by wider trends. It is worth considering the change in these variables. In Figure 5.14, we look at the relationship between the growth in capital per worker, the change in total employment and net migration. This confirms the negative relationship one would expect between employment and capital per worker. The relationship between capital per worker and net migration is much less evident. The capital/labour ratio drops half a dozen times in this 60-year period. Half of them occur a year after a rise in net migration, but half of these falls occur after a peak in net emigration. Sometimes the relationship is positive (1960s, early 1980s, early 2000s), and other time negative (the end of the 1980s and the early 1990s).

In particular, since the mid-2010s, net migration and total employment have both been growing, at a time when the capital labour ratio has been declining.

In the second half of the last decade, we experienced several years of almost unprecedented net migration of people to New Zealand. It is perhaps no surprise to see some signs of this feeding into the capital/labour ratio. It is unclear whether the slight pick-up in capital per worker in 2018 was a sign of the capital stock adjusting, as this was shortly before the beginning of the Covid-19 pandemic, and so remained in negative territory.

Figure 5.14 Changes in capital per worker are more closely allied with employment than migration
Net migration and the change in employment and capital per person, 1960–2019



Source: Capital: University of Groningen and University of California, Davis, Capital Stock at Constant National Prices for New Zealand [RKNANPNZA666NRUG], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/RKNANPNZA666NRUG, February 26, 2022. Feenstra et al. (2015)
Migrant population: United Nations Population Division, Trends in Total Migrant Stock.

Notes: 1. Capital Stock at Constant National Prices for New Zealand, Millions of 2017 U.S. Dollars.
2. Net migration and population: Stats NZ.

Housing

Another concern about immigration is that it creates undue pressure on the housing market. If the supply of housing is fixed, or immigration is unforeseen and not persistent, increased migration is like any other increase in population, and the impact will be to raise prices, and perhaps price locals out of the market. It has long been known that it is difficult to disentangle the relationship between migrants and house prices at the aggregate level because the two are both pro-cyclical (Cochrane & Poot, 2019; Hyslop et al., 2019). Migrants are more likely to both come in search of work and have been employed as part of an international job search when the economy is doing well, and of course, higher income chasing the same number of houses also leads to house price inflation (until supply can adjust). Studies of the relationship of population and migration with housing prices find a much weaker relationship (Cochrane & Poot, 2019; Gonzalez & Ortega, 2013; Hyslop et al., 2019; Sá, 2015; Saiz, 2003, 2007; Saiz & Wachter, 2011).

Migrants have to live somewhere, whether owning or renting. It is useful to look at the living arrangements for immigrants. We can do this by looking at the 2018 Census. Australian-born New Zealand residents look a lot like New Zealanders in terms of their housing arrangements (Figure 5.15). They are slightly less likely to own their house outright, and slightly more likely to be renting than their New Zealand-born neighbours. Generally speaking, other migrants' housing status reflects their more recent arrival or temporary residence. They are less likely to own homes (outright or paying a mortgage) and more likely to be renting the dwelling they are living in. There are, as one would expect, large differences between migrants in different visa categories. Those on temporary work visas or student visas are much less likely to own their homes than New Zealanders than their New Zealand-born neighbours. The majority of these migrants are renting (indeed the whole of the RSE category are renting). Migrants on resident visas are much more similar to the average New Zealand- or Australian-born person, as are those who are longer-term (5 years or more). Generally speaking, other migrants' housing status reflects their more recent arrival or temporary residence.

Figure 5.15 Housing status By stream, 2018

Source: NZPC analysis of Census 2018 data in the IDI.

To get some perspective on New Zealand, Spain is an interesting comparison. It is unusual by comparison to other OECD countries in that it has had large scale immigration and rapid house price inflation in the 2000s. Between 1998 and 2008, the foreign-born share in the working-age population in Spain increased from 2 to 16 percent (from half-a-million to five million), being the primary driver of population (Gonzalez & Ortega, 2013). The crucial difference to New Zealand is that immigration into a region led to sizeable increases in both the price of housing and construction activity. Gonzalez & Ortega (2013) estimate that a migration-driven one percent increase in population leads to an increase in house prices of 1 to 1.6 percent in the following year, and that new construction activity leads to a 0.8 to 1 percent increase in the number of dwellings.

