tailrisk economics
te maha hoki o nga pihikete

Alternative Facts

An assessment of the New Zealand Initiative's immigration economics

February 2017

About Tailrisk economics

Tailrisk economics is a Wellington economics consultancy. It specialises in the economics of low probability, high impact events including financial crises and natural disasters. Tailrisk economics also provides consulting services on:

- The economics of financial regulation
- Advanced capital adequacy modelling
- Stress testing for large and small financial institutions
- Regulatory compliance for financial institutions
- General economics.

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

Introduction

Recently the New Zealand Initiative has released a report '*The New Zealanders'* on the immigration issue. The stated purpose is '*To give the most up-to-date information to the public. To stack up these social, economic and nationhood fears against the available data and research*. It is claimed that the evidence on the economics is positive and fairly conclusive.

By and large, economists favour immigration as migrants benefit the countries they move to through knowledge spill-overs and global connectedness. Growing the population through immigration also produces 'economies of agglomeration' (i.e. the abilities of larger, denser populations to support more commerce and knowledge exchange).

All this is presented as a solid, objective assessment "*While we could deduce the* ***objective*** *economic effects ….'*

We disagree. The economic 'facts' had a distinct 'alternative' whiff to them. The arguments were at best thin, and the paper did not seriously engage with some of the key issues. It is easy to cherry-pick the (mostly) foreign literature to find an article that supports an assertion. It is much harder to convey a fair overall sense of the state of the economics of immigration, and critically, its relevance to New Zealand. The report does not do this, and the reader is left with the impression that nearly all economists support high levels of immigration, and that there is compelling support for this in the literature.

This paper presents an alternative view. But first let us define the scope of the debate. First, It is not about stopping all immigration or reversing what has happened. Most people are relaxed about genuinely high skilled immigration. And we can continue to enjoy the 'soft benefits' of diversity from the existing stock of migrants. The debate is about whether we continue the policy of large-scale medium/low skilled immigration. Second, it is not about whether immigration will generate a bigger economy. It will. The issue is whether it will make current New Zealanders better off. The '*New Zealanders'* is somewhat ambivalent on this point, but it is the broadly accepted test.

Our alterative economic narrative addresses the major shortcoming in the paper. It did not seriously engage with the critical structural features of the New Zealand economy. That is, New Zealand economy is, more than any other advanced economy, land based and isolated. Other things being equal we would expect a large influx of immigrant labour to drive down average incomes as a larger labour force has to seek out more labour intensive low income jobs. Thus the foreign literature, even if robust, may not be a good guide to New Zealand outcomes.

The facts on the ground seem to support this view. If there was something in the theory that large-scale immigration was generating large-scale positive externalities, then we would be expecting to see a positive shock to per capita income, and that this effect would be more pronounced in Auckland, which has been immigration central. However:

- Labour productivity has stalled

- Auckland incomes have declined relative to the rest of the country
- Exports per capita have fallen.

What we have done is work our way through the main economic arguments to assess how many of them stand up to fact and sense tests. We start first with the headline arguments in the summary of the report and then proceed to most of the other cited literature. We had a bit of a head start because we had previously written a response to Mai Chen's '*Superdiversity Stocktake*'.[1]

Our key conclusions

The '*The New Zealanders'* economic arguments for large scale immigration divide into the positive, and the absence of negative, effects. On the positive side there is a large positive fiscal spinoff; GPD per capita increases; there is a positive impact on innovation; and labour markets work more efficiently. The latter two impacts should be drivers of GDP performance, so the positive effects essentially reduce to the fiscal position and per capita GDP growth.

Second, it is not doing any harm. It is claimed that immigration has not had a material impact on Auckland house prices and that there is no evidence of adverse labour market (employment and income) impacts even for the most vulnerable workers.

The positives

Per capita GPD

It is claimed that there is a positive effect on GDP in three cited empirical studies. One actually showed a negative effect, and the other two studies were not convincing. The positive results are probably just artifacts of the researchers' methodologies.

The bottom line here is the actual performance of the New Zealand economy. There is no sign of enhanced performance, particularly in Auckland, and '*The New Zealanders' had* no explanation of this lacuna.

Innovation

None of the studies cited provided convincing evidence that mass immigration was having a material impact on innovation in New Zealand.

Labour market flexibility

There is no explanation of why, generally, the price system cannot be left to sort out labour market imbalances and why large-scale immigration is required to deal with 'shortages'.

[1] www.tailrisk.co.nz/documents/The**SuperdiversityMyth**.pdf

[2] Fry J. 'Migration and Macroeconomic Performance in New Zealand: Theory and Evidence' 2014

Positive fiscal Impact

Immigrants are reported as making a net positive fiscal contribution of $2.9 billion in 2013. However, there are a number of significant biases in the methodology, and it is not clear whether the immigrant contribution was positive. More importantly, the study does not pose the right question from an immigration policy perspective. The key issue is not whether the current stock of migrants is making a positive or negative contribution. It is whether the present value of the net contributions/costs of new lower skilled migrants is positive or negative. Given our progressive tax system, and range of welfare state benefits, the present value cost of a lower income migrant can be in the hundreds of thousands of dollars.

Lack of negatives

Impact on Auckland house prices

The study '*The New Zealanders'* relied on to argue that immigration did not have a material impact was based on a flawed interpretation of historical academic literature, and failed to engage with what has been going on in the Auckland market at all.

Positive impacts on earnings and employment for low-income workers

This conclusion was based on a single MBIE sponsored Motu study. It is notoriously difficult to disentangle the effects of immigration from everything else that is going on in the economy, but for our money the MBIE study uses a methodology that will tend to bias the results to the positive. Basic economic reasoning suggests that there will be adverse impacts on lower income workers, even if this has yet to be broadly demonstrated in a formal study.

Conclusion

Our view is that the overall impact of the of large scale immigration programme is more likely to be negative than positive. At the margin the impact is almost certainly negative.

Do economists really 'love' immigration and does it matter what they think anyway?

First we deal with the argument that economists are pretty much all in favour of large-scale immigration. On the international scene many are, but most have not considered the issue in depth, and the literature has been mostly concerned with narrower issues such as whether immigration affects the incomes and employment prospects of low paid workers in the host country.

There is actually quite a small literature on the overall impact of migration (captured by per capita GDP). There are some papers that make very strong claims about positive impacts, but we have

found this literature to be mostly unconvincing, and sometimes bizarre. There are fewer skeptical papers probably for the obvious reason that if there is nothing in the data, then there is nothing in the data, and there is little point in pursuing the matter. The 'true believers', on the hand will persist until the data confesses. Most economists would not be close enough to the literature to form a view on the robustness of most of the papers. There is a tendency just to cite papers without having a close and skeptical look at them, so the side with the most published papers looks to be the winners.

In New Zealand the research agenda has been largely funded by MBIE and they tend to get the perspective (and mostly the outcomes) they have paid for.

