Centre for Future Work

Submission to Senate Select Committee on Productivity in Australia

Centre for Future Work

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About this submission

This submission was written and assembled by Emeritus Professor David Peetz, Carmichael Distinguished Research Fellow at the Centre for Future Work, drawing on his previous work and that of Jim Stanford.

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Introduction[1]

This submission is organised into six substantive sections. Between them, it addresses seven of the questions in the Committee's Discussion Paper (indicated below the section headings), while the answers are also relevant to a number of other questions raised by the committee (referred to in relevant footnotes). Time has not permitted full responses to other questions asked in the Discussion Paper.

Historical performance and framework[2]

- **What is Australia's historical and recent productivity performance, and the expected outlook and related assumptions on future productivity growth? How does Australia's productivity performance compare with other countries, including the global productivity frontier?** *and*
- **What are the limitations of Australia's current productivity measurement frameworks?**

Productivity is about quantities, not costs. Productivity 'measures how good we are at producing output'.[3] To put it colloquially, it is about answering 'how many workers does it take to make how many widgets?' The limited evidence available suggests that most Australian workplace managers do not know how to measure productivity correctly[4], and often think of it in terms of prices or wages, not quantities.

As the Productivity Commission says, it 'is calculated as the ratio of the value of output produced to the quantity of inputs used'.[5] Sounds simple, though measurement gets more imprecise, the more complex it becomes. Quantifying labour productivity – output per unit of labour input – is fairly straightforward if there is a single output that is sold in a free market, and the focus is on a single input (labour). It is not hard to measure, or describe, the number of cars produced per worker in a week.

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1 This submission has been written and assembled by David Peetz and draws on the works of Jim Stanford and David Peetz. These include Jim Stanford, *Productivity on the Real World: What it is, what it isn't, and how to make it work better for workers*, Centre for Future Work, July 2025; and David Peetz, *Labour productivity and industrial relations,* Fair Work Commission Workplace Relations Education Series, Invited Paper 1/2015, Fair Work Commission, Melbourne, June 2015, 17pp, 'Productivity is often mistaken for wages. What does it really mean? How does it work?', *The Conversation*, 8 October 2024, and 'Home truths about workplace relations and productivity', in Roy Green and Phil Toner (eds), *Understanding Productivity*, Routledge, forthcoming 2026.

2 This section is also relevant to the question 'How do measurement gaps in non-market sectors affect understanding of overall economic performance? ' Issues relevant to the question 'What is Australia's historical and recent productivity performance' are also addressed in section 4, headed 'Factors behind relative decline'.

3 Productivity Commission, 'What is productivity?', Productivity Commission, 2025, https://www.pc.gov.au/what-is-productivity#.

4 Alison Morehead et al., *Changes at Work: The 1995 Australian Workplace Industrial Relations Survey* (South Melbourne: Longman, 1997).

5 'What is productivity?'. n3 above.

It becomes very tricky when looking at multi-factor productivity (output per unit of, say, labour-and-capital input).[6] That is typically estimated as a residual.[7] Economists cannot even describe the denominator (for example, what even is a unit of 'labour-and-capital'?), so what is measured is expressed as an index (giving it a value of 100 in a base year). Many bold assumptions come to be made, including about how to translate a unit of capital into a unit of labour in each industry.

Even more creative assumptions are made when attempts are made to measure productivity in the public sector, when the market is not the aim. By the logic above, productivity is higher in classrooms when there are fewer teachers per student. Students will tell you the opposite. The same problem applies in other service industries, especially outside the market sector. Productivity is higher where there are fewer nurses per bed? Patients and bureaucrats will have very differing views on the meaning of labour productivity.

The ABS measures outputs, not outcomes, in the non-market sector. That is, outcomes such as waiting times for surgery, patient recovery rates, life expectancy, patient quality of life, and the rate of surgical failures are not part of the productivity equation in health; instead it is only the numbers of such things as hospital treatments and medical consultations that are counted.[8] In collectively consumed outputs such as defence, public policy making and security services, production is measured as labour input and so measured productivity growth is inherently zero. In the rest of the non-market sector, the ABS notes that 'attempts to improve the quality of non-market services will show up, at least in the short term, as an increase in hours worked but not an increase in output, thus biasing productivity estimates downward'.[9]

A further point is worth noting: at an aggregated level, productivity growth is very erratic, and is best measured over growth cycles. In the short run, labour productivity is very sensitive to movements in cyclical conditions.[10] When economic activity starts to decline, firms tend to hoard labour, reducing labour productivity. This is because there are high costs involved in retrenching and rehiring and firms do not want to lose skilled employees.[11] Productivity growth is so erratic, that you can tell very little from one quarter's figures. 'Revise, revise and revise again', as the Productivity Commission said.[12] The best thing to do, as the Australian Bureau of Statistics recognised long ago, is to average productivity growth over the whole of a 'growth cycle', between one peak of growth and the next. The trouble is, growth cycles (comparable to economic growth cycles) vary in length, and the end point is not easy to pick when it happens, only later. If it is not possible to measure over growth cycles, then growth averaged over a long period is a lot more meaningful than growth measured over a short period.

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6 Australian Bureau of Statistics, 'Estimates of Industry Multifactor Productivity methodology', 2023, https://www.abs.gov.au/methodologies/estimates-industry-multifactor-productivity-methodology/2022-23#.

7 Julián Messina, Oskar Nordström Skans, and Mikael Carlsson, 'Firms' productivity and workers' wages: Swedish evidence', *VOXEU: CEPR Policy Portal* (London), 23 October 2016, https://cepr.org/voxeu/columns/firms-productivity-and-workers-wages-swedish-evidence.

8 Australian Bureau of Statistics, 'A primer on labour productivity', updated 3 September, 2025, https://www.abs.gov.au/articles/primer-labour-productivity#a-primer-on-labour-productivity.

9 ibid.

10 Hagedorny, M & Manovskiiz, I (2011) 'Productivity and the Labor Market: Co-Movement over the Business Cycle ' *International Economic Review*, 52 (3) pp. 603-619.

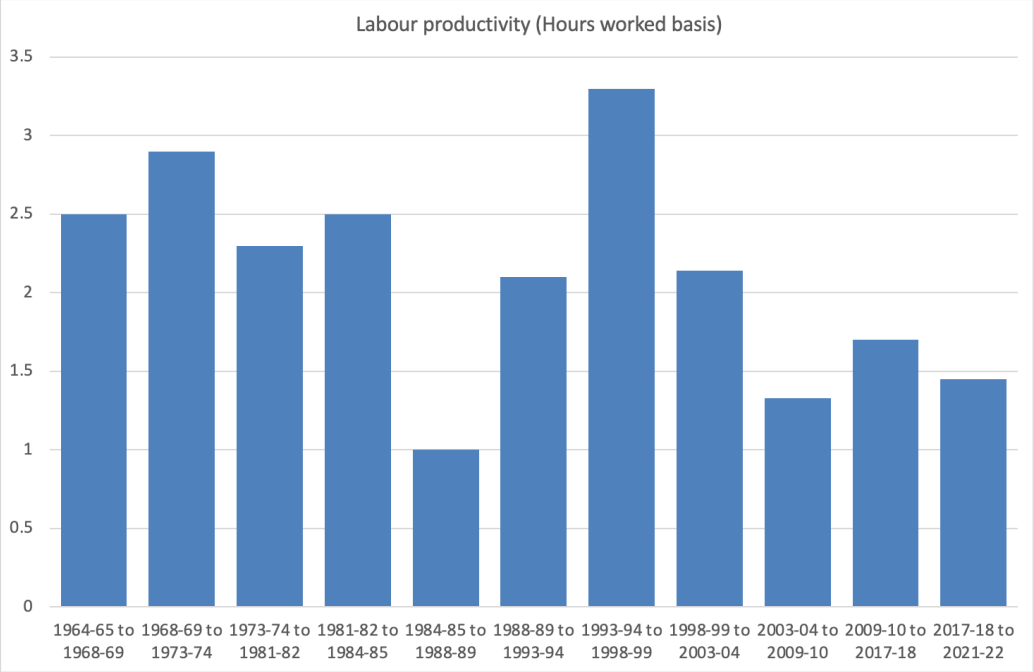
11 Ljungqvist, L (2002) 'How Do Lay-off Costs Affect Employment?' *The Economic Journal*, 112 (482) pp. 829-853.

12 *Quarterly productivity bulletin – September 2024*, Productivity Commission (Canberra, 2024), https://www.pc.gov.au/ongoing/productivity-insights/bulletins/quarterly-bulletin-september-2024/bulletin-september-2024.pdf.

Figure 1 shows average annual labour productivity growth in the market sector in Australia (calculated on an hours worked basis) over each of the growth cycles since 1964-65. Note that the lengths of the growth cycles vary, so distances along the x-axis are not proportionate. The data only go back to 1964-65, as that is the earliest time for which the ABS calculated growth cycles. However, it is noteworthy that productivity growth through the 1950s and 1960s averaged between 2.2 and 2.4% per annum,[13] similar to the first four growth cycles shown in figure 1.

Figure 2 shows average annual labour productivity growth in Australia in the market sector, calculated on a quality-adjusted hours worked basis, over each of the growth cycles since 1984-85, the first for which this was calculated. This attempts to adjust changes in the endowments of the labour force (in effect, education and skill levels). The current growth cycle is not shown in either figure, as it is not possible to know when a growth cycle has ended until after the event.

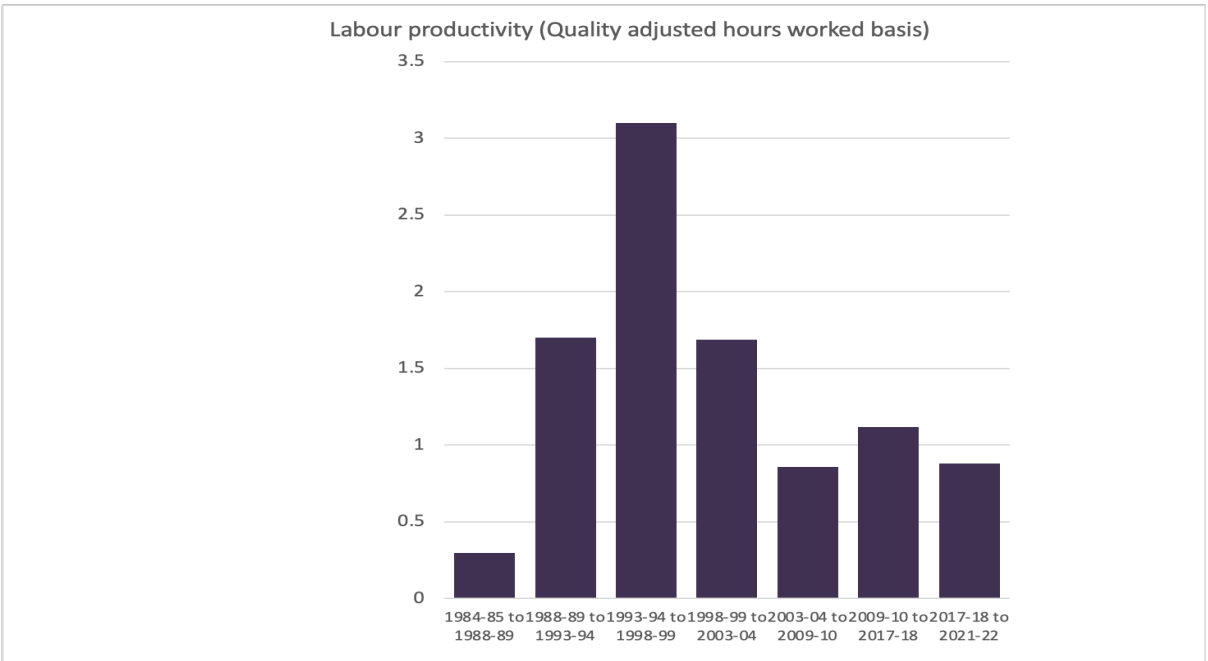
Figure 1: Average annual hourly labour productivity, growth, market sector, growth cycles, 1946-65 to 2021-22



Source: Calculations from ABS, Australian National Accounts, annual, various years.

