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# Australia's economic future: an agenda for growth

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### **About this publication**

Australia's economic future – an agenda for growth

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### **About CEDA**

CEDA – the Committee for Economic Development of Australia – is a national, independent, member-based organisation providing thought leadership and policy perspectives on the economic and social issues affecting Australia.

We achieve this through a rigorous and evidence-based research agenda, and forums and events that deliver lively debate and critical perspectives.

CEDA's membership includes 700 of Australia's leading businesses and organisations, and leaders from a wide cross-section of industries and academia. It allows us to reach major decision makers across the private and public sectors.

CEDA is an independent not-for-profit organisation, founded in 1960 by leading Australian economist Sir Douglas Copland. Our funding comes from membership fees, events and sponsorship.

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# foreword



To maintain Australia's economic prosperity and ensure we continue to create high paying jobs of the future, Australia needs a genuine growth agenda to improve our competitiveness, increase economic flexibility and drive investment in economic infrastructure and our people.

As a new term of national Government is about to begin, this CEDA report delivers an important roadmap of priority areas to ensure our future prosperity.

This report is part two of CEDA's 2016 series on economic repair. In March CEDA released *Deficit to balance: budget repair options* which examined options for repairing the Federal Budget and returning to surplus by 2018–19.

This latest research examines how to repair Australia's economic structures and drive a growth agenda.

To achieve this CEDA has provided recommendations across 10 key areas:

- Innovation
- Competition policy
- Education
- Workforce participation
- Infrastructure
- Fiscal resilience
- Tax reform
- Federalism
- Workplace relations
- Climate change

These are clearly the most pressing challenges facing Australia.

Australia has undergone significant economic reform in the past which has served us well and ensured our current level of prosperity.

However, it is time again to embrace an economic reformist zeal to ensure the next wave of prosperity.

This report has received valuable input from CEDA's specially formed Economic Reform Expert Group, chaired by CEDA's National Chairman Paul McClintock AO. I would like to thank all members of this group for their contribution to this important piece of research.

As always I hope you find this a valuable resource and it generates timely debate and discussion on this important topic.



Professor the Hon. Stephen Martin  
Chief Executive  
CEDA

# executive summary

Australia's record long stretch of uninterrupted economic growth has not been by chance but by design. To continue experiencing economic growth, and opportunities for all Australians, requires the nation to become more innovative, more competitive, and to better equip and engage its workers. This growth agenda outlines the major reforms that will position the nation to capitalise on the rapidly changing global economy.

Specifically, a growth agenda for the Australian economy will involve:

- An innovation agenda that helps position Australia on the technological frontier;
- A National Productivity Policy to address unfinished reform and to remove inefficiencies from Australia's economy;
- An education strategy to improve the outcomes for all students and ensure that funds are spent well;
- A workforce plan to improve the economic engagement of all segments of society; and
- Sensibly trying to respond to and mitigate climate change.

The recommendations contained in this report address the most pressing challenges facing Australia, and the most glaring deficiencies in the nation's economic structures. Identifying the problems in Australia, and even detailing potential solutions, is the easy part of the challenge. The difficult part is driving reform forward. However, without a substantial growth agenda, Australia will not capitalise on the opportunities available in the global economy and the loss of these opportunities will fall most pronouncedly on the most vulnerable in society.

This report has received valuable input from the Economic Reform Expert Group, chaired by the CEDA National Chairman. The Economic Reform Expert Group comprised the following participants:

- Paul McClintock AO, National Chairman, CEDA (Chair);
- Angus Armour, Principal Adviser, BCA;
- Professor Gary Banks AO, Dean and CEO, Australia New Zealand School of Government;
- The Hon. John Brumby, Deputy Chair, Industry Super Australia;
- Dr John Edwards, Visiting Fellow, The Lowy Institute; Board Member, RBA and CEDA;
- Saul Eslake, independent economic advisor and consultant; former Chief Economist, ANZ and Bank of America Merrill Lynch Australia;
- Professor Roy Green, Dean, UTS Business School;
- Professor Ian Harper, Partner, Deloitte Access Economics;
- Professor John Hewson AM, Crawford School of Public Policy, Australian National University;
- John Langoulant AO, Chairman WA, Westpac; Board Member, CEDA
- Catherine Livingstone AO, President, BCA; Board of Governors, CEDA;
- Dr Rodney Maddock, Adjunct Professor in Economics, Monash University; Vice Chancellor's Fellow, Victoria University; Board Member, CEDA;
- Professor the Hon. Stephen Martin, Chief Executive, CEDA;
- Dr Kerry Schott AO, Chair, Moorebank Intermodal Terminal; Board Member, Infrastructure Australia; Board of Governors, CEDA
- Professor Greg Smith, Senior Fellow, Melbourne Law School;
- Diane Smith-Gander, Chairman, Broadspectrum; Board Member, CEDA;
- Andrew Stevens, Chair, Advanced Manufacturing Growth Centre; Independent Non-Executive Director, MYOB Group; Board Member, CEDA;
- Dr Ziggy Switkowski, Chancellor RMIT; Board of Governors, CEDA;
- Dr Ian Watt AO, Chairman, BAE Systems Australia; Board Member, CEDA;
- Professor Beth Webster, Director Centre for Transformative Innovation, Swinburne University; and
- Professor Glenn Withers AO, Professor of Economics, Crawford School of Public Policy, Australian National University.

However, the final report and its recommendations are the responsibility of CEDA Chief Executive, Professor the Hon. Stephen Martin, and CEDA Chief Economist, Nathan Taylor.



# overview

Australia is one of the best positioned countries in the world to thrive in the turbulent economic changes that are taking place in the global economy. It has a well-educated, highly globalised population, robust political and economic institutions, rich resources and is situated in one of the fastest growing regions in the world.

However, to maintain its economic prosperity and ensure it creates the high paying jobs of the future, Australia will need a growth agenda to improve the nation's competitiveness and increase its economic flexibility. It will also need to invest heavily in economic infrastructure and its human capital. Such growth orientated strategies and investments are required to maintain the country's hard won prosperity and continue to enjoy ongoing shared economic opportunity in the years ahead.

A simple projection undertaken by Dr John Edwards suggested that there is no overt reason why Australia could not extend its run of unbroken economic expansion to three decades and that by 2022:

*"Australia's population will reach 26.3 million, GDP in nominal dollars will be just short of \$2.5 trillion, and GDP per head in today's dollars will be \$68,400 compared to \$59,000 now. There will be 13.34 million employees. Nominal net wealth will have increased by three quarters to \$14 trillion – on average, half a million dollars each."*<sup>1</sup>

Already household wealth has increased by more than five times the level it was at when the current economic expansion started in 1991, while living standards have improved significantly and the output from the economy has doubled. The nation's economic expansion has not occurred by chance alone but due to robust policy settings that enabled and incentivised the nation to respond to a range of extreme and sometimes hostile circumstances. These have included the Asian financial crisis, the 2001 technology bubble collapse and subsequent advanced economy recession, and what the rest of the world refers to as the Great Recession but Australia

fortunately can call the Global Financial Crisis (GFC). The country has also managed to digest the most sustained and pronounced mining boom in its history through appropriate economic incentives and effective management of fiscal and monetary policy.

While the future is promising, Australia's ongoing prosperity is not guaranteed. The nation's economic expansion was initially a result of opening the economy to global trade in the 1980s, regulatory reforms in the 1990s, and digesting the resource boom in the 2000s. These sources of growth have now slowed. If Australia is to avoid the anaemic global economic growth, which the International Monetary Fund (IMF) is calling "the new mediocre", it needs to undertake concerted economic reform across all aspects of society. This will provide the greatest opportunities for citizens from all parts of society to flourish. A central issue for Australia is whether the nation can recreate a progressive reform agenda that will underpin increasing living standards.

Improving the economic flexibility of the economy, and its productive capacity, is particularly important given how digital disruption and globalisation are reshaping the world's economy. The jobs of the future are being defined by automation, robotics and computer technology applications that have the world on the cusp of a technology revolution the likes of which have never been seen. The implications for Australia, and how it shapes policies to adapt to the future, are therefore even more critical.

Australia is fortunate to have experience in embracing radical economic reforms that restructure society and produce significant shared improvements in the nation's economic fortunes. It is time once again to embrace this reformist zeal to ensure a sustainable economic future.

This is possible and CEDA presents a range of reforms in this report to grow the Australian economy and improve the nation's competitiveness in the critical areas of innovation, capital, labour, government and the environment.

In developing these proposals, many of the recommendations have been sourced from previous CEDA research reports<sup>2</sup>, from significant organisations such as the Grattan Institute and the Australian Council of Learned Academies (ACOLA), outcomes from the National Reform Summit and major policy reviews such as the Competition Policy Review, the Australia's Future Tax System Review and the Australian Government's Re:think tax discussion paper.<sup>3</sup>

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## A growth agenda for Australia

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Australia is now one of the most prosperous nations in the world and requires a new wave of growth orientated reforms to safeguard this position and improve it. To underpin improvements to national prosperity, any improvement in Australia's productivity needs to be sustained and not merely cyclical. Australia needs to develop a long term National Productivity Policy that addresses rigidities in the economy, incentivises innovation and improves the capability of its human capital. This cannot be a one-off change, but needs to be a dynamic ongoing program that helps the nation adapt to domestic and global circumstances as they emerge and puts in place world leading policy responses.

The proposals put forward in this report represent a non-exclusive range of important reforms for Australia.

### **Innovation**

To improve Australia's innovative capacity, the government should give greater weight to translation activities in funding universities; encourage innovative procurement policies; and improve the funding arrangements for industry driven research. Finally, programs should be scientifically assessed and successful ones should be scaled up.

### **Competition policy**

To maintain and foster economic growth and improvement in living standards, Australia should implement a National Productivity Policy.

### **Education**

To lift Australia's performance in developing the capabilities of the population and skills to meet the needs of the future, the education sector needs a unified overarching policy framework. This framework should cover from early childhood education through to tertiary education and be implemented by governments through the Council of Australian Governments (COAG) process. Its focus should be on broad-based competencies rather than specific skills.

### **Workforce participation**

As part of the education strategy, a workforce plan should be developed to engage all segments of society, with a focus on participation of women and older workers, and specific policy changes to reduce barriers to employment.

### **Infrastructure**

To provide the infrastructure necessary for sustained economic growth, governments must publish long-term, comprehensive and transparent infrastructure plans, informed by evaluation criteria utilising consistent social benefit/cost (or social rate of return) to prioritise and allocate funds to investments that are attractive to participation from the private sector.

### **Fiscal resilience**

To sustain Australia's economic growth, the Federal Government must return the Budget to balance as a matter of urgency, maintain stable macro-economic policy settings and maintain an equitable distribution of incomes on an after-tax basis that rewards effort while ensuring all sections of society benefit from economic growth.

### **Tax reform**

Government expenditures should be funded out of taxes that directly or indirectly fall on current consumption rather than on saving, investment or innovation activities – that is, on the activities that contribute to future growth in productivity and improvement in living standards for the community as a whole.

## Federalism

To improve the functioning of the Federation, as part of the National Productivity Policy, governments should either reassign roles and responsibilities along with funding, or adopt explicit models for sharing responsibilities for service delivery that create the basis for dynamic efficiency.

## Workplace relations

Changes to Australia's workplace relations laws should make the Australian labour market more flexible, agile and better placed to create the high value jobs of the future while ensuring Australia is not positioned as a low labour-cost destination or enshrining unfairness in the system.

## Climate change

To minimise and manage climate change risks for both the probability and consequence of adverse climate events, a National Risk Register should be established that determines strategies for both the public and private sectors. To make the largest contribution possible to mitigating climate change, a social cost of carbon should be determined and, along with an assessment of the real option value of alternative strategies, used as a basis for allocating public funds.

## Implementing reform

The growth reform agenda presented by CEDA is not uncontentious or incontestable. However, to position the country as best as possible, and to ensure that opportunities are available for all, requires the nation to introduce competition reform into previously protected areas and make significant changes to the way things are currently done. Compared to many other countries, the situation in Australia is far from intolerable. It is just not optimal. The challenge is not that Australia will fail to benefit from the ongoing development of Asia. The nation's globally competitive sectors and close geographic proximity mean it is well positioned to benefit from this economic development. However, a continuation of the status quo will not optimise Australia's response to international opportunities.

CEDA acknowledges the reforms and initiatives associated with enabling the economy to fully realise the opportunity, represent second order changes and will be difficult to prosecute.

