



Inflation and migration:

Theory, evidence and implications for the Monetary Policy Committee

NZIER report to Reserve Bank of New Zealand

March 2024

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Authorship

This paper was prepared at NZIER by Julie Fry and Peter Wilson.

It was quality approved by Christina Leung.

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Registered office: Level 13, Public Trust Tower, 22–28 Willeston St | PO Box 3479, Wellington 6140
Auckland office: Ground Floor, 70 Shortland St, Auckland
Tel 0800 220 090 or +64 4 472 1880 | econ@nzier.org.nz | www.nzier.org.nz

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Key points

The large economic literature on migration in general and more limited literature on the relationship between migration and inflation suggest that the effect of people flows on inflation in any one country at any given time is an empirical issue.

The effects of permanent settler immigration on the labour market of the receiving country have been studied extensively. The results vary depending on labour market institutional settings, expectations of how immigrants are treated in each country, the characteristics of migrants, including their skill levels, and the context they enter.

There is less literature on the economic impacts of emigration and temporary immigration. Studies on these topics also suggest no general conclusions about impacts.

The balance of demand and supply

Migrants have supply and demand effects, and the balance of those effects determines the final macroeconomic impact on the host economy. Immigration and emigration can add to or reduce inflation depending on the size and direction of flows, the motivations of the migrants, their specific demographic (for example, age) and personal characteristics and the design and enforcement of labour market regulations. Demand effects are often immediate, while supply effects may work with a lag. The state of the host economy also matters: immigrants who fill large-scale skill shortages, such as the construction workers who helped rebuild Christchurch following the earthquakes in 2010 and 2011, can reduce the need for economy-wide tightening of monetary policy by reducing pressure on wages.

Also of relevance is the capacity of any economy to absorb migrants. Key constraints are the state of the labour market, housing and physical and social infrastructure, including transport, education and health care.

Monetary policy and migration

To successfully undertake its mandate, the Monetary Policy Committee of the Reserve Bank of New Zealand will need to take a view on the current and future effects of people flows into and out of the country.

New Zealand is an outlier among OECD countries regarding both the inflow of immigrants and the outflow of citizens. As a result, the empirical results of studies undertaken in other countries may not be directly relevant.

While much media and economic commentary on immigration focuses on headline net migration, that figure is composed of four separate components: arrivals and departures of citizens and arrivals and departures of non-citizens. Each of these flows is conceptually driven by different factors.

There is a paucity of New Zealand studies that directly examine the balance of supply and demand effects and their impacts on monetary conditions. This is despite a growing store of data that could be used for this purpose (especially Stats NZ's Integrated Data Infrastructure (IDI), which contains data that links cross-border movements of people to income tax and other records).

NZIER recommends that using this data directly to build an evidence base to guide the Monetary Policy Committee in its decision-making should be a priority for the Bank. Dynamic computable general equilibrium (CGE) models are being used effectively by other central banks in their analysis of the monetary policy implications of migration, and using the Bank's modelling suite to do likewise should be considered.

The Monetary Policy Committee has clearly articulated how it uses the official cash rate (OCR) to influence the behaviour of consumers and firms as it carries out its mandate. For example, the Bank has explained how it expects increases in the OCR to dampen aggregate demand and investment if inflation moves outside the target band. There is well-researched literature on the relationship between fiscal and monetary policy and how inflation-targeting central banks should communicate their views on the balance of those policies.

However, relatively little has been written on the balance between immigration policy and monetary policy, and there is even less on how this should be communicated to the public. The analogy between immigration and fiscal policy is not perfect, as any government can only directly influence the number of non-citizens it admits at any time. And even here, while it might have a policy preference for a level of inward migration by non-citizens, its ability to achieve that preference is limited. It has little control over most of the components of cross-border people flows. Migration is largely endogenous, not an exogenous policy instrument.

Given our findings and current very high cross-border flows, the Bank's announced intention to undertake further work on the relationship between immigration and monetary policy is timely. We recommend that as well as deepening its understanding of the effects of immigration on inflation, that work include the issue of how the Monetary Policy Committee should communicate with both consumers and firms and with the government of the day, its views of the likely economic effects of net migration and the appropriate monetary policy response.

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1 Introduction

The Reserve Bank of New Zealand has engaged NZIER to undertake a targeted literature review on the relationship between inflation and migration and the implications for monetary policy. Our audience is the Bank and its Monetary Policy Committee.

As well as reviewing the literature, we have been asked to include NZIER's conclusions on the implications of the existing literature for the work of the Monetary Policy Committee in understanding the inflationary impact of current and anticipated migration patterns in New Zealand and to make recommendations for further analysis.

1.1 The motivation

The motivation for this report is that New Zealand and many other OECD countries are currently experiencing a confluence of high inflation and high net migration (see Figure 1 over the page). In the past, periods of high inflation were associated with a net outflow of people, while some periods of high net inflows coincided with moderate inflation.¹

While this latest episode has resulted in some commentary from central banks and others, it has not, at least not yet, resulted in significant new contributions to the literature.²

1.2 The literature

The economic literature on immigration is large, growing, and at times produces what appear to be contradictory results. In this review, we provide a summary of the existing general literature, but we do not attempt a comprehensive review.³ We do note areas where the literature is still developing and where it is more settled.

We then discuss the much smaller literature on the relationship between migration and inflation in more detail.

1.2.1 The literature provides limited guidance

Neither the general migration literature nor that on migration and monetary policy provide settled theoretical guidance on the impact of cross-border people flows on the host or source country. The answer to the question of impacts is always empirical. As the Bank of England commented after examining large increases in temporary migrants in the United Kingdom:

The overall impact of immigration ... is on its own not clear-cut – there is no automatic rule-of-thumb that we can look to in order to determine the impact on the economy. (D. Blanchflower, Saleheen, and Shadforth 2007, 23)

¹ As neither inflation nor net migration are random variables, no causal relationships should be inferred from these observations.

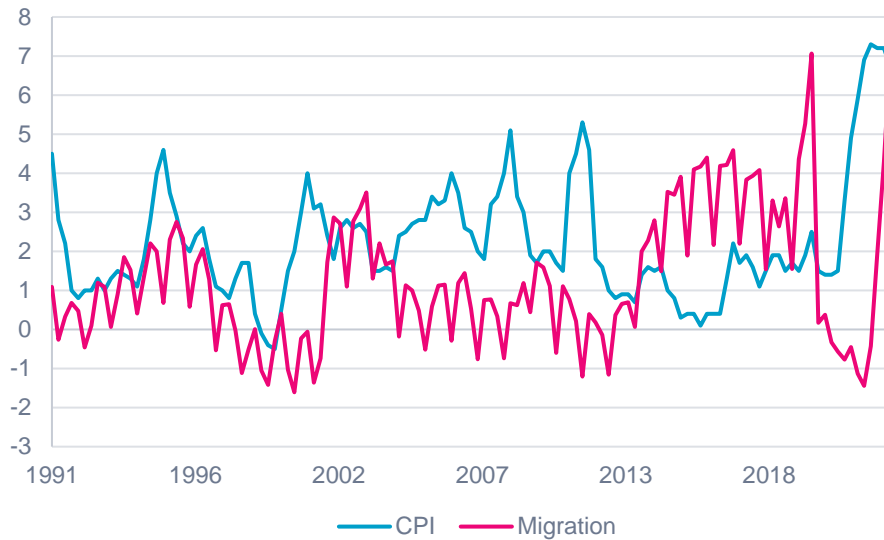
² For example, in its July 2023 Monetary Policy Report, the Bank of Canada commented that population growth due to strong migration was contributing to “surprisingly strong” economic activity (Bank of Canada 2023, 8). The Governor of the Reserve Bank of Australia, Michele Bullock, made similar observations about the Australian economy in October last year (Reserve Bank of Australia 2023).

³ As part of its 2021-22 inquiry into migration settings, the New Zealand Productivity Commission undertook a comprehensive internal research programme and commission external research looking at the specifics of migration in New Zealand. See New Zealand Productivity Commission (2022).

This finding colours the structure and content of the rest of the report.

Figure 1 Inflation and net migration⁴

CPI: annual change, migration: net migration per 1000 head of population⁵



Source: Stats NZ

Understanding the monetary policy implications of migration in New Zealand requires making sense of the general findings of the literature, why the results are theoretically ambiguous and how the contexts of the host and source countries across a range of broad policy dimensions influence empirical impacts. Those dimensions include:

- Labour market regulation (frictions; floors to wages)
- The social welfare system (access to benefits for different classes of migrants and the level of benefits compared to wages for both migrants and locals)
- Characteristics and motivations of immigrants and emigrants.

The details of immigration rules and how they influence the behaviour of potential and actual immigrants and their employers and, in the case of migrants who own businesses here, their employees, also vary from country to country in ways that can materially impact the economic effects of cross-border people flows.

1.2.2 Global migration trends

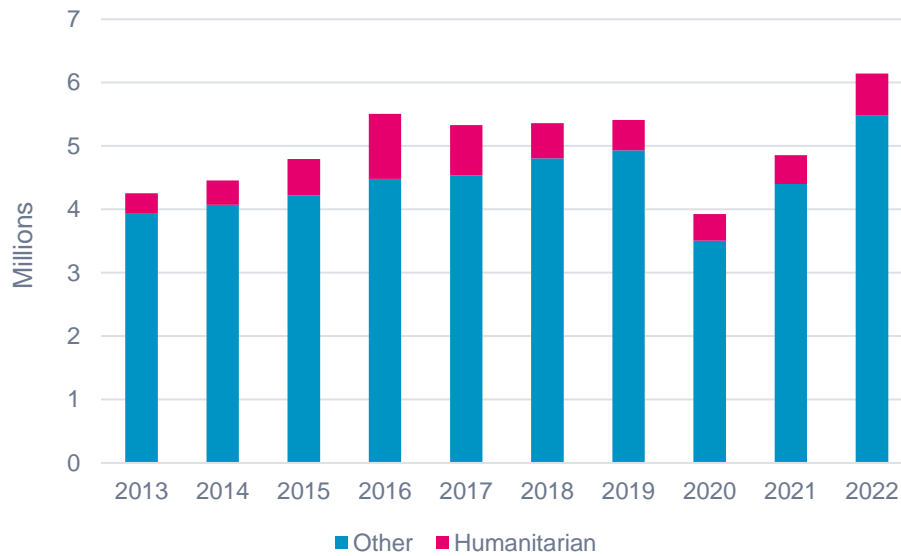
The latest OECD International Migration Outlook records that across all member countries, permanent and temporary immigration are at record levels (OECD 2023).

⁴ Note that in November 2018, Stats NZ changed the way it estimates cross-border people flows, moving from intentions stated on arrival and departure cards completed by passengers at the border to administrative data to determine how long a person is personally present or absent. As a result, there is a break in the data series. For a discussion of the two measures, see Stats NZ (2017).

⁵ Presenting the migration data as a rate per 1000 head of population adjusts for population change. Given the high levels of net migration in New Zealand, migration has had a material impact on population over an extended period.



Figure 2 Permanent-type migration to the OECD, 2013–2022



Source: OECD (2023)

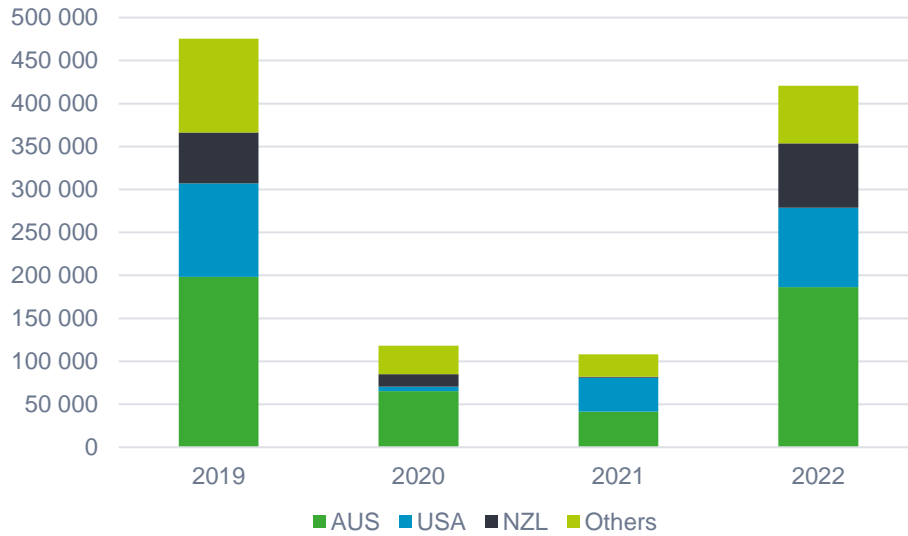
Although available data series are not as long, the OECD also reports that temporary immigration is increasing across several categories, including trainees, working holidaymakers, and people working in the ICT sector (ibid.).

New Zealand is an outlier in the OECD in terms of both the stocks and flows of immigrants and emigrants. Discussing long-term trends, the Productivity Commission observed:

From the 1960s onwards, the nature and volume of immigration changed, with outward migration (especially of New Zealanders) becoming an increasingly important feature. One result of this is that New Zealand has had some of the highest per capita rates of both inward and outward migration in the OECD, marking it out as unusual in the developed world. (New Zealand Productivity Commission 2021c, 14, internal citations omitted).

In relation to working holidaymakers, New Zealand is among the top five OECD countries receiving the largest absolute number of these types of immigrants.

Figure 3 Working holidaymakers entering selected OECD countries



Source: OECD (2023)

The data presented is the absolute number of visas issued. If adjusted for population, New Zealand is an extreme outlier.

Table 1 New Zealand is an extreme outlier

Working holiday visas issued per 1000 head of population

	2019	2020	2021	2022
Australia	7.8	2.5	1.6	7.2
United States	0.3	0.0	0.1	0.3
New Zealand	11.9	2.9	0.2	14.6

Source: NZIER calculations using data from World Bank (2024) and OECD (2023).

The drivers of the global trends in both permanent and temporary immigration are many and varied. That said, in our view, the high levels of inward migration that New Zealand has been experiencing of late are unlikely to be solely a short-term phenomenon related to pent-up migration demand after removing pandemic-related border restrictions.

Fundamental forces are also at play. For example:

- Increases in human capital in many countries, but especially in the developed world, are raising the employment expectations of young workers and expanding the opportunities available to them. As a result, the supply of local workers prepared to undertake low-wage jobs is falling, with immigrants from developing countries increasingly filling the gap (Porzio, Rossi, and Santangelo 2022).
- Worldwide demand for people with technology and management skills is being driven by the Fourth Industrial Revolution.⁶ Globally, many employers are looking overseas

⁶ Klaus Schwab of the World Economic Forum coined the term Fourth Industrial Revolution to describe the current fusion of technologies that is blurring the lines between the physical, digital and biological spheres. He considers it to be separate from digital

for employees and many people are seeking to move to other countries to gain higher returns from in-demand skills (Lazarova et al. 2023).