[13] See Figure 2 (page 30) of Jim Stanford, Productivity on the Real World: What it is, what it isn't, and how to make it work better for workers, Centre for Future Work, July 2025, which draws upon RBA 'Australian Economic Statistics 1949-1950 to 1996-1997,' Occasional Paper #8, June 1996.

Figure 2: Average annual quality-adjusted labour productivity, growth, market sector, growth cycles, 1984-85 to 2021-22



Source: Calculations from ABS, Australian National Accounts, annual, various years.

Measurement and the non-market sector[14]

- **Why has productivity performance been lacklustre in Australia's non-market sector?** *and*
- **How can official productivity measures of the sector be improved, to facilitate policy making and resource allocation?**

The evidence for a 'lacklustre' productivity performance in the non-market sector disappears when tested. As discussed above (pages 4-5), it is not possible to persuasively measure productivity in the non-market sector. And even if 'productivity' was lower because of something like fewer beds per nurse, it would be a plus, not a minus, for living standards. If productivity in higher education is improved by increasing class sizes or shifting from face-to-face to entirely online teaching, it may improve the financial performance of the university and the bonuses of senior management, but the achievement of the aims of higher education might be compromised.

[14] This section is also relevant to the question 'How do measurement gaps in non-market sectors affect understanding of overall economic performance?'

We need to be very wary when claims are made that the 'productivity challenge is...greater and more pressing in the non-market sector',[15] given the meaning of productivity is so contested. It is better to think of the conceptualisation and measurement of productivity that is challenging, not making whatever is easily measured to grow faster. The ABS correctly observed that 'comparing market sector productivity to its non-market counterpart is...not an exercise in comparing like with like'.[16]

When assessing national productivity, it is best to ignore measured productivity growth in the non-market sector, and just focus on the market sector. The differences between the two sectors are too great and fundamentally irreconcilable. Productivity measurement across the non-market sector is meaningless, as the differences within the non-market sector are also too great (beds per nurse cannot be compared to students per teacher). Productivity measures in each part of the non-market sector need to be designed for measuring the factors that matter in that particular industry, and reflect the benefit to users, not the simple cost of production.

Productivity and competitiveness

- **How does Australia's productivity performance affect its global competitiveness and attractiveness for investment?**

Productivity is important because it provides a possible foundation for increases in living standards. Higher productivity means greater output per worker, and the greater value from that output can be (though it often is not) shared between workers (in the form of higher wages) and employers (in the form of profits).[17]

By contrast, some argue that higher productivity is needed to remain competitive in the global economy.[18] This is much less relevant.[19] It is true that productivity is one of the influences on competitiveness. However, competitiveness is also influenced by such factors as quality, costs, delivery time and exchange rates. Variations in exchange rates alone have a *far* bigger impact than variations in productivity in explaining whether Australia has become more or less price competitive.

This is illustrated by Figure 3, which shows the extent to which variations in national price competitiveness between Australia and the USA from 1983 to 2013 arise from movements in productivity and in exchange rates (that is, it shows the impact on relative prices of Australian goods in relation to US goods and services as a result of those two factors).

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15 Alex Robson, 'Australia's productivity deadlock persists', news release, 30 September, 2024, https://www.pc.gov.au/ongoing/productivity-insights/bulletins/quarterly-bulletin-september-2024#media-release.

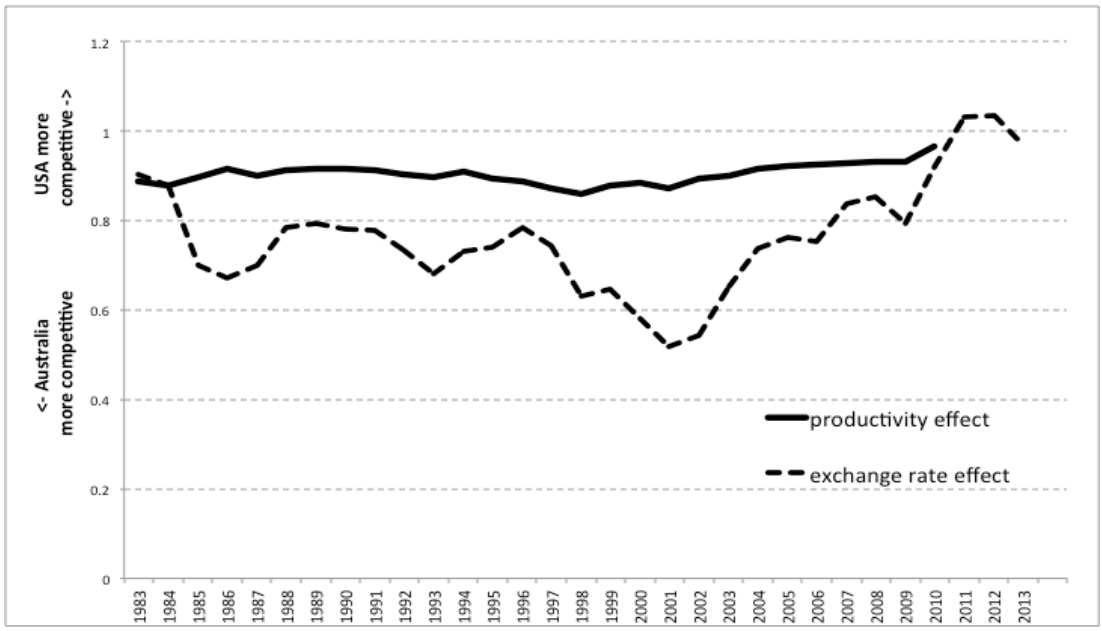
16 Australian Bureau of Statistics, 'A primer on labour productivity'. n7.

17 Krugman, P (1994) *The Age of Diminished Expectations: US Economic Policy in the 1990s*. Washington DC, Washington Post Company.

18 e.g. Lydon, J, Dydon, D & Bradley, C (2014), *Compete to prosper: Improving Australia's competitiveness*. Melbourne, McKinsey Australia.

19 e.g. Krugman (*Age of Diminished Expectations,* n12*,* p11.

Figure 3: Influences of exchange rates and relative labour productivity growth on USA/AUS price competitiveness



Source: Exchange rates: Financial forecast centre, http://www.forecasts.org/data/data/EXUSAL.htm. Productivity: OECD data extracted on 17 Feb 2012 00:52 UTC (GMT) from OECD Stat

The upper (solid) line shows that, from year to year, differences in labour productivity growth between Australia and the USA had a slight impact on national competitiveness. The lower (dashed) line shows that movements in the exchange rate had, by comparison, a very large impact on national competitiveness (after a while, a rising AUD made Australian exports more expensive and so less 'competitive' on world markets). So, productivity has an influence on competitiveness (as does the size of wage increases relative to those in our trading partners), but that is very minor compared to the influence of exchange rate movements. The significance of productivity lessens further when account is also taken of the influence of such factors as design, quality, reliability, networks and delivery time on competitiveness.

Productivity *is* more important, as mentioned, in terms of its link to potential living standards. In particular, higher labour productivity means greater output per worker, and the greater value from that output can be shared between workers (in the form of higher wages) and employers (as higher profits).

While higher labour productivity creates the potential for higher wages, it does not follow that it *will lead* to higher wages. At the aggregate level, if this were to happen, the relative shares of wages and profits in national income would remain broadly constant (assuming no major change in the government share of national income). However, since the 1980s this has not occurred. That is, in a number of countries (albeit to varying degrees) including Australia, the relative share of income going to capital (profits) has increased and that going to labour (wages) has declined, leading to what has been called the 'decoupling' of wages and productivity and debate over the implications of this 'decoupling'.[20]

[20] Ellis, L & Smith, K (2007) *The global upward trend in the profit share*. BIS Working Paper No 231, Bank for International Settlements, Basel; Rosenberg, B (2010) 'Real wages and productivity in New Zealand'. Labour,

Factors behind the relative decline in productivity growth [21]

- **What factors have contributed most to Australia's decline in productivity growth relative to OECD peers?**

It is clear, from the data in Figures 1 and 2 and the accompanying text on pages 6 and 7, that labour productivity growth was highest in the pre-1984-85 decades, and in the 1993-94 to 1998-99 growth cycle. There is contention as to the causes of the seeming spike in that latter growth cycle (was it microeconomic reforms — if so, which ones? was it increased work intensity?) but whatever the cause, it was clearly unsustainable, given the failure of productivity growth to approach that level again. A view at the time, associated with the Productivity Commission, was that microeconomic reforms were a key driver of that surge.[22] After that, however, productivity growth slowed substantially, suggesting the reforms provided no permanent impetus to productivity growth. John Quiggin argued that the higher productivity growth rate achieved in Australia in just one growth cycle was probably a statistical illusion anyway. That is, it was not a signal that reforms had delivered a 'new economy' that could produce permanently higher productivity growth rates, but rather, a blip caused by overestimation and, most importantly, an unsustainable increase in work intensity that was subsequently wound back, at least partly.[23] None of the economic reforms of the 1980s and 1990s, or any combination of them, led to a sustainable increase in labour productivity growth. Instead, labour productivity growth has declined over the long term. If the reforms of the 1990s had a long-term impact on productivity growth, it was the wrong one.

The experience described above is consistent with the international experience: despite the world-wide adoption of 'neoliberal' reforms,[24] productivity growth across industrialised countries has unevenly but gradually declined since the 1950s and 1960s.[25] Whatever 'neoliberal' reforms achieved, they did not improve long-term productivity, but they did have distributional effects. In five major anglophone countries studied (UK, USA, Canada, New Zealand and Australia), the move to

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employment and work, Wellington, Victoria University of Wellington; Cowgill, M (2013) A Shrinking Slice of the Pie, Melbourne, Australian Council of Trade Unions; Parham D (2013), *Labour's share of growth in income and prosperity*, Visiting Researcher Paper, Productivity Commission, September; Jim Stanford, *Productivity on the Real World: What it is, what it isn't, and how to make it work better for workers*, Centre for Future Work, July 2025, pp53-60.

[21] This section is also relevant to the question: What lessons can Australia learn from top-performing OECD countries (for example Ireland, Luxembourg, Norway, Belgium, United States), in terms of productivity growth?

[22] Banks G (2002) 'The drivers of Australia's productivity surge', paper presented at Outlook 2002 conference, Department of Industry, Tourism and Resources and the Australian Bureau of Agriculture and Resource Economics, National Convention Centre, Canberra, 7 March; Parham, D (2002) 'Microeconomic reforms and the revival in Australia's growth in productivity and living standards', Paper presented to the Conference of Economists, Adelaide, 1 October.

[23] Quiggin, J (2006) 'Stories about productivity' *Australian Bulletin of Labour*, 32 (1) p.18.

