

Migration and productivity

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Migration is an important element in the functioning of the world economy. As well as alleviating domestic labour shortages, migrant workers bring new knowledge and skills which can boost the productivity of the firms they work in, benefitting both firm owners and their fellow workers. However, some fear that immigrant workers may put downward pressure on the salaries of domestic workers, and that their ability to contribute may be limited due to language or cultural barriers.

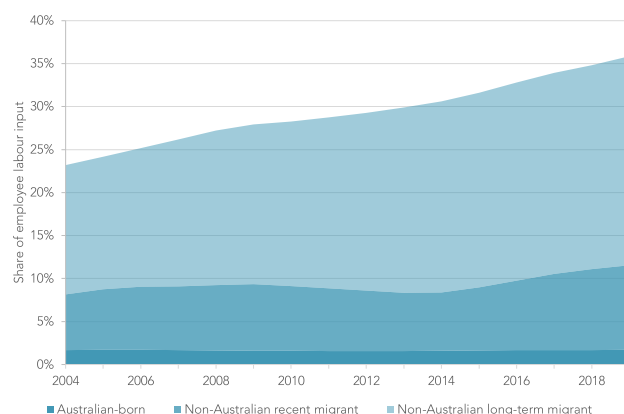
Migration and Productivity, by Richard Fabling, David C Maré and Philip Stevens, examines how migrants contribute to productivity in New Zealand. Using administrative data on the flows of migrants into and out of New Zealand, visas, earnings and jobs between 2004 and 2019, the research explores how the relative productivity and wages of migrants differ – both from those of the New Zealand-born and across different groups of migrants.

Why this topic?

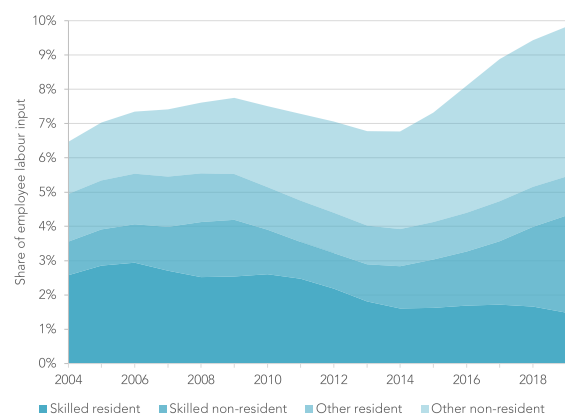
A high proportion of New Zealand's workforce was born overseas. Between 2004 and 2019 the share of migrants in total labour input increased substantially, driven by growth in the number of long-term migrants (migrants who have been in New Zealand for at least five years). Long-term migrants accounted for 24% of full-time equivalent employee labour input in 2019, up from 15% in 2004. At the same time, there has been a marked change in the composition of recent migrants, with a decline in the share of skilled resident visa holders (including skilled migrant and entrepreneur visa categories) and rapid increase in the number of workers on skilled non-resident visas (such as essential skills), and other non-resident visas (including recognised seasonal employer, and working holiday scheme visas).

Figure 1 | The contribution of migrants to the economy

The number of long-term migrants has increased



The growth of recent migrants is driven by non-resident categories



Migration policy has long been a contentious question for New Zealand, as it is in much of the world. Well-informed policies need to balance a range of considerations, including impacts on local firms, workers, and the economy as a whole as well as the wellbeing of the migrants themselves. This research provides evidence on how migrants contribute to the economy through their employment in New Zealand firms, and how that contribution is rewarded in terms of relative earnings.

What categories of workers do we consider?

We compare productivity and earnings outcomes between New Zealand-born and overseas-born workers. Among the New Zealand-born population we differentiate across workers by skill, dividing them into three groups according to the market valuation of their skill (based on previous work identifying worker and firm fixed effects, Maré et al., 2017). Among the migrant population we differentiate on the basis of length of stay in New Zealand (5+ years / less than 5 years) and visa type (resident / non-resident and skilled / other). These categories are summarised in Figure 2.

Figure 2 | Types of labour studied in our analysis

1. NZ-born (native)	2. Migrants (foreign-born):
1a. Low-skilled NZ-born	2a. Long-term migrant: (5+ years) ¹
1b. Moderately-skilled NZ-born	2b. Recent migrant: (<5 years)
1c. High-skilled NZ-born	<ul style="list-style-type: none">• Skilled resident• Skilled non-resident (primarily work visas)• Other resident• Other non-resident

1. This includes Australian-born migrants. We also examined Australians as a separate group.

How do we measure relative contribution and earnings?