The *New Zealanders* offers two sets of evidence for widespread economist support.

An open letter

An open letter emphasising the benefits of immigration to the US president and Congress in 2006 had no difficulty amassing more than 500 signatures, the majority from practising economists. It is telling that economists are so supportive of immigration when many of the popular arguments against immigration are economic.

This was a short letter. It was as much a statement about the American way – accepting the world's poor - as a statement about the economics. The economic argument was that there was a net economic benefit, although admittedly 'modest' (the US National Academy's estimate is 0.3 percent of GDP), and that concerns about the impact on low-income workers could be addressed in other ways.

500 academics (not all economists) signed it. About 14,500 American economists did not.

In any event, does it really matter what economics think? 90 percent of the issue is about the politics, and economists' opinions here are no better than anybody else's. As Borjas put it in his recent *"We Wanted Workers"* views on the matter mostly depend on "who you are rooting for".

The Expert Panel

The IGM Economics Experts Panel regularly surveys economists on policy questions. Almost all experts agree that high-skilled immigration benefits existing residents, and the majority agree unskilled immigration would benefit existing residents.

And

However, there was less optimism about the effect on low-skilled residents, with a slim majority agreeing they would be worse off with more low-skilled immigration.

The IGM Economics Expert panel is a panel of 40 public policy economists. They are not necessarily expert in the economics of immigration. On the first two questions the answers follow naturally from a basic labour market model. If there is an influx of high skilled immigrants, the return to high skills falls, to the benefit of the majority of the population. Similarly, if there is an influx of low skilled workers the majority (who are not low skilled) benefit, to the detriment of that minority of the population. On the effect of a low skilled influx, the description of the poll was a tad disingenuous.

46 percent agreed that low-income workers would be adversely affected, 30 percent were uncertain and 9 percent agreed. A slim majority?

The main economic arguments

House prices

Migrants certainly have an effect on the housing market, but one that is complex. Economists Bill Cochrane and Jacques Poot note that high levels of migration and high house prices occur when the economy is doing well, but one does not necessarily cause the other. That is because visitors on a temporary visa, such as students, do not tend to buy accommodation but rent it. In this they compete with Kiwis in the rental market, but the effects are modest. Rents in Auckland rose 0.2% in September 2016 compared to the same month a year ago. Cochrane and Poot suggest instead it is returning/remaining Kiwis, confident in their economic prospects, pushing up house prices.

Response

We are talking about house prices here not rent increases, but for the record Auckland rents increased by 3.5 percent in the year to October 2016, and 7.5 percent in the preceding year. Immigration would have had something to do with that.

It is a little difficult to make sense of the above summary, which conflates two ideas, so we have gone back to the Cochrane/Poot paper. This was MBIE commissioned response to public concerns that immigrant/ foreign buyers (particularly Chinese) were pushing up Auckland house prices. In particular it was a response to a real estate firm's estimate that 40 percent of buyers were Chinese.

The focus was on, as the title '*Past Research on the Impact of International Migration on House Prices: Implications for Auckland*' indicates, past research conclusions from an empirical literature which draws on data that is up to 30 years old. The paper does engage at all with what was actually going on in the Auckland market. They admit in their summary. '*Unfortunately, as we know little about foreign investors in New Zealand property markets at present, we are unable to access the role (if any) of such investors in driving property prices in Auckland, in particular, or New Zealand in general'.*

Nevertheless they draws some strong conclusions on what has been driving Auckland house prices based purely on their assessment of the some historical evidence.

Cochrane/Poot proceeded by setting up a number of propositions and then answering them.

1. The decrease of New Zealanders leaving in recent years, due to relatively strong economic growth and a subdued Australian economy, has had a bigger impact on rising house prices in Auckland than the growing number of migrants settling in Auckland.

Supported

This hypothesis appears supported by the New Zealand data and the literature review. The data show that much of the change in net international migration has been due to the changing migration of

New Zealanders. Moreover, the growth in inward migration has been particularly in temporary visa-controlled immigration (e.g. international students, temporary workers – including working holiday makers), as could be seen in Figure 9. The latter types of international migration flows are likely to have had a quantitatively smaller impact on house prices and to have contributed little to house price increases observed recently. The lesser demand on the housing market of temporary migrants has been shown with respect to students by BERL (2008). Generally, research on the differential impact on housing markets between those arriving and staying on temporary visas, compared with those arriving on, or subsequently obtaining, permanent visas still needs to be undertaken.

This is a strong conclusion based on scanty evidence and flawed logic. The impact on prices does not depend just on the changes in current immigration flows. It also depends on the number of potential purchasers and their capacity and inclination to purchase. It matters whether the immigrant is a penniless refugee or a cashed up Chinese speculator looking for a safe haven for his capital. Emperical studies may provided limited insights into what is going on in Auckland now, because the phenomena of interest, 'Chinese investment buying ' is not in the New Zealand historical data. Nor is 'Chinese buying' in most of the overseas studies that were cited.

The authors had no way of knowing that migrant/ speculator demand was less important than changes in the flows from Australia. On the face of it it seems unlikely. New Zealanders who otherwise would have gone to Australia probably didn't already own an Auckland house, and would not have had the capacity to buy one if they did stay.

2. *The contribution of the inflow of Australians and of returning New Zealanders to population growth in Auckland has had a bigger impact on house price increases than other permanent and long-term (PLT) arrivals.*

Inconclusive

Comment
This is not really a different proposition than 1, so it is not clear why they come to a different conclusion.

3. *Current and recent (5 years previous) net international migration trends (considering both PLT arrivals and departures) have had a minor impact on the Auckland housing market, relative to other factors.*

Supported

This hypothesis appears supported by the New Zealand data and the literature review. Fry (2014) reviews the case for large positive (pg. 21-37) and large negative impacts (pg. 8- 20) from international migration finding that, on consideration of the existing evidence, "The macroeconomic effects of immigration in New Zealand are uncertain. There are plausible arguments but as yet no evidence for large positive or negative impacts of immigration" (p.41).

Comment
There is no serious analysis to support this conclusion.
The Fry statement is about the overall impacts of immigration. She had the following to say about

the impact on house prices[2].

On balance, the available evidence suggests that migration, in conjunction with sluggish supply of new housing and associated land use restrictions, may have had a significant effect on house prices in New Zealand

The Cochrane/Poot discussion proceeds

The econometric evidence is almost exclusively based on analysis with PLT migration statistics, not on data regarding visa approvals. Evidence with PLT migration data such as that provided by Coleman and Landon-Lane (2007) of large housing market effects for international migration would seem to overestimate the effect size and, as the authors note, be upwardly biased. This is supported by the work of Stillman and Mare (2008) which finds that there is little evidence of higher house price inflation in areas where new migrants settle.