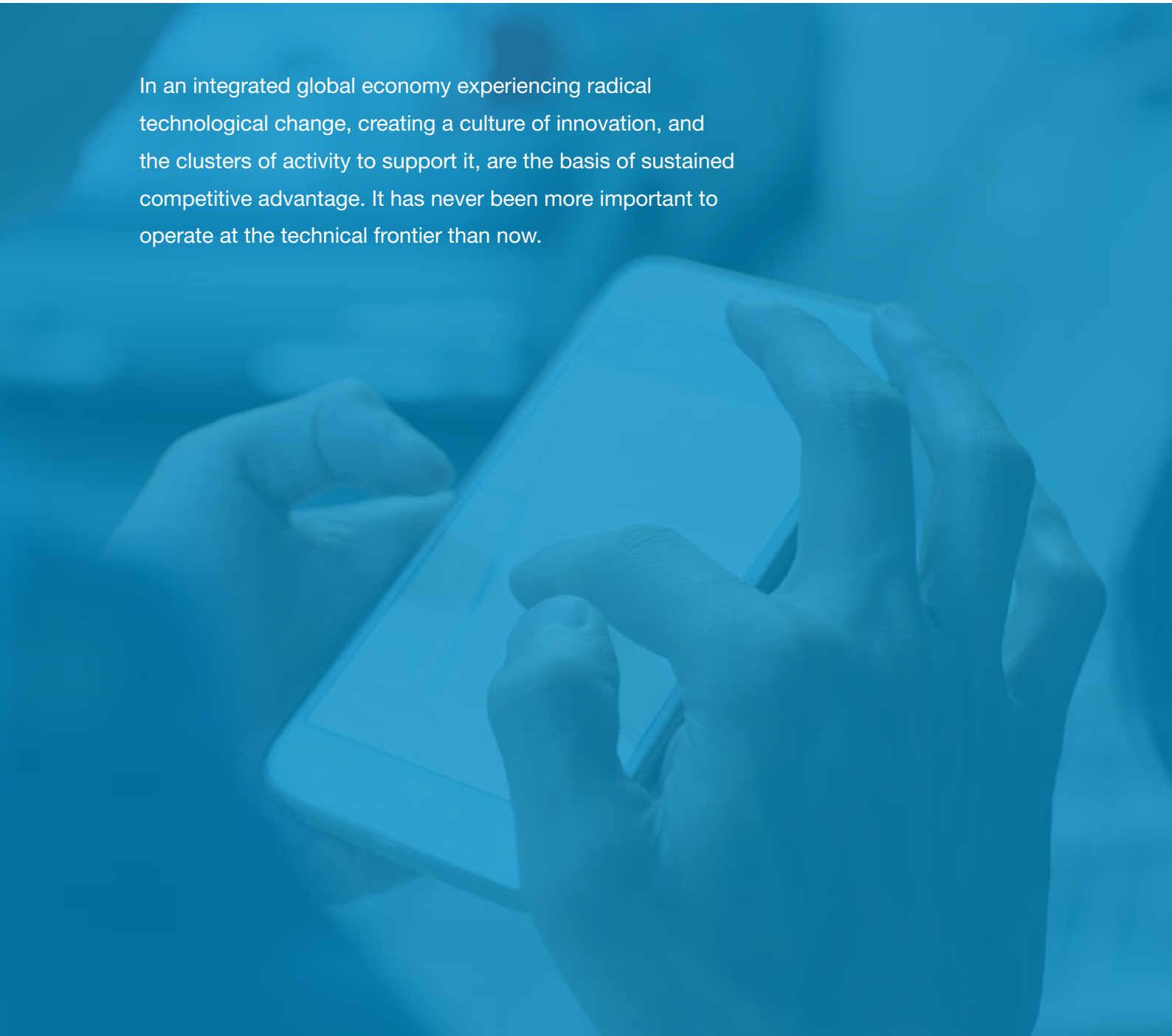
Identifying what needs to be done is, in many respects, the easiest part of the process. What is more difficult is successfully introducing reform. It is to be hoped that no direct crisis will prompt Australia to undertake the economic reforms necessary to optimise its economic performance. However, it will require skilful political leadership to communicate and convince the Australian public that it is in their self-interest for the economic reforms to take place.

The economic reforms Australia needs to introduce involve major change, transforming or even replacing existing ways of doing things and finding completely new solutions to old problems. Anything less will not position the country to optimise its prosperity in the highly competitive global economy.

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# innovation

In an integrated global economy experiencing radical technological change, creating a culture of innovation, and the clusters of activity to support it, are the basis of sustained competitive advantage. It has never been more important to operate at the technical frontier than now.



With the continuing extension of computerisation into almost all aspects of human activity, it is likely to radically reshape existing business practices and transform the workplaces of tomorrow. Whether this results in a net increase in employment and wealth within Australia, or whether the labour market benefits will be dispersed to the global middle class, will depend, in part, on how well the nation manages its innovation systems.

Australia's relative performance in adoption of innovation is in decline. There are good incentives for basic research in universities and other institutes, but the incentives are weak for undertaking applied or translational research and for translation of research into productivity-raising improvements to production and other business processes. Australia has tended to derive its comparative advantage from its natural endowments, and research and innovation focused on capitalising on these.

The Government has indicated its commitment to innovation through the National Innovation and Science Agenda (NSIA). However, there is a much wider challenge to transform Australia's industries.

Inevitably, responsibility for innovation resides with business and not government. However, government can act as a catalyst for change. It is to that end it is recommended that:

- Government initiatives, including funding criteria, be changed to encourage universities to give significantly greater weight, in the research-related metrics for academic advancement, to performance in achieving the adoption, translation and diffusion of innovations (as have been implemented in Europe and the United States). Impact and engagement metrics that acknowledge efforts at translation should be adopted and should be considered on par with current criteria for evaluation;
- To help fund innovation activities by Small and Medium-sized Enterprises (SMEs), explore utilising research and development (R&D) focused public procurement programs (such as the United States Small Business Innovation Research [SBIR] program) and income-contingent loans, repayable from income generated by successful innovations – i.e. a funding pool that is recycled instead of once-off outright grants;
- On the basis of scientific assessments, programs that make a measurable improvement to innovation should also receive significant funding commitments so that they can achieve a meaningful scale; and
- To create, where the conditions are conducive, R&D corporations while also encouraging the Industry Growth Centres to become hubs of R&D and diffusion. Relevant industries are ones in which there are a number of firms, producing broadly similar products, that could all beneficially adopt innovations. For example food processing, some other manufacturing sectors, and parts of biotech.

It is noted that encouraging higher participation in science, technology, engineering and mathematics (STEM) subjects, without a corresponding increase in industry demand, is a supply driven approach that is unlikely to result in successful careers for students. While information and communications technology (ICT) manipulation skills will be increasingly important, this does not equate to training all children to be programmers.

It is also recommended that:

- The Federal Government undertakes a thorough review of global innovation best practice and benchmarks Australia's performance and vigorously pursues the necessary reforms, particularly those giving rise to innovation clusters.

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## Discussion

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The rapid expansion of the global economy, a process that accelerated with the end of the Cold War and the eventual inclusion of China into the World Trade Organization (WTO), has resulted in constant innovation being the source of sustainable competitive advantage. Automation and digitalisation is accelerating this trend and giving rise to superstar economics where innovators take a much larger share of the winnings than ever before. This no longer just applies to popstars or sports people, but innovative companies can increasingly become the global provider of a good or service. Think Uber or Airbnb, the world's largest taxi company and accommodation provider respectively, neither business existed 10 years ago. The world is moving towards winner takes all outcomes where those that create something unique or special command increased returns on their efforts while the rest are destined for commoditisation.

Australia's abundant natural endowment, and its skill at utilising it, has meant the nation's sources of comparative advantage have not tended to be based in innovative endeavours. The nation's broad strategy, adopted outside of the agriculture and resources sectors, has been to quickly copy technological and process innovations made elsewhere, rather than develop and bring to market new breakthroughs directly. This strategy gives a false impression of convergence: the nation may be close to the technological frontier but, in many respects, it is a long way from being able to move that frontier forward. The *Australian Innovation System Report* characterised Australian businesses as early and swift adopters rather than a first in the world developer.<sup>4</sup>

**TABLE 1**  
**GLOBAL INNOVATION INDEX, 2015**

	Australia		Top ranked country	
	Score (0–100)	Rank	Country	Score (0–100)
Global innovation index	55.2	17	Switzerland	68.3
Innovation input sub index	64.8	10	Singapore	72.1
Innovation output sub index	45.6	24	Switzerland	68.6
Innovation efficiency index	0.7	72	Angola	1.0

Source: OECD, The Global Innovation Index 2015.

The United Nations (UN) and the Organisation for Economic Co-operation and Development (OECD) both produce regular reports that rank either Australia's technologies or innovation systems.<sup>5</sup> In 2012, the OECD ranked Australia as 20 out of 26 countries on its patent quality index; the UN ranked us 17 behind almost all other OECD countries on its Global Innovation Index. However, more worrying is that while the UN ranked Australia 13 on the calibre of our innovation inputs (institutions, infrastructure, and knowledge workers), the nation's innovation output was considered so low that our innovation efficiency was ranked 72 in the world, behind most OECD countries and many middle-income economies. Australia's weaknesses are in its knowledge diffusion (99), knowledge absorption (63) and innovation linkages (38). By contrast, our infrastructure and our political, regulatory and business institutions are ranked among the top dozen or so countries.

While innovation efficiency is not a goal in itself, it does indicate where an economy is performing poorly. For a mature advanced economy Australia's ranking is poor and this performance has been slipping.<sup>6</sup>

The policy emphasis in advanced national innovation systems is shifting away from R&D incentives towards more holistic approaches to innovation. For example, Finland's agency for technology and innovation, Tekes, has redirected substantial funding from R&D-driven projects towards non-technological innovation, services activities and SMEs. Similarly, in Canada, another country with a large resources sector and poor productivity performance, almost half of R&D activity now takes place in the services sector and the growth of non-technological innovation is reflected in trademark data, with SMEs playing a key role. Non-technological innovation, such as business model innovation, requires high levels of absorptive capacity in organisations (just as much as technology innovation) and the associated adoption of transformative management practices.



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## Innovation clusters

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Given the pace and scale required to operate at the technological frontier, innovation requires active collaboration across firms, industries and economies with a significant role for government in promoting innovation through direct funding support, tax incentives, public procurement and the co-production of innovation. In this context, Australia's innovation performance has been described as mixed, with some world class achievements, considering the relatively small size of the economy, and some continuing deficiencies.<sup>7</sup>

Whereas previously innovation was identified with investment in science and technology and related skills development, the understanding of innovation has now been broadened to encompass management and organisational change, as well as creativity and design, which are crucial to innovation capability and performance at the level of the enterprise. Innovation policy needs to be seen in terms of a national innovation system. That is the “network of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies” and the “elements and relationships which interact in the production, diffusion and use of new, and economically useful, knowledge”.<sup>8</sup>

It is important to note that while innovation is important, it not something that government can directly influence. Instead, governments have an indirect but important influence over the nation's incentive structures and innovation ecosystems. The first Federal Government policy instalment focused on start-ups and translational research. However, there are much wider challenges to transforming Australia's industries and three important areas are:

1. New forms of targeted science technology and research funding, including income contingent loans and innovation encouraging procurement processes;
2. Coordinate entities promoting industry driven R&D; and
3. Skilling and capability issues.

A thorough, independent review of Australia's policies towards innovation against the OECD best-practice strategy is also needed, followed by vigorous implementation of policy reforms.

## New forms of targeted science technology and research funding

Analysing innovation activity and barriers to it suggest that there is a gross imbalance in the size distribution of firms and the corresponding proportions of firms within each category that are engaged in innovation activity. According to the Australian Bureau of Statistics (ABS), 21 per cent of respondents to the innovation survey cited lack of access to additional funds as a barrier to innovation, while 15 per cent cited cost of development or implementation as a barrier. By contrast, 3.6 per cent of respondents felt that lack of access of knowledge or technology impeded the development or implementation of new innovation. Lack of skilled people within the labour market, government regulations and compliance, and uncertain demand for new goods or services were a barrier to innovation for around 13 per cent of respondents (for each of these categories).

This suggests that funding constraints were the biggest single barrier to innovation, a conclusion that is even more compelling when one separates out the businesses into those that are actively innovating and those that are not. For innovation-active businesses, lack of access to additional funds impeded innovation and the cost of development or implementation inhibited innovation in 32 per cent and 23.3 per cent of businesses, respectively. By contrast, non-innovation-active businesses were less constrained by access to additional funds and development costs (14 per cent and 10 per cent, respectively). A lack of access to technology was found to constrain 1.7 per cent of non-innovation active businesses and 6.5 per cent of innovation active businesses. A much lower barrier to innovation compared to funding or cost constraints.

