DISCUSSION NOTE

FROM	Michael Reddell
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SUBJECT	**PRODUCTIVITY: JUST HOW BADLY HAS NEW ZEALAND DONE?**

Executive Summary

Very.

It is pretty widely understood that New Zealand's economy has not performed that well, and that living standards have fallen relative to those in other advanced economies. Indeed, one commentary has noted that over the last century among the relatively advanced economies for which Angus Maddison had collected data New Zealand has done worse than only Argentina, Uruguay, and Romania. Each of those countries had handicapped themselves with severe institutional weaknesses.

Many comparisons focus on GDP per capita (or related measures such as GNI or NNI per capita). Per capita measures are affected by a number of factors which may not say much about economic performance - for example, the age-structure of the population or, historically, cultural attitudes towards participation of mothers in the market labour force. Per capita measures are also very cyclical. In this note, I take a look (mainly) at GDP per hour worked, as the best measure of labour productivity over the period since 1970. There is nothing special about 1970 except that the OECD's collection of productivity data starts then. In a New Zealand context, however, it is a convenient starting point, coming before the sharp fall in the terms of trade in the mid-1970s, and allowing a significant period before the accelerated reform period of 1984-1993 got underway.

And I am going to focus on OECD countries, mostly because the data are fairly consistently collected and reported. It means leaving out some of the faster-growing countries such as Singapore and Hong Kong, but also some of the more troubled, such as Argentina and Uruguay. But it does not appear to be an unrepresentative grouping of the sort of countries one would usefully want to compare New Zealand's economic performance with. The number of member countries of the OECD has grown over time, and now has 34 members spanning countries with mediocre labour productivity such as Mexico and Chile, to high labour productivity countries such as Norway and Luxembourg. In addition to using the OECD's data, I will also use the Conference Board's Total Economy Database for the subset of OECD countries.

There are two lenses on the issue. The first is to use real labour productivity data, in national currencies, to calculate growth rates over periods of time. The second is to use levels data, calculated using estimated PPP exchange rates, to look at relative changes in levels over time.

Growth rates

Growth rates first. The table below uses the OECD's data to 2013, expressed in constant USD prices, converted at 2005 PPPs. The OECD also has data to 2012 for GDP per hour worked, in constant 2005 prices, expressed in national currencies. For a focus on growth rates, in many ways this latter series is preferable, but (a) it is older and has one year's less data, and (b) more importantly, it has data for materially fewer countries in the earlier decades. Neither is ideal because for the earlier decades some countries are covered in one set of data and not the other (for the early period Switzerland, for example, is in the second and not the first, while Iceland is in the first but not the second). Both series offer complete coverage since 2000. I have looked at both series, and comments that follow are not materially affected by which series one chooses to cite.

Total growth in real GDP per hour worked (%)

	1970-80	1980-90	1990-00	2000-13	Since 1970	Since 1980	Since 1990
New Zealand	7.6	24.1	14.3	15.1	75.7	63.3	31.6
Median	45.5	24.1	22.9	37.4	151.4	75.5	45.1
New Zealand ranking	23 of 23	12 of 23	20 of 24	21 of 34	23 of 23	19 of 23	17 of 23

We've had one decent decade. In the 1980s, New Zealand was the median country. But in none of these sub-periods have we managed productivity growth above the median, and for the period since 1970 as a whole, we have had the slowest productivity growth of any of these 23 countries. Using the alternative (national currency) data, Switzerland has had slightly lower growth than New Zealand since 1970, but in 1970 Switzerland had the third or fourth highest level of productivity).

Since 1980, four countries had lower productivity growth than New Zealand, on both measures of labour productivity growth:

Belgium
Netherlands
Canada
Italy

On one measure, Switzerland joins the list, and on the other Iceland (neither is in both series for the full period)

For the shorter period since 1990, when data from more countries are available, Luxembourg and Israel join the list.