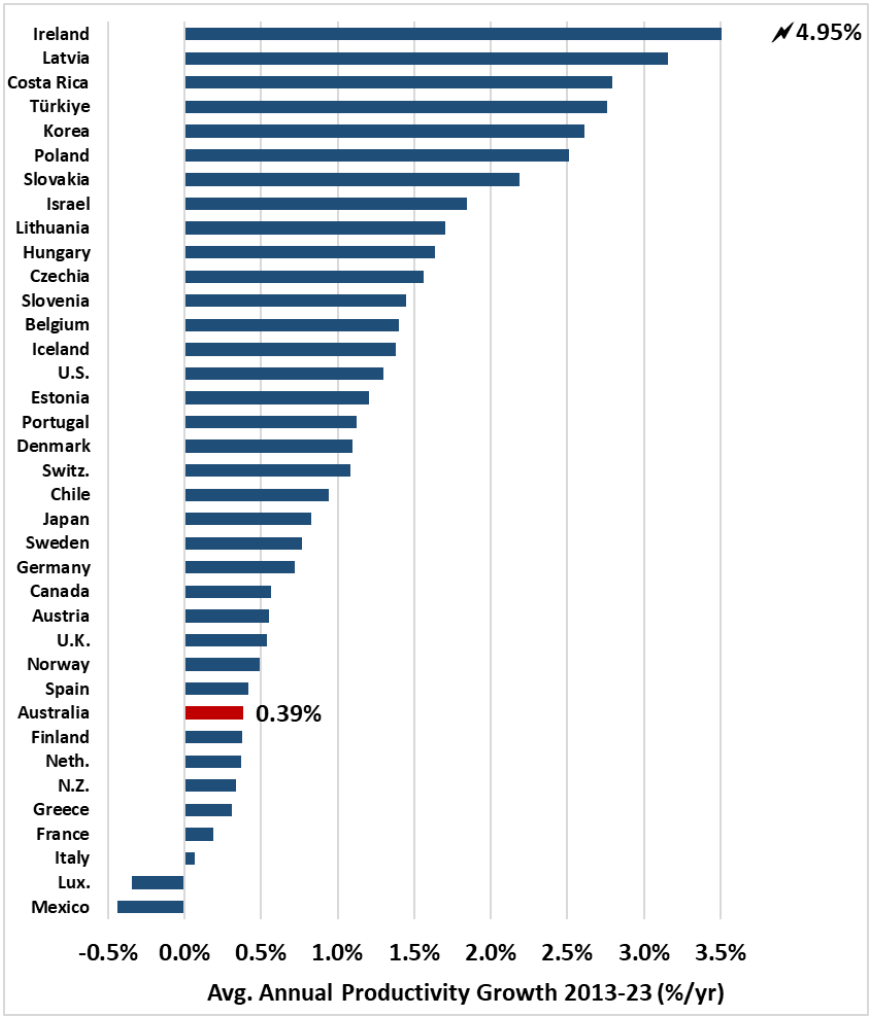
[24] Liz Manning, 'Neoliberalism: What It Is, With Examples and Pros and Cons', Investopedia, updated 2 July, 2024, https://www.investopedia.com/terms/n/neoliberalism.asp.

[25] Georg Erber, Ulrich Fritsche, and Patrick Christian Harms, 'The Global Productivity Slowdown: Diagnosis, Causes and Remedies', *Intereconomics* 52, no. 1 (2017).

'neoliberalism' saw a *reduction* in average incomes growth among the bottom 90% of the population, consistent with a decline in productivity growth, but an *increase* in income growth for the top 1%.[26]

The long-run slowdown in productivity growth is not unique to Australia. Nevertheless, in international perspective Australia's slowdown has been relatively severe. Australia's average productivity growth in the ten years from 2013 to 2023, a period that includes pre-pandemic and pandemic years) was 0.39%, ranking Australia 29th out of the 37 OECD countries reporting data (see Figure 4). Countries that achieved the fastest productivity growth in this period include several industrialising countries in Eastern Europe; other developing countries (including Türkiye and Costa Rica); and Ireland, Korea, and Israel.

Figure 4: Average Annual Labour Productivity Growth, OECD Countries, 2013 – 2023



Source: Calculations from OECD Data Explorer, Productivity Growth Rates.

Ireland boastsd both the highest level of productivity, and the fastest rate of productivity growth over that decade (almost 5% per year), according to OECD data. Its reported *level* of labour productivity per

[26] David Peetz and Georgina Murray, 'How Economic Paradigms Shape Income Growth for the Rich and the Rest in Liberal Market Economies', *Journal of Australian Political Economy* 87 (2021).

hour was more than twice as high as Australia's. This is a surprising and very deceptive result. Whatever its merits, Ireland is not rich, and its economy does not generally embody the cutting edge of modern technology and efficiency. Ireland's standing in productivity is largely a mirage, and a good case study in the pitfalls of uncritically relying on productivity as a benchmark of economic and social progress. Ireland is a member of the European Union but has an unusually low corporate tax rate (12.5%, well below other EU countries). To take advantage of this favourable tax rate, global companies (including U.S. tech giants like Microsoft and Apple) have established Irish subsidiaries, to which they transfer internal funds (nominally for items such as intellectual property or management fees). This effectively shifts to Ireland much of the profit these firms generate on their global operations, where they attract a lower corporate tax rate than in jurisdictions where the profits were genuinely generated. In turn, this boosts Irish GDP, which includes the profits of foreign-owned subsidiaries.[27] In 2023, more than half of all net value added in Ireland consisted of business profits, and two-thirds of that belonged to foreign firms. The large profits of these companies, and their use of this tax avoidance strategy, generated little benefit for the Irish people. To the contrary, Ireland's low corporate tax rate (like other tax havens) undermined the capacity of all countries to collect fair taxes from the world's wealthiest corporations and investors – to fund the public services and infrastructure that are needed for the successful operations of those same businesses. Far from demonstrating the potential of productivity growth, or providing a model for how to achieve it, the Irish case reinforces scepticism of uncritical use of productivity as a magic bullet for all economic and social problems.

Luxembourg ranked second in the OECD for the level of productivity, and for similar reasons: it is also a low-tax haven within Europe, attracting head offices and artificially relocating the accounting profits of multinational corporations. This boosts Luxembourg's GDP, which in turn boosts apparent productivity – but at the cost of reduced fiscal capacity in Europe (and around the world). Neither Ireland nor Luxembourg are examples that provide lessons for Australia.

Economists and advocates have advanced numerous theories about the reasons for slower productivity growth in recent years. This section reviews evidence for some of the most likely factors behind Australia's longer-term productivity slowdown. The theme that brings together most of the sub-headings here concerns the capability and foresight of business and managers, at the workplace and organisational levels.

In this context, we need to recognise that the biggest single factor that shapes productivity is technology. Management is responsible for decisions about what technology a business introduces, and how. It is not workers who make the decisions about how much money is available for investment, which particular technologies firms buy, install and use, how much money is allocated to the training of workers to use new technology, or how they are deployed. Workers have no say in how much money is set aside for research and development (R&D). Management decides on the training provided to workers. Management decides on how much pay to offer qualified workers to apply for and fill skilled vacancies. Management decides on job quality. Management decides on the extent to which a firm pursues diversity, equity and exclusion practices, shown by 'decades of research' to

[27] For more on this practice, see Civil and Public Services Union, 'Tax Justice! Ireland's Role in the International Context,' (Dublin: Civil and Public Service Union, 2015), https://waronwant.org/sites/default/files/Tax%20Justice%20Irelands%20Role%20in%20International%20Context.pdf; and Lyslie Boller, et al., 'The End of the Double Irish: Implications for US Multinationals and Global Tax Competition,' *Budget Model Brief*, Penn Wharton, October 14, 2024, https://budgetmodel.wharton.upenn.edu/issues/2024/10/14/the-end-of-the-double-irish.

benefit innovation,[28] while sexual harassment practices and paid parental leave are important influences on productivity. Given the obviously substantial impact that management has on productivity, and notwithstanding the importance of worker skills for productivity, the Productivity Commission cited OECD research that 'productivity gains from upskilling managers could be three times higher than for upskilling workers'.[29] Meanwhile, CEO pay has been 'at least three times higher than that required to maximise organisational performance'.[30]

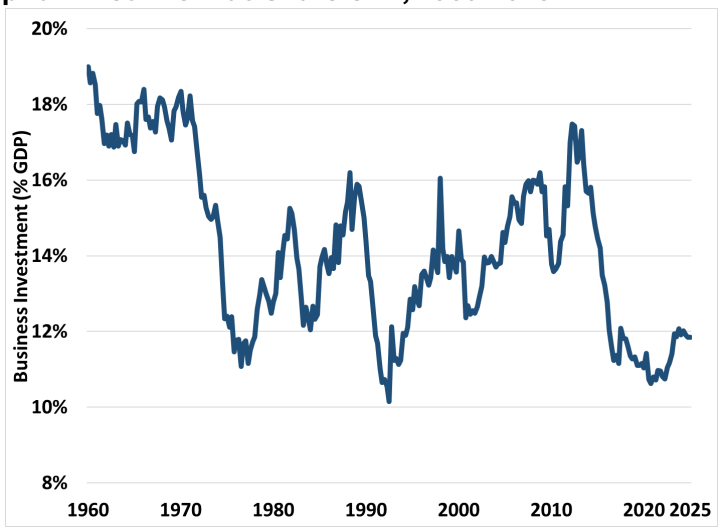
Alongside the decisions of business and management, the other main theme that emerges below concerns decisions of public policy-makers regarding the level and form of public investment. These two factors — business and public policy-making — are in turn encompassed and shaped by a broad policy framework for business and government that has previously been referred to, in shorthand, as 'neoliberalism'. We turn to this at the end.

Weak capital investment

Australia's strong economic growth, job-creation, and productivity improvements during the initial postwar decades were led by strong capital investment by the business sector. Businesses invested as much as 18% of national GDP in new capital during the postwar boom. However, after the mid-2010s (years before the COVID pandemic), that rate of investment slackened by one-third (see Figure 5). Since then, Australia's businesses have recorded the lowest sustained rate of capital investment of the entire postwar era: around just 11% of GDP on average since 2017. Without strong investment in new capital, businesses cannot take advantage of new technology and production practices. Strong investment in earlier decades was crucial for powering both quantitative expansion and qualitative expansion during the postwar boom, as Australia transformed into an important manufacturing and technology player. Since then, weak investment has been associated with both sluggish growth (in GDP and productivity) and reversion to resource extraction rather than technology-intensive value-adding industries as the basis for growth.

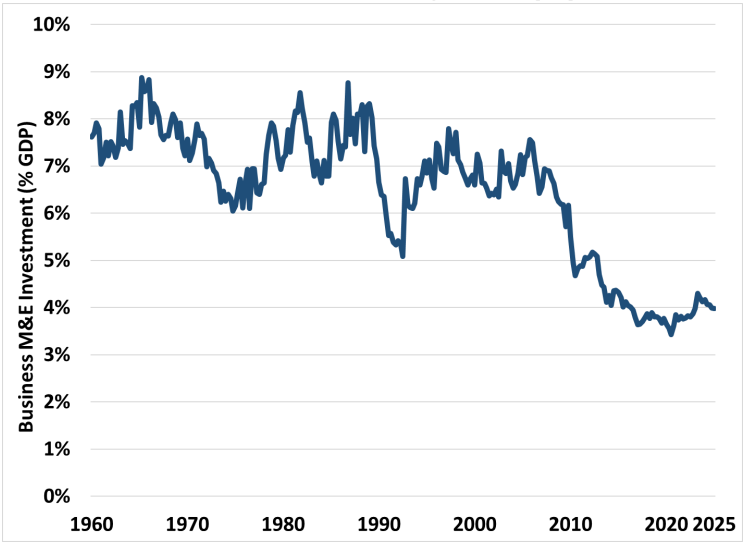
[28] Scientific American 2025. 'Editor's Note: How Diversity Makes Us Smarter'. *Scientific American*, 311.
[29] Productivity Commission, --- 2023b. '5-Year Productivity Inquiry — Innovation for the 98%: Volume 5'. *Inquiry report No 100*. Canberra, p8.
[30] John Shields, Michael O'Donnell & John O'Brien, 'The Bucks Stop Here: Executive Pay and Company Performance'. *in:* Barry, M. & Brosnan, P., eds. New Economies: New Industrial Relations, Proceedings of the 18th AIRAANZ conference, February 2004 Noosa, Qld, Association of Industrial Relations Academics of Australia and New Zealand, 490-499.