This is the nub of the New Zealand empirical evidence assessment. Two RBNZ studies that show a strong relationship between house prices and migration flows are ignored because it is claimed (but not demonstrated) that the endogeneity issue could have overstated the effect of immigration. Reliance is placed on the Stillman and Mare study that showed that immigration did not affect relative house prices in different geographical areas. However, this does not necessarily mean that immigration does not push up prices overall.

If immigrant buying is geographically concentrated then this could initially push up prices in those areas. However, natives will react by buying elsewhere, potentially equilibrating prices. There will be no observed relationship between the proportion of immigrant by geographical area and relative house prices but immigration will still have pushed up overall prices.

Stillman and Mare did, however, find a strong positive relationship between returning New Zealanders and house prices.

They put this down to their higher incomes but there was probably also a wealth effect. Given the exchange rate and relative foreign/NZ house prices returning New Zealanders would have been well placed to buy in NZs best suburbs.

However, this may not be the case now. We need to bear in mind that the study was for the period 1986 to 2006, so relevant characteristics might have changed. In particular, with the strong New Zealand dollar and high Auckland house prices returning New Zealanders are probably not as well placed to buy well.

Cochrane and Poot also state

However, to permit a quantitative assessment of the extent to which the overall effect may be considered "minor" requires modelling of the Auckland housing market. This modelling should also take into account investor demand, for example due to the increase in rents associated with growing student migration, and many other influences.

It is difficult to see how they could to reach their conclusions without doing this analysis.

[2] Fry J. 'Migration and Macroeconomic Performance in New Zealand: Theory and Evidence' 2014 Treasury

On the international literature they say:

All the international research reviewed is suggestive of rather quantitatively small positive (or even negative) impacts on house prices and therefore consistent with the hypothesis.

The international research cited is not necesarily relevant to Auckland with its particular market charactersitics, but in any event some of it shows material impacts. The negative impact they cite relates to 'white flight' from UK localities that became more 'low income' immigrant intensive. The flight will have driven up prices elsewhere, so it is misleading to imply that immmigration will have driven prices down overall.

Possibly the most relevant foreign literature is the Vancouver experience. There is research that shows that Chinese buyers had an impact on property prices and that prices fell when the immigration catergory buyers were using was stopped. A recent tax on foreign purchasers has had a significant impact on the market. One Vancouver paper was cited but it was dated.

4. Investor migrants are not having a disproportionate impact on the Auckland housing market as they are purchasing largely commercial property or a single individual residence.

Supported

Comment

This conclusion is based on a MBIE review of just the investor migrant immigration category (35 in the investor plus, and 228 in the investor category). The methodology is unclear. It is stated, *Financial data and investment information was collected from New Zealand banks (largely private banking and migrant banking) that cover a significant amount of the New Zealand migrant investment banking market'*, but it is not explained how this generated the investment data.

From the small numbers involved it is likely that this was some kind of voluntary survey, and it may well present a biased picture of across the board immigrant/ investor behavior. If you had been busily buying up numerous residential properties, you would hardly want to come to the attention of the authorities, given the sensitivity of the issue. So while the information here may be literally true it is not very informative.

5. *Until comprehensive data become available on country of residence of buyers and sellers at the time of a sale, it cannot be established conclusively that offshore investors drive up house prices in particular areas in central Auckland.*

Supported

Comment

Less formal methods can provide relevant information, while 'comprehensive' data can easily be defeated by devices to mask the residence of the beneficial owner. The real message here, of course, is don't listen to Phil Twyford.

6. *Given the above and the time lags between immigration policy changes and impacts, it is unlikely to be useful to make changes to immigration policy to dampen Auckland house prices.*

Supported

Comment
An unsubstantiated assertion. Housing markets are, to a degree forward looking, and an announcement that foreign investment were to be dealt with by purchase restrictions, or a tax, and that immigration was to be wound back is likely to have an immediate impact on prices.

Conclusion
We have laboured a little on this issue because the New Zealand Initiative has made so much of the Cochrane Poot analysis. The truth is we don't know what have been the big drivers of the Auckland house price increases and what relative impacts they have had, but we do know that immigration/foreign investor buying cannot be ruled out.

Wages and employment

Research into the effects of temporary migration in the decade to 2011 found a positive effect on the earnings and employment of New Zealanders. This may be because migrants fill jobs that native born are reluctant to do, and because migrants provide a boost to the sectors in which they work.

The temporary migration study is interesting, because it is a targeted study that attempts to address the question of whether immigration is impacting on workers who are most vulnerable to immigration competition. The working holiday visa programme, for example, might have an impact on young workers if they are direct substitutes in the labour market (i.e. working at entry level in supermarkets and bars). There were some negative effects but the overall finding that employment and wage elasticities were positive (though very small). It is conjectured that this is because apparently similar workers are in fact complements. This didn't ring very true to us and we suspect that the favorable results had something to do with the methodology.

The basic methodology is to see if there is a relationship between the share of immigrant employment by regions and industries (and a combination of both) on earnings and employment outcomes for selected groups. In the preferred version of the model, employment is differentiated by region and industry – for a total of 252 cells. The problem with this approach is that it imparts a positive bias because of spillover effects between regions (and we assume between industries too), similar to those we discussed in the housing markets section. This effect has been demonstrated in the US literature on the effect of spatial models. Other possible issues relate to the impact of a common minimum wage rate, lags which are difficult to model, and the use of earnings rather than actual wage rates as the indicator of a price effect. We note too, that immigrants' incomes were not sensitive to immigrant numbers. We would expect the demand curve to be downward sloping if the model was really picking up the underlying relationships.

We also found it easy to construct plausible scenarios that would likely lead to negative outcomes but would probably show up as a favorable data points in the study.

The results are what they are, and may be convincing to some, but we suspect that a researcher with an 'immigration-skeptical ' agenda could come up with an alternative methodology that would present less favorable results.

Impact on per capita GDP

Despite concerns that immigration is dragging down GDP per capita even as headline GDP grows, the evidence suggests that there is little reason to be concerned. Research from New Zealand and overseas finds that immigration improves productivity and GDP per capita growth.

Three studies were cited on the impact of immigration on per capita GDP, and the recent empirical outcomes are noted.

1. New Zealand General equilibrium model

This study was not cited, but it was the centre piece in the Department of Labour's research programme that purported to show the benefits of immigration. We reviewed it in 'The Superdiversity Myth' and it is worth presenting the analysis here as an illustration of just how thin some of the officially sponsored research has been. 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'. [3]

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.

[3] Department of Labour 2009 'Economic impacts of immigration:Scenarios using a computable general equilibrium model of the New Zealand economy' ECONOMIC IMPACTS OF IMMIGRATION WORKING PAPER SERIES

There are no problems relating to the limits on the production of primary based outputs because non-traditional 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.

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.

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 below.

