Markets Research

Macro-Thematic

national australia bank

Thematic – The RBA's productivity red herring

Summary

Much of the discussion on productivity asks if falling output per hour worked during the pandemic recovery will persist. It hasn't and it won't. But the RBA's assumption that productivity growth picks up to around its long-run average is optimistic. In this thematic, we disentangle the drivers of productivity to make 3 main points.

1. Pandemic distortions have mostly faded, and recent productivity performance in much of the economy is stronger than it looks. That does not mean the RBA's assumption is a reasonable baseline going forward.
2. Slowing trend growth in the decades prior to the pandemic was masked by growing mining activity and the fruits of the mining investment boom. A sharp, sustained pick up in productivity in the non-mining economy would be required to achieve the RBA's assumption over time.
3. Even though the RBA's assumption is optimistic, we do not think short-term productivity matters as much for near-term inflation outlook as the RBA's framing implies.

Key points

- Growth in mining activity was a large and growing support for productivity over the 2000s and 2010s. The fruits of the mining investment boom meant that mining alone accounted for some 70% of growth over the 2010s, up from 'just' 24% in the prior decade.
- With the tailwind from mining likely over, achieving productivity growth around 1.2% y/y (the RBA's 'long-run average' assumption) is not impossible, but requires a substantial pickup in non-mining productivity, not just a return to trend.
- Productivity determines how much real earnings growth can be sustained over time, but other adjustments can take place over shorter time horizons that matter for the near-term inflation outlook. Weak productivity hasn't been a key driver of labour cost pressures for much of the economy, and it wouldn't take much of a shift in the profit share to allow for some real wage catch up alongside further progress on inflation.

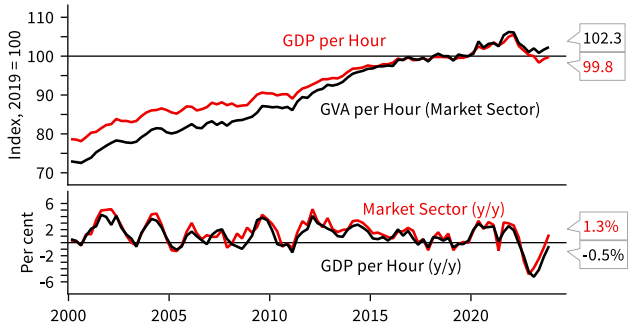
The context

Productivity, inflation, and the RBA

When the RBA talks about productivity, it is usually labour productivity and it is through the lens of the inflation implications of wages outcomes. Labour productivity is the amount of output per hour of labour input. It depends on the skills workers have and the type of work they are doing, production processes and technology, and the amount of capital available.

Productivity in normal times is notoriously difficult to measure and forecast, and pandemic distortions have clouded productivity outcomes. Output per hour worked in Australia initially increased over the pandemic before falling back sharply. That is a pattern that has been mirrored in many other economies as compositional shifts in hours worked pushed average output per hour higher, only for it to fall back as employment shares normalised and distortionary impacts faded. The post-pandemic boom also drew in less experienced labour, and meant hours growth outpaced growth in capital inputs. More recently, labour productivity has stabilised, and it looks like the pandemic influences on measured productivity are now mostly behind us.

Australia Labour Productivity



Source: National Australia Bank, Australian Bureau of Statistics, Macrobond

While the RBA doesn't explicitly forecast productivity, the assumption inherent in its activity and hours forecasts is for a return to long-run average growth of around 1.2% y/y. Recent outcomes help confirm the fallback in measured productivity into 2023 wasn't a new trend but say little about how much growth is likely going forward.

