Technology Investment and AI: What Are Firms Telling Us?

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Abstract

Information technology investment by Australian firms has grown strongly over the past decade. A key question is how these technologies are shaping and may continue to shape the Australian economy in the future. We surveyed more than 100 medium–large firms from a range of industries in the RBA liaison program to understand how technology investments are affecting their operations, including their labour productivity and hiring decisions. The results suggest that surveyed firms anticipate these investments, particularly in artificial intelligence tools, to be labour-saving and productivity-enhancing over the long term. Firms also expect to see a substantial transformation of the types of roles and skills needed in the future. Importantly, evidence suggests that the labour-creating effects of past technologies have generally outweighed the labour-replacing effects in aggregate. Firms highlighted that there is considerable uncertainty around the extent and timing of these effects and emphasised that the main barriers to enhancing their productivity over recent years have been the regulatory environment and the ability to access suitable labour.

Introduction

Firms in RBA's liaison program have indicated they have been investing heavily in a broad range of different technologies for several years. However, Australia's productivity performance over recent years has remained subdued, despite strong investment over time in information technologies.

In economic theory, technology investment (across many forms) is a fundamental driver of long-run growth in GDP per capita because adopting new technology can increase output for the same-sized workforce and therefore boost total factor productivity. However, the effect of technology on measured productivity growth can take several years to be realised due to a range of drivers. One of these is that it takes time to successfully embed technology (Brynjolfsson, Rock and Syverson 2021). Supportive conditions for new technology, such as cultural and institutional environments, are also needed to drive sustained economic growth (Mokyr 2016).

The adoption, availability and use of technology can have significant implications for the labour market, influencing the demand for different skills and the overall level of employment, even while productivity benefits are still materialising. Understanding both dynamics is important for the RBA, given its dual mandate for monetary policy – stable inflation and full employment.

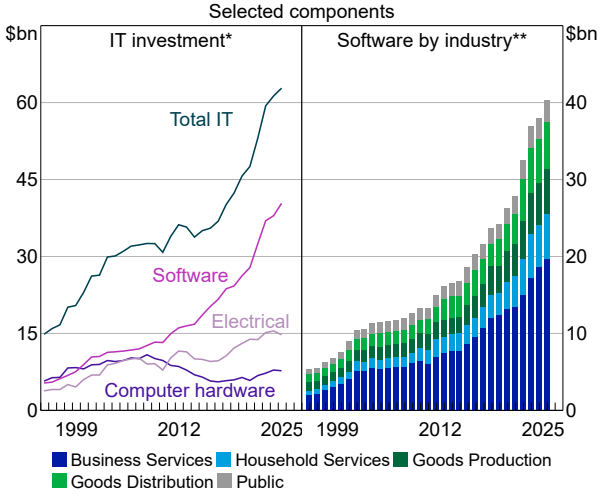
To understand how these dynamics are currently unfolding in the Australian business sector, RBA staff conducted a survey of firms in its liaison program to more deeply understand the nature and motivations of firms' recent and planned investments in information technology (hereafter referred to as 'technology' in this article) and any expected implications for firm-level productivity and headcount.[1] The survey was conducted between June to August 2025 and involved guided interviews, with 105 responses received spanning most industries (see Appendix A for details about the survey).[2]

This article presents the results of the survey and discusses how these firm-level insights compare with other survey data and literature in Australia and globally.

Growth in technology investment

Before turning to the results of the survey, it is helpful to understand broader trends in technology investment in Australia. Over the past decade, the value of technology investment in the Australian economy has grown strongly, increasing by almost 80 per cent over this period (Graph 1, left panel); this compares with an increase of around 60 per cent in other types of investment.[3] The increase has been driven by software investment, which rose as a share of private business investment from around 6 per cent in 2014/15 to 10.5 per cent in 2024/25. All industry groups have contributed to the increase, though it has been particularly pronounced in the business services sector, which includes finance and insurance and professional services firms, many of whom tend to be at the leading edge of technology adoption (Graph 1, right panel). Similarly, growth in research and development spending by firms over recent years has been driven by information and computing sciences (ABS 2025a).

Graph 1
IT Investment
Selected components



* By type of IT investment, current prices.
** Software investment by industry group, current prices.
Sources: ABS; RBA.

It can be difficult to assess the potential economic implications of investments in technology, including for productivity, due to some data limitations in measuring this investment and associated activities (Dedrick, Gurbaxani and Kraemer 2003). Official statistics provide useful insights into broad categories of technology investment, such as computers, electrical equipment and software, but offer limited detail on the specific types of technology that firms are adopting. Additionally, not all technology spending is captured in capital

investment, with technology increasingly procured in the form of subscriptions or 'software-as-a-service' (SaaS), which are captured as an operating expense in official data. Moreover, firms make investments in staff re-training and new processes (and other so-called 'intangible investments') to implement and embed new technology, and these have proved challenging for statisticians to measure over time (Brynjolfsson, Rock and Syverson 2021).[4]

While liaison information cannot overcome these challenges, it provides valuable detail on the types of technology being adopted and firms' motivations for doing so, offering additional context for assessing potential flow-on effects to the economy such as employment and productivity.

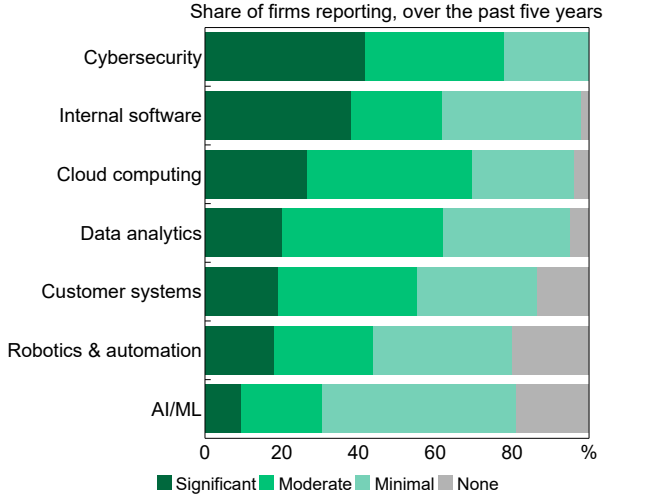
Recent drivers of liaison firms' technology investment

The elevated level of technology spending by surveyed liaison firms over recent years has been driven by several forces related to business modernisation that have shaped the nature of these investments. We asked firms how significant their expenditure on particular types of technologies was as a share of their total investment. The most prominent driver has been addressing cyber risks, which have grown as economic activity has become more digitised and data have become more abundant (Graph 2). Another key driver has been upgrades to internal software such as customer relationship management (CRM) and enterprise resource planning (ERP) platforms. For many firms, these upgrades have been essential as legacy systems were nearing end-of-life. These upgrades were critical for business continuity and reduce risks to output and productivity (such as from cyber-attacks). However, implementing them was generally not expected to lift productivity on their own and, in some cases, required additional staff to implement them.