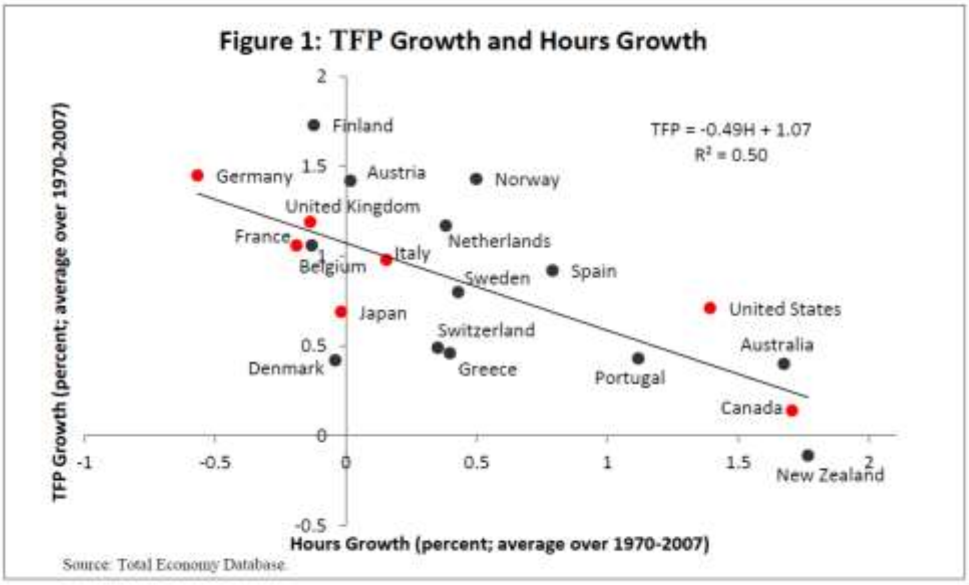
A short summary is that all the countries which were poorer than New Zealand have grown faster than we did[1], and most of the countries who were richer than us did too. That is true

[1] However, if Mexican data were available for the full period it is all but certain that Mexico's productivity growth has been substantially lower than New Zealand's. Mexican data start only in 1991, and since then total

even if one thinks of 1980 as a starting point for comparison - after New Zealand's very poor relative (and underwhelming absolute) performance in the 1970s, we have not recovered any of the losses at all.

Looking on the bright side, in the 6 years after 2007 when New Zealand has had productivity growth a little above that of the median OECD country - as one might have hoped, given the strong terms of trade and the absence of the disruption of a domestic financial crisis. That outperformance could, of course, yet be revised away, and it is small. But in the 43 years I looked at, the only other six year periods when New Zealand had productivity growth faster than that of the G7 countries were around the 1980s. One implication is that potential growth has probably slowed less rapidly in New Zealand than in most other advanced economies, suggesting that more of the gap between pre-recession trend growth and current GDP is likely to reflect excess capacity here than in many other countries.

Labour productivity is one way of looking at productivity, and is probably the most easily measured. Total factor productivity is conceptually superior, but harder to reliably measure. Good, consistently compiled, TFP growth estimates are hard to come by. The Conference Board publishes estimates since 1990, and has estimates for a range of the older OECD countries back to 1970. These data are not made generally available, but some IMF researchers were given access to them, and in a recent Working Paper[2] they included this chart



New Zealand had the weakest TFP growth of these 20 countries over 1970-2007. Other charts in the paper suggest that the 1970s was particularly bad, but for none of the subsequent sub-periods has New Zealand matched the median of these countries. The publically-available TFP growth data since 1990 covers all OECD countries, and over that period we have ranked 26th of the 34 countries. If anything, these TFP data suggests that the labour

productivity growth is estimated to have been around 3 per cent (compared with in excess of 40 per cent for the median OECD country.

[2] "Productivity or Employment: Is it a Choice?" by Andrea De Michelis, Marcello Estevão, and Beth Anne Wilson, IMF Working Paper 13/97, 2013

productivity data understate how disappointing New Zealand's productivity performance has been[3].

