INTERIM REPORT 1:
Key to Prosperity

1 Productivity growth and prosperity

Key points

- **Productivity growth — producing more outputs, with the same or fewer inputs — is the only sustainable driver of increasing living standards over the long term. While economic growth based solely on physical inputs cannot go on forever, human ingenuity is inexhaustible.**

- **Sustained productivity growth is a relatively recent historical phenomenon. It has ensured that modern life is richer in potentially every sense compared to any time in the past.**
  - Over the past 200 years, productivity growth has lifted hundreds of millions of people out of poverty and has led to a dramatic increase in living standards for the vast majority of the world's population.
  - Technological developments and inventions — including vaccines, antibiotics and statins — have driven huge increases in the quality and length of life over the past century.

- **The benefits of productivity growth come in the form of:**
  - goods and services that cost less, in terms of number of hours employees need to work to afford them
  - goods and services whose quality improves over time
  - completely new goods and services invented to improve everyday lives.

  In practice, novel products, improved quality and reduced cost often blend together.

- **As goods and services become more affordable, people can work fewer hours and consume more; over the past 120 years, the economic output of the average Australian is up 7-fold, while hours worked have consistently fallen.**

- **While productivity growth is an imperfect measure of rising wellbeing, lifting the rate of productivity growth is an essential element of any policy strategy aimed at increasing the collective welfare of the Australian community. Productivity growth relaxes the constraints of scarcity and opens up opportunities — for individuals, businesses and the general community.**

2 Forces shaping Australia's productivity challenge

Key points

- **Australian productivity growth is at its lowest rate in 60 years. This broad-based slowdown has been observed across advanced economies.**
  - Australia's productivity performance in the goods sector, including mining and agriculture, is consistently strong when compared to global peers. Australia's services — which employs almost 90 per cent of Australian workers and accounts for about 80 per cent of economic activity — are comparatively less productive.
  - Australia has slipped down the productivity rankings recently and has instead maintained its rich country status largely through increasing the share of people in the workforce.

- **The Australian economy faces challenges bouncing back from its recent poor productivity performance. These include:**
  - Continuing increase in the size of the services sector, where productivity growth has historically been more difficult to achieve than in the traditional goods sectors (e.g. mining, manufacturing and agriculture).
  - A fast growing, government funded and regulated, non-market services sector (e.g. aged care, schools, childcare and disability services), where a lack of competition and contestability can mask underperformance and the freedom to innovate and the sharing of new approaches can be limited.
  - Impacts of climate change and the task of decarbonising the Australian economy in line with international commitments.
  - Threats to open and flexible international markets for trade, capital and labour — which has benefited Australia enormously in the past — as some countries turn inwards in the face of increasing global tensions.

- **COVID-19 prompted an acceleration in the uptake of digital technologies across the Australian economy and showed that when governments, businesses and households worked together they could adapt quickly, including to remove long standing productivity bottlenecks.**

- **As the economy evolves in the wake of COVID-19, increased digital capacity could lead to a productivity dividend, particular in the services sector. Taking advantage of the opportunities afforded by digital technology — such as online service delivery, artificial intelligence and data analytics — will require:**
  - governments and businesses continuing to adopt and adapt innovative business models.
  - a suitably skilled workforce (and training infrastructure) adept in non-routine tasks.
  - access to data, much of which is collected through businesses reliant on funding or regulation of governments, is not unduly locked down.

3 Enabling future productivity growth

Key points

- **Productivity growth relies on the generation and spread of ideas that enable businesses and other product and service providers to deliver more (in quantity, quality or variety), from less. Institutional and policy settings play a key role in providing the frameworks and capabilities that enable and support this process.**

- **Considering the current context and headwinds to productivity growth, this review will focus on the broad cross-sectoral enablers to productivity growth — what we must have in place to enable businesses to adapt efficiently in a rapidly changing environment. The policy areas of focus are:**
  - Innovation and diffusion of new technologies, processes and ideas: including openness to foreign direct investment, ideas and skills; collaborations between businesses and universities and other channels for knowledge transfer; removing unnecessary regulations that discourage the diffusion of new ideas from the global frontier; and aligning incentives for innovation and information sharing in government services.
  - Data, digital technology and cyber security: The economy-wide importance of data and the digital technologies that generate and use data, as general purpose technologies that could boost productivity in many areas of the economy, including services.
  - A productivity-friendly business environment: Limiting impediments to employment and investment, including through openness to trade and foreign investment, which is critical for Australia's relatively small economy; providing policy settings that facilitate efficient emissions reductions and energy security and reliability; sound macroeconomic policy frameworks and competitive and contestable markets
  - A skilled and educated workforce: The importance of education in driving productivity growth through increasing human capital and creating settings conducive to technological breakthroughs and adoption.

- **The inaugural 5-Year Productivity Inquiry released in 2017 — *Shifting the Dial* — provides a basis for productivity-enhancing reforms that the current Inquiry can build on. *Shifting the Dial* detailed a blueprint — much of which is still very relevant today — to achieve productivity growth in several sectors of the economy, including within government itself. It focussed on delivering benefits for Australian consumers.**

Findings, recommendation directions and information requests

Productivity growth and prosperity

Insight 1.1 – Productivity growth is a recent historical phenomenon and over the past 200 years has led to massive growth in living standards around the world.

Insight 1.2 – Productivity growth benefits the average Australian by increasing their purchasing power. The average worker can consume more, better quality, and novel goods and services, while working fewer hours.

Insight 1.3 – Almost all sustained increases in real wages are underpinned by improvements in labour productivity growth.

Insight 1.4 – Being more productive means that the average Australian can consume more higher quality and completely new goods and services.

Insight 1.5 – Being more productive means that the average Australian can spend fewer hours at work to achieve a given level of consumption if they choose to.

Insight 1.6 – Consumers have received large benefits from productivity growth, including the capacity to benefit from a broad government social safety net.

Insight 1.7 – Productivity growth is an imperfect measure of wellbeing, but higher productivity growth means more opportunities for individuals, businesses and government to devote resources to directly improving wellbeing.

Forces shaping Australia's productivity challenge

Insight 2.1 – Australia's productivity is growing at its lowest rate in 60 years, consistent with a broad-based slowdown in productivity growth among advanced economies.

Insight 2.2 – The increasing share of people in the workforce has shielded Australia from some of the effects of slowing productivity growth, but sustaining an ever-increasing share of people in the workforce (and maintaining their income levels), is neither possible nor desirable.

Insight 2.3 – Closing the productivity gap to our OECD peers requires working smarter so that Australia can have higher GDP per capita without having to work longer.

Insight 2.4 – Australia's relative global productivity performance is strong in the goods sector, which includes mining and agriculture. Services are comparatively less productive on average, but our rankings are improving.

Insight 2.5 – Similar to other advanced economies, the services sector dominates the Australian economy. This reflects both the impact of higher incomes on consumer preferences, and the fact that productivity gains have been harder to secure in many service industries — making services relatively more expensive. Australia's industry structure also reflects our areas of comparative advantage (which for example, leads to a reliance on imported manufactured goods) and demographic factors such as an ageing population.

Insight 2.6 – Productivity growth in the goods sector is faster than in services. However, reflecting their diversity, the variation in growth rates across the services subsectors is substantial.

Insight 2.7 – COVID-19 prompted an acceleration in the general uptake of digital technologies and showed that in a crisis, governments, businesses and households can adapt quickly. The challenge is for Australia to achieve a sustained productivity dividend following the pandemic by embedding the efficiency gains from online activity and services.

Insight 2.8 – Innovation in services industries is less about inventing 'things' and relies more heavily on diffusing ideas and adapting business models. But this can be difficult for businesses operating away from the productivity frontier, and in sectors where government funding and regulation have a heavy influence.

Insight 2.9 – The large volumes of data produced by our increasingly digitised and services-oriented economy can be used to improve productivity. While there were good examples of effective data use during the COVID-19 response, Australia compares poorly internationally on use of data-driven technologies.

Insight 2.10 – A high skilled workforce is more important in an economy where jobs increasingly involve non-routine tasks, and use of digital technologies and data manipulation.

Insight 2.11 – Tight labour market conditions in Australia strengthens the need for workers to be allocated to their highest valued use. It also highlights the importance of access to skilled labour from other countries, which can help alleviate demand pressures and enhance productivity by improving the quality and diversity of skills in the labour market.

Insight 2.12 — Climate change presents risks to the Australian economy, especially for industries that utilise the environment as a key input. Selecting forms of abatement and mitigation to cost effectively achieve Australia's net zero by 2050 commitment will be challenging given the inherent uncertainty about future technological breakthroughs.

Insight 2.13 - As an increasingly services-based economy, Australia can benefit from greater global trade and integration in many service industries.

