

WAGES – A TALE OF TWO COUNTRIES - NOVEMBER 2017



Explaining subdued US & Australian wages growth

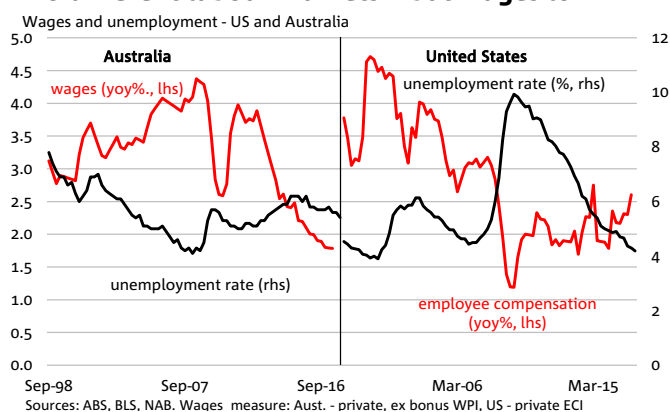
NAB Group Economics

Modelling shows that labour market slack, inflation and productivity help explain wage pressures in Australia and the United States. For Australia, changes in the terms of trade are also important. Currently subdued US wage growth reflects weak productivity growth, but we expect to see some improvement in coming years. For Australia, the modelling suggests that wages growth should already be picking up due to a fading terms of trade headwind, but this is yet to be seen in the data. Our expectations that Australia's unemployment rate will decline further, and that there will be a gradual upwards move in inflation, also point to higher wages growth in the future.

A big issue across many advanced economies in recent years is subdued wages growth. In this note we seek to explain the drivers of wage growth in two economies – the United States and Australia.

The IMF recently **found**, across a range of countries, that the bulk of the slowdown in wages growth can be explained by developments in three factors. These are: labour market slack, inflation expectations and productivity. In countries where unemployment rates were back to their pre-GFC levels, two-thirds of the slowdown was attributed to slower productivity growth, but labour market slack remained an issue as unemployment rates could overstate the recovery in the labour market.

Two different labour markets – but wages low



The United States was harder hit by the GFC. In its aftermath, the US unemployment peaked at just under 10%, while Australia's rate stayed below 6%. However, since then the US unemployment rate has steadily fallen, and now stands at 4.1%. In contrast, after an initial recovery Australia's unemployment rate drifted upwards, moving above 6% between mid-

2014 to late 2015, although it has since eased gradually and currently sits at 5.5%.

For both countries, wages growth has been subdued by historical experience, although in the case of the US it has come off its post-GFC lows.

Approach

Our basic approach was to use econometric models to identify the key variables driving wages growth.

The wages growth measures used were the private sector wage price index (WPI) (excluding bonuses) in Australia and the private sector Employment Cost Index (ECI) in the United States.

It is commonly thought rising productivity is the key to rising individual living standards over time. The more productive an employee is, the more a business will be willing (and able) to pay them, after adjusting for inflation. Wages may also be expected to rise when employees have more bargaining power – such as when there is a scarcity of labour.

Given this, for both countries we modelled wages growth based on the following variables:

Trend productivity

Inflation/inflation expectations

Labour market slack (unemployment or a broader measure of slack)

For Australia we added a fourth variable:

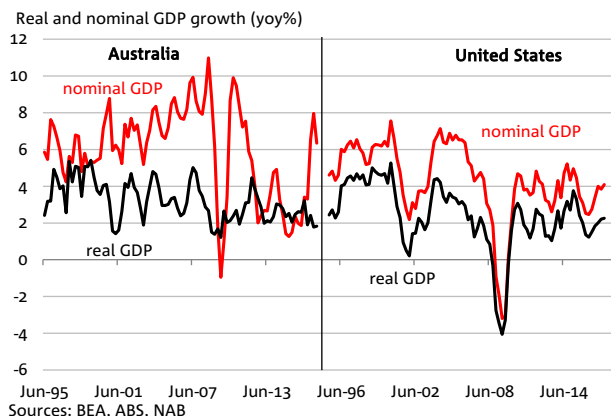
Terms of trade

The rationale for adding the terms of trade for Australia was to pick-up national income changes driven by commodity prices. Western Australia, the state most exposed to commodity prices experienced WPI growth of over 6% yoy in 2007 (nationally 4%)

but in the June quarter 2017 growth it was only 1% yoy, about half the national level.

