Australian Government
Productivity Commission

Productivity before and after COVID-19

Australian Conference of Economists

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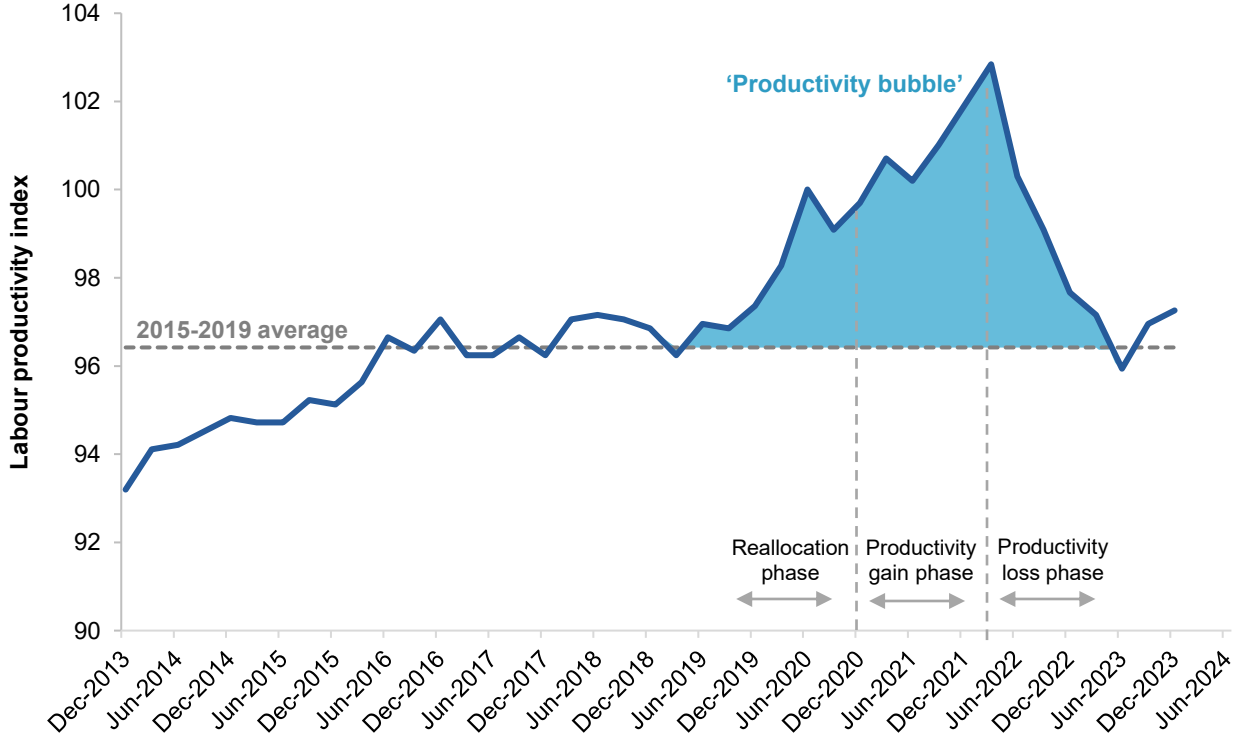
The Productivity Commission acknowledges the Traditional Owners of Country throughout Australia and their continuing connection to land, waters and community. We pay our respects to their Cultures, Country and Elders past and present.

What factors caused a productivity bubble to emerge during the pandemic?



Why is this question important?

Labour productivity has implications for wages, living standards and prosperity

Predict if trends are persistent or transitory

Inform post-pandemic policies to promote productivity growth

What are the main factors that explain the productivity bubble?

We assessed 9 potential reasons for the ‘productivity bubble’

- Industry composition
- Capital-to-labour ratio
- The quality of the labour force
- Labour mobility
- Growth in the care economy
- Creative destruction, and firm entry and exit
- Supply disruptions through the pandemic
- Working from home
- Workplace restrictions

1. Industry composition

Some industries tend to be more productive than others

Use of technology

Capital/labour intensity

Market structure

Lower productivity

Higher productivity

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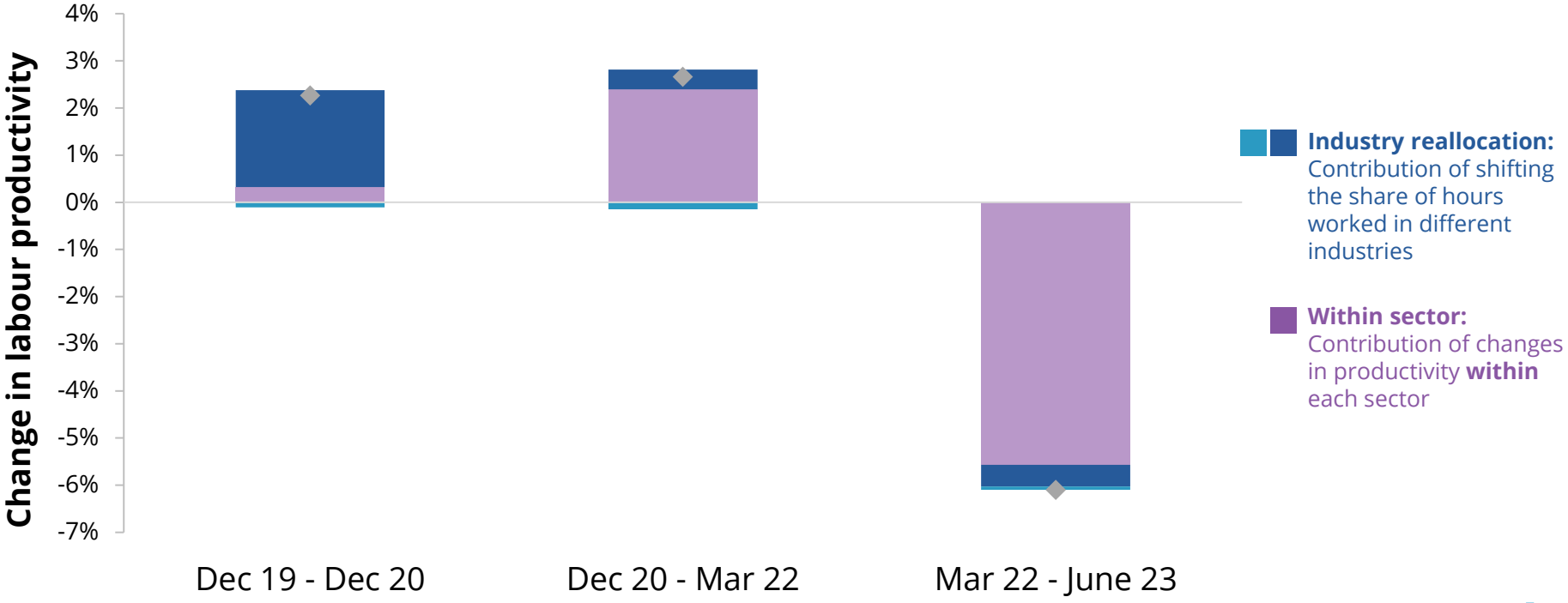
1. Industry composition