Figure 5. Business Capital Investment as Share GDP, 1960-2025



Source: Calculations from Australian Bureau of Statistics, Australian National Accounts: National Income, Expenditure and Product, Table 3.

Figure 6. Australian Business Investment in Machinery and Equipment, 1960-2025



Source: Calculations from Australian Bureau of Statistics, Australian National Accounts: National Income, Expenditure and Product, Table 3.

The situation is even worse regarding investments in tangible machinery and equipment (including tools, factory equipment, computers, and robots). This component of tangible investment is especially important for productivity and innovation. For the last decade, business machinery and equipment spending has been only half the rate typical during the postwar expansion: just 4% of GDP, compared to 8% or more from the 1960s through the 1980s (see Figure 6).

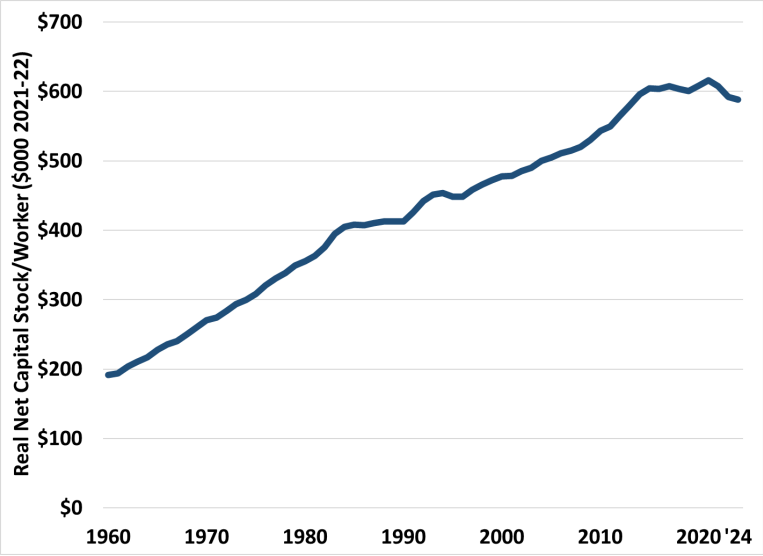
This failure of business investment in general, and machinery and equipment investment in particular, cannot be attributed to a lack of profits, incentive, or cash flow: corporate profits as a share of GDP rose sharply after the 1980s (thanks to sustained business-friendly policy changes). But the share of corporate profits reinvested in Australia has declined steadily. Weak business capital investment is

likely the most important single cause of Australia's productivity slowdown – and responsibility for it lies squarely with the business community (not with taxes, 'red tape,' or unions).

Falling capital-labour ratio

The combination of sluggish business capital spending and unusually rapid population growth after the COVID pandemic has produced an unprecedented and concerning outcome. The aggregate ratio of net capital to labour employed in Australia's economy has been falling since 2021 and is now lower than it was a decade ago (Figure 7).

Figure 7. Aggregate Capital-Labour Ratio, Australia, 1960-2024



Source: Calculations from Australian Bureau of Statistics, Australian System of National Accounts (Annual), Table 63, and Labour Account Australia, Table 1.

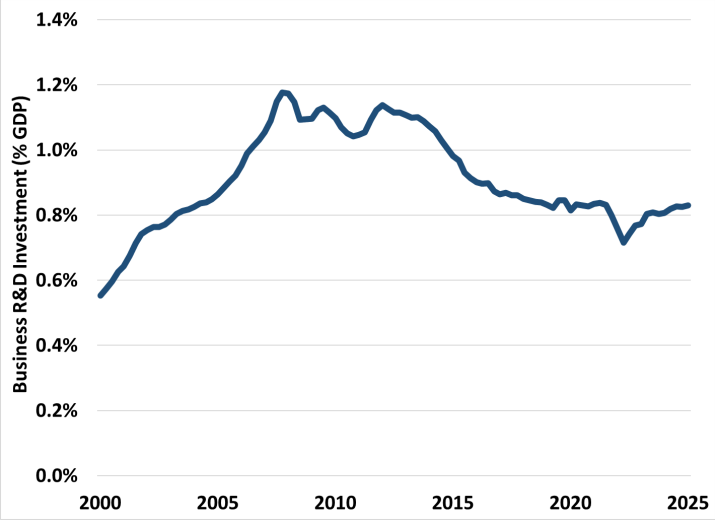
On average, after adjusting for inflation and depreciation of existing capital, the typical worker in Australia in 2024 was working with 5% less net business capital assets and equipment than in 2021 – a decline in net capital stock of about $30,000 per worker. The historical process of economic development is closely associated with the accumulation of more capital and equipment over time. But, for the first time in postwar history, the ratio is declining, not improving. The declining capital intensity of production also reflects the growth of relatively labour-intensive (and relatively less productive and lower-wage) industries, such as private and personal services.

Weak business innovation

Slow accumulation of physical capital is not the only cause of Australia's poor productivity growth. Business investment in intangible knowledge and technology has also declined in the last 20 years, which is perverse considering the technological revolution transforming work and production in other industrial countries. As illustrated in Figure 8, business investments in research and development in Australia have declined by about one-third as a share of GDP since the mid-2000s.

Australia's business innovation effort also increasingly lags behind other countries. Research and development (R&D) by Australian businesses is only half the rate in peer countries. Large Australian businesses are in 'retreat from R&D investment'.[31]

Figure 8. Australian Business Investment in Research and Development, 2000-2025

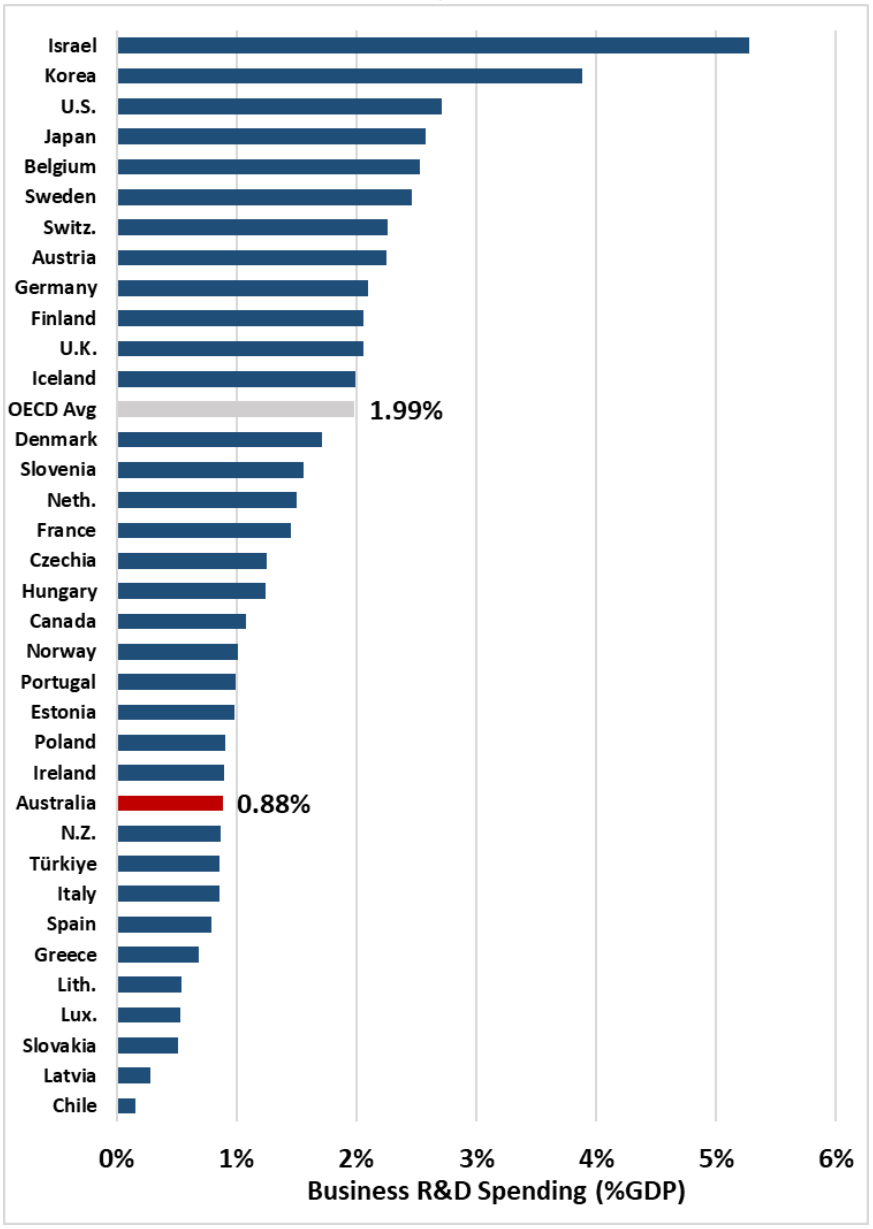


Source: Calculations from Australian Bureau of Statistics, Australian National Accounts: National Income, Expenditure and Product, Table 3.

Figure 9 illustrates comparative levels of business R&D spending as a proportion of GDP for OECD economies. The business sectors in global R&D leaders like Israel and Korea invest 4-5% of GDP in new research activities (often through direct partnerships with government through active innovation programs and industrial development strategies). Businesses in the U.S., Japan, and northern Europe are also strong innovation performers. On average across the OECD, businesses invest about 2% of GDP in research and development. Australian, business, unfortunately, invests less than half that much – ranking a lowly 25th out of the 35 OECD countries reporting this data.

[31] Mandala Partners 2025. 'Unlocking Australia's R&D Potential'. *Report to Business Council of Australia, Atlassian Corporation and Cochlear Limited.*

Figure 9. Business R&D Investment as Share GDP, 2021



Source: OECD Data Explorer, Main Science and Technology Indicators.

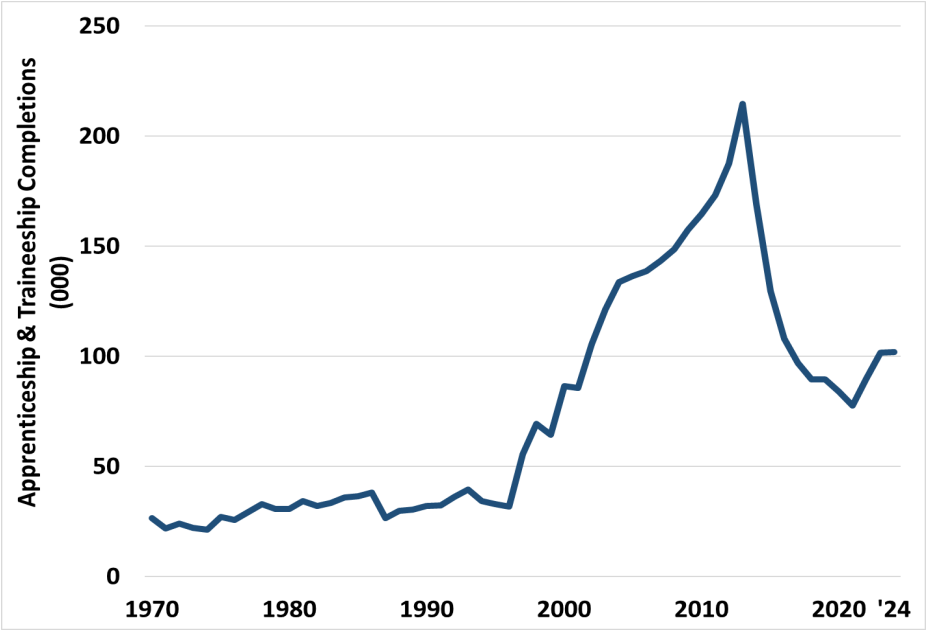
Given Australia's relatively well-educated population, and the strong research capacities of our public institutions (including universities, CSIRO, and other publicly-funded research bodies), the failure of Australian businesses to invest in research and innovation is puzzling and concerning.