INTERIM REPORT 2:
Australia's data and digital dividend

1. Use of digital technology and data in the Australian economy

Key points

- **Digital technology and data have the potential to significantly improve Australia's productivity.**
  - Digital technology and data can reduce business production costs. Examples include lowering search costs (e.g. algorithmic search engines compared to manual search), transportation costs (e.g. using digital tools to generate and transmit data rather than paper records) and verification costs (e.g. establishing identity and reputation online instead of in person).
  - Greater use of digital technology and data can improve product quality and consumer choice, particularly in the services sector. Millions of phone apps, online banking, telehealth consultations, computer-assisted services such as counselling, and entertainment streaming services are examples of improved and/or new products enabled by technology and data.
- **Digital technology and data use has steadily increased for much of the past decade, as more businesses and consumers recognise the benefits of digitisation. COVID-19 accelerated this trend — many businesses were forced to operate only online, such as retailers making online sales, and more people worked from home.**
- **Businesses face benefits and costs from adopting digital and data tools that likely vary based on characteristics such as their size and industry. This could explain the variation in the rates at which technologies diffuse across the economy, and may affect dispersion in business performance.**
  - Larger businesses are more likely to adopt digital and data tools than small businesses.
  - Businesses in regional or remote areas are less likely than businesses located in cities to use customer relationship management and enterprise resource planning software.
  - The type of technology adopted and its relevance varies between industries. For example, knowledge-intensive service businesses are more likely to use artificial intelligence (AI), while businesses in industries that are reliant on physical equipment are more likely to use radio frequency identification tags.
- **Compared to other developed countries, Australia does well on basic measures of technology and data uptake, but is falling behind on more advanced uses. This could limit future productivity growth.**
  - Australia has relatively high internet coverage and data download volumes.
  - Australia's internet speeds and use of AI and data analytics are relatively low.

2 Potential barriers to adopting new technologies and data

Key points

- **Although many businesses are adopting digital tools to improve their productivity, there are some barriers slowing the adoption of new uses of technology and data across the economy.**
- **The most common barriers to technology and data adoption identified by Australian businesses are inadequate internet, lack of skills, limited awareness and uncertainty about benefits, cost and legacy systems.**
  - Agriculture businesses are most likely to cite unsuitable internet speed and geographic location as barriers, suggesting poor digital connectivity in regional and remote areas could be limiting adoption.
  - High costs are more frequently identified as a barrier by medium and large businesses, which could reflect the costs associated with transitioning from legacy systems and established processes towards new technologies and ways of working.
- **More broadly, unique features of the digital and data environment could hinder adoption. For instance, without clear rules about access and rights, data is likely to be underutilised as potential users could be excluded. Businesses are also likely to underinvest in cyber security because the costs of cyber attacks to an individual business are often less than the costs of such attacks to society more broadly.**

3 Targeting government investments and policy priorities

Key points

- **Technology change and increasing private sector provision of digital infrastructure have led to more options for regional and remote Australians to connect to the internet. Infrastructure funding arrangements that support providers to flexibly and competitively offer reliable internet solutions in regional and remote areas could be a more efficient and future-proof way to deliver the government's Universal Service Guarantee.**
- **While government-held data is increasingly accessible, data produced and held by providers of government-funded services is often not shared. To increase the use of this data to improve community outcomes and accountability for taxpayers, providers in sectors such as health, education, aged care and childcare could be required to share certain specified data with the government on service provision and outcomes as a condition of receiving funding.**
- **Meeting Australia's digital and data skills needs will be an important enabler of future productivity growth. While there may be a limited role for government to play in the upskilling and reskilling options that are already available (such as industry certifications and short courses), skilled migration policy could better reflect employer demand for emerging skills.**
- **Secure use of technology and data is essential for maintaining business and consumer trust, and ensuring lack of trust does not become a barrier to adoption. More information is required to understand whether the government's regulation of high-risk critical infrastructure sectors has led to unintended economic consequences, such as higher costs or lower investment.**
- **Ethical use of technology and data — particularly via artificial intelligence — is an emerging focus area that is also required to build trust. While there is broad agreement on good ethical principles, translating these into action is challenging, and more information is required to determine whether government has a role to play.**
- **More coordination between digital, data and cyber security policy and regulatory agencies, and more engagement between agencies and industry, would reduce overlap and inconsistency and lower uncertainty for businesses.**

Findings, recommendation directions and information requests

Use of digital technology and data in the Australian economy

Insight 1.1 — Digital technology, combined with data, can help businesses to improve their productivity by lowering the costs of search, replication, transportation, tracking and verification. It can also lead to productivity-enhancing product improvements and greater choice, particularly in services sectors, which have historically had more difficulty achieving productivity growth.

Insight 1.2 — Most Australian businesses make some use of digital tools, such as having a web presence, placing orders online and adopting cloud technology. COVID-19 accelerated technology use, with many businesses shifting to online sales or digitally delivered services. Technology adoption is highest for foundational tools such as cloud technology and cyber security software. To the extent that some technologies (such as 3D printing and blockchain) may have a narrower set of economic applications, it could be optimal for take-up rates to be relatively low at present.

Insight 1.3 — Variation in businesses' adoption of digital and data tools likely reflects differences in expected benefits and costs from adoption. For example, knowledge-intensive industries are more likely to use cyber security software and artificial intelligence, while manufacturing and supply chain logistics industries are more likely to use radio frequency identification and electronic data interchange tools. This could explain variation in the rates of technology diffusion across the economy and may affect dispersion in business performance.

Insight 1.4 — Australia performs well compared to other developed economies on foundations such as internet connections and data volumes. But we trail in some more advanced indicators such as internet speeds and use of data-driven technologies.

Potential barriers to adopting new technologies and data

Insight 2.1 — Australian businesses report challenges to adopting digital and data tools that include: inadequate internet, lack of skills, limited awareness and uncertainty about benefits and costs, and legacy systems. Inadequate internet connectivity and speed are particular issues in the agriculture industry, while skills barriers are more likely to be identified by smaller businesses.

Insight 2.2 — More access to and better use of data enables productivity growth by increasing competition, innovation and allocative efficiency. But efforts to increase data sharing could discourage quality future data production if they erode the economic benefits that private organisations can realise from investing in data collection and analysis. As such, increased data access must be balanced alongside incentives for the ongoing collection and maintenance of quality data, as well as privacy and data security concerns.

Insight 2.3 — Cyber security attacks are costly to respond to and recover from, and security concerns can deter uptake of digital and data tools. Businesses that do not account for all of these costs to themselves and others are likely to underinvest in their cyber security. Small and medium businesses are less likely to have mature cyber security practices than large businesses.

Targeting government investments and policy priorities

Insight 3.1 — Some regional and remote communities have poor internet connectivity, which can limit the ability of local industries to adopt productivity-enhancing technologies and reduce employment opportunities for local residents (if they are unable to work from home). Inadequate and unreliable connectivity also contributes to social exclusion, as residents are less able to access essential services (such as health, education and welfare support) in an increasingly digitised world.

Insight 3.2 — The suitability of fixed and mobile broadband, and satellite technology, as options to reliably connect to the internet differs substantially across Australia. The market for internet connectivity is evolving rapidly, with a range of private sector providers developing regional digital infrastructure that may address some access and reliability gaps.

Insight 3.3 — Productivity-enhancing access to low-cost and reliable internet services could be more efficiently and effectively delivered to regional and remote communities through a more flexible government approach to facilitating market participation by a range of providers. Competitive tendering could be a more efficient mechanism for delivering the Universal Service Guarantee. It may more transparently allocate and target government funding, and could be technology neutral and adapted to different regional and remote community needs (on service outcomes and price).

Recommendation direction and information request 3.1
Investing in regional digital infrastructure

The Commission is considering a recommendation in its final report to improve access to low-cost, reliable, future-proofed internet services in regional and remote parts of Australia. To inform the development of this recommendation, we are seeking views and evidence on:

- Could a Universal Service Guarantee (USG) tender mechanism be designed to meet regional and remote connectivity requirements and support competitive bidding, and what would be appropriate settings for:
  - the minimum service levels to be delivered and maximum prices to be charged by the successful provider
  - the geographic regions that tenders are issued for, and how granular regional breakdowns should be
  - contract specifications such as optimal length and payments structure?
- What would be the benefits and costs of introducing such a market-based mechanism, compared to the current system of allocating government funds to multiple regional digital infrastructure programs?
- If a USG tender mechanism were to be implemented, what kind of phasing or transitional arrangements would be required to effectively shift from the current system?

Insight 3.4 — The Consumer Data Right (CDR) provides a strong foundation for consumer data sharing, but relatively low uptake means its economic benefits are yet to be fully realised. Initiatives such as the CDR sandbox, which may improve data quality, and introducing action initiation could increase uptake in the future.

Insight 3.5 — Collaboration between government and the private sector can lead to new opportunities for digitisation and data sharing, and derive more value from data provided to government agencies. Overcoming risk aversion around government data sharing can benefit businesses and consumers by streamlining processes and improving service delivery, but only if data safety and security are maintained. The *Data Availability and Transparency Act 2022* (Cth) does not currently allow government data sharing with the private sector, which could prevent some high-value data uses.

Insight 3.6 — Much of the data generated by government-funded services and investments is not currently shared. But there could be large benefits resulting from better use of this data. For example, in health, data sharing can lead to improved services as providers have access to more accurate medical records and policymakers make more informed decisions. Government could require certain specified data to be shared as a condition of receiving funding. As this would be a significant change, it would require strong consideration about appropriate data security and privacy safeguards as well as working with service and software providers to minimise compliance burdens.