The initial rise in labour productivity is attributable to movements of workers between industries, but after December 2020, worker productivity improved and then declined



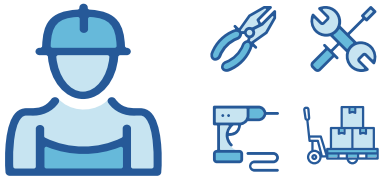
2. Capital-to-labour ratio

All else equal, a higher capital-to-labour ratio enables workers to produce more output her hour

Less capital per worker

Less productive

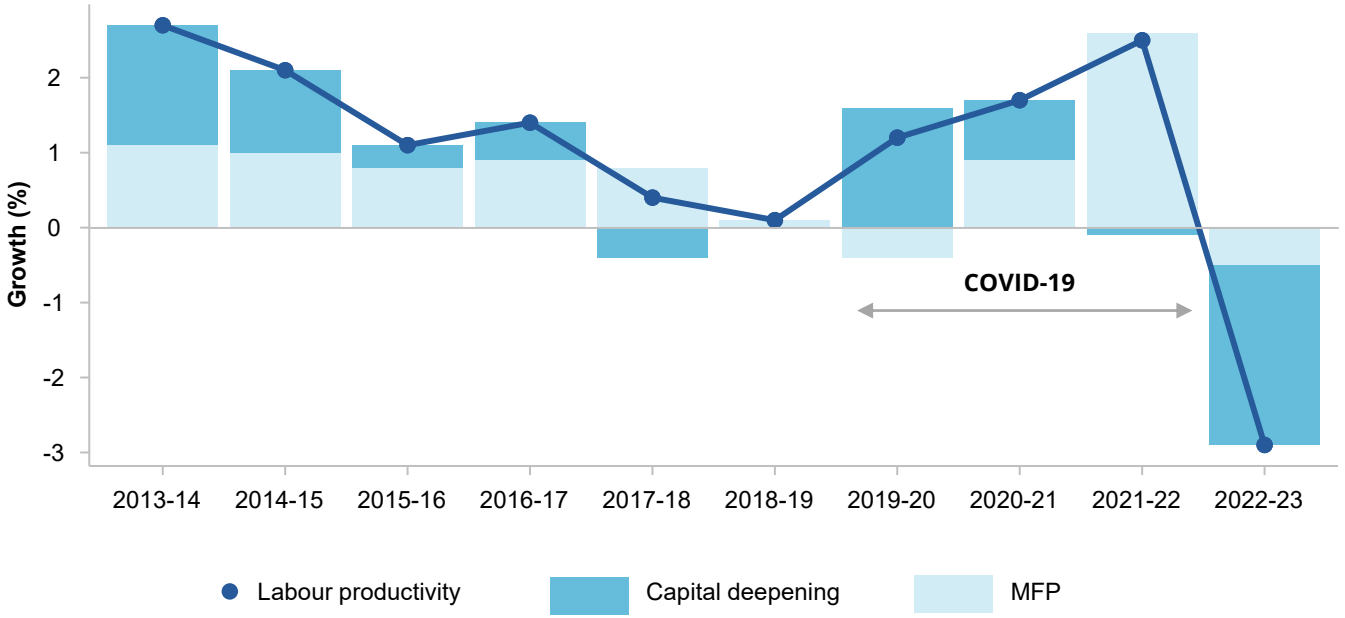
More capital per worker



More productive

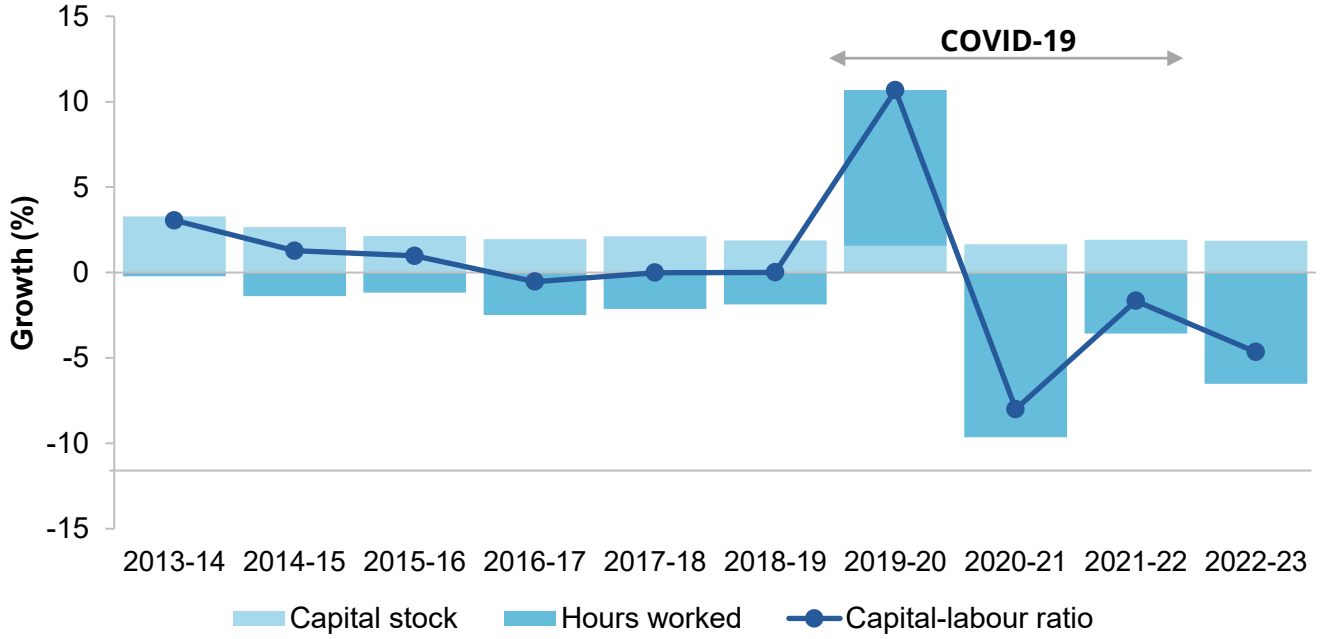
2. Capital-to-labour ratio

Changes to the capital-to-labour ratio throughout the pandemic were a significant part of the growth and subsequent decline in labour productivity that occurred during the COVID-19 pandemic

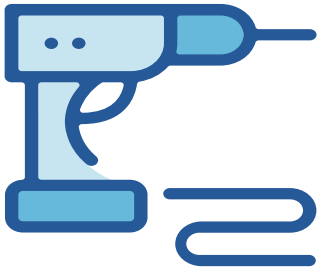


2. Capital-to-labour ratio

Changes to the capital-to-labour ratio were driven by changes to hours worked rather than changes to capital stock