While lobby groups demand concessions, tax cuts, and subsidies in order to change things, chronic business underinvestment, in the face of unprecedented profitability in recent years, should not require more public handouts to resolve. Ultimately, responsibility for the failure of private-sector investment and innovation in Australia lies with the business community itself.

Training and skills

Australia has a relatively well-educated population, and hence the skills of Australian workers should be a key advantage in supporting productivity and innovation. However, in some important ways, Australia's skills system has failed to meet the needs of an economy facing technological and demographic change. In particular, Australia's vocational training system was deeply damaged by years of privatisation, misguided handouts to questionable private operators, and fiscal cutbacks in the public TAFE system.[32]

Figure 10. Apprenticeship and Traineeship Completions, 1970-2024



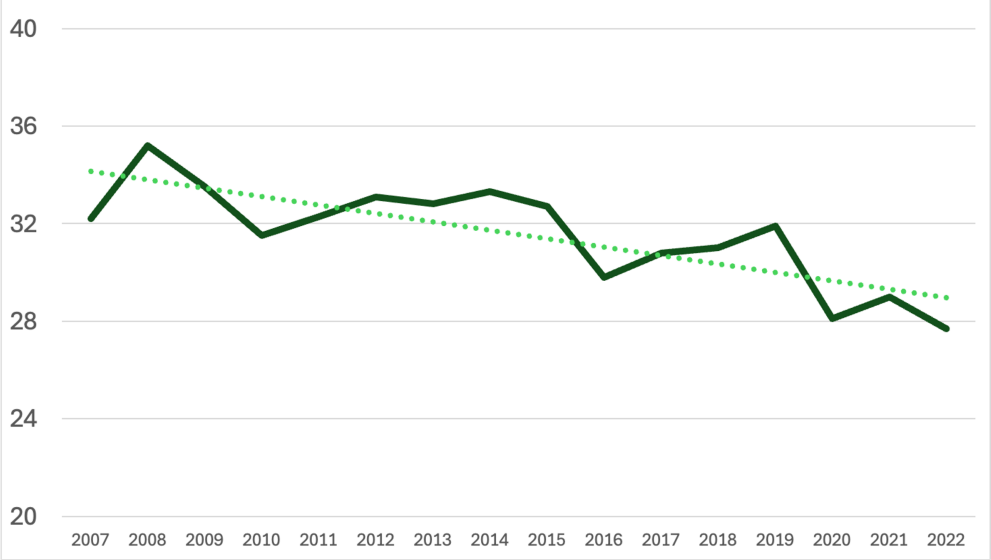
Source: NCVER, Historical time series of apprenticeships and traineeships in Australia from 1963 to 2024.

Completions through Australian apprenticeship and traineeship programs fell by more than half under the Coalition Commonwealth government from 2013 to 2022 (see Figure 10). Relative to the size of the workforce, that decline in vocational training was even more severe.

Moreover, there have been gradual but persistent declines over a 15 year period in the proportions of Australian workers engaged in work-related training and the average hours spent in training by those who participate, as shown in Figure 11. There are declines in almost every industry.

[32] These failures are documented in Alison Pennington, *Fragmentation & Photo-Ops: The Failures of Australian Skills Policy Through COVID,* Canberra: Centre for Future Work, 2022.

Figure 11: Proportion of workers participating in work-related training, Australia, 2007-2022



Source: HILDA Survey, Release 22, used in Committee for the Economic Development of Australia, *Learning curve: Why Australia needs a training boost,* Sydney, CEDA (2024)

Employers regularly complain about shortages of qualified staff in a wide range of occupations (despite the coexistence of unemployment and underemployment). Data from Jobs and Skills Australia indicate that one-third of 916 occupations tracked by the department report national-level shortages of skilled workers.[33]

The legacy of privatisation and underfunding in vocational education is now being addressed through renewed funding, fee-free TAFE programs, and new programs in key areas (such as new training streams in renewable energy technology). All this is supporting a partial recovery in training outcomes. However, it is clear the lingering damage from past failed skills policies still requires attention, before the system can fully meet the needs of Australia's future economy.

Sectoral composition

A key factor determining overall productivity levels and growth rates is the sectoral make-up of an economy. Countries which possess a larger footprint of dynamic, high-technology, value-adding industries are more likely to attain high and growing levels of productivity. A potent example of this is the U.S. economy, which is often held up as a role model for innovation and productivity, even though this productivity performance has not translated into well-being for American workers. One reason for America's relatively rapid productivity growth is the disproportionate presence of technology-related industries where productivity growth (at least by conventional metrics) has been phenomenal.

Every country in the world dreams of developing its own Silicon Valley, but of course that unique cluster is not replicable. Those that have made some progress in developing their own clusters of high-tech production (such as Japan, Korea, and Taiwan) have also recorded faster-than-average productivity growth, for similar reasons as the U.S.

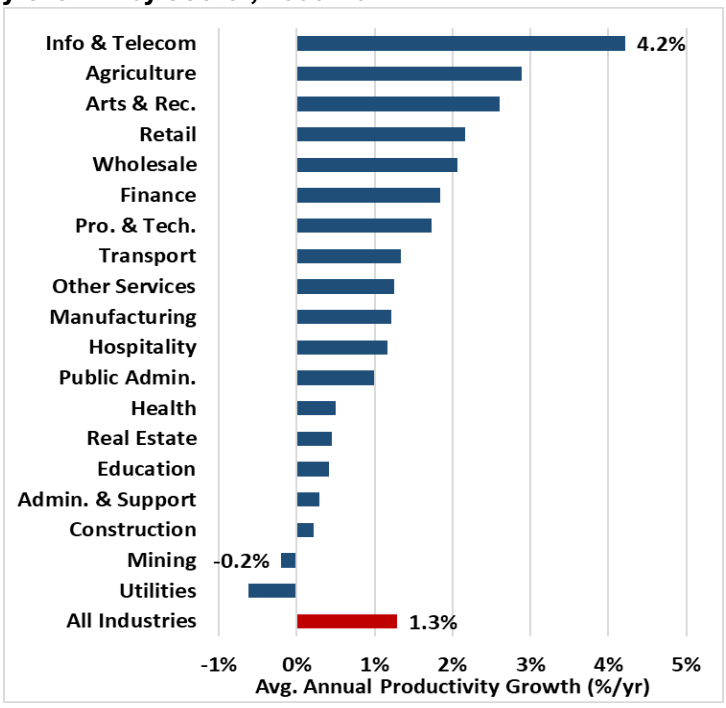
[33] Jobs and Skills Australia, *2024 Occupation Shortage List: Key Findings and Insights Report,* Canberra: Australian Government, October 2024.

There are two lessons in this analysis for Australia. First, it is yet another reason to exercise great caution in interpreting productivity statistics. We should understand that the superior productivity performance of some countries (like the US) in part reflects a unique combination of history and geography that has led to success in very specialised high-tech industries – and that combination cannot be broadly duplicated. Second, while Australia cannot replicate Silicon Valley, it can certainly aspire to strengthen the presence of dynamic, technology-intensive industries here. This would imply a greater focus on active industrial or sectoral development strategies to broaden our industrial and technological capacities.

The atrophy of Australian manufacturing in recent decades, and the renewed dependence on the extraction and export of unprocessed natural resources, has also contributed to Australia's productivity slowdown. While some resource industries have high *levels* of productivity (reflecting the very capital-intensive nature of their production processes), labour productivity tends to *decline* over time in extractive industries, provided prices remain unchanged. This is because it usually takes more labour to extract and transport minerals and other resources, as the industry reaches for more remote or hard-to-access reserves. The tendency is exacerbated when ore prices rise: high ore prices increase the incentive to spend more time digging deep and removing overburden — that is, they reduce labour productivity, even while mining profits boom.

As shown in Figure 12, labour productivity growth in the Australian mining sector has been negative on average since the turn of the century. Yet resource extraction has grown as a share of total GDP and exports over this period. Meanwhile, technology-intensive segments of manufacturing (like the automotive sector) have declined or disappeared – in large part due to previous government policy. Productivity growth has been strongest since 2000 in Australia's information and telecommunication sector.

Figure 12. Productivity Growth by Sector, 2000-2024

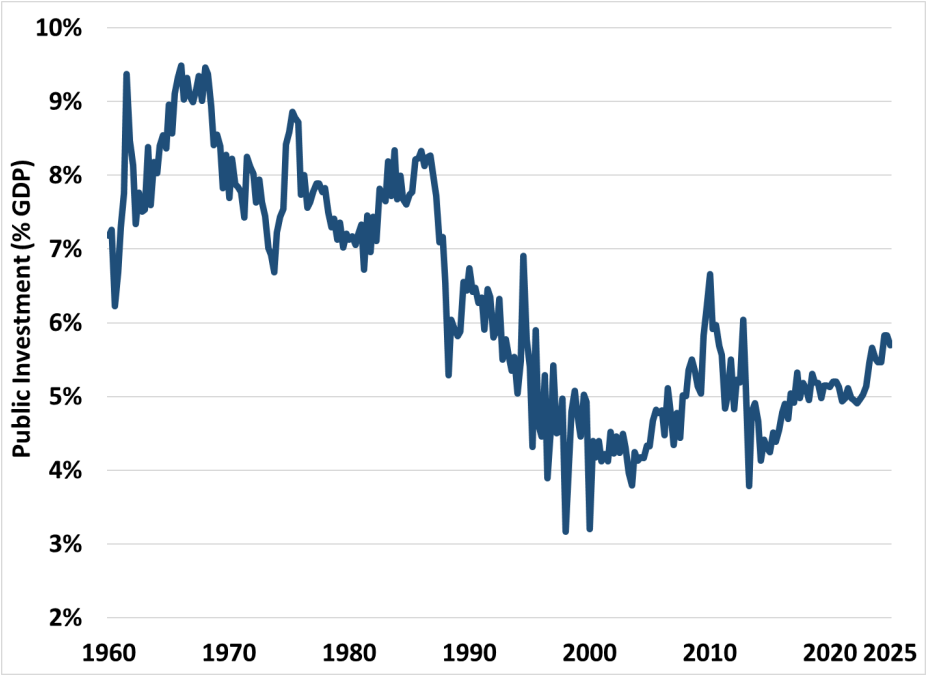


Source: Calculations from Australian Bureau of Statistics, Australian System of National Accounts (Annual), Table 15.

Infrastructure and public investment

The weak performance of private capital spending (especially in machinery and equipment, and innovation and research) has been the biggest single cause of slow productivity growth. But weakness in public investment has played a supporting role. During the initial decades of the postwar expansion, public capital spending (on infrastructure, public facilities, and investments by Crown corporations) was a significant driver of both economic growth and higher productivity. Public investment averaged about 8% of GDP until the late 1980s, when it was suppressed under more austere fiscal policies by state and federal governments (see Figure 13). In those earlier decades, building up Australia's transportation, communication, and utilities infrastructure reinforced productive activity by private firms, and supported Australians to live better and work more efficiently. Investments in expanded education and health care services (backed by capital spending into new facilities) further equipped Australian workers with the skills and capacities needed to reinforce productivity growth.