- Ageing populations are increasing the demand for trained health and care workers globally. Many governments are looking to immigrants to staff public health systems and care facilities (OECD 2020b), and 25 percent of the medical and nursing workforce of Australia, Canada, the United Kingdom, and the United States are immigrants (Dahl et al. 2021). About 42 percent of doctors on the New Zealand register are internationally trained (Medical Council of New Zealand 2022). More generally, population ageing is having an impact across all industries as the baby boom generation starts to retire (OECD 2020a, 29).
- Global conflicts continue to displace millions of people who are seeking shelter in a safer haven, with Ukraine and Gaza two of the latest examples (Office of the High Commissioner for Refugees 2023).⁷
- Climate change is expected to make many developing countries less habitable, and the number of climate refugees may expand (Mbaye and Okara 2023).⁸

1.3 Our research question

The research question we are answering in this report is:

What is the appropriate monetary policy response in New Zealand to the current confluence of an inflationary shock and a structural change in global migration patterns, and how should the Monetary Policy Committee and the Bank communicate their views of that response to Government, the market and population?

In answering this question, we focus on mainstream economic analysis rather than exploring heterodox theories of either migration, inflation, or monetary policy.

revolution starting in the middle of the twentieth century, where electronics and information technology automated production. (Schwab 2016).

⁷ Scholars are already releasing results of the effect of the surge in refugees following Russia's invasion of Ukraine on neighbouring economies (Pogarska et al. 2023). Pogarska et al. report the familiar story of a short-term boost to retail spending in Poland and Estonia and expect a lagged impact on labour supply.

⁸ Mbaye and Okara (2023) demonstrate how climate migration impacts need to be considered on a case-by-case, country-by-country basis. While the general proposition that climate change may induce some people to move to other countries holds, the numbers involved will depend on the circumstances of people where they currently live. Not everyone who would like to emigrate in response to climate change can afford to.

2 Background

Net migration to New Zealand is at record levels.

Figure 4 Net migration is historically high

Net migration per 1000 head of population, all citizenships, using Stats NZ definition of migrant. Year ended July.



Source: Stats NZ Table ITM407AA

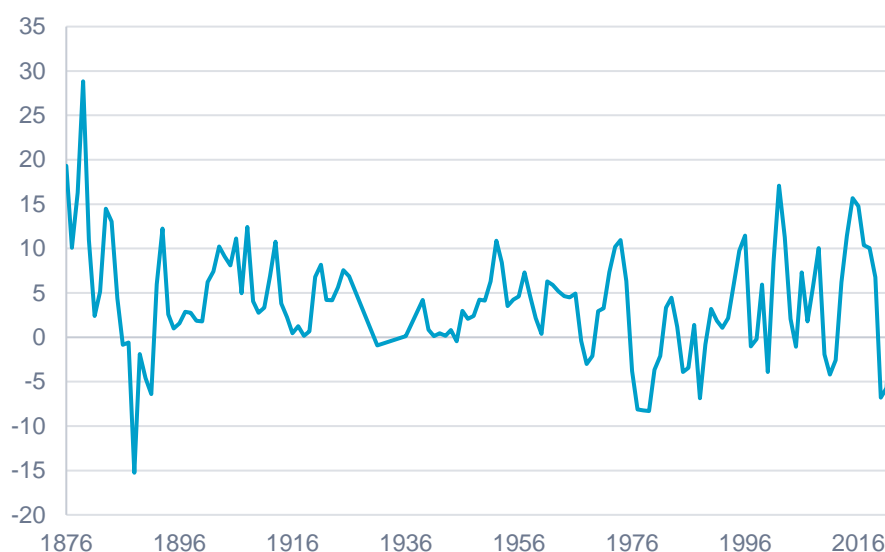
Figure 4 above shows net migration using Stats NZ's current definition of 'migrant'.⁹ This data series only dates from 2002. Longer-term data is available from several sources that allow the current level of net migration to be put into a wider context. Figure 5 shows the rate of net migration dating back to 1876.

⁹ Stats NZ's definition of migrant is not based on visa categories or citizenship but on the length of time spent in New Zealand. Under the current approach, which dates from November 2018, a person who enters New Zealand is regarded as a migrant if they are physically present in New Zealand in 12 of the 16 months after their arrival. This approach, while more accurate, introduces a lag into the data. To accommodate this, Stats NZ estimate quarterly data, which are then subject to later revision. Before November 2018, travellers' statements on arrival and departure cards regarding their intended period of stay in or outside New Zealand were used to determine numbers of permanent and long-term immigrants. This approach was timelier, but less accurate, because people did not always fulfil their stated intentions.



Figure 5 Long term net migration

Net migration per 1000 head of population



Source: Migration: Stats NZ cohort life tables, population: Data 1850

We consider there is more than the usual uncertainty around the future track of migration. Prior to the Covid lockdowns, immigration levels were unsustainable and the closure of the border provided an opportunity to review policy (Wilson and Fry 2020). Initially, the then government responded by announcing that it would be initiating a ‘reset’ of policy for when the borders opened (Nash and Faafoi 2021). However, following widespread employer concerns regarding labour shortages, when border restrictions were lifted in February 2022, the government announced policies that represented an easing of pre-lockdown restrictions (Faafoi and Hipkins 2022).¹⁰ Nothing in the new government's policies suggests any radical change of direction in the short term.¹¹

2.1 Trans-Tasman migration

The Trans-Tasman Travel Arrangement is a material aspect of New Zealand’s cross-border people flows. The agreement facilitates freedom of movement between New Zealand and Australia, much like the Schengen Agreement does for the European Union.¹² Detailed rules

¹⁰ The number of visas that can be issued under the new Accredited Employer Work Visa is uncapped and eligibility criteria are looser than under the Essential Skills Visa it replaced. The previous government also announced an increase in the number of visas to be issued under the Recognised Seasonal Employer (RSE) scheme and negotiated expanded working holiday programme with the UK as part of a free trade agreement.

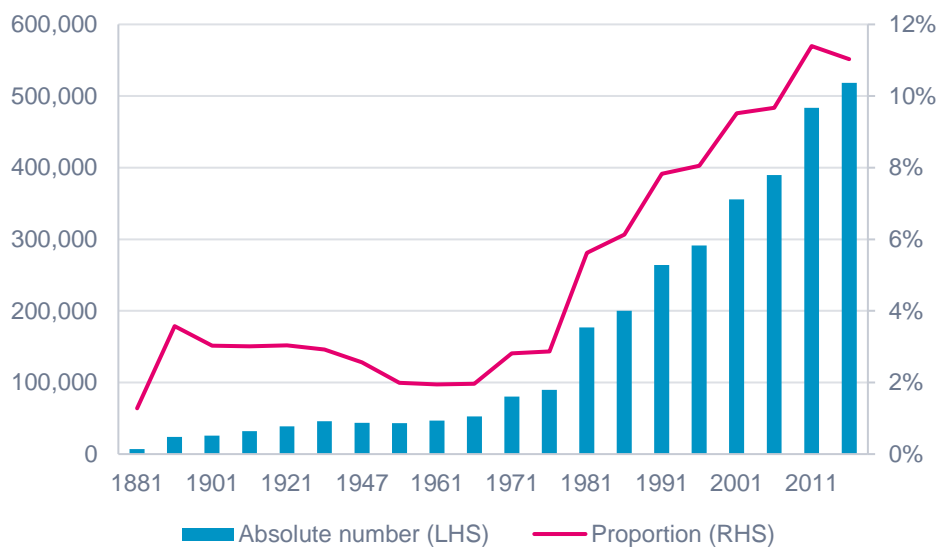
¹¹ The agreement between the National Party and ACT suggests a further loosening of restrictions on migrant numbers and loosening of requirements regarding rates of pay. The migration provisions of the agreement between National and New Zealand First is more focused on enforcement of existing rules. There is also a reference to the need to “Address and provide solutions for the long-expressed concern of the OECD into the lack of focus in New Zealand Immigration Policy” (New Zealand National Party and New Zealand First 2023, 5). It is unclear at this stage exactly what this might entail.

¹² The Schengen Agreement is a treaty which led to the creation of Europe's Schengen Area, which largely abolished internal border checks. It is named after the town in Luxembourg where it was signed on 14 June 1985. Initially covering five of the ten member states of the then European Economic Community, membership has expanded over time. Of the 27 current European Union member states, 23 participate in the Schengen Area, while Bulgaria, Cyprus and Romania are seeking to join the area in the future. Non-EU states Iceland, Norway, Switzerland and Liechtenstein are also members. The UK never joined the Agreement and currently Ireland maintains an opt-out and runs its own visa policy.

have changed over time,¹³ but actual movement between the two countries is relatively frictionless.

Data compiled by Jacques Poot shows that the number of New Zealand-born people living in Australia has been growing steadily since the mid-1960s, in both absolute terms and as a proportion of the remaining New Zealand resident population (see Figure 6). Poot contends that this flow is caused by the forces of globalisation, agglomeration and technological change driving differential economic development paths across the Tasman (Poot 2009, 17). We see little reason to suggest this not continuing, absent a significant lift in productivity here or a large decline in living standards in Australia.¹⁴

Figure 6 A steady increase in the New Zealand-born population in Australia



Source: Poot (2009), updated in personal communication with the authors

While there has been a steady build-up of New Zealanders living in Australia, annual people flows have been cyclical. Figure 7, taken from Mein Smith (2013), shows that departures to Australia followed a ten-year cycle, with peaks in 1969, 1979, 1989 and 2000. There was another peak in departures associated with the 2012 minerals boom in Australia (see Figure 7). Jacques Poot has made a similar observation. He suggests that this cyclicity has several drivers: asynchronous business cycles across the Tasman, exchange rates, the

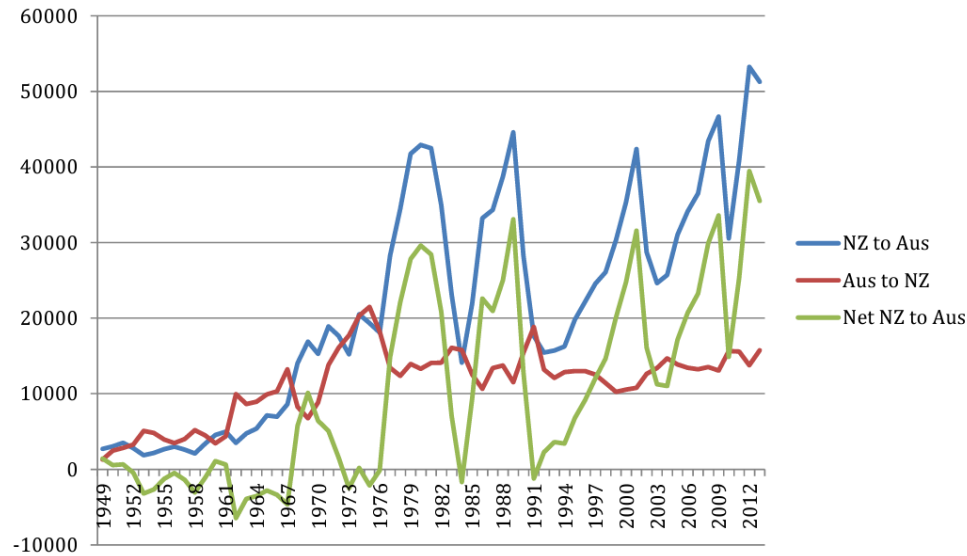
¹³ The Trans-Tasman Travel Arrangement was officially introduced in 1973, but it codified arrangements going back to the 1920s (Poot and Sanderson 2007, 1). Originally, the agreement conferred reciprocal rights on New Zealanders and Australians to live in the other country with most of the rights of citizens. Visas to live and work were not required. However, Australia progressively restricted those rights from the mid-1990s, with New Zealand often reciprocating at least partially, albeit with a lag. In 1994, Australia introduced a Special Category Visa, which while granted on entry, was the first restriction on rights. As a result, New Zealanders became subject to health and character checks, meaning they could be denied entry (Love and Klapdor 2020, 1). From 2001, New Zealanders became ineligible to receive social security benefits, could not join the permanent public service or have a pathway to citizenship. One motivation for these changes were concerns in Australia that New Zealand was being used as a ‘back door’ means of entry to Australia by citizens of third countries who would not be eligible for direct entry to Australia (Birrell 2013). In 2014, the Australian Parliament enacted Section 501 of the Migration Act, which provides for mandatory deportation of people sentenced to twelve months of more imprisonment. Section 501 applies to the citizen of all countries, not just New Zealanders (Love and Klapdor 2020, 1). A limited pathway to citizenship was reintroduced in 2016, but it only applied to people in Australia on the date of announcement (Turnbull and Dutton 2016). In 2023, the Australian government announced a new direct pathway to Australian citizenship for New Zealanders (Albanese 2023). The new pathway to Australian citizenship will make living in Australia more attractive at the margin to New Zealanders.

¹⁴ The impact of climate change, for example, may reduce the liveability of large parts of Australia (CSIRO 2020).



influence of past fluctuations in fertility and migration by people aged 20 to 30 and the openness of New Zealanders to migration (Poot 2009, 329). In a separate study, Poot also notes that trans-Tasman migration has features that make it like a form of interregional migration, with a 'drift' toward the largest agglomerations in Australasia (Poot 1995).