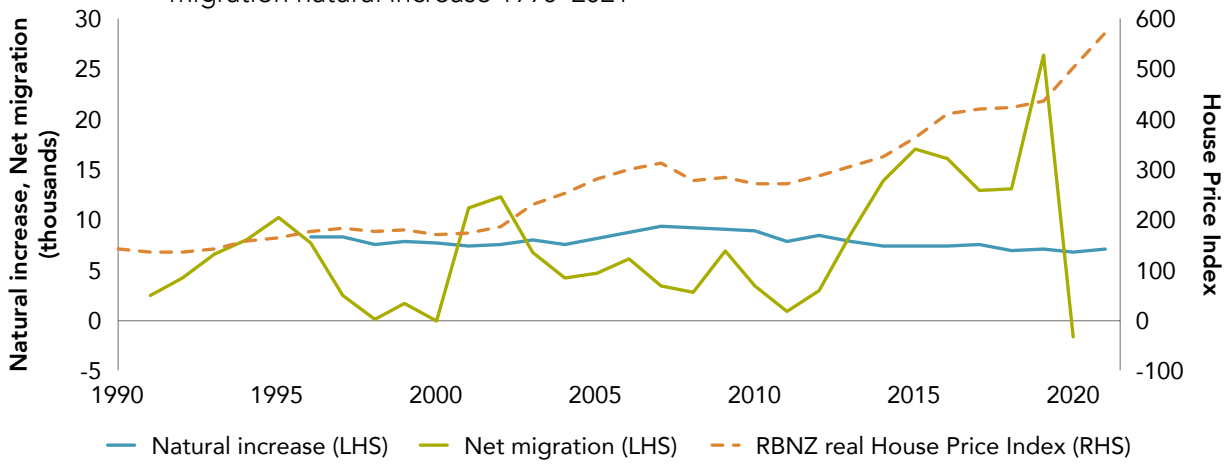
New Zealand research looking at the relationship between migrants and house prices mirrors the international literature. Research is ambiguous on the impact of migration on housing prices, over and above general population increases. Authors such as Coleman & Landon-Lane (2007) find evidence that a higher proportion of migrants in an area is associated with higher house prices, whereas Hyslop et al. (2019) find little evidence of systematic effects of international or domestic migrant composition of the local population on prices or quantity.

In their summary of research on the impact of international migration on house prices, Cochrane & Poot (2016) are fairly clear:

> "we find that the literature and the available data on population change suggest that visa-controlled immigration into New Zealand, and specifically into Auckland, in the recent past has had a relatively small impact on house prices compared to other demand factors, such as the strongly cyclical changes in the emigration of New Zealanders, low interest rates, investor demand and capital gains expectations. Consequently, changes in immigration policy, which can impact only on visa-controlled immigration, are unlikely to have much impact on the housing market."
> (Cochrane & Poot, 2016)

The relationship between migration and housing is discussed in more detail in NZPC (2021c). Here we note that there are two problems with the thesis that house prices are being driven primarily by migration. First, the price of housing was increasing long before net migration rose in the late 2000s. Second, when net migration plummeted during Covid-19, and went negative, house prices actually *accelerated*. Of course, there are many complex reasons for this, but it confirms that there is no simple relationship between the two. House prices do appear to rise when net migration rises, but they also rise when it does not.

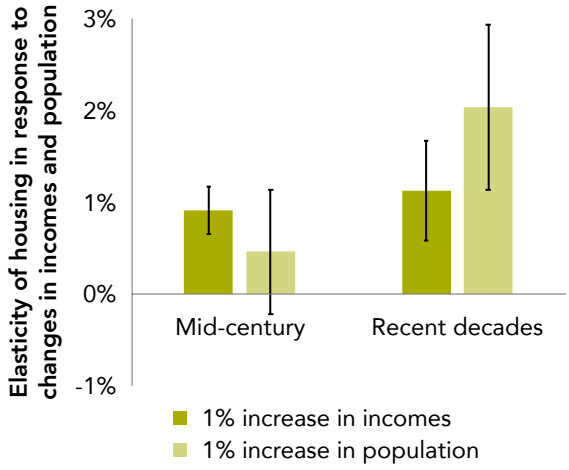
Figure 5.16 **House prices were rising long before net migration rose, and continued to rise after net migration fell** Real house prices, population growth due to net migration natural increase 1990–2021



Source: House price index: RBNZ, https://www.rbnz.govt.nz/statistics/m10

What else might be driving house prices then? This is the $1 million question and is beyond this collection of data on migration. However, recent work by the Infrastructure Commission (New Zealand Infrastructure Commission, 2022) analysed how housing prices and supply changed over the past century. They showed how populations and incomes, which drive housing demand, grew more rapidly in the middle of the 20th century than in recent decades, but that house prices have risen more rapidly in recent decades and new housing construction has slowed. They argue that the problem is slowing supply, rather than accelerating demand. This is because the responsiveness of housing supply to increasing population has fallen (Figure 5.17). Between the late 1930s and late 1970s, a 1% rise in population caused house prices to increase by roughly 0.5%. Between the late 1970s and late 2010s, a 1% rise in population caused house prices to increase by roughly 2%. Income growth also had a larger impact on prices in recent decades. This suggests a deeper set of issues, which migration exacerbates. We need houses for our migrants, but we also need them for the people born here. Migration and the housing market are discussed in more detail in section 2.2 of NZPC (2021c).