Figure 13. Australian Public Investment, 1960-2025



Source: Calculations from Australian Bureau of Statistics, Australian National Accounts: National Income, Expenditure and Product, Table 3.

After 1990, public capital investment fell significantly and has since averaged around 5% of GDP (except for a brief spurt during the Global Financial Crisis, when stimulus spending by government on new construction in schools and other public assets helped Australia avoid a recession). Decades of public underinvestment have undermined performance of transportation, utilities, and communication. Perhaps most painful for many is Australia's poor internet infrastructure, one of the worst in the industrial world. Inadequate infrastructure has negative implications for productivity across both the public and the private sectors. More recently, in the last five years public capital spending has grown modestly (and is now close to 6% of GDP), though this is below the level needed to ensure that Australia's public capital stock meets the needs of a dynamic, innovative economy.

Labour market underutilisation and labour cheapening

Businesses is stimulated to use labour more productively when it becomes scarce and/or more expensive. In this regard, conditions of labour market tightness (with full employment and rising wages) reinforce the motivation for productivity improvements. Since labour in those circumstances is harder to recruit and retain, and likely becomes more expensive, employers face a strong incentive to conserve on labour – including through measures (like automated technology) that reduce labour demand. In contrast, employers' desire to undertake productivity-enhancing measures will be diluted and undermined if labour is inexpensive and readily available.

In this context, the move away from full employment macroeconomic policies since the 1990s (replaced by a focus on inflation control and deficit reduction) has contributed to the productivity slowdown. First, as noted above, productivity exhibits a pro-cyclical (albeit erratic) pattern: it increases when the economy is growing strongly. Second, when the labour market is weak for extended periods of time, the availability of surplus labour supply and corresponding weakness in wage growth makes it easier and less expensive for employers to utilise labour – even in functions which are not especially productive.

A virtuous cycle between full employment and productivity growth prevailed during the initial postwar expansion, when unemployment was deliberately kept very low. Full employment was the top priority of macroeconomic policy, and a closely regulated labour market (including widespread unionisation and Awards coverage) allowed the coexistence of low inflation and low unemployment. Unemployment averaged just 1.9% from 1949 through 1974.[34] Not coincidentally, that was also the era of Australia's strongest productivity growth. The scarcity of labour during this time reinforced the adoption of new technology by employers. Strong institutions of redistribution (including a strong Awards and collective bargaining system) ensured the resulting gains in productivity were broadly shared (as discussed further below).

With the sea-change in macroeconomic policy over the past generation, however, unemployment was boosted – and, in fact, it is now deliberately maintained through a monetary policy framework oriented around the supposed existence of a 'non-accelerating inflation rate of unemployment' (NAIRU). Other than very short periods (such as the first year after the end of COVID lockdowns), Australia's labour market has been chronically underutilised throughout the last generation. Higher official unemployment is one manifestation of that weakness; even what is now considered a 'strong' labour market by modern standards features unemployment of 4% or higher. Other large pools of underutilised labour (such as underemployment) are now normal features of the labour market. The underutilisation rate (equal to the sum of unemployment and underemployment, as a share of the total labour force) has remained in double digits through virtually all of the last generation. As a result, it is usually easy for employers to mobilise underutilised labour to meet incremental needs, rather than trying to achieve greater productivity through their existing workforce.

The role of labour scarcity in motivating productivity improvements has been further dissipated by the misuse of temporary migrant labour programs in Australia, which allow employers to recruit non-permanent migrants to fill labour requirements (often at lower cost than hiring Australian residents). Sound immigration policies can contribute to stronger productivity growth, by attracting specialised workers (such as in technology-intensive occupations) and supporting their full integration into

[34] Calculations from Reserve Bank of Australia, 'Australian Economic Statistics 1949-1950 to 1996-1997,' Occasional Paper No. 8 Table 4.3.

Australian life and work (protected by full labour rights and security). Temporary migrant labour programs, however, can have the opposite effect. In industries like hospitality, temporary skilled migrants are sought not to fill gaps in hard skills but to find labour perceived as relatively controllable, productive and reliable.[35] Less than 1% of employers in one survey claimed they would increase wages or provide other incentives to potential candidates as a means of addressing recruitment challenges.[36] Temporary migrant workers are mostly hired into low-wage, vulnerable jobs, and often effectively denied normal labour protections. This undermines overall productivity performance (although it is good for profits), including by lessening the pressure on employers to invest in labour-saving technologies when labour is scarce.

The sluggish performance of wages in recent years has also undermined the incentive for employers to enhance labour productivity. The advent of various non-standard and insecure forms of employment (including irregular, temporary, agency, and contract labour) allows employers to access labour while offloading the risks and costs associated with fluctuating business conditions. Australia is, for example, one of the highest users of casual or temporary employment. Again, when contingent labour is readily and inexpensively available, employers can organise business models around its continued use. At the extreme, platform models of employment (such as gig-based passenger, food, and package delivery systems) allow employers to maintain ready supplies of contingent labour at no cost. Since the time workers spend waiting for an incoming job is usually not compensated, businesses like Uber and Lyft have no incentive to try to use their workers' time more efficiently. Is it to the firms' advantage, in fact, to have thousands of underemployed drivers waiting idly, unpaid – to facilitate faster service when new tasks are assigned.

Labour market regulation[37]

- **How do labour market policy and regulatory settings influence labour market dynamism and productivity growth?**

By some arguments, labour market policy settings that favour labour over capital retard productivity growth, by reducing the availability of resources for investment. At an aggregate level, these arguments do not appear to have much merit. Certainly, labour productivity is influenced by the relative costs of labour and capital. If labour is relatively cheap compared to capital, then firms are more likely to employ labour than capital. This will impede labour productivity growth. Countries with low wages have low labour productivity,[38] and as their wages rise with economic development, labour productivity must rise in response, which may lead more labour-intensive industries to relocate to lower cost countries. Further, in an Australian context, when the centralised prices and incomes

[35] Chris F Wright, Angela Knox and Andreea Constantin, 'Using or abusing? Scrutinising employer demand for temporary sponsored skilled migrants in the Australian hospitality industry', *Economic and Industrial Democracy*, 42(4), 937-959, 2021.

[36] Chris F Wright and Andreea Constantin, Why recruit temporary sponsored skilled migrants? A human capital theory analysis of employer motivations in Australia, *Australian Journal of Management*, 46(1), 151-173, 2021.

[37] This section is also relevant to the three questions under the heading 'Australia's regulatory burdens that limit productivity', and to questions under the heading 'Dynamism of Australia's labour market', including 'What are the main structural and other barriers to labour market productivity growth?' and 'How can these barriers best be addressed by policymakers and others'?

[38] Krugman, P J, Obstfeld, M & Melitz, M (2006) *International Economics: Theory and Policy,* 9th Edition, Upper Saddle River NJ, Prentice Hall, p38.

Accord of the 1980s caused a drop in real award wages, there was a sharp drop-off in labour productivity growth.[39]

Low minimum wages may allow inefficient employers to remain in business and facilitate a 'low cost, low skill 'equilibrium'.[40] In the short to medium term, how much higher minimum wages would lead to higher productivity might be constrained by how much low-wage employers are willing to invest in training and technology,[41] a result of a 'free rider' problem in coordination of training.[42] There is some evidence that wage compression increases training[43] and that the introduction of the UK national minimum wage may have increased (or at least not decreased) training.[44]

High wages can encourage firms to introduce new technology that improves productivity.[45] If labour becomes more expensive, it may be more profitable for firms to invest in labour-saving technology. With low wages, firms face a disincentive against introducing new technology, as it is more likely that profits could be enhanced by paying for the cost of more cheap workers than by paying for the cost of the new machinery. Without new technology, productivity will remain low.

The exception to the pressure from higher wages to higher productivity occurs if higher wages also reduce, by a large enough amount, the capacity for firms to finance this investment — that is, if the surplus generated by firms and used for investment is reduced by higher wages. However, that argument is only relevant if that surplus is primarily used for investment in new technology. In reality, the surplus generated by firms can be used either for investment or for increasing profits, shareholder returns and senior executive compensation.

Moreover, the amount of surplus directed to profits has increased, while the amount of surplus directed to investment and innovation has declined. There is a global trend towards the increased use of surplus funds for share buy-backs, which increase the value of shareholder returns and senior executive remuneration: their use by the world's largest 1200 corporations trebled over the decade to 2022, compared to a 54% increase in dividends. There is 'strong evidence that share buybacks are

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39 Peetz, D (2012) 'Does Industrial Relations Policy Affect Productivity?' *Australian Bulletin of Labour*, 38 (4) pp. 268-292.

40 Rasmussen, E, Foster, B & Murrie, J (2012) *The decline in collectivism and employer attitudes and behaviours: facilitating a high-skill, knowledge economy?* Proceedings of the 16th ILERA World Congress, Philadelphia, PA, 16th International Labour and Employment Relations Association World Congress. Burgess, J, Rasmussen, E & Connell, J (2004) *Temporary agency work in Australia and New Zealand: Out of sight and outside the regulatory net*. New Economies: New Industrial Relations, Noosa, Association of Industrial Relations Academics of Australia and New Zealand.; Salter, W E G (1969) *Productivity and Technical Change*, Cambridge University Press, Cambridge.

41 McLaughlin, C (2006) 'Achieving labour market equity and efficiency in low-paid sectors: The minimum wage and sectoral collective bargaining.'. International Industrial Relations Association Conference, Lima.

42 Buchanan, J & Evesson, J (2004) *Creating markets or decent jobs? Group training and the future of work*, National Centre for Vocational Education Research, Adelaide.

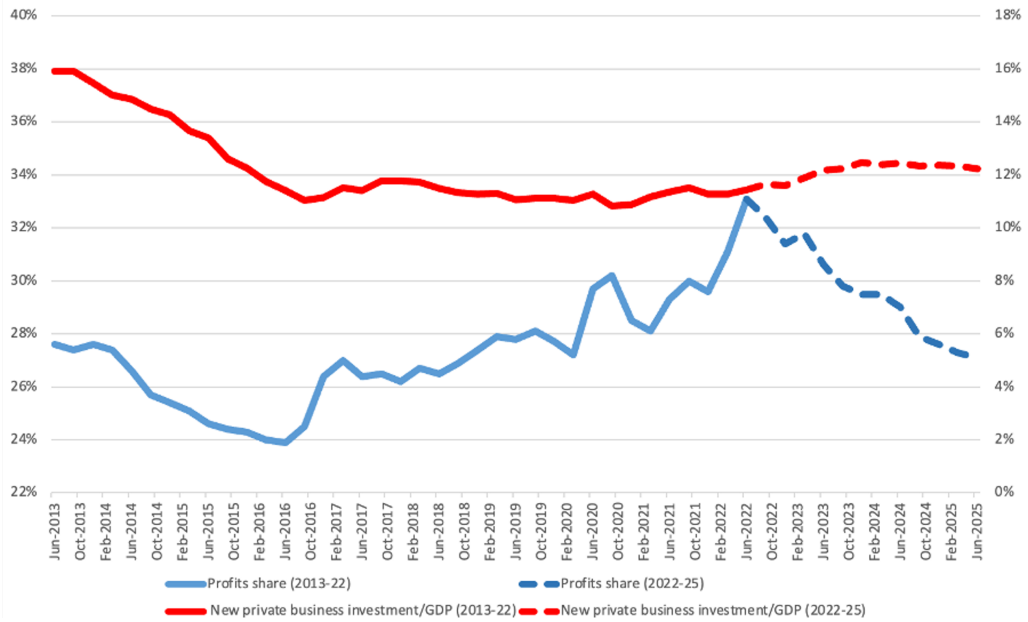
43 Brunello, G (2002) 'Is training more frequent when wage compression is higher? Evidence from 11 European countries', Munich, Center for Economic Studies & Ifo Institute for Economic Research, *CESifo Working Paper No. 637 (4),* http://www.cesifo-group.de/portal/page/portal/DocBase_Content/WP/WP-CESifo_Working_Papers/wp-cesifo-2002/wp-cesifo-2002-01/637.PDF

44 Arulampalam, W, Booth, A L & Bryan, M L (2004), 'Training and the new minimum wage', *Economic Journal*, 114(494), C87-C94.