Figure 7 Cyclical flows across the Tasman



Source: Mein Smith (2013)

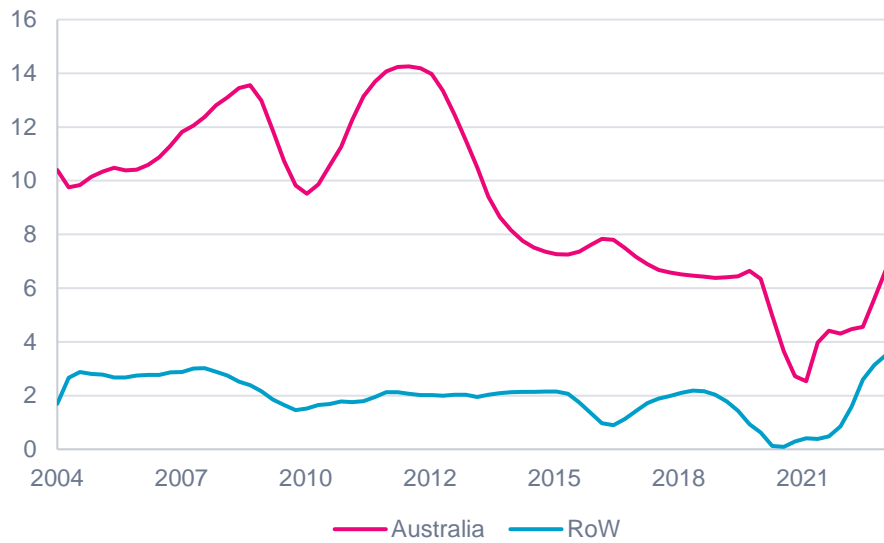
Despite the significant number of New Zealanders in Australia and ongoing local concern about a brain drain, it is surprising that the drivers of trans-Tasman emigration have not been subject to much recent study.¹⁵

Regarding emigration, we have also seen significant outflows of New Zealand citizens to Australia and elsewhere since borders reopened. However, as Figure 8 shows, departures to Australia are well below historical peaks, while departures to the rest of the world are historically high. It is possible that departures to the rest of the world represent a pent-up demand for young New Zealanders who were denied the opportunity of an overseas experience or OE due to COVID-19. We return to this issue below.

¹⁵ Jacques Poot and several co-authors have undertaken empirical studies of this issue in the past (Poot 1993; Gorbey, James, and Poot 1999; Poot and Sanderson 2007; Poot 2009; 2015).

Figure 8 New Zealand resident departures

Departures per 1000 of the resident population, quarterly, Stats NZ definition



Source: Stats NZ

2.2 Migration policy

New Zealand's policy on immigration has developed since 1840 (see Fry and Wilson (2018) for a history). In general, New Zealand has always welcomed migrants. In the early colonial period, assisted migration to build a 'better Britain' was the express policy of the New Zealand Company and Provincial governments. Assisted migration in various forms continued until the late 1970s (Phillips 2015). Early restrictions on immigration had racial overtones, with a clear preference for British settlers. Prior to 1987, immigration was restricted to 'traditional' source countries in Northern Europe, with some special categories for the Pacific. The primary focus was on permanent ('settler') migration.

Immigration policy in New Zealand in 1984 was based essentially on the long-established view of New Zealanders that New Zealand has a limited capacity to absorb large numbers of new settlers and that immigration was needed primarily to supplement the labour force when there were labour shortages. (Farmer 1996, 56)¹⁶

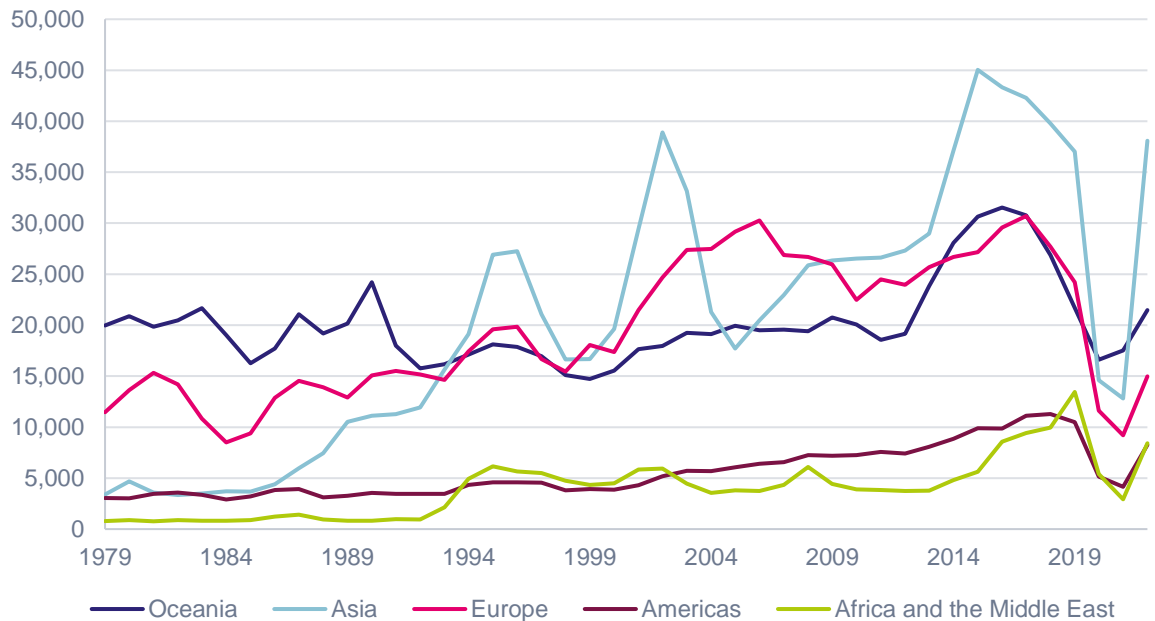
In 1987, New Zealand moved away from a country preference model, where immigrants from Europe were deliberately favoured, to a neutral policy, where entry was based on other criteria (education, skills, job match, etc.) (Burke 1986). Figure 9 shows the clear effects, with immigration from Asia increasing progressively and increasing migration from post-apartheid South Africa.¹⁷

¹⁶ We note, however, that there are often elements of fallacy of composition underlying concerns about labour shortages. The difficulties individual employers face in recruiting labour (at current wage rates) get translated into an assumed aggregate need for labourers. We thank Gary Hawke for this insight.

¹⁷ Note that while the sources may have changed over time, the absolute level of migration from these four traditional sources did not fall.



Figure 9 Sources of immigrants have changed



Source: Stats NZ

Progressively, there has also been a structural shift in the type of migrants entering New Zealand. The number of permanent migrants has remained largely stable, but there have been marked increases in different categories of temporary migrants with different work rights.

This is consistent with global trends.

International migration today is very different from what it was a century ago. In the past, cross-border migration has been predominantly unidirectional, for example, consisting of large streams of European emigrants destined for North America in the late nineteenth and early twentieth centuries. The general perception was that those who emigrated never returned to the Old World. However, international migration is no longer a one-way journey with a fixed single destination. Rather, there is notable return migration and increasing circulation of international migrants. Some migrants are repatriating, some are repeatedly moving back and forth between the origin country and the destination country, and some are moving onward to a third country. (Duncan, Poot, and Waldorf 2020, internal citations omitted)¹⁸

2.3 The results

The effect of cross-border migration on the total population is the combination of the departures and arrivals of citizens and departures and arrivals of non-citizens. The

¹⁸ It is unlikely that immigration was always one-way. Not all migrants flourished in their new home, and some returned or tried a third country. We thank Gary Hawke for this observation.

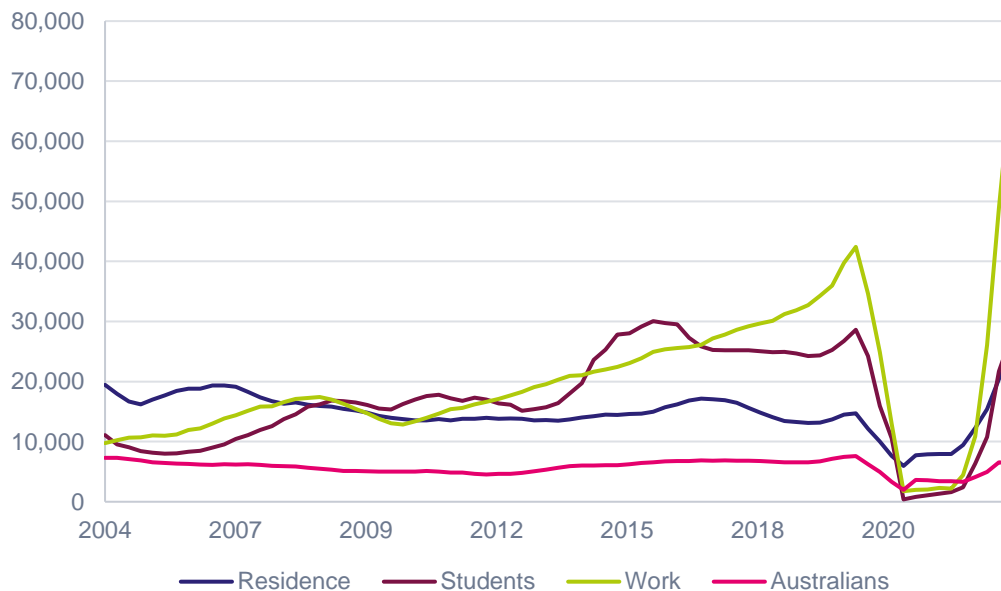


government can influence the inward flow of non-citizens via immigration policy.¹⁹ However the other three elements are largely the result of individual relocation decisions.²⁰

Figure 10 shows four different classes of immigrants using Stats NZ’s 12/16 month rule: residents, students (who have restricted work rights),²¹ temporary visa holders with full work rights and Australian citizens.²² The increase in temporary workers and students is quite apparent. It should be noted that some migrants are granted residence visas, and some Australian citizens might not be in the labour market: they could be the children or partners of workers. Likewise, not all students take up employment. However, most people granted a work visa will be employed, as these visas are conditional on job offers.²³ Also apparent is that temporary migration is now well in excess of pre-COVID levels.

Figure 10 A shift in the composition of immigrants

Migrant arrivals, Stats NZ definition, 12 months ending each month



Source: Stats NZ

The International evidence we will return to below suggests that temporary migrants may have a smaller impact on the local economy because they tend to send remittances to their

¹⁹ The government sets the conditions on different types of visas and, in some cases limits the total number of visas that can be issued in any one year. For example, currently, 19,500 RSE visas can be issued each year (Immigration New Zealand 2021, sec. WH1.1.15). But the final decision on the number of people who enter New Zealand given these rules rests with potential immigrants.

²⁰ There are a small number of deportations by New Zealand of non-citizens each year (see Immigration New Zealand (2023) for details). There are also a few (albeit often high-profile) cases of New Zealanders being deported from overseas (see Department of Home Affairs (2023) for details of New Zealanders deported from Australia under Section 501 of the Commonwealth Migration Act 1958). Outside of these instances, and recent pandemic-induced border closures, the Bill of Rights protects the right of New Zealand citizens to enter the country as they wish and the rights of all people to leave (Bill of Rights Act 1990, Section 18).

²¹ Tertiary students in New Zealand on a student visa (which includes people enrolled at a tertiary institution and a private training establishment) are permitted to work up to 20 hours per week during term time and full-time during holidays (Immigration New Zealand 2021, sec. U13.15).

²² This data does not include students with work rights who do not meet the 12/16 rule, which is typically those attending short courses, and Working Holiday visa holders who also have work rights.

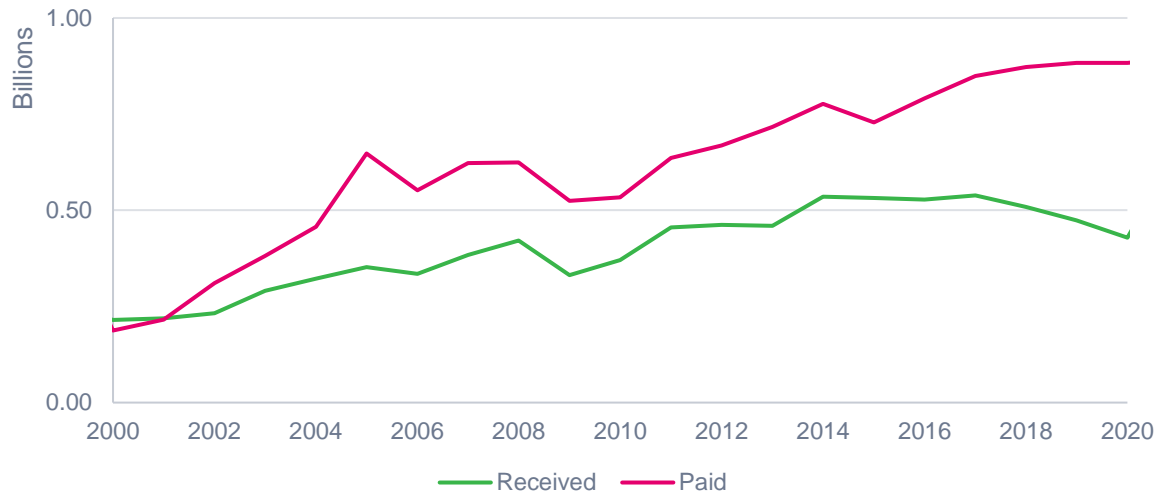
²³ One exception is the partners of some people granted a work visa, who may apply for a special work visa, which gives them general work rights without having to have a job offer.



home country. Data from the World Bank shows a steady increase in remittances to and from New Zealand.²⁴

Figure 11 Remittances paid and received by New Zealanders have increased²⁵

Current \$US



Source: World Bank (2024)

One key point to note in the decomposed data is the difference in variability between these series through time. The number of New Zealanders returning is reasonably stable, while there is significantly more volatility in departures. The recent increase in net migration that has motivated this report results from a combination of an increase in non-citizen arrivals and a decrease in citizen departures.

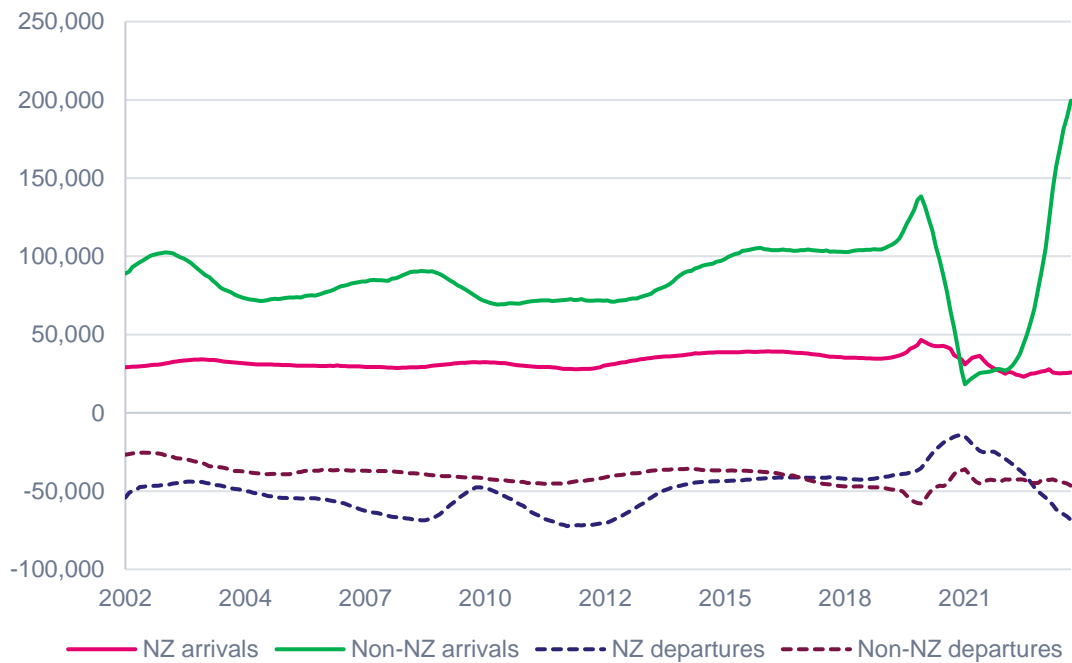
²⁴ The data in Figure 11 uses IMF balance of payments data. It records both personal transfers and compensation of employees. Further analysis would be required to determine what effect, if any, these trends are having on the New Zealand economy.

