

The Superdiversity myth

A review of the economic arguments
for the ‘superdiversity dividend’

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Principal Ian Harrison (B.C.A. Hons. V.U.W., Master of Public Policy SAIS Johns Hopkins) has worked with the Reserve Bank of New Zealand, the World Bank, the International Monetary Fund and the Bank for International Settlements.

Contact:

Ian Harrison – Principal Tailrisk economics

ian@tailrisk.co.nz

Ph. 022 175 3669

04 384 8570

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Introduction

Recently, Mai Chen, a prominent public law specialist, published an online book 'Superdiversity Stocktake', which discusses the implications of what is termed 'superdiversity' for business, government and New Zealand more generally.

In the preface to the book Mai Chen says:

"Many agencies, organisations and businesses are enjoying the diversity dividend from superdiversity. But investment is now needed to keep that diversity dividend high and sustainable because New Zealand's superdiversity has reached a critical mass; never before has New Zealand had living here such a large number of people who were not born here, and this puts us in a small group of nations. We have crossed the Rubicon. It is important that we understand what the demographic statistics show us and understand that the diversity dividend will not continue if we do not invest and remain responsive to New Zealand's cultural evolution".

The key propositions, as we understand them, are:

- Superdiversity is economically beneficial for New Zealand
- 'Investment' is needed to maintain the 'diversity dividend'
- More diversity is inevitable and is to be welcomed
- The benefits from superdiversity need to be more widely understood and better communicated.

The argument that 'superdiversity', now driven primarily by large-scale immigration from Asia, is beneficial to New Zealand is by no means intuitive, and there are arguments to the contrary, which we will cover below. While the tone of the Superdiversity Stocktake suggests the economic case is almost self-evident, there is a discussion of some relevant evidence from the economic literature and other sources and a number of less formal arguments in other parts of the paper.

The main purpose of this paper is to assess the evidence that is presented that superdiversity is economically positive for New Zealand. We have confined ourselves to an assessment of the evidence presented, rather than to the conjectures and assertions.

One of the papers cited is an overview of a series of studies on the impact of immigration, that were commissioned by the then Labour Department, up until 2010. It presents a very positive picture and underpins current officials' advice on immigration strategy. We have reviewed the underlying studies in detail so this paper serves a dual purpose. An assessment of the evidence presented or referenced by Mai Chen, and an assessment of the official immigration 'line'.

Key conclusions

Case for the diversity dividend not made

The case that diversity has a positive impact on economic outcomes is not made in the Stocktake. We examined the ten references that were presented in support of Mai Chen's proposition. Three provided evidence that came to the opposite view. The other seven did not provide any convincing evidence.

Immigration research does not support large scale immigration policy

The Labour Department's immigration research programme did not provide any convincing evidence that large-scale immigration is good for New Zealand.

- The flagship research effort, the computable general equilibrium model, was incapable of addressing the key issues that large-scale immigration raises.
- The assessment that average incomes increase is based on a flawed methodology and there is no evidence of a positive outcome for 'native' New Zealanders.
- The positive fiscal effect was also based on a flawed methodology.
- Continuing large-scale immigration will have a substantial negative impact on immigrants who have recently arrived.

A conventional economic analysis of large-scale immigration impacts

Before we proceed with the assessment of the evidence in the Stocktake, it is useful to set out a conventional way of looking at the economic impact of large-scale immigration, which captures important elements that are ignored or glossed over in the official immigration benefit story

The distinctive feature of the New Zealand economy is that land is an important input into the productive process. This is obvious with the agricultural, fishing and forestry sectors but it also applies to international tourism. In a simple model of the New Zealand economy where the supply of land is fixed, and New Zealand's isolation means it is not a 'natural' location for the production of a broad range of internationally traded goods and services, then an increase in the labour supply through large scale immigration will reduce the marginal product of labour. As a result:

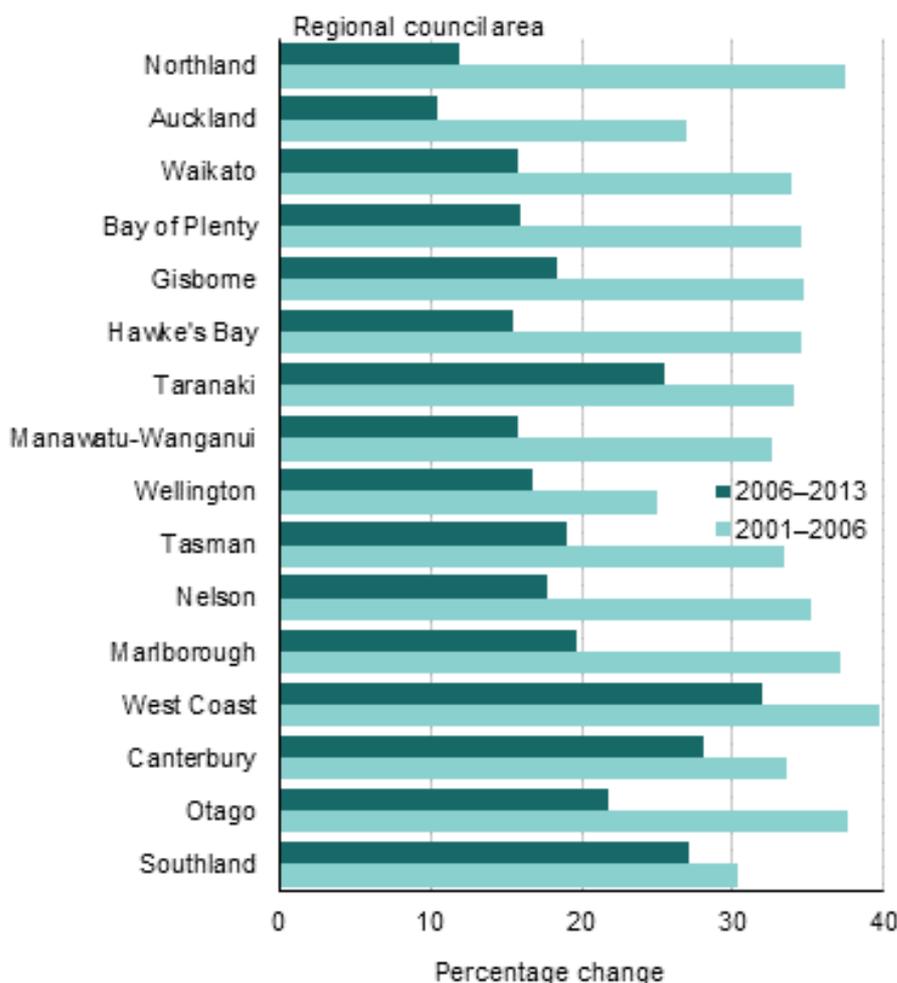
- Real wages will fall
- Owners of land will benefit
- There will be an outflow of 'native' labour in search of higher wages in Australia
- The economy will be bigger, but average incomes will fall
- Resources will flow into low value service production.

This conventional model of the impact of an increase in labour supply is obviously a simplification of a complex reality, but we think that the fixed factor effect is important enough to be considered in any discussion or analysis of the impact of immigration in New Zealand. The official analysis, however, almost entirely omits it. There is a tendency to follow the international literature, where omitting the impact of fixed factors of production is a simplification that doesn't matter very much, without thinking at all about how New Zealand could be different.

The model seems to be consistent with some of the observed facts:

- Real per capita export growth has slowed significantly as labour supply has increased
- Labour productivity growth has been very slow
- Census data shows Auckland median income growth was the second lowest of any region over 2001-2006, and the lowest over 2006 to 2013. Auckland is the 'poster child' of superdiversity. If there was anything in the 'diversity dividend' argument Auckland should have been leaping ahead in the income stakes.

Change in personal income
By regional council area
2001–2006 Censuses and 2006–2013 Censuses



Source: Statistics Department

The economic case for the ‘superdiversity dividend’

The economic case is largely made under key point two ‘The Diversity Dividend’ in the second section of Superdiversity Stocktake – Business.

The argument is summarised in para. 2.84.

“The ‘diversity dividend’ describes cities and regions with large immigrant populations experiencing higher rates of productivity and innovation, as diversity provides ‘an environment for the cross-fertilization of ideas that contribute to creativity and innovation’.

Investment and the increased local aggregate demand created by diversity foster ‘product and process innovation’, and can involve a transfer of managerial or technological expertise, or a commercial buying or selling of connections as part of a global value chain (as is discussed further below).”

It is not altogether clear here who benefits from the diversity dividend, but it must be implicit that ‘native’ New Zealanders share in the dividend. If they did not, there would be no case for continuing with the current large-scale immigration policy. The Government could (and should) immediately adjust its immigration policy settings and substantially cut the inward flow. The future demographic changes, which are a key focus of the book, would then be very much muted.