The ABS data also suggests that funding constraints are more acute for innovating smaller business than for larger ones as 66 per cent of innovative smaller firms identified it as such while 14 per cent identified the cost of technology or knowledge. Skills shortages and demand uncertainties had an adverse impact on innovation for 34 per cent and 38 per cent, respectively for these small firms. By contrast, lack of access to additional funds (14.7 per cent) and cost of development or implementation (16 per cent) had a far smaller comparable impact on larger firms.

Smaller firms are far more constrained in their ability to innovate than are larger ones, and that funding and cost constraints are the biggest components of impediments for all categories and sizes of businesses.

Government can play a role in responding to this barrier by doing two things: improving the pre-finance capabilities of firms, and assisting with finance to better foster allocative efficiency, including provision of the external benefits otherwise lost to the economy. However, along with recognising this role for government, it is financial institutions that have the infrastructure and networks for selection, screening and monitoring needed for any comprehensive processing and provision of finance to businesses. At the same time the innovating firms themselves must wear part of the cost of support as well, since further problems of moral hazard and asymmetric information will otherwise arise.

There is a need for an integrated program to support skill enhancement and financing for small business innovation based on a partnership between enterprises, government and financial institutions. Other schemes to assist small business innovation do exist, but they often have poorly aligned incentives for firms, are inflexible and distort loan priorities and do not address human resource development in getting firms finance ready.

The Federal Government can combine skills enhancement with providing finance through a revenue related loan to be repaid through taxation on future positive net earnings to complement a further proportion of the finance that would be provided on normal commercial terms. This loan would involve government providing a default-protected loan mechanism where commercial banks are reluctant to take on all risk. We can justify government assuming a share of risk by the pooled probability within such an approach of a high social payoff through the opportunities generated from small business innovation activity that would not otherwise be undertaken.

In this approach taxpayer subsidies can be recovered but only where the investment supported has been successful. The scheme therefore provides a form of revenue or profit smoothing so as to diminish financial pressures precisely at the time this is most needed. In this way government also expands the pool of venture capital for small innovative businesses.

Such a program would have the following advantages:

- It could act to improve the functioning of loan markets where innovation activities are below what a government might consider to be optimal;
- As some part of taxpayers' subsidies would be recovered when the enterprise is succeeding commercially, there is an important mutual responsibility dimension;
- Not only is it fair that average taxpayers don't eventually foot the bill for all subsidies to successful enterprises, the fact that there are returns to the public sector should also be seen to be desirable because of the associated potential to reduce national budgetary pressures;
- The repayments allow the financing of more innovation projects than if the scheme was solely grant financed (or through lower taxes, or higher provision of alternative government services); and
- Such a scheme essentially provides a form of revenue (or profit) smoothing, and diminishes financial pressures on small innovative enterprises at the time when this is most needed.

Variants of such a program have been successfully used by Israel to encourage R&D through the Office of the Chief Scientist, or to encourage the take up of energy efficiency by the Clean Energy Finance Corporation.

Another form of public support for innovation can be delivered through procurement processes. An overwhelming focus on value for money considerations, and concerns about risk minimisation, in public sector procurement can stymie innovative solutions to public problems. The United States SBIR program awards over 4000 contracts, totalling over \$2 billion in value, per year. These awards are not loans or grants or even equity investments. They are contracts for the development of technologies that the United States Federal Government believes they require. Studies have

found that over a 10 year period SBIR funded companies generated five times as many new jobs as non-SBIR funded firms.<sup>9</sup>

Demand-side support for innovation should be considered by examining the SBIR and considering developing an equivalent program in Australia. This would involve:

- Encouraging individual government departments to identify areas where they need innovative new technologies to meet their objective;
- Setting aside a portion of departmental procurement budgets to fund innovative technological solutions; and
- Allowing public servants to procure innovatively without being subject to value for money considerations.

Such a procurement approach would represent a significant expansion of the Business Research and Innovation Initiative, which has less than \$20 million in funding and with relatively small funding amounts available. Any procurement processes adopted to encourage innovation should focus on outcomes, rather than outputs, and trials of less prescriptive tender documents than is the norm. Education and information sessions can also help a broader range of businesses understand the procurement process.

It is worth noting that the SBIR program has been operating for decades. It did not always receive the significant level of support it currently does. The United States, Israel, and other innovative countries tend to support successful initiatives. In contrast, Australia does not capitalise on its successful policy initiatives as they tend to be small in size and often short-lived due to lack of funding. To rectify this, scientific assessments that explicitly measure whether a policy initiative has made a valid contribution should be undertaken for Australia's innovation policies. Those that are successful should be scaled up, receiving greater levels and longer commitments of funding.

The better Australia becomes at enabling innovative companies to succeed, the likelier it is that the high quality jobs of the future will be created here.

## Coordinate entities promoting industry driven R&D

A major challenge for new-to-the-world innovation is that it is not just another business investment. It is frequently not possible for the business which has funded the up-front costs of innovation – chiefly the costs of creating and making the idea commercial-ready – to reap most of the benefits from the innovation. As a consequence, many good ideas may not be pursued as they are not profitable for a business even if they have considerable benefit to society as a whole.

New-to-the-world innovation is also challenging because of its high degree of uncertainty. The degree of uncertainty carried by investments into innovation dwarfs the uncertainty associated with investments into physical assets. There comes a point at which some investments are too risky for even the largest business to undertake (think of space exploration). In this situation, society as a whole, using government as their agent, bears the risk.

Many of the key technologies driving growth today, including the Internet, mobile technology and genomics, would not have been possible without public funding of long-term research. Successfully positioning on the technological frontier is a high stakes game that requires businesses to adopt best practice behaviours and technologies all the way along the production chain. It is a myth that Australia's efficiency in mining and agriculture is principally due to our abundant natural advantages. A large number of countries in Asia and Africa also have substantial resources and rich pastures but have not been in a position to use them effectively. Our continued success in mining and agriculture is due to the combined efforts of specialist R&D, education and training, business service and finance sectors that deliver miners and farmers a high-performing platform in which innovation can flourish.

R&D corporations are cooperative industry-owned groups that fund R&D for the benefit of the members. Source funds typically come from a mix of industry levies, membership fees and government funds.<sup>10</sup> Rural R&D corporations are funded by industry and government in the ratio one-to-one while other industry groups differ. This leaves industry free to design the mechanism by which these funds are allocated to R&D projects. Strategic R&D priorities are identified by the industry through a range of consultative activities and the research is targeted at specific industry needs. For this system to work, members must have similar technological needs and be able to find areas of common technological interest. As Australia becomes progressively integrated into the global economy, we are finding that our direct competitors come not from within Australia, but elsewhere in the world.

Australia has not succeeded in agriculture and mining because of its natural endowment of resources. There are many other countries with similar, or better, natural endowments. However, Australia has developed comparative advantage in these two sectors with extensive investment in innovation.

Outside of mining and agriculture, what is missing from the Australian innovation context is industry-led programs of knowledge generation and diffusion that link researchers and industry. While there are a large number of Cooperative Research Centres (CRCs) these tend to be university centric and not business focused. In addition, the relatively new Industry Growth Centres are an attempt to create industry led bodies to drive innovation and productivity in the selected sector. There are six Industry Growth Centres (Advanced Manufacturing, Cyber Security, Food and Agribusiness, Medical Technologies and Pharmaceuticals, Mining Equipment, Technology and Services, and Oil, Gas and Energy Resources). To assist in creating institutional arrangements to enable the prospective users of applied research to drive it and to contribute to its cost, the government should:

- Create the enabling frameworks for setting up, in industries where the conditions are conducive, of R&D corporations similar to those in rural industries. Relevant industries are ones in which there are a number of firms, producing broadly similar products, that could all beneficially adopt innovations (for example food processing and some other manufacturing sectors; or parts of biotech); and

- The six Industry Growth Centres should be the coordinators of R&D and innovation in, gathering the content providers, including CRCs, R&D corporations, and other entities responsible for generating and diffusing innovation.

In addition, more emphasis should be placed on commercialisation activity rather than indirectly penalising it. For instance, the important National Health and Medical Research Council (NHMRC) project grants and fellowships are provided for health and medical research but not medical commercialisation.<sup>11</sup> Time spent in the translation process results in fewer academic publications and so reduces the likelihood of a successful funding application. To reverse this requires that impact and engagement metrics should be developed and adopted and should be considered on par with current criteria for evaluation.

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## Skilling issues

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One policy response of developed countries to the rapid pace of technological development frequently adopted globally has been to promote STEM studies. For instance, both the United States and the United Kingdom have adopted substantial programs that seek to increase the number of students studying these subjects.

It is worth noting that a lack of access to technology and knowledge was a much smaller barrier to innovation than access to finance. In addition, the number of students undertaking these subjects has escalated dramatically in the developing world. For instance, in 2002, the total number of STEM first university degrees awarded in Asia was just over one million, with almost half a million in China alone and a further 176,036 in India. By 2010 the total STEM degrees awarded in China had risen to 2.6 million, with the figure anticipated to rise to 3.5 million by 2015. China alone will produce more STEM degrees in 2015 than all of Asia did as first degrees in 2002. India is experiencing similar growth trajectories in higher education.

Seeking to influence the number of STEM students in Australia is unlikely to be a worthwhile endeavour for either the individual student or the nation as a whole. It is not a lack of knowledge or skill that is preventing Australia from developing robust innovation clusters.

Australia should not adopt a supply driven approach of subsidising or excessively promoting STEM subjects to students. Rather, the focus should be on ensuring all students have familiarity and competency with ICT as a very significant portion of the Australian population lack these basic skills.

two

# competition policy

To maintain growth and improvement in living standards, Australia needs to raise its productivity growth and sustain it. In essence, the nation needs to undertake another wave of microeconomic reforms such as those that successfully raised national productivity growth over the decade from the mid-1990s onwards.



Australia needs a new National Productivity Policy that addresses the residual microeconomic reforms, small and large, that have proven too politically challenging in the past and unleash a new wave of competitive tension into the economy. Many of the necessary reforms can only be successfully undertaken by the two major levels of government working together. Any reform agenda in this area should be supported by a new Inter-governmental Agreement (IGA) that incentivises the states to carry out committed reforms. The incentives should be equivalent of the National Competition Policy (NCP) payments relative to the increase in the size of the Australian economy. Also, to ensure the accountability of both levels of government, an independent auditor of progress (ideally the Productivity Commission) should be given the role of assessing achievement against commitment and reporting publicly on progress and expected net benefits.

Reforms to be undertaken under a new National Productivity Policy IGA should include those below, all of which are needed to make our economy more efficient, flexible and competitive:

- A comprehensive regulatory review across all areas, with a view to culling unnecessary regulations, particularly where market solutions or private enforcement will serve the desired objectives. Where regulation remains warranted, simplify and ensure consistency across jurisdictions, to reduce compliance costs. This should focus on:
  - Planning restrictions;
  - Retail trading hour restrictions;
  - Unnecessary product standards; and
  - Pharmacy location restrictions.
- Review overly restrictive licensing and self-regulation by various professions and ensure it is liberalised on a net social benefit test; and
- Review selective industry subsidies against a net social benefit test.

In addition, infrastructure reforms and improvements to the education system should both be considered as part of the National Productivity Policy IGA. In both cases there are considerable Federal entanglements and improvements that will only occur with both spheres of government working together.



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## Discussion

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In 2016, Australia will have enjoyed well over two decades of continuous economic expansion, free from the ravages of recession that we had become accustomed to expect as an integral part of the 10-year cycle of boom followed by bust that has been the norm in our economic history. This is an achievement only exceeded by Norway in industrial countries post World War II. The consequence of this economic expansion has been to substantially improve the material wellbeing of all Australians. During this economic expansion, the nation's output has more than doubled, living standards have increased significantly and household wealth increased to more than five times the level it had reached when the long expansion began at the end of 1991.

The nation's economic expansion has not occurred by chance alone but due to robust policy settings that enabled and incentivised the nation to respond to a range of hostile circumstances. These have included the Asian financial crisis, the 2001 technology bubble collapse and subsequent advanced economy recession, and the GFC. Australia has also managed to digest the most sustained and pronounced mining boom the nation has experienced through effective management of fiscal and monetary policy. It has also responded effectively to the decline in the terms of trade, with the economy growing at above trend rates regardless.