Figure 5.17 If not population, then what?
Elasticity of housing in response to changes in incomes and population



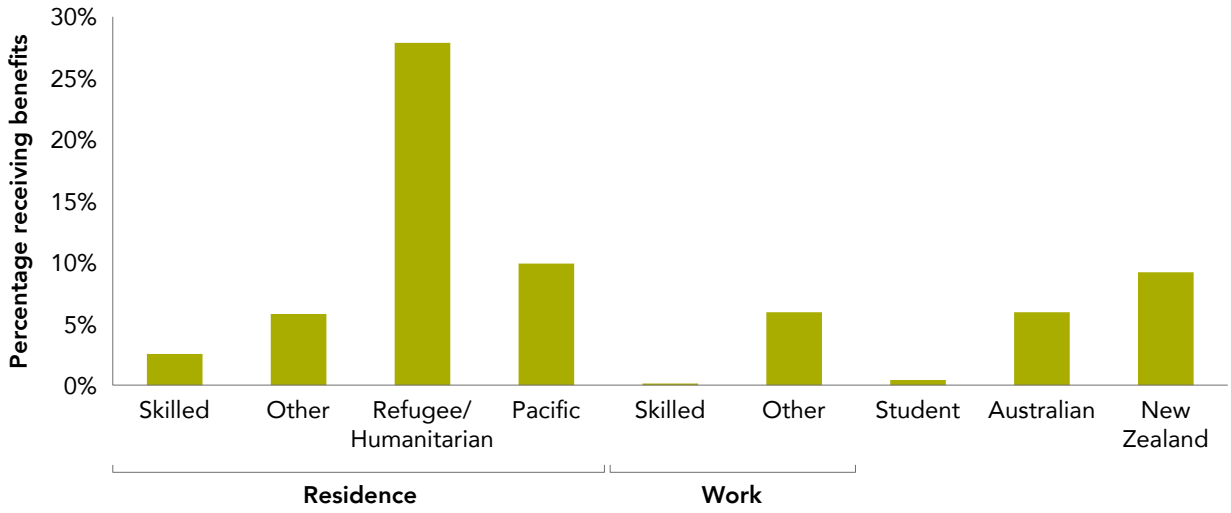
Source: New Zealand Infrastructure Commission (2022).
Notes: 1. Bars indicate estimated model coefficients.
2. Black lines indicate one standard error ranges around estimated coefficients.

The fiscal impact of immigrants

The fiscal impact of migrants measures the contribution of migrants to their country of residence. A positive fiscal impact indicates migrants contribute more to taxes and revenues than they use in services (such as education, healthcare or social benefits), while negative impact is the opposite. We have noted above that younger, more highly-educated and well-paid migrants have a higher net fiscal contribution as they are educated and possibly trained overseas (Hodgson & Poot, 2011). Moreover, just as firms benefit from hiring staff trained in other firms, New Zealand's public finances benefit from migrants educated overseas before arriving in the country. This positive fiscal impact is partly driven by policy, as selection criteria which typically screens out people who might have high fiscal costs (eg, the elderly, those with health conditions or criminal records). Immigration policy may also restrict services to certain visa types (eg, temporary visas to limit impact on public finances). Studies in New Zealand found a significant positive fiscal impact of migrants using a static snapshot approach (Slack et al., 2007). However, this approach may overstate the actual impacts as it does not take into account lifetime effect as net contributors throughout their working age and net recipients as children and retirees.

While on aggregate the fiscal impact of migrants in New Zealand is positive, some migrants require assistance either on arrival or ongoing while they are in the country. Figure 5.18 and Figure 5.19 shows 5.4% of migrants receiving benefits by visa type and age. Unsurprisingly, 28% of refugee and humanitarian migrants were receiving benefits in 2018, often requiring housing and social assistance to settle in New Zealand. Except for Pacific resident visa holders, of whom 10% receive benefits, the share of all other categories is below that of the New Zealand-born population (9%).