²⁵ The World Bank includes two types of payment in its definition of personal remittances: personal transfers and compensation of employees. Personal transfers are in cash or in kind made or received by resident households to or from non-resident households. Compensation of employees is the income of border, seasonal and other short-term workers who are employed in an economy where they are not resident (World Bank (2024). For more details, see International Monetary Fund (2009).



Figure 12 Migration decomposed by citizenship and direction

Arrivals and departures, Stats NZ definition, 12 months ending each month

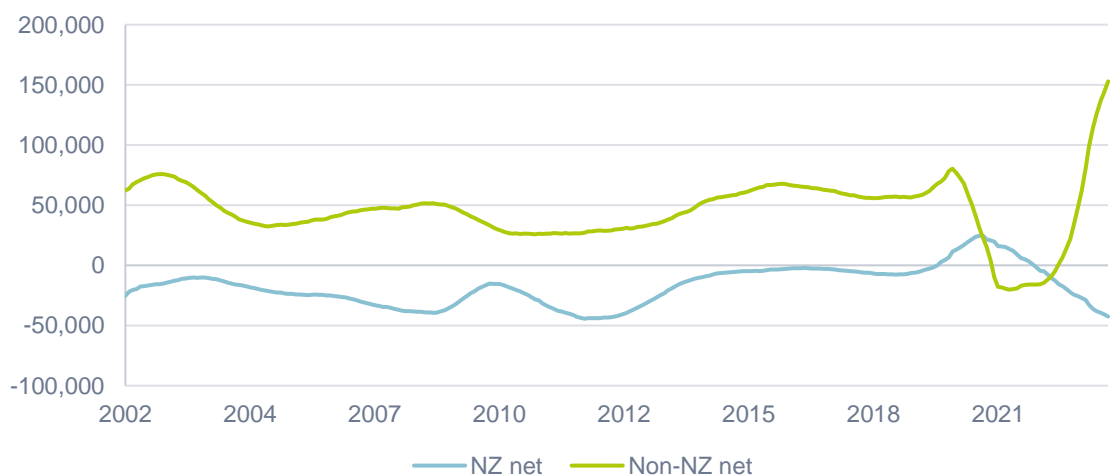


Source: Stats NZ

Since borders have reopened, arrivals of non-citizens have greatly outstripped departures, while for citizens, there has been a dramatic increase in departures. These effects are shown in Figure 13 below.

Figure 13 Net migration by citizenship

Net migration, Stats NZ definition, all citizenships, 12 months ending each month



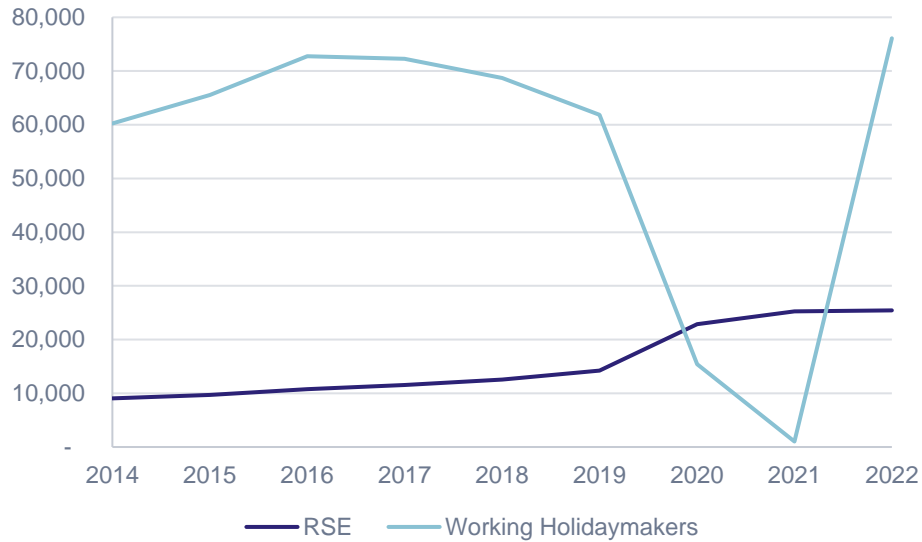
Source: Stats NZ

Data from the Ministry of Business, Innovation and Employment (MBIE), while available over a shorter timeframe, shows that a large number of people who do not necessarily fit



Stats NZ's definition of migrant are granted visas with work rights. These include growing numbers of seasonal agricultural workers granted entry under the Recognised Seasonal Employment (RSE) scheme.

Figure 14 Visas with work rights attached

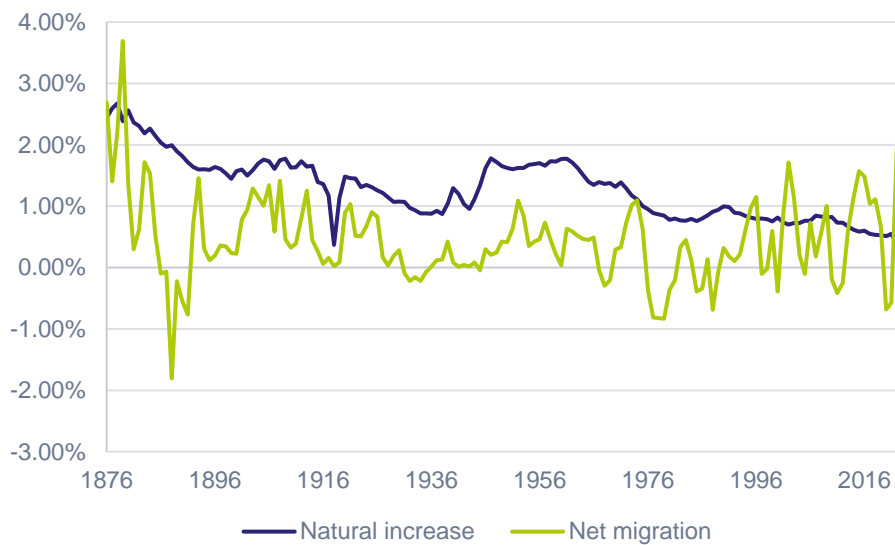


Source: MBIE

Compared to the falling rate of natural increase, net migration has become a more important driver of New Zealand's total population.

Figure 15 Net migration compared to natural increase in population

Natural increase (births minus deaths) and net permanent migration as a percentage of the resident population



Source: Stats NZ and Data 1850

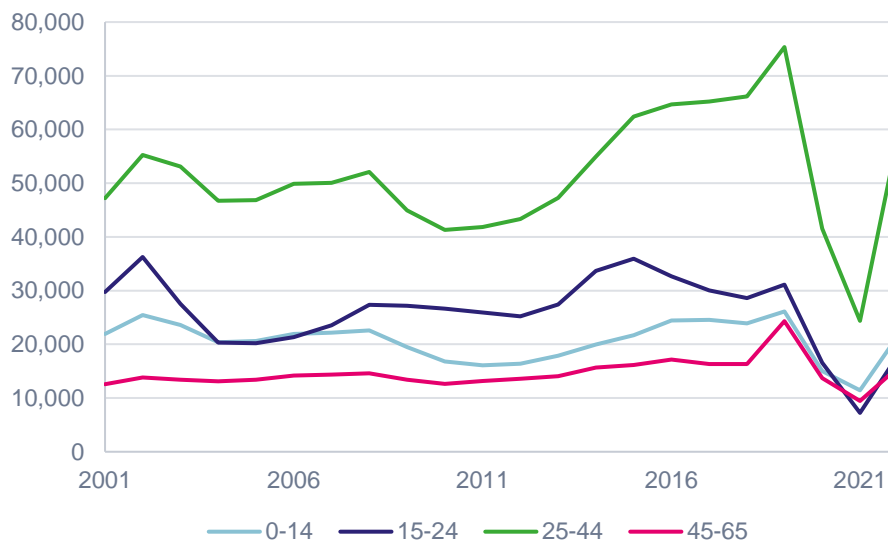


Stats NZ publishes data that allows us to break down flows of migrants by age. Given that earnings are often correlated with age, the age distribution of migrants can influence demand effects.

Figure 16 shows arrivals broken down into four age groups. The interesting trend here is the increase in the proportion of people arriving aged 25 to 44 in the period after 2009. The group aged between 15 and 24, which would include many students, did not experience a similarly large increase.

Figure 16 Arrivals by age

All countries, 12/16 rules



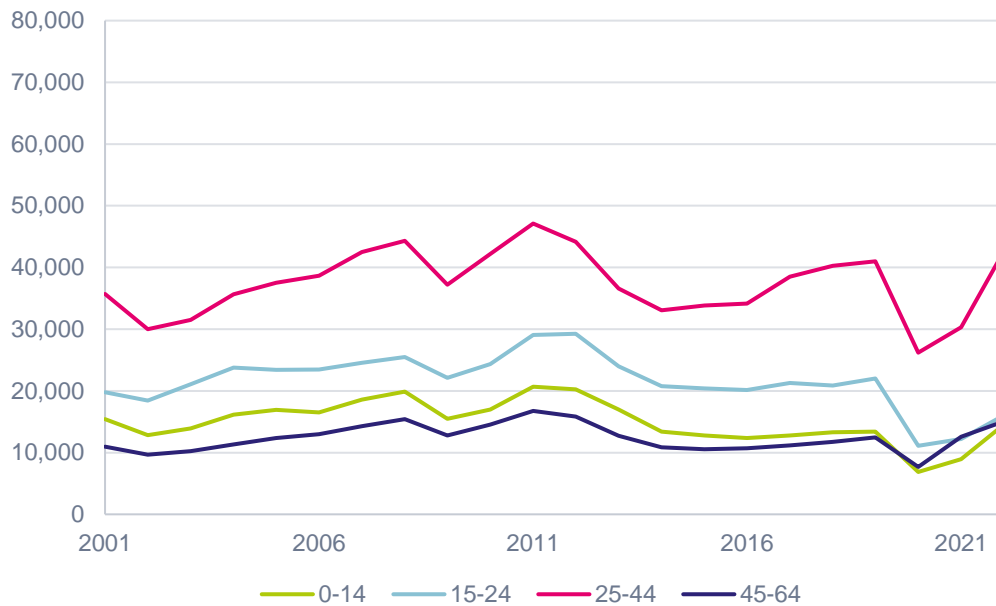
Source: Stats NZ

Looking at departures, Figure 17 shows a similar distribution across age groups but without the post-2009 spike.



Figure 17 Departures by age

All countries, 12/16 rules



Source: Stats NZ

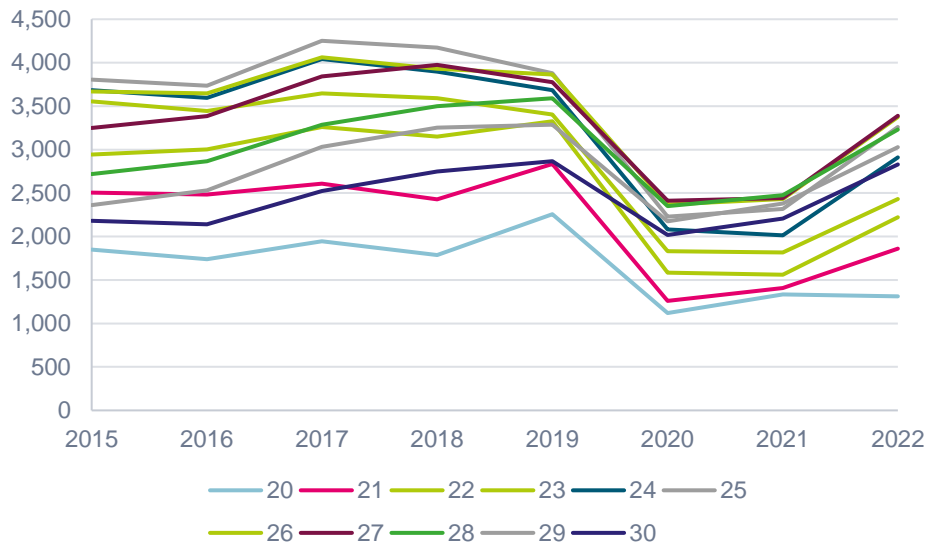
This data also provides some insights on the issue of whether the post-COVID departures of New Zealand citizens are pent-up demand for the traditional OE.

Figure 18 shows a more granular dataset: departures by people aged between 20 and 30.²⁶ For all ages, departures are still well below pre-COVID levels. Given that departures of children have remained stable, this suggests that it is older people who are departing, possibly for a longer period. A more detailed analysis of departures by New Zealand citizens, by age and destination and duration of stay overseas, would be required to draw any firm conclusions here.

²⁶ Many of New Zealand's reciprocal Working Holiday agreements have an age cap of 30.



Figure 18 Little evidence of pent-up departures on OE



Source: Stats NZ

We are not aware of any recent research which would allow us to provide a robust assessment of the extent to which age matters when it comes to migration impacts. Without IDI research, there is no way to match departures to returns. Data on cross-border movements does not disclose how long individuals stay away or the extent to which they circulate or move in and out of New Zealand before returning home.

Anecdotally, young, educated New Zealanders often spent some time overseas. Those with professional training who return will usually have gained skills and experiences that will boost their productivity.

2.4 The labour market

Recently, immigration policy in New Zealand has been closely associated with the labour market. This is consistent with current international thinking. According to the OECD:

The central objective of labour migration policy is to help meet those labour market needs which cannot be satisfied through tapping domestic labour supply in a reasonable timeframe, without adversely affecting the domestic labour market and without hindering development prospects in vulnerable origin countries.
(OECD 2019)

Of note is that New Zealand policy requires many migrants to have a firm job offer before they are granted a visa.²⁷

The main temporary work visa, the Accredited Employer Work Visa (AEWV), also places a strong emphasis on employment.