During the 1990s the main contribution to gross domestic income (GDI) per capita was productivity growth which constituted 60 per cent of the total improvement in real income experienced over the decade. However, during the 2000s the key driver of GDI per capita was capital accumulation, which added half of all improvement experienced over that period while productivity growth added just 3.5 per cent to GDI per capita. Extracting cyclical factors, such as drought and increased investment in long lived assets as a response to record high terms of trade, Australia still had very low levels of productivity growth following the turn of the century.

Over the longer term, the key determinant of improvements to the national income growth and international competitiveness is productivity. Put simply, productivity is the nation's output divided by its inputs. It measures the ability of a nation to produce goods and services and has a strong relationship with a nation's income per capita. What tends to be forgotten in the public debate about productivity is that it is not important in and of itself, but because it underpins collective improvements in national standards of living. Income per capita is a broad proxy for improving quality of life, although it is not the only factor. Other factors, such as the quality of the environment and the equity of the income distribution also contribute. However, national prosperity allows for important social, environmental and equity programs to be undertaken.

Small changes in productivity growth rates have very significant implications for the nation's standard of living in the long term. Between the first Intergenerational Report in 2002 and the fourth a decade and a half later, the projected rate of economy-wide labour productivity growth was lowered from 1.75 to 1.5 per cent.<sup>12</sup> This may reflect what the IMF has referred to as the new mediocre where global growth remains low. If the nation is willing to embrace reform, a low growth future need not be Australia's.

During the 1990s, Australia's productivity growth was especially high, with an estimated average of 2.2 per cent growth per year. As the Treasury notes, this labour productivity growth has largely been attributed to the economic reforms undertaken during the 1980s and 1990s. These reforms created more competitive and flexible markets in which businesses became more efficient and innovative, and new and improved technologies were adopted.

At the end of this reform program, in 2005, the National Competition Council issued its final assessment of governments' progress implementing the NCP and related reforms adopted by all Australian governments in 1995. It noted that over the past decade, Australian governments have participated in the most extensive and successful economic reform program in the nation's history. However, it also stated:

*"As productivity enhancing reforms have been implemented, new challenges (many not envisaged in 1995) have emerged. Some have likened the reform task to walking up a down escalator – in a globally competitive environment, reform inertia means declining living standards. The relevance of existing regulations needs to be re-assessed continually and what is considered best practice today may tomorrow be an impediment to the nation achieving its growth potential."*<sup>13</sup>

In assessing the NCP, the Productivity Commission noted:

*"There is both the scope and the need to do better. Population ageing and other challenges will constrain our capacity to improve living standards in the future. Further reform on a broad front is needed to secure a more productive and sustainable Australia."*<sup>14</sup>

To underpin improvements to national prosperity, any improvement in Australia's productivity needs to be sustained and not merely cyclical. Australia needs to develop a long term National Productivity Policy that addresses rigidities in the economy, incentivises innovation and improves the capability of its human capital. This cannot be a one off reform agenda, but needs to be a dynamic ongoing program that helps the nation adapt to domestic and global circumstances as they emerge and puts in place world leading policy responses.

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## Regulatory reform

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The recent Competition Policy Review found that, despite considerable progress being made, significant unfinished business remained from the original NCP agenda and new areas had arisen where competition policy should apply. Many sectors facing regulatory restrictions supply critical inputs to other business activities. In addition, regulations that may be made with the best of intentions can have significant consequences in other areas. For instance, the individual regulations governing the requirements for childcare facilities may appear sensible but the collective consequence is to significantly increase the cost of childcare for working families. As an example, the Perth Central Business District (CBD) has only two childcare facilities. The National Productivity Policy should focus on these key regulatory barriers as, collectively, they have a significant influence on the economy.

The Competition Policy Review identified planning restrictions, retail trading hour restrictions, unnecessary product standards and pharmacy location restrictions as areas requiring urgent attention.<sup>15</sup> While some action has been taken to address elements of the Competition Policy Review recommendations, it has been limited because the Federal Government responded in isolation.

The regulatory reform initiative needs to be reinvigorated, with a new round of national regulatory reviews required. A national approach will provide momentum, impose discipline on all jurisdictions, and foster the emergence of a nationally consistent business regulatory environment. Governments need to make a concerted effort to examine and reform regulation that restricts competition where it is not in the public interest.

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## Competition in human services

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The Competition Policy Review raised the importance of extending competition policy into non-traditional areas, specifically human services. Given the size of the human services sector (which is set to increase further as Australia's population ages), even small improvements will have profound impacts on people's standard of living and quality of life. It is important that dynamic efficiency be introduced into these sectors to improve their productivity and to increase the choices available for consumers.

Consider the case of healthcare. As medical technology advances, it becomes more desirable to intervene earlier and more intensively than in the past. This increases the level of utilisation of healthcare services at all ages. Healthcare is one area of human activity that has infinite demand and finite resources.

Australia's current policy settings involve a de facto rationing of access to medical services, typically through longer waiting lists for elective surgery or restricting access to medical treatments. It is increasing utilisation of medical services that will have a larger influence over the financial sustainability of the healthcare sector than the ageing of the population.

The recommendations in the Federalism chapter of this report provides one way to improve the contestability and efficiency with which healthcare services are delivered. Another approach is to create stronger links between a patient's use of medical services and the benefits they receive from them. The funding model used to support healthcare needs to be focused on the individual rather than institution or process focused. To introduce dynamic efficiency into the healthcare sector, one method to introduce reforms would be through:

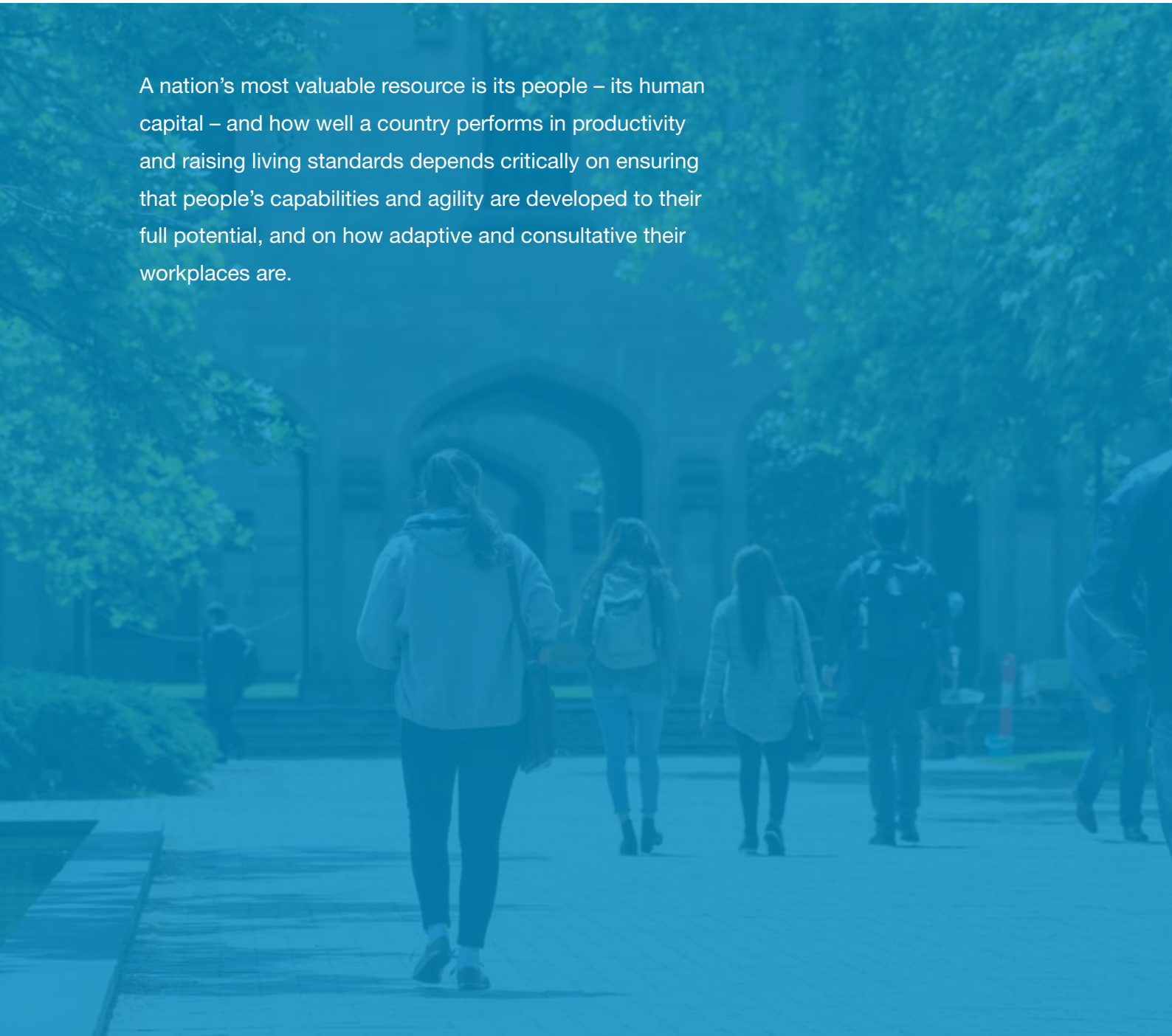
- Aggregating all health funding at the level of the individual;
- Having financial risk reside with competing health funds through insurance arrangements, introducing managed competition, eliminating fragmented responsibility and cost shifting;
- Linking public healthcare budgets and community expectations of healthcare services to economic capacity to pay, via a fully hypothecated Medicare levy that funds healthcare expenditure; and
- Introducing pre-funding for healthcare costs by quarantining a portion of the Superannuation Guarantee rate, or increasing the Levy, so that approximately three per cent is set aside to cover healthcare costs.

Given the overall level of waste and adverse events has been estimated at between 20 and 30 per cent of healthcare expenditure in the United States, and likely to be similar in Australia, there is substantial scope to improve the outcomes from the sector.<sup>16</sup>

three

# education

A nation's most valuable resource is its people – its human capital – and how well a country performs in productivity and raising living standards depends critically on ensuring that people's capabilities and agility are developed to their full potential, and on how adaptive and consultative their workplaces are.



While Australia has had relatively high levels of participation and employment in recent times, there are segments of the community where skills development and participation are poor and the country lags behind international averages, let alone best practice.

Despite increasing levels of investment in education, Australia's performance has been in decline according to a range of metrics. The nation needs to ensure its investments are being targeted appropriately. Australia needs a unified over-arching policy framework, covering the whole education sector to provide coherence in building human capital. This would allow the nation's investment in education to be allocated across the lifecycle according to where the incremental payoff will be greatest.

More generally in our education and training systems, there is too much emphasis on very specific skills. In building the capability to be productive, adaptive and agile in the workplace, broad-based competencies are more important than specific skills.

To lift Australia's performance in developing to the fullest the capabilities of our human capital, this reform would encompass these elements:

- Develop, in cooperation between the Commonwealth and the states, a unified, over-arching policy framework to guide the allocation of investment in education and training from early childhood to further education and training and tertiary education;
- Within the framework, examine the entire educational process and allocate investments in a targeted way, building on previous investments;
- Within the framework, develop specific initiatives targeted at those segments in the school aged population that are lagging behind, particularly children from disadvantaged groups in the population;
- Provide individuals with the information they require to make optimum human capital investment decisions of their own; and
- Improve Australian research on linkages between human capital and economic growth.

## Discussion

A key strength of the Australian economy is its highly educated workforce. Over half the working age population have a qualification of some kind.<sup>17</sup> More than two fifths of workers in the business services and social services industries have a Bachelor's degree or above. Goods producing industries employ fewer graduates in proportional terms, but its workforce is still highly qualified.

Within the OECD, only five countries have greater rates of higher educational attainment.<sup>18</sup> Outside the OECD, Australia's rate of tertiary attainment is three times that of Argentina's, seven times greater than South Africa's and 14 times that of China's.<sup>19</sup> However, this gap is closing with the absolute number of graduates in developing countries rising significantly.

Australia's improved levels of education attainment have resulted from several decades of reform. Starting with significant reforms to university funding in the late 1980s, this has continued in the 2000s with the National Reform Agenda. Underpinning the National Reform Agenda was the contention that improvements in educational attainment were required to enhance workforce participation and productivity, and hence Australia's future living standards.<sup>20</sup> These commitments have resulted in a range of policy reforms covering vocational education and training (VET), as well as responding to policy reviews such as funding for schooling and higher education.

In addition, a number of states and territories have implemented significant reforms, most notably in VET. For example, Victoria and Queensland have developed entitlement based funding models for VET, providing eligible students a publicly subsidised place, in a public or private provider of their choosing.