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 very influential in driving the official line that more immigration is good. However, we can safety 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	436
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

2. NZIER study

An NZIER report[4] found net immigration has a positive effect on New Zealand GDP per capita, even after isolating the reverse causality that pulls migrants towards growing regions. Increasing net migration could increase GDP per capita, up to an additional $410 per person per year.

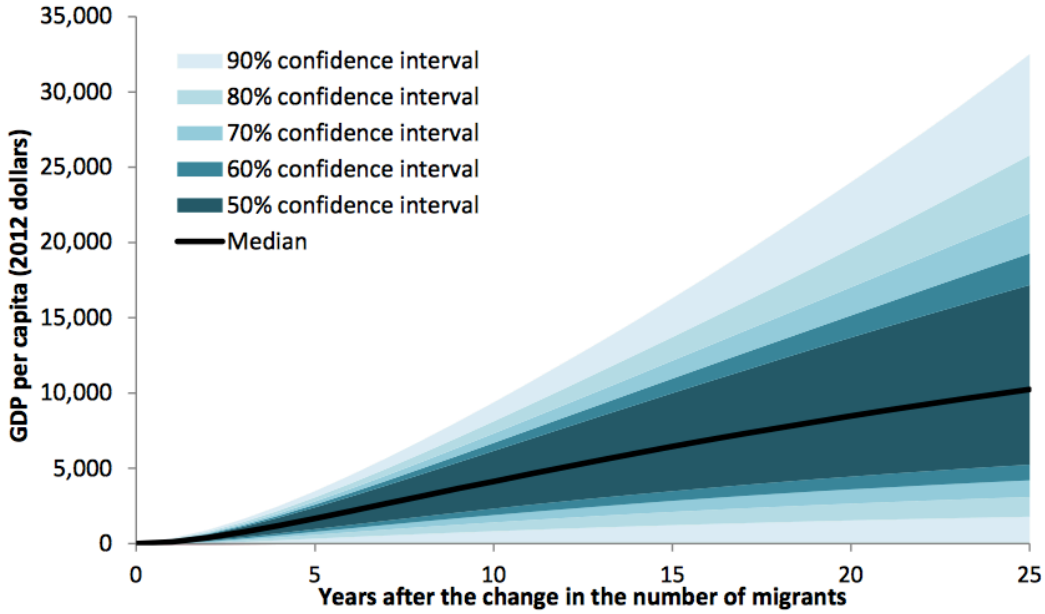
This is an extremely simple model that posits a link between the net immigration rate and lagged per capita GDP. It is claimed that if immigration is increased by 40,000 a year then in 25 years per capita GDP will have increased by 25 percent. Unlike other studies that posit a relationship between the stock of immigrants and GDP, GDP is driven by the net immigration flow, which will be affected by inflows and outflows of New Zealanders. The New Zealander impact would have been the dominating influence in the earlier years of the study, which dates back to the early 1970s

The detail of the model is not reported, but from their figure below it appears that the GDP/net migration flow coefficient was barely (if at all) statistically significant at the 90% confidence level. The size of the positive GDP relationship does not appear to be intuitively plausible. For example,

. [4] New Zealand Institute of Economic Research (NZIER), "Migrants increase our incomes," *NZIER Insight 44 (2014).*

does it make sense that outflows to Australia, in response to poor New Zealand economic conditions, decreases per capita GDP.

Figure 2 Increasing migration lifts average income for each New Zealander



There are any number of reasons why the model, given its simpliciy, could picked up a spurious relationship, and we don't think that it provides credible support for the positive immigrant/ per capita GDP link.

3. IMF study

The '*New Zealamders'* is particularly fond of this one.

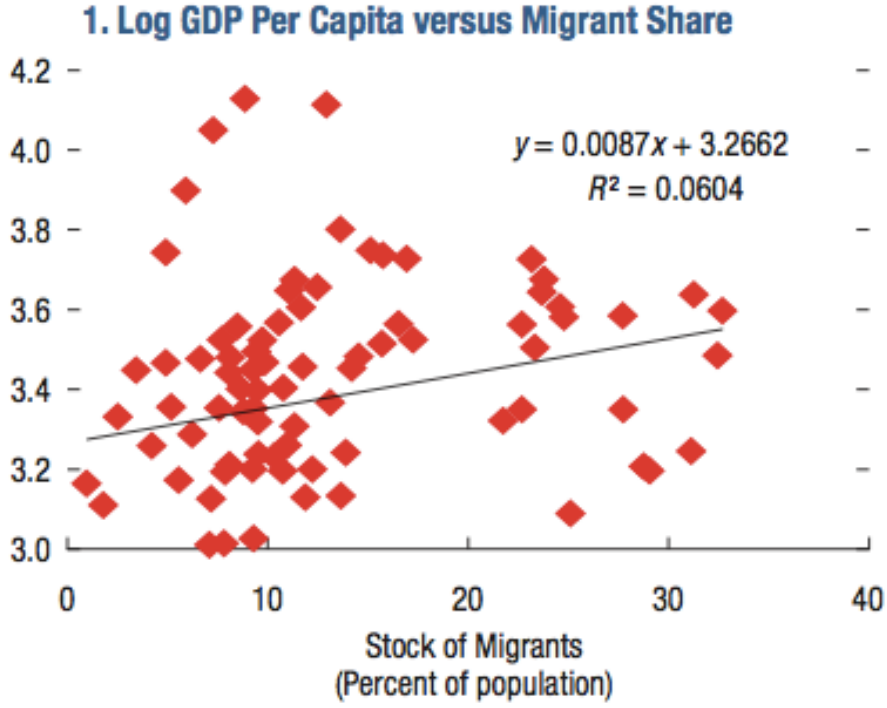
Migrants of all stripes, not just high-tech entrepreneurs, add value to the economy. Low-skilled migrants in service jobs can provide value much greater than their contribution to GDP suggests. Hiring migrant workers in the service industry, especially home production (childcare, cleaning, gardening), can free up time for workers in other sectors of the economy. This way, they can be an important complement to highly skilled workers. A 2016 IMF[5] paper provides strong evidence that low-skilled immigration can boost labour productivity. In particular, increasing the share of low-skilled migrants in the population increases labour force participation of women in the economy, likely because of the greater availability of household and childcare services.

4. Florence Jaumotte, Ksenia Koloskova, and Sweta C. Saxena, "Impact of Migration on Income Levels in Advanced Economies" (International Monetary Fund, 2016).

This IMF study is something of a curiosity. They find a statistically robust relationship between unskilled migrants and per capita GDP (a 2 percent increase for everybody when the migrants share in the population increases by 1 percentage point). However, there is no statistically robust relationship with medium and high skilled immigration and GDP (they skate over this by saying that the estimated coefficient is about the same as the unskilled coefficient).