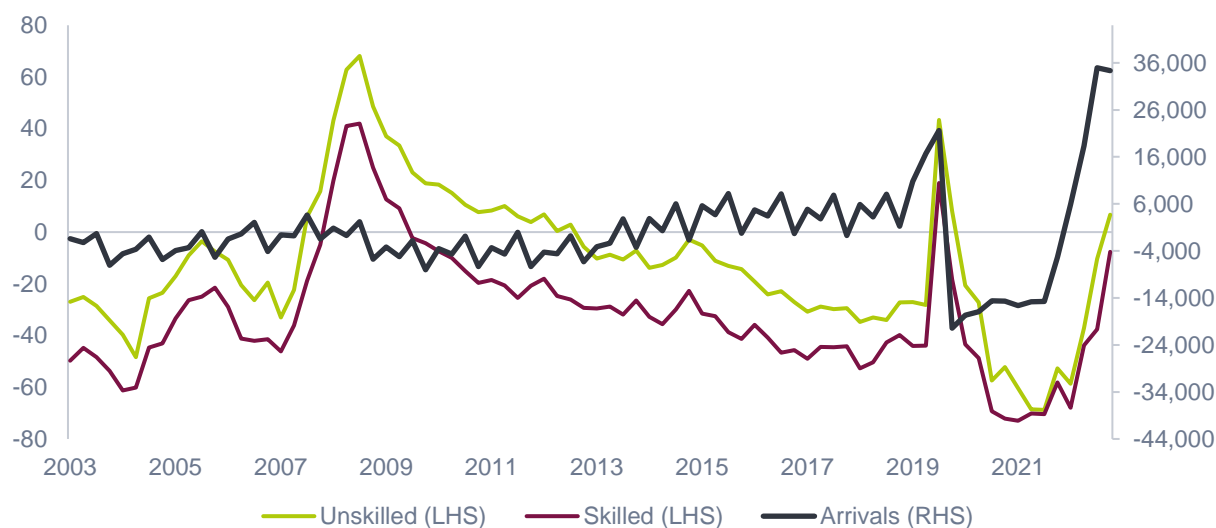
²⁷ Applicants for this class of visa are assessed on a points system, with more points being granted for a job offer (or existing employment if they are in New Zealand on another visa), level and appropriateness of qualifications, work experience and partner qualifications. Applicants are also subject to a health check, designed to “ensure that people entering New Zealand do not impose excessive costs and demands on New Zealand’s health and special education services” (Immigration New Zealand 2021, sec. A4.1).



However, data suggests that the relationship between the job market and immigration in New Zealand might not be this straightforward. In Figure 19, we present results from two separate datasets: NZIER's *Quarterly Survey of Business Opinion (QSBO)* and arrivals of migrants with residence and work visas. The QSBO data record the net number of firms reporting that it is easy to find skilled and unskilled employees. A negative number means more firms are finding it hard to source labour. The arrivals data is the difference between arrivals in any quarter and the long-term average (2003 to 2023).²⁸ Recent QSBO findings affirm that the increase in arrivals since borders reopened has been associated with a loosening of the labour market (NZIER 2023).

Figure 19 The relationship between immigration and the labour market

Ease of finding skilled and unskilled labour and gross arrivals of non-citizens



Source: NZIER and Stats NZ

The longer-term relationship between immigration levels, the tightness of the jobs market, and whether there has been a structural shift since COVID warrants further study.

2.4.1 Wages and benefits

Much of the European and US literature has focused on the impact of immigration on the wages and employment of locals, including recent immigrants (Dustmann, Schönberg, and Stuhler 2016). One finding is that labour market regulation can have an impact on outcomes.

The regulation of the labour market in New Zealand is light touch compared to many European countries, being more in line with the regulatory settings in the US. However, the

²⁸ This approach reveals the variability in the arrivals data series thought time. We thank Jacques Poots for suggesting this methodology.

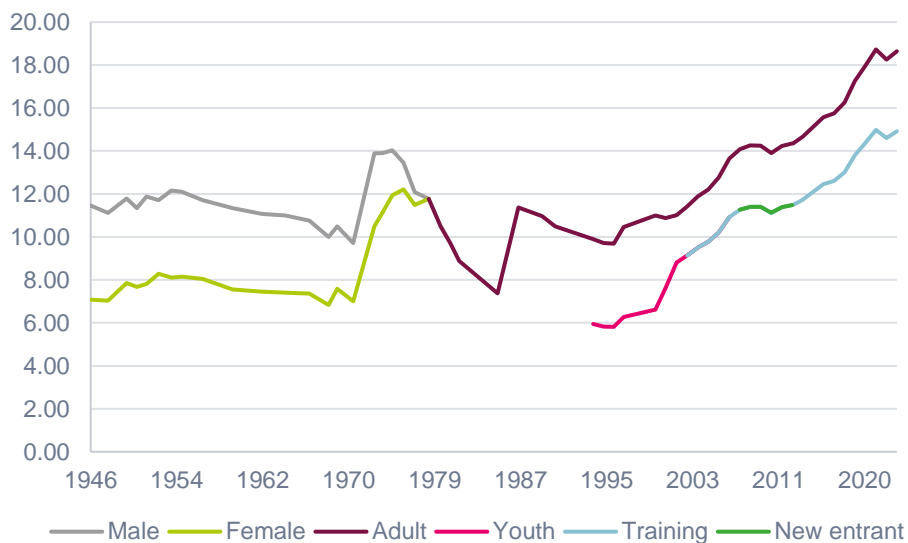


New Zealand minimum wage is among the highest in the OECD relative to median incomes (Wilson and Fry 2021, 4).²⁹

Figure 20 shows the path of the real level of the minimum wage since 1946. Several temporary visas, like the new Accredited Employer Work Visa, include requirements that workers be paid more than the minimum wage, which will blunt some of the competition effects of new entrants. That said, the minimum wage is likely to boost the wage levels of students and working holidaymakers compared to an unregulated labour market.³⁰

Figure 20 The real minimum wage

June 2017 prices



Source: Wilson and Fry (2021), updated to include 2022 and 2023 policy decisions³¹

The relationship between inflation and unemployment is, of course, much studied, and one of the key transmission mechanisms for monetary policy is through the labour market (Reserve Bank of New Zealand 2020, sec. 6.3). Therefore, settings like the minimum wage and benefits rates can influence the responses of workers to price increases.

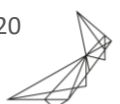
Since 1995, increases in the minimum wage in New Zealand have been greater in real terms than increases in the main unemployment benefit. For low-income workers, this would significantly increase the economic consequences of unemployment.³² Put another way, there are considerable fiscal benefits to individuals from being employed. How this interacts with immigration settings is uncertain. David Blanchflower and Chris Shadforth (2009) suggest that fear of unemployment due to immigration may have contained wage

²⁹ See Maré (2022) for a recent study of the impacts of labour market reforms in New Zealand and Maré and Hyslop (2021) for a review of the minimum wage.

³⁰ The extent of compliance with labour market regulations by employers of students and working holidaymakers is uncertain.

³¹ The data used to construct this figure comes from MBIE historical records and legislation setting the minimum wage on the New Zealand Legal Information Institute data base: <http://www.nzlii.org/>.

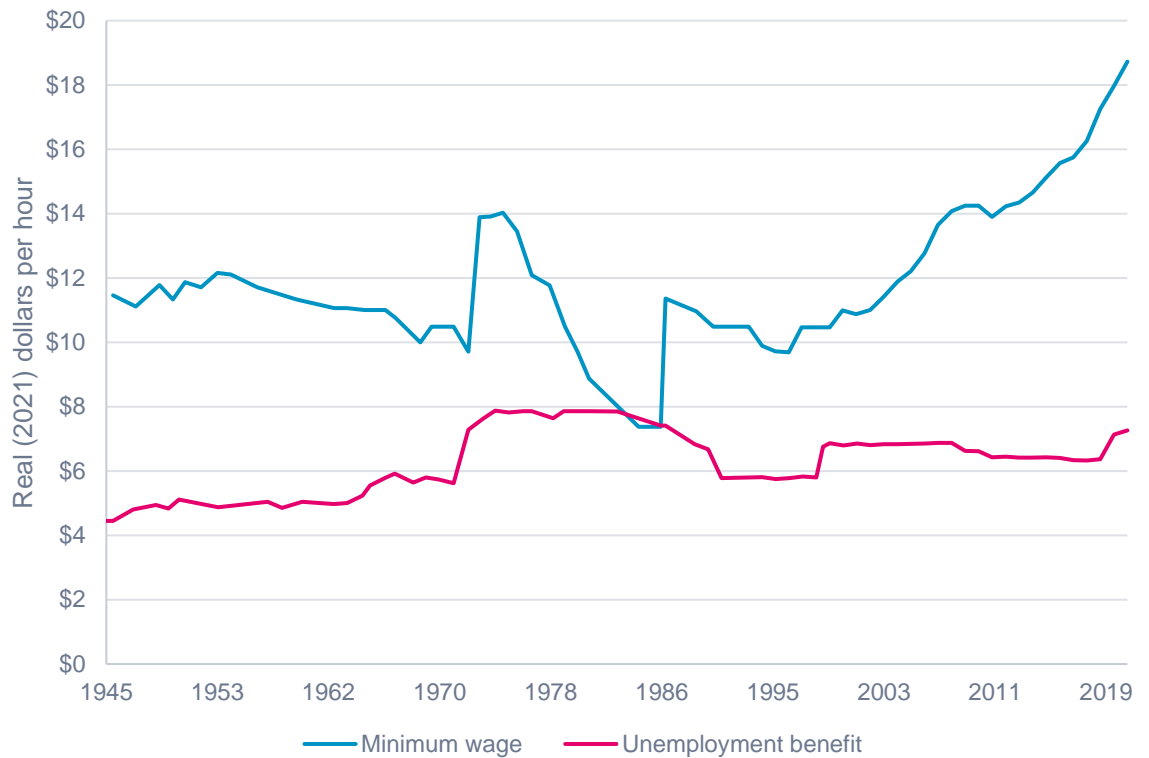
³² Low-income workers and recipients of the Jobseeker Benefit with children are eligible for Working for Families tax credits, which increases both classes of people's after-all taxes and transfer income. Because beneficiaries are not eligible for the In-work Tax Credit component of Working for Families, the after all taxes-and-transfers gap is actually higher than the pre-tax difference.



pressures in the UK. In the recent past in New Zealand, with historically low unemployment and high net migration, the situation may be different.

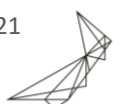
Figure 21 The gap between the minimum wage and the main unemployment benefit

Highest level of minimum wage and main unemployment benefit paid to an adult without children, June 2017 prices



Source: Benefit level data is the authors' calculations using MSD data;³³ Minimum wage data is from Wilson and Fry (2021)

³³ The benefit data used to construct this figure comes from MSD historical records and legislation setting the benefit levels contained in the New Zealand Legal Information Institute data base: <http://www.nzlii.org/>.



3 The economics of migration

There is a large and growing literature on the economics of migration.³⁴ This section focuses first on the main international findings before examining the New Zealand literature.³⁵

Despite its size, some major issues remain unsettled (Fasani, Lull, and Tealdi 2020). This is in part because much of the analysis has been empirical, resting on a thin theoretical base (Hatton 2014, 43).

The literature mostly focuses on the effects of migration on host communities and workers. It largely takes the causes of migration itself as given. To the extent that studies have theoretical underpinnings, it is usually some variant of the so-called Roy-Borjas model, developed by George Borjas in the 1980s and 1990s as an application of Roy's self-selection model to cross-border people flows (Roy 1951; Borjas 1987; 1991).³⁶ In this model, migration is motivated by differences in the average returns to labour and human capital in both the destination and source country.³⁷ Essentially, migrants will choose their destination based on how they perceive that they will fit into a new country (Dowlah 2020, 285).³⁸

Scholars have used a range of techniques, data and assumptions to study immigration. Many studies focus on a specific issue rather than seeking a broad understanding.³⁹ Because of this, some results may seem inconsistent when they are actually studying different issues (Dustmann, Schönberg, and Stuhler 2016).

The size of the literature also disguises its relatively narrow focus.

The still growing body of evidence, however, is based on analyses focusing on the experience of a relatively small number of countries and has mainly looked at single aspects of the phenomenon, often guided by data availability and by policy relevance. While such an evidence increases our general knowledge on migration, it does not offer an exhaustive view with reference to individual countries. In fact, the external validity of the existing studies remains an open question. (Mariani, Pasquini, and Rosati 2023, 85)⁴⁰

³⁴ Searching for 'migration or immigration or emigration or refugee' in the subject field of the electronic database EconLit yields 119,785 hits, dating from 1889 to the present. Over 19,000 of those items were published after January 2020. Restricting the search to items under with JEL code F22 International Migration narrows the returns to 7,803 hits since 1983, 816 of which were published after 2020.

³⁵ For previous reviews we have undertaken see Fry (2014), Fry and Wilson (2018; 2021) and Wilson and Fry (2022). Studies that we have found useful are Hanson (2008); Kerr and Kerr (2011); Borjas (2015); Dustmann and Görlach (2016); Blau and Mackie (2017); Quak (2019); Dowlah (2020); Fasani et al. (2020) and Walerych (2020), together with several meta-studies by Longhi et al. (2005; 2010; 2008a; 2008b).

³⁶ The Roy-Borjas model has been much studied. For a recent example, see Leopold (2023).

³⁷ That migrant location is self-selected has important implications for empirical work: migration cannot often be safely assumed to be a random result and doing so, without appropriate correction, leads to biased results.

³⁸ Beerli and his co-authors, for example, find that high-skilled migrants to Switzerland adjust their location choices in response to changes in employment opportunities (Beerli, Indergand, and Kunz 2023).

³⁹ For example, there is a sizeable literature on the economic effects of migration in the United States in the 1980s that was searching for a plausible explanation for an observed increase in income inequality (Okkerse 2008). This literature therefore focused on the impact of immigration on wages. More recently, some of the focus in the European literature has been on the consequences of free movement of people within the European Union. Blanchflower et al. (2007) was an early, influential contribution to this literature. Christian Dustmann and several co-authors have also studied this issue (Dustmann, Fabbri, and Preston 2005; Dustmann, Schönberg, and Stuhler 2017; Dustmann and Preston 2019; Dustmann, Ku, and Surovtseva 2021).

⁴⁰ Meta-analysis like that in Longhi, Nijkamp and Poot (2008a) can account for country effects.



With these caveats in mind, we now summarise some of the more important results in the literature.

3.1 Wage and employment impacts

Early studies of migration impacts were based on a model in which all workers, whether they are locals or migrants, have the same characteristics.⁴¹ The canonical result is that while a migration shock may initially affect local workers, once the economy adjusts, there is no effect on local employment or wages.