3. Labour force quality



Skills

Knowledge

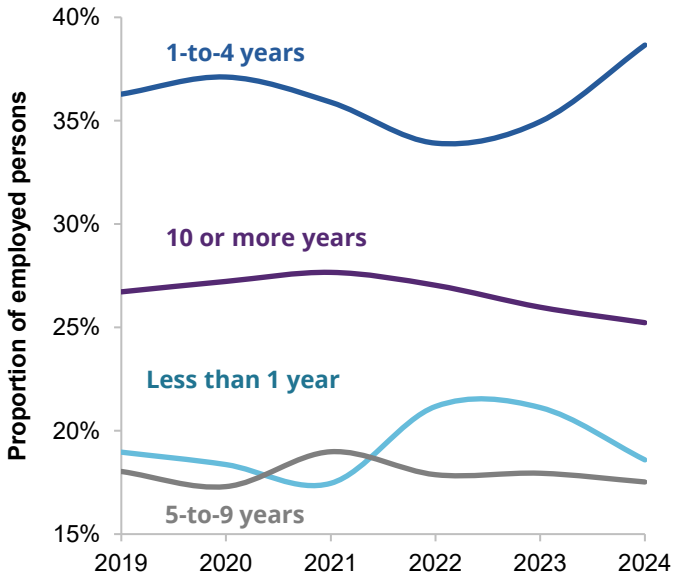
Experience

- Younger, less experienced and skilled workers were more likely to be cut at the start of Covid-19, contributing to an estimated **37% of the measured rise in labour productivity**.
- As the economy rebounded, younger and less experienced workers returned, contributing to an estimated **14% of the measured decline in labour productivity**.

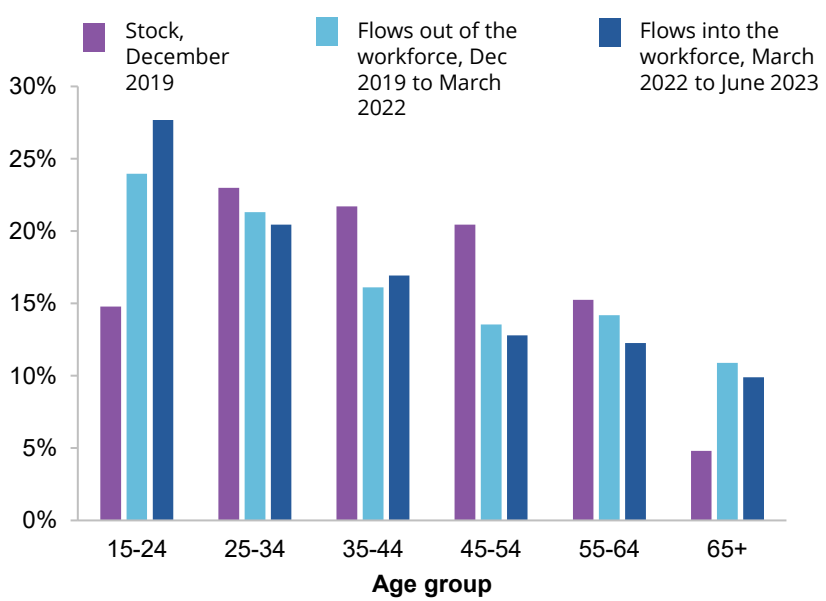
3. Labour force quality

The workforce got younger and less experienced after COVID, which weighed down labour productivity

Years in current job



Workforce composition by age



4. Creative destruction, and firm entry and exit

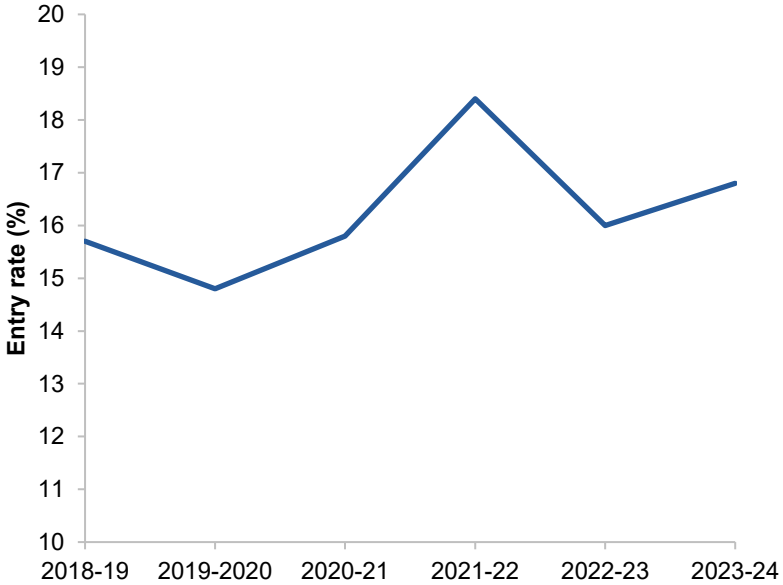
- The **reallocation effect** suggests that creative destruction can improve productivity as lower productivity firms are more likely to exit the market, reallocating labour and capital towards higher productivity firms.

- The **scarring effect** suggests that creative destruction in downturns can weaken productivity as productive but financially constrained businesses exit.

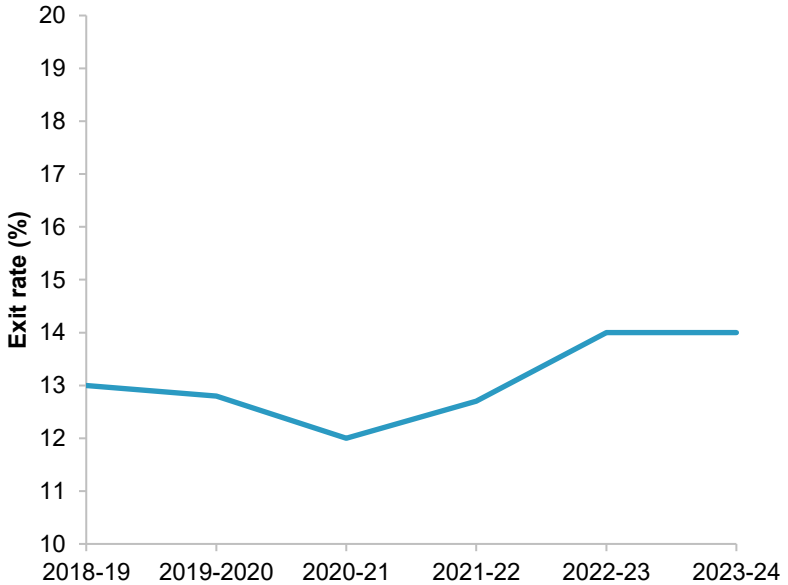
4. Creative destruction, and firm entry and exit

During the pandemic, it is unlikely there were significant implications of firm entry and exit for the labour productivity bubble