Graph 2

Significance of Technology Investment*

Share of firms reporting, over the past five years



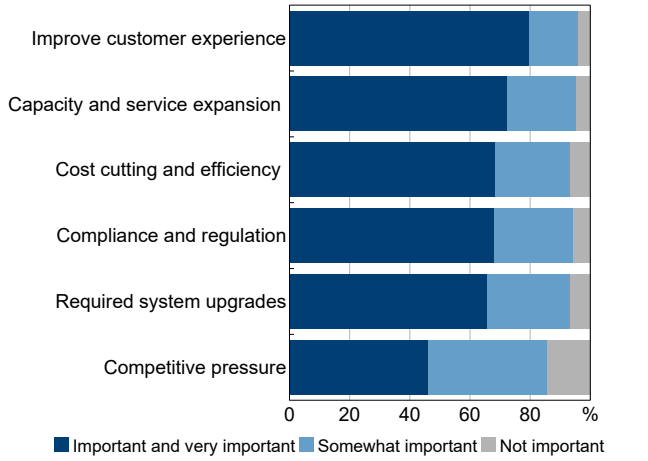
* As a share of total investment expenditure.

Source: RBA.

Many surveyed firms have also made major investments in cloud computing and data infrastructure. These investments are considered essential foundational steps for further modernising operations, driving efficiency and, in some cases, for adopting artificial intelligence (AI) and machine learning (ML) tools in an effective way.

The motivations of surveyed firms for undertaking these investments included improving customer experience, and capacity and service expansion, a trend accelerated by the COVID-19-induced shift to a more online economy (Graph 3). In recent years, high inflation and labour costs have also motivated surveyed firms to cut costs and identify efficiencies to maintain profitability. Difficulties finding suitable staff in a tight labour market over recent years has expedited these investments for some surveyed firms. Far fewer firms cited competitive pressure explicitly as a dominant motivator, though 80 per cent reported it was a somewhat important factor; cost-cutting and efficiency are typically related to maintaining competitiveness. This result may reflect the market power of the generally larger firms surveyed or the strong demand conditions over some of the period in question.

Graph 3
Motivations for Investment
Share of firms reporting, over the past five years



Source: RBA.

Most surveyed firms that reported they were able to improve their labour productivity over recent years indicated they had undertaken considerable investment in technology, including robotics and automation, along with internal process improvements. More than 70 per cent of surveyed firms viewed technological advancements as an enabler to productivity improvements.

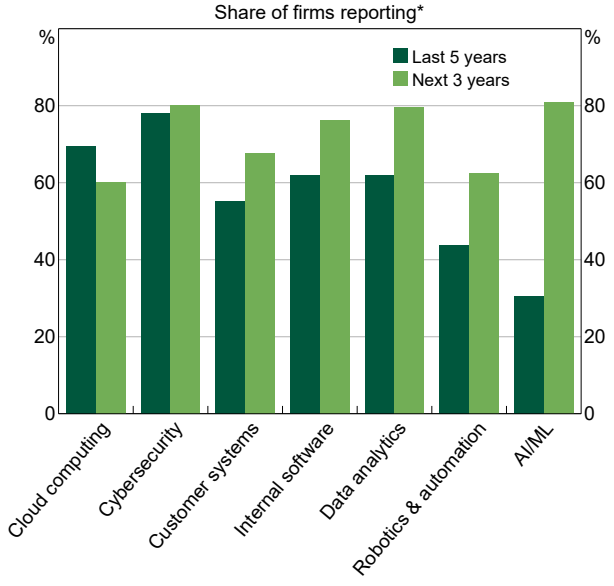
Taken together, these findings suggest that while technology investment has been widespread and often essential for modernisation, the primary drivers of recent investment have included risk management and operational resilience. As such, achieving immediate productivity gains or cost savings was not the goal and their implementation would be unlikely to lift measured productivity. These findings are also consistent with many firms likely still being in the adjustment phase of adopting and embedding technology and productivity gains might be realised in the future.

Liaison firms' planned technology investment

Looking ahead, surveyed firms expect their technology investments to increase further (as a share of their overall investment), although the nature of this investment is expected to change over time.

Surveyed firms expect that investment in AI/ML and robotics and automation will be much higher over the next three years than it has been previously (Graph 4). By contrast, surveyed firms expect a slight decline in the significance of cloud computing investment over the next three years, with many firms having already undertaken substantial upgrades over recent years. These results are consistent with some international evidence that suggests investments in 'frontier' technology such as AI/ML are expected to continue to grow strongly in market size and significance into the future[5] (United Nations Conference on Trade and Development 2025).

Graph 4
Significance of Technology Investment Over Time
Share of firms reporting*



* Firms reporting moderate or significant investment, as a share of total investment expenditure.

Source: RBA.

Generally, firms need to make complementary internal changes, including supporting staff through training and uplifting managerial capacity, to support diffusion and profitable adoption of technology and realise productivity gains. Surveyed firms indicated they are hopeful that AI/ML will support their efforts to raise productivity growth across their operations and staff, if they can complement the investment with hiring skilled personnel, changing workflows and culture to incorporate new tools, and adapting to different ways of working. Empirical studies have also highlighted the importance of such complementary changes to support the adoption of technology and staff adaptation to using that technology (Brynjolfsson, Rock and Syverson 2021; Dedrick, Gurbaxani and Kraemer 2003). Some early evidence suggests that AI adoption among older established manufacturing firms may follow a 'J-curve' whereby short-term productivity losses precede longer term gains due to organisation and production-process adjustments that affect productivity and profitability in the short run (McElheran *et al* 2025).