Despite rapid educational attainment growth in the working age population, there is a question as to whether Australia is maintaining its position internationally, and whether skills are increasing sufficiently across the entire Australian community. The latter will become increasingly problematic as digital disruption increases the skill requirements for work.

**TABLE 2**  
**AUSTRALIA'S PISA PERFORMANCE, 2012**

	Mathematics	Reading	Science
Mean	504	512	521
% top performing students	15%	12%	14%
% low performing students	20%	14%	14%
Overall rank	19th out 65	14th out 65	16th out 65

Source: PISA Australia 2012.

Not only is Australia's relative performance declining, but a significant minority of students exit the education system without the skills to function in a modern society. The Programme for the International Assessment of Adult Competencies surveys 24 countries to measure whether individuals possess the skills required to participate in society. Performance at a Level Three standard is considered the "minimum required for individuals to meet the complex demands of everyday life and work in the emerging knowledge-based economy" but over 40 per cent of Australians did not perform at this level.<sup>21</sup>



The failure to adequately educate a significant portion of the population is a concern given the observation that:

*“Rich economies seem to be bifurcating into a small group of workers with skills that are highly complementary with machine intelligence, for whom he has high hopes, and the rest, for whom not so much.”<sup>22</sup>*

Automation and ongoing digital disruption may change the labour market more than anything seen in the past. Low skilled jobs are disappearing and the jobs that remain require people with higher levels of skill and education. This trend has been evident for some time now and is projected to continue into the future.<sup>23</sup> Adapting to a more technological world requires the fundamentals of an excellent education system, that ensures students develop literacy and numeracy skills as well as equipping them with digital literacy. With 40 per cent of Australians lacking the skills necessary to participate in a digital economy, the nation needs to do more to maintain ongoing prosperity and an equitable distribution of income.

To enhance the performance of the education system there are five areas that need to be improved:

#### 1. Develop an overarching policy framework for education and training.

A lack of coherence means that reform of the Australian education system tends to be disjointed and results in unnecessary complexity and wasted resources. It also results in inconsistencies between sectors.

To use the example of funding distribution, the Australian Government is the sole government funder of higher education. Key features of the Australian Government's higher education funding include demand-based funding, a generous indexation rate, and student contributions varying on the basis of discipline. Government subsidies are, in the main, only available for students attending what are known as Table A providers (largely public universities). However, government financial support is available for students wishing to attend other higher education providers, in the form of an income contingent loan (for example FEE-HELP).

Finally, there are eight different approaches across Australia to the provision of funding for VET. As noted above, subsidy rates, in conjunction with student contributions vary significantly between jurisdictions. There is little commonality in the funding approaches or structures used by the various jurisdictions to fund education. Different indexation rates are used, alongside very different approaches to the provision of funding. The approaches to determine student and government contributions also vary enormously. While an overarching policy framework cannot be expected to resolve all these anomalies, it should at least go some of the way.

Due to shared or separated policy responsibilities between the Australian Government, and state and territory governments, there has not been a policy review, or specific policy, covering all education sectors. It is appropriate that such a policy framework be collaboratively developed through COAG. This framework should not seek to generate a uniform approach to education and training across the whole of Australia. At a minimum, it



should lead to consistency within jurisdictions in how they approach education and training policy, as well as provide impetus for a greater degree of integration and coordination between the components of the education and training sector.

## 2. Make optimum human capital investments at appropriate points in the lifecycle.

Government has a key role in supporting optimum human capital investment decisions. By optimum, it is specifically meant that human capital investment occurs at times that will generate the highest net return.

It should be noted that this policy action is not just about optimising government investment, but rather total investment. Indeed, a key policy issue at this point in time, particularly in VET, is the contribution that should be made by students to the cost of their education

An equally contentious issue that will need to be considered in the context of optimising human capital investment is the need to ensure that current resources are being spent effectively across all levels of education. For example, it may be appropriate to reallocate resources from one sector to another. Only after this optimisation has occurred should consideration be given to allocating additional resources to education and training.

## 3. Continued focus on the attainment of skills.

For individuals to ensure their careers are resilient in a rapidly changing environment they may need to treat their career as a business, take on more responsibility for their own education and invest in skills and professional development to keep adapting their skills to match industry needs.

To be successful and able to participate in the digital economy, basic digital literacy needs to be included as a core component of school education, both in terms of content and delivery, as distinct from the teaching of specialised ICT, technology and computer science subjects. Post-school, the teaching of digital literacy skills must continue into tertiary education, and be a core component of ongoing workplace skills development.<sup>24</sup>

The evidence of the Programme for the International Assessment of Adult Competencies suggests that a sizeable proportion of individuals are moving through school without mastering numeracy and literacy skills, impeding their ability to further develop their skills and to participate effectively in the labour force. This needs to be rectified if these individuals are to make a constructive contribution to society.

#### 4. Provide individuals with the information they require to make optimum human capital investment decisions of their own.

A potential weakness in the Australian education system is that the open market approach which currently operates in the VET sector, which has also been proposed for the university sector, allows more private education providers to offer courses using the Higher Education Loan Program (HELP). This has the potential benefit of increasing competition among providers and driving efficiencies in the education market, but experience shows that in the absence of good information for education consumers and proper regulation of the system, outcomes can be poor.

The provision of VET in a number of jurisdictions, alongside higher education, has largely moved to a demand-based funding model. Such a system design, replacing fixed enrolment caps, and even caps within specific disciplines, provides students with significant decision making authority.

For potential students to make optimal human capital investment decisions, they need to be well informed about likely future skill requirements, alongside appropriate education and training opportunities that can assist in developing these skills.

To operate effectively, consumers need to understand the obligations and implications of signing up for HELP loans. They should also be informed of the income earning potential in the jobs for which people train and be informed about the employment outcomes achieved for students enrolled with each education provider.

Education and employment outcomes, quality and costs should also be rigorously monitored by government due to the large taxpayer investment in this expanded market. Poor outcomes and unscrupulous providers could lead to consumers being discouraged from investing in their own education.

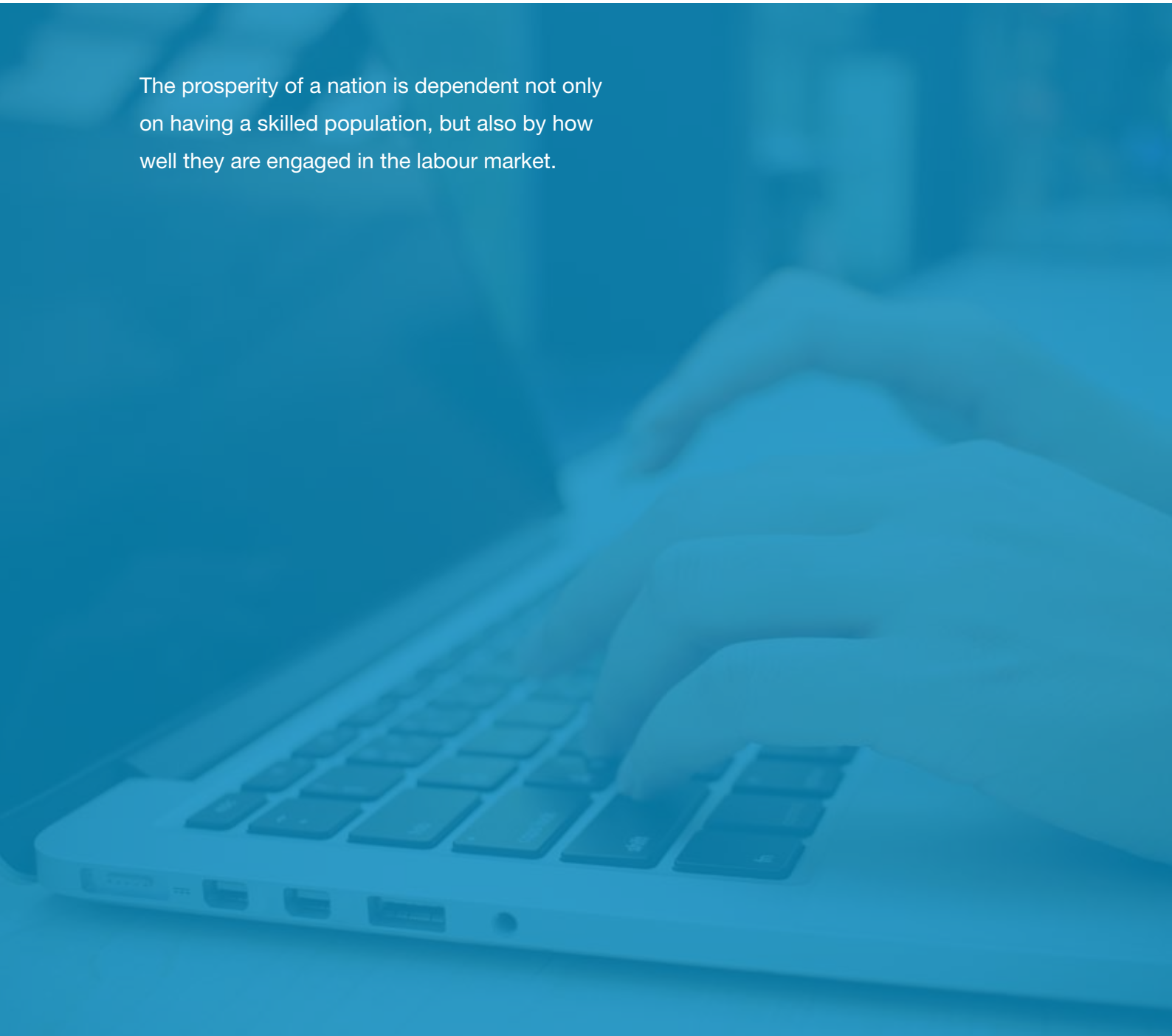
#### 5. Improve Australian research on linkages between human capital and economic growth.

A key challenge in the development of education and training policy is that the linkages between human capital and economic growth, are multi-layered and take many years to materialise. One area requiring immediate research is to better understand what the skills being applied to job activities are in the Australian labour market, and how these differ within and between occupations.

four

# workforce participation

The prosperity of a nation is dependent not only on having a skilled population, but also by how well they are engaged in the labour market.



While Australia has had relatively high levels of participation and employment in recent times, there are segments of the community where skill development and participation are poor and the country lags international averages, let alone best practice. In particular, female participation lags male participation by almost 12 per cent, and is 12 per cent below that of New Zealand, which has similar social and economic institutions.<sup>25</sup>

Likewise, when it comes to workers between 55 and 64 years old, Australia is above the OECD average, and improving, but is over 12 per cent behind New Zealand. Finally, prime aged men, those between 15 and 64 years old, have higher participation rates than the OECD average, but are almost seven per cent below Iceland, the global leader, and significantly below a range of broadly similar countries. Improving the workforce participation of prime age males will occur with improvements to the education system, which currently results in a significant number of Australian's failing to develop the skills and competencies to thrive in a modern economy.

Not engaging more female and older workers means Australia is failing to capitalise on a potential demographic dividend. While the Intergenerational Report focuses on the budgetary consequences of the rising Aged Dependency Ratio, the ratio of people over 65 compared to those aged between 15–64, there is little consideration of the Child Dependency Ratio, the ratio of those aged between 0–14 and 15–64. Considering the much higher cost of childcare compared to retirees, particularly infants, to assess the overall fiscal consequences of an ageing population requires comparing these two ratios. An ageing population does not necessarily mean a smaller workforce. With relatively fewer children, there is even greater scope for increased female workforce participation, and the skills required in a modern economy require intellectual and emotional insights more than brawn, potentially expanding the pool of older workers capable of continuing to be productive.

To lift Australia's performance in capitalising on its human capital, the nation should develop a national workforce plan that seeks to engage, and as needed, reskill, under-utilised groups in the workforce.

For female workers this would specifically target:

- Time bound goals for increased participation, with the objective of reducing the gender participation gap in line with G20 target goals through;
  - Addressing the high marginal tax rate families experience when the second income earner seeks to re-enter the labour market after the birth of a child;
  - Seeking to reduce the cost of childcare by initiatives such as deregulating and streamlining to improve productivity and incentivising corporations to provide onsite childcare facilities; and
  - Allowing tax-deductibility for childcare.
- Reintroduce the Women's Budget statement to ensure new initiatives do not bring unintended negative consequences that reduce female participation; and
- Undertake the Time Use survey (which was last completed in 2006).

- For older workers:
  - Reduce legal impediments to working longer, such as age-related licensing restrictions and age restrictions on workers' compensation and superannuation contributions;
  - Ensure older people have the chance to maintain or update skills that may contribute to their employability; and
  - Encourage more flexible work hours to suit older workers.