A material net benefit to ‘native’ New Zealanders (which we define as all current permanent residents and citizens, not just those who were born in New Zealand) is the test that we apply to our assessment of the evidence.

The economic arguments divide into two:

1. Preliminary arguments for the diversity dividend
2. Other arguments and references

One: A Mckinsey report

The following summary of a McKinsey and Company report ‘Why Diversity Matters’ was presented.

“A 2014 study examining 366 public companies across a range of industries in Canada, Latin America, the United Kingdom and the United States found that:284

Companies in the top quartile for racial and ethnic diversity were 35 per cent more likely to have financial returns above their respective national industry medians.

Companies in the bottom quartile both for gender and for ethnicity and race are statistically less likely to achieve above-average financial returns than the average companies in the data set (that is, bottom-quartile companies are lagging rather than merely not leading).”

The McKinsey report did not focus on the benefits of immigration as such. Even in its own terms, the general benefits of diversity, the results should be treated with caution for a number of reasons:

- McKinsey is a consulting firm and the study is primarily a marketing device for ‘diversity’ consulting products. There is no payback for findings that diversity doesn’t matter.

- The difference between financial success (which is not very well defined) of diverse and less diverse companies is not very great. 43 percent of companies in the fourth, less ethnically diverse, quartile had an above average financial performance. Of the three regions studied, the diversity of senior management was not statistically significant in two (Great Britain and Latin America).
- What is reported is correlation not causation. What we might be seeing here is that more financially successful companies are more likely to have some form of affirmative action programmes to boost minority representation at management and board levels. They may not think it matters, in terms of business success, but they think it is good PR and the cost is not an issue. In other words, the causation may work from success to affirmative action.

Two: A UK study

“A 2014 study in the United Kingdom found that 69 per cent of young adults did not want to work for establishments lacking ethnic diversity, and a significant majority of teachers preferred recommending an organisation with a reputation of promoting ethnic diversity in the workplace.”

The study cited was, apparently, a survey by an online company, mykinda crowd, which tried to build an online community between young people and educational institutions. There is no reference to the study, if that is what it was, on the mykinda crowd or its successor's website. The mykinda crowd company no longer exists.

Three: A Credit Suisse report

“A global survey of private companies likewise found that greater diversity on boards is associated with higher equity returns, higher prices-to-book valuations and superior stock price performance.”

This report by Credit Suisse was about women in management and on boards, and had nothing to do with ethnic diversity.

Conclusion

On the basis of just these three pieces of evidence it is concluded:

“Accordingly, there will be a diversity dividend for regions that receive immigrants, depending on the level of diversity, the source countries, the level of worker skills and experience, employment status, and the accessibility of support services for migrants”

This is a strong conclusion from such sparse evidence.

Four: Export and tourism benefits

“Increased diversity underpins two of New Zealand’s largest export earning sectors: international education and tourismMigrant communities can play an important role in export and international trade, as they are often well connected internationally through their “prior experiences, family connections and wider business activities....”

The benefits of the diversity dividend in the New Zealand context are being measured in research by the Te Pūnaha Matatini Centre of Excellence at the University of Auckland, which includes measuring the effect of increased migration on export success”

The study did show that firms that employ a higher fraction of high-ability foreigners are more likely to export. However, this correlation only applied to employees from Australia, the Pacific and Europe, and was absent for foreign employees from Asia. As Asia has been the source of the bulk of recent immigrants, the study does not support the Asian immigrant/export story that is made at several points in the book.

Five: The Motu study on innovation

The Motu study looked at employee characteristics (share of recent immigrants and returning New Zealanders) and innovation. Innovation is defined very broadly and captures almost any change in product, process, marketing or organisation over the previous two financial years. 46 percent of firms were identified as innovators. There is a question here of whether this is really measuring innovation. If, for example, the organisational change variable is capturing the personal department belatedly following the latest management fad, does that represent innovation?

The study found that there were some relationships between the share of ‘highly skilled’ migrants and ‘innovation’, but it was difficult to say whether the share of highly skilled staff in general, or highly skilled immigrants was driving the results. *“When we try to separate out the effects of migrants and returnees on innovation from them being new, high skilled, and having an ‘outside’ perspective, we find that the former two factors seem to matter more, at least for some forms of innovation, and/or some types of firm. This conclusion is supported by results for the self-reported influence of new staff on innovation, where recent migrants and returnees do not appear to raise the likelihood of this reporting, over and above their contribution to the new employee share”*

There were no results by the source of immigration, which could be important. It is possible that the results could have been driven by Australian firms placing workers in subsidiaries

precisely to make some change in the business. The distinction is important because Australians can come here as of right and are not affected by immigration policy.

