

Economic Note

Productivity Update

06 June 2019

Explaining low wage growth

Summary and implications

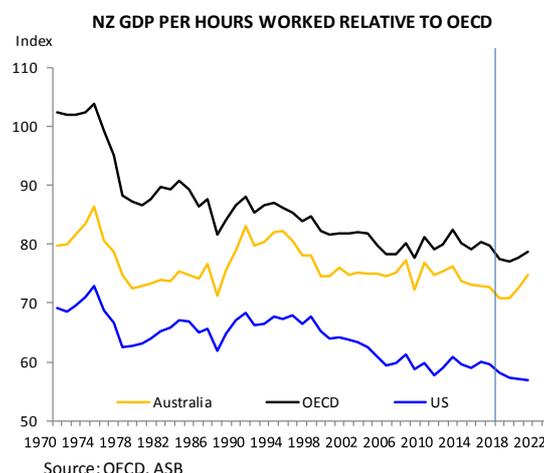
Increasing productivity holds the key to boosting living standards, but it is an area where New Zealand has traditionally struggled. Our productivity track record has been poor, with GDP per hours worked (labour productivity) averaging just over 1% growth per annum since the early 1990s. Moreover, there are few signs that NZ is making up on its considerable productivity shortfall in relation to other advanced economies. **Our low capital stock, small size and distance from key markets look to be significant impediments.**

We have observed a pronounced slowing in labour productivity growth since the Global Financial Crisis (GFC). With the odd exception, the slowdown has been reasonably generalised across most industries. **Our analysis continues to suggest that trend growth in labour productivity over the next few years will be somewhat weaker than historical averages.** We also expect growth in the labour force to continue to moderate as the pace of net immigration slows. **In combination, this would drive an approximate 0.5 percentage point drop in rates of annual trend GDP growth over the next few years, to around 2½% per annum.** Further ahead, the NZ economy faces demographic challenges posed by population ageing that will need to be addressed.

One of the puzzles of late has been why wage growth has remained low despite stretched labour market capacity. Our analysis identifies **low consumer price inflation and slower productivity growth as potential explanations**, with similar increase in real wages and labour productivity over the last 30 years for the New Zealand economy. Our detailed sector analysis also suggests that since the Global Financial Crisis (GFC), more productive sectors have tended to attract larger wage increases. There are a number of sector outliers, suggesting other determinants matter.

What has been happening?

The NZ economy is in the mature phase of the domestic cycle, having been in expansionary mode since the late 2010 recession. The size of the economy has increased by 27% over that period, about half of that on a per-capita GDP basis. The prolonged period of the domestic expansion has seen the economy run into capacity constraints. Initially these were concentrated in the construction sector but they have filtered out into the broader economy. The shortage of available capacity, rather than insufficient demand, has been increasingly cited as weighing on the domestic expansion.



We can increase our capacity through increasing the productive capital stock (via increasing investment), increasing the workforce, or increasing productivity, where output is higher for each unit of capital and labour. **The latter holds the key to boosting living standards, but it is an area where NZ has traditionally struggled.** Since the early 1990's, NZ's GDP growth has averaged 3% per annum, but two thirds of this has been due to working greater hours. Over the 2018 calendar year, labour productivity levels were little changed on the 2017 calendar year.