45 Coviello, D., Deserranno, E. & Persico, N. 2022. 'What Happens to Worker Productivity after a Minimum Wage Increase?'. *Kellogg Insight*, December.

suppressing corporate innovation'.[46] Despite the theoretical availability of more funds due to greater restraints on wages, private expenditure on new fixed capital investment in Australia has been unimpressive in recent years. Over the decade from March quarter 2015, the profit share of national factor incomes in Australia rose by 2.8 percentage points but gross fixed capital formation (new private business investment) as a share of GDP fell by 1.4 percentage points (Figure 12).[47] Regulation of share buy-backs might be more relevant to innovation and productivity than regulation of employment relations.

Figure 12: Profits and new private business investment, Australia, 2013-2025



Source: ABS, Australian National Accounts, quarterly, Cat No 5206.0.

In modern labour markets, firms exercise discretion over the wages that they pay workers. Despite seemingly tight labour markets[48] with allegedly high levels of labour shortages, firms have increasingly chosen low wage strategies, with the effect that real wages have barely grown in recent years. These low wages do not appear to have been used to increase investment (and hence productivity) but instead to release funds for raising returns to shareholders and senior executives.

Moreover, while poor technology is the most obvious way in which low wages are linked to low productivity, low wages also adversely affect the extent to which employees work productively. Wolfers and Zilinsky analysed 20 studies and showed that higher wages 'motivate employees to work

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46 Swift, T. 2022. 'Do Stock Buybacks Suppress Corporate Innovation?'. International Journal of Innovation Management, 26.https://doi.org/10.1142/S1363919622500372

47 Australian Bureau of Statistics, 'Australian National Accounts: National Income, Expenditure and Product, Table 24: Selected Analytical Series ', in *Cat No 5206.0* (Canberra, 2025).

48 Ai Group, 'Deep dive: Solving the skills shortage crisis', Australian Industry Group, 2023, https://www.aigroup.com.au/resourcecentre/research-economics/economics-intelligence/2023/solving-the-skills-shortage-crisis/.,

harder…attract more capable and productive workers…lead to lower turnover… enhance quality and customer service… reduce disciplinary problems and absenteeism', and reduce supervision costs.[49]

In Australia, a major test of the impact of changes to labour market regulatory regimes on productivity took place with the 'WorkChoices' legislation, characterised by the closest period Australia has experienced to a reliance on individual contracting in wage fixing. Although advocated with the promise of increased prosperity, the years of the WorkChoices legislation featured low productivity, at 1.2% per annum, around half the long-term average productivity growth rate in Australia up to then. Productivity growth improved afterwards, under the Fair Work Act, to a level close to that long term average. WorkChoices was not the only factor influencing productivity in this cycle, if it had any influence at all, but it certainly provided no impetus for an acceleration of productivity growth. Indeed, in the whole Workplace Relations Act period (which included the WorkChoices period), labour productivity growth averaged 2.5% annually, representing no tangible improvement on the 2.4% a year averaged during the traditional award system of the 1960s and 1970s. This is not to say that the Fair Work Act necessarily delivered a markedly better outcome. It suggests, though, that industrial relations policy has made little difference to productivity growth. Reinforcing that conclusion, but from a different angle, Hancock, analysing productivity growth across industries as well as nationally, found no evidence of any effect from enterprise bargaining.[50]

Since the turn of the century, productivity growth has averaged less than half as fast as what it was during the boom from the 1950s through to after the end of the 1970s. Yet days lost to industrial disputes are down by over 90% (as a share of all days worked). The 'bite' of Australia's minimum wage (measured relative to median wages) has fallen by one third. Union density has declined by over half. By any measure, Australia's labour market is a more deregulated, employer-friendly arena than during the postwar expansion. Yet despite this – or perhaps because of it – productivity growth has never been worse.

If there is one area of labour market policy where more could be done to improve productivity, it may be in ensuring that workers have a voice at work. Productivity *tends* to be higher where employees have a voice in the workplace. But they often do not get the chance. In one study, 'When employees were asked why they were not given a fair say in workplace change, most pointed to the practices of their managers'.[51] Employees are more welcoming of something when they have a voice in it. New technology such as artificial intelligence meets lower resistance from employees when they are consulted over its introduction.[52] One recent study showed that 'poor or procedural consultation' leads to 'resistance, anxiety & delays'.[53] Workers know it is not generally in their interests to block the introduction of new technology, provided they have a say — as that technology gives their firm a

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[49] Justin Wolfers and Jan Zilinsky, 'Higher Wages for Low--Income Workers Lead to Higher Productivity', Real Time Economic Issues Watch, Peterson Institute for International Economics, updated 13 January, 2015, https://www.piie.com/blogs/realtime-economic-issues-watch/higher-wages-low-income-workers-lead-higher-productivity.

[50] Keith Hancock, 'Enterprise bargaining and productivity', *Labour & Industry: a journal of the social and economic relations of work* 22, no. 3 (2012).

[51] Chris Briggs and John Buchanan. 2000. *Australian Labour Market Deregulation*. Commonwealth Parliamentary Library (Canberra). They were referring to the WBS95 study.

[52] Sandrine Cazes. 2023. 'Social dialogue and collective bargaining in the age of artificial intelligence.' *OECD Employment Outlook* 2023

[53] Kehinde Aluko & John Burgess, 'Negotiating the Future', paper presented to AIRAANZ 2026 conference, Sydney.

competitive edge and improves their employment and pay prospects. It would make sense for management to wisely use the knowledge of those employees who actually operate the technology.

Indeed, for much of the past half century, considerable public policy effort seems to have been put into reducing the efficacy of the most formalised form of worker voice, trade unions, and their local manifestation, union delegates. There are few studies on the specific impact of workplace delegates (rather than unions) on productivity, but one recent Portuguese survey using matched employee-employer records found that a one percentage point increase in the proportion of members who were union representatives increased firm performance by at least 7%.[54] The author suggested that the result was likely driven by increased training investments by employers in such firms, as 'workers' voice is potentially made more cohesive through the intermediation of union reps and the resulting dialogue with employers can become more effective'. [55]

More research has been conducted into the more general link between unionisation and productivity, but it, too, fails to show the negative relationship that would justify interventions to discourage unionism. Evidence from empirical studies of the relationship between unionism and productivity shows that productivity is, on average, at least as high in unionised as in non-union workplaces, despite any purported potential for 'featherbedding' or union restrictions on use of technology.[56] This is mostly because such negative effects are frequently outweighed by the potential positive impacts of worker voice on productivity, for example, by encouraging employees to identify better ways of doing things, or motivating them to optimise their effort. The net impact, it appears, depends on circumstances.[57] As Appelbaum, Gittell & Leana found in a 2011 study, 'neither highly adversarial battles over union organizing nor ongoing adversarial labor-management relations are conducive to... achieving positive results'. They added that:

> Labor-management partnerships based on mutual respect for worker, union, and employer rights and responsibilities have been shown to achieve high performance by facilitating employee participation and related high-performance work practices and by creating social networks within and across organizations'.[58]

The other likely factor, at least in Australia, explaining the absence of a strong net negative effect of unions on productivity is that much, probably most, 'featherbedding' was removed by the wage reforms of the 1980s (including the 'two tier' wage system) and 1990s (through the early rounds of enterprise bargaining). More generally, it is not normally in the interests of the workers concerned to prevent the introduction of new technology, as such technology gives their firm a competitive edge which improves their employment and pay prospects. Hence the literature is replete with examples of

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54 Pedro S. Martins, 'The Microeconomic Impacts of Employee Representatives: Evidence from Membership Thresholds,' *Industrial Relations* 58, no. 4 (2019).

55 Ibid.

56 J. Addison and C. Belfield, 'Union Voice,' *Journal of Labor Research* 25 (2004); B.T. Hirsch, 'What do unions do for economic performance?,' *Journal of Labor Research* 25, no. 3 (2004); Freeman, Richard B. 'What Do Unions Do ? The 2004 M-Brane Stringtwister Edition'. *Journal of Labor Research* 26, no. 4 (Fall 2005): 642–687; Bruce E Kaufman, 'What do unions do?—Evaluation and commentary,' *Journal of Labor Research* 26, no. 4 (2005).

57 Sandra E. Black and Lisa M. Lynch, 'How to compete: the impact of workplace practices and information technology on productivity,' *The Review of Economics and Statistics* 83, no. 3 (2001).

58 Eileen Appelbaum, Jody Hoffer Gittell, and Carrie Leana, 'High-Performance Work Practices and Sustainable Economic Growth,' (memo to Obama Administration, Brandeis University, 20 March 2011).

'dual commitment' by employees to both management and unions,[59] and employees in several countries, including Australia, report that they desire a cooperative relationship between the union and management at the workplace.[60]

Lessons to be learned[61]

The preceding discussion indicates that the key lessons to be learned about achieving superior productivity outcomes are not to be learned from outliers like Ireland or Luxembourg, or even the United States. The key lesson is that the solution lies within, and it relates to the broad framework within which businesses and governments have been making what can best be described as poor decisions. That framework has been labelled 'neoliberalism' for short, and it has seen governments under-invest in infrastructure and businesses and management lulled into complacency by restrained wages growth and a proliferation of tools for flexibilising and cheapening labour. After all, why would business invest in new equipment, training, and boosting productivity if there are simpler ways to boost profits? In the absence of the discipline provided by high wages and tight labour, the discipline provided by markets is no discipline at all.

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[59] L R Dean, 'Union activity and dual loyalty,' *Industrial & Labor Relations Review* 7, no. 4 (July 1954); T V Purcell, 'Dual allegiance to company and union: Packinghouse workers,' *Personnel Psychology* 7 (1954); Daniel G Gallagher, 'The relationship between organizational and union commitment among federal government employees,' *Academy of Management Proceedings* 44 (1984); Cynthia V. Fukami and Erik W. Larson, 'Commitment to company and union: Parallel models,' *Journal of Applied Psychology* 69, no. 3 (Aug 1984 1984), http://proquest.umi.com/pqdweb?did=1152711&Fmt=7&clientId=13713&RQT=309&VName=PQD; Harold L. Angle and James L. Perry, 'Dual commitment and labor-management relationship climates,' *Academy of Management Journal* 29, no. 1 (Mar 1986 1986), http://proquest.umi.com/pqdweb?did=1908385&Fmt=7&clientId=13713&RQT=309&VName=PQD; John M. Magenau, James E. Martin, and Melanie M. Peterson, 'Dual and Unilateral Commitment Among Stewards and Rank-and-file Union Members,' *Academy of Management Journal* 31 (1988); P A Bamburger, A N Kluger, and R Suchard, 'The antecedents and consequences of union commitment: A meta-analysis,' *Academy of Management Journal* 42, no. 3 (June 1999); Ed Snape and Andy W Chan, 'Commitment to company and union: Evidence from Hong Kong,' *Industrial Relations* 39, no. 3 (July 2000), http://proquest.umi.com/pqdweb?did=56237480&Fmt=7&clientId=13713&RQT=309&VName=PQD.