Even if the highly skilled immigrant result is statistically robust and relevant, it is not very economically important. The effect of an increase in the high skilled immigrants equivalent to 1 percent of the workforce would increase the innovation rate by 0.656 percentage points. That is, from 47 to 47.7 percent. As the share of recent highly skilled immigrants in the study was only 0.7 percent, this trivial innovation improvement requires a 150 percent increase in the workforce representation.

Our conclusion is that the Motu research does not provide material support for the innovation/mass immigration linkage.

Six: Attraction to talent

“Research conducted in the United States found that cities and regions that are more tolerant and inclusive of migrants are able to attract more talent. As a result, these areas displayed higher levels of innovation”

The study cited was a paper by Florida, ‘Cities and the creative class’. It reported on measures of attributes of cities that might be attractive to what he terms ‘the creative class’, resulting in positive economic outcomes for those cities. He found *“no relationship between immigration and positive economic outcomes. There was no correlation with innovation, and job growth (p.12)”*. He did find a correlation between economic success and the ‘gay index’ and the ‘Bohemian’ index.

The study does not support Mai Chen’s claim. It came to the opposite conclusion.

Seven: Immigration and innovation

“2.96 A 2012 study on the increasing numbers of immigrants in 12 European countries found that “innovation levels are ... positively associated with migrant diversity”, an effect that only occurs when there is a “minimum level of diversity”. The study further found that diversity can enhance local aggregate demand for goods and services; new investment fosters product and process innovation; and migrants, especially skilled migrants, add to the “capital stock” of host communities”.

This study¹ examines the relationship between regional innovation (as measured by patent levels) and the size and composition of the immigrant stock in those regions.

¹ Ozgen, P Nijkamp and J Poot *Immigration and Innovation in European Regions*

The authors conclude, “Our results suggest that an increase in the share of the foreign-born in the population of a region is not conclusively associated with innovation. However, an increase in the average skill level of migrants (proxied by migration from source countries from which emigrants are on average higher skilled) has a positive and statistically significant effect on patent applications.”

A **negative** relationship was found between the share of immigrants and innovation, but this was not statistically significant. With respect to the skill level conclusion, what appears to be going on here is that immigration from high income countries was the driver (immigrants from high income countries were assumed to be high skilled). Innovation is concentrated in regions with concentrations of universities and research institutes, and these bodies draw from a pool of mobile ‘labour’ from mostly high income countries (and mostly from within the EU). Regions with a high proportion of these workers will be more ‘diverse’ and will naturally generate higher patent levels. Universities do research. On the other hand, stagnant regions such as Calabria in Southern Italy do not attract immigrants and are very homogeneous. Little research is done there.

It is a big step to claim that ethnic diversity amongst researchers and academics is in itself an innovation driver. These people are likely have similar educations, backgrounds and workplace values. Where it matters, in the workplace, they are likely to be relatively homogeneous. Diversity in the place of birth or ethnicity probably is probably not the innovation driver.

There was a test of the area of origin of foreigners. Outside the EU, African and US origins was found to be positively associated with innovation, but there was a strong **negative** correlation with an Asian origin. We don’t put much store on the Ozgen et al. study, but if the study is to be cited then this result should have been reported.

Eight: Diversity and production

“2.97 Another study relying on aggregate data from 12 European countries found that cultural diversity positively influences production and consumption. The study also found that there was growing evidence that Americans are more productive when they live in culturally diverse regions.”

This study² claims that there is a positive relationship between productivity and diversity, and that the causation runs from diversity to output.

² E Bellini, G Ottaviano, D Pinelli and G Prarolo *Cultural Diversity and Economic Performance: Evidence From European Regions*

Two sets of results are presented. The first set of models, estimated using ordinary least squares, just identified a correlation between output and diversity and are open to the criticism that the causation works from high income to immigration. Immigrants will go to cities where wage rates are highest. The authors claim that equations that use instrument variables compensate for this affect, and so show a causal relation from diversity and income. However, the technique they use is based on the strong assumption, which we think is wrong, that immigration in the first of the two data years (1990 and 2000) was not based on the relative economic attractiveness of the regions. We think that causality is unproven and that the likely causation is from income to diversity.