## Discussion

### Female participation

For female workers Australia has a labour force participation rate that is above the OECD average. However, the average includes countries with very low participation rates, such as Greece. Some high performing nations, such as the northern European countries, have a distinct social compact which may not be easily replicated in Australia. However, female workforce participation is also substantially higher in Canada and other Anglo-Saxon countries that are culturally, economically and institutionally similar to Australia.

The OECD statistics for Australian labour force participation rates in 2014 report a female rate of 70.5 per cent and a male rate that is 11.6 percentage points higher. These figures conceal a far wider gender gap in actual hours of labour supply, a gap that is in the order of 40 to 50 per cent during the prime working years, due to the high proportion of women in part-time work (approximately 40 per cent of women employed part time and only 15 per cent of men).<sup>26</sup>

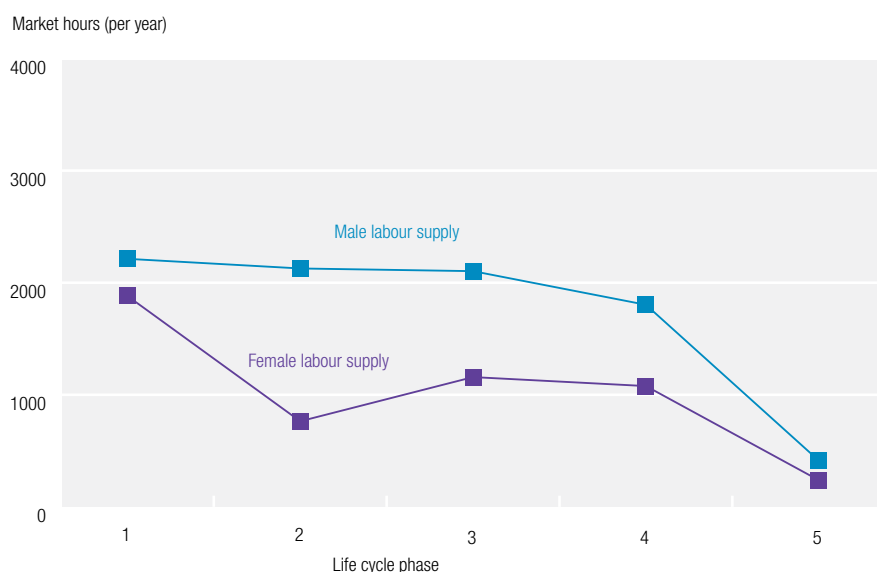
The gender gap in labour market participation begins with the arrival of the first child, which creates additional unpaid work for the household as, until that time, both partners work at the same rate.<sup>27</sup> The *How Australians use their time* survey by the ABS broke time use decisions of households into five phases:

1. Pre-children;
2. At least one child of preschool age is present;
3. Children are of school age or older but still dependent;
4. Parents are of working age but with no dependent children in the household; and
5. Retirement.<sup>28</sup>

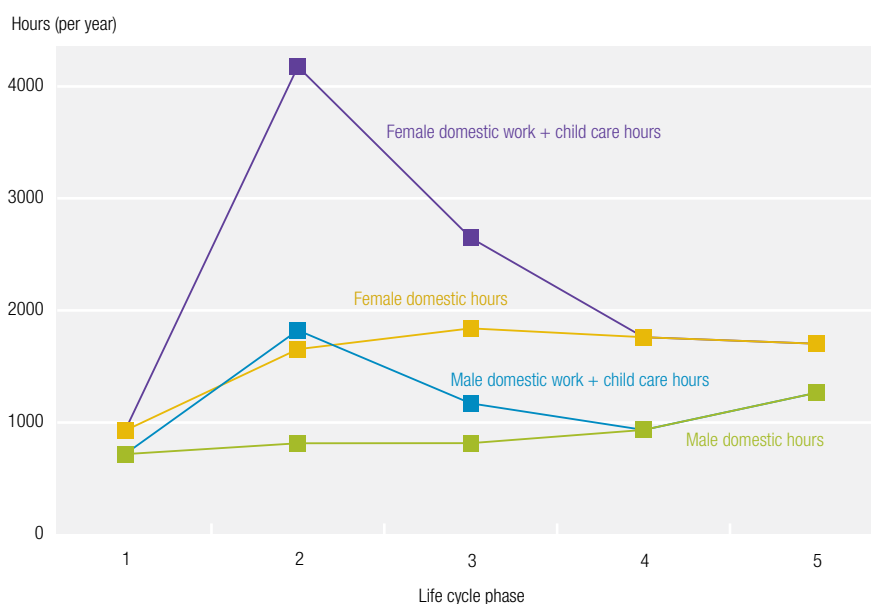
The mean data for male and female time allocations between market work, domestic work and childcare are described in the figure below. While there is gender parity, or close to it, in phase one, across the child-rearing phases, full-time and part-time female employment rates drop to 26 per cent and 40 per cent, respectively. The remaining third are non-participants. In the pre-retirement phase 30 per cent are non-participants and 35 per cent are working part-time.

With the arrival of a child, one parent, typically the mother on a lower wage, can work at home providing childcare and domestic services as an

**FIGURE 1**  
LIFECYCLE LABOUR SUPPLY, CHILDCARE AND DOMESTIC WORK<sup>29</sup>



**FIGURE 2**  
LIFE CYCLE DOMESTIC WORK AND CHILDCARE



alternative to working in the market and buying in care and related services. The choice will depend critically on the availability of childcare at an affordable price and acceptable quality and on the net-of-tax gender wage gap. These figures reflect both the high degree of heterogeneity in female labour supply and the persistence of decisions made during the early child rearing years, which the literature attributes to loss of human capital.<sup>30</sup>

The choice of participating in the labour market or not is critically dependent on the availability, quality and cost of childcare and the net-of-tax earnings.

The effective rate of taxation for the second income earner in a household has increased significantly in Australia in recent decades as the country's family tax system has transformed. In the early 1980s families received universal child payments and were taxed under a highly progressive individual

based income tax. This was changed by the Howard Government so that universal child allowances were replaced with payments withdrawn on joint income, and the rate scale of the personal income tax became far less progressive.<sup>31</sup> Australia now has a system of quasi-joint family taxation, with the highest marginal tax rates applying across average incomes and to the income of the second earner, creating a net-of-tax gender wage gap that makes the continuing gender gap in pre-tax pay look relatively insignificant.<sup>32</sup>

Individual taxation is recognised as superior to joint taxation because the partner with the lower earnings and higher labour supply elasticity, typically the female, faces a lower marginal tax rate under a progressive rate scale. This is consistent with the Ramsey rule for efficiency.<sup>33</sup> Given that male labour supply is found to be relatively unresponsive to a change in the net wage, a strongly progressive rate scale, together with universal family payments, minimises the gender gap in labour supply for a given degree of redistribution or revenue constraint.

Under a conventional joint income tax, the second partner contemplating going out to work faces, on the first dollar earned, the marginal tax rate on the last dollar earned by the primary earner. This conflicts with the Ramsey rule. A system of quasi-joint taxation tends towards the same effect, but more erratically. For example, under the current Family Tax Benefit Part A (FTB-A) system, Medicare Levy (ML) and personal income tax rate scale, a second earner with an income of \$40,000 in a family with two dependent children and a primary income of \$65,000 faces a marginal tax rate of 66 cents in the dollar, a rate significantly above the top rate of 49 cents. Not even under a conventional system of joint taxation does the second earner face this kind of tax penalty.

Current arrangements are highly regressive as women with lower earning capacity are strongly discouraged from work. These women take home a smaller proportion of any money they do earn after childcare expenses and welfare changes are accounted for. This may discourage them from workforce participation for several years, reducing their opportunities later in life.

Improving female workforce participation would also mean a better return on Australia's investment in higher education. Women now make up almost 60 per cent of Australia's tertiary education enrolment. Yet if these graduates do not work, or only work part-time, these valuable skills can be lost.

Finally, improving female participation will significantly improve gender equality. After several years of working part-time, or not working at all, many women find it difficult to re-enter the labour market, and are discouraged as their previous colleagues are substantially further advanced. Women who do not work for several years often find it difficult to find meaningful workplace interaction, and financial independence, particularly in retirement.

The evidence on wage elasticities suggests that female labour is the most mobile factor of production. Therefore, to reduce the participation gap the Government should:

- Reduce high effective marginal tax rates and the after tax cost of childcare. In particular, alter access to FTB and the Childcare Benefit and Rebate so that a household's second income earner, generally the mother, takes home more income after tax, welfare and childcare costs.

Barriers to female participation would be substantially reduced by treating FTB as income in the hands of the family's first wage earner, and treating childcare as a deduction in calculating tax and eligibility for welfare benefits. However, it would be necessary to closely examine tax and welfare changes that would reduce barriers at an acceptable cost to the Budget, after taking into account increased income tax collection as a result of higher lifecycle female labour market participation.

### Older workers

Australia's participation rate for older workers has risen considerably over the last 35 years and is already four percentage points above the OECD average at 64 per cent. As mentioned above New Zealand and other countries with similar social structures have participation rates almost 15 per cent higher than Australia. This difference may be partly explained by New Zealand's substantially less generous approach to pensions and lack of a strong superannuation policy.

The labour market contributions of older workers are heavily dependent on retirement policy and associated institutional arrangements. With the eligibility age for the pension rising to 67 by 2023, and preservation age for superannuation benefits set to rise from 55 to 60 by 2024, it is likely the labour market participation of older Australians will continue to increase, as it has done for the last decade.

Not only will Australians live longer, but improvements in health mean they are more likely to remain active for longer. Active ageing presents great opportunities for older Australians to keep participating in the workforce and community for longer, and to look forward to more active and engaged retirement years. The 2015 Intergenerational Report estimates that an increase in the age pension eligibility age from 65 to 70 would add 0.8 percentage points to the aggregate labour force participation rate.

Rather than forcing workers to remain in the workforce longer, the Government should examine the legal and structural barriers that may encourage discrimination against older workers, such as age-related licensing restrictions and age restrictions on workers' compensation and superannuation contributions.<sup>34</sup> Ensuring older people have the chance to maintain or update skills may contribute to their employability. Unemployed older workers can find it more difficult to find work because their skills do not match contemporary employer needs or due to disability or discrimination<sup>35</sup>. They also face higher rates of long-term unemployment. On average, unemployed people aged over 55 last worked in a full-time job 67 weeks ago, compared with 38 weeks for people aged 15–54.<sup>36</sup>

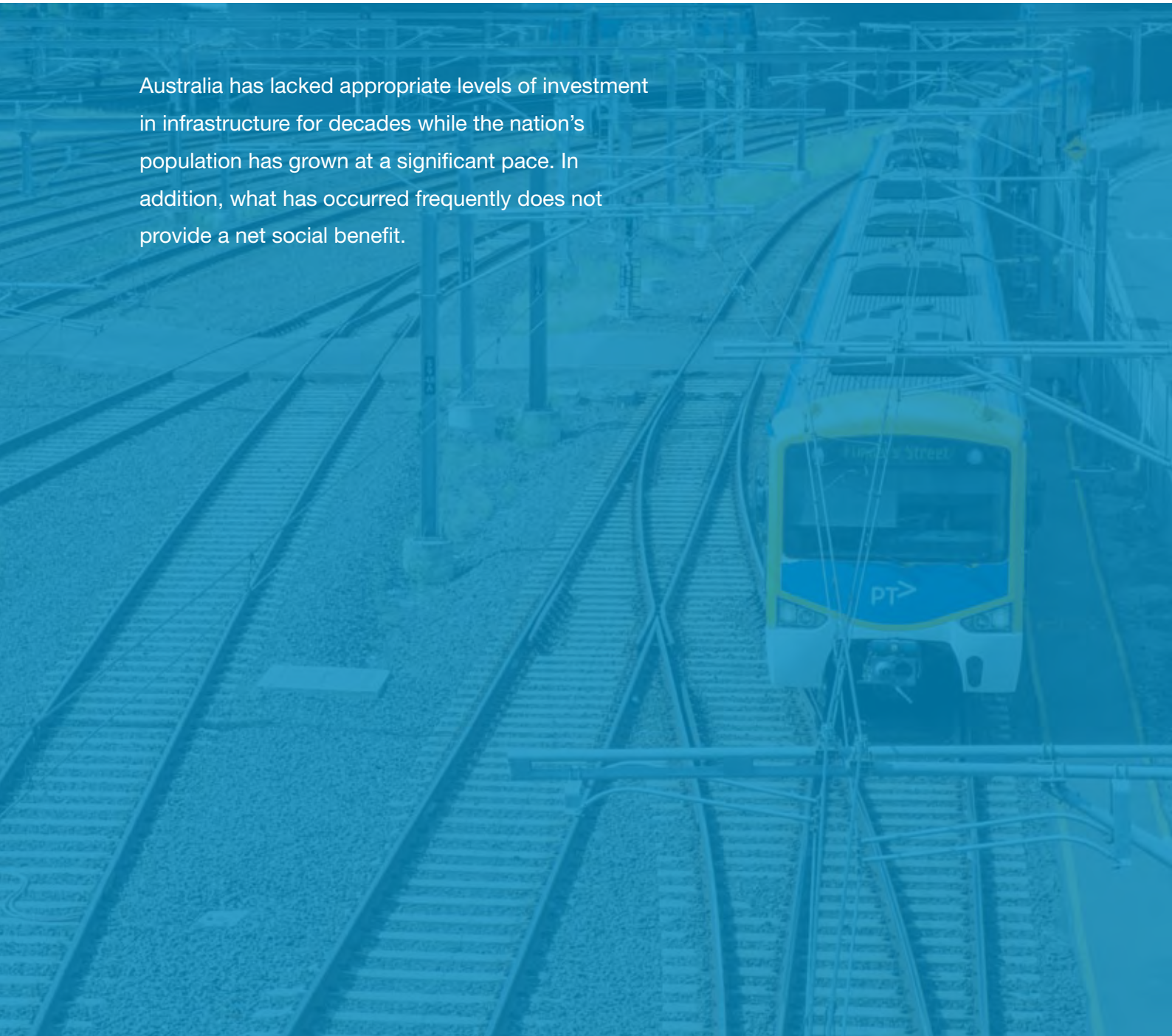
While financial disincentives related to tax and superannuation can be addressed through policy measures, shifts in the attitudes and expectations of employers and the labour force will be as important.