The US also has a large energy sector, but its economy is far more diverse and less tied to movements in commodity prices. This can be seen by looking at movements in real and nominal GDP. The differences between the two reflect inflation (not just for consumers but for all goods produced). US nominal GDP tends to move in the same way as real GDP, but for Australia, the two can diverge, as changes in commodity prices lead to big swings in national income.

Aus. national income can diverge from real activity



Other factors that have been cited as contributing to subdued wages growth include: decreased unionisation, competition from automation and offshoring, digital disruption, greater industry concentration, scars on business and employee confidence and behaviours from the GFC, the rise of ‘superstar’ firms and the structural shift in the economy towards part time and lower paid services sector jobs. Directly accounting for the impact of these factors is beyond the scope of the modelling approach adopted in this note.

What is striking is how well the models work despite these structural changes. This may be because some of these factors are indirectly captured by our model variables (e.g. automation and offshoring influences productivity and unemployment). Moreover, shifts in sectoral employment and hours worked would be expected to have little effect on fixed-weighted wage indicators like the ECI & WPI which are the focus of this note, although of course they are relevant for measures of average earnings.

Results

The modelling indicates that a slowdown in productivity growth, subdued inflation (or inflation expectations) and labour market slack are, or have been, factors putting downward pressure on wages. For the US, however, the drag from labour market slack has passed, and the key issue is weak productivity growth.

For Australia, the terms of trade appears to have been a significant factor in explaining WPI growth. However, recent data raise the question as to whether the relationship has broken down, changed, is dependent on the stage of the mining cycle and/or on whether market participants view commodity price changes as permanent.

United States

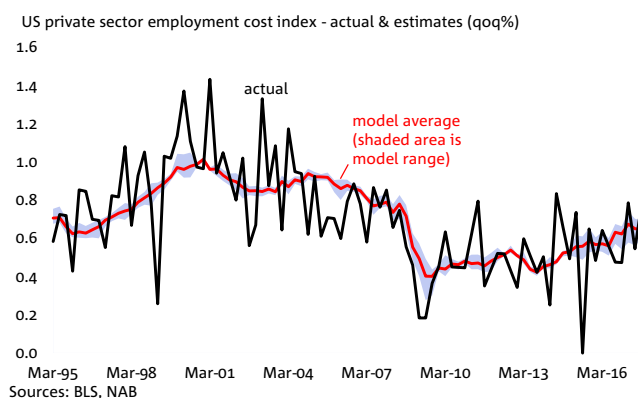
In the case of the US, a wide variety of model specifications produced similar results.

Past inflation or inflation expectations were both significant (but not jointly). A model which replaces these broad headline inflation measures with Brent crude prices does not lose much explanatory power. That said, a model with no inflation variable at all also works reasonably. The US models were estimated from 1995 onwards, a period of relatively stable inflation which may have anchored wage setting, so that the impact of temporarily high/low inflation or small changes in expectations do not have large impacts.

There was little difference between using the headline unemployment result compared to using the broader ‘U6’ measure. U6 includes underemployment and people marginally attached the labour force.

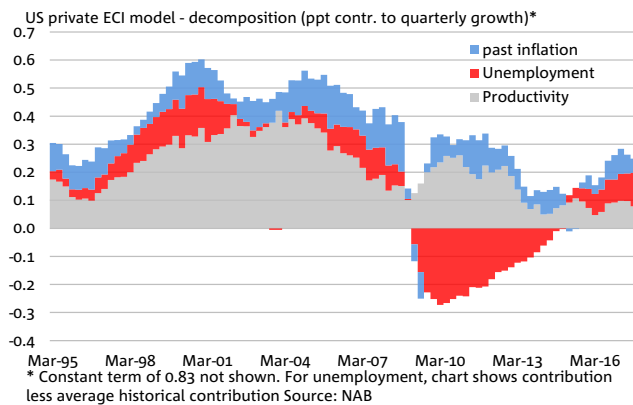
The chart below shows the model average as well as the range of estimates. While actual ECI growth is very volatile, the models do a good job of tracking the underlying direction. The range of the various model estimates is fairly narrow, and all suggest that ECI growth should have been trending up gradually, which it broadly has.