AI adoption in Australia in the global context

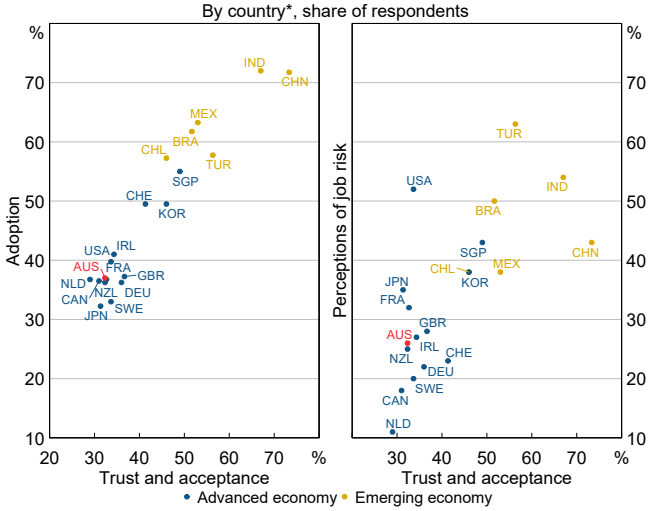
There has been keen global interest in AI over recent years following the release of generative AI tools. This interest is reflected by the strength in global equity markets for AI-related stocks and significant investments by technology companies in developing AI tools.[6] However, the degree of formal uptake of AI by firms in Australia and globally to date has varied considerably.

International surveys of AI uptake indicate that Australia ranks relatively low across a range of metrics including sentiment, investment and adoption (Graph 5) (Gillespie *et al* 2025; AI Index Steering Committee 2025). These surveys indicate that adoption, trust and acceptance of AI appear to be positively correlated, and highlight that trust and adoption seem to be higher in emerging markets than in advanced economies (Gillespie *et al* 2025).

Graph 5

Use and Trust of AI

By country*, share of respondents



* Countries classified according to the International Monetary Fund's World Economic Outlook groups. AUS = Australia, BRA = Brazil, CAN = Canada, CHL = Chile, CHN = China, FRA = France, DEU = Germany, IND = India, IRL = Ireland, JPN = Japan, MEX = Mexico, NLD = Netherlands, NZL = New Zealand, SGP = Singapore, KOR = South Korea, SWE = Sweden, CHE = Switzerland, TUR = Turkey, GBR = United Kingdom, USA = United States of America.

Source: IMF; IPSOS; RBA; Stanford University; University of Melbourne/KPMG.

Even among advanced economies, Australia's rates of adoption of and trust in AI are presently at the lower end. Commonly cited concerns in Australia relate to cybersecurity risks and the loss of human interactions and connection, which is consistent with the main concerns cited for most of the other countries surveyed (Gillespie *et al* 2025). Further, Australia's relative performance across several economic metrics such as AI skill penetration and AI talent concentration are currently lower than in other countries, which may reflect the cautious approach Australian firms have taken to AI adoption to date (AI Index Steering Committee 2025).

Overall, Australians' concerns around their job risk are broadly in line with other advanced economies (Graph 5, right panel). However, these concerns are noticeably lower than some emerging economies that have relatively high acceptance and adoption of AI. A possible interpretation of the data is that the more that individuals use AI, see it affecting roles in their workplace, and gain acceptance of it, the more likely they are to perceive a risk to their role being replaceable with AI.

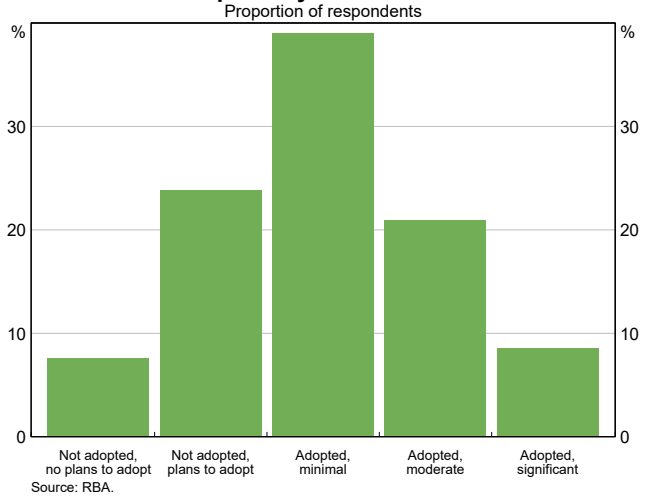
Liaison firms' uptake of AI

Our results indicate that for many surveyed firms, adoption of AI at an enterprise scale is still at a very early stage and largely for pilot or experimental purposes. Two-thirds of surveyed firms reported having adopted AI in some form, but the depth and nature of this adoption varied considerably. For most firms, adoption has been shallow to date, with nearly 40 per cent indicating minimal use so far (Graph 6). In these firms, adoption is typically limited to digital assistants such as Microsoft Copilot or ChatGPT, which have largely been sourced as off-the-shelf AI products and are currently used for discrete tasks such as summarising emails and undertaking research.

Graph 6

AI Adoption by Australian Firms

Proportion of respondents



Source: RBA.

Around 30 per cent of surveyed firms have made more substantive progress in adopting AI. Firms with 'moderate' adoption are using AI to assist with some business processes such as revenue or demand forecasting or inventory management. A smaller group of firms has begun integrating AI more extensively, embedding it across multiple business lines and relying on it in critical processes such as fraud detection.

The relatively high uptake among surveyed firms may reflect the sample being skewed towards larger, established firms that have been able to dedicate resources to AI adoption. Our survey results accord with literature suggesting that large firms that have more resources and are already more productive are more likely to adopt tools such as AI/ML (Acemoglu *et al* 2022; Nguyen and Hambur 2023). Surveys from other institutions suggest that AI adoption among smaller Australian firms is lower than for larger firms (DISR 2025; Ai Group 2024).

Overall, many surveyed firms indicated that their adoption of AI tools to date has been relatively piecemeal, with adoption often being employee-led rather than employer-led.[7] Firms reported that returns on investment have been mixed to date and they expect the returns will take time to be realised.[8] Identifying high-impact use cases to lift productivity and profitability are seen by firms as a priority going forward. Some firms reported increasing interest in agentic AI tools (i.e. AI systems that once operational can make some designated decisions and solve problems relatively autonomously without human intervention), although practical adoption of such tools so far has been low.

Technology adoption and jobs

The large-scale adoption of new technology can be disruptive to and for the labour market. While AI is still at a relatively early stage of enterprise-wide adoption, there has been considerable debate about whether its effect on the labour market will mirror those of past waves of technology adoption or be somewhat different. It seems clear that AI will result in both creating and destroying jobs. However, it is too soon to know the overall impact on jobs; the literature shows that technology has historically created more jobs than it has replaced in many cases.