Stephen Nickell provides a concise summary of the mechanism underlying this result:

An influx of migrants lowers the capital-labour ratio, lowers the real wage, raises the return on capital and generates a net welfare gain for natives. The gains accruing to the owners of capital are greater than the losses faced by the suppliers of labour.

In the long run, the higher return to capital stimulates investment and in the new equilibrium the capital-labour ratio, the real wage and the marginal product of capital will revert to their original levels under constant returns. The natives neither gain nor lose and the economy is simply that bit bigger. (Nickell 2009, 57)

This model is based on the idea of adjustment. After a temporary shock, the economy returns to its pre-shock equilibrium. Implicitly, recognising the neoclassical paradigm within which this model rests, adjustment is frictionless. There are no rigidities within the economy that impede transition.

Acknowledging that this simple model is a 'gross oversimplification', Basso and Peri (2015, 1) note that the literature has developed as more sophisticated models, improved data, and new thinking have been brought to bear.⁴² Writing in 2016, Giovanni Peri described the evolution of thinking about the economic impacts of immigration in these terms:

Twenty years ago, economists typically framed their analysis of immigration as an increase in the supply of labor within a model of homogeneous workers and a downward-sloping labor demand, which was determined by the complementarity between labor and physical capital. This approach tended to focus the attention of the researcher on how immigrants competed with other homogeneous workers in the labor force while keeping everything else fixed, in a "partial" view of the labor market. More recent analyses offer greater flexibility. Researchers now distinguish different types of workers by their education and other important skill dimensions (such as ability in performing manual or analytical tasks). Moreover, immigration is now analyzed in a framework that looks at its total effects and accounts for many responses to immigrants: from native workers, in terms of possible complementarities and degrees of specialization; from firms, in terms of choices about capital and technology; and even from consumers, in terms of the mix of goods and services they choose to purchase. Unsurprisingly, this framework has produced a richer set of possible effects of immigrants on wages and employment of natives. (Peri 2016, 6, internal citations omitted)

⁴¹ Peri (2016, 11) and Dustmann et al. (2016) provide detailed descriptions of the canonical model and discuss how it has developed through time.

⁴² Dustmann et al. (2016).



One key development, which has important implications for thinking about the relationship between inflation and immigration was the introduction of a general equilibrium setting, which allows a much wider range of relevant economic elements to vary.⁴³ As Def Dowlah comments:

From an economic standpoint, the movement of labor abroad changes the relative quantities of factors available in both source and destination economies and therefore it affects all factors of production—because immigrants are not only workers, they are also consumers, inventors, innovators, and so on. (Dowlah 2020, 300)

The main drivers of migration impacts in these extended models are the skills of migrants compared to locals, how firms respond (including in relation to capital and technology), and the structure and characteristics of the host economy.

3.1.1 Characteristics of workers

The literature has incorporated a range of different characteristics of workers, including:

- skill levels⁴⁴
- tasks performed⁴⁵
- responses by locals, especially previous waves of migrants, to the arrival of migrants.⁴⁶

Adding different characteristics of migrants resulted in studies of permanent migration producing varying estimates, ranging from negative to positive impacts on aggregate local wages and employment.⁴⁷ However, most studies find any effects to be modest. Simonetta Longhi, Peter Nijkamp and Jacques Poot suggest, however, that to guide policy, “this broad conclusion needs to be supplemented with more refined statements that concern the outcomes in specific labour markets for specific workers at specific times.”⁴⁸

Their meta-analysis suggested that:

- Earlier migrants experience a statistically significant reduction in wages when new migrants arrive
- Locals who cannot move to other jobs or locations for some reason are also negatively impacted by the arrival of immigrants.⁴⁹

⁴³ Analysing an issue in a general equilibrium framework does not necessarily mean that the researcher has used a formal Computable General Equilibrium (CGE) model.

⁴⁴ Some studies divide workers between college- and non-college education (e.g. Card (2001); Card and Lemieux (2001); Ottaviano and Peri (2012)), while others distinguish those who have and have not finished high school, e.g. Borjas et al. (2008). New Zealand research shows more skilled permanent migrants integrate into host economies more quickly than those who are less skilled. Steve Stillman and Dave Maré found that university-qualified migrants achieved wage and employment outcomes similar to those of locals faster than less skilled migrants did (Stillman and Mare 2009).

⁴⁵ Peri (2016, 13).

⁴⁶ Ibid., 14.

⁴⁷ Dustmann et al. (2016) report different studies on the effect of immigration on wages have found divergent results, with some studies finding positive impacts (migration leads to locals' wages increasing) and others finding the opposite (more migrants lead to lower wages). As they explain, the studies are often looking at different effects on different groups. For example, Joan Lull found that increased migration had a negative effect on the wages of local men (Lull 2018)), while Mette Foged and Giovanni Peri found that migration had a positive effect on the wages of less educated locals, regardless of gender (Foged and Peri 2016)). These two results are not necessarily inconsistent.

⁴⁸ Longhi, Nijkamp, and Poot (2008a, 185).

⁴⁹ Ibid., 186.



3.1.2 Motivations of immigrants

Traditionally, the literature assumed that all migrants were of the settler variety. Migration was forever.

More recent studies have differentiated migration by type and motivations, showing that temporary migrants behave differently from settlers.

Christian Dustmann and Joseph-Simon Görlach observe that many studies on the effects of migrants do not adequately adjust for the fact that migrants have the choice to leave.⁵⁰ If sufficiently large numbers of migrants who experience low wages in their new country return home (or on-migrate to a third country), then excluding them in data sets may bias results.⁵¹ Studies also often do not account for the fact that locals, too, have the choice of migrating, either internally or to another country, in response to the effects of migrants on their communities.⁵²

Temporary migrants may boost demand in the host economy less than permanent migrants.⁵³ In examining the impacts of increased temporary migration to the United Kingdom following the 2004 accession of eight EU countries (the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia – hereafter referred to as ‘A8’ countries) to the European Union, the Bank of England noted several possible reasons for this, including temporary migrants saving more so they could send remittances home, spending less on durable goods because they weren’t staying permanently, and being more likely to live in communal housing.⁵⁴

3.1.3 Change in capital use

As well as being potential substitutes for local labour, migrant labour can be used alongside or instead of existing local capital.

As Julie Fry and Hayden Glass explain:

As the economy adjusts [to increased immigration] it can require more and different capital and new ways of working. If capital adjusts in response to labour growth, productivity may improve, especially if the new capital is invested in updated technology.

If capital growth does not keep up with the rising supply of labour, and the economy adjusts to immigration by adopting more labour-intensive modes of production, productivity may fall. This has occurred in New Zealand in the past. (Fry and Glass 2016, 21)

⁵⁰ Dustmann and Görlach (2016b). Fogel and Peri (2016) make a similar point.

⁵¹ Dustmann and Görlach (2016b) note that in 2008, the OECD estimated that between 20 and 50 percent of migrants to OECD countries leave their new country within five years of arrival.

⁵² Okkerse (2008, 9).

⁵³ This is not to suggest that seasonal migrants do not have local demand impacts, just that these impacts are likely to be smaller than those generated by permanent migrants. Where, as is the case with seasonal horticultural workers, seasonal migrants are living in a concentrated area, their annual arrival can have an equally concentrated impact on the micro-economy in which they are residing.

⁵⁴ Blanchflower et al. (2007, 24 and 53). A separate paper by William Olney, which does not distinguish between permanent and temporary migrants, finds that a one percent increase in remittances reduces wages of local workers by 0.06 percent, due to the reduced boost to host-country demand (Olney 2015).



These results are all based on studies of permanent migration, and firm behaviour may differ when migration is seasonal or temporary.⁵⁵

3.2 The economics of emigration

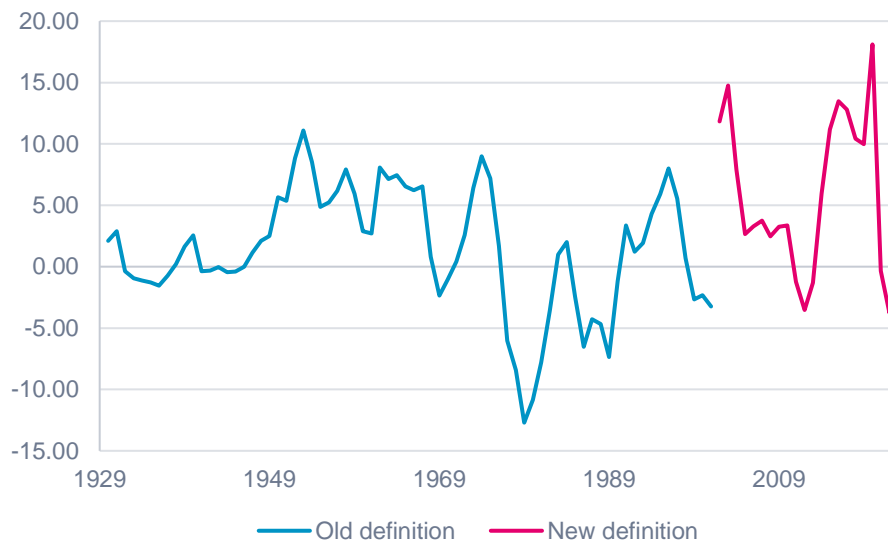
Migration from New Zealand (emigration) has always been significant.

In 1888, in response to a long depression, 10,000 more people departed New Zealand than arrived, many of them leaving for one of the British colonies in Australia. (Fry and Wilson 2018, 12)

Since 1960, there have been seven distinct periods when net migration to New Zealand was negative.

Figure 22 Emigration sometimes outweighs immigration

Net permanent migration per 1000 head of population. 1929 to 2001, intentions-based definition. 2002-2023, administrative data rule



Source: Jacques Poot, personal communication with the authors.

Despite the extensive study of the economics of immigration, far less attention has been paid to the economic effects on the source country. Early work in the literature examined the impact of emigration on developing countries. The implications for origin economies of the accession of A8 countries to the European Union after 2004 have been a focus of late.

We discuss two important issues:

- the impact of emigration of skills in the sending country (the 'brain drain')
- the labour market outcomes of those who remain.⁵⁶

⁵⁵ However, it is unlikely that long-term effects like technological change, changes in population density and the capital intensity of production will have an immediate impact on observed inflation rates.

⁵⁶ Małgorzata Walerych has undertaken a detailed review of the literature which provides a useful summary of other results (Walerych 2020).



3.2.1 The brain drain

As we noted at the beginning of this section, the Roy-Borjas model predicts that people will self-select into migration based on their assessment of their prospects in the host country. Biavaschi et al. show that consistent with this finding, there is a strong bias towards education in emigrants: those departing are disproportionately the better educated. They also show that this bias is also observed in OECD-**receiving** countries: inward migrants are more highly skilled, on average, than locals. Not surprisingly, this skills bias is highest in countries like Canada, the UK, the US, Australia and New Zealand, which operate immigration systems designed to admit more skilled workers (Biavaschi et al. 2020, 6).

Early theoretical studies of emigration suggested that the brain drain was detrimental to sending countries as it depleted their stock of human capital and reduced tax bases (Walerych 2020, 122). As a recent review concluded:

For at least three decades, the literature on labor migration between developing and developed countries has reflected the view that this migration is associated with a brain drain: the countries of origin lose high-skill workers. The loss is considered to be real since absent migration the home country would have had a more skilful workforce, and per capita output (and national welfare) would have been higher; greater openness seems to have an unfavorable repercussion. The literature on the brain drain has consequently concentrated on the question of how to mitigate this adverse consequences. The prevalence of the consequence has been firmly taken for granted. (Stark, Helmenstein, and Prskawetz 1997, internal citations omitted)

However, a series of studies starting with Mountford (1997) have shown that the situation can be more nuanced.⁵⁷

The possibility of gains from migration will induce people to gain skills with the intention of migrating. However, not everyone eventually leaves; thus, being open to emigration may result in a higher average level of education and skills than in a closed economy (Beine, Docquier, and Rapoport 2001, 275). These theoretical ideas have been confirmed empirically (Walerych 2020, 123).

The idea of a brain drain is again an example of scholars thinking within a settler migration paradigm: emigration is forever. But many migrants return home for a variety of reasons:

First, returning may be optimal and part of the migrants' original plan even if they have the option to stay abroad; or because they are not legally permitted to stay in the destination country beyond a specified time frame. In contexts where permanent stays are possible, workers may choose to return because of location-specific preferences for consumption and amenities, such as being near their families or cultural characteristics. They may also choose to return because the income earned abroad and the resulting savings may have higher purchasing power and lead to higher consumption levels. Finally, migrants may have accumulated significant human capital or financial capital (or both) which may yield higher returns as entrepreneurs, self-employed professionals or investors at home. (Bossavie and Özden 2023, 4, internal citations omitted)

⁵⁷ See de Haas (2012) for a review of the swings in this debate. Gamlen et al. (2019) review the various theories and evidence around the rise and importance of diaspora institutions, which seek to increase the benefits of emigration for origin countries.



In a 2002 Treasury Working Paper, Hayden Glass and Wai Kin Choy concluded that New Zealand was experiencing a “brain exchange” with the rest of the world and a “same drain” with Australia (Glass and Choy 2002, 6). Age-wise, they identified “a drain of younger New Zealanders and a gain of adult non-New Zealand citizens.” (ibid., 4).

3.2.2 Wage effects

The departure of a relatively highly skilled portion of a workforce can have effects on the remaining population. Intuitively, a reduction in the supply of labour should increase wages within the remaining population. A study by Aydemir and Borjas found that:

In Mexico, however, emigration rates are highest in the middle of the skill distribution and lowest at the extremes. As a result, international migration has greatly increased relative wages in the middle of the Mexican skill distribution and lowered the relative wages at the extremes. (Aydemir and Borjas 2007, 701)

Similar effects have been found historically in Sweden (Karlstrom 1985), Ireland (O’Rourke 1995) and Lithuania (Elsner 2012).

3.3 The New Zealand evidence

There have been periodic bouts of interest in studying the economic impacts of migration in New Zealand. And the issue is much discussed, from time to time, in the media. Common concerns are that immigrants take jobs off locals, reduce wages, increase housing costs, put additional pressure on public and social infrastructure and do not share ‘New Zealand value’ (Fry and Wilson 2018, 9). Conversely, during the COVID border closures, there were frequent complaints by employers, especially in the horticulture and hospitality sectors, about worker shortages.

Early analysis focused on the effect of immigration on population rather than directly on GDP or the labour market.