The study also has to deal with data limitations and uses a number of proxy variables that may affect the results. For example, wages are proxied by GDP, and rents are proxied by 2 star Michelin ranked restaurant prices. The former proxy is not valid. The point of the study was that workers would be become more productive and this would be reflected in higher wages. A GDP proxy will be picking up profit and rent impacts.

On the last point, the paper did not find that Americans are more productive when they live in culturally diverse areas. The paper just said that there was growing evidence of this effect in the US. The main piece of evidence cited was a US study by the lead author of the European study, which, we think, suffers from significant issues with the robustness of the causation conclusions. Curiously, the US study found, using the same methodology for the wage equations that rents increased with diversity. As no one argues that diversity in itself makes a property more productive, this points to other factors at work that are probably biasing the results on the role of diversity on incomes.

Nine: Filling labour shortages

Several claims are made that immigrants are just filling jobs where there are shortages of New Zealand workers, particularly it is implied, 'highly skilled' workers. While there may be specialist vacancies that cannot be readily filled from the Australasian market, or sectors (universities and research institutes) where it may be desirable to access a world market, for the most part there is no shortage of skilled workers, if by that we mean someone with a university qualification or similar. New Zealand is producing plenty of university graduates.

Some employers may not be able to get an employee at the salary they might wish to pay, but that is not a sign of a shortage, it just means that the market will clear at a higher wage rate.

It is also argued that immigrants are doing jobs that New Zealanders will not do. Farm work and aged care are examples. Native New Zealanders have and will do those jobs, but higher wages are needed to attract the right workers.

The rural sector is discussed as an example of why immigrants are needed throughout New Zealand.

“2.272 The critical challenge facing New Zealand’s agricultural sector – which is mainly dairy farming, followed by beef and sheep farming and horticulture – is the lack of succession as the current generation of farmers retires. For every 10 people leaving the agricultural sector, there are around three to five people entering the industry. The 2015 Federated Farmers Farm Confidence Survey found that 20.6 per cent of dairy farmers had found it difficult to find skilled and motivated staff over the preceding six months. This is exacerbated by New Zealand’s ageing population and the trend of internal migration away from the regions to urban centres, in particular Auckland. Research also suggests that young New Zealanders do not find farming to be an attractive career prospect, due to the long hours and labour-intensive nature of farming.”

There was never any shortage of ‘suitably qualified’ New Zealand dairy workers, (the migrant workers generally had no experience in dairy farming) there was just a shortage of workers prepared to work long hours for low incomes.

If the market had been left to work and there were no migrant workers, employee incomes in the sector would have been higher (as farmers competed for good workers), production processes would have been a little less labour intensive, and the sector would have been a little smaller as some conversions, that would not have been profitable at the higher wage rates, would not have proceeded. The latter effect would have been small because dairy farming is capital intensive and even a substantial increase in wages would not have been a make or break for nearly all dairy farm conversions.

It is also reported *“Farm owners report that they want migrant workers to stay on and to buy into their farms, but this is difficult because they are not permanent residents.”*

This doesn’t make sense. There is no way a farm worker will ever be able to buy the factory farm where they are employed. When the farm is sold, it will be sold to the highest bidder.

Ten: The Fry and Glass book

In para. 3.13 it is stated *“Julie Fry and Hayden Glass, in their forthcoming book on the transformation of migrants and migration, contend that changing New Zealand’s immigration policies can transform our national economic performance, in particular, the economic contribution of self-directed and economically motivated migrants. This is because high levels of “on paper” skills do not necessarily translate to successful settlement.”*

We will have to wait until the book comes out to see what Fry and Glass actually say, but our understanding is that one of the messages is the present policy of large scale immigration has not worked.

Conclusion

The case that diversity has a positive impact on economic outcomes is not made in the Stocktake. We examined the ten relevant references that were presented in support of Mai Chen's proposition. Three provided evidence that came to the opposite view. The other seven did not provide any convincing evidence. We don't think that this was just a matter of bad luck, that is, selecting the most unconvincing studies when there are plenty out there that are more convincing. On our reading there aren't that many academic articles that find a positive relationship between ethnic diversity and economic benefits, and we didn't find any that provided a compelling argument for a general proposition that ethnic diversity has significant economic benefits. The other strand in the literature, that ethnic diversity has a negative impact on economic performance is entirely omitted from Mai Chen's discussion.