US ECI model results



A decomposition of the estimates for one of the models is shown below. The stand out result is that, while post GFC labour market slack was a factor, the still relatively subdued level of wages growth is now largely a productivity issue.

US Model decomposition weak productivity remains a headwind

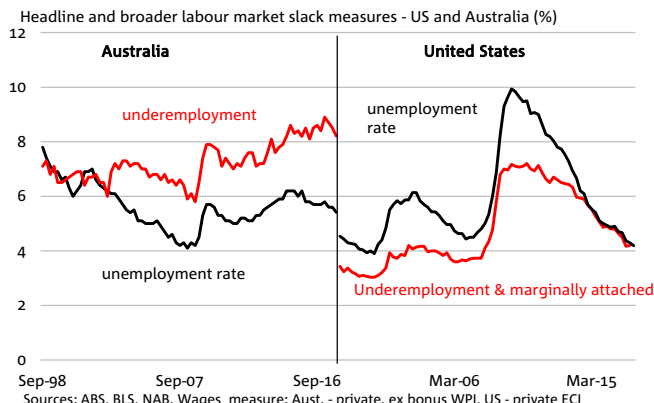


This can be confirmed by looking at the deviation of ECI growth over the last year from its 1995 to pre-GFC (2007) average growth rate. In only one model does the fall-off in productivity growth less than fully account for the wage slowdown. The lowest estimate of how much of the deviation of wages growth over the last year from its pre-GFC average can be accounted for by low productivity is 70%.¹

Australia

For Australia the model included the following explanatory variables: trend productivity, labour market slack (level and change), past inflation and changes in the terms of trade. An inflation expectations variable was also tested; it was significant only if there was a change in labour market underutilisation variable. The models performed similarly with or without inflation expectations; if the expectations term was included, the coefficients on the other price variables – past inflation and the terms of trade – were smaller, as was the constant term.

Australian underemployment rate can diverge from unemployment rate, unlike US



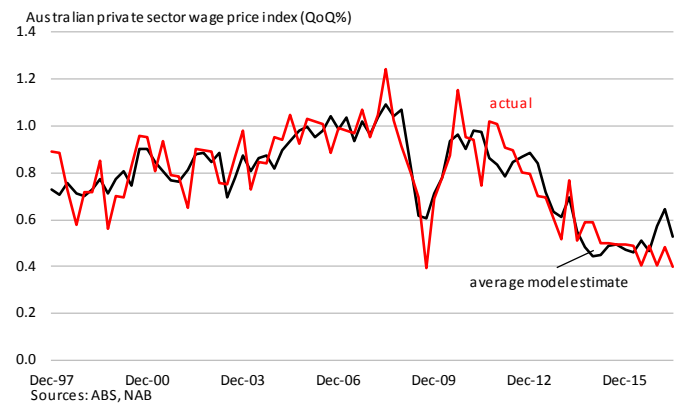
Unlike the US, the unemployment rate was not significant by itself. Slack is still relevant, but only when allowing for both unemployment and

¹ Other research has found similar results. For example, Yellen (September 2016), Inflation, Uncertainty, and Monetary Policy, Federal Reserve; and Pinheiro & Yang (2017), Wage Growth after the Great Recession, Cleveland Federal Reserve.

underemployment (i.e. underutilisation). This difference between the countries is not surprising given that US underemployment tends to move in the same direction as the unemployment rate but for Australia they can move in different directions.

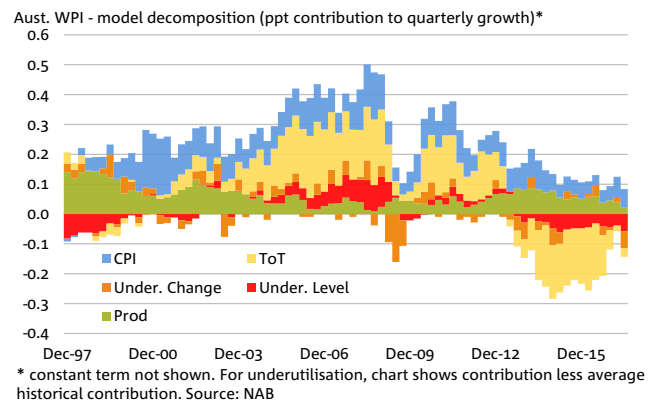
The models generally do well in picking up the underlying movement in private WPI growth (the average of the models with and without inflation expectations are shown below). However, the modelling indicates that WPI growth should have started strengthening, but this is yet to happen.