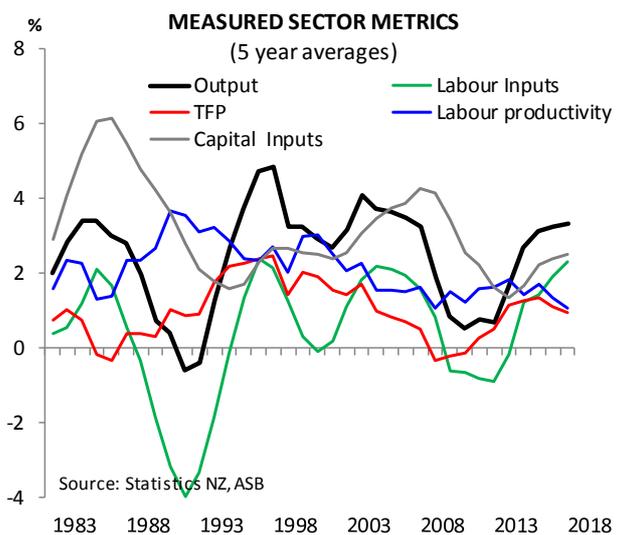
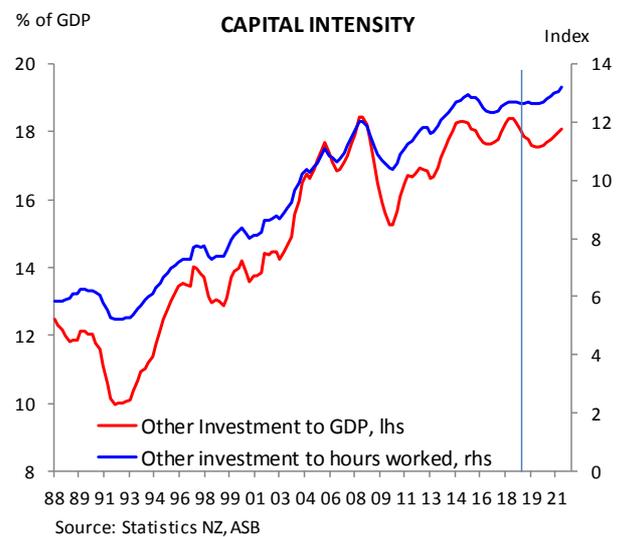
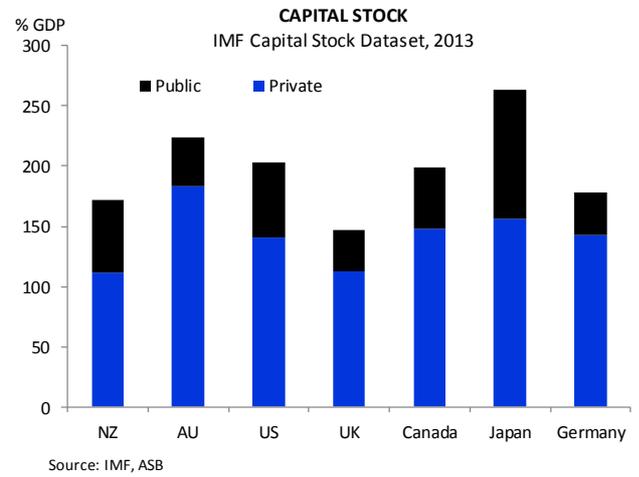
The slowdown in productivity growth since the GFC has not just been isolated to NZ, but has been a common occurrence for many OECD countries. It may also have implications for the comparatively low level of real interest rates in recent years.

Be that as it may, New Zealand has continued to underperform relative to its peers since the Global Financial Crisis (GFC). Latest figures from the [OECD](#) place New Zealand's real GDP per hours worked more than 40% below the US, close to 30% below that of Australia and close to 25% below the OECD average. OECD forecasts do not point to an imminent turnaround. Our small size and distance from key markets remain major obstacles.

As we cited in the note last year, our poor nationwide saving performance has translated into low investment and low capital formation. Figures from the IMF (while dated), suggest that NZ has a low capital stock to GDP ratio in relation to our OECD peers. The situation is unlikely to have significantly improved since then considering our strong recent population growth. The legacy of the slump in business investment following the **Global Financial Crisis (GFC) may still be casting a shadow over poor labour productivity growth.** Growth in the capital stock has averaged less than 2% per annum since 2010 (1.9%), as opposed to the 3.5%+ per annum average from the early 1980s until the GFC. Investment, relative to both GDP and hours worked, has levelled off in recent years.

A more detailed look at NZ

Here we provide a detailed update on what has happened to productivity metrics for the "[measured sector](#)", which constitutes roughly 80% of NZ GDP¹. Growth at 2.9% in the March 2018 year was close its long-term average (2.8%). This was achieved by increasing both capital and labour inputs. As we had foreshadowed in our [note](#) last year, both labour (+0.8%) and total factor productivity growth (+0.7%) for the March year came in below both post 1992 and post Global Financial Crisis (GFC) averages. Annual labour productivity growth has averaged 1.9% since 1992 (1.5% since 2010), with annual TFP growth averaging 1.2% (1992 onward) and 1.1% (2010 onward).