Department of Labour research

In 3.37 it is claimed that research has shown that migrants make a net positive contribution to New Zealand's economy. The reference is to a paper (New Zealand Research on the Economic Impacts of immigration 2005–2010: Synthesis and Research Agenda) that summarises the main results of research commissioned by the Department of Labour up to 2010.

The overview in the paper presents a very positive picture of the research results.

"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."

We have assessed the key papers that underpinned these conclusions. Where relevant we have quoted from the overview paper descriptions and assessments of the papers.

Long run economic impacts

The flagship of the modeling effort was a general equilibrium model, which is based on inter-industry relationships. A description of the model and the results of alternative

immigration scenarios are set out in the paper 'Economic impacts of Immigration: Scenarios using a computable general equilibrium model of the New Zealand Economy'.

The key output was a comparative static analysis that showed the impact on the economy of an increase in immigration of 20,000 a year which increased the population by 6.1 percent, and the labour force by 7.4 percent, over a 15-year horizon.

The key outputs look positive. For example per capital GDP increases by 1.5 percent and exports volumes increase by 8.5 percent. While the model looks complex and sophisticated, the results are driven by a few key assumptions.

- The amount of capital automatically increases to maintain a constant labour capital ratio
- The economy has constant returns to scale
- 'Nontraditional' exports are driven by the labour supply and face a highly elastic demand curve
- The demand for labour equals the supply.

Output is labour driven, so output is basically a simple scalar of labour supply. There are no problems relating to the limits on the production of primary based outputs because non-tradition export markets are always there to pick up the labour driven increase in output. Additional labour resources are always used – there is no impact on unemployment and a minimal impact on wages.

Essentially the model works like a central planning exercise. Once aggregate labour and capital supply is centrally determined, resources are allocated to sectors depending on their capital intensity, and by prices, which are driven by a set of product demand curves.

Increase in per capita GDP

The increase in per capital GDP is explained by the assumption that a higher proportion of the immigrant population is of working age, so the labour force increases by more than the increase in population. No account is taken of the fact that immigrants have a lower (age adjusted) participation rate than the native population, or that there are observed differences in productivity. Adjusting for these factors could see the per capita GDP fall.

The focus on per capita GDP as the 'success' metric is wrong. What should have been measured is a national income measure. This would capture the terms of trade effect (which drives export growth) and the cost of capital inflows to fund the larger capital stock. An income-based measure would probably see income fall in per capita terms.

Finally on this point, even if per capita GDP metric was correct the gains from the higher participation rate would be captured by the immigrants, leaving the natives no better off.

Increase in exports

A noteworthy output is the 8.5 percent increase in exports, which is not an obvious result given the New Zealand export sector's dependence on natural resources.

Exports by major commodity group and the percentage increase over the base case are shown in table one.

Several of the estimates don't seem to make much sense:

- Traditional pastoral export volumes are determined by technology and prices, and costs. There is no reason to think that an increase in the labour supply (accompanied by a fall in the price of labour in the model of just 0.2 percent) would have any material impact on output.
- An increase in labour supply will not increase the fish stocks that underpin export volumes.
- Why other food exports are not supplied constrained like 'traditional' products is a mystery.
- Forest product exports are constrained by the supply of trees, which take 25-30 years to grow.
- Tourist numbers are not substantially driven by labour supply. There will be sensitivity to price but there is not the highly elastic response that is built into this model.

A more realistic view is that exports will not respond much to an immigration driven increase in labour supply, which will go into the services sector (think taxis, restaurants etc.) driving down prices and the marginal return to labour.

The computable general equilibrium model results seem to have been influential in driving the official line that more immigration is good. However, we can safely conclude that the model has nothing very useful to tell us about the impacts of immigration and many of the key results are wrong or misleading. The analysis simply assumes away the key issues.

Table one: Increases in exports with increased immigration

Commodity type	% increase over base	Exports 2021 \$'m
Dairy	2.2	8439
Meat	2.2	7178
Wool	2.2	813
Horticulture	5.7	2486
Fish	5.3	2436
Other food	11.1	5457
Wood and logs	12.1	4482
Pulp and paper	11.9	2234
Tourism	11.8	17211
Other services	11.9	6466
Machinery and equipment	9.4	10119

House price inflation

The conclusion that immigration does not impact on house prices is perhaps now just of historical interest. The key issue today is whether immigration is having an effect on Auckland house prices. It is hard to argue that it has not.