five

# infrastructure

Australia has lacked appropriate levels of investment in infrastructure for decades while the nation's population has grown at a significant pace. In addition, what has occurred frequently does not provide a net social benefit.



Due to a lack of investment in infrastructure, Australian has forgone significant potential productivity gains and traffic congestion has increased significantly and will get worse unless addressed, from an estimated \$13.7 billion in 2011 to an increase of almost 400 per cent by 2031, with significant increases in demand for key public transport networks expected as well. At the same time the digital transformation of the global economy makes high functioning capital cities more important than ever. Currently these capital cities generate 80 per cent of Australia's GDP.

To improve timely infrastructure provision, it is important that all Australian governments adopt:

- Mechanisms for the establishment of published long-term plans for infrastructure development that:
  - Are comprehensive and infrequently revised; and
  - Utilise consistently social benefit/cost (or social rate of return) assessments to prioritise and allocate funds to investments transparently, so as to yield the greatest benefit from the overall investment budget.
- A valuation approach that explicitly incorporates the value created by an infrastructure project:
  - This could involve using innovative mechanisms for increasing the potential for private beneficiaries to contribute to the costs (on the user pays principle), in particular using value capture mechanisms. For example, if a prospective transport infrastructure investment would have the effect of raising nearby land values, a charge resembling an increment to local government rates could capture some part of that. Tolls are another, more familiar, user pays mechanism.
- Improve the functioning of local government and the major urban centres in Australia by:
  - Introducing virtual local government models to improve the efficiency and capability of the sector; and
  - Create discrete entities with the responsibility for whole-of-urban planning, preferably with the funding arrangements outlined below.
- For each investment, evaluation criteria would be established at the outset, enabling ex post evaluation of whether its prospective net benefits (benefits net of costs) are achieved.
- Appropriately pricing infrastructure should be rigorously pursued to provide appropriate incentives for consumers and signals for future investments. These reforms should embrace energy, urban and rural water as well as roads and should be revenue neutral.

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## Discussion

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Australia is one of the most urbanised countries in the world. Eighty per cent of the population lives in cities with more than a hundred thousand people and over 60 per cent live in the four largest state capitals. These capitals are also among some of the lowest density metropolitan areas in any developed country, and this creates a lot of congestive pressure as the more far flung the population, the further from employment and the greater the demand for longer road trips. Yet despite the population growing at almost 1.5 per cent per annum this century, and that growth rate projected to continue until 2031, there has been a chronic underfunding of infrastructure in Australia's capital cities.

Between 2011 and 2031, almost three-quarters of our population growth will occur in Sydney, Melbourne, Brisbane and Perth. This means our biggest four cities will collectively need to accommodate 5.9 million more people. Without action the cost of congestion could rise to more than \$50 billion annually by 2031 with the demand for key urban rail and road corridors projected to exceed current capacity by 2031.

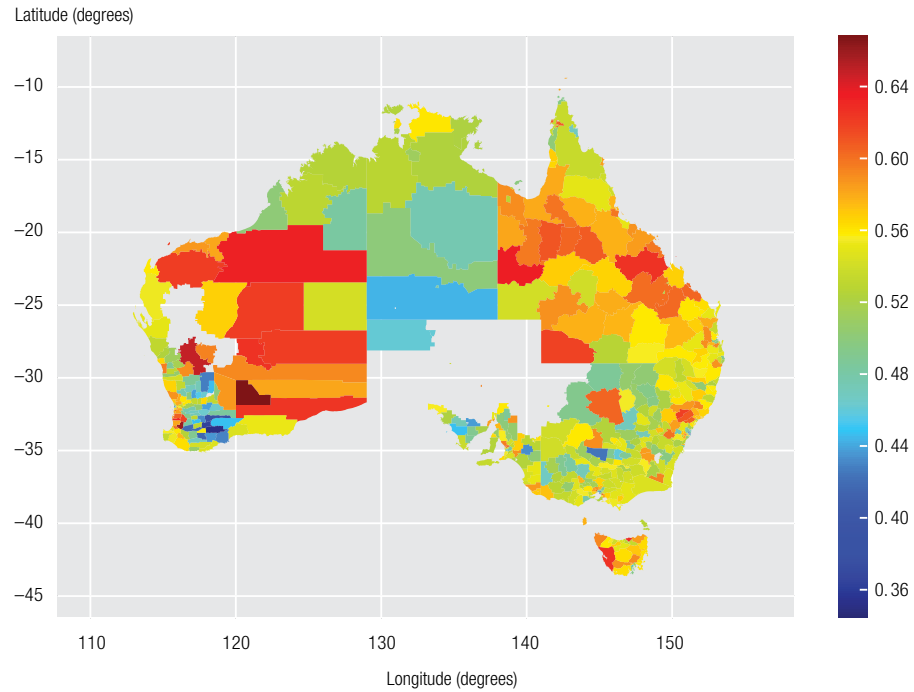
Public investment in infrastructure has been restrained by perceived budget constraints – and confusion between investment (the capital outlay) and recurrent expenditure (the accruing costs of interest, depreciation, maintenance and operating expense once the investment is in place). The process of prioritising and allocating the available budget for public investment has not had sufficient regard to maximising overall social benefit/cost, and the process at the political level has been less transparent than desirable. The potential for the private sector to make a bigger contribution to infrastructure provision has also been under-utilised, partly because of lack of clarity and stability in long-term planning by public authorities; there is also unused potential to add to the range of mechanisms for beneficiaries to contribute to funding.

A significant, but often overlooked, contributor to political inertia is the local government sector, an often neglected sphere of Australia's government. This is unfortunate as local governments frequently lack the size necessary to deliver adequate infrastructure and to avoid capture by small constituents with localised concerns. Virtual local governments may be an alternative to amalgamation that provides suitable economies of scale for infrastructure provision. The virtual local government model provides for smaller local governments, able to focus on local needs through intensive place and client management, but with the capacity to buy-in services economically from a regional shared service centre cooperative or a specialist private or not-for-profit provider, providing efficiency and economies of scale.

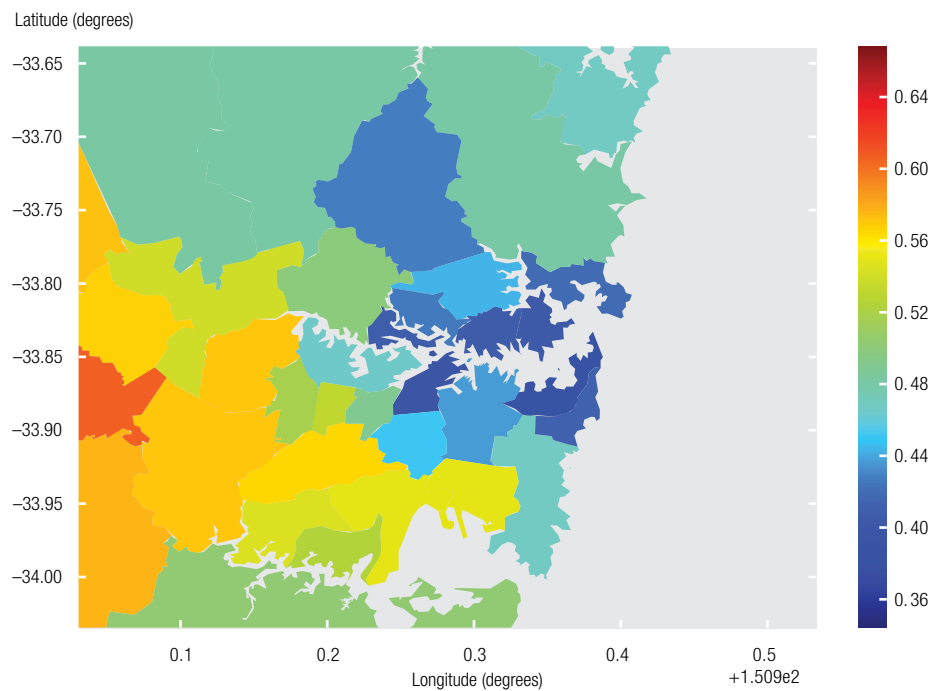
Australia's current metropolitan planning governance frameworks are lacking. The historic impetus for small local governments, and the failure of state governments to be able or willing to fill the void, has resulted in sub-optimal urban planning. Addressing this deficit is critical in a post resources boom where future economic growth will be generated from urban centres. Already Australia's major cities generate over 80 per cent of the nation's wealth and are struggling with rapidly rising congestion and poor planning. The trend of continuous automation means that those jobs least likely to be automated or computerised will tend to be located in the CBDs of

Australia's capital cities. Projected job losses, where dark red means that a higher portion of existing jobs are highly probable of being made redundant, are described in the charts below.

**FIGURE 3**  
**PROBABILITY OF JOB LOSS THROUGH COMPUTERISATION AND AUTOMATION IN LOCAL GOVERNMENT AREAS OF AUSTRALIA**



**FIGURE 4**  
**WEIGHTED PROBABILITY OF JOB LOSS THROUGH COMPUTERISATION AND AUTOMATION IN LOCAL GOVERNMENT AREAS OF SYDNEY**



For the prosperity of the entire country it is increasingly important that the nation's major cities work efficiently. For this reason, it is important that governments put in place mechanisms for the establishment of published long-term plans for infrastructure development.

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## Public and private infrastructure provision

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A major reason for the poor level of infrastructure provision has been a failure of the taxation arrangements to capture the value created by infrastructure provision. As a consequence, a significant portion of the benefits associated with infrastructure development are not being factored in to the cost benefit analysis for projects. It is also a failure of Australia's federal entanglements. The nation should adopt a valuation approach that explicitly incorporates the value created by an infrastructure project.

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## Road pricing

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Despite the importance of roads as a business input and amenity in an urban centre, they are among the least reformed of all infrastructure. The funding and delivery of institutional arrangements have been unchanged for decades. More effective institutional arrangements are needed to promote efficient investment in and usage of roads, and to put road transport on a similar footing with other infrastructure. A lack of road pricing results in inefficient investment, poor incentives for consumers and distorts usage choices.

It is important that road pricing should not be an additional impost on road users. As a consequence, revenue raised by road pricing should result in a corresponding reduction in indirect taxes and charges such as fuel excise and registration fees.

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## Urban water

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Australia has historically relied on very large multiyear storages, with the infrequent imposition of restrictions, to provide water to its urban centres. The extended dry period, from 1997 to 2009 known as the Millennial Drought, revealed the weakness of this approach. Since then, Australia's water supply systems have evolved from predominately multiyear gravity fed storages to include portfolios of different sources of varying reliability of supply; ranging from river diversions and large multiyear reservoirs to groundwater, potable recycling and desalination. There is an opportunity to assess the performance of existing regulatory structures and decision making processes to avoid some of the economic inefficiencies created during the Millennial Drought.