Comparative productivity levels

Cross-country levels comparisons are challenging[4]. Fortunately, our interest here is in comparing countries at substantially similar levels of economic development. The World Bank's International Comparisons Programme is hugely valuable in looking at GDP per capita comparisons in more recent periods. However, the focus of this note is on labour productivity.

For OECD countries, there are two sources of historical levels data on labour productivity for advanced countries - the OECD itself, and the Conference Board.

The OECD provides, for each year since 1970, estimates of current price GDP per hour worked, at current PPPs. Those are the best indication of the purchasing power of the real output per hour in the country/year concerned. However, that means they are thrown around by fluctuations in the terms of trade. Those fluctuations affect the real value of what is produced but - at least for a small country - they are largely exogenous, and reveal little about the underlying performance of the economy or the impact of economic policy measures.

To deal with this, the OECD and the Conference Board also provide annual estimates of real (constant price) GDP per hour worked, converted at the PPP exchange rates of the base year. Thus the Conference Board has estimates using 1990 and 2013 prices and PPP exchange rates, while the OECD reports numbers at 2005 prices and PPPs. In principle, the Conference Board's 2013 PPPs series and the OECD current price, current PPP series should be the same for 2013 - and they are very similar The Conference Board has gone a little further in providing earlier estimates for a wider range of (now) OECD countries, and provides estimates for a range of advanced countries back to the 1950s.

The Conference Board estimates that in 1960, New Zealand had GDP per hour worked that was 7th highest of the 27 (now) OECD countries for which they produce estimates - although still less than two-thirds that in the United States.

By 1970, when we have both OECD and Conference Board data, New Zealand had slipped further, to around the middle of the pack. In current prices terms, New Zealand's GDP per hour worked was 104 per cent of the median for the countries for which the OECD reports data (and 97 per cent of the GDP per hour worked of the G7 countries - the one summary measure reported for the whole period).

In 1970 all the countries that have lower productivity than us today were also behind us then, but the five countries immediately behind us in the ranking were Germany, Italy, France,

[3] The OECD itself has TFP data, compiled on a slightly different methodology, for a subset of its members. For the 15 countries for which there is data since 1985, New Zealand ranks 11th, and among the 20 countries for which there is data since 1995 we rank 13th.

[4] And further complicated, to a small extent, by the gradual transition of countries to the new SNA08 national accounts standards. When New Zealand's revised national accounts are published shortly they will lift measured labour productivity to a small extent – although by less than the revisions seen in most other countries that have so far adopted the new national accounts standards.

Norway, and the UK. On all four measures, all five countries are ahead of us today - even Italy.

We can summarise New Zealand's rankings as follows:

	1970	1980	1990	2000	2013
OECD					
Current prices & PPP	9/22	18/23	21/25	22/34	22/34
2005 prices/PPPs	13/22	18/23	21/25	22/34	23/34
Conference Board					
1990 prices/PPPs	12/27	20/28	21/30	22/34	25/34
2013 price/PPPs	13/27	18/28	21/30	22/34	23/34

Having already looked at the national growth rates, there are no real surprises in this table. The 1970s still show up as far the worst decade, and in no decade have we gained ground. In the period since 1990, our real productivity growth was well below that of the median country, but we did not lose ground in the ranking. There was quite a considerable gap between New Zealand's 2000 productivity level and those of most of the countries below us.

Who ranks behind us now? Recall that in 1970, those just behind us were established Western European countries with democratic political systems and functioning market economies.

In 2013, the base list of OECD countries estimated to have lower labour productivity than New Zealand is (in approximate order, from higher to lower):

Slovakia
Greece
Czech Republic
Portugal
Poland
Hungary
Estonia
Turkey
Chile
Mexico

On 3 of the 4 measures, South Korea is also below New Zealand (well below - in the middle of the pack), and on one Israel is just below New Zealand.