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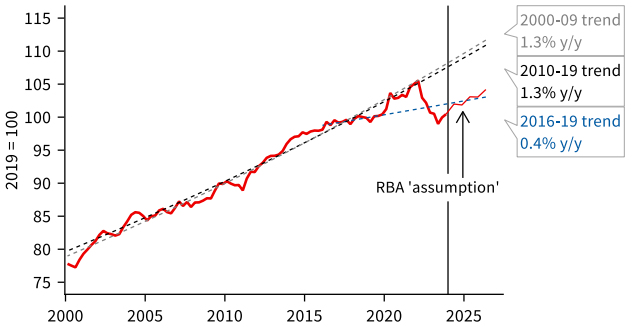
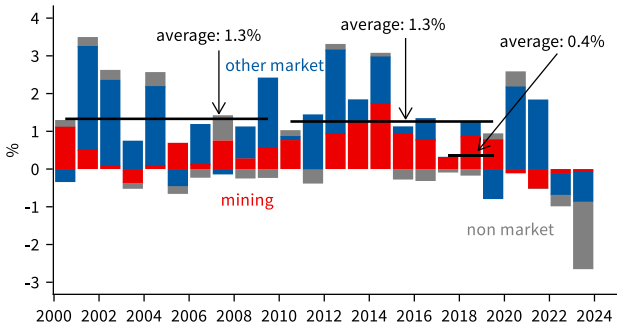
Output (GVA) per hour



Source: National Australia Bank, Australian Bureau of Statistics, Macrobond

Annual labour productivity growth with contributions



Source: National Australia Bank, Australian Bureau of Statistics

When more is produced per hour worked real wages can rise without putting upward pressure on inflation. That's the link that supports RBA communication that the current "*level of wages growth remains consistent with the inflation target only on the assumption that productivity growth increases to around its long-run average*" (March 2024 Statement).

Where wages growth is not matched by higher productivity, the RBA's concern is it must be inflated away through higher prices, but it can also be absorbed by lower profits. The profit share of income has tended to be broadly stable over time and cannot trend in one direction indefinitely, but the evolution of profit margins can play a role cyclically.

Productivity outcomes pre-pandemic

Labour productivity is measured by dividing total output by the number of hours worked. For this analysis, we use gross value added (GVA), which is GDP adjusted for the contribution of taxes less subsidies on production, per hour. We also refer to 'market productivity,' which excludes health, education and public administration. This avoids measurement challenges due to data constraints and because of a large role for governments in determining prices and quantities in non-market industries.

Labour productivity growth as measured by GVA per hour worked was 1.3% on average in the decade from 2000. It also averaged 1.3% in the decade from 2010. While productivity growth was much weaker in the 3 years prior to the pandemic at just 0.4% y/y, that longer-term perspective at face value makes trend productivity growth recovering to 1%+ seem like an uncontroversial baseline. But looking at the sources of growth over the past couple of decades reveals that sustaining similar growth going forward requires substantial improvement in productivity outcomes in the non-mining economy.

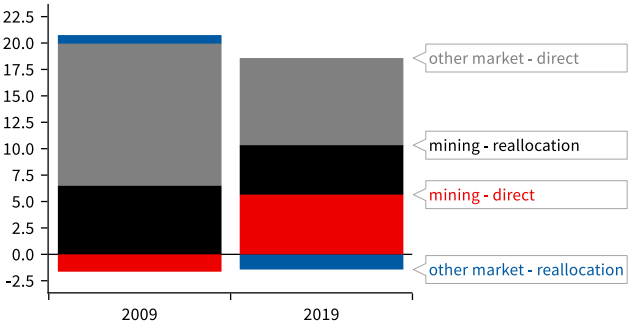
Mining dominates industry-level productivity

We decompose productivity outcomes into contributions by industry (according to Wei 2012). Productivity improves either because a larger share of hours are worked in industries that have high output per hour (**reallocation effect**) or because more is produced for each hour worked in a particular industry (**direct effect**).

Mining in Australia is very capital intensive. It accounts for 13% of Australia's GDP but just 1.5% of employment. That makes it fantastically productive from an output per hour worked perspective and completely out of line with the broader economy. Gross Value Added per hour worked in mining is $715; for the economy as a whole is it $97, and for the non-mining economy it is $85.