From 1938 up until the late 1980s, economic policy in New Zealand was predicated on active state involvement in a policy of planned industrialisation through import substitution (import licensing, discriminatory tariffs and exchange controls) and export promotion (subsidies) (Brooke, Endres, and Rogers 2018, 213). Population, and thus migration, were viewed through this lens.

For example, the 1946 Dominion Population Committee rejected the advice of employers, manufacturers and organised labour that large-scale migration of skilled workers was required. The Committee concluded that housing constraints would not allow such a policy (Dominion Population Committee 1946, 118).

As far as we know, New Zealand has never had an explicit population policy and interest in the New Zealand government developing a population policy, within which migration policy could be nested, has waxed and waned.⁵⁸

⁵⁸ Thirty years ago, Wolfgang Kasper recommended a substantial boost in immigration to increase the population as a way of lifting economic growth (Kasper 1990), a sentiment repeated by Peter O’Conner and his co-authors in 2012 (O’Connor, Stephenson, and Yeabsley 2012). In 1994, the then Minister for Immigration called for a debate on what New Zealand’s optimum immigration and population levels should be. While welcomed by New Zealand population specialists, nothing really came of that call (Farmer 1997, 4). Paul Spoonley recently called for an explicit population policy (Spoonley 2020). More recently, Te Waihanga | The Infrastructure Commission recommended that the government develop a long term and stable “National Population Plan” that should focus “on reducing uncertainty of future demand for long-lived infrastructure” (Te Waihanga 2021, 59). In a report to the Productivity



In the mid-2000s, the then Department of Labour undertook a multi-year research programme on immigration and the New Zealand economy. Poot and Cochrane (2005) started the project with an assessment of where local empirical studies might be warranted. Hodgson and Poot (2011) reviewed the work undertaken and made suggestions for further work. The results of this work programme remain the latest empirical analysis of the impact of immigration on New Zealand across several dimensions.⁵⁹

In summarising the results of the work programme, Hodgson and Poot wrote:

We conclude that immigration has made a positive contribution to economic outcomes in New Zealand and that fears for negative economic impacts such as net fiscal costs, house price inflation, lower wages, and increasing unemployment find very little support in the available empirical evidence. Moreover, the economic integration of immigrants is broadly successful. Once migrants are in New Zealand for more than 10–15 years, their labour market outcomes are predominantly determined by the same success factors as those for the New Zealand born.

Migration increases trade and tourism, both inbound and outbound. The net fiscal impact of immigration is positive. The links between immigration and technological change are complex. A positive impact may be expected but this is difficult to quantify. Nonetheless, simulations over a 15-year period with a CGE model of the New Zealand macroeconomy and sectoral-level economy suggest that even without additional technological change, additional immigration raises gross domestic product (GDP) per capita, albeit only modestly. Conversely, without net immigration, GDP per capita would be less. (Hodgson and Poot 2011, viii)

In 2021, the government referred the issue of immigration settings to the Productivity Commission. The Commission's overall conclusion was that:

Immigration has had small and mostly positive effects on the wages and employment of New Zealand-born workers over the last 25 years. Overall evidence on labour market effects does not, of itself, point to major problems with the level and composition of immigration into New Zealand. (New Zealand Productivity Commission 2021b, 1)⁶⁰

As we noted above on the issue of the drivers of trans-Tasman migration, economic conditions in both the host and origin county can influence location decisions.

Commission, we assessed this proposal, and suggested that “[T]he effect of migration on population should be one of the factors that governments consider when setting immigration policy, but population growth per se should not be a target of immigration policy.” (Wilson and Fry 2022, 29). In the Government's response to the Strategy, it noted the Commission's recommendation, stated that it supported the intent of the recommendation, but said that it required further consideration (Government of New Zealand 2022, 19).

⁵⁹ In 2019, as part of its regular reviews of the New Zealand economy, the OECD conducted an in-depth analysis of immigration in New Zealand, publishing the results as a separate working paper (Carey 2019).

⁶⁰ As part of its work, the Commission undertook a major in-house research programme on the issue: see Productivity Commission (2021a; 2021b; 2021c; 2021d; 2021e; 2022). The Commission also commissioned three external research reports: Taylor Fry Ltd (2021); Whāia Legal (2021) and Wilson and Fry (2022). The Commission's publication *Immigration by the numbers* provides an up-to-date source of much relevant data (New Zealand Productivity Commission. 2022).



There is some limited and quite dated research on state dependence in New Zealand, but it does not provide any clear evidence for or against the proposition that New Zealand's relative position in the economic cycle is driving migration in either direction.⁶¹

⁶¹ Keith McLeod and Dave Mare undertook two studies on the impact of temporary migrants that touched on this issue (McLeod and Maré 2013; 2018).



4 Inflation and migration: international evidence

There is very little literature on migration and inflation.

The theory is indeterminate, again with two potentially offsetting effects. Immigrants supply labour, which can have dampening effects on inflation. They also boost demand, which can add to inflationary pressures, especially if other supply constraints exist. Housing is an example.⁶² Empirical results depend on migrant characteristics and the circumstances in the countries they enter and leave. This section briefly summarises some key empirical studies.⁶³

4.1 Israel

From 1990–1994, an unexpectedly large number of immigrants from the former Soviet Union arrived in Israel after emigration restrictions were lifted, leading to a 12 percent increase in the host country's population (Friedberg 2001).

Using store-level price data on 915 products from the consumer price index, Saul Lach showed that despite the increase in aggregate demand, they generated significantly reduced prices. Controlling for local population size and city and month effects, on average, a one-percentage-point increase in the ratio of immigrants to locals in a city decreased prices by half a percentage point. Lach attributed this negative impact to migrants having higher price elasticities and lower search costs than locals.

While specific to a very large and unanticipated increase in net migration, Lach's work demonstrated that immigration "can have a moderating effect on inflation through its direct effect on product markets, and not only by increasing the supply of labor" (Lach 2007, 548). That said, his results are somewhat counterintuitive.⁶⁴

4.2 United Kingdom

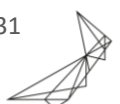
In contrast with earlier expansions of EU membership, such as when Spain and Portugal acceded to the then European Economic Community in 1986, the 2004 accession of the A8 countries led to a significant increase in temporary migrants to the UK.⁶⁵ Differences in GDP per capita and unemployment rates were key drivers (Gilpin et al. 2006), combined with the emergence of low-cost airlines and the widespread access to free video calling services, which made travelling between locations and maintaining connections in the home country cheaper and easier.

⁶² William Cochrane and Jacques Poot (2021) undertook a detailed review of the theoretical and empirical finding on this issue. While noting that the housing market is complex and immigration is only one of many influences, they suggest that on average, a 1 percent increase in immigration may increase rents in an area by between 0.5 and 1 percent. The impact on housing prices is about twice that. They suggest that these effects may be concentrated in the short term, if housing is inelastically supplied. In the longer term, however, an influx of immigrants may induce some locals to move (so-called white flight), which may dampen price effects (ibid. 288).

⁶³ Garcia and Guerra-Salas (2020) cite two other papers that while containing models that are capable of empirically estimating the impact of immigration on inflation did not report any results from this channel: see Stähler (2017) and Kiguchi and Mountford (2019). We have not included reviews of these studies in the paper.

⁶⁴ Normally, an increase in demand should, in the short-term, lead to an increase in prices, while markets take time to adjust. In this case, it appears that the consumers were very price sensitive, and had low reservation price levels above which they were not prepared to purchase.

⁶⁵ While there were some measurement challenges, it appeared that at least half of migrants who entered the UK between 2004 and 2006 did not stay permanently (D. Blanchflower, Saleheen, and Shadforth 2007, 9).



In a 2007 speech, Bank of England Monetary Policy Committee member David Blanchflower and others argued that in the short run, A8 immigration had tended to increase supply in the UK by more than demand, thereby reducing inflationary pressures. In particular:

It is likely that immigrants spend a lower fraction of their income when compared to domestic workers, perhaps because they send remittances back home or spend less on durable goods while temporarily resident in the UK. (D. Blanchflower, Saleheen, and Shadforth 2007, 24)

Exchange rates at the time of accession made earning in pounds and spending back home in local currency particularly attractive (Dustmann, Ku, and Surovtseva 2021).

Regarding house prices, Filipa Sá found that immigration negatively impacts house prices within metropolitan areas in the UK due to the mobility response of locals, “particularly those at the top of the wage distribution” (Sá 2015, 1393).

4.3 United States

Using confidential microdata from the US Consumer Price Index, Patricia Cortes found that low-skilled immigration benefits the local population by reducing the cost of non-traded goods. A 10 percent increase in the average city's share of immigrants was estimated to decrease the price of immigrant-intensive services, such as gardening and housekeeping, by 1.3 percent (Cortes 2008).

This effect occurs via a decrease in wages: the increased immigrant share was found to reduce the wages of low-skilled locals by 0.6 percent and those of low-skilled immigrants by 8 percent. Cortes concluded that low-skilled immigration “brings positive benefits to the US economy, but generates a redistribution of wealth; it reduces the real income of low-skilled natives and raises the real income of high-skilled natives” (Cortes 2008, 27).⁶⁶

Although studies generally conclude that immigration has little to no impact on wages overall,⁶⁷ the need to reduce wages to mitigate inflationary pressure has been a prominent feature of recent US commentary, particularly since the pandemic. In a 2022 speech at the Brookings Institution, Federal Reserve Chair Jerome Powell noted that US wages were increasing due to labour demand outstripping labour supply, partly as a result of reduced immigration:

The combination of a plunge in net immigration and a surge in deaths during the pandemic probably accounts for about 1-1/2 million missing workers. (Powell 2022, 7)

Mark Regets, a labour economist working at the National Foundation for American Policy, recently commented that:

⁶⁶ The literature often uses the term ‘natives’ to refer to non-immigrant workers in the host country. We prefer to use the more neutral term ‘locals’.

⁶⁷ As Mathias Sinning, Thomas Bauer and Regina Flake note, “Although simple theoretical models suggest that an increase in labor supply due to immigration may result in lower wages and/or higher unemployment of natives if they are perfect substitutes to immigrants, empirical studies typically conclude that immigration has economically irrelevant or no effects on wages and employment of natives” (Sinning, Bauer, and Flake 2011, 1). A 2008 meta-analysis of 45 primary studies undertaken by Simonetta Longhi, Peter Nijkamp and Jacques Poot concludes that “the impact of immigration on the labour market of the native born is quantitatively very small, and estimated impacts are more than half the time statistically insignificant” (Longhi, Nijkamp, and Poot 2008a, 185).



Inflation occurs when the demand for goods and services grows faster than supply. Increasing our ability to produce by increasing the supply of labor is the least painful way to control inflation. (Anderson 2023)

However, even within the US, this is not an uncontested view. For example, Ottaviano et al. (2006) argue that results from partial analyses can be misleading. In particular, they point out that locals often respond to the arrival of immigrants by moving to housing in different locations or upgrading their jobs. As a result:

...where there are complementarities between skills and service produced by natives and immigrants, where house owners' income is positively affected by an increase in the price of houses and where some local amenities such as restaurants and personal services may be made more affordable by immigrants those negative partial effects may have a positive counterpart and the aggregate general equilibrium effect could be very different from the partial effect and positive for natives. (Ottaviano et al. 2006, 2)

The authors document a strong positive association between immigration and house prices between 1990 and 2005. They conclude that this link is causal, and their simulation results suggest that locals benefit from increased (wage plus housing) income associated with immigration, in part because they are more likely than migrants to be homeowners (Ottaviano et al. 2006, 1).

4.4 Spain

Pablo Burriel, Jesus Fernández-Villaverde, and Juan Rubio-Ramírez examine shocks to population growth using MEDEA (Modelo de Equilibrio Dinámico de la Economía Española), a dynamic stochastic general equilibrium model for Spain that is estimated using Bayesian techniques and data from the preceding two decades. The model incorporates an independent monetary authority along the lines of the European Central Bank and a small open economy framework (Burriel, Fernandez-Villaverde, and Rubio-Ramírez 2009, 176).

Spain received substantial immigration flows in the late 1990s and early 2000s. In MEDEA, such flows are expansionary (output, investment and imports grow) but generate lower wages and a decline in inflation. The nominal interest rate, set by the central bank following a Taylor rule, also declines (Burriel, Fernandez-Villaverde, and Rubio-Ramírez 2009, 129).

Similarly, Samuel Bentolila Chocrón, Juan José Dolado, and Juan Jimeno argue immigration may have contributed to the flattening of the Phillips curve in Spain. They observe that between 1995 and 2006, the Spanish unemployment rate fell by 15 percentage points while inflation remained roughly constant. They estimate that had the fall in unemployment not been largely offset by increased immigration, it would have increased annual inflation by 2.5 percentage points.

The authors suggest that immigration may reduce inflation if there are differences between the labour supply decisions or bargaining power of locals and immigrants (Bentolila, Dolado, and Jimeno 2007). As Burriel and his colleagues note, Spanish wages “are mainly set by insiders with long-term contracts and thus high bargaining power” (Burriel, Fernandez-Villaverde, and Rubio-Ramírez 2009, 207). However, it is not clear whether Bentolila Chocrón et al. considered the impact of immigration on demand, and they do not discuss how monetary policy should respond to an increase in immigration.



4.5 Norway

Francesco Furlanetto and Ørjan Robstad examined the macroeconomic effects of immigration in Norway between 1990 and 2014 using a vector autoregressive approach. They found a small positive effect on inflation via exchange rate depreciation: rather than increasing the price of domestic goods, a population shock puts upward pressure on the price of imported goods.

The authors suggest that the exchange rate depreciation might result from immigrants sending remittances home. Allowing for remittances substantially reduces the demand effects of population increase: intuitively, consumption in the host country is reduced relative to the baseline case (Furlanetto and Robstad 2017).

4.6 Chile

Recent simulations by the Chilean central bank using their dynamic CGE model illustrate the possible response of inflation and monetary policy to substantial immigration inflows and shed some light on why earlier studies may sometimes produce conflicting conclusions (García and Guerra-Salas 2020).⁶⁸

As we have noted, the inflation impact of an immigration shock is theoretically ambiguous. A larger population increases demand for goods and services, thereby creating inflationary pressures. But at the same time, as immigrants seek jobs, they increase the supply of labour and reduce pressure on wages, thereby creating deflationary pressure. The net effect depends on which of these impacts dominates and will determine the appropriate response from a central bank targeting inflation.