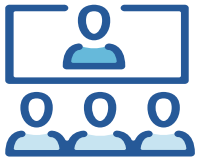
Firm entry rate



Firm exit rate



6. Labour mobility

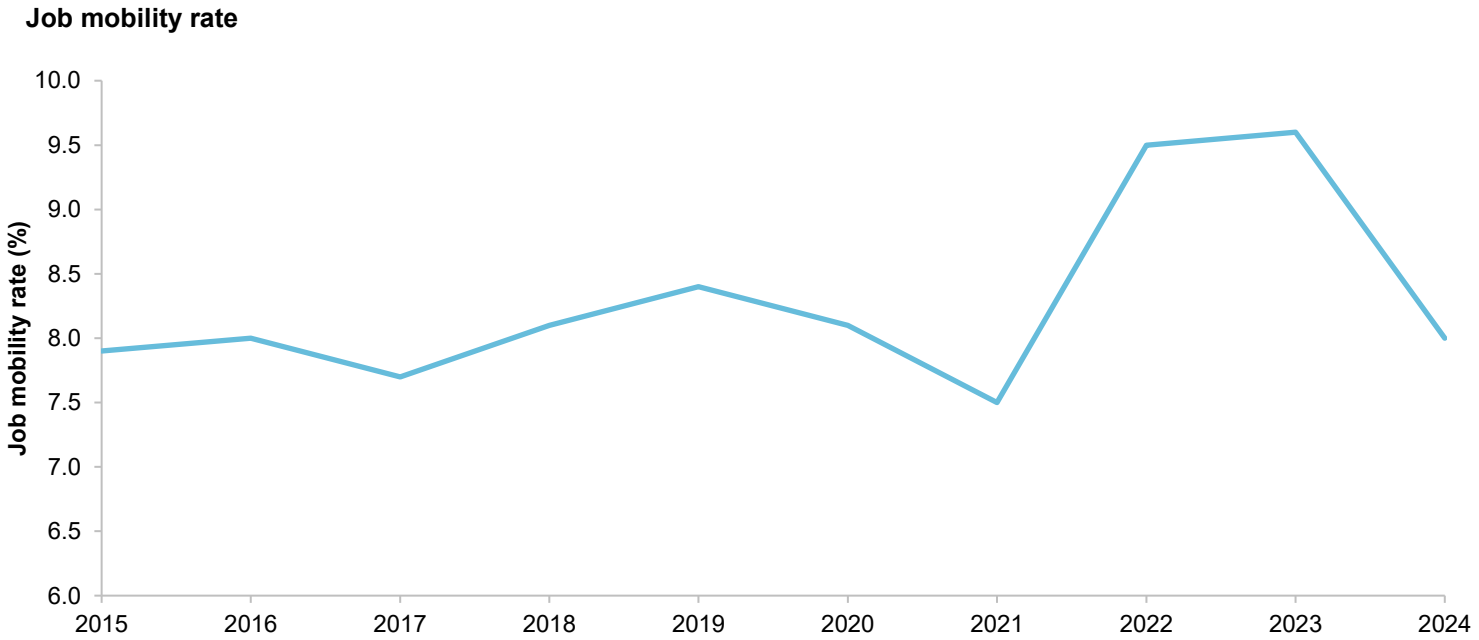


Labour mobility can result in **either**:

- **productivity gains** if workers find a job that **better aligns with their skills** or move to a higher productivity firm
- or **productivity losses**, due to the **loss of job-specific institutional** knowledge

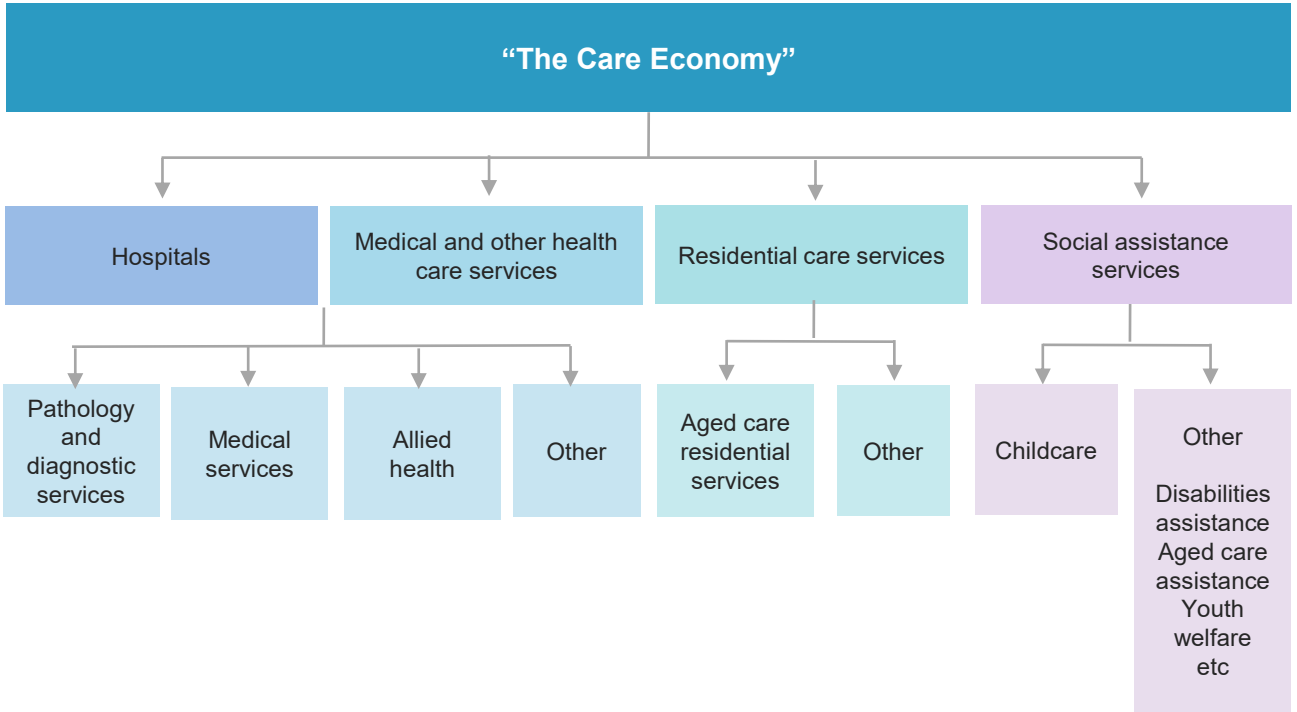
6. Labour mobility

It is hard to determine the precise impact of labour mobility on the 'productivity bubble'