They put the unskilled result down to an increase in the number of highly skilled women in the workforce that is enabled by an increased supply of cheap, complementary, domestic labour. But this does not work. One of their model results is that the proportion of high skilled workers does not increase GDP. So while the individual woman might benefit from a return to the labour force, this does not increase productivity in the economy overall.

Figure 4. Simple Correlations



To

So how do they do they find the strong positive relationship? The starting point is the statistical base presented above. There is no real relationship between per capita GDP and migrants share in the population, and the very weak correlation is probably explained by the causal link running from economic conditions to immigration. They could have left the matter there and published an article to the effect that migration does not increase GDP per capita. But instead they go on.

to reduce the risk of reverse causality and other biases, we use a gravity model to construct instruments for migration. An ordinary least squares estimator of equation (2) will suffer from several possible biases:

(1) endogeneity stemming from migrants preferring richer countries;

(2) omitted variable bias, related to unobserved determinants of the migration share correlated with income per capita;
(3) measurement error, related to unobserved determinants of the migration share, which are not correlated with income per capita.

While the endogeneity bias goes in the direction of finding a larger coefficient in the ordinary least squares regression, the other two biases could potentially go in the opposite direction. One possible example of a bias that goes in the opposite direction is if countries tend to have stricter immigration rules or are better able to control their borders when their incomes per capita are higher, which would associate higher income per capita to lower immigration shares.

This is a pretty thin argument - we are dealing with OECD countries here.

Another example, mentioned in Ortega and Peri (2014), is labor demand shocks, which are not observed to the econometrician, but can affect the migration share and also be directly correlated with GDP per capita.

But what these (unskilled) labour demand shocks?

*To reduce these biases, (*whatever they are*) we use a gravity model to predict the (bilateral) migration shares, which would result from push factors specific to origin countries, such as economic, political, and social factors, and from bilateral migration costs determined by geography and culture, as well as from their interactions*

So the strong GDP/unskilled immigrant relationship is entirely an artifact of their choice of instruments. We struggle to understand what could explains this, and they do not offer a plausible explanation.

Even if they could come up with some qualitative explanations, the magnitude of the coefficient is implausible.

Applying the result to New Zealand, say we have an increase in unskilled immigrants of one percentage point of the population, or 45000 people. Assume that 30000 are employed (food hall workers or taxi drivers etc. at $30000 p.a., with an aggregate income of $900 million. According to their model GDP per capita increases by 2 percent, so total GDP must have increased by 3 percent. $ 260 billion x .03 = $7.80 billion. How does that happen? What is it about a ride in a taxi driven by an immigrant, or a meal consumed in a food hall served by an immigrant, that has such a big impact on every else's productivity?

If the coefficient is implausible, at least it is not as implausible as a study mentioned in the IMF paper.

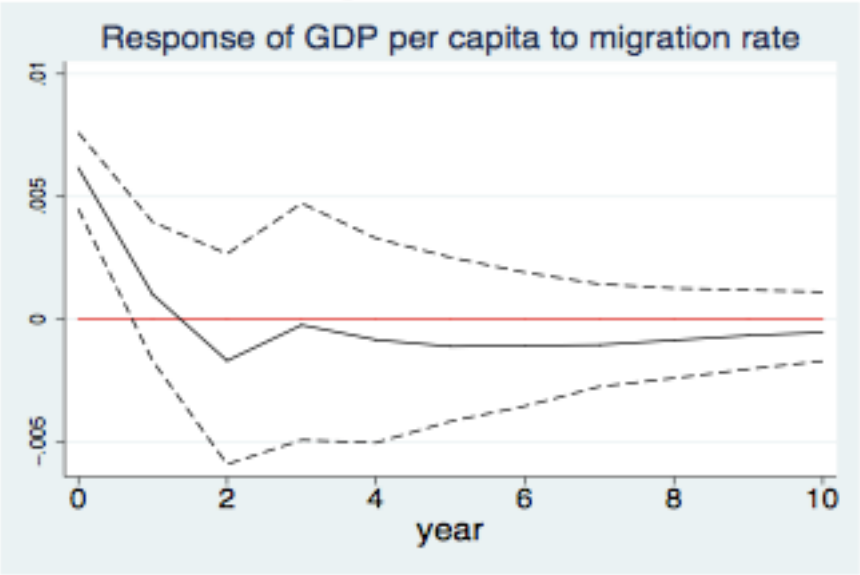
While large in economic terms, our estimate is considerably lower than those found in the previous literature. For example, Ortega and Peri (2014), in a cross-sectional setting, find that a country with a migration share 10 percentage points higher than in another country would have twice as high a long-run level of income.

We have not read the study (it would have cost US$40), but the abstract was interesting. They found that openness did not increase GDP (overturning a well established relationship in the literature) and that immigration was the only significant GDP driver. Tell that to Japan, Korea, Taiwan etc, etc.

4. OECD Country study

A study of 22 OECD[6] countries from 1987 to 2009 found migrants are not just attracted to countries with higher prosperity, they also help bring it about.

This another study where the results are a function of the instrumenting methodology, with all of the uncertainty that this involves[7]. In any event the results do not seem to show a positive relationship . Here is the impulse function. GDP has an initial positive impact but thereafter per capita GDP goes negative.



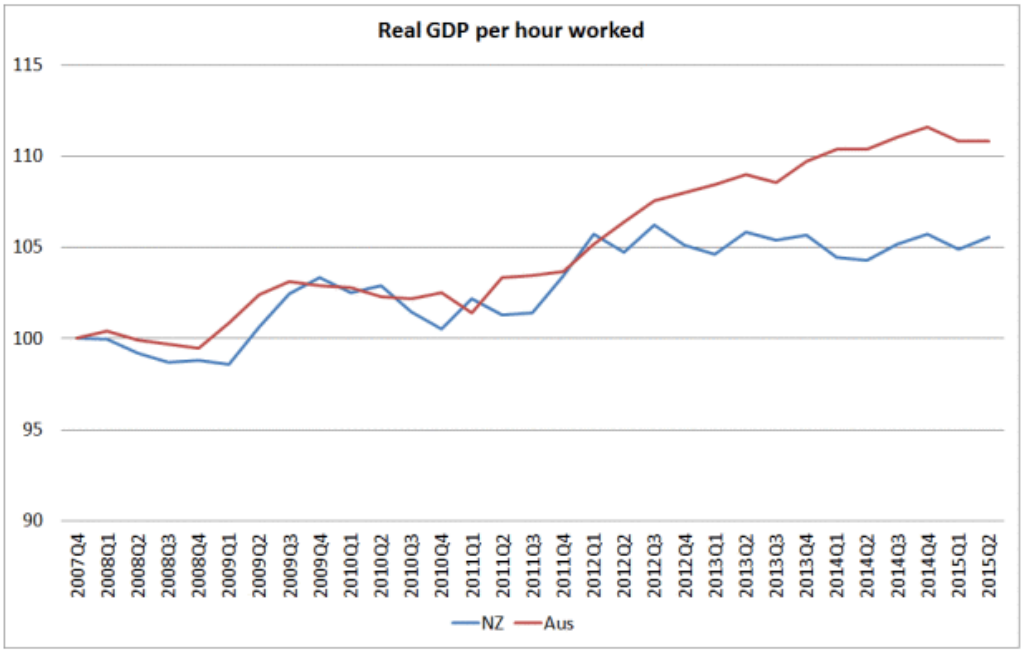
5. The facts on the ground

There is no real response to the Reddell argument that if immigration has so many positive spinoffs then why isn't it being reflected in the numbers. Per capita GDP and productivity growth has been weak, and Auckland has been in relative decline. You can line up as many feel good arguments and journal references as you like, but the ultimate test is, does it deliver in New Zealand.