Recommendation direction and information request 3.2
Creating new data sharing and integration opportunities

Building on existing government initiatives to support data use across the Australian economy, the Commission is considering a recommendation to derive more value from data held by government-funded service providers. We are seeking views on how this could be implemented and what are the benefits and costs, particularly feedback and evidence on:

- What would be the essential features of a policy requiring healthcare providers to share data on patient services and outcomes with and through government as a condition of receiving government funding, including:
  - how to stage implementation in a way that supports providers with different constraints and capabilities, and recognises the potential costs that some stakeholders would face
  - what data would be required to be shared, weighing up the likely benefits associated with greater use of specific data items against the costs of providing that data
  - how government could work with software providers to co-design and, ultimately, automate reporting requirements
  - could My Health Record (MHR) be the starting point for implementing this data sharing requirement and, if so, what changes would be required for this broader use of the MHR system?
- In which other sectors would greater sharing of data produced by government-funded services and investments create significant opportunities for productivity improvements, and what would be the nature and size of these economic benefits?

Insight 3.7 — Short courses and unaccredited training can be preferred for developing digital and data skills, as they are often more relevant and flexible. Businesses and workers are already using options such as industry-delivered vendor certifications to upskill and reskill, which could indicate a limited role for government in this area.

Insight 3.8 — Not all digital and data skills needs can be met locally or with education and training in the short term. Skilled migration enables businesses to access a deeper talent pool, particularly for specialist skills that are difficult to find or develop in Australia. However, the occupation lists that underpin much of the skilled migration system are not sufficiently flexible or up-to-date to meet employers' digital and data skills needs.

Recommendation directions and information requests 3.3
Developing digital, data and cyber security skills

As stakeholders have identified skills issues as a significant barrier to productivity growth, the Commission is considering a recommendation on improving the supply of digital, data and cyber security skills in Australia's workforce for its final report. To inform the development of this recommendation, we are seeking views and evidence on:

- What role (if any) does government have in increasing the number of students and workers undertaking formal and unaccredited education and training in digital and data skills, given that various options are already being offered and taken up?
- How could the skilled migration program be made more relevant to current and future digital and data skill needs — for example, by improving the occupation list or changing how skilled visas are granted?
- Are existing government programs to improve digital literacy adequate, or are some cohorts still at risk of being left behind in an increasingly digitised world?
- How large are the productivity gains to be had from meeting Australia's digital and data skills needs or, conversely, what is the size of economic losses associated with failing to meet these needs?

Note that other interim reports to be released for the 5-year Productivity Inquiry will cover the topics of Australia's education and training system, and skilled migration policies, more broadly. Feedback about these policy areas in general and as they relate specifically to digital, data and cyber security skills will be combined for the Commission's recommendations in the final report.

Insight 3.9 — Cyber security regulation of high-risk sectors needs to manage the risks without unnecessarily deterring businesses' innovation and investment. The impacts of the government's recent critical infrastructure security regulations remain unclear but, while more time and information is required to understand whether these regulations strike an appropriate balance, there is no evaluation or review process included in the legislation.

Insight 3.10 — A business may face multiple reporting requirements for a single cyber security incident, depending on its operations and the nature of the breach. This can place unnecessary burdens on businesses that are focused on recovering from the cyber incident. More coordination between government agencies and streamlining of reporting requirements (such as via a single online interface) would assist in reducing reporting burdens on businesses.

Recommendation direction and information request 3.4
Balancing cyber security and growth

The Commission is considering a recommendation on the government's role in maintaining Australia's cyber security in its final report. There are a number of government initiatives that could be helpful — we are interested in hearing from stakeholders about their potential benefits and costs, and how they could be implemented. In particular, the Commission is seeking views and evidence on:

- Whether the critical infrastructure legislation led to any unintended consequences (such as increased costs or deterred investment) and, if so, what changes could be implemented that would support both cyber security and productivity growth?
- What can government do to incorporate cyber security into its technology procurement decisions, in a way that encourages suppliers to invest in cyber resilience and response but does not impose unnecessary burdens?
- How could government work with industry to build automatic cyber incident reporting into security software, and what would be the benefits and costs of this approach?

Insight 3.11 — Governments have generally agreed on the principles of ethical use of artificial intelligence, but are still working out how to translate this into action and where policy intervention is required. The Australian Government is not yet directly regulating technology and data-related ethical issues. Any intervention would need to be appropriately targeted towards high risk areas, and implemented in consultation with industry and technical experts.

Recommendation direction and information request 3.5
Supporting ethical use of technology and data

While this is an emerging policy area and the role for government to support ethical use of technology and data is rather unclear, some stakeholders have identified it as an important area to support future investment in productivity-enhancing digital technologies. The Commission is therefore considering a recommendation on this area for its final report, and is interested in hearing views about:

- How should government support the ethical adoption of new uses of technology and data, particularly for applications outside of artificial intelligence?
- What would be the benefits and costs of any government activity on technology and data ethics?
- If some regulation is required in Australia on ethical issues, how can the government identify high-risk settings where regulation would be most appropriately targeted?

Insight 3.12 — Existing coordination between Australian government agencies on technology and data issues only includes regulators, not policymakers, and focuses on digital platforms. More coordination could reduce uncertainty for regulated entities and improve engagement with industry and overseas, supporting adoption of productivity-enhancing technologies. The benefits of this would need to be weighed against the potential financial and time costs of greater coordination.

Recommendation direction and information request 3.6
Coordinating the policy and regulatory environment

Efforts to coordinate policymakers and regulators in the digital, data and cyber security areas are in the early stages, and the Commission is considering a recommendation on improving and broadening coordination and engagement for its final report. To inform the development of this recommendation, we are seeking feedback on:

- Whether there is evidence that poorly coordinated policy and regulatory activity in digital, data and cyber security areas have negatively affected businesses' investment, innovation or productivity?
- What policy issues and regulations are most important for agencies to coordinate on domestically and/or internationally, including both current and emerging areas?
- Which policymakers and regulators must be involved to effectively coordinate government activity in digital, data and cyber security areas, and how should they be coordinated?
- Are there costs associated with more policy and regulatory coordination, and how could these costs be minimised?

INTERIM REPORT 3:
Innovation for the 98%

1 The case for strengthening the diffusion of innovation

Key points

- **While novel, 'new-to-the-world', innovation is an important source of economic performance, it relates to only one to two per cent of Australian firms. The slow accretion of existing knowledge across the economy — diffusion — is often overlooked as a source of productivity. It has the scope to lift the performance of millions of businesses.**
- **Diffusion of knowledge in the non-market service sector, which governments control, fund and often run, can lift the quality of services central to Australians' wellbeing (such as education and healthcare). Diffusion of best practice regulation can also raise the efficiency of the private sector.**
- **Many Australian businesses undertake little or no assessment of their performance, and overall management capability — a critical determinant of adoption of best practice — appears to be weak for a large share of businesses, and significantly worse on average compared with the United States.**
- **There are signs that the 'diffusion machine' has weakened, with reductions in the growth of most of the key factors driving diffusion — labour mobility, business exits and entries, and overall investment in capital that embeds new ideas ('capital with brains') — such as equipment and machinery, R&D and software.**
- **The key policy levers for diffusion are different from those relevant to novel innovation. The quality of the business environment that affects knowledge flows and adoption — regulatory settings, skill formation, immigration and foreign direct investment policy, and competition policy — is far more influential than subsidies to particular sectors or targeting inventive effort.**

2 Enabling innovation diffusion in Australia

Key points

- **Policies to promote diffusion of established technologies and practices across firms and industries are more generic than those that target 'new-to-the-world' innovation.**
- **Commercial and market settings provide incentives for firms to seek out and adopt innovations, and profit from doing so. But regulation and policy can either facilitate or unduly hinder the process.**
- **Adoption of innovations developed overseas is critical to Australia's productivity. Linkages with overseas firms via trade and foreign investment are critical channels for diffusing technologies and innovative practices to Australian firms.**
  - Ensuring FDI screening and approval processes and costs are commensurate with national security risks is important to maintain this channel for diffusion.
- **A firm's workforce — its managers and employees — determine its abilities to identify, evaluate and absorb external information and make the broader organisational changes needed to benefit from transformative technologies such as digital technologies.**
  - Skilled migrants can have knowledge of frontier technologies and practices, and they have skills that are lacking in Australia, thanks to their experiences with firms overseas. Facilitating skilled migration can remove barriers to the diffusion of knowledge and skills.
  - Government support for building workforce skills could strengthen innovation diffusion if focused on transferable skills that augment the absorptive capacity of firms, such as digital and management skills.
- **Innovation diffusion depends on information. While industry organisations and business networks facilitate information flows and spillovers, businesses may benefit from more tailored information to help identify the need and opportunities for innovation.**
  - There is an opportunity to explore how to make better use of existing public data, and the expertise of industry associations and advisors, to provide benchmarking services to businesses.