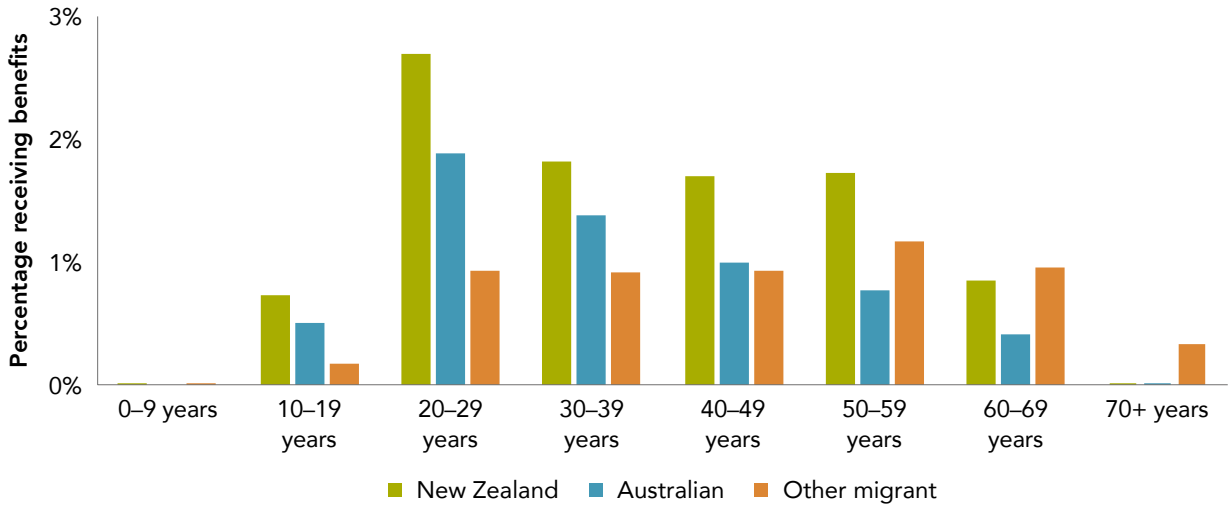
Figure 5.18 Likelihood of receiving benefits, by visa type and nationality, 2018
Percent



Source: NZPC calculations using data from Stats NZ IDI Data.

The share of beneficiaries by age shows a downward trend by age for New Zealand-born (Figure 5.19), with the highest share of recipients in the 20–29-year group (2.9%), falling for each older age range to below 1% for the 60–69-year group. There is a similar trend for Australians, with the highest share of benefit recipients for 20–29 years (2%) and lower for each older age bracket. In contrast, the share of migrant beneficiaries is consistent across all working age ranges at 1%, with a higher share for 50–59 years at 1.2%.

Figure 5.19 Likelihood of receiving benefits, by visa type and age, 2018
Percent



Source: NZPC calculations using data from Stats NZ IDI Data.

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Appendix A
Industry groups

The industrial classifications in our empirical analysis are based on New Zealand Standard Industrial Output Categories (NZSIOC). We set out the classification below.

ANZIOC	Industry Name
AA11	Horticulture and fruit growing
AA12	Sheep, beef cattle and grain farming
AA13	Dairy cattle farming
AA14	Poultry, deer and other stock farming
AA21	Forestry and logging
AA31	Fishing and aquaculture
AA32	Agric, forest, fish support services and hunting
BB11	Mining
CC1	Food, beverage, tobacco manufacturing
CC21	Textile, leather, cloth and footwear manufacturing
CC3	Wood and paper product manufacturing
CC41	Printing
CC5	Chemical, rubber, non-metallic manufacturing
CC61	Non-metallic mineral product manufacturing
CC7	Metal and metal product manufacturing
CC81	Transport equipment manufacturing
CC82	Machinery and other equipment manufacturing
CC91	Furniture and other manufacturing
DD1	Electricity gas supply and water

ANZIOC	Industry Name
EE11	Building construction
EE12	Heavy and civil engineering construction
EE13	Construction services
FF11	Wholesale trade
GH11	Motor vehicle & parts and fuel retailing
GH12	Supermarket, grocery and specialised food retailing
GH13	Other store-based and non-store retailing
GH21	Accommodation and food services
II11	Road transport
II12	Rail, water, air and other transport
II13	Post, courier support and warehouse services
JJ11	Information media services
JJ12	Telecommunication, Internet and library services
KK1_	Finance Insurance and superannuation
KK13	Auxiliary finance and insurance services
LL11	Rental and hiring services
MN11	Professional, scientific and tech services
MN21	Administrative and support services
RS11	Arts and recreation services
RS21	Other services

Source: Stats NZ, https://datainfoplus.stats.govt.nz/Item/nz.govt.stats/0381a627-927b-4d60-bce3-bba549bf5a2d


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