Literature on the impact of new technology on employment suggests there are broadly four channels through which technology adoption can affect a firm's demand for labour, and in turn aggregate labour demand (Hötte, Somers and Theodorakopoulos 2023; Borland and Coelli 2023):

1. **Displacement.** This involves the direct replacement of labour by capital through automation and other labour-replacing technology. This includes lower intake of entry level roles where tasks have been automated.
2. **Reinstatement.** This involves the creation of new tasks and roles directly associated with the new technology.
3. **Augmentation.** This involves an increase in productivity from new technology leading to greater demand for workers engaged in complementary non-automated tasks at a firm or within the same industry.
4. **Productivity (real income effects).** This involves firms passing gains from technology-driven productivity improvements (i.e. lower costs) through to lower consumer prices and higher wages, leading to a boost in demand from higher real incomes. This drives demand for firms' products and, in turn, their labour demand.

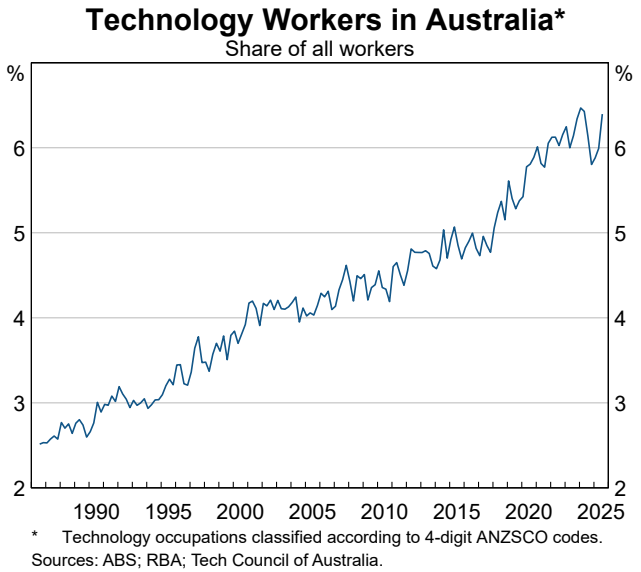
Economy-wide demand for labour will be determined by the net impact of these channels, plus any spillover effects to other firms. These spillover effects can include increases in real income driving the demand for other firms' goods and services, which, in turn, could drive increases in their demand for labour (Acemoglu and Restrepo 2019; Autor *et al* 2024; Autor 2022; Borland and Coelli 2023). Further, the nature and maturity of different technology can affect the share of capital and labour within firms in different ways and have varied flow-on effects to productivity.

Responses from surveyed liaison firms suggest that to date most of the impact on labour from technology investment (including but not limited to AI) over the past five years have been managed through redeployment and retraining. However, many surveyed firms anticipate that AI and automation will begin to weigh slightly on headcount (all else equal) in the coming years, but other types of technology are expected to have little impact. While a sample of around 100 medium–large Australian firms cannot tell us what might happen for the labour force as a whole, economic data spanning past technology waves can provide some useful information.

Technology-related changes in the Australian workforce over time

Increased technology adoption in Australia over recent decades has contributed to compositional changes in the Australian labour market. As some roles have been displaced, others – particularly in technology-related fields – have expanded. The number of workers employed in occupations related to information and communication technology (ICT), software and applications, and database management has increased by more than 40 per cent over the past decade (Graph 7), which is stronger employment growth than in many other occupations.[9]

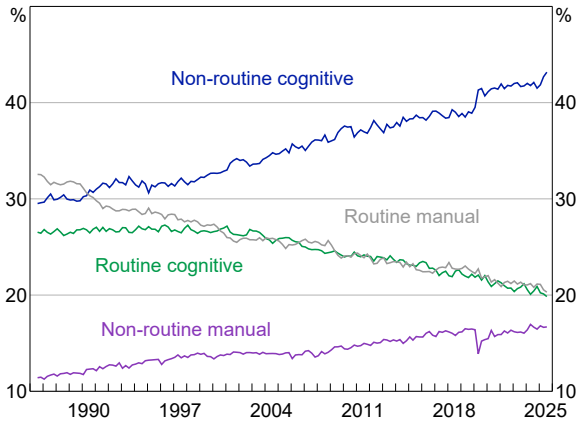
Graph 7



* Technology occupations classified according to 4-digit ANZSCO codes.
Sources: ABS; RBA; Tech Council of Australia.

Relatedly, the nature of work has shifted for many Australians. Over the past four decades, the share of workers in routine-based occupations has declined, while employment in non-routine cognitive roles has increased steadily (Graph 8) (Borland and Coelli 2023; JSA 2025).[10] Common classifications of relatively manual occupations include administration or operational jobs and examples of non-routine occupations include jobs in personal services or managers (Borland and Coelli 2023). These trends in Australia align with broader global trends showing strong growth in technology work and non-routine work over a long period. They also reflect strong growth in the deployment of technology such as robotics and automation, which has replaced occupations involving repeatable routine tasks, alongside an increase in non-routine roles.

Graph 8
Employment by Skill Type*
Share of total



* Mapping of ANZSCO occupations to occupation groups based on Borland and Coelli 2023.
Sources: ABS; Borland and Coelli (2023); RBA.

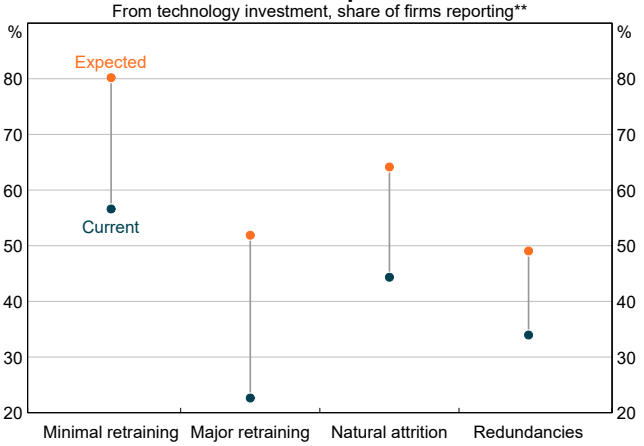
Importantly, the international evidence suggests that the labour-creating effects of technology have generally outweighed the labour-replacing effects over time (Hötte, Somers and Theodorakopoulos 2023; Abel *et al* 2025). Over recent decades, annual hours worked per working age person in Australia have been little changed overall, despite concerns that widespread adoption of technology would lead to a substantial decrease in the availability of work (Borland and Coelli 2023).

