



Quarterly productivity bulletin – December 2023

Key points

- * **For the first quarter since March 2022, labour productivity rose in the September 2023 quarter by 0.9%, although labour productivity was still down 2.1% through the 12 months to September.**
 - The rise in the September quarter reflected a 0.2% rise in GDP coupled with a 0.7% fall in hours worked.
 - The fall in hours worked reflected less hours worked per worker. Total employment continued to grow.
- * **Labour productivity ceased its freefall and now sits at a similar level to the period before the pandemic.**
 - Employment is up, meaning more workers have entered the workforce (although newer workers tend to require more training and have less experience), while investment has also increased, allowing capital per worker to return to pre-COVID-19 levels.
- * **13 out of 19 industries saw productivity growth in the September quarter, which was predominantly a result of decreases in hours worked rather than increases in output.**

This bulletin provides a brief on the most recent trends in productivity from the September 2023 quarter National Accounts, published in December 2023. Quarterly data can be volatile and may deviate from the long-term trend. Data is also subject to revisions in subsequent ABS publications, which warrants caution in interpreting the meaning behind the numbers in any particular quarter. For this reason, medium- and long-term trends are also explored. A primer on productivity, as well as productivity data and their revisions, are included in the appendix.

1. Productivity returned to pre-COVID levels

Labour productivity is out of freefall

Labour productivity came out of its freefall in the September 2023 quarter, rising 0.9% and halting the decline that began in March 2022 (ABS 2023b). Over the 12 months to September 2023, labour productivity fell 2.1% (ABS 2023b).

The rise in labour productivity can be attributed to a 0.2% growth in Gross Domestic Product (GDP), and a 0.7% decline in hours worked. This marked the first time that aggregate hours worked have fallen since September 2021 (ABS 2023a).

The market sector also registered a 0.6% increase in labour productivity attributable to a 0.1% fall in Gross Value Added (GVA) and a 0.6% fall in hours worked (ABS 2023b).

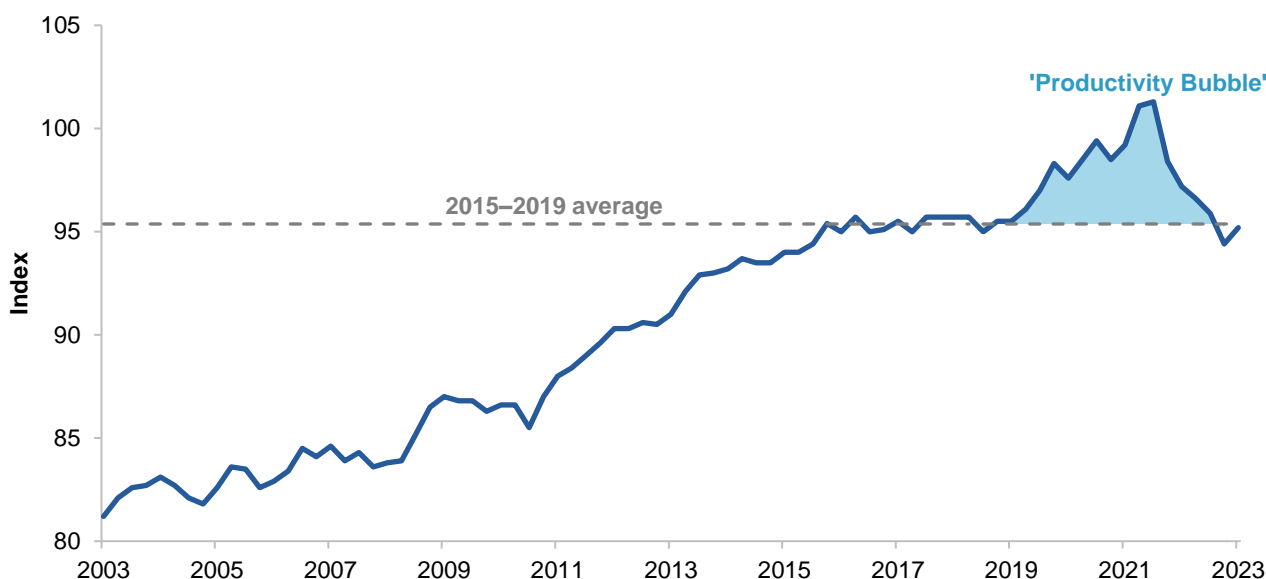
Australia returned to pre-pandemic levels of labour productivity

The decline in labour productivity stopped at almost the same level as in the four years prior to 2019 (figure 1). To understand recent productivity trends, it is important to disentangle changes in labour productivity attributable to the COVID-19 pandemic, from other, longer-term trends that may be occurring.