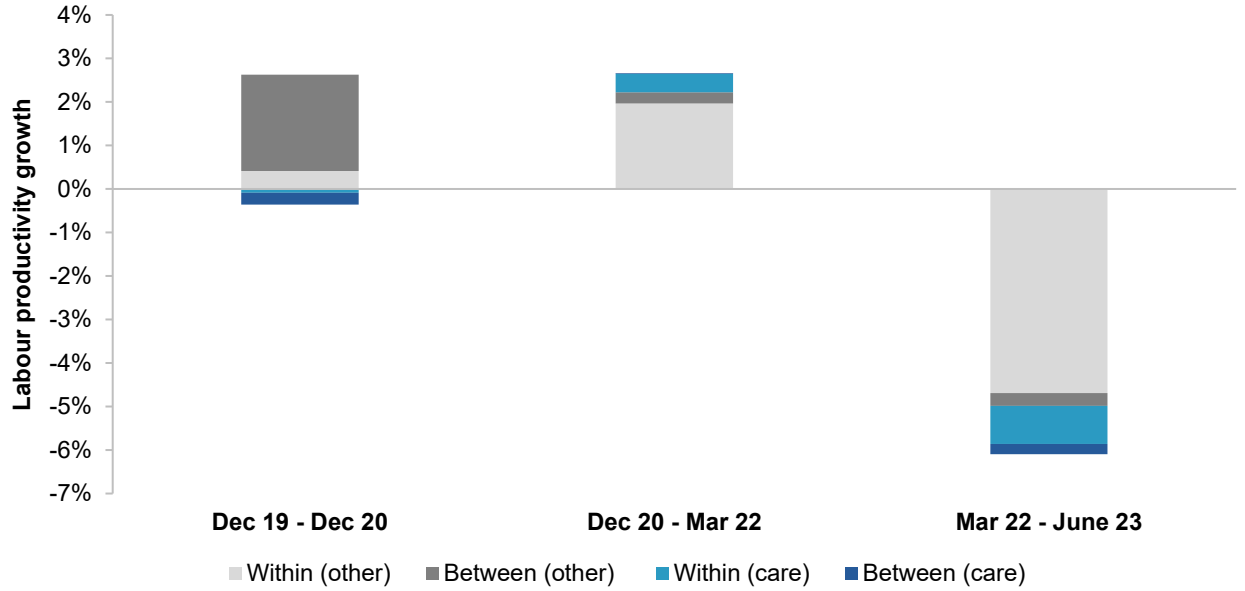
5. The care economy

The care economy provides critical services to Australians



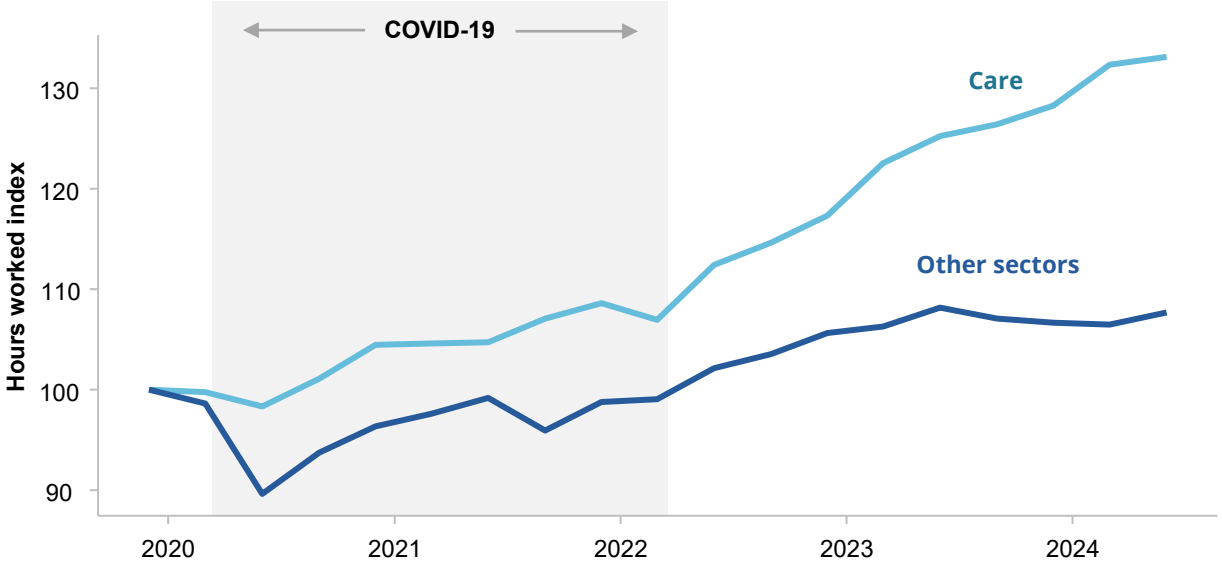
5. The care economy

The care sector contributed to 18% of the decline in measured labour productivity between March 2022 and June 2023



5. The care economy

This decline in productivity was largely due to an increase in hours worked which wasn't matched by an equivalent increase in measured output

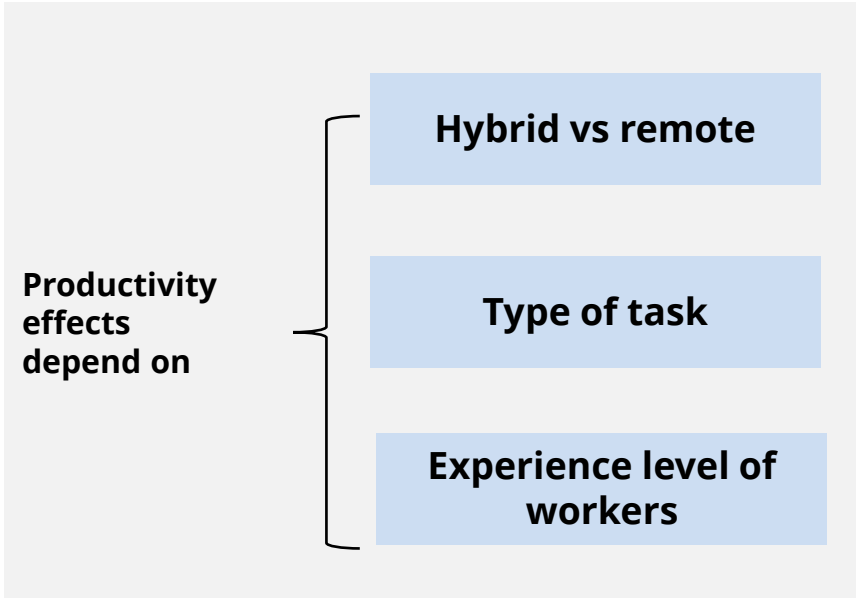


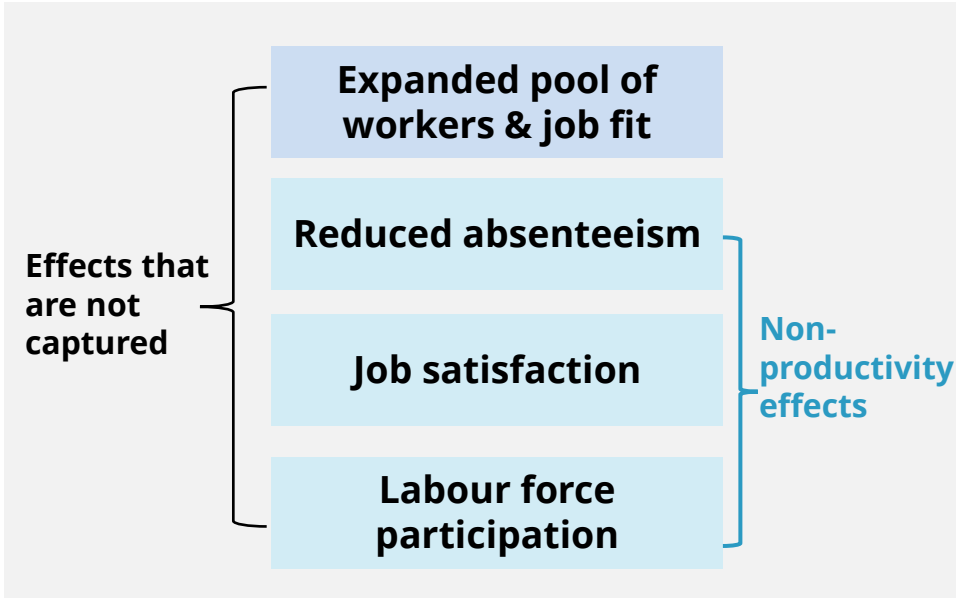
Policy changes

- NDIS expansion
- Mandatory aged care minutes
- Legislated nurse-patient ratios
- ECEC workforce package in 2023