---

6 Ekrame Boubtane, Dramane Coulibaly, and Christophe Rault, "Immigration, Growth and Unemployment: Panel VAR Evidence from OECD Countries" (Institute for the Study of Labor, 2012).

6. There is an amusing discussion on the uses and abuses of econometrics in economic policy debates in Albert Pistayck's ' Beware economists bearing robust instruments: How to win in the policy wars' (forthcoming)



The poor productivity performance is regretfully conceded, but not explained. There is an attempted defence of the Auckland performance with an argument that Auckland's productivity is higher (but not by much) than the country average, but that is not at issue. What needs to be explained is why its relative performance has deteriorated.

Fiscal impact

Migrants contributed a net +$2.9 billion to the government's books in 2013. On a per capita level, this was equivalent to +$2,653 per migrant. Native born New Zealanders contributed a net +$540 million to the government's books, or +$172 per person. This reflected the age structure of the native born population, with 47% in the economically active band in 2013, versus 60% for migrants.

The positive fiscal effect is one of the 'New Zealanders' jewels in the crown, but the analysis underpinning the analysis is questionable.

First, there is the treatment of immigrants' New Zealand born children. 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.

Second, 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.

Third, the methodology takes a static view of expenditure and taxes. Expenditures on immigrants are relatively low because a smaller proportion are not yet receiving national super and are not in the high health cost years. But they will get there. One way to look at the issue is to compare the present value of expenditure and taxes, which would tend to smooth out some of the difference between natives and immigrants. For some immigrants this will not make a big difference, given the time to retirement, but some times it will. For example, an immigrant who brings in two 55 year old parents (who would have been eligible for the pension in 10 years, will have been imposing a present value cost of perhaps $500,000.

A further issue is the treatment of company taxes (one third as big as personal income tax), which is not considered within the model because it is difficult to allocate to immigrants and natives. That is true, and an allocation mechanism raises conceptual and technical issues, but if one were of a mind to show the 'native fiscal position' in a better light then a credible allocation mechanism would likely disproportionately allocate company tax to natives.

A larger issue is the policy relevance of the study. It is designed to capture the fiscal impact of all overseas born in a particular year, but that is not what is relevant for making a decision about the size of the immigration inflow. We could instead frame the question as follows. 'We are 'importing' a lot of low/medium skilled workers. What would be the fiscal implications if we cut back on this flow?' It is likely that the answer would be: strongly positive.

Immigrants get married and have kids, but low-income workers with a family do not pay income tax. Instead they receive a tax credit. They will also get an accommodation supplement, send the kids to school, use the health system, occasionally receive the unemployment or sickness benefit, and eventually qualify for national super. They will pay some tax, GST all the way through, and income tax, as the kids get older. We could work out the present value of the relevant cash flows for different classes of relatively unskilled immigrants and then aggregate to calculate the fiscal impact of reducing the inflow by, say 20,000. Our back of the envelope calculations suggest some immigrants could have a fiscal cost in the hundreds of thousands[8], and that the aggregate cost could well exceed the purported $2.9 billion per year benefit. Of course a detailed study would be required to seriously address the question. But that is not likely to happen while MBIE controls the purse strings.

[8] This obviously puts a different gloss on the 'New Zealanders' celebration of low skilled immigration. A professional woman might get home help a dollar or two an hour cheaper, but the rest of us would pay the price.

Innovation

Technological innovation is the strongest driver of economic growth. To produce more with less input requires innovation and ideas, which are more likely to occur where people are more connected and have more exposure to new information. This is where migrants have huge potential.

This upbeat promise is not a description of the New Zealand reality. Most of the evidence relates to the United States:

- A report by the National Foundation for American Policy showed that 51% of US start-ups valued over $1 billion had at least one immigrant founder.
- Six migrants in America received the Nobel Prize in 2016.
- In Silicon Valley, 37.4% of the population are foreign-born.
- The impact of immigration on innovation has been generally impressive. One study found that a 1 percentage point increase in the share of immigrant college graduates increases patents per capita by 15%, mainly due to the large spill-over benefits to native-born workers.
- A review of the academic literature on immigration in the United States concludes: "Immigration has been essential for the United States' leadership in innovation and entrepreneurship".

The problem is that New Zealand is not the United States, and the Hutt Valley is not Silicon Valley. It is a valley, it has sand, and it has immigrants. But that is not a sure fire recipe for success. The innovation story is mostly just wishful thinking.

The report goes on

The diversity of the immigrants is also part of the story; a 2011 study[9] *of European regions found "patent applications are positively affected by the diversity of the immigrant community beyond a critical minimum level".*

We examined the European paper in 'The Superdiversity Myth'. Our assessment follows:

The study examines the relationship between regional innovation (as measured by patent levels) and the size and composition of the immigrant stock in those 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 c****onclusively 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."*

[9] Ceren Ozgen ,Peter Nijkamp, and Jacques Poot, "Immigration and Innovation in European Regions" (Institute for the Study of Labor, 2011).

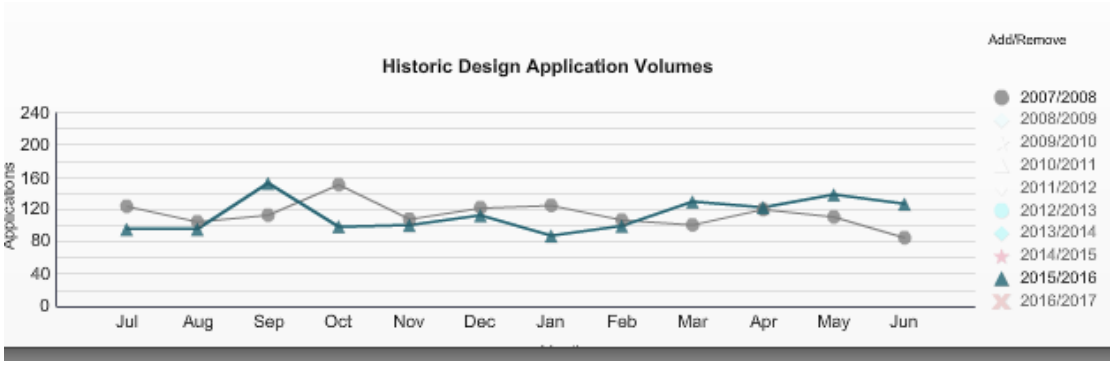
A **negative** relationship was found between the share of immigrants and innovation, but this was not statistically significant. With respect to the skill level conclusion, what appears to be going on here is that immigration from high income countries was the driver (immigrants from high income countries 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 to 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 immigrants. EU, African and US origins were 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.