3 Innovation and diffusion in government services

Key points

- **Given governments' spending of about $880 billion or more than 42 per cent of gross domestic product, even small gains from innovation and adoption can realise either better services or cost savings of billions.**
- **Innovative approaches in service delivery, policy and system design are present throughout the public sector, and extend to regulation, tax and funding settings that also produce benefits for the private sector.**
  - But innovation is often slow, piecemeal, disorganised, and inconsistent across jurisdictions.
  - Benchmarking shows wide variations in the efficient provision of services across jurisdictions.
  - This reflects unique aspects of the public sector: measures of success are contested and ambiguous; funding models create opposing and perverse incentives; norms and regulations discourage innovative approaches; and competitive pressures and the threat of exit are absent.
- **Many of the approaches to achieving diffusion of new processes and approaches in government services are well-known but underexploited.**
  - New funding and procurement models could drive better quality care in health services, and save tens of billions in procurement in defence and public infrastructure.
  - Better service benchmarking, data collection and program evaluation can uncover why there are inefficiencies, what to do about them, and motivate adoption of best practice by underperformers.
  - Hiring of migrants in the public sector is restricted, constraining the injection of new talent.
  - Reforming the pricing of Australian standards, requiring free access to government-funded research monopolised by academic publishing, and intellectual property reforms could better enable the diffusion of good ideas.
  - The steep costs of diffusing best practice could be reduced by exploiting the reputation of existing longstanding institutions with strong brand names that already act as repositories of best practice.
  - National Agreements and other arrangements for coordination between the Australian, state and territory governments may be better configured to take advantage of the relative strengths of the different levels of government and be less funding-driven.

Findings, recommendation directions and information requests

Enabling innovation diffusion in Australia

Finding 2.1
A business environment conducive to diffusion

The business environment provides the incentives, resources and capabilities of firms to invest in and adopt established innovations, and their capacity to profit from doing so. The policies that shape the business environment to promote diffusion of established technologies and practices tend to be more general and broad-based than those that target new-to-the-world innovation. They aim to affect all firms in all industries, not just those investing in creating and commercialising highly novel innovations.

Finding 2.2
Trade and FDI as channels for diffusing knowledge and technologies

Trade and FDI are critical channels for diffusing knowledge and technologies developed overseas to Australian firms. While Australia is very open to foreign investment, with relatively high FDI as a share of the economy, its FDI screening and approval processes are viewed as more restrictive than in other OECD countries. Ensuring FDI screening and approval processes and costs are commensurate with national security risks is important to maintain this channel for diffusion.

Information request 2.1 – Foreign Direct Investment

How have changes to Australia's foreign investment screening and approval processes changed the nature or level of foreign investment directly related to innovation (investment in research; in developing and adapting technologies developed overseas for the Australian market; and in developing a skilled local workforce)?

What secondary benefits are observed to have flowed from FDI into Australia and how have these changed in recent years?

Finding 2.3
Management capability for successful technology adoption

Poor management capability is holding back some businesses from making good adoption decisions and from getting the best outcomes from their investments in developing and adopting new technologies. Firms with stronger management are more likely to make good decisions about whether or not to adopt new technologies and practices, and when and how intensively to adopt them. Such firms are also more likely to be able to make the broader organisational changes that are needed to benefit from transformative technologies such as digital technologies. Despite a huge appetite for digital transformation in many industries, skills and management capability gaps (and a lack of tailored information) has seen some firms lose out from adopting new digital technologies, reducing their willingness to pursue future productivity-enhancing innovation.

Recommendation direction 2.1
Skilled migration as a means to diffuse technologies and skills

Skilled migrants have skills that are lacking in Australia, thanks to their experiences with frontier technologies and practices developed overseas. Facilitating skilled migration will remove barriers to the diffusion of those technologies and skills. An expanded and adapted employer-nominated migration scheme would allow better matching of the skills and knowledge needed by employees and the unique capabilities held by migrants.

Information request 2.2

The recently announced National Industry PhD Program (part of the University Research Commercialisation Action Plan) aims to increase the supply of researchers with industry-relevant research experience, with preference given to applications aligned with the National Manufacturing Priorities.

Is a lack of industry-relevant research experience in universities the most significant constraint to firms developing an in-house research capacity? To what extent is firm capacity to make the best use of researchers' skills a constraint?

What kind of arrangements would foster greater movement of researchers from the Social Science fields into Australian businesses?

Recommendation direction 2.2
Focus on skills to increase firm absorptive capacity

To strengthen diffusion, government support for building workforce skills should focus on transferable skills that augment the absorptive capacity of firms, such as digital and management skills. Support measures should be broad-based.

Information request 2.3

What aspects of the agricultural extension services model could be applied more broadly, and in which sectors in particular, to assist with diffusion of technologies and practices?

Information request 2.4

How can governments best support industry associations to diffuse information about innovation to their members?

Finding 2.4
A narrow focus on university research commercialisation.

Recent policy initiatives to increase knowledge transfer are too narrow in their scope in that they focus on direct commercialisation activities and advanced manufacturing industries. By focusing on research commercialisation, policy initiatives to increase knowledge transfer treat knowledge transfer as synonymous with commercialisation, even though other channels (e.g. consulting by academics) may be more relevant for certain types of firms and industries (especially service industries), research areas (e.g. social sciences) and research institutions.

Information request 2.5

Can Australia's current level of academic consulting to private industry be increased? In what industries or areas of research could linkages improve the diffusion of innovation?

Information request 2.6

- What data sources could be used to support business benchmarking? Where could data linkages between public sector agencies or use of private sector data to complement that collected by governments enhance the usefulness of data for business benchmarking? What specific issues would need to be overcome for this to happen (assuming data security, confidentiality, and privacy requirements were satisfied)?
- What information would be most useful to provide to businesses to encourage innovation and the diffusion of innovative practices?

Information request 2.7

- Is it feasible for Industry Growth Centres to play a more explicit role in supporting innovation diffusion?
- If so, what specific supporting activities could Industry Growth Centres deliver, and which of these would be most useful for industry?

Finding 2.5
Policies to promote clusters have a limited impact on broader knowledge transfer

Clustering may promote innovation diffusion amongst participating firms through job transitions and knowledge sharing. But given that spillovers from co-location are highly localised, and most place-based programs focus on highly novel innovators, place-based innovation policies are unlikely to yield a significant and wide-reaching diffusion dividend.

Innovation and diffusion in government services

Finding 3.1
Small changes — large gains

Australian, state and territory, and local governments spend hundreds of billions of dollars each year, mostly on services and social welfare transfers. The scale of governments' activities means that even the smallest of reforms — if widely adopted — can generate large savings or improve the quality of services for millions of people.

Finding 3.2
Government innovation is not an oxymoron

Government at all levels can be highly innovative, as illustrated by rapid responses to the COVID-19 pandemic, many innovative programs to address chronic disease, and the leadership role Australian governments have played in the use of technology to better achieve regulatory objectives ('regtech'), among many other initiatives. In combination, these initiatives have the potential to save billions.

Finding 3.3
But governments can be slow adopters of best practice

Innovation and the uptake of best practice is often sluggish, patchy and inconsistent across jurisdictions. Benchmarking of governments' performance across multiple dimensions — school education, elective surgery waiting times, prisoner education, support services for people experiencing homelessness — suggest many have failed to draw on the practices of the best.

Finding 3.4
Structural flaws in government frustrate innovation and its diffusion

While slowness partly reflects divergent views about what amounts to best practice or innovation across different governments, there are also major structural flaws in government processes that frustrate innovation and diffusion. Uncoordinated actions of governments and agencies that share overlapping roles, siloed services, clashing funding incentives and risk averse cultural norms tend to work against experimentation. Few publicly operated services experience the risk that poor performance will lead to their closure, unlike businesses.

Information request 3.1

National agreements between the Australian and state and territory governments are partly shaped by the power imbalance arising from the greater capacity of the Australian Government to raise revenue. A preferred model might be to have more cooperative models where governments agree to coordinate the activities that are best managed by each level of government.

How could new models for cooperation between governments work and what role would national agreements, the National Cabinet, and the National Federation Reform Council play in such models?

Finding 3.5
New funding models can encourage diffusion and best practice

Funding models for hospitals that reward them for preventing hospitalisations would lower costs in the costliest part of the healthcare system, but also encourage the development and diffusion of a wide range of primary health interventions aimed at preventing and managing chronic disease.

Funding contracts for community organisations delivering government funded services are often too short and limit the capacity and incentives for such organisations to learn, innovate and copy best practice.

In some human services, such as disability care, giving the citizen control over a funding package stimulates more innovative solutions than alternative arrangements driven by government-funded or operated organisations.

Information request 3.2

Nearly everyone agrees that significant government procurement decisions should be guided by rigorous cost-benefit analysis, yet projects with low net benefits still abound. What *realistic* mechanisms could better diffuse best-practice project evaluation?

Finding 3.6
Defence procurement has often had mixed goals, used imperfect processes that have led to cost-overruns and failed to achieve the desired capabilities.

Defence procurement has often had the mixed goals of achieving a defence capability and providing industry assistance. Imperfect processes have led to cost-overruns of billions of dollars and failed to achieve the desired capabilities. The productivity and efficiency benefits of better practices are large given the $270 billion of anticipated defence spending over the next decade.

Information request 3.3

What procurement processes would reduce the risks of cost and time overruns on major projects?

What institutional arrangements would provide rigorous disciplines on procurement?