Looking just at the market sector, 24% of productivity growth over the 2000s was from mining - not bad for less than 2% of employment - but that rose to a whopping 70% over the 2010s. The sources of that growth also shifted. Over the 2000s, an increasing share of the economy's hours worked were occurring in the highly productive mining industry, driving average productivity higher (more people were doing very productive mining activity). But the amount produced per hour of work within the mining industry fell (mining activity was marginally less productive). That changed in the 2010s: the boost from labour being reallocated towards mining slowed, but new, was the fruits of the investment boom, which drove direct productivity growth within mining.

Market sector labour productivity growth by decade



Source: National Australia Bank, Australian Bureau of Statistics

Meanwhile, in the non-mining market sector (aggregated into the grey and blue bars above), the slowdown in productivity growth between decades was much more pronounced. The net contribution of labour reallocation within the non-mining market sector is comparatively small over both periods, but direct growth in output per hour worked slowed materially.

The table below breaks out the industry level contributions to productivity growth over the decade in more detail. A slowdown in productivity growth in Manufacturing,

Agriculture, Financial and Insurance, and Transport and Warehousing were key drags, only partially offset by a pickup in Professional, Technical and Scientific.

Labour Productivity Contributions

	decade to 2009		decade to 2019	
	direct	reallocation	direct	reallocation
Mining	-1.3	5.3	4.6	3.8
Accom and food	0.3	-0.4	0.1	-0.5
Admin and support	-0.5	0.0	0.1	-0.3
Agriculture	1.4	0.3	-0.2	0.1
Arts and rec	0.4	0.0	0.1	-0.1
Construction	-0.1	0.6	0.4	-0.2
Utilities	0.0	0.3	-0.3	0.3
Financial and insurance	2.6	0.2	1.1	0.5
Info media and telecom	0.7	0.0	1.0	0.0
Manufacturing	2.3	0.3	0.4	0.1
Other services	0.5	0.0	0.0	-0.3
Professional	0.1	-0.2	1.4	-0.3
Rental, hiring and real estate	-0.4	0.4	0.6	0.2
Retail trade	1.2	-0.7	0.9	-0.2
Transport and warehousing	1.2	0.0	0.4	0.0
Wholesale trade	1.2	0.0	0.8	0.0
non-mining market	10.9	0.8	6.7	-0.9
market	9.6	6.1	11.3	3.0
Education and training	0.5	-0.1	-0.3	-0.3
Health and social assistance	0.6	-0.3	0.3	-0.6
Public admin	0.0	0.1	0.9	0.0
non-market	1.2	-0.3	0.9	-0.9
Total	10.8	5.8	12.2	2.0

Source: NAB, ABS

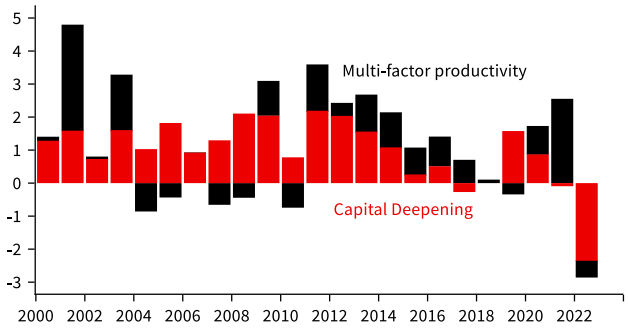
The role of investment and Capital Deepening

Another lens is to look at the contribution of capital deepening (more capital inputs for each hour of labour input) against 'multifactor productivity' or getting more output with the same volume of inputs.

Over the pandemic, total hours worked swung much more than available capital inputs. That drove predictable variation in capital deepening over the period. Before those pandemic impacts though, a trend decline in capital deepening has been noticeable since around 2013.

Note that capital deepening contributions early in the investment phase of the mining boom are likely overstated because of long lead times before investments boost output.