New Zealand patents

There isn't a New Zealand study on patent levels and immigration. For the record, the number of patent applications has been flat over the last 10 years so there is no 'good news' immigration story here. The figure below shows patent applications for 2007/8 and 2016/16.



Good New Zealand news on immigration and innovation?

Evidence of a relationship between immigration and innovation can be seen in New Zealand, too. A 2014 study found that "firms with more recent migrants are more likely to introduce new goods and services, new processes, and new marketing methods, as well as being more likely to enter new export markets".

There were two Motu papers[10] on this research, essentially covering the same ground.

This assessment is from the first paper. It 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 could be capturing a personal department belatedly following the latest management fad.

The paper 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 of a percentage point. 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.

The second (2014) paper describes the results as follows.

"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*** (Our emphasis***).*** *Even when controlling for subgroups of enterprises that have positive*

[10] David C. Maré, Richard Fabling & Steven Stillman 'Immigration and Innovation' Motu Working Paper 11-05

Keith McLeod, Richard Fabling, and David C. Maré, "Hiring New Ideas: International Migration and Firm Innovation in New Zealand" (Wellington: Ministry of Business, Innovation and Employment, 2014).

R&D expenditure, are in high R&D industries, or have a highly skilled workforce themselves, no evidence is found."

Business migration

There is no assessment of the papers that have reviewed the business migration schemes. Our reading of the evidence is that the business migration schemes failed. We were picking 'lifestylers' who struggled to make an income.

Immigration and trade

Another study[11] found links between hiring recent migrants and increased exports and more international engagement. However, these studies do not prove a causal relationship. It is possible the relationship is driven by the hiring preferences of innovative and exporting firms.

And this is what was actually said:

We find that firms with a higher proportion of high-ability foreign employees (and thus a lower proportion of high-ability native employees) are more likely to export, as are firms with a higher proportion of employees who previously worked for an exporter. Similarly, these employee characteristics are correlated with many other types of firm international engagement. Not all foreign employees are equally correlated with exporting: while those from Australia and the Pacific and from Europe are positively correlated with exporting, ***the correlations vanish for employees from Asia.*** *When examining income earned in New Zealand's major trading partners, we find that on average the probability that a firm earns income in a given country is more correlated with its fraction of employees from that country than with its total fraction of foreign employees. However, a firm with more employees from a given country is more likely to earn income in that country only if the country is developed. Firms with more employees from a developing country such as China, India or Malaysia are no more likely to earn income in that country.*

The 'New Zealanders' goes on
A meta-analysis[12] across 48 studies reveals that international trade increases with migration flows between countries.

The study also found that immigration had little effect on homogeneous goods exporters. Other studies found that there are diminishing returns to the immigration/export effect.

[11] Isabelle Sin, et al.,"Exporting, Innovation and the Role of Immigrants" (Wellington: Ministry of Business, Innovation and Employment, 2014).

[12] Murat Genc, Masood Gheasi, PeterNijkamp, andJacques Poot, "The Impact of Immigration on International Trade: A Meta-Analysis" (Norface Migration, 2011).

What to make of it

From this point in '*The New Zealanders'* the discussion gets more philosophical/political, and is at least partially directed to switching the terms of the debate. They argue that the burden of proof should not lie with the proponents of large scale immigration. Rather the burden should lie with those who argue that it should be scaled back.

A number of arguments are marshalled to make the pro-large scale immigration case. Some are economic; some go to fairly fundamental questions in political philosophy. There is an attempt to seize the moral high ground.

We are a little reluctant to proceed too far on the broader arguments. There is the risk of being labeled a bigot, a racist or (worse?) a eugenicist.

So we have limited ourselves to the following.

A Simpsons paradox?[13]

Even if immigration is affecting GDP per capita, it is not evidently making anyone worse off. If working migrants are reducing GDP per capita, is it still possible for New Zealanders to be better off? Again, the answer is yes!' Whenever Bill Gates walks into a room the average wealth of that room increases, but no one is actually any richer. Likewise, a migrant with low productivity might lower our GDP per capita but does not make anyone poorer.

Yes someone can be poorer in a more realistic scenario. Imagine a room (a small country) with 20 land owners and 1000 workers. The market clearing wage is $700 per week. Now introduce 200 more immigrant workers. Output expands, but not by much, because of the fixed supply of land. The market clearing wage falls to $600. The original 1000 natives are worse-off. Then everybody has to bear a tax increase because the new arrivals have a negative fiscal impact.

The Mariel evidence

A famous example of a natural experiment is the Mariel boat lift. President Fidel Castro declared in 1980 that any Cuban who wished to leave Cuba was free to do so via the Mariel Harbour. The United States too offered automatic refugee status upon arrival. Before emigrations bans were reinstated, about 125,000 Cubans fled to America, mostly to Florida, causing a 7% increase to the labour force.

Economists could observe how unanticipated inflows influenced wages without reverse causality muddying the findings. Leading labour economist David Card reported in a highly influential paper:

'[The inflow] had virtually no effect on the wage rates of less-skilled non-Cuban workers. Similarly, there is no

[13] Not to be confused with the better known version of Simpson's paradox. 'Alcohol – the cause of - and solution to - all of life's problems ' Homer Simpson.

evidence of an increase in unemployment among less-skilled blacks or other non-Cuban workers. Rather, the data analysis suggests a remarkably rapid absorption of the Mariel immigrants into the Miami labor force, with negligible effects on other groups'.

The paper has been the subject of much debate. Most prominently, labour economist George Borjas reported a detrimental impact on some groups within the labour market. But the evidence only shows a short run detrimental effect on unskilled wages, and almost nothing in the long run.

In a more recent analysis, Borjas said the detrimental effects are more severe than previously thought.

For our money Borjas won, and his results should have been reported. The discussion leaves the impression that the matter was largely settled against him, and that Borjas was left crying in the wilderness. Here is the relevant excerpt from his 2016 paper.

*A reappraisal of the Mariel evidence, specifically examining wages in this low-skill group, overturns the finding that Mariel did not affect Miami's wage structure. The wage of high school dropouts in Miami dropped dramatically, by **10 to 30 percent**, suggesting an elasticity of wages with respect to the number of workers between -0.5 and -1.5.*

Labour market impacts

Many other papers have studied the labour market impacts of immigration using sophisticated econometric techniques to uncover the causal impact. Meta-analyses of these studies have found very small impacts. A 2016 OECD report[14] reported that the majority of empirical studies on the labour market impacts of immigration found no effects on local wages or employment.