When the review was written there were two, apparently conflicting, results on the impact of immigration of house prices.

“Coleman and Langdon-Lane (2007) found with their model that an inflow of migrants that is equivalent to 1 percent of the overall population was associated with house prices increasing 8–12 percent.”

A later study by Stillman and Mar (2008), which looked at house prices and immigration at the local level, did not find a relationship. The summary document suggests that this raises doubts about whether the robustness of the relationship at the national level. Whether the different results raised issues with the local study analysis was not considered.

Innovation impacts

The review reports on the Maré et al study (an earlier version of the study reported above) that found no relationship between immigration and innovation.

“The results suggest that only two factors have a strong predictive power in explaining the variation in innovation across firms: firm size and firm R&D expenditure. Large firms and/or those that devote money to R&D generate more product and/or process innovations. The presence of migrants (internal or international) and the characteristics of the labour force more generally do not have a statistically discernible influence on innovation outcomes. Even when controlling for subgroups of enterprises that have positive R&D expenditure, are in high R&D industries, or have a highly skilled workforce themselves, no evidence is found.”

However, the overview suggests that this may be due to technical difficulties in uncovering the ‘true’ relationship.

“The links between immigration and technological change are complex. A positive impact may be expected but this is difficult to quantify.”

Immigration and trade

“Law et al (2009) estimated a so-called gravity model of trade. The data cover trade with more than 190 countries over the period 1981–2006..... The basic econometric estimates suggest that when the number of immigrants from a particular country increases by 10 percent, New Zealand exports to that country increase by 0.6 percent, while the volume of imports from that country increases by 1.9 percent.”

“Qian (2008) estimates a somewhat more simplified version of the gravity model but finds very similar coefficients: a 10 percent increase in the migrant stock increases exports by 0.56 percent and imports by 1.35 percent.”

One of the issues with these papers is that they appear to equally weight all countries regardless of their contribution to New Zealand’s exports. There is a risk that the results could be driven by countries whose trade is economically insignificant. Another key issue is causation. It could be just coincidental that migration to New Zealand has increased at the same time that Asian countries have become richer and more open to New Zealand's primary product exports. Immigrants may have had no part in that growth.

Immigration and tourism

The results of the study by Law et al. (2009) on the impact of immigration on tourist numbers showed that tourism is related to international migration. When number of immigrants from a particular country increases by 10 percent, the number of visitor arrivals from that country increases 2 percent, but the number of New Zealanders visiting that country increases 4 percent.

The immigration/ tourism relationship is real. When immigrants settle here there will be more visits from friends and family. However, it is not clear whether there is a net

economic benefit from immigration. There will be a benefit from tourist arrivals, but equally more will be spent overseas at the expense, presumably, of expenditures in New Zealand.

Fiscal impacts

The review reports on the fiscal impacts study for 2005/06.

The study estimated that migrants contributed a total of \$8,101 billion through income taxes, GST, and excise duties. Estimated fiscal expenditure on the migrant population was \$4,813 billion. This number just covered government spending on education, health, benefits and allowances, and superannuation. Other government expenditures were not allocated to the migrant or the native group.

Income tax of on immigrants was \$5,170 per head compared with \$4,930 per head by the 3.1 million New Zealand-born population.

The study uses population income and expenditure profiles to disaggregate government revenue and expenditure data. Income is based on census incomes. Taxation is not based on tax actually paid but on statutory tax rates. Expenditures taxes are based on average weekly expenditure by income deciles, not on the actual expenditures by immigrant and non-immigrant groups.

It is reported "the demographic profile of migrants is the main cause of the net impact being larger for immigrants than for the New Zealand-born population. Migrants tend to be relatively young, are often single, and, given the policy requirements, are usually employed in relatively well-paid jobs."

There are a number of issues with the results.

First, the study takes a snapshot of tax and revenue flows at a point in time. A major reason for the lower expenditure on immigrants is that fewer are receiving superannuation and are not in the high per capita health cost years. Taking an accruals approach to the life-cycle liability that the government is incurring would markedly change the results.

The review notes this criticism but argues that the immigrant contribution is still likely to be positive because of the savings on education costs. There might be an argument here if migrant human capital made a significant contribution to New Zealand incomes at the margin (and so increased the tax take) but it is not clear if this is the case. New Zealand has made huge investment in university education, in particular, which has driven down the private returns, and social returns at the margin would be even lower. The marginal return to immigrants' human capital might be very low.