¹ It mainly contains enterprises within 18 industries that are market producers and typically excludes industries in which outputs are not adequately measured independently of inputs, with some series available back to the late 1970's. For our analysis we mostly use figures published for the "former measured sector" given its more lengthy available time series.

What has happened? We have seen sizeable increases in labour inputs, with HLFs hours worked averaging close to 3% per annum from March 2010 to March 2018. Capital stock per hours worked are likely to be lower, all else equal. Productivity levels of new employees are likely to be initially lower than that of the existing workforce, and it may take them a while to get up to speed.

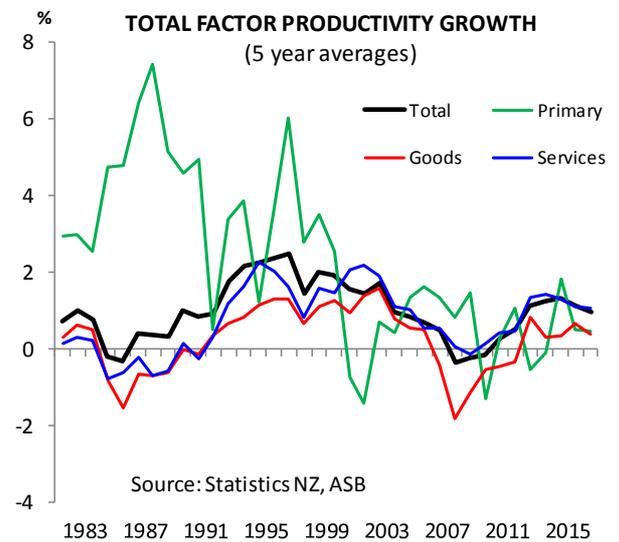
Sectoral productivity trends

Here we dig a little deeper and examine the productivity performance of each of the 18 measured sectors.

Here we divide the measured sector into three broad groups:

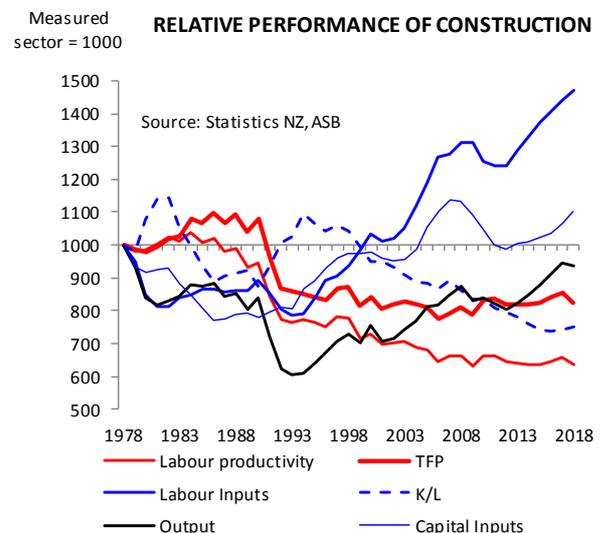
- Primary sector- about 10% of paid hours in the measured sector (2.3% growth per annum in labour productivity since the early 1990s). It includes agriculture, forestry, fishing and mining.
- Goods sector – just under 30% (1.0% per annum). It includes manufacturing, construction and electricity, gas and water.
- Services sector – Just over 60% (1.7% per annum). Includes transport, ICT and retail and administrative services.

Comparing the trend growth (we use a 5-year average) shows that a **generalised slowdown has been evident in labour productivity growth since the late 1990s**. Over the last decade or so, the goods sector has tended to underperform. **Total factor productivity (TFP) growth has remained close** to historical averages for the measured sector since 2010 (1.1 % per annum versus 1.2% per annum since 1992). However, the sector splits reveal a notable deceleration in productivity growth in the primary sector (0.3% per annum versus 1.1% per annum since 1992). Growth in goods sector TFP remained close to its **early 1990 averages** (0.7% per annum versus 0.5% per annum), reflecting an improvement in both the manufacturing and construction sector TFP. TFP growth in the service sector was close to longer-term averages (1.1% per annum versus 1.2% per annum). Within the services sector productivity growth has been particularly weak in for the education & training sector, education & training, healthcare, accommodation & food sectors, and the arts and recreation sectors. Competitive pressures and more technological innovation have seen sizeable increases in both labour and TFP growth for both the retail and information, media and technology sectors.