On all measures, Slovenia - a region of Communist Yugoslavia as recently as 1990 - is now above New Zealand. Across the 4 different measures, the countries most often appearing just above New Zealand are Finland, Italy, Japan, Slovenia, and Israel. In 1970, across the four measures New Zealand was about equal to (just ahead of) Italy, with the others lagging well behind.

There are no clear-cut causal links from democratisation to prosperity, but in terms of "company we keep" I find it a bit sobering that of the countries on the base list only Chile had a genuinely democratic political system in 1970.

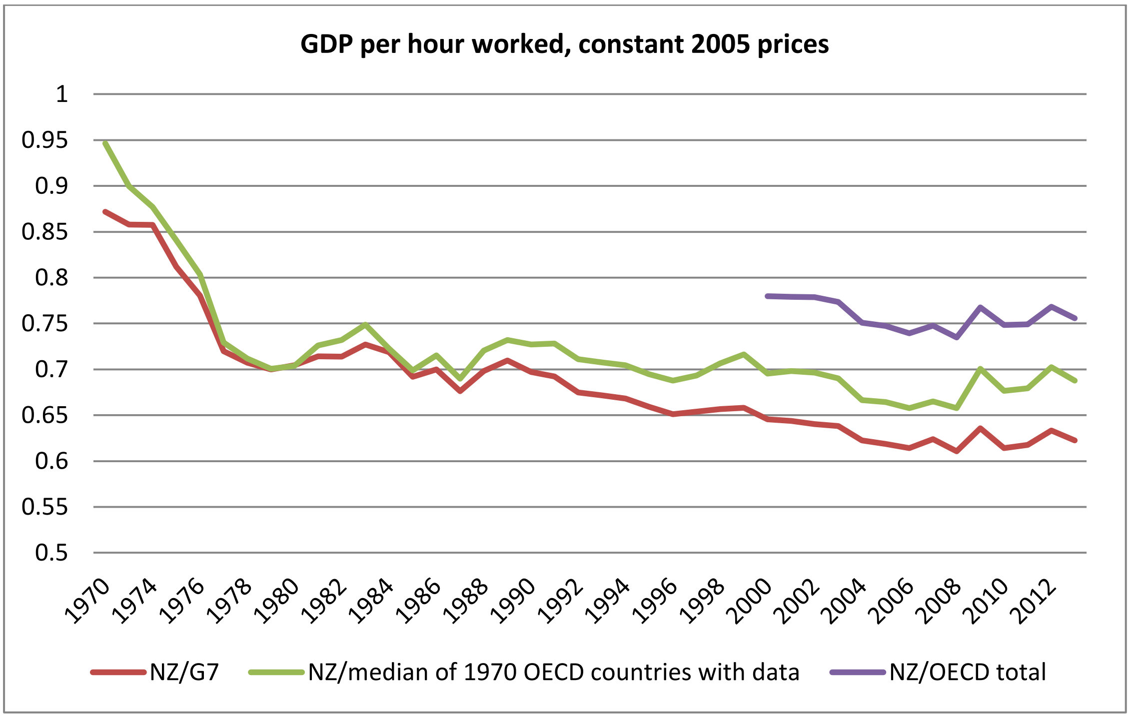
Over the 43 years covered in this note, we have managed to almost keep pace with Italy. What of three other countries in focus in the recent crisis?

Greece has had lower levels of productivity than New Zealand throughout the 43 years, but….in 1970, under the military junta, it was half to two-thirds of New Zealand, and in 2013 on most measures is only about 10 per cent behind New Zealand.

Spain in 1970, in the last years of the Franco dictatorship, but with economic liberalisation well underway, had productivity per hour around three-quarters of that in New Zealand. Today it is about a third higher than New Zealand's.