Second, there is a methodological issue that significantly biases the results. If an immigrant family has children in New Zealand, then education and health expenditure is assigned to

the New Zealand, not to the immigrant, population. Logically those expenditures are a consequence of the immigration arrival and should be assigned to immigrant expenditure. This allocation rule also impacts the measure of tax per capita because immigrant families will be recorded as having fewer non-earning dependents.

Third, the income tax receipts are based on the application of statutory tax rates to census incomes not actual tax receipts. There are many reasons why the two could differ. Immigrants are more likely, for example, to receive off shore income that doesn't incur New Zealand tax.

Similarly, indirect tax receipts may differ because of different expenditure patterns. Migrants may be more likely to remit earnings overseas and to spend on overseas travel. There may be less expenditure on highly taxed items like cigarettes and alcohol.

Our view is that the fiscal contribution papers were not robust and do not demonstrate that there is a favorable fiscal impact.

Labour market impacts

The key paper here is by Mare and Stillman (2007), which uses census information (1996 to 2006) to investigate the impact of immigration flows on the employment and wages of native New Zealanders and new and older migrants groups. The methodology is based on the idea that migrants are spatially concentrated so we can draw conclusions from labour market outcomes by comparing geographical areas with different percentages of migrant residents.

This is a lengthy and complex paper, which presents a range of different models and scenarios. It cannot be readily summarised, but the basic result was that migrant inflows do not impact negatively on either the employment or wages of native New Zealanders. Generally there are positive impacts but these are typically very small. Additional immigration does, however, have a substantial negative impact on the wages and employment prospects of migrants who have been in New Zealand for less than five years.

There are a number of potential issues with the modelling, which suggest that the conclusion that immigration will have no impact on 'natives' may not be very robust:

- Relevant wage rate data was not directly available and had to be estimated from census income data. There is a risk that it is tainted by non-labour income, in a way that would have biased the results favorably.
- The modeling is highly aggregated and the average results may not apply to particular industries where there has been a high inflow of immigrant workers. There can be little doubt, for example, that immigration will have had a negative effect on native wages in the dairy industry.

- Despite claims to the contrary, the results may still be biased by an endogeneity problem. The causation may, at least in part, run from good labour market outcomes to immigration, rather than the other way round.
- The geographical area based approach has been subject to criticism because it tends to miss labour market impacts outside the specified area and understates the total impact. The authors claim that their results are robust to different levels of aggregation (from 170 geographical areas to 16), but we don't think that this deals with the above criticism. The reason is that the model inputs are population weighted, so when the level of aggregation is changed the large urban areas don't change but the smaller areas are aggregated. The effect is that the model inputs are not materially changed. The criticism that impacts outside the 16 geographical areas are not taken into account stands.
- Longer-term negative impacts of migration may be masked by temporary demand shocks, which are favorable to natives, when immigrants arrive.
- The wage rate assessment is of nominal not real wages. If immigration drives up the price of housing accommodation then real wages for natives could fall.
- The modelling relies on some old data and an update could test the robustness of the conclusions.

Business migration

There is no assessment of the papers that reviewed business migration in the review paper. Our reading of the evidence is that the business migration schemes failed.

Conclusion

Our reading of the research papers is that they do not provide any convincing evidence that immigration has been beneficial to native New Zealanders. In particular the flagship general equilibrium model has nothing useful to say about the impact of immigration and produces outputs that often don't make much sense. The assessment that New Zealand is better off because per capita GDP has gone up a little, does not survive scrutiny.

The one convincing result was that continued immigration significantly harms both the employment prospects and incomes of immigrants who have been in New Zealand for less than five years. Most of these immigrants are, or will become, New Zealanders. Their interests would be served by sharply reducing net immigration.

Another point to bear in mind is that the research agenda was driven by a positive view of the benefits of immigration, so analysis that was likely to point to negative outcomes was less likely to have been considered. So what we are seeing leans towards a positive sample

of the possible evidence. As an example, one of the tests of the relationship between immigration and innovation in the international literature is the impact on the number of patent applications. New Zealand patent application numbers have flat-lined for some time, so a study of the relationship would have found that there was no positive impact.

Some kind of bias is inevitable with research agendas. People who do research will bring a certain perspective to the task and this will affect what is done and how it is interpreted. What can be lacking, in a small country like New Zealand, is research done from alternative perspectives that could provide a more balanced understanding of the issues, and what the data is telling us.