Wages failing to accelerate as model suggests

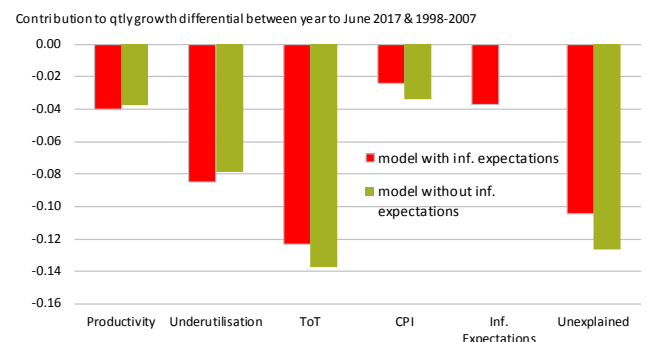


Decomposing the model without an inflation expectations variable into its component parts we can see that the expected upturn in wages arises from a predicted fading in the headwind from the terms of trade.

Fading of terms of trade headwind may lift wages



All factors pushing wages down over last year relative to pre-GFC period

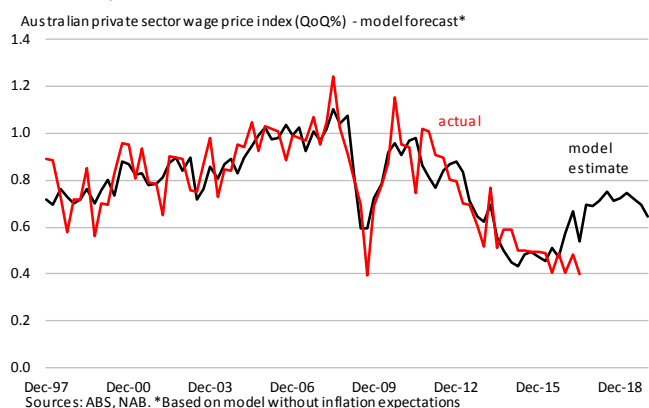
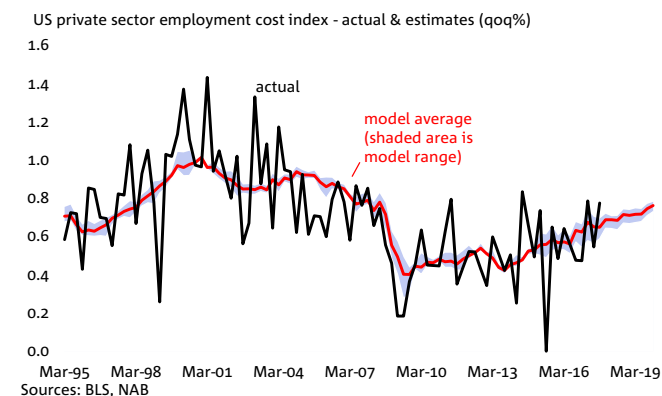


The terms of trade still remains a drag relative to its historical contribution, as is slower productivity growth, relatively subdued inflation (expectations) and labour market slack. Average quarterly WPI growth in the year to June quarter 2017 was 0.4ppts below its pre-GFC average (1997-2007).

What does the future hold?

Based on our forecasts for the **Australian** and **United States** economies, the outlook is for wages growth to strengthen, without reaching the levels achieved in the 2000s.