6. Working from home

Measuring the economy-wide impact of increased working from home on labour productivity is difficult, as results from existing vary with factors like the extent to which people work from home, and don't capture indirect or long-term effects.





Australia's productivity problem is a long-term challenge

While the effects from the Covid-19 on productivity will likely, for the most part, be transitory, the bubble demonstrated the importance of reform to improve productivity.

- For example, investment reforms to support capital uptake (Pillar 1), enhancing training opportunities to uplift the skillset of our labour force (Pillar 2) and enabling collaborative healthcare to improve efficiency in delivering quality care (Pillar 4).

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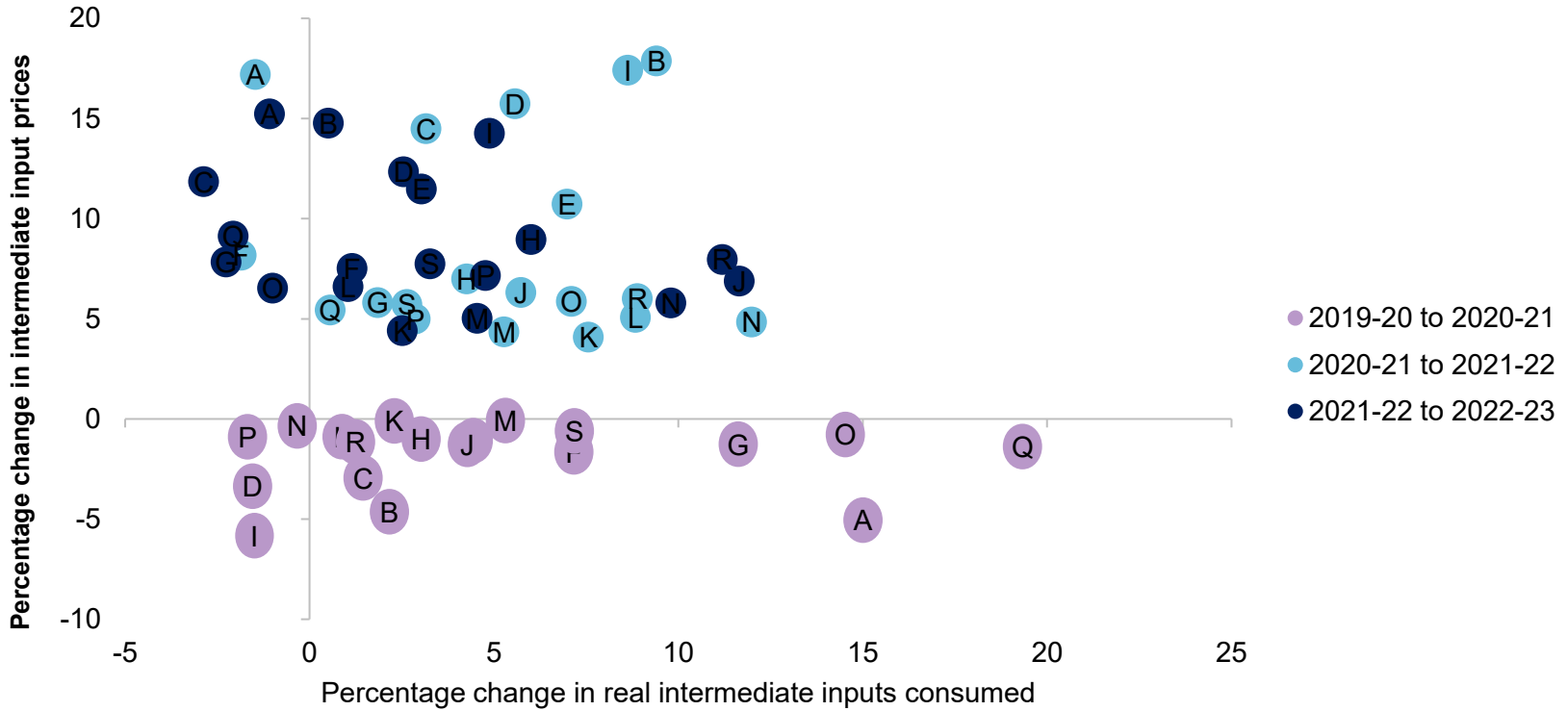
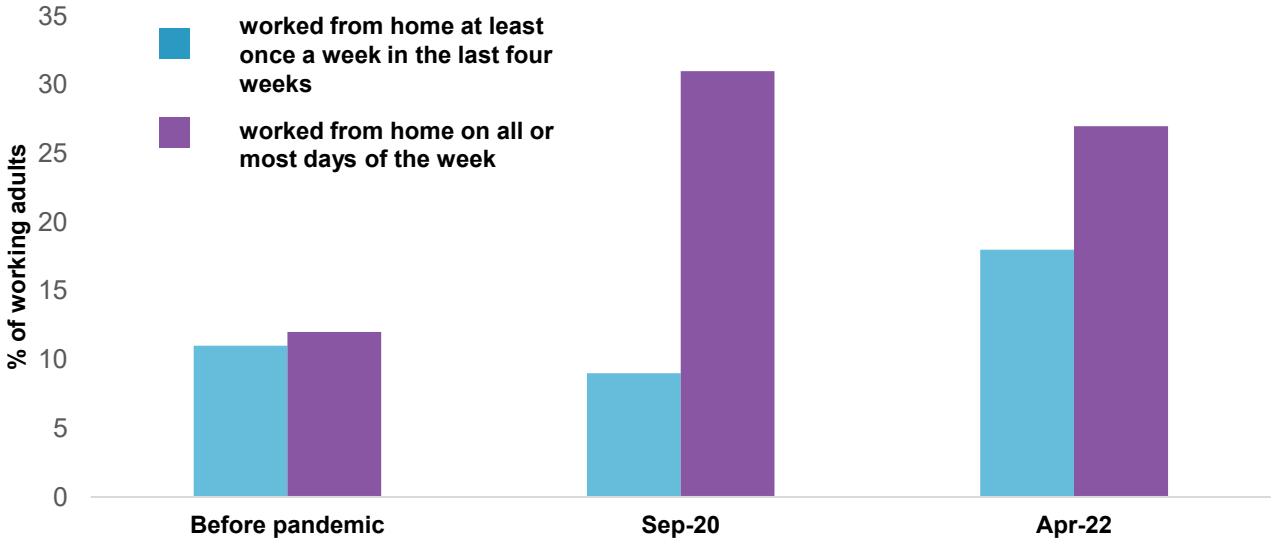
7. Supply chain disruptions

Cursory analysis of the effects of supply chain disruptions on labour productivity is inconclusive



6. Working from home

Rates of working from home increased over the pandemic



Why has long-run investment growth been low?