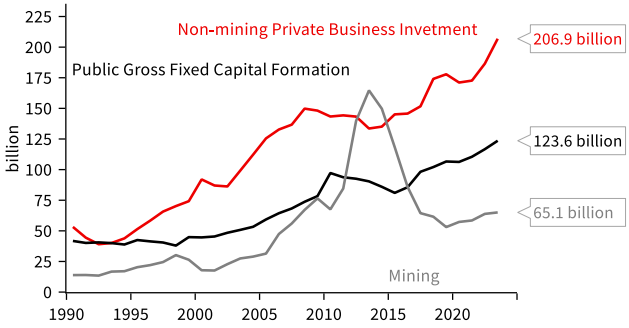
Market Labour Productivity contributions (Fin Year)



Source: National Australia Bank, Macrobond

Capital investment has improved, and intentions have remained reasonably resilient, but mining investment spend pales in comparison to its previous peaks. Mining capex is currently directed to marginal greenfield expansions to replace end of life mines, but we are unlikely to see a repeat of the same capacity expansion across the breadth of commodities we saw during the mining investment boom. Capex growth outside of the mining industry is on a better foundation than before the pandemic but may not sustain the kind of growth seen through the 2000s.

Real Public and Business Investment (Financial year)

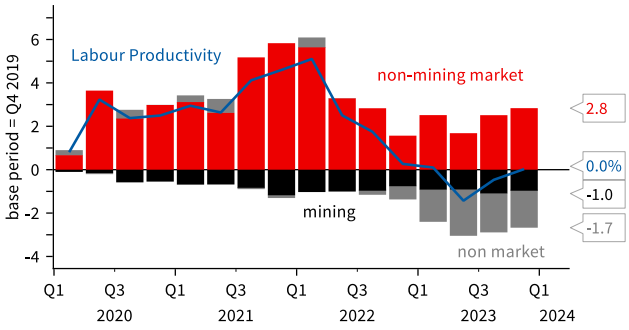


Source: National Australia Bank, Australian Bureau of Statistics

Recent productivity performance

Productivity is around where it was in 2016. After the temporary pandemic spike, we are back to where we were through the 2016-19 slump. But looking at productivity in the mining, non-mining market, and non-market sectors separately shows a hidden, more positive story.

Cumulative productivity growth with contributions



Source: National Australia Bank, Australian Bureau of Statistics

Excluding the export-focussed mining industry, the market economy (red bars) has seen decent productivity growth. Pandemic factors drove the temporary surge, and we show the contribution of pandemic swings in hours worked below. Even as those pandemic distortions unwound, productivity in this subset of the economy is meaningfully higher than it was pre-pandemic, contributing almost 3ppt to productivity growth over the past 4 years. That positive contribution has been fully offset by mining and non-market outcomes. Over the past 4 years, mining subtracted 1ppt, and health and education almost 2ppt from productivity.

The drag from health and education was alongside a surge in hours worked in early 2023, which has since stabilised. That unusually large negative contribution may unwind, which is an upside risk for near-term productivity outcomes. More broadly, the longer-run structural trend for health and education employment to grow faster than aggregate

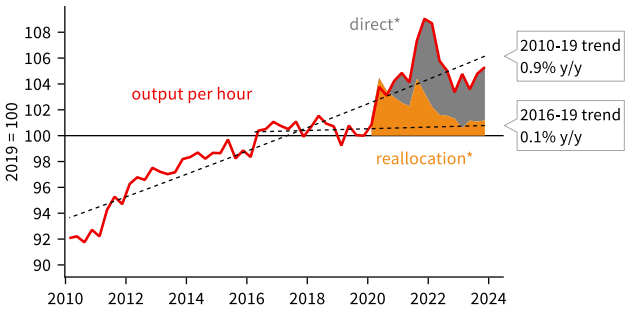
employment is likely to resume, implying a small ongoing drag on aggregate productivity from reallocation.

Non-mining market productivity

Looking at non-mining market productivity directly reveals even more about the drivers of productivity over the pandemic. Shifts in hours worked away from lower productivity face-to-face services industries drove a positive 'reallocation effect' in orange, which faded alongside reopening. But in the background, the direct, within-industry productivity growth picked up.