Construction recovery proves to be fleeting

Last year we noted there had been some encouraging signs, with labour productivity and TFP growth in the construction sector outperforming the overall measured sector. More recent data have been less encouraging. Output is still increasing from this sector, and we note that nationwide residential consent issuance is currently around 44-year highs. However, increases in output from the sector have been facilitated by more labour and capital inputs rather than improving productivity. Recent publicised difficulties of firms and cost overruns in the construction sector are testament to pressures in the sector and construction cost inflation has continued to outstrip that for the economy in general. In response, we have seen a raft of policy tweaks, including proposed reforms to the Building Act to improve accountability and product regulation changes. We will have to wait and see whether these proposed reforms produce the desired results.

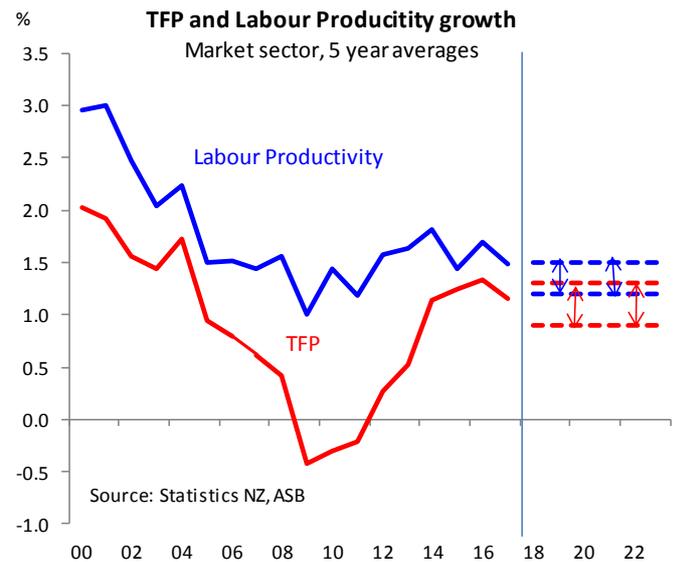


Implications for future trend growth

Given recent strong increases in employment, labour productivity growth is currently around a cyclical lull. Beyond cyclical influences, the trend productivity growth rate for the economy will largely depend on the productivity levels of individual firms and how the structure of the economy evolves. By extrapolating forward growth in paid hours for each industry it is possible to derive “bottom-up” estimates of trend labour and trend total factor productivity growth for the measured sector. These estimates are intended to be illustrative and are based on a number of assumptions.

Our back-of-the-envelope estimates suggest trend growth in labour productivity in the measured sector could slow from its 1.5% annual average since 2010 to 1.2-1.5% per annum over the next few years. Trend total factor productivity growth rates are also likely to be a fraction lower than their historical averages (0.75%-1% per annum versus 1.1% per annum). Assuming labour input growth of around 1-1.25% per annum over the next few years, this is likely to deliver trend growth in the measured sector of around 2.25%-2.5% per annum, around 0.5 percentage points lower than recent historical averages. **We would expect a similar reduction to our estimates of trend GDP, with about a 0.5 percentage point reduction – closer to 2½% per annum rather than around 3% previously.**

Further ahead, the NZ economy faces significant challenges posed by population ageing, which looks set to moderate the growth in the working age population more quickly than that for the general population (see our note [here](#)). This will likely entail the need for greater flexibility in working arrangements and potentially more dependence on inward migration as NZ competes with the rest of the OECD for labour.