Technology effects on liaison firms' staffing

Consistent with the literature, surveyed liaison firms reported strong growth in their employment of IT and technical roles (including contractors) over recent years to support the adoption of new technology. They also reported that their headcount had increased during the embedding phase of technology, such as technology related to cybersecurity and cloud computing.

In the survey, we asked firms what effect the individual types of technology had, or would have over coming years, on their headcount, abstracting from all other factors that might drive changes in headcount.[11] Surveyed firms reported that to date most workers displaced by technology (including but not limited to AI) in their firm had been redeployed into other roles with minor retraining (Graph 9); firms have typically used a combination of strategies to manage displaced staff. Going forward, surveyed firms anticipate that their technology investments may be more disruptive for their staff. That is, a higher share of firms expect technology deployment will, all else equal, reduce their headcount over coming years than was the case over prior years. Additionally, a larger share of firms anticipates the need for increased staff retraining as the adoption of new technology becomes more widespread.

Graph 9
Outcomes for Displaced Staff*
From technology investment, share of firms reporting**

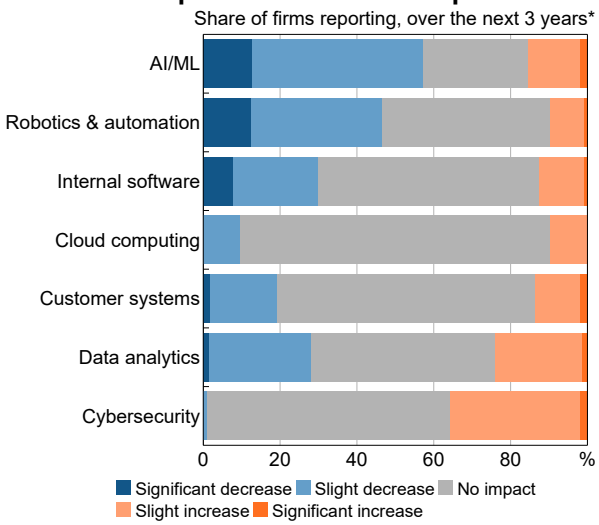


* The expected outcome for those staff who are displaced by embedded technologies; answers are not applicable to a firm's total headcount.
** Firms could nominate multiple categories so results do not sum to 100.
Source: RBA.

Liaison firms' expected workforce adjustments from AI adoption

Around half of surveyed firms expect adoption of AI/ML specifically will lead to their firm slightly reducing their total headcount over the next three years, all else equal (Graph 10).[12] However, the survey findings do not reflect the impact on overall headcount from other non-technology-related factors such as business growth and expansion and broader market dynamics that will affect firms' total demand for labour.

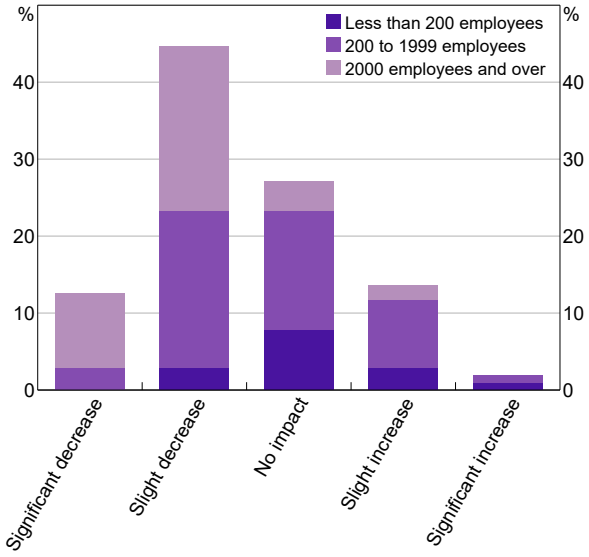
Graph 10
Expected Headcount Impact from Tech
Share of firms reporting, over the next 3 years*



* These results do not reflect the impact on overall headcount from other non-technology specific factors such as business growth and expansion and broader market dynamics that will affect the firms' total demand for labour.
Source: RBA.

Individual firms expected headcount implications from embedding AI to vary because of their different stages of adoption, different workflows and the scope for automation based on current technology and ambitions around automation. As a result, there is a wide dispersion of expected headcount outcomes among surveyed firms even when they are of a similar size (Graph 11).[13] Firms planning to reduce their headcount expect to do so through natural attrition, lower intake of new staff and redundancies, or a combination of all three. Firms also anticipate similar effects from robotics and automation, suggesting that these forms of technology may complement AI/ML. Large-scale job losses are not expected by surveyed firms in the near term. For other staff, many firms expect that AI will lead to shifts in the nature of their roles and day-to-day tasks.

Graph 11
Expected Impact on Headcount from AI/ML
Share of firms reporting, over the next 3 years, by firm size*



* Firm size groupings are based on current number of employees.
Source: RBA.

Most other types of technology are expected to have little to no impact on staffing, while cybersecurity is expected to drive a modest increase in headcount, all else equal.

Surveyed firms generally expect a lag between when the technology investments are made and when the peak impact on headcount is realised. Many firms reported that investment will typically be an ongoing process, but that effects from most technology investments on their headcount would typically materialise within one-to-three years. For AI specifically, firms anticipated a longer lag – which could perhaps be between three-to-five years – before the peak impact on their headcount materialises. This slightly longer timeframe could reflect AI's position as a relatively new technology that firms must first embed into their processes and augmented workflows and train their staff to use to optimise its use.

Unlike many other forms of technology, one of the risks posed by AI is its potential to replace non-routine cognitive tasks – that is, higher-skilled roles that have been less exposed to technological disruption in the past (Autor 2024). For example, trained professionals are likely to be more susceptible to displacement from AI than was the case with some other types of technology. Surveyed liaison firms were asked to nominate roles in their firm that have already been displaced by AI or they see as likely to be displaced in the future, and roles that

Table 1: Occupations That May Be Displaced or Created Due to AI Adoption
Most mentioned by surveyed firms

At risk of displacement	Likely to grow or be created
Routine finance (e.g. bookkeeping, loan assessment, payroll)	AI, ML and automation engineering
Administrative and clerical support	Data engineering and architecture
Contact centres and service desks	Cybersecurity
Repetitive or legacy IT support	Robotics process automation engineers
Junior professionals	Business analysis and process orchestration
Manual roles in manufacturing and logistics	Customer experience and design

Source: RBA.

have or are likely to be created or grow in response to AI adoption. The most frequently cited examples of roles that are likely to be displaced, created or to grow are set out in Table 1.