Changes in productivity through the COVID-19 pandemic were largely attributable to temporary shifts in where people were employed

Australia experienced a ‘productivity bubble’ during the COVID-19 pandemic (figure 1). The sharp productivity rise (and subsequent sharp decline) is unlikely to reflect workers becoming more (or less) productive – instead, the pandemic led to major (but temporary) shifts in where people were employed – away from relatively low productivity sectors, towards high productivity sectors. Labour productivity rose sharply in March 2020 as relatively low productivity sectors shed workers, increasing the average productivity of the workforce even as the economy slowed (PC 2023b, p. 5). As pandemic-related restrictions were eased, and workers moved back to lower productivity sectors, predominantly in the services space, this trend reversed and average labour productivity declined (PC 2023b, p. 5).

Figure 1 – Labour productivity is back to levels reached in the four years prior to 2019
Labour productivity (index, 2021=100) between September 2003 and September 2023

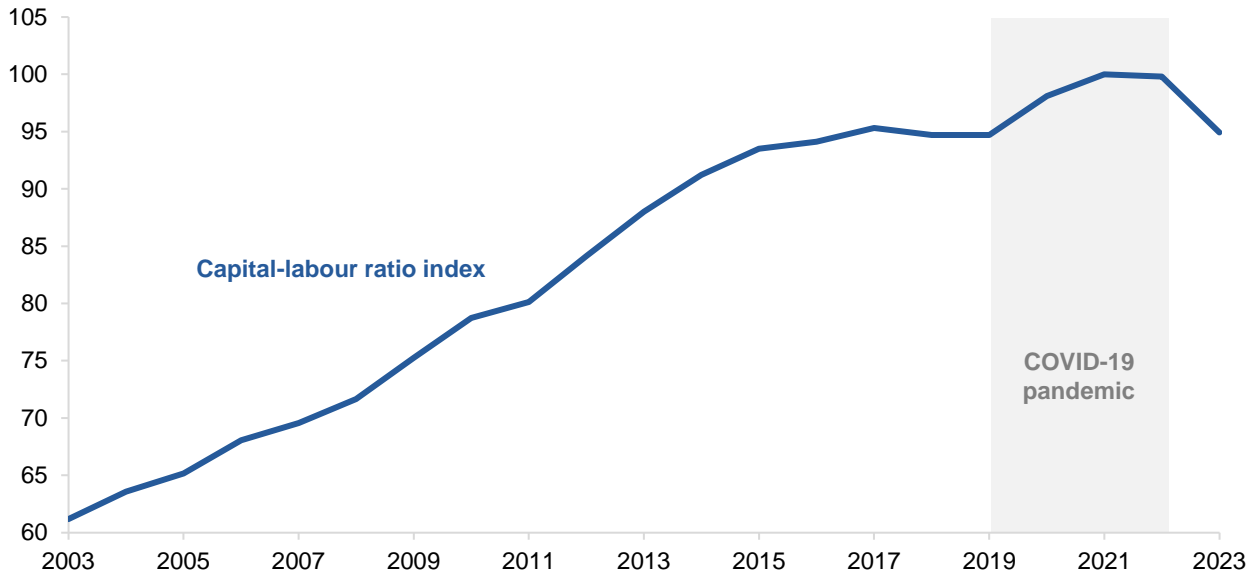


Source: ABS (2023, *Australian National Accounts: National Income, Expenditure and Product*, September 2023, Cat. no. 5206.0., table 1)

And increases to the capital-labour ratio were also short-lived

Similar to the productivity bubble, the capital-labour ratio, or capital deepening – a key input into labour productivity – rose sharply during COVID-19. And as with the productivity bubble, this increase proved to be short-lived (figure 2).

Figure 2 – The capital-labour ratio has also returned to its pre-pandemic level
Capital-labour ratio (index, 2021=100) between September 2003 and September 2023



a. The capital-labour ratio measure is for the market sector and not the whole economy. This data is released every financial year. The Commission also estimated other measures for the whole economy and found similar results.

Sources: ABS (2023, *Australian National Accounts, 2022-23*, Cat. no. 5204.0, table 13).

The sharp rise in the capital-labour ratio is attributable to the rise in unemployment in the services sector, without a commensurate fall in capital – consider for example a café that laid off workers during the pandemic but did not dispose of their kitchen machinery or oven. This resulted in an increase in the *measured* capital-labour ratio even though much of the capital stock sat idle (PC 2021, p. 10). This rise in the capital-labour ratio was then reversed as employment rose and workers began using the capital that had previously been underutilised in the services sector. Some of the biggest increases in the capital-labour ratio occurred in the accommodation and food services, transport, postal and warehousing and arts and recreation services – all industries that shed high numbers of workers during the pandemic, and all have returned to about their pre-pandemic capital-labour ratios.