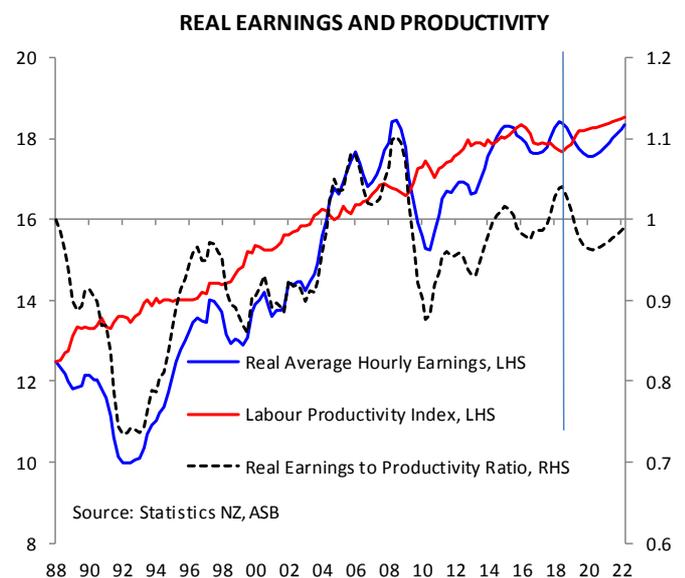


Is there a link with subdued wage growth?

One of the puzzles of late has been why wage growth has been so subdued given stretched labour market capacity and the limited significant flow-through of the higher minimum wage. There are a few candidates:

Low wage growth may be the result of low consumer price inflation. Annual CPI inflation has averaged just 1.3% since the start of the decade, a significant drop from the 2.7% average in the 2000’s. Our estimates suggest that in inflation-adjusted terms (ex-GST), average hourly earnings Quarterly Earning Survey (QES) have averaged a 1.1% annual increase since the start of the decade, the same rate as in the 2000’s and above the 0.7% annual average over the 1990’s. It could also mean that instead of wage increases, firms are offering more flexible working arrangements and non-cash incentives that may have not been fully picked up by the statistics.

Low productivity growth may also be a factor. To assess whether broad trends in productivity are related to trends in labour earnings, the chart compares nationwide movements in labour productivity with real average earnings based on data from the Quarterly Earning Survey (QES). Over the last 30 years real average earnings have increased roughly 30%, with labour productivity increasing by a similar magnitude. In the 1990s, nationwide increases in labour productivity outstripped rises in real wages, although income tax cuts over this period would likely to have partly compensated wage earners. The 2000’s saw steady improvement in labour productivity and real wages. Since the Global Financial