In addition, many surveyed firms reported examples of AI currently augmenting the jobs of their staff, even at relatively low levels of adoption. These examples include changes that save time on traditionally time-consuming tasks such as personal administration, drafting documents and summarising meetings, enabling individuals to focus on higher cognitive tasks. That said, few firms reported material AI-driven productivity gains so far, likely reflecting limited breadth and depth to adoption of AI. Many firms expect AI to deliver greater output in the future through efficiency gains. Ultimately, the impact of AI on the labour market will be determined by the net contribution of these channels.

Taken together, the initial survey results suggest that firms expect the widespread adoption of AI/ML could be more disruptive to staff than other types of technology, both in terms of job displacement and changes to the nature of work, although most surveyed firms are highly uncertain about the impacts that AI will have on their business. However, past waves of technology adoption have resulted in the creation of new roles and emergence of new firms that were not previously anticipated (Feigenbaum and Gross 2024; Rosenberg and Trajtenberg 2004). This past experience means that caution must be exercised in interpreting the survey results in terms of their possible implications for aggregate employment.

Uncertainty around AI adoption

Surveyed firms emphasised the uncertainty around both the scale of AI impacts and timing, including for firms that are relatively sophisticated in their adoption of AI. This reflects a few factors – notably, the pace of technological change, a lack of knowledge about the possible applications or strategy for adoption or the resources required to deliver it, and uncertainty around the regulatory environment.

In the near term, firms face challenges in adopting AI that may slow both adoption and the speed of its impact on employment. Many surveyed firms reported difficulties finding skilled workers (e.g. data engineers and scientists) to drive their adoption of AI. This issue is expected to become more challenging over coming years as more firms compete for these skills, potentially constraining the pace of investment in the future. Similar challenges have been observed overseas. Other factors cited both in Australia and internationally as contributing to weaker AI adoption include a lack of digital readiness, uncertainty about use cases and return on investment, risk appetite of the business, problems integrating legacy systems and concerns about the cost of AI technology (Bratanova *et al* 2025; OECD, BCG and INSEAD 2025).[14] These factors may mean the adoption of AI/ML in Australia is slower than anticipated, with possible flow-on effects to competitiveness and productivity if adoption lags other economies.

AI and future employment

Quantitative estimates of AI's future impact on labour markets vary widely. A common method is to assess the *exposure* of occupations to AI by evaluating which tasks could be automated or augmented (Felten, Raj and Seamans 2023; Gmyrek, Berg and Bescond 2023; JSA 2025). The International Monetary Fund estimates that around 40 per cent of global employment is exposed to AI and could possibly be as high as 60 per cent in advanced economies, suggesting greater susceptibility in advanced economies over a shorter time horizon (Cazzaniga *et al* 2024). Other studies suggest lower estimates of around 24 per cent (Gmyrek *et al* 2025). Estimates for Australia suggest that only around 4 per cent of the current workforce are highly exposed to AI automation, while around 21 per cent have medium-to-high exposure (JSA 2025).[15] In such studies, a job being assessed as 'exposed' to AI, does not necessarily mean it will be replaced by AI.

While some roles may be automated (and hence, displaced), based on current technology, a much larger share of roles are exposed to AI-driven augmentation. Jobs and Skills Australia estimate nearly 90 per cent of Australian jobs have medium-to-high augmentation exposure (JSA 2025). This suggests that AI could primarily reshape how work is performed and what part of roles are completed by humans, rather than rapidly eliminate the need for a large number of roles. For example, AI may take over routine or information-processing tasks, allowing workers to focus on specialised tasks and interpersonal activities (Septiandri, Constantinides and Quercia 2024).

In the Australian context, long-run modelling suggests that AI adoption may result in a net increase in employment (JSA 2025). Such estimates are based on the expectation that AI adoption will create productivity gains, increasing overall output and, in turn, increasing the demand for labour, though employment growth may slow in the short term as firms restructure and workers retrain. During this transition, firms anticipate efficiency gains from AI adoption, which could generate both productivity and reinstatement effects (Productivity Commission 2025). These dynamics align with our survey findings: firms expect a modest reduction in headcount in the near term but anticipate higher output as AI tools are integrated.

Aggregate results can mask the disruptive displacement effects that new technology can have on individuals whose jobs are directly impacted or sub-groups who are disproportionately affected.[16] Research from Jobs and Skills Australia highlights that certain groups may be particularly vulnerable to the negative impacts from AI, including women, First Nations peoples, people with disability, and culturally and linguistically diverse communities (JSA 2025).

Opportunities and barriers to lifting productivity

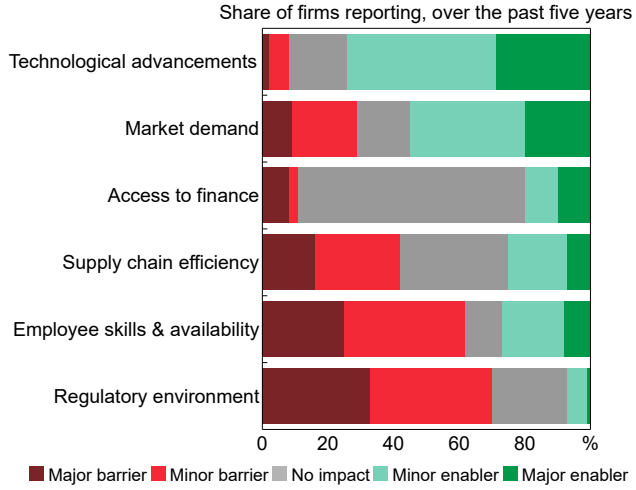
Investment in technology can drive economic growth and surveyed firms see the potential for data and emerging technology as potentially transformative in lifting productivity growth.[17] Also, firms hope to see a boost to medium-term productivity from this technology. However, firms reported that technology was by no means the main obstacle in the very near term or the only solution to low productivity growth in Australia.

Government policy changes are seen by surveyed firms as equally important to complement business technology and other cost-saving initiatives. The priorities of surveyed firms for improving economy-wide productivity include streamlining the amount and complexity of regulation across different levels of government and policy issues, such as environmental and energy, tax, data, privacy and industrial relations regulations. Many surveyed firms noted that the volume and complexity of regulation has diverted staff away from core business activities and has been a key factor weighing on their labour productivity growth over the past five years (Graph 12). Firms also highlighted the impact that government policy uncertainty can have in slowing their investment and hiring decisions.[18] These results reinforce that raising productivity across the economy is multifaceted.[19]

Graph 12

Factors impacting productivity

Share of firms reporting, over the past five years



Source: RBA.