A return to pre-pandemic productivity levels, but the economy has changed

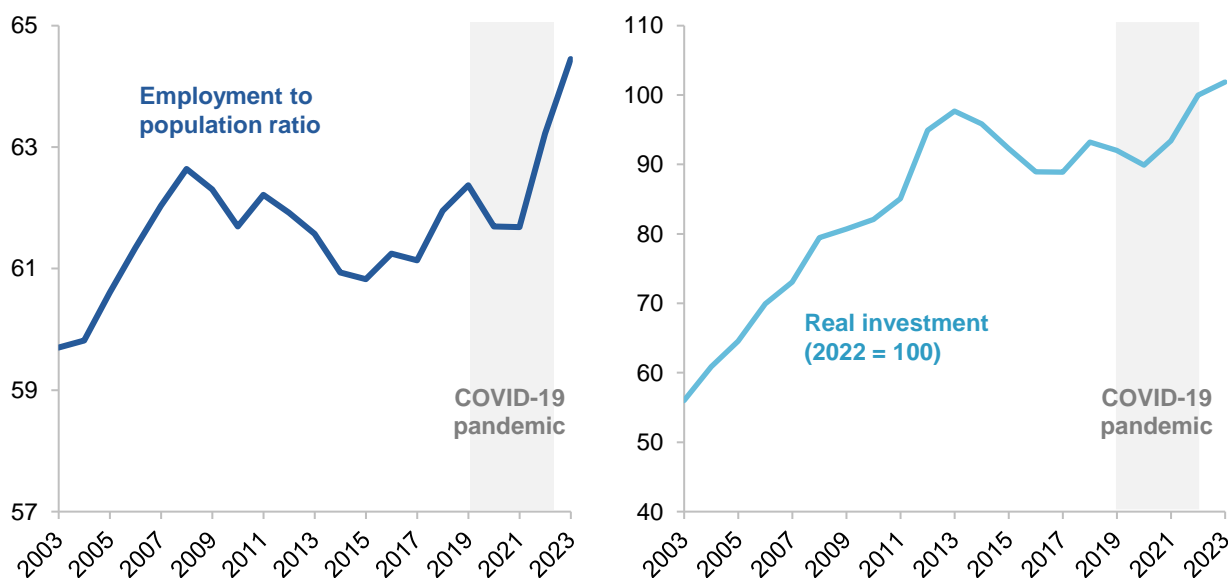
In some respects, a reversal of the ‘productivity bubble’ after pandemic restrictions unwound seems intuitive. But the economy has changed since 2019.

The country has record high labour force participation, and low unemployment (figure 3). This means that previously marginal workers (including younger workers and those with lower levels of education) are now active in the workforce, which likely puts downward pressure on measured productivity in the short term as relatively inexperienced or less skilled workers tend to take time to catch up to their new colleagues. Ultimately, more people in jobs is a positive economic and social outcome. As these new workers gain experience, their effect on aggregate productivity will also improve.

For the capital-labour ratio to have returned to pre-pandemic levels with higher employment, capital must have increased. Indeed, real investment (the flow of new capital into the economy) increased since the start of the pandemic (figure 3), allowing capital to keep pace with labour. This rising investment has occurred despite rising nominal interest rates.

Figure 3 – Less experienced workers entered the labour market, but investment increased enough to return capital-labour ratios to pre-pandemic levels

Employment to population ratio (left)^a, and real gross fixed investment index (right)



a. The employment to population ratio is the proportion of the population above the age of 15 who are employed. This data is released monthly and has been converted to financial years.

Sources: ABS (2023, *Labour Force, Australia*, October 2023, Cat. no. 6202.0, table 1; 2023, *Australian National Accounts*, 2022-23, Cat. no. 5204.0, table 64).

This rise in investment is welcome as non-mining investment was weak before the pandemic leading to a slowdown in capital deepening and even capital shallowing from 2018 (PC 2023b, p. 17). This slowdown weakened labour productivity which was mostly stagnant between 2015 and 2019. Encouragingly, the increase in investment since 2021 is not driven entirely by mining investment, as was often the case before the pandemic, with agriculture, manufacturing, electricity services and other services all experiencing an increase in investment.

And the long-run trend is still a cause for concern

Australia's labour productivity returning to 2019 levels is still a concern. It means that the weak productivity growth (both labour and multifactor) experienced before COVID-19 has continued as Australia recovered from the pandemic. In the decade leading to 2019 multifactor productivity growth (0.5%) was a little over half the average of the three decades prior (0.9%) (ABS 2023c). This reflects the combination of a global slowdown in productivity growth that has been ongoing since about 2005 (PC 2020).

2. More productive industries reduced hours worked

Industrials contracted while services expanded

While output growth was only 0.2%, which could well be revised down in future, 12 out of 19 industries still experienced rises in GVA. Output rose in most service industries, while major goods industries saw a fall.