There is an extensive list of studies in the OECD paper but most of it is quite old. In only a few studies does the reference period extend past 2000. The important point to bear in mind here is that the immigration numbers in these studies were typically not very high, so we would naturally expect that there would be a limited impact on wages or employment.

Labour market flexibility

Labour markets can work flexibly if employers simply increase wages to attract a qualified worker. The employer seeking a petrol station manager should to do that rather than go through a charade with immigration officials to demonstrates that the position is truly 'highly skilled'.

It is also important to remember that employers are not just restricted to the small New Zealand market. They can employ Australians at will.

We cannot manipulate wages by distorting the market in the long run. Virtually anything can be imported today if there's the will. Cheap foreign labour already competes with New Zealand labour

[14] OECD," International Migration Outlook 2016"(Paris, OECD Publishing, 2016).

even if workers don't land on our shores. If wages in New Zealand for similar output rise much higher than foreign wages, we can only expect more outsourcing and exit of New Zealand firms.

This argument doesn't really apply to most non-traded goods, other than in a really, really, long run. Try importing a haircut, a drink at your friendly local bar, or emergency health care.

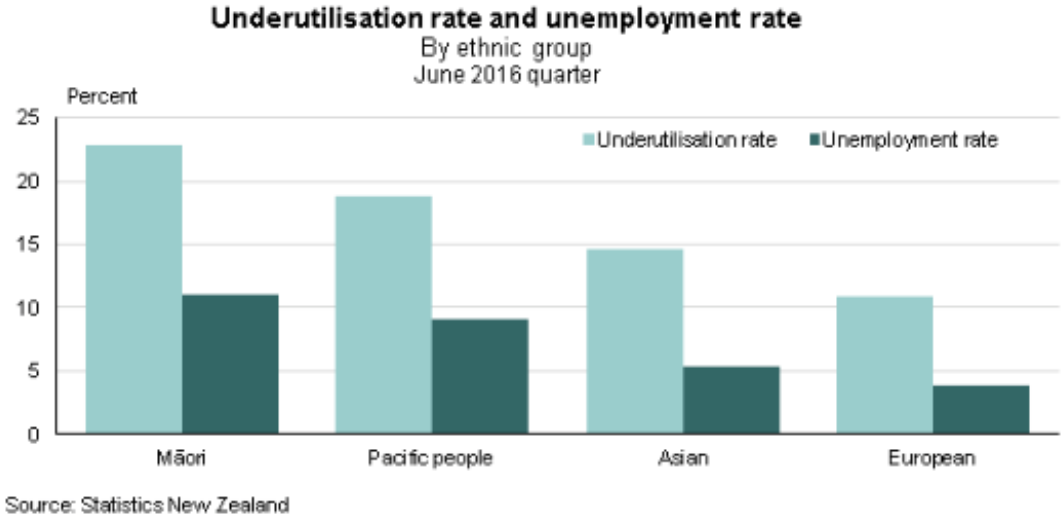
Ultimately, wages are determined by the value of a worker's production at the margin and the willingness of the worker to forgo leisure for consumption. Bringing in productive migrants more willing to work than New Zealanders may lower wages for some in the short run, but it also means New Zealand can produce more goods and services cheaper. Barring entry to New Zealand solely out of fear that the migrant is willing to accept lower wages echoes antiquated eugenic concerns about different races 'underliving' the dominant one.

The eugenics argument is a curious one. Here is an excerpt from the abstract of the cited article Thomas C. Leonard, "The Progressive Case for Regulating Women's Work,".

American economics came of age during the Progressive Era, a time when biological approaches to economic reform were at their high-water mark. Reform-minded economists argued that the labor force should be rid of unfit workers—whom they labeled "unemployables," "parasites," and the "industrial residuum"—so as to uplift superior, deserving workers.

Perhaps the eugenic argument goes the other way here. As the (former) Prime Minster put it. We need to have immigrant workers because the locals (code for Maori and Pasifika?) don't want to work or are on drugs. With immigration it is easier to just leave them out of the workforce. The latest underutilisation rate data for Maori and Pacific peoples is presented below. New Zealand youth also has a high underutilisation rate.

Figure 5



Source: Statistics New Zealand

Free movement of labour is a fundamental driver of the creative destruction process, just like free movement of goods and capital. It can be painful for some but it improves outcomes for many. And if managed well, the pain can be short-lived and the benefits perpetual.

As discussed elsewhere in the report the free movement of labour is not compatible with a welfare state. And if you are on the wrong side of the impact of the open labour market, then the pain can last for the remainder of your life. Also, the impact on recent immigrants should not be forgotten here. An earlier study commissioned by MBIE[15] showed that the incomes of recent arrivals was severely impacted by current immigration.

A wider concern – the moral high ground

If the benefit to migrants was accounted for in cost-benefit analysis of immigration policy, it may be the easiest policy to improve human outcomes. Economist Alexander T. Tabarrok says, "Immigration is the greatest anti-poverty program ever devised" – and with good reason. A report by the Center for Global Development says relaxing labour mobility in the developed world would affect a much larger flow of money to people from the developing world than foreign aid, and at a much lower cost to the developed world.

The argument is that immigration should focus on the poorest in the poorest countries, because they would get the biggest benefit. In that respect a policy that (tries) to cherry-pick from the relatively well off doesn't measure up. If we really wanted to make a difference, then we could commit to accepting, say, 500,000 Syrian refugees over the next 3 years.

More on the moral high ground

Discrimination against people for factors out of their control (ethnicity, gender or sexuality has no place in a liberal society. This ideological battle has largely been won legally. Perhaps one day, history will view discrimination based on country of birth in the same light. For this reason, the case for open borders is compelling. Especially for the libertarian minded or those generally skeptical of government intervention in interactions among individuals

Perhaps history will move that way, and the cosmopolitan utopians will win the day.
And perhaps too the advantages of being born into the right family will be recognised
as unjust, and the communist utopians will then hold sway.

Fear and loathing in New Zealand?

Such is the intensity of the fear and confusion among the public that many opposition parties have seized on this narrative, some naively and some opportunistically. The pro-immigration Key government too has tightened policy settings to appease the public.

We think that many New Zealanders are starting to suspect that they have been sold a pup on the economics, and on the reality of the composition of the migration flows. The main point of this

Mare and Stillman 'The impact of immigration on the labour market outcomes of New Zealanders' Motu 2009

paper is that they are right. It may be a bitter pill to swallow, but so is Winston.

To be fair, we found much in the report that was very useful, in particular the taxonomy of beliefs about migration. The report certainly challenged some of our preconceptions and it provides a good starting point for a debate that has to include what people really feel and believe about some sensitive issues.