Conclusion

Our survey results, along with the cited empirical studies, suggest that technology investment will remain elevated, but the realisation of productivity gains from the adoption of technology could take time. Complementary changes to processes and workforce skills and training will be important to realising these gains. Alongside this, AI and other automation tools may have a more pronounced effect on workforce composition than some other types of technology, though it is currently too early to tell the size and timing of such an impact on the Australian workforce, particularly as Australia is at a relatively early stage of AI adoption. Skills shortages and uncertainty around AI's developmental trajectory also present key uncertainties. While the potential for productivity gains is widely acknowledged, the pace and distribution of these gains will depend on firms' ability to identify the most useful application of new tools to their business and to successfully embed them and adapt to the broader policy environment in which they operate. Over time, attitudes towards new technology may shift and normalise with greater use, familiarity and interactions with that technology, which will mean the issues and the implications for the Australian economy discussed in this article will continue to evolve.

Appendix A: Survey sample and methods

A survey of medium–large firms was conducted in June to August 2025 on the topic of 'Productivity and Technology Investment'. A subset of firms in the RBA's liaison program were invited to voluntarily participate. Data was collected through guided interviews held with an RBA staff member.

There were 105 responses spanning most industries. The sample was not designed to reflect the exact structure of the Australian economy, although it is broadly representative across industries and locations (see Table A.1 for further detail). Participating firms tended to be larger and established firms, which may affect the applicability of the results, and did not cover the small business sector.

A few of the questions asked in this survey overlap with questions asked in an RBA survey in 2018 of firms' use of information and communication technology, enabling a comparison of responses over time (Lai, Poole and Rosewall 2018).

Table A.1: Survey Sample Characteristics

Industry	No. of firms	Share of sample	GVA share[(a)]	Employment share[(b)]
By sector:				
Agriculture	5	5	4	3
Business services	25	24	27	27
Construction	9	9	8	8
Household services	13	12	21	36
Manufacturing	24	22	6	6
Mining	2	2	16	1
Transport and storage	10	10	6	5
Utilities	2	2	2	1
Wholesale and retail trade	15	14	10	13
Total	**105**	**100**	**100**	**100**
By size:[(c)]				
<200 employees	15	14		
200–1,999 employees	52	50		
2,000+ employees	38	36		
Total	**105**	**100**		

(a) ABS (2025b).

(b) ABS (2025c).

(c) The ABS defines business size by employment where <20 employees are small, 20–199 are medium, and 200+ are large. All respondents to our survey had more than 20 employees.

Sources: ABS; RBA.

Endnotes

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1 For more information about the RBA's liaison program, see Dwyer, McLoughlin and Walker (2022).

2 A subset of firms in the RBA's liaison program was invited to voluntarily participate in the survey. Data were collected through guided interviews held with an RBA staff member. The sample was not designed to reflect the exact structure of the Australian economy, although it is broadly representative across industries and locations (see Table 1 for further detail). Participating firms tend to be larger and established firms, which may affect the applicability of these results.

3 Compared with some other countries, however, Australia's investment in information and communications technology (ICT) and software as a share of total investment has been relatively low over time.

4 Following the widespread adoption of personal computers in the 1970s and 1980s, economist Robert Solow observed that the proliferation of computers had coincided with a slowdown in productivity growth. This observation became known as the 'Solow Paradox' as economists had struggled to empirically find evidence in many cases of the size of ICT investment and the associated impact on productivity. Since this time, economists have found empirical evidence that IT investment can have a significant impact on the productivity of firms, but there can be a wide range of returns from that investment (Dedrick, Gurbaxani and Kraemer 2003).

5 This refers to technologies that have the potential to be transformative and to provide opportunities for economic development, sustainability and governance. See United Nations Conference on Trade and Development (2025).

6 An assessment of the possible financial risks from valuations of technology stocks and market concentration in that sector is beyond the scope of this article.

7 This aligns with other survey evidence suggesting that many employees to date have opted for general AI tools rather than specific ones developed for the organisation (Gillespie *et al* 2025).

8 A recent study from the Massachusetts Institute of Technology highlighted that many firms adopting GenAI do not realise or cannot measure returns on that investment in the very near term (Challapally *et al* 2025).

9 Technology occupations are classified according to Appendix 1 in Tech Council of Australia (2023).

10 Autor, Levy and Murnane (2003) define routine tasks as a limited and well-defined set of activities that can be accomplished by following explicit rules, while non-routine tasks involve problem-solving and complex communication activities. They argue that technology is a substitute for workers carrying out routine tasks but complements workers in performing non-routine tasks. Non-routine cognitive occupations include most managers, professionals and engineering, IT and science technicians. Non-routine manual occupations include community and personal service workers and food trades workers. Routine cognitive occupations include clerical and administrative and most sales workers, while routine manual occupations are comprised mainly of machinery operators and drivers, labourers, and some technicians and trades workers.

11 This required firms to assume that their headcount does not grow or decline for other reasons, such as changes in revenue or business lines. In discussions, some firms noted they anticipate potential job losses being offset by further business growth due to broader economy or industry-specific factors.

12 Firms were asked about the expected impact on their headcount from AI/ML alone, which abstracts from other factors that might boost headcount, such as growth in demand for their goods and services.

13 The slight skew in Graph 11 to larger firms is consistent with the survey sample, where very few smaller firms were survey respondents.

14 Some Australian studies have found that small business also cites funding constraints as an important barrier and that adoption among small business is lower than among larger firms and risks smaller firms falling behind (DISR 2025; Fifth Quadrant 2025).

15 'Highly exposed' in this context means a significant share of tasks within an occupation that are susceptible to AI automation (JSA 2025). JSA suggests that its lower estimate reflects its assessment that most tasks are susceptible to augmentation rather than automation and could be as a result of having a more up-to-date understanding of AI technology than earlier studies.

16 Previous waves of technology have disproportionately affected lower skilled workers, who may have faced structural unemployment due to skill mismatches, or in some cases, multiple rounds of reskilling within their working lifetime (Productivity Commission 2025).