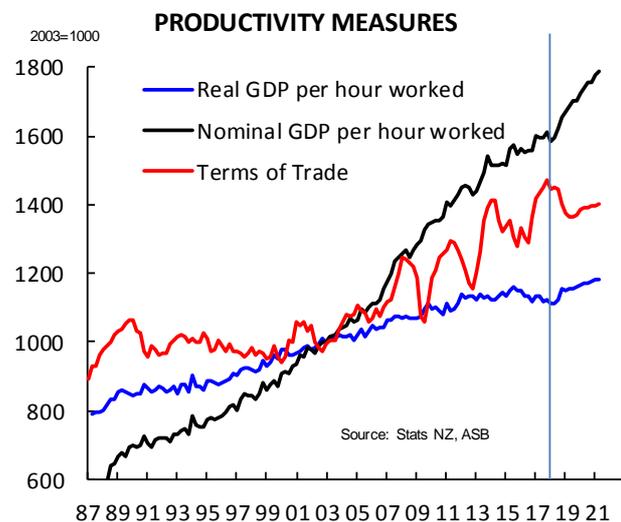
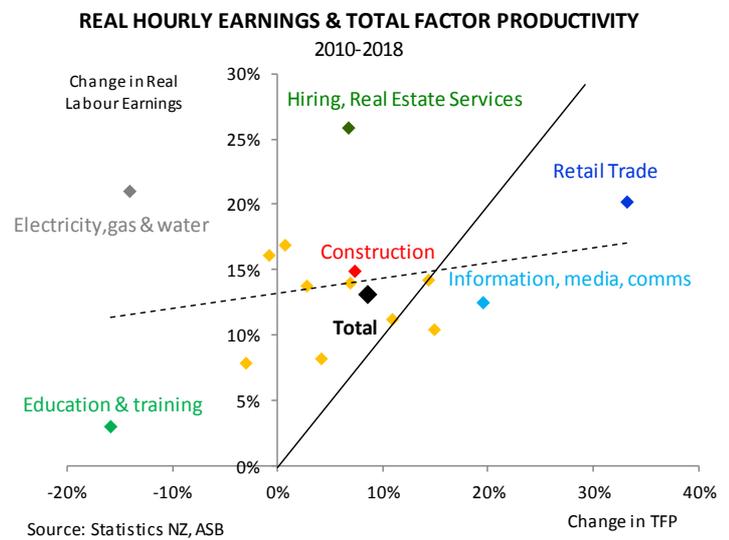
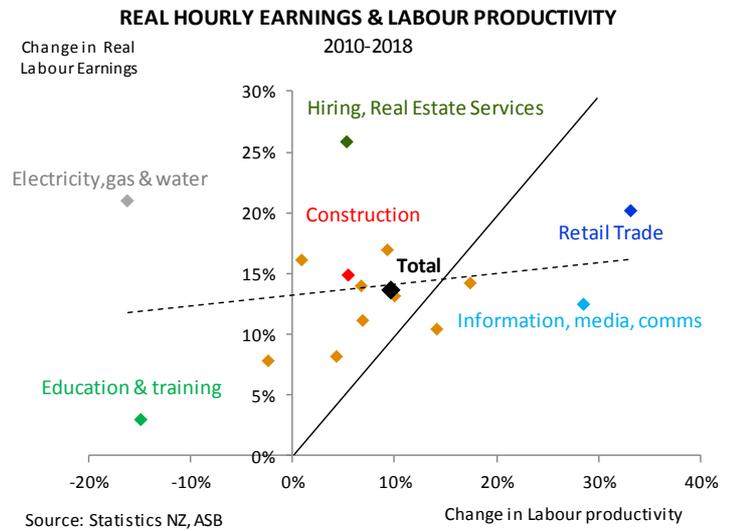
Crisis (GFC) there has been a flat-lining in labour productivity, while real wages have continued to grind higher.

Using the more detailed data, the scatter plots in the charts compare changes in productivity with those in real average hourly earnings, for the total NZ measured sector ('Total' in the plots) and various measured sectors from the 2010 to 2018 period. **For the measured sector as a whole, increases in real average earnings post the GFC (13% from 2010 to 2018) have slightly outpaced increases in productivity (10% for labour, 9% for total factor productivity).** So have real earnings for most of the individual measured sectors. **Comparing the trend relationship based on the results for individual sectors (dotted lines in the plots) show there is a weak positive relationship between growth in productivity and labour earnings.** Sectors that have posted higher productivity growth have tended to achieve larger than average increases in real average hourly earnings. For example, more sizeable wage increases in the retail sector may have been facilitated via higher productivity growth. Lower than average real wage increases for education and training is consistent with lower measured productivity in those sectors. Interestingly, readings for the construction sector were not markedly out of line with the other sectors.

There are also a number of outliers. Despite little (or no) improvement in productivity performance, wage growth has been more sizeable for employees in the real estate and utilities sectors. Conversely, wage increases have been more subdued in relation to productivity gains in the Information, media and communications sector and for the retail sector. Competitive pressures and a lack of pricing power for both labour inputs and final outputs may be playing a role here. Measurement difficulties may be a factor.

Implications

Productivity matters as a key determinant for living standards, so lifting overall productivity should be towards the top of the list for Government policy-makers. NZ's recent lacklustre labour productivity performance has been masked by strong population growth and the elevated Terms of Trade, which has boosted economy-wide purchasing power and contributed to the 'feel good factor' NZ has experienced of late. There are limits to how high our Terms of Trade can go, given our lack of pricing power on many international markets. **Rather than continuing to count on strong population growth and the Terms of Trade being our get out of jail free cards, strengthening economy-wide labour productivity is an important route to sustainably bolster living standards, overall GDP and general wellbeing.** Focus on lifting our productive capital stock, improving skills, vocational training, increased research & development, and further bolstering labour market flexibility should help.



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