As Benjamín García and Juan Guerra-Salas comment:

An immigration shock generates inflationary pressures through a demand channel, and disinflationary pressures through a labor supply channel. We have studied these effects, as well as the response of a central bank following a Taylor rule, in a small open economy New Keynesian model with search frictions in the labor market. A baseline parameterization for Chile, an emerging country that has experienced a substantial immigration flow in recent years, suggests the demand channel dominates the labor supply channel, so an immigration shock leads to an increase in inflation and the interest rate. (García and Guerra-Salas 2020, 27)

However, they note that these conclusions are specific to that particular context:

These effects would be reversed, i.e. the labor supply channel would dominate the demand channel, if it were the case, for example, that immigrants were willing to accept lower wages than natives for a given job, or put another way, to offer more labor at any given wage. This stronger labor supply effect would lead to a decrease in inflation and the interest rate. (ibid.)

Their conclusions are also dependent on the model they use. As the authors comment:

We also find that, under our parameterization, allowing immigrants to send a fraction of their income as remittances has little effect on inflation and the response of monetary policy. Remittances generate opposing forces on inflation

⁶⁸ Details of the Bank's model, Xmas, are in García et al. (2019).



that nearly cancel each other out: an exchange rate depreciation pushes inflation up, but weaker consumption pushes inflation down. (ibid.)

García and Guerra-Salas also simulate the effects of reduced average labour productivity in their model. This might result if newly-arrived immigrants are underemployed relative to their underlying skill levels. Where this occurs, they find firms will face cost pressures that lead to higher inflation (ibid., 15).

As we noted above, many immigrants to New Zealand require a job offer as a condition of their visa, so García and Guerra-Salas' parameterisation of their model to include a period of job search would need to be adjusted if it were to be applied here.

In passing, the authors note that some conclusions drawn in earlier studies from other countries may differ due to different underlying assumptions. For example, in reviewing the work of Lach (2007), García and Guerra-Salas highlight the author's assumption that immigrants may have higher price elasticities and face lower search costs than locals, meaning higher aggregate demand can lead to a decrease in prices (García and Guerra-Salas 2020, 2). In contrast, García and Guerra-Salas use a framework where the increased aggregate demand associated with an inflow of migrants increases inflationary pressure. Thus, in their model, reduced inflationary pressure only arises through the labour supply channel.

4.7 New Zealand

Research in New Zealand related to migration and inflation has mostly focused on the housing market.⁶⁹ The approaches used have, unsurprisingly, mirrored those adopted internationally, and the conclusions drawn reflect differences in methodological approaches, migrant characteristics and behaviour, and the contexts they enter.

An initial Reserve Bank report by Andrew Coleman and John Landon-Lane used a structural vector autoregression model to analyse the relationship between migration flows, housing construction and house prices between 1962 and 2006. The authors found that in the short term, net migration gains equal to 1 percent of the population raised house prices by about 10 percent at the national level (Coleman and Landon-Lane 2007). Later work for the Reserve Bank by Chris McDonald found a 1 percent increase in the population caused an 8 percent increase in house prices over the following three years, with increasing arrivals having more effect than reducing departures (McDonald 2013).⁷⁰ These strong conclusions imply that an immigration shock would boost aggregate demand more than aggregate supply.

Subsequent analysis by Jed Armstrong and Chris McDonald was undertaken while New Zealand was experiencing what was, at the time, its largest net inflow of permanent and long-term migrants in 100 years (Armstrong and McDonald 2016). The authors found that particular migration cycle was largely driven by high unemployment in Australia, which was also reflected in a high unemployment rate in New Zealand. Because high net migration

⁶⁹ Cochrane and Poot (2021) include a detailed case study of New Zealand in their synthesis of the literature.

⁷⁰ McDonald and Armstrong (2016) extended this analysis to examine an additional immigration shock associated with fluctuations in Australian unemployment. When a higher Australian unemployment rate between 2014 and 2016 drove increased immigration to New Zealand, it led to a higher local unemployment rate. In contrast, higher net immigration for other reasons reduces unemployment in New Zealand.



inflows coincided with relatively weaker domestic demand pressures, their impact on inflation was more muted than previously.

Armstrong and McDonald also noted that the increase in net migration was primarily driven by arrivals aged 17–29 on student and work visas. A related study by Tugrul Vehbi further explored the impact of the composition of inflows (Vehbi 2016). Vehbi grouped migrants into two categories and found that those aged 17–29 had a relatively smaller economic impact than those aged 30–49. Julie Fry and Hayden Glass noted that the estimated impacts in the earlier two Reserve Bank studies (Coleman and Landon-Lane 2007; McDonald 2013) were large compared to international estimates and commented:

...the authors of these studies all say that their work may overstate things for various reasons. For example, if migrants are attracted to areas with improving prospects and consequently with rising house prices, or if they tend to come to New Zealand when the economy is doing well, then it will look like immigration is causing rising house prices when actually they are just both happening at the same time. (Fry and Glass 2016, 24)

Research into regional and local markets has typically found smaller or marginal impacts. Using data from the 1986, 1991, 1996, 2001 and 2006 Censuses, Steve Stillman and Dave Maré found that a 1 percent increase in the population of a local market was associated with a house price rise of 0.2 to 0.5 percent. Returning New Zealanders were found to have a greater impact on prices than foreigners do (Stillman and Maré 2008). These findings were, however, “not robust to the choice of time period, suggesting that factors other than differences in population growth across areas may be more important in determining the rate of local house price appreciation” (ibid.). An updated MOTU study estimated the elasticity of both rents and house prices with respect to population changes and concluded:

Although international migration flows are an important contributor to population fluctuations, we find little evidence of systematic effects of international or domestic migrant composition of the local population on prices or quantity. In particular, despite there being a strong correlation between immigration and house price changes nationally, there is no evidence that local house or apartment prices are positively related to the share of new immigrants in an area. (Hyslop et al. 2019, iii)

4.8 Conclusions from local and international studies

Pulling all the evidence together, we draw the following conclusions.

In the short term, in response to an increase in net migration, demand often increases more than supply, particularly if there is a lag between arrival and immigrants finding employment.

New Zealand’s policy settings – the requirement for many migrants to have a job offer as a condition of being granted a visa – may temper this.

The extent and persistence of this divergence depends on the characteristics of migrants, whether their stay is permanent or temporary, the absorptive capacity of the economy, and the responsiveness of various parts of the economy to increases in demand.



As well as adding to demand pressures, migrants can help improve supply responsiveness in particular sectors with internal skills shortages (for example, migrant doctors, nurses, and aged care workers make important contributions to the provision of health services).

In some situations, an inflow of migrants can reduce the need for a monetary policy response to a particular economic shock (for example, after the Christchurch earthquakes, access to migrant construction workers limited the need for an economy-wide tightening of monetary policy to reduce wage pressures that would otherwise have been stronger).

Overall, local and international research on the impact of immigration on local wages generally finds no or very modest effects once the economy responds to increased labour supply and consumer demand. However, these findings are often not translated into popular discussion, with concerns about the negative impacts of migration being common, both here and overseas (Fry and Wilson 2018, 9). This can make communicating the relationship between monetary policy and immigration policy more difficult.

At the same time, there is considerable commentary from central bankers who see migration as an important tool for boosting labour supply and reducing upward pressure on wages in the short term.

There is a growing literature on the impacts of emigration. More recent work has shown that emigration can benefit the sending country and at least partially offset the short-term reduction in human capital that was once thought to be unquestionably negative. It also suggests that the effects on individual sending countries are highly variable.

At least anecdotally, the private sector seems better able to respond to increased demand resulting from population increases than does the public sector. We do not see shortages in many areas of professional and personal services; we do observe increased crowding on roads and public transport, in schools, and increased time to access medical care. That said, private firms always have the option, in the short term at least, of increasing prices as a way of bringing supply and demand into balance. Public sector organisations must normally ration supply by way of queueing.



5 Implication for the Monetary Policy Committee

In its August Monetary Policy Statement, the Committee said:

Net immigration increases both the supply of labour and demand in the economy. Past empirical research on the New Zealand economy has found that the demand impact is greater than the supply impact, particularly in the short term. For this reason, the Reserve Bank has tended to assume that positive net immigration adds more to aggregate demand than aggregate supply, and therefore increases inflationary pressure. (Reserve Bank of New Zealand 2023, 31)

While we agree with this assessment, the empirical work on which it is based is becoming dated.

In recent years, New Zealand has experienced a rapid rise in temporary migration, with limited study of the impacts. Indeed, many temporary migrants, such as students with work rights, seasonal workers entering under the Recognised Seasonal Employer scheme, and working holidaymakers, are intentionally excluded from the data collected by Stats NZ.

Some international research argues that temporary migrants might impact demand less (because they tend to stay in lower quality, more intensive accommodation, spend less on durable goods, and save more of their earnings to remit or take home), thereby reducing their impact on inflation. However, recent modelling by the Chilean Central Bank presents an interesting interpretation of the causes of this behaviour. The authors suggest that because they lack local family support, have limited savings and have a strong preference for sending remittances, temporary migrants are likely to be less discriminating regarding job search. Rather than wait for a job more suited to their skills and experience, they will accept positions that mean a more immediate income flow. If this is true, then temporary migration might have a net-dampening effect on inflation.⁷¹

After the lifting of travel restrictions, trans-Tasman migration has continued to see many Kiwis depart from our shores. Our open border with a country with a materially higher level of GDP per capita means that the experience of Eastern European members of the EU may hold relevant insights for New Zealand. While we can observe a growing number of New Zealand-born people living in Australia, we have limited information about how long people stay away and whether they are using higher wages in Australia to finance consumption in New Zealand.

We also have limited data on the effect of migration on the stock of human capital in New Zealand. While many New Zealanders live overseas, we have little information about their qualifications and skills. Research has shown that New Zealanders living in Australia tend to have above-average earnings compared to locals:

Our estimates using multiple approaches show that NZ-born workers earned significantly higher weekly wages than Australian-born workers and [Non-English speaking countries] migrants but earned lower wages than [other English-speaking country] migrants. Although the literature suggests that migrants earn more than native-born workers because of their advantages in education and

⁷¹ Again, context matters. Garcia and Guerra-Salas assume that temporary migrants are unemployed when they arrive in Chile and are thus seeking employment (Garcia and Guerra-Salas 2020, 3). In New Zealand, temporary migrants on work visas must have a job offer and, under current rules, the job must pay above the median wage. However, more casual migrants – students and working holiday makers – do fit the pattern Garcia and Guerra-Salas model.



skills, our data show that NZ-born workers in Australia have no such advantages but still earn more than both Australian-born workers and [Non-English speaking countries] migrants. (Doan, Nghiem, and Doan 2023, 311, internal citations omitted.)

This raises the possibility that the “same drain” to Australia identified by Glass and Choy (2002) may have become a brain drain in the decades since their study was completed.

There is international evidence that some immigrants will be employed, at least in the short term, in positions for which they are overqualified, a phenomenon known in the literature as immigrant downgrading (Eckstein and Weiss 2004; Dustmann, Frattini, and Preston 2013; Dustmann, Ku, and Surovtseva 2023). Poot and Stillman (2016) used data from the New Zealand Censuses in 1996, 2001 and 2006 to compare the qualifications of migrants and locals. They initially found that migrants were more qualified than locals, but after adjusting for differences in the skills distribution of locals and migrants, they concluded that migrants, on average, have low education levels for the roles they hold.

There is also anecdotal evidence that working holidaymakers in New Zealand are often overqualified for the jobs they take, especially in the hospitality and retail sectors.

Commentary by overseas central banks has emphasised that immigration adds to labour supply and dampens wage pressures. But there is limited empirical support for the suggestion that high levels of immigration into New Zealand have placed downward pressure on wages here (New Zealand Productivity Commission 2021b, 1).

As we do not consider that the current levels of inwards or outwards flows on people across the border are a temporary phenomenon, we support the Bank’s intention to conduct further research to confirm the net impact of migration on the New Zealand economy in general and on inflation in particular. The common misunderstandings of the impacts of immigration – and the reluctance of governments to engage in meaningful discussion – may place additional burdens on the Bank when discussing the monetary policy response to immigration.⁷²

5.1 Future research priorities

There are three main research priorities that we recommend the Bank consider.

Before commenting on those in detail, we note that Furlanetto and Robstad (2017) provide interesting insights that can be applied to any empirical work the Bank might undertake.

First, because the main impacts of immigration on an economy are theoretically ambiguous, any study must first do some subsidiary empirical studies to identify the effects of interest. In their case, they had to identify the impact of migration on wages to determine sign restrictions to impose in their VAR model.

Secondly, the theoretical support for any assumptions should be carefully considered when undertaking such studies. Furlanetto and Robstad, for example, suggest that studies by George Borjas – they cite Borjas (2003) – provide support for their assumption that immigration has negative effects on wages. That result is contested and in any event is highly dependent on institutions and history in the US.⁷³

⁷² See Productivity Commission (2021d) and Wilson and Fry (2022) for discussions on the limited transparency in the setting of immigration policy in New Zealand.

⁷³ See Dustmann et al.(2016) for a comprehensive study.



Finally, whether variables are endogenous or are at least highly influenced by policy needs to be considered.⁷⁴

5.1.1 Wage impacts in New Zealand

Empirical research on the impact of immigration on the wages of New Zealand workers is dated. In particular, much of the work that has been done pre-dates significant increases in both temporary migration and minimum wages, and the literature points to different effects of temporary migrants on the local economy compared to settlers. Work on the impact of EU expansion on sending and receiving countries provides guidance on methodologies and data requirements.

5.1.2 Dynamic CGE modelling

García and Guerra-Salas (2020) have demonstrated how dynamic CGE modelling can be used to study the relationship between immigration and inflation. Replication of their model technique using New Zealand data may provide useful insights.⁷⁵

5.1.3 The Integrated Data Infrastructure

Stats NZ's IDI includes a rich database on the movement, employment and earnings of immigrants.

We suggest that this is a greatly underused resource when it comes to understanding the impact of immigrants.

Priority should be given to examining workers not captured in Stats NZ's surveys of the resident population (such as working holidaymakers and RSE workers).

5.2 Communicating the relationship between immigration policy and monetary policy

Finally, the relationship between immigration policy and monetary policy in New Zealand and how the Bank should communicate its views of the balance between those policies and the appropriate monetary policy response to any given set of conditions remains an important issue in its own right. The Bank should, therefore, actively consider how it might communicate the results of any research to the government and the market.

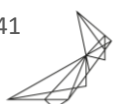
⁷⁴ An example is labour force participation by women. Furlanetto and Robstad estimate this rate on the basis that it is determined endogenously, based on labour market conditions. In New Zealand, however, increasing the labour work participation rate of women was an explicit goal of policy, encouraged for example by marked increases in government subsidies to early childhood education (Wilson and Fry 2022, 15).

⁷⁵ One of the main benefits of using these models is to allow simulations to be undertaken to test various assumptions, for example about the effects of different types of migrants, on host economies.



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