What disciplines could be used to separate old-style assistance to industries that do not have a credible comparative advantage in defence manufacturing from the need for some local capability to use and maintain complex defence equipment?

Recommendation direction 3.1
Bring sophistication to benchmarking of government service delivery to drive diffusion of best practice

All Australian governments should go beyond descriptive benchmarking of the comparative performance of the services they fund or supply to sophisticated analytics to identify why the differences arise and how, when not justified, they could be eliminated.

Recommendation direction 3.2
Innovation and diffusion in the public sector are frustrated by excessive restrictions on hiring global talent

Australian governments should review the security and citizenship requirements and overly bureaucratic processes that limit the recruitment of people from outside Australia who bring innovative ideas and different ways to the public sector.

Information request 3.4

While there are a range of existing institutions with expertise and an associated capacity to diffuse best practice, these cover only some services. Loose innovation networks do not appear to have been effective.

What institutional models could be used to better diffuse evidence-based best practice across all critical public sector services?

Recommendation direction 3.3
Ideas that have large public good value should not be behind paywalls

The Australian Government should:

- look at new funding models for Standards Australia to reduce or eliminate the pricing of standards that have high public good value
- require open-source publication of research principally funded by governments in line with recommendations in the Productivity Commission's inquiry into intellectual property
- reform fair-use provisions in intellectual property regulations to adopt a principles-based fair use exception.

INTERIM REPORT 4:
A competitive, dynamic and sustainable future

1 Competitive and dynamic markets

Key points

- **Competitive and dynamic markets drive productivity growth. They do this by rewarding and encouraging businesses to develop new and better-quality goods and services, or adopt more efficient production methods.**
  - Relatively slow investment growth, dampened business dynamism and limited competitive pressures in the burgeoning government-dominated services industries are likely to be acting as a collective handbrake on Australia's productivity growth.
- **Efficient investment and productivity go hand in hand. Yet business investment as a share of GDP has declined relative to its long-run average in Australia, as it has across a number of advanced economies. This likely reflects both structural and cyclical factors.**
- **Policy should not attempt to 'reverse' long-term structural shifts, such as the growth of the services economy. Nor should policy promote investment at any cost. However, the potential dampening effects of some policy and regulatory settings, often hidden and unintended, warrant attention.**
  - Public investments should always be rigorously assessed for social net benefits especially when the opportunity costs of scarce labour and other resources are at a premium. In the absence of net social benefits, tax or subsidy support for particular industries or business types will generally increase costs for others, potentially allocating resources to low value activities and encouraging rent seeking.
  - Pressures for greater self-reliance in the wake of the COVID-19 pandemic and geo-political disruptions pose significant risks to efficient investment and productivity growth.
  - Overall business investment levels do not appear to have been particularly responsive to declining costs of capital. This underscores the need for a deeper focus on productivity-enhancing reforms to improve expected risk-adjusted returns.
- **Competition and business dynamism, when measured at an aggregate level, appear to have declined. Examination of particular sectors could help identify where consumers face limited product choice, where contestability is lacking, and where policy changes could improve market outcomes.**
  - Promoting competition and dynamism will require a suite of policy levers and a sectoral focus — particularly in sectors where contestability has been stubborn and where government regulation and funding have significant influence.
  - It is important that our competition laws remain fit for purpose in the context of contemporary challenges. Principles of good regulatory design can help ensure any reforms will promote (and not hinder) productivity.

2 Openness to trade and foreign investment

Key points

- **International trade and investment will be critical for driving future productivity growth and building economic resilience.**
  - Trade in goods and services and foreign direct investment (FDI) are key sources of competitive pressure for domestic firms and important mechanisms for facilitating the diffusion of knowledge and innovation. The benefits of openness in shaping Australia's economy have materialised over many decades.
  - Supply chain shocks and global upheaval do not diminish the case for openness. Indeed, as a small, advanced economy, increased global linkages are likely to be the best way for Australia to build resilience to deal with global uncertainties.
- **Australia's FDI screening regime should properly account for national security concerns, but care should be taken not to disincentivise investment.**
  - Application fees for foreign investors are increasingly used as a tax base. There are limits to which such taxes can be used without affecting the supply of FDI into Australia.
- **Removing residual tariffs would reduce costs to importing firms and assist more advanced production processes that form part of global supply chains.**
  - Australia's tariff regime provides little protection to domestic firms. Tariff revenue is likely already outweighed by compliance costs to importing business, and this will increasingly be the case as preferential trade agreements proliferate.
- **Trade in services is likely to be increasingly significant for productivity.**
  - Growth of trade in services stems from the advancement and proliferation of technology, as well as rising incomes among Australia's trading partners. Barriers exist both 'at the border' and 'behind the border'.
  - There are multiple policy and regulatory levers that would help Australia participate in the global growth in trade in services, including improvements to migration and FDI policy settings, and licensing regulations.

3 Managing the climate transition

Key points

- **Climate change looms large over Australia's near-to-long term productivity performance. Its potential physical impacts, and the policy steps taken to limit them, will affect productivity growth.**
  - Climate change is expected to directly impact productivity in agriculture, fisheries, tourism, and in those sectors that rely on physical labour in heat exposed environments.
  - Alongside these expected physical impacts, policy efforts to contain the costs of climate change, either by reducing emissions or by adapting to a changing climate, will come with their own costs.
  - Policy responses by the world's major economies risk impacting demand for key Australian exports.
- **The pursuit of least cost mitigation and adaptation policies could help minimise climate-related risks to Australian productivity growth.**
- **Broad-based explicit carbon pricing mechanisms generally promote least-cost abatement across an economy. However, Australia has implemented a suite of alternative policies that impose a range of implicit carbon prices on the economy, some much higher than likely under explicit carbon pricing.**
- **Depending on its design, a reformed Safeguard Mechanism can help transition Australia towards a less costly, and potentially more equitable, approach to emissions reduction policy.**
  - The broader the range of emissions sources it applies to, and the greater the transferability of emissions rights between sources, the lower the overall cost of Australian emissions reductions.
  - These gains will also depend on the credibility of offsets recognised by the Safeguard Mechanism.
- **Policy coordination between the Commonwealth and other levels of government will be important during the transition. Proponents of additional mitigation policies should communicate and demonstrate how they are complementary to a reformed Safeguard Mechanism. The implicit carbon price of additional measures should be independently estimated and made public.**
- **Australia will have to prepare for additional climate change, regardless of the speed of emissions abatement over coming decades. An efficient adaptation policy should focus on three tasks:**
  - helping individuals, households and business to make informed adaptation decisions
  - avoiding policy settings that directly or indirectly constrain those adaptation decisions
  - avoiding locking in development pathways that lead to higher future adaptation costs.

Findings, recommendation directions and information requests

Competitive and dynamic markets

Finding 1.1
Subdued investment growth should be met with productivity-enhancing reforms

Australia's subdued (non-mining) investment growth likely reflects a number of factors. To some extent, lower investment levels are the result of desirable developments, including structural shifts in the economy and changes in technology. Persistence of investment hurdle rates, despite falling borrowing costs over the past decade, suggest that risk perceptions may have also played a role. Broader policy reform aimed at making Australia's business environment more conducive to growth can promote investment. Productivity-enhancing reforms that promote economic growth can improve returns to investment, further supporting productivity growth in the process.

Finding 1.2
Action on competition could focus on particular industries

Trends in competition suggest the need for vigilance. However, the need for and nature of intervention varies between markets, given the optimal settings for productivity growth are dependent on the specifics of the market and the nature of production. Policy could be particularly influential in industries where governments have a significant role in the market, including in several industries where Government Business Enterprises are prominent; in publicly funded and delivered services; and in certain financial services such as private health insurance.

Information request

The Commission welcomes submissions detailing:

- specific markets that exhibit poor competitive outcomes — where evidence suggests consumers are experiencing poor choice, where firms face poor incentives to improve efficiency, or where there are known barriers to contestability
- examples of where Australia's openness to foreign market entrants has improved or could improve contestability.

Openness to trade and foreign investment

Finding 2.1
Building economic resilience and productivity through openness to trade and investment

Relative openness with regard to trade and foreign investment policy is conducive to productivity growth. Despite the presence of severe global economic uncertainty, Australia's productivity growth is best served by more exposure to the competition that comes with trade, more access to foreign direct investment, and a well-functioning rule-based system of global trade. Protectionism and industry assistance in the cause of 'self-reliance' would pose significant risks to productivity.

Recommendation direction
Facilitating open trade in goods

The Australian Government should promote open and resilient trade in goods, in part by reducing Australia's statutory import tariff levels to zero and accepting international standards where practicable.

Recommendation direction
The FDI review processes should avoid undue chilling effects on investment

While the Australian Government should ensure its framework for FDI review is effective in targeting potential fraud and strategic risks, its design should be cognisant of the potential chilling effects on investment. Application fees for the FDI review processes should not be used as a tax base.

Finding 2.2
Global trade in services will be a significant development for Australia

As an advanced service-based economy, Australia has potential to benefit from the global increase in trade in services. But maximising the opportunities will require consideration of not only trade policy, but also tax settings, occupational licensing, and migration settings.