To estimate the relative contribution of these different groups of workers, we use a production function approach developed to look at productivity-wage differentials across varied labour types. In essence, we jointly model the contribution of different worker groups to both firm output and the firm wage bill and comparing the estimated contribution of various migrant workers with the middle group of New Zealand workers, whom we call “moderately-skilled New Zealand workers”. This method is based on models developed by Hellerstein & Neumark (1995, 2008) and used in New Zealand to examine gender [and ethnic] pay gaps (eg, Sin et al, 2020).

The comparison of production function and firm-level wage bill equation weights on each type of labour helps address the fact that we do not directly measure worker hours or ability, since we expect variation in effort and ability across workers to be identified by higher weights in both the production function and wage bill equation.

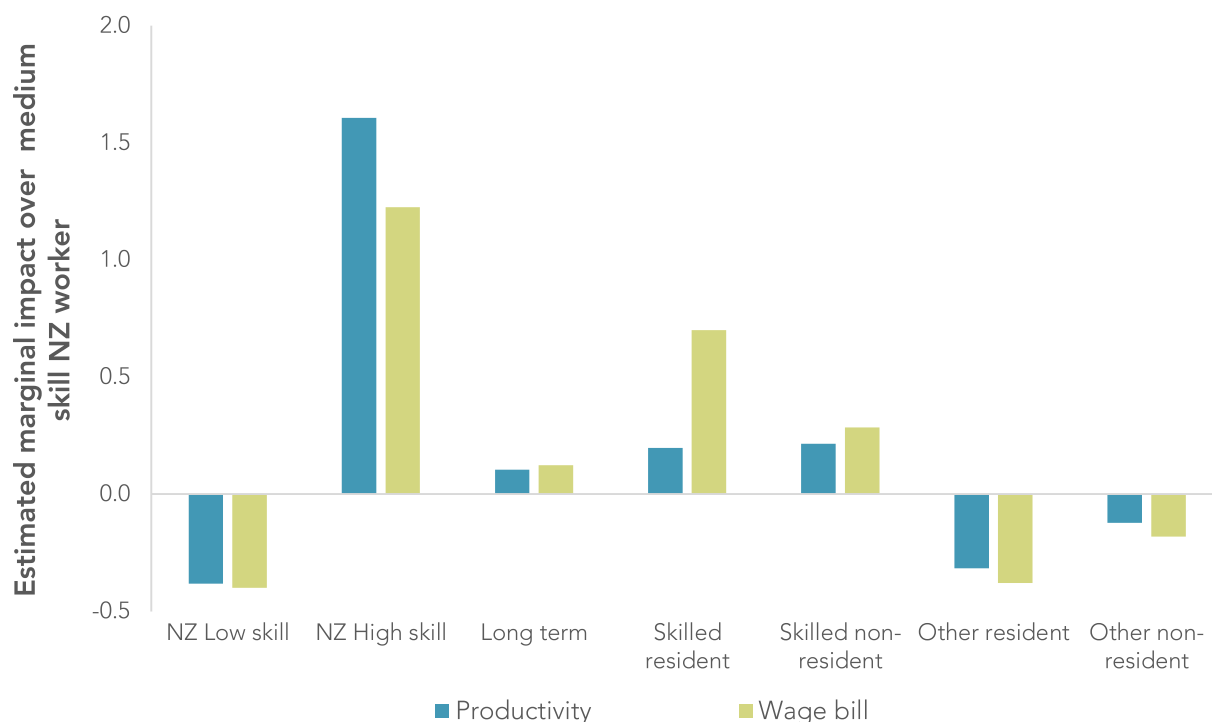
Migrant contributions to the economy

Different industries rely more or less heavily on migrants as a whole, and also employ different types of migrants. Industries such as horticulture, accommodation and food, and telecommunications rely on migrant workers for a third of their labour input, whereas for industries such as road transport, and forestry and logging the figure is more like 5-10%. There is also a wide variety in the migrant visa types that industries employ. Recent migrants on skilled resident visas are important for telecoms, and for professional, scientific and technology services, whereas the majority of the migrant labour for horticulture and accommodation are on other non-resident visas.