[60] Richard B. Freeman, Peter Boxall, and Peter Haynes, eds., *What Workers Say: Employee Voice in the Anglo-American World* (Ithaca NY: ILR Press, 2007); David Peetz, 'Workplace cooperation, conflict, influence and union membership,' in *Contemporary Research on Unions: Theory, Membership, Organisation and Non-standard Employment*, ed. G Griffin, Monograph No 8 (Melbourne: National Key Centre in Industrial Relations, 1996).

[61] This section is relevant to the series of questions asking about public policy, such as 'What lessons can Australia learn from top-performing OECD countries (for example Ireland, Luxembourg, Norway, Belgium, United States), in terms of productivity growth?', 'Can lessons be learnt from Commonwealth countries, such as Canada and the United Kingdom; or regional countries, such as Japan, Singapore, Korea or New Zealand?', 'Which regulatory requirements impose the greatest burden on productivity growth and how could these be streamlined without compromising public interest or safety?', 'How do government-related regulatory burdens affect and limit productivity growth, including regulations imposed by different Australian Government agencies and determine their relative contribution to the red tape burden?', 'What strategies can be employed for supporting the economic and productivity growth of regional Australia?', 'Is Australia's National Competition Policy effective, or does it need to be updated?', and 'How can these barriers best be addressed by policymakers and others?'.

The focus of policies aimed genuinely at improving Australia's productivity trajectory should focus on:

- boosting investment and innovation;
- building a more diversified, balanced, sustainable economy;
- investing in people and skills;
- enhancing physical and social infrastructure;
- valuing labour; and
- reductions in working hours

Boosting investment and innovation

No single factor is more correlated with Australia's productivity slowdown than the sustained weakness in Australian business investment in capital, machinery and equipment, and innovation. This weakness cannot be ascribed to a lack of profit or cash flow: as noted above, profits in the business sector have increased dramatically as a share of GDP in recent decades and reached all-time records as a share of GDP in the aftermath of the COVID pandemic. Ironically, those record profits have been associated with less investment, not more. Responsibility for Australia's productivity problems rests most strongly with the business sector – not with government, unions, or other stakeholders.

Where fiscal tools can be revised to focus more incentives on eliciting increased investment (rather than profits), it is worth considering. Examples could include:

- Investment tax credits focused on new spending in targeted industries or assets are more effective in eliciting additional investment spending than across-the-board corporate tax cuts.
- Higher taxes imposed on payouts of dividends, excessive executive compensation, and stock buyback programs would encourage firms to reinvest free cash flow, rather than paying it out to owners and CEOs.
- Joint investment and innovation projects (such as joint-venture partnerships with government investment agencies, like the National Reconstruction Fund) can amplify the flow of new capital in strategic or targeted sectors.
- Making public support for research, targeted infrastructure, or training assistance contingent on additional investment commitments by partnering businesses, can also elicit more investment effort from the private sector.
- Australia's industry superannuation funds could be encouraged to partner with businesses in expanding capital spending in key Australian industries.

Building a more diversified, balanced, sustainable economy

The sectoral composition of the economy has major implications for the trajectory of productivity. Countries with high productivity performance are generally those with a strong presence of higher-tech sectors, that demonstrate the fastest productivity growth. The erosion of technology-intensive manufacturing in Australia has undermined investment in capital and research and contributed to slower productivity growth. Meanwhile, doubling down on the extraction and export of non-renewable resources (industries which have often demonstrated declining productivity) will likely reinforce future productivity sluggishness. Using active industrial policies to nurture a larger high-tech presence in Australia (in advanced manufacturing, information and telecommunication services, and professional

and technical services) would help to lift overall productivity growth. More important, it would provide Australia with a better and more diverse foundation from which to participate successfully in global trade – rather than continuing to rely so disproportionately on extraction and export of raw resources.

There is growing awareness around the world that pro-active industrial strategies are needed to foster a larger domestic presence of industries that meet desirable criteria. Industries attracting this pro-active policy attention are generally those which embody technology intensity, export orientation, an ability to anchor extended supply chains, and potential for strong productivity growth (and hence, potentially, income growth) over time.[62] This renewed worldwide interest in active industrial strategy has found reflection in recent Australian policy initiatives, including the Future Made in Australia framework and the Net Zero Economic Authority. The imperative to reduce greenhouse gas emissions and fulfil Australia's commitments to global net-zero targets adds impetus to this need for a stronger domestic presence of high-value, sustainable industries – industries that can both diversify and strengthen Australia's growth and exports and simultaneously contribute to decarbonisation.[63]

Investing in people and skills

Measures to improve the flow of skilled workers entering the labour force, and to ensure that all workers have opportunity and support to develop their skills throughout their working lives, are an important component of a well-rounded productivity strategy. Policy themes in this regard could include:

- TAFE institutes should be revitalised as the core pillar of vocational education in Australia, with renewed funding by state and federal governments, expanded fee-free access, and capital funding to ensure TAFE students are trained on modern equipment and techniques. Improvements in TAFE funding and fee-free spaces implemented in recent years constitute a good start in this regard.

- Compensation for students in apprenticeships, traineeships, and work placement positions needs to expand beyond recent improvements, to ensure that they can appeal to potential users and enable them to support themselves through their program.

- Tax measures should aim to foster stronger employer support for in-house training. One option in this regard is a refundable training levy, through which employers are effectively required to invest a certain proportion of gross payroll in on-the-job training opportunities for staff, or else pay additional payroll taxes to offset some of the cost of public education and training). This 'train or pay' approach was previously used in Australia and is still common in several European countries to strengthen employer training commitments.[64]

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62 Summaries of research confirming the benefits of strategic sector-focused development policy interventions include Joseph E. Stiglitz, Justin Y. Lin, and Celestin Monga, 'The Rejuvenation of Industrial Policy,' World Bank Policy Research Working Paper No. 6628 (Washington: World Bank, 2013); Dani Rodrik, 'Normalizing Industrial Policy,' Commission on Growth and Development Working Paper No. 3 (Washington: World Bank, 2008); and Mariana Mazzucato, *The Entrepreneurial State: Debunking Public vs. Private Sector Myths* (London: Anthem, 2013).

63 For a summary of the global interface between industrial policy and emissions reductions, see Charlie Joyce, *A New Era for Climate Industrial Policy A Compendium of Recent Developments in Major World Economies* (Canberra: Carmichael Centre, 2023).

64 For details see Carolina Torres, *Taxes and Investment in Skills*, OECD Taxation Working Papers No. 13 (Paris: OECD, 2012), Section 4.7.

Enhancing physical and social infrastructure

While private industry has been the dominant cause of Australia's productivity disappointments, the public sector must play a strong supporting role in revitalising productivity growth. This will require a continued strengthening of investments in physical infrastructure, including transportation, communication, clean energy, and other utilities. Much of Australia's public capital stock is badly in need of modernisation and expansion. Australia's weak internet performance is a case in point. State and federal governments are making initial steps toward addressing this shortfall, but a more sustained public investment effort is required. Public capital spending should rise by at least another full percentage point of GDP; even then, it would be still well below the peak investment rates experienced in the initial postwar decades (and which contributed so much to the high growth of productivity in that era).

Public support for basic research in universities and other public institutions plays a vital role in stimulating new technologies and creating opportunities for more commercial technology development. Public investments could be reflected in ongoing equity stakes in technology spin-offs. Government investment agencies and superannuation funds could play a more active role in fostering industrial applications of new research.

Australia's social infrastructure is another vital ingredient in productivity success. Ensuring that workers and their families are able to build lives that are secure and healthy, fulfilling their human and economic potential, is crucial for sustained economic and social progress. A good example is the recognised importance of high-quality early childhood education and care (ECEC) for developing stronger learning and earning capacities among children who participate in these programs. Rigorous international evidence confirms that cognition, communication and social skills, future learning capacity, and general health and well-being are improved for children who receive ECEC through high-quality (preferably not-for-profit) group centres.[65] In this light, improving Australia's ECEC system (which lags most peer industrial countries in both scale and quality) is a productivity priority. Fiscal support for ECEC services should be expanded; costs to parents should be reduced; and wages and working conditions for ECEC workers further improved.

Valuing labour

The conventional assumption that productivity improvements are automatically passed down to workers (in the form of higher real wages, shorter working hours, or both) is unfounded.[66] Workers need bargaining power and institutional support to demand and win a proportional share of the extra value they produce through improved technology, work organisation, and skills. Building an economy in which labour is valued, protected and fully utilised, rather than being wasted and cheapened, is critical to a high-productivity economy. This requires a strong commitment to full employment at the macroeconomic level, backed up with strong protections and institutions to ensure labour is protected and fairly compensated in all circumstances. This would close the door on some of the most wasteful and unfair employment practices of employers – boosting productivity, but also improving fairness.

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[65] This research is reviewed in the Australian context by Australian Institute of Health and Welfare, 'Literature Review of the Impact of Early Childhood Education and Care on Learning and Development,' Working paper, Cat. no. CWS 53 (Canberra: AIHW, 2015).

[66] David Peetz, *The Curious Incident of Low Wages Growth*, Centre for Future Work, Australia Institute, Canberra, April 2025, 43pp.

Employers should have a continuing incentive to improve work practices and productivity and thus use each hour of labour as efficiently as possible. This incentive is reinforced when labour is in short supply, and when wages are robust and rising. Broad policy themes to help keep labour scarce and wages strong, thus spurring employers' interest in productivity, could include:

- Revising the Reserve Bank of Australia's operating framework to explicitly include pursuit of genuine full employment (not the 'NAIRU') as an equal goal, alongside inflation control.
- Continuing to reform the Modern Awards system, so that Awards do not merely serve solely as a safety net.
- Increasing the national minimum wage (and corresponding Award wages) in real terms each year (that is, above expected inflation) to support long-run growth in real wages across the labour market – and provide employers with a continuing incentive to improve labour productivity.[67]
- Strengthening rules regarding non-standard and platform work, to close remaining loopholes whereby employers can avoid productivity pressures by accessing labour that does not meet normal labour standards (for example, by being outside the rules of the Award system).

Reductions in working hours

The potential of higher productivity to support reduced working time should serve as a motivation for productivity initiatives, so long as they are paired with a meaningful institutional commitment to achieving shorter work time. In recent decades the long historical process (which Australia once led) of work time reduction for full-time employees has stalled and, indeed, reversed. Reductions in working hours are now the domain of underemployed part-time or precarious workers. Establishing shorter work time and more sustainable work-life balances should be an integral component of an overall productivity agenda. Policy themes to consider in this regard include:

- Better enforcement of regulations regarding payment to workers for overtime work, to spur employers to make sure work is performed more efficiently within regular working hours (rather than spilling over into breaks, evening, and weekends, without penalty).
- Strengthening and fully enforcing Australia's new right-to-disconnect protections, so that workers are protected from unreasonable work interruptions during their off hours (and reinforcing pressure on employers to get work done productively during regular hours).
- Expanding pilot programs for four-day work weeks and other working time innovations (including in public sector workplaces).
- Strengthening and extending provisions under the Fair Work Act so all workers can request flexible working arrangements, which in turn can boost productivity.

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[67] This suggestion is also made by Ross Gittins 'Want greater productivity? Set wages to rise by 3.5 percent every year,' *Sydney Morning Herald*, 19 May 2025.