There are multiple potential explanations for the long term stagnation in private non-mining investment

- **Increasing risk-premium associated with investment**: increase in market-risk premium after GFC, potentially due to changing global conditions, could make firms more risk-averse to investing
- **Shift towards service sector**: service sector relies less on physical capital on average (this is not a major factor because most significant reductions are due to changes within sectors)
- **Changes to composition of capital**: investment is increasingly centered on longer lived assets such as building and infrastructure which don't need to be replaced frequently and in intangible assets which are hard to measure not fully included in investment measures
- **Weak economic growth**: can encourage firms to take defensive strategies and reduce investment
- **Growing market power of firms**: theoretically, firms with more market power may have less incentive to produce output and build capacity
- **Low marginal factor of productivity growth**: may reduce gains from capital stock and therefore reduce investment incentives

Shift-share decomposition

Based on Teo and Ong (2017)

- Growth in labour productivity can be decomposed into the summation of within, static shift and dynamic shift effects
  - **Within effect**: the contribution of productivity growth within sectors to overall productivity growth
  - **Static shift effect**: the contribution of changes in the hours worked shares of sectors with different productivity levels to overall productivity growth
  - **Dynamic shift effect**: the contribution of changes in the hours worked shares of sectors with different productivity growth rates to overall productivity growth

Labour mobility

QALI measurement

Box 3.3 – How labour quality is currently accounted for in productivity statistics

While there are differences across the workforce in labour quality and skills, the ABS headline labour productivity measurements treat all hours worked as equal inputs. These differences in the quality of the labour force are not identified in *standard* multifactor and labour productivity measurements – changes to labour quality over time are captured by the changes in multifactor productivity, which is a residual after taking into account the direct output effects of changes in capital and labour inputs. However, the ABS estimate a quality adjusted labour input measure, which uses the education and age of workers as a proxy for worker quality. Unfortunately, data limitations restrict its application in analysing short term productivity trends (this is discussed further in the final section of this chapter).

Analysing and accounting for changes in the quality of the labour force can provide insights into the long term drivers of labour productivity. ABS estimates suggest that approximately one third of labour productivity growth and 40% of multifactor productivity growth in the market sector from 1994-95 to 2022-23 were driven by improvements in the workforce's human capital (ABS 2023d).[7]

8. Changes to how we work

Working from home

In-person interactions are important, but workers don't need to be in the office full-time to experience the benefits

Remote work has the potential to boost workforce participation

Remote work provides opportunities to work for people who would be unable to do so

Remote work could improve job fit and labour productivity

Remote work expands the geographical pool of potential employees and employers

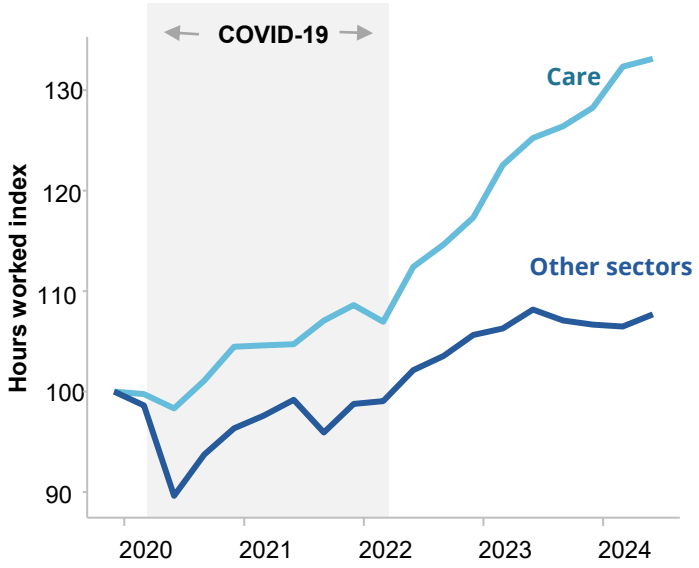
Workplace restrictions

Changes to how we worked due to COVID-19 restrictions are likely to have negatively affected labour productivity, but measuring the aggregate effect is difficult.

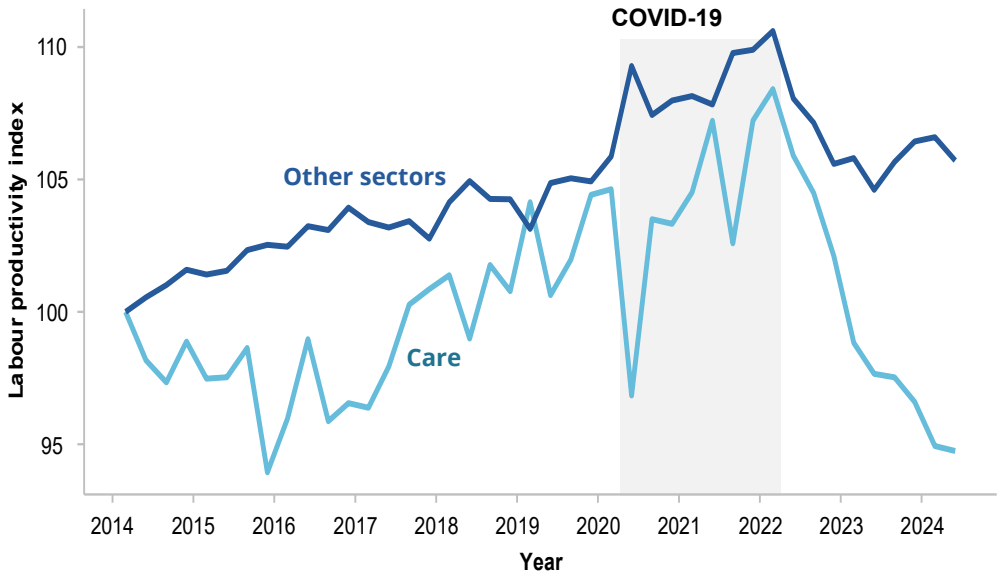
5. The care economy

A decline in measured labour productivity in the care economy, combined with a significant growth in hours worked, has contributed to the fall in Australia's labour productivity