17 To date, there is a wide variation in estimated economy-wide productivity benefits stemming from generative AI adoption – in Australia, the Productivity Commission estimates the multifactor productivity gains over the next decade could be above 2.3 per cent, which equates to 4.3 per cent growth in labour productivity over this same period (Productivity Commission 2025). Australian firms have historically not been global leaders in adopting and diffuse new technologies, which may weigh on their global competitiveness (Nguyen and Hambur 2023).

18 Broadly, these themes are consistent with those raised at the Australian Government Economic Reform Roundtable in August 2025.

19 A survey conducted by Ai Group (2024) also found that skills capability gaps and regulation posed challenges to lifting productivity growth.

References

Abel JR *et al* (2025), 'Are Businesses Scaling Back Hiring Due to AI?', Federal Reserve Bank of New York Liberty Street Economics Blog, 4 September.

ABS (Australian Bureau of Statistics) (2025a), 'Research and Experimental Development, Businesses, Australia 2023–24', August.

ABS (2025b), 'National Accounts 2024–25, Gross Value Added by Industry, Chain Volume', October.

ABS (2025c), 'Labour Account Australia, Total Jobs by Industry, Seasonally Adjusted', September.

Acemoglu D and P Restrepo (2019), 'Automation and New Tasks: How Technology Displaces and Reinstates Labor', *Journal of Economic Perspectives*, 33(2), pp 3–30.

Acemoglu D *et al* (2022), 'Automation and the Workforce: A Firm-level View from the 2019 Annual Business Survey', NBER Working Paper No 30659.

Ai Group (2024), 'Technology Adoption in Australian Industry: Commercial, Workforce and Regulatory Drivers', Report, October.

AI Index Steering Committee (2025), 'Artificial Intelligence Index Report 2025', Stanford University Institute for Human-Centered AI Annual Report.

Autor D (2024), 'Applying AI to Rebuild Middle Class Jobs', NBER Working Paper No 32140.

Autor D (2022), 'The Labor Market Impacts of Technological Change: From Unbridled Enthusiasm to Qualified Optimism to Vast Uncertainty', NBER Working Paper No 30074.

Autor D *et al* (2024), 'New Frontiers: The Origins and Content of New Work, 1940–2018', *The Quarterly Journal of Economics*, 139(3), pp 1,399–1,465.

Autor D, F Levy and R Murnane (2003), 'The Skill Content of Recent Technological Change: An Empirical Exploration', *The Quarterly Journal of Economics*, 118(4), pp 1,279–1,333.

Borland J and M Coelli (2023), 'The Australian Labour Market and IT-enabled Technological Change', Melbourne Institute Working Paper No 01/23.

Bratanova A *et al* (2025), 'Australia's Artificial Intelligence Ecosystem: The 2025 Update', Australian Government Department of Industry, Science and Resources Report.

Brynjolfsson E, D Rock and C Syverson (2021), 'The Productivity J-curve: How Intangibles Complement General Purpose Technologies', *American Economic Journal: Macroeconomics*, 13(1), pp 333–372.

Cazzaniga M *et al* (2024), 'Gen-AI: Artificial Intelligence and the Future of Work', IMF Staff Discussion Note No SDN/2024/001.

Challapally A *et al* (2025), 'The GenAI Divide: State of an AI Business in 2025', July.

Dedrick J, V Gurbaxani and K Kraemer (2003), 'Information Technology and Economic Performance: A Critical Review of the Empirical Evidence', *ACM Computing Surveys*, 35(1), pp 1–28.

DISR (Department of Industry, Science and Resources) (2025), 'AI Adoption Tracker – 2025 Q1', 4 June.

Dwyer J, K McLoughlin and A Walker (2022), 'The Reserve Bank's Liaison Program Turns 21', RBA *Bulletin*, September.

Felten EW, M Raj and R Seamans (2023), 'How Will Language Modelers like ChatGPT Affect Occupations and Industries?', 1 March.

Feigenbaum J and DP Gross (2024), 'Answering the Call of Automation: How the Labor Market Adjusted to Mechanizing Telephone Operation', *The Quarterly Journal of Economics*, 139(3), pp 1879–1939.

Fifth Quadrant (2025), 'Turning Responsible AI Into Practice: New Self-Assessment Tool Empowers Organisations', Blog, 27 August.

Gillespie N *et al* (2025), 'Trust, Attitudes and Use of Artificial intelligence: A Global Study 2025', The University of Melbourne and KPMG Report.

Gmyrek P, J Berg and D Bescond (2023), 'Generative AI and Jobs: A Global Analysis of Potential Effects on Job Quantity and Quality', ILO Working Paper No 96.

Gmyrek P *et al* (2025), 'Generative AI and Jobs: A Refined Global Index of Occupational Exposure', ILO Working Paper No 140.

Hötte K, M Somers and A Theodorakopoulos (2023), 'Technology and Jobs: A Systematic Literature Review', *Technological Forecasting and Social Change*, 194, No 122750.

JSA (Jobs and Skills Australia) (2025), 'Our Gen AI Transition: Implications for Work and Skills', Final Overarching Report, 14 August.

Lai S, E Poole and T Rosewall (2018), 'Firm-level Insights into IT Use', RBA *Bulletin*, September.

McElheran K *et al* (2025), 'The Rise of Industrial AI in America: Microfoundations of the Productivity J-curve(s)', CES Working Paper No 25-27.

Mokyr J (2016), *A Culture of Growth: The Origins of the Modern Economy*, Princeton University Press.

Nguyen K and J Hambur (2023), 'Adoption of Emerging Digital General-purpose Technologies: Determinants and Effects', RBA Research Discussion Paper No 2023-10.

OECD, BCG and INSEAD (2025), *The Adoption of Artificial Intelligence in Firms: New Evidence for Policymaking*, OECD Publishing, Paris.

Productivity Commission (2025), 'Harnessing Data and Digital Technology', Interim Report, August.

Rosenberg N and M Trajtenberg (2004), 'A General-purpose Technology at Work: The Corliss Steam Engine in the Late-nineteenth-century United States', *The Journal of Economic History*, 64(1), pp 61–99.

Septiandri AA, M Constantinides and D Quercia (2024), 'The Potential Impact of AI Innovations on US Occupations', *PNAS Nexus*, 3(9), pp 320–333.

Tech Council of Australia (2023), 'Tech Jobs Update', Report, May.

United Nations Conference on Trade and Development (2025), 'Technology and Innovation Report 2025: Inclusive Artificial Intelligence for Development', Report No UNCTAD/TIR/2025.