If we were to treat migrant workers as a uniform group, they would appear to produce slightly less than the average NZ-born worker, but capture a larger share of the firm-level wage bill. However, this simplistic comparison hides considerable diversity within the migrant population. The detailed administrative data available in the IDI allow us to examine this heterogeneity by visa type and by length of time within New Zealand (long-term vs recent). Once we account for this variation, we find that long-term and skilled recent

migrants are generally more productive than moderately-skilled NZ-born workers, and that this higher productivity is largely accounted for by effort or skill differences – evidenced by wages also being higher for these groups – relative to moderately-skilled NZ-born (see Figure 3, below).

Figure 3 | Estimated productivity and wage effects, all industries



This finding holds both for the economy as a whole and when we separately consider each of the five largest industries. That is, to the extent that migrants make a differential contribution across industries, this variation is driven more by the relative number of migrants employed than by relative productivity and wages. As such, the overall contribution of migrants to the New Zealand economy is in part a function of the industries in which they are employed.

In general, worker groups make a similar contribution to firm productivity and to the firm’s wage bill – that is, their pay appears to reflect the current value of their work (relative to moderately-skilled New Zealand workers). However, for two groups there is a notable disparity between the weights in the production function and those in the wage bill equation. High-skill New Zealanders appear to contribute relatively more to firm productivity than to the wage bill, while recent migrants on skilled resident visas show the reverse pattern. This positive gap between earnings and productivity contributions suggests that firms benefit from skilled recent migrants in ways that are not reflected in their current output. Such benefits may include improved connections to international markets or contributions to innovations which will benefit the firm in future years.

Changing contributions over time.

An important element of the New Zealand immigration picture has been the increasing numbers of long-term migrants. Our analysis suggests that the contribution of long-term migrants to the New Zealand economy has been increasing both because of this increase in numbers, but also because the average long-term migrant is contributing more (relative to the average moderately-skilled New Zealander). This could reflect either increasing productivity among early cohorts of long-term migrants (either because those that stay are gaining more useful skills and knowledge, or because the least productive are leaving) or because more recent long-term migrants are more productive than those who arrived in and before the 2000s.

Migrants may be complementary to high-skilled New Zealanders

Finally, we find tentative evidence that high-skilled NZ-born workers make a stronger contribution to output when they work in firms with higher migrant shares. This is suggestive of complementarities between the

two groups. For example, a foreign worker's knowledge of the Chinese market helps the firm generally. However, when it is combined with a skilled New Zealand-born product developer, that person can focus their skills on developing products that will most closely meet the needs of the Chinese market. An alternative explanation is that both migrants and highly-skilled New Zealanders are more successful than other New Zealanders in identifying, and finding jobs in, firms pay the highest wages and in which all workers are more productive.

It seems unlikely as it relies on migrant workers knowing a great deal about which New Zealand firms to work in, or be less likely to leave, than three-quarters of the New Zealand-born population. More likely is that highly productive firms have more effective hiring strategies.

What does this mean for the New Zealand economy?

A key message from our work is that overall picture is more complex than the naïve question "are migrants good or bad for the economy" would suggest. Firms employ migrants in response to business needs, and there is no reason to expect these requirements to be the same across all firms. By allowing for variation in outcomes across different groups of New Zealand and migrant workers, our research has shown that long-term migrants and recent migrants on skill-based visas are generally more productive than moderately-skilled NZ-born workers. This is likely due to a mix of skill differences and/or effort, and is largely reflected in higher wages. Migrants that are not on skilled visas are associated with lower output and lower wages than moderately-skilled NZ-born, appearing more akin to low-skilled New Zealanders. In this regard, the range of visa categories available to potential migrants appears to have been doing its job: migrants who gained entry to New Zealand on the basis of their skills and ability to contribute to the economy are indeed making a stronger contribution than those who came here through family links, to study, or under bilaterally agreed working holiday programmes.

Our results also suggest that skilled migrant workers provide something in addition to their direct labour input to firms that their employers value. For example, the knowledge they bring with them – be it knowledge of their home market, or of products and services and ways of working foreign to New Zealand workers and firms – is an addition to the stock of intangible capital at the firm.

Intriguingly, we have found tentative evidence that high-skilled NZ-born workers make a stronger contribution to output when they work in firms with higher migrant shares. This is suggestive that there is complementarity between the two groups. One of the potential benefits of diversity is not merely the addition knowledge and skills that are gained, but how they interact with each other. Knowledge of foreign markets, for example, could enable New Zealand developers to better utilise their skills to ensure products match what the markets value. Further work is required to confirm this result, and distinguish this interpretation from alternative explanations, such as positive mutual sorting of these groups into higher productivity firms.

References

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