Output per hour in the non-mining market sector is more than 5% higher than it was in 2019, a sharp improvement from the pre-pandemic slump. Better productivity outcomes have been led by agriculture alongside strong harvests and professional, scientific and technical services. Info media & telecoms, accommodation and food services, and admin and support services have also shown improvement.

Non-mining market output (GVA) per hour

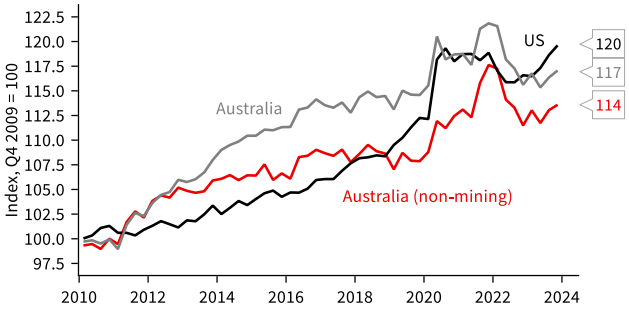


*cumulative contribution to growth relative to Q4 2019
Source: National Australia Bank, Australian Bureau of Statistics

Australia and the United States

Recent US productivity performance has been the envy of a lot of advanced economies. Australian productivity outcomes have been materially worse, but once again it is mining and the non-market sector that have driven underperformance. Non-mining market productivity has still under paced productivity growth in the US business sector, but there has been a clear improvement compared to the relatively sluggish pre-pandemic trend. Productivity outcomes were stronger in the US than Australia prior to the pandemic, which means there is some potential for Australian productivity to catch up towards the productivity frontier.

US and Australia Market Productivity*



*Market Sector Productivity for Australia, Business Sector Productivity for US
Source: National Australia Bank, Australian Bureau of Statistics, U.S. Bureau of Labor Statistics (BLS)

Conslusion and implications

The above analysis shows why, in our view, the RBA's assumption for a return to productivity growth around its long-run average, which they frame as conservative, is actually an assumption for meaningfully better productivity outcomes than the Australian economy has achieved for well over a decade. A silver lining is that we also think the RBA is wrong to centre trend productivity so centrally in the cyclical inflation outlook.

Excluding mining and government dominated industries, there has, in fact, been a pickup in productivity back to levels broadly consistent with the outcomes achieved in the decades prior to the pandemic. That has been offset by the decline in mining output and by the sharp increase in hours worked in education and health, leaving aggregate measured productivity still mired around 2016 levels.

We think a more reasonable forward looking baseline assumption is for those offsetting negatives to recede and for the positive productivity growth achieved elsewhere in the economy to sustain. Without the mining tailwind, the experience of the past couple of decades suggests that looks more like annual productivity growth of 0.5% than 1%+.

That more modest outlook for productivity growth is also a more pessimistic outlook for what real earnings growth can be sustained over time. Wages growth that is not inflated away is either matched by productivity or absorbed in the profit share and the non-mining profit share is not especially elevated, nor can it trend lower indefinitely. Wages growth would need to slow towards an average around 3% over time if productivity doesn't pick up beyond the 0.5% y/y or so consistent with our analysis in this note.

In the short term though, the profit share does not need to move much to have meaningful implications for the consistency of near-term productivity, wage, and inflation outcomes and means wages growth somewhat hotter than that for a period of time needn't derail the disinflation outlook. Further, if mining continues to weigh on productivity, that can readily come at the expense of very elevated mining profits with few broader profit and inflation implications.

A productivity boom of course is not impossible. New technologies including AI, digitisation, and the labour-saving investment incentivised by tight labour markets in a capacity constrained economy may yet prove transformative. Australia is not at the productivity frontier and there is room for catch up towards productivity outcomes achieved elsewhere through improved technology adoption and diffusion among businesses. There could be more meaningful reform, or a fix to the housing crisis that is currently adding sand into the gears of labour market dynamism. We can always hope and there are some green shoots, but there are headwinds as well. A close look at the experience of the past couple of decades suggests the long-run average is an optimistic baseline looking forward.

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