Managing the climate transition

Finding 3.1
Sound climate policy is part of Australia's contribution to global efforts to contain the long-run costs of climate change

Having committed to a 2050 Net Zero Emissions Target, and an interim target of 43 per cent below 2005 emissions levels by 2030, the economic costs of that contribution to global abatement would be minimised by taking a least-cost approach to emissions reductions. This would be complemented by multilateral oversight of the contributions of other nations.

Finding 3.2
Assistance that is neutral between sectors and avoids the automatic defence of sunk-cost investments

Transitional assistance for businesses and individuals facing hardship in climate-exposed sectors will be generally supportive of ongoing productivity growth if it is neutral as to which industries and regions that recipients choose to transition into. This would support households and businesses to make their own judgements about which sectors and regions they are best placed to transition into.

Scarce capital should continue to be allocated to its most productive use when making adaptation-related investment decisions. Automatic prioritisation of defending defence of sunk costs investments in climate-exposed areas, over rebuilding infrastructure in less climate-exposed areas, would likely drive capital misallocation over time, weighing on productivity growth, and raising long-run adaptation costs. Analysis of the broad costs and benefits of either option can help inform decision making.

Finding 3.3
Transferring the cost of climate-risk reduction measures for specific developments to the broader community can encourage excessive risk-taking

Incorporating climate risk reduction and response costs into the costs of commercial and residential developments could help planning authorities avoid excessive risk taking. It could also help ensure that remaining risks were borne knowingly.

Finding 3.4
An efficient abatement path prioritises least cost abatement options before higher cost abatement options are pursued

Setting a long-run emissions target does not mean that all emissions sources need to be reduced at the same time. Pursuing low-cost abatement options before proceeding to higher cost options provides time for innovation to reduce the cost of those higher costs options before they need to be pursued. Broad-based emissions pricing schemes can be an efficient way of ordering abatement actions in this way.

Finding 3.5
The public policy case for special treatment of Emissions Intensive Trade Exposed Industries (EITEIs) under the Safeguard Mechanism is not clear

Fears of 'carbon-leakage' commonly lead to EITEIs receiving some proportion of their emissions permits for free in countries with emissions trading schemes. However, the Safeguard Mechanism is already a 100 per cent free permit system in so far as covered facilities are not required to pay for any emissions underneath their benchmark. Any special treatment of EITEIs under the Safeguard Mechanism should weigh the risks of carbon leakage against the additional costs of transferring additional abatement burdens to non-EITEI facilities and their consumers.

Finding 3.6
Reforms could move Australia toward a lower cost approach to abatement with reduced adverse impacts on productivity

Australia's current suite of implicit carbon prices is an inefficient approach to climate policy. The Australian experience with carbon pricing has resulted in a suite of alternative policies that impose a wide range of indirect carbon prices on the economy. Reforming Australia's Safeguard Mechanism to broaden its application across the economy and allow transferability of emissions between emissions sources could allow Australia to transition away from higher cost measures.

Recognising offsets that are not additional, measurable, and permanent, will weigh on the effectiveness of the Safeguard Mechanism, and increase the cost of emissions abatement in Australia.

Finding 3.7
Policy coordination between the Commonwealth and the States will increase the efficiency of Australian emissions abatement

Maximising the efficiency of Australian emissions abatement requires that Commonwealth, State, and local governments take a coordinated approach to policy development. Good practice would include stipulating whether existing or proposed policies are 'complementary measures' or whether they are intended to drive abatement in facilities and sectors not covered by the Safeguard Mechanism. The expected implicit carbon price of these policy measures should be independently estimated and made public.

INTERIM REPORT 5:
From learning to growth

1 The value of human capital

Key points

- **Education increases people's capabilities — allowing them to do more or better work in the same time. It also makes society healthier, safer, better informed, and more civically engaged, and can foster social mobility.**

- **Skills developed through education, training and on-the-job experience underlie the capacity to make the fullest use of the technology embedded in capital equipment, and the generation of new ideas and absorption of knowledge between producers of goods and services, both within Australia and from overseas.**
  - Rising skill levels have accounted for about 19% of the growth in output per hour in the market sector from 1994-95 to 2020-21.
  - One in five Australians have low basic skills, which limits their job opportunities, versatility, capacity to acquire further skills and lifetime wages. Quality education can help prevent young Australians from ending up with low basic skills, and also improve social inclusion.

- **As our reliance on the services sector expands, people's capabilities ('human capital') will play a more important role than physical capital in improving productivity.**
  - **General and foundational skills** will continue to underpin the workforce's contribution to productivity, and as routine tasks are automated, newly created jobs will increasingly rely on areas such as interpersonal skills, critical thinking, working with more complex equipment, and accomplished literacy and numeracy.
  - **Specific skills** in areas such as data and digital technology, allied health care and community services will be increasingly needed due to a changing composition of the economy and an ageing population.

- **Beyond these trends, we cannot predict many of the jobs that will emerge over the coming decades. An adaptable system teaching general skills can provide resilience to these changes.**

2 Building productivity in schools

Key points

- **Ensuring school resources are deployed efficiently to improve student outcomes over time is vital to Australia's ongoing productivity and prosperity.**
  - Looking to the longer term, it is important to consider the directions in which schooling could evolve to better equip students with strong foundational skills that underpin a productive workforce and healthy society.
- **School systems need to prioritise gathering and spreading evidence to improve school practice. While there has been progress in developing an education evidence base this is not enough on its own.**
  - Professional learning is key to getting evidence-based teaching practice into classrooms. Master teachers can be used to spread best practice across schools. Within schools, instructional leaders and increased use of observation and feedback practices can be used to promote ongoing improvement in teaching.
- **Adoption of digital technology has the potential to be transformative, but it needs to be evidence-based, combined with effective pedagogy and integrated carefully.**
  - Governments need to consider how best to ensure digital technologies are integrated into the classroom by enhancing support provided to schools and staff in the purchase and use of technology.
- **Schools will need to rebalance the roles of teachers and other school staff to better use their expertise.**
  - Teachers should be supported to spend less time on non-core teaching tasks, such as administration, and more time on tasks that directly enable quality teaching and learning.
- **As in other sectors of the economy, there should be scope to innovate in education — variations on conventional approaches to schooling may better meet the needs of some students.**

3 Investing for future skill needs

Key points

- **To support productivity growth, the tertiary education system needs stronger incentives for providers to deliver courses that adapt to growing and changing skill needs.**
- **Rationing places in tertiary education — through skill lists or provider funding caps — impedes efficient skill acquisition by limiting access or distorting course choice. Concerns about fiscal costs are better addressed through other means, such as changes to subsidies or expanding income-contingent loans.**
- **Government subsidies for tertiary education could be allocated more efficiently and equitably, without necessarily increasing the total amount of public funding.**
  - Currently, governments set differential subsidies based on targeting public benefits and skill needs, but these have little impact on student choice because income-contingent loans eliminate upfront fees and make price differences less salient.
  - Many students receive large subsidies despite strong private incentives to study.
  - While the public benefits of tertiary education provide a strong rationale for subsidisation, they cannot be reliably estimated by course. Setting subsidies with reference to the private benefits of tertiary education (expected lifetime earnings) or simply offering a flat subsidy could be more efficient and equitable.
  - 'Skills shortages' are a poor basis for setting subsidies in both theory and practice.
- **Unlike students, providers are highly responsive to course prices. Setting prices to better reflect course delivery costs would encourage providers to meet skill needs and dampen incentives to prioritise enrolments in high margin courses.**
- **Increasing the competition for funding across education providers could encourage sector innovation, competition, and student choice.**
- **Expanding loan access for vocational education and training (VET) students at the Certificate III and IV levels would reduce barriers to participation and reduce distortions for students choosing between VET and higher education, but would need to manage the risks of abuse that occurred with VET FEE-HELP.**
- **Given the growing importance of lifelong learning, rebalancing public funding to support ongoing skill acquisition may be warranted.**

4 Boosting learning outcomes for tertiary students

Key points

- **High-quality teaching in the tertiary education system is essential for developing a productive workforce. But there are obstacles to high-quality learning for students.**
  - Incentives to invest in teaching quality are dampened by limitations to informed student choice and tightly controlled system settings. This is particularly the case for universities, which are primarily rewarded based on research (not teaching) outcomes.
  - Technology could improve access and outcomes, but poorly delivered online courses can worsen the quality of the learning experience. The rapid shift to online learning during COVID-19 left many students unsatisfied.
- **Continuous improvement in teaching quality is crucial to ensure investment in post-secondary education is worthwhile for both students and taxpayers. This requires a multi-pronged approach.**
  - Information to guide student choice has improved in higher education, but remains deficient in VET. It also needs to be more readily available to students at the time they decide on a course.
  - The new university performance-based funding (PBF) scheme appears sound, but is yet to be tested. Given the potential pitfalls of PBF, once operational it needs to be subject to ongoing monitoring and refinement.
  - Teaching quality in higher education is measured indirectly with proxies such as student and employer surveys. More systematic external review of teaching quality could spur continuous improvement, but can be costly to implement.
  - Recent regulatory changes allowing teaching-only 'university colleges' have opened the door to higher education providers that distinguish themselves on the basis of teaching excellence. However, there may be other barriers to specialising in teaching that remain unaddressed.
  - VET graduates need to be more adaptable to rapidly changing skill needs, career progression and lifelong learning. This could be supported by piloting a more flexible approach to developing course content for certain types of training, such as digital or other professional skills.
- **Some students face higher risks of non-completion due to factors that can be mitigated through better supports and guidance. While it is not feasible nor desirable for every student to complete their studies, excess non-completions can waste resources and talent, and leave students with debt.**
  - A more systematic approach to evaluating retention and support programs — and targeting programs at students at risk of non-completion beyond equity groups — is a ripe area for improvement.