Wages growth should push higher in Aus. & US



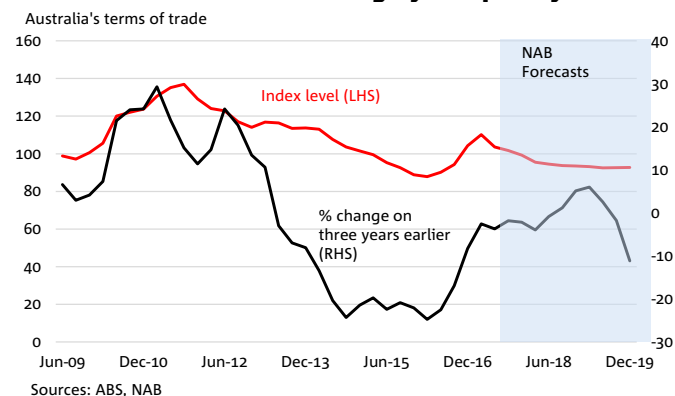
For the US, this reflects our economic forecasts which are for a modest improvement in productivity and further falls in the unemployment rate. While core inflation has drifted lower this year, we think this is likely to be transitory. That said, risks are to the downside; the future for productivity growth is highly uncertain and the recent weakness in inflation may be because it has settled at a lower level, accompanied by a fall in inflation expectations.

For Australia, as already noted, according to the model, wages should already be picking up due to a fading terms of trade headwind. The absence of any pick up in wages growth raises the question as to whether there has been a breakdown in the underlying model relationships.

Movements in Australia's terms of trade are shown in the chart below. The model uses the change over a three year period, which is also shown in the chart. The improvement in the terms of trade between mid-2016 and early 2017 reflected in large part a recovery

in commodity prices over this period. However, as there were transitory supply factors in part driving the lift in commodity prices, it was generally expected that the recovery in prices would be, at least partially, temporary. Indeed, after peaking in early 2017, the RBA's non-rural commodity price index has eased and we expect further declines in overall commodity prices going forward.

Recent terms of trade lift largely temporary



The short-lived run-up in commodity prices, and the perception at the outset that it might be temporary, may explain why the normal flow through to the rest of the economy has failed to materialise. (Similarly, mining investment has continued to decline.)

The counter to this is that the rise in commodity prices did produce a rise in national income (regardless of whether it is temporary or not). In the model, changes in the terms of trade take a while to be reflected in wages and it would not be surprising if the lag between changes in the terms of trade and their flow through into wages and other economic variables over time varies. By this reasoning, the rise in wages may simply have been delayed.

Apart from terms of trade affects, some further improvement is forecast from a likely gradual upwards move in inflation and the improvement in the labour market already underway. Productivity growth will continue to weigh modestly on wages growth relative to historical experience.

As we don't forecast underemployment, in projecting the model estimates forward, it is assumed that the underutilisation rate will fall in line with the forecast decline in the unemployment rate. The divergent experience of unemployment and underemployment suggests that there is a risk that this may not happen. Statistical tests point to the possibility that there has been a structural shift in the underemployment rate. Whether this is ongoing (resulting in further divergence from the unemployment rate) – and perhaps related to other developments such as changing industry composition – is unclear.

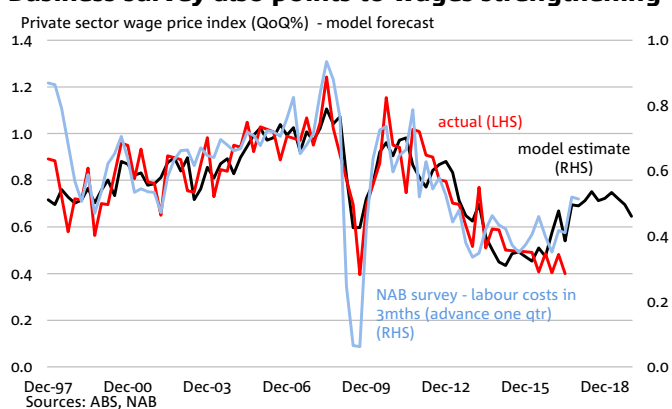
While this suggests that there is some downwards risk to the wages growth projection, over the six months to the September quarter 2017, both the underemployment and unemployment rates have

eased, so there is some recent evidence for the approach used.

Moreover, NAB's **Quarterly Business Survey** measure of the difficulty of finding suitable labour has been rising, and in the past this has been consistent with a decline in labour market underutilisation.

The survey also asks businesses to provide their expectations for labour costs over the next three months. While the resulting measure is strictly for the total wages bill (and reflect changes in employment as well as wages) historically it has tracked WPI growth reasonably well. Like our wages model, it is also signalling a strengthening in wages growth. The head of the Commonwealth Treasury, John Fraser, in a recent speech also noted that there were 'pockets' of stronger wage growth.

Business survey also points to wages strengthening



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