Hours worked index



Labour productivity index



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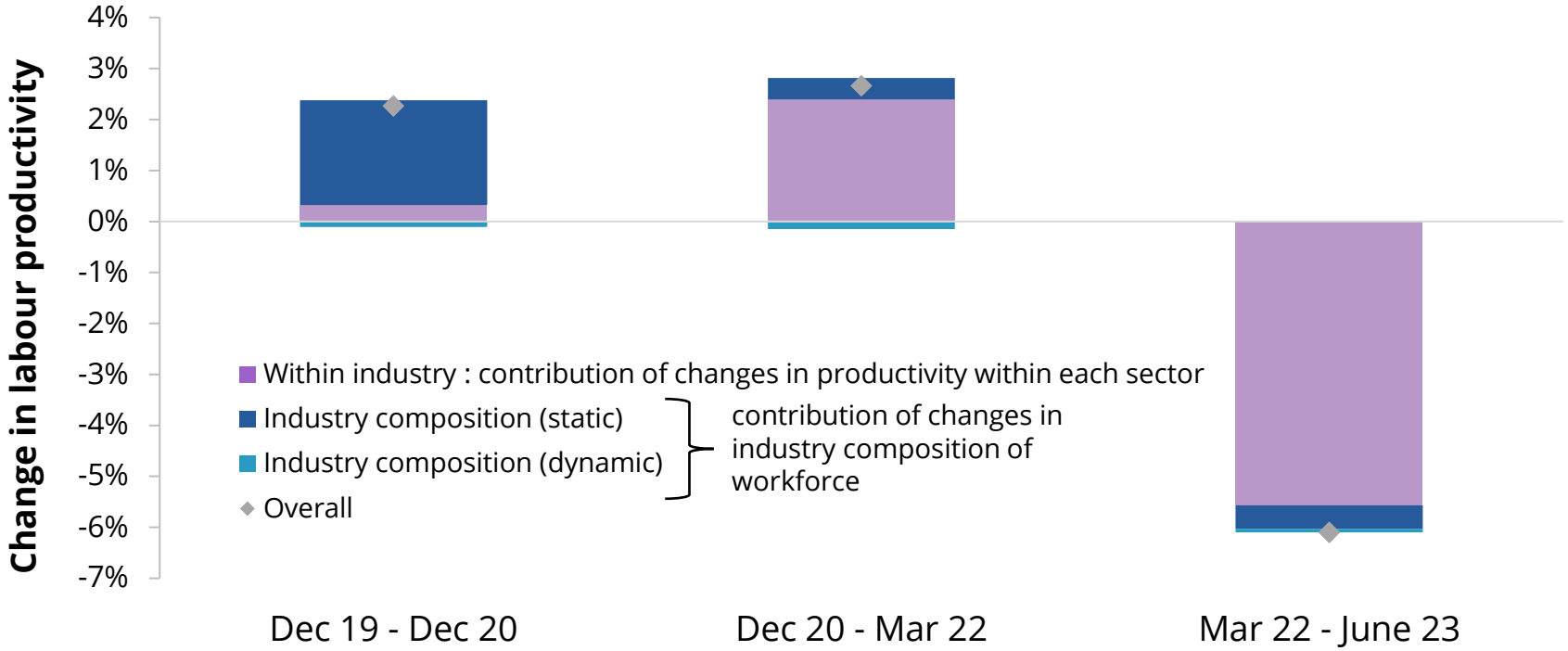
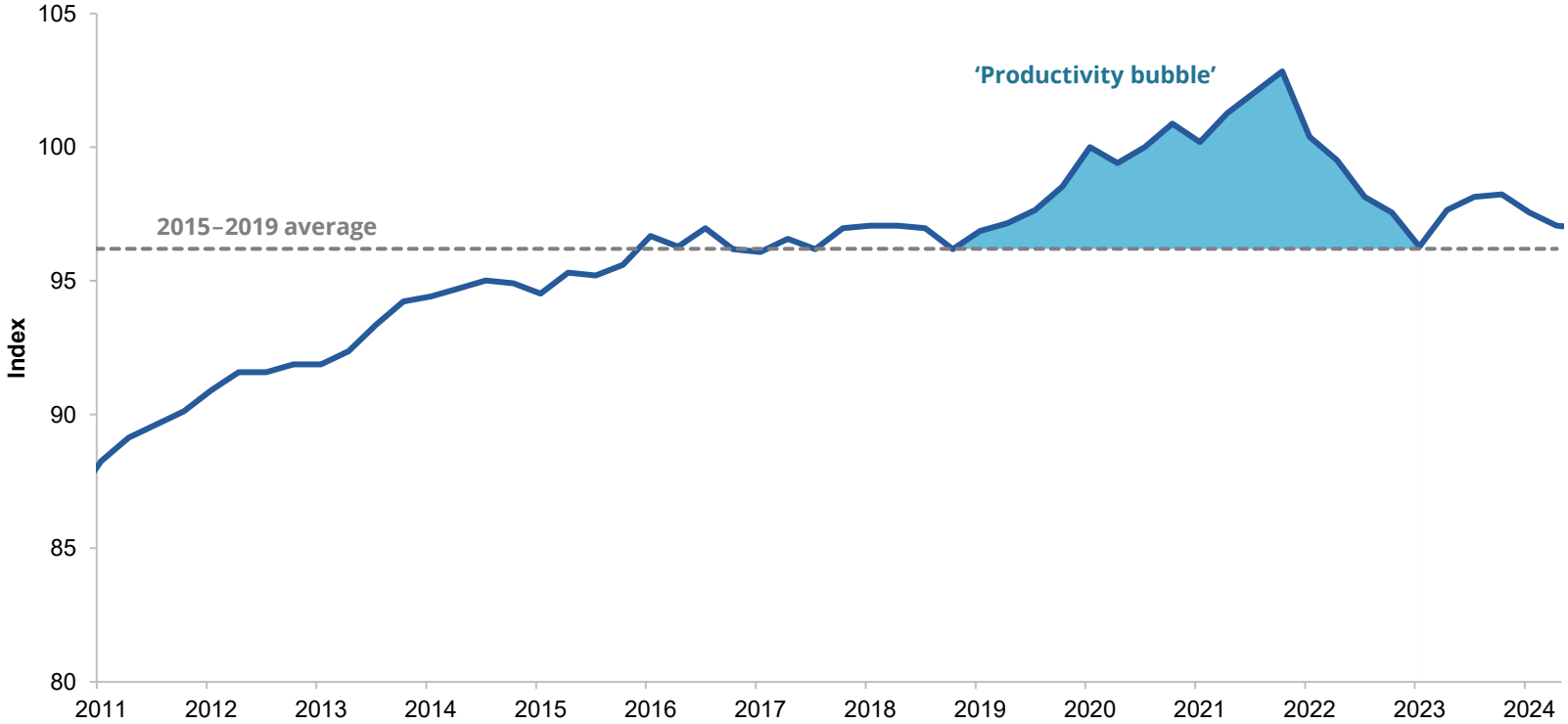


A productivity bubble emerged during the pandemic



6. Working from home

The productivity impacts of working from home may vary between fully remote and hybrid work arrangements.

Hybrid work from home

- No effect or linked to better productivity
- Reduced absenteeism
- Job satisfaction

Fully remote work

- Linked to lower productivity
- Productivity impacts of better Job fit?
- Labour force participation

2. Capital shallowing

Investment recovered above pre-pandemic levels but continues the long-term trend of low investment