In the services sector, output increased the most in the information, media and telecommunications (2.6%), arts and recreation (2.0%), and health care and social assistance (1.8%) industries. This was consistent with

the 2022-23 statistics, where media and telecommunication and arts and recreation industries both experienced a large increase of 10.5% and 7.5% in GVA in 2022-23 (ABS 2023d).

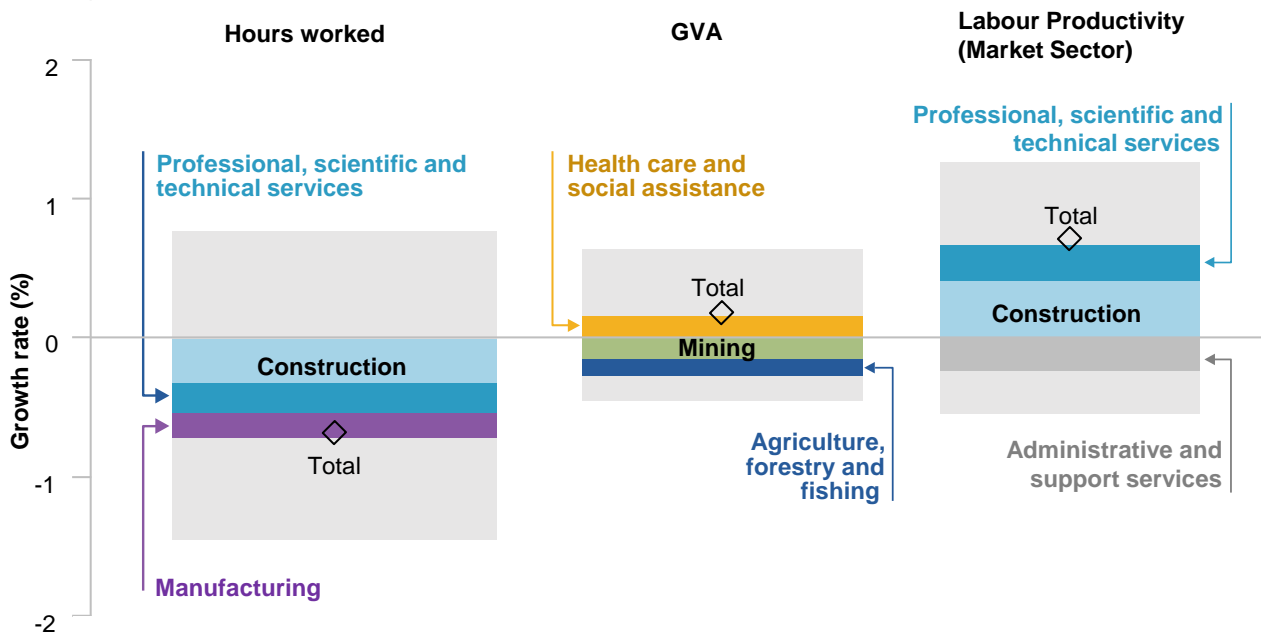
In the goods sector, output declined the most in: agriculture (-3.5%) reflecting a fall in the demand for grains; electricity, gas, water and waste services (-2.6%) reflecting warmer winter conditions which reduced demand; and mining (-1.0%) where maintenance of mining sites disrupted production (ABS 2023b). Quarterly trends for the goods sector broadly aligned with annual trends.

The modest uptick in productivity was driven by decreased hours

The 0.9% increase in whole economy labour productivity was underpinned by labour productivity growth in 13 of 19 industries – reversing the declines over 2022-23 (ABS 2023b, 2023d). Most cross-industry labour productivity variation was driven by changes in the number of hours worked, rather than changes in output.

A few key industries account for most of the change in quarterly labour productivity (figure 4). Construction, along with the professional, scientific and technical services industry, contributed 0.7 percentage points while administrative and support services decreased labour productivity by 0.2 percentage points. This reflected significant changes in hours worked in these industries.

Figure 4 – Decomposed economy-wide growth in hours worked, output and productivity
Growth in aggregate labour productivity^a, aggregate gross value added (chain volume) and aggregate hours worked^b decomposed by the top 3 industries, Jul-Sep 2023



a. Market sector labour productivity is decomposed using ABS’s method of decomposition of aggregate labour productivity (Wei 2012). **b.** Industry hours worked uses the hours actually worked in the quarterly labour account.

Source: Commission estimates using ABS (2023, *Australian National Accounts: National Income, Expenditure and Product*, September 2023, Cat. no. 5206.0, table 1; 2023, *Labour Account Australia*, September 2023, industry summary table).

Abbreviations

ABS	Australian Bureau of Statistics
GDP	Gross Domestic Product
GVA	Gross Value Added

References

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Publication enquiries:

Phone 03 9653 2244 | Email publications@pc.gov.au

www.pc.gov.au