Findings, recommendation directions and information requests

Building productivity in schools

Information request 2.1

How to spread best practice teaching

- What are the most effective ways of sharing evidence-based teaching practices? What are the barriers to implementing these in the classroom and making sure that they 'stick'?
- Would 'master teachers' and 'instructional leaders' facilitate spreading and maintaining effective teaching practices?

Information request 2.2

Using digital technology to reduce teaching out of field

- How can virtual schools be more widely used to ensure that students are able to take a broader range of subjects with appropriately qualified teachers?
- What is the best model for providing access to classes in a virtual setting?
- What are the risks of providing access to virtual schooling? How can they best be addressed?

Information request 2.3

Better support for schools in accessing and using digital technologies

- How can digital technologies be better adopted and integrated into schools for the benefit of students, teachers, and the operation of the school?
- What are the barriers to change?
- What are the respective roles for Australian, State and Territory Governments to coordinate and support technology adoption?
- What level of evidence should be required prior to procurement of digital technology by schools? What is the process for generating evidence?
- What professional development would help teachers adopt and implement technology that is beneficial to effective teaching and student learning?
- How can students have equitable access to, and develop the necessary skills to effectively use technology?

Information request 2.4

The future role of the teacher

- How can the role of the teacher and other school staff be recast to better use their expertise and improve student outcomes?

- What policies and decisions should be taken now to start mapping out a plan that would progressively develop the role of the teacher?
- How can non-teaching tasks be better allocated to other school staff?
- How should teaching assistants support teachers in the classroom?
- How can teaching assistants be supported to learn and develop their skills?

Information request 2.5
Changing school hours to support learning

- Is there a need for a greater range of school hours?
- What objective would be fulfilled with any change in school hours?
- Given the existing flexibility in hours, what are the barriers for change?

Information request 2.6
Untimed syllabuses

- What are the expected benefits of using untimed syllabuses? And what are the possible downsides?
- Is it possible to effectively implement untimed syllabuses? What professional development and technological supports would primary and secondary teachers need to implement differentiated curricula?

Information request 2.7
Trials of different models of school operation

- Is there a role for charter schools or academies in Australia? Are there other models that should be considered?
- What would be the appropriate context for trialling an alternative school model?
- What would be the costs and benefits involved for the Australian and/or State and Territory Governments to trial 'academisation' of poorly performing public schools?

Investing for future skill needs

Recommendation direction and information request 3.1
Supporting sustainable growth in tertiary education

The Commission is considering a recommendation in its final report to expand the number of places in tertiary education to better support future workforce needs. To inform the development of this recommendation, we are seeking further views and evidence on:

Recommendation direction and information request 3.1
Supporting sustainable growth in tertiary education

- Do funding caps place a binding constraint on education providers, or conversely, is there evidence on the extent of unmet demand for tertiary education?
- How should places be expanded across VET and higher education?
  - Should growth in places be determined using a formula?
  - Should demand-driven funding be expanded to support more students (such as equity groups)?
- To what extent is 'overskilling' or 'overeducation' a problem in Australia, and what should be done to reduce it?

Recommendation direction and information request 3.2
More effective targeting of government investment in education

The Commission is considering a recommendation in its final report to alter qualification subsidy rates across tertiary education to improve the effectiveness of government investment and support expanded access. To inform the development of this recommendation, we are seeking further views and evidence on:

- Which approach: public benefits, private benefits, a flat-rate subsidy or some other variant, is the best method of setting subsidies?
- How should subsidy rates vary by field and level of education? Should there be any adjustments for particular types of students?
- While skill lists and differential subsidies do not appear to be effective ways to address skills shortages, could they be improved in some way that would support good outcomes?
- Can funding be better allocated in tertiary education to encourage competition across providers? To what extent would this (or other funding approaches) support more efficient or high-quality education, and improve the flexibility of the tertiary system to changing skill needs?

Recommendation direction and information request 3.3
Improving price setting in tertiary education

To improve incentives for providers to deliver courses that adapt to growing and changing skill needs, the Commission is considering a recommendation in its final report to improve price setting in tertiary education. To inform this recommendation, we are seeking further views and evidence on:

- Is median cost a suitable benchmark for efficient prices?
- How could existing methods for estimating efficient costs be improved?

Recommendation direction and information request 3.4
Equalising access to loans across tertiary education

The Commission is considering a recommendation in its final report to expand eligibility for income-contingent loans to reduce barriers to VET participation. To inform this recommendation, we are seeking views and evidence on:

- How far down the Australian Qualifications Framework should income-contingent loans extend?
- How should a transition to greater loan availability be managed?
- Are loan caps sufficient to constrain price increases when an income-contingent loan is offered?
- Should HELP loans include a loan fee (similar to VSL)?
- How should the costs of debt not expected to be recovered be shared between governments?
- What other policies are needed to address other barriers to participation in tertiary education, such as living costs while studying?

Recommendation direction and information request 3.5
Governments' role in lifelong learning

Labour market trends suggest a continued need for upskilling and reskilling. In this context, greater government support for lifelong learning might be justified.

The Commission is considering a recommendation in its final report to expand taxpayer support for lifelong learning. To inform this recommendation, we are seeking views and evidence on:

- Is the current balance between government funding for initial post-school education and training, and ongoing skills acquisition and lifelong learning fit for purpose? Or, does it need to be reconsidered given evolving labour market needs?
- Should there be a greater public investment in lifelong learning? If so, what areas have the largest positive spillovers that governments should target with their support?
- What would be the best mechanisms to encourage additional uptake of ongoing education and training, given that private benefits for both workers and employers exist, and many adults are already engaging in lifelong learning?
- How might any changes to government funding arrangements to support lifelong learning affect various parts of the formal tertiary education system (such as universities and RTOs) and providers of other training options (such as industry-delivered short courses and unaccredited microcredential providers)?

Boosting learning outcomes for tertiary students

Recommendation direction and information request 4.1
Better informed student choice in tertiary education

To improve incentives for institutions to invest in teaching quality, the Commission is considering a recommendation in its final report to support students making more informed choices when selecting a tertiary provider, and is interested in views about:

- What mechanisms or channels should be used to provide students with relevant information about higher education course quality when they make their enrolment decisions?
- Would a single combined measure of higher education course quality improve teaching outcomes? Are there other options that could support better student choice? What are the benefits and risks?
- Could a similar approach be applied to the VET system once RTO-level information is publicly available? Or, are there additional challenges that would need to be addressed for the VET sector?

Recommendation direction and information request 4.2
Supporting ongoing improvement in the quality of teaching in higher education

The Commission is considering a recommendation to support ongoing improvement in teaching quality for higher education providers, and is interested in views about:

- Could teaching quality across the higher education sector be improved with more comprehensive external review of outcomes?
  - What forms of review would provide the best information about teaching quality and learning outcomes?
  - How could the costs of systematic external review be mitigated?
  - What should be the consequences for an institution found to have poor teaching quality?
- Should a centre for teaching excellence be established to support external review of teaching quality, or could this function be linked to an existing body?
  - Are there other ways such a body could support higher quality teaching (for example, evaluating new approaches to online learning)?

Information request 4.1
Barriers to specialisation in teaching excellence in higher education

- What barriers remain for higher education institutions specialising in teaching excellence? Are providers limited by the higher education Provider Category Standards or are other factors (such as funding arrangements) more influential?
- Are there barriers to internal specialisation in teaching within universities (for example, teaching focused schools)? If so, is there any role for Government in addressing these barriers?

Recommendation direction and information request 4.3
Allowing greater flexibility in VET course delivery

To allow VET teaching to better cater to changing needs of students and employers, the Commission is considering a recommendation to support greater flexibility in the way VET courses are delivered, and is interested in views about:

- What would be the risks and benefits of piloting alternative approaches to competency-based training?

- What types of skills would be best suited to a shift away from the competency-based framework (for example, digital skills or other professional skills)?
- Under an alternative approach, how should training be defined and updated over time?
- What safeguards would be needed to ensure the quality of training is maintained?

Recommendation direction and information request 4.4

Supporting completion where it improves outcomes

The Commission is considering recommendations for its final report to support retention where it improves outcomes, while also facilitating exit where it is preferable, and is interested in views about:

- What are the best approaches to supporting student retention, how should these be adapted for different students, and how could the lessons from these approaches be shared across the tertiary sector?
- Should the Higher Education Participation and Partnerships Program extend to support retention beyond equity groups to capture a broader range of students with elevated risk of non-completion (such as part-time, online or low ATAR students)?
- What approaches have been demonstrated to reduce barriers or costs to trying a tertiary pathway and dropping out?