And finally, **Ireland**, a stable democratic English-speaking country, once (not too long ago) predominantly agricultural which for decades experienced a significant net outflow of its own people. In 1970, Ireland had GDP per hour worked, not much more than half that of New Zealand. Today, it is estimated that GDP per hour worked in Ireland is around 50 per cent higher than in New Zealand. In Ireland, of course, GNI is only around 80 per cent of GDP, and some regard the former as a better indicator of domestic economic performance (because of the way company tax laws have encouraged the profits of multinationals to be recorded in Ireland). But even on the lower figure, Ireland's labour productivity today is materially higher than New Zealand's.

The overall picture is fairly familiar.



Some concluding commentary

The main point of writing this note was to get the productivity data, as it stands now, straight in my own mind.

But doing so, even though in some respects it is familiar ground, invites sober reflection on a pretty dismal record. Across the whole OECD, Mexico has clearly done worse than New Zealand: having started among the lowest productivity countries in the OECD, it ends unambiguously with the lowest level of labour productivity. A "victim" of a resource curse and longstanding poor institutions?

Doing better than Mexico is surely no consolation to anyone - it should remind us of how badly we've done.

And we've not really done much differently from Italy or Israel - both were, and remain around, New Zealand levels of labour productivity. In some respects Italy - and its recent decades of lack of sustained reform - speaks for itself. Israel might be more of a surprise to some. Perspectives on Israel will no doubt differ greatly. From my perspective, their relatively lacklustre productivity growth is probably not too surprising given the heavy burden of defence spending Israel faces, and the challenges of absorbing the mass influx of Jewish immigrants - a right to immigrate that is intrinsic ton Israel's founding purpose. Israel has had the fastest population growth of any OECD country since 1970, and even more so since 1990. Both the defence burden and the rapid population growth represent more existential goals than merely maximising per capita living standards, but nonetheless they represent some very substantial non-tradables shocks that makes it more difficult than otherwise to sustain rapid productivity growth towards the global productivity frontier.

Which leaves the dismal New Zealand performance. It looks like a substantial reproach to our elites - political and economic.. Such a poor record has been chalked up in what is, for all its weaknesses, a country with moderately good institutions; a country that is joint heir in the political, economic and institutional traditions that have generated for our Anglo peers (US, UK, Canada, Australia, Ireland) so much better performances (mix of levels and changes) in recent decades.

Views will differ on why New Zealand has done so badly. A weak terms of trade was part of a plausible story for a time, but no longer seems so (and Japan and Korea look much worse on that score). Some emphasise stories about size and distance, in some mix of consolation and despair ("we might be doing about as well as we can: get used to it"). I find that story largely unconvincing, for various reasons. Foremost among them are the high real interest and real exchange rates that have been experienced here. Countries with few investment opportunities - perhaps victims of a world in which agglomeration is a huge consideration – should expect to see low returns to capital, low domestic interest rates, a weak real exchange rate, and current account surpluses (as consumption is held back, on limited future growth prospects, and capital flows abroad seeking better opportunities - as, for example, it has done in Switzerland). That isn't the New Zealand we see.

I've set out my views elsewhere - including in my RB/Treasury exchange rate forum paper[5] and a subsequent talk/note "Why New Zealand languishes" - on elements of what seems a plausible candidate hypothesis for what has gone wrong- for why we have failed to reverse the sharp relative decline of the (1960s and) 1970s. Mine is one hypothesis, and no doubt there are other plausible stories, that can grapple with the scale of New Zealand's failure. But too little of such hypothesising seems to be being reflected - and put up for serious contest and scrutiny - in the public debate, in the output of think tanks and universities, or in the advice of official agencies.

That should worry anyway who hopes for a prosperous future for New Zealand, whether for themselves or their children

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[5] http://www.rbnz.govt.nz/research_and_publications/seminars_and_workshops/Mar2013/5200823.pdf

Appendix

These charts show growth in GDP per hour worked, using the OECD constant price USD series, converted at 2005 PPPs.