INTERIM REPORT 6:
A more productive labour market

1 Reducing labour market rigidities and barriers

Key points

- **A well-functioning labour market is a critical contributor to productivity growth, particularly through the matching of jobs and people with appropriate skills and know-how.**
  - The effect of participation on productivity is complex, and is driven, in part, by the skills composition of new labour market participants. Removing barriers or disincentives to labour supply can contribute to productivity growth if it leads to better jobs and skills matching by expanding the pool of available skills.
  - The design of Australia's migration system and occupational licensing requirements can act as barriers to allocating and attracting labour to where it is most productive.
  - While an efficient education and training sector can improve the supply of needed skills (discussed in a separate interim report), complementary policies can reduce underutilisation of existing skills.
- **Shifting Australia's skilled migration system away from one that relies heavily on restrictive skill shortage lists, and toward a system that better enables employer-sponsored skilled migration, could better support productivity growth.**
  - The composition of the migrant intake will have a significant bearing on productivity. Australia will need to compete to attract workers whose skills meet local demands and who bring valuable knowledge and experience.
  - Improving options for job mobility for sponsored migrants could also assist with the better matching of workers to jobs.
- **Improving recognition of qualifications and scope of practice can promote efficient utilisation of scarce skills.**
  - Occupational licensing must balance potential improvements to safety and quality of service against the costs imposed on employers and employees. Unnecessary restrictions can arise when regulatory settings are mismatched with migration policy or not updated to support workforce skill needs.

2 Effective workplace relations

Key points

- **Employees and employers have strongly aligned interests in improving productivity as it can increase both profits and wages. However, they also have incentives to use bargaining power to achieve one-sided gains. In this context, the workplace relations system aims to enshrine minimum standards of fairness while ensuring that opportunities to improve productivity are not eroded or destroyed by conflict, the lack of incentives, or burdensome red tape.**
  - The design of the workplace relations (WR) system can affect many factors directly relevant to productivity — investment, wages, decisions about how to organise firms, and the degree of cooperation between employees and managers. It has many indirect effects on productivity because of the complex and often long-winded regulatory processes it entails.
- **Where further award simplification is feasible, it could improve the flexibility of employment conditions to better meet employer and employee needs and reduce compliance costs and barriers to starting new businesses.**
  - Award complexity can confuse workers and employers, increasing both compliance costs and the scope for non-compliance. Award regulatory technology ('regtech') and education initiatives — such as tailored advice for small businesses on award compliance — can help businesses better navigate awards.
- **The enterprise bargaining system remains complex and inefficient. Removing barriers to effective agreement-making has the potential to generate productivity gains through efficient resource allocation and innovation.**
  - Limiting the reach of the Better Off Overall Test could increase efficiency in agreement approvals.
  - The capacity to include clauses in agreements that restrict technologies and beneficial work practices is counter to productivity and makes agreements a less attractive model for workplace bargaining. The question of how to *practically* limit this capacity demands close attention.
- **Platform-based business models can benefit consumers and some workers, while contributing to productivity through new and more efficiently delivered services. Governments should attempt to address the regulatory challenges associated with platform-based work without unduly constraining its business model.**
  - Many forms of platform-based work are not directly comparable with employment relationships. Shoehorning platform work into other employment categories would risk removing benefits to both efficiency and flexibility for workers.
  - Some types of protection for workers are required, such as insurance, safety and dispute resolution.

Findings, recommendation directions and information requests

Reducing labour market rigidities and barriers

Finding 1.1
Migration of skills

Migration settings that are overly restrictive and prevent skills matching are a risk to Australia's productivity growth. This suggests that migration policy should not be unduly restrictive, particularly at a time when the economy is near full employment, there are skills shortages in a number of sectors, some other countries are competing vigorously for skilled labour, and there are additional factors beyond Australia's policy influence that potentially increase the costs of workers relocating to Australia.

Information request 1.1 Improving migration pathways

The Commission is considering how the Australian Government could improve productivity through adjustments in migration settings, and is interested in feedback on:

- The potential to allow both temporary and permanent employer-sponsored skilled migration to take place without restrictions from a skill shortage list, such that employers can sponsor migrants in job vacancies that meet a threshold wage, regardless of occupation
- How such a threshold wage might be set, and how migration should be managed for jobs that do not meet the threshold wage
- How to improve job mobility for sponsored migrants generally, such as by reducing the net costs to employers of sponsoring migrants and by making it less costly for migrant workers to take up similar or better offers
- How to improve enforcement of labour laws as they pertain to underpayment and exploitation of migrant workers generally

Recommendation direction 1.1
Increase recognition of international licences

The Australian Government should pursue further international mutual recognition of occupational licences.

Finding 1.2
Occupational licensing

While occupational licensing can introduce labour market rigidities and dampen productivity growth, the extent of this is likely to vary substantially between industries, as are the public health and safety benefits of a licensing regime. Decisions about scope of practice, in accordance with best practice principles for regulatory reform, should be evidence based and take into account broader costs and benefits of action. The lack of empirical evidence supporting licensing design in Australia is likely leading to considerable inefficiencies.

Australian states and territories have made significant progress in establishing automatic mutual recognition of occupational licensing (AMR). Subject to further evidence that may substantiate any risks associated with AMR, it would be valuable to expand the scope of AMR to include all Australian jurisdictions and a broader range of occupations. This would not only lead to improvements in labour mobility at the margin, but in the longer term, such a system would set a useful foundation for international recognition of licences, trade in services, and more efficient administration of licensing of future occupations.

In the context of full employment, governments will increasingly need to consider where scope of practice boundaries could be adjusted in order to make better use of scarce skills, with due consideration of evidence that may substantiate potential risks to public safety. Australia's experiences during the early years of the COVID-19 pandemic demonstrated that changes can be made safely.

Effective workplace relations

Information request 2.1

The Commission is interested in understanding to what extent Australia's system of modern awards could be further simplified or streamlined. The Commission is seeking views on which aspects of awards are working well, and which aspects of specific awards are overly complex or limit labour flexibility.

Finding 2.1
Further progress is needed in helping businesses comply with awards

In addition to award simplification, it will be important for the Australian Government to continue to pursue avenues to help businesses comply with awards through the provision of specific advice, information and other increasingly sophisticated tools.

The introduction of 'safe harbour' provisions associated with awards regtech (regulatory technology) is likely to be problematic unless award interpretation technology is significantly more advanced. Any safe harbour proposals would need to be carefully designed to avoid incentives for non-compliance with awards and to encourage accuracy of award regtech solutions.

Finding 2.2
Reforming bargaining matters

The capacity to include clauses in agreements that restrict technologies and beneficial work practices is, on its face, counter to productivity and makes agreements a less attractive model for workplace bargaining. There are several possible mechanisms that could be used to address the costs posed by such clauses, however, any such mechanism should reflect the need for bargaining to be mutually beneficial.

Finding 2.3
Digital platforms appear to be expanding quickly, but data is limited

Platform work is rapidly expanding, but poorly defined. There is a lack of publicly available data on the size of the digital platform workforce and the characteristics of its workers. What statistics are available have limitations, with sample sizes and/or are from interested parties that do not provide the underlying data. The lack of data is an impediment to definitive conclusions about the sector.

Finding 2.4
Platform business models are efficiency-enhancing

By improving the matching of services to consumers, consumer choice, competition, and the quality and variety of available services, platform-based work can contribute to productivity growth.

People choose to engage in platform-based work for different reasons, including:

- low barriers to entry where workers have difficulty getting jobs in the formal labour market — some workers use platform work as their main source of income
- autonomy over hours of work — some workers find that attractive pay rates are available for short durations of peak demand, or through multi-apping, or as a supplement to their main source of income
- choice in tasks where platforms have less control over the type of tasks completed by a worker.

Finding 2.5
There would be costs in shoehorning platform work into other categories

Categorising platform workers as employees would remove key benefits to both efficiency and flexibility for workers. Many platform-based occupations are a direct extension of existing independent contracting arrangements, which can involve relatively high rates of pay.

Other platforms offer pay rates close to, or under, the National Minimum Wage. Workers who rely heavily on these forms of work as a major source of income often face poor job prospects for reasons that would, in many cases, be better addressed directly.

Finding 2.5

There would be costs in shoehorning platform work into other categories

Collective bargaining with platform providers could offer a route for platform workers to negotiate conditions, although no binding agreements on pay have been made in Australia. Regulation governing enterprise bargaining, including that relating to protected industrial action, is separate from collective bargaining arrangements for platform workers who are independent contractors.

Information request 2.2

The Commission is interested in views on how dispute resolution could be improved for platforms and platform workers, and whether there need to be different approaches for different platform business models.

Information request 2.3

The provision of insurance in platform work appears to be varied and patchy. The Commission seeks further information on the extent of insurance provision across different forms of platform work and views on what improvements could be made.

Finding 2.6

WHS regulators' involvement with platform work will continue to be important

Several forms of platform work entail heightened risks to personal health and safety. It will be crucial for Work Health and Safety regulators at all levels to continue to improve their monitoring and involvement with platform work, including in informing platform workers of their rights and responsibilities.