Urban water supply systems have typically been built to deliver a specified reliability of water supply, typically defined as the proportion of years when unrestricted supply is available, accepting the imposition of water restrictions during severe droughts. This definition of reliability is based on the probability of a system failure where failure is defined as the inability of the system to deliver a desired amount of water. The problems with this approach are that:

- Augmentations only occur when the system is stressed which means that the options available are likely to be less than optimal. Furthermore, since extreme risks are vested with state governments, inevitably political considerations will influence augmentation decisions and, in turn, operational activity;
- Without accounting for the extreme risks, the value of uncorrelated water supply sources is underappreciated, making the operation of the water supply system economically inefficient; and
- Applying homogenous water restrictions creates social costs and dulls pricing signals for water utilities.

Australia's approach to defining and implementing reliability essentially vests the extreme weather events as the responsibility of government. It also undervalues the reserve capacity of the storage system. Privatisation of the water sector will encourage greater levels of risk transfer to the government. This is an unfortunate consequence of the Water Industry Competition Act introduced in NSW in 2003. Essentially, the private sector will not invest in sufficient infrastructure to guarantee supply in extreme risks.

In quantifying the costs of poor augmentation decisions, the Productivity Commission examined the investment decisions in Melbourne and Perth to identify the costs for consumers due to excessively sized desalination plants being built. The costs were found to be:

*"Of the order of \$1.8 to \$2.4 billion for these two cities combined over a 10 year period and \$3.2 to \$4.2 billion over a 20 year period, depending on modelling assumptions."<sup>37</sup>*

Urban water suppliers typically deal with declining water supply by imposing homogenous water restrictions. Economists understand that restrictions cause economic inefficiency, by creating direct social costs and not providing important information to urban water utilities about how much the community is willing to pay for reliable services.

An alternative approach to setting reliability is to consider the physical infrastructure underpinning urban water reliability as a form of insurance premium paid by an urban centre to try and guarantee water supply. In this scenario, the objective of the urban water utility is to minimise the insurance cost associated with meeting water demand over a defined planning period. The cost of insurance is dependent on the state of water supply, the robustness of water systems, augmentation options available, and the probability and time discounted cost of meeting water demand. Such an approach can inform pricing decisions reflective of the level of water in storage.

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## Rural water sector

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In many regards, Australia has world leading policy expertise when it comes to agricultural water. Australia's rural water markets have been very effective at allocating water to its most efficient use, thereby creating a highly responsive and integrated river system along the Murray-Darling. However, these water markets could benefit from introducing storage and delivery capacity entitlements to complement water entitlement and allocation trading

Failing to account for sustainable diversion limits prior to allocating water entitlements can have catastrophic environmental consequences. Furthermore, subsidising infrastructure provision tends to promote low value agricultural activity that constantly requires public funding. The key policy lessons from the experience with the Murray-Darling Basin must be learnt and not replicated.

Lessons learnt from past experience need to be integrated into any expansion of irrigation in Northern Australia. Critically these include establishing sustainable diversion limits, supported by full cost recovery pricing, and having supply decisions driven by market opportunity rather than political opportunism from the outset of any new irrigation districts.

Failure to enact the recommendations of the National Water Initiative have reduced the productivity and resilience of the agricultural sector.

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## Energy infrastructure

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A reliable and affordable supply of energy is a fundamental component to a vibrant economy. In the 1990s, Australia embarked upon a journey of significant microeconomic reform. The wholesale electricity market was created through the establishment of the National Electricity Market (NEM) and significant gains, measured as a reduction in electricity prices, were achieved. In 2002, the Council of Australian Governments Energy Market Review estimated that over five years, reforms would increase GDP by approximately \$7 billion. While the reform agenda that created the NEM produced stable energy prices for over a decade, since 2007 electricity prices began to escalate. Average household electricity prices in the NEM, even at purchasing power parity (PPP) rates of exchange, are now among the highest in the world.

To usher in a new phase of stable, or even declining energy prices, will require a reform agenda that involves:

- State governments divesting their ownership of network service provision assets.
- If state governments do not privatise the provision of network services, then:
  - The ownership structure of network service providers should be considered when determining a suitable return on the regulated asset base;
  - The timeframe over which regulatory price or revenue controls are imposed should be reassessed;

- The use of benchmarking for prices, expenditures, asset values, service outcomes and rates of return to best domestic and comparable standards should be expanded; and
- The regulatory oversight arrangements for jurisdictions where state governments maintain ownership should be examined.

To address the growth in the peak, cost reflective pricing (such as peak demand capacity tariffs) should be broadly adopted. This would significantly improve economic efficiency and equity. However, there is likely to be a small number of vulnerable consumers who struggle to pay peak rates for electricity. Policy makers will need to consider additional policy measures such as greater concessions for vulnerable consumers or exclusion from the program in the case of households using vital medical equipment. These exemptions and financial support need to be well targeted, a feature absent from many current forms of energy policy compensation.

Customer hardship should not be used as a reason to avoid completing the energy market review process. Smart meters and cost-reflective pricing are necessary reforms to increase economic productivity within the energy sector and the broader economy. However, it is clear that there needs to be a comprehensive national review of concessions with a view to better aligning concessions and transfer payments with customers in need. For example payments based on household income and consumption rather than one or the other.



six

# fiscal resilience

Australia has experienced over 25 years  
of unbroken economic expansion that has  
benefited all segments of society.



Not only has the tax and transfer system reduced disparities in society, the absence of a serious recession has improved the conditions for the poorest in society significantly. The least skilled and most marginal members of society often experience the most severe consequences of economic downturns.

Monetary and fiscal policies need to be complementary, and to strike the right balance between the need to support the economy, on the one hand, and the need to strengthen the Federal Budget, on the other.

Monetary policy needs to continue to maintain inflationary expectations at a reasonable level. Fiscal policy needs to return the Federal Budget to surplus in a reasonable timeframe, in order to restore a buffer against future shocks, such as the nation was fortunate to have when the GFC unfolded. Future surpluses will also contribute to the finance of investments that will underpin continuing growth. However, the speed of that adjustment needs to be set so as to maintain positive growth in the short to medium term.

To maintain continuous economic growth requires:

- Continuing stable macroeconomic policy settings;
- A return to Federal Budget balance as soon as reasonably possible; and
- Maintaining an equitable distribution of incomes on an after-tax basis that rewards effort while ensuring all sections of society benefit from economic growth.

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## Discussion

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A key enabler of Australia's economic growth has been the robust macroeconomic settings that manage the economy. These policy frameworks include an independent central bank, a free floating exchange rate, flexible labour markets and a bipartisan commitment to achieving a balanced Federal Budget over the business cycle. These policy settings were a fundamental part of the Australian economy's successful ability to digest the most sustained and pronounced mining boom in its history, and its subsequent decline, through appropriate economic incentives and effective management of fiscal and monetary policy. To maintain Australia's economic growth these stable policy settings will need to continue.

It is worth comparing the steady, low inflation outcomes associated with this mining boom with what happened following the terms of trade spike in the 1950s. Due to the influence of the Korean War there was a surge in demand for many commodities and Australia's exports climbed dramatically. However, the centrally planned exchange rate was not allowed to appreciate, resulting in a significant bout of inflation in Australia and abrupt fiscal tightening.<sup>38</sup>

In contrast, Australia is still experiencing sustained, if relatively modest, economic growth following the decline of the terms of trade. However, despite more than a quarter century of prosperity, the Federal Government is now in the eighth year of continuous and substantial fiscal deficits. Budget

projections expect that these federal deficits will continue for another four years. More than a decade of Federal Budget deficits will undermine the resilience of fiscal policy, impeding its ability to respond to future economic shocks, while also representing a major intergenerational equity transfer. This is unfair to future generations who will have to pay interest on debt they have not accrued.

In every previous Australian Government deficit episode since the Federal Budget was brought back into balance after the exceptional spending of World War II, deficits have arisen from economic contractions. This is not the case now. Based on the 2016–17 Federal Budget estimates, the deficits in the 10 years to 2018–19 as cumulative shares of GDP will be substantially bigger than the run of deficits arising from either the recession of 1982–83 or the recession of 1990–91 – and not far short of the total deficits accumulated in both recessions, again compared to GDP.

While there may be differing views as to what the size of government should be, particularly as the population ages, it is important that the Federal Budget be returned to surplus with measures that have broad community consensus. This helps ensure that any policy measure undertaken by one political party will not be reversed with a change of government.

The Federal Budget should be brought back to balance as fast possible, bearing in mind the requirement to also sustain economic growth. The sooner the deficit is eliminated, the less the accumulation of debt, the smaller the interest burden on future budgets, and the greater the fiscal resilience of the country.

The average share of tax to GDP in the years between the introduction of the GST in 2000–01 and the GFC in 2008–09 was close to 23.9 per cent. This is consistent with the ceilings adopted by both Coalition and Labor governments. After adjustment for the GST, a similar tax ceiling was used in the 2002 and 2007 Intergenerational Reports under Federal Treasurer Peter Costello. A tax share of 23.6 per cent of GDP was used in the 2010 Intergenerational Report under Federal Treasurer Wayne Swan, and 23.9 per cent of GDP was the share used in the 2015 Intergenerational Report under Federal Treasurer Joe Hockey. A 23.9 per cent of GDP share is identified as the tax cap in Federal Treasurer Scott Morrison's December 2015 Mid-Year Economic and Fiscal Outlook (MYEFO) and continues to be factored into the projections in the 2016–17 Federal Budget in May 2016.

This tax cap is markedly above the 22.1 per cent share expected in 2015–16 but close to the average tax share of the first decade of the century. Non-tax revenues typically run at 1.6 per cent of GDP, giving an average expected revenue ceiling of 25.5 per cent of GDP.

In March 2016, CEDA's report *Deficit to balance: budget repair options* recommended that the Federal Budget should be brought back to balance by 2018–19 using the tax ceiling of 23.9 per cent with a total revenue-to-GDP ratio of 25.5 per cent as a principle. To balance the Federal Budget by 2018–19 would imply that expenditure would have to be at around the same level, that is 25.5 per cent as a share of GDP. Based on MYEFO 2015–16 figures, this translated to about one per cent of GDP and implied:

- \$2 billion in spending cuts; and
- \$15 billion in revenue enhancements.

The CEDA report proposed a suite of options that would achieve balance using this method. The problem remains similar in the 2016–17 Federal Budget update – the budgetary problem in 2018–19 remains around one per cent of GDP, with the tax-to-GDP ratio well below the target.

While there is a sustained Federal Government budget deficit, taxing and spending constraints also apply to state and local government. However, while there have been year-to-year variations, state and local government income and spending, and the total of their capital and consumption spending, have been fairly stable as shares of GDP over recent decades and are now close to the long run averages and Parliamentary Budget Office projections suggest that these two spheres of government are close to balance as a whole.

Finally, in restoring fiscal resilience it is important to balance incentives to encourage workforce participation while also maintaining, as far as is reasonable, an equitable distribution of incomes on an after-tax basis. Government spending, particularly on transfers to individuals, can have important incentive and income effects that need to be accounted for in returning the Budget to surplus. CEDA's Balanced Budget Commission did not examine the economic consequences of the packages proposed, but put them forward to stimulate discussion. However, the incentive and income effects of government expenditure can interact in complicated ways. For instance, a higher tax on labour income would have an incentive effect of discouraging people from working, while the income effect may encourage more work, to ensure that the individual or family has enough after tax income to meet their expenditure needs. Australia requires after-tax incentives to remain sufficiently robust so as to encourage high levels of workforce participation while also maintaining an equitable distribution of after-tax income.

# seven tax reform

Australia requires a tax system that raises sufficient revenue to fund public goods and services while not harming economic growth and recognising the global competition for capital and highly skilled labour. Australia currently taxes more heavily than is optimal the activities that contribute to future growth, notably savings.



**Australian Government**  
**Australian Taxation Office**

Ideally we should be funding current government expenditures out of taxes that directly or indirectly fall on current consumption rather than on saving, investment and innovation activities – that is, on the activities that contribute to future growth in productivity and improvement in living standards for the community as a whole.

The shortcomings in the Australian tax system have recently been analysed in the Australia's Future Tax System Review (AFTSR), known as the Henry Review, and the Australian Government's Re:think tax discussion paper. These reviews have examined the ways in which the current tax system distorts incentives and contributes to economic inefficiency.

Based on these findings, the tax system should be reformed in order to:

- Reduce the company tax rate over a period to an internationally competitive level; and
- Broaden the tax base by culling middle class and business welfare tax breaks (many of which are highlighted in the annual Tax Expenditures statements) and simultaneously reduce marginal tax rates.
- Broaden the base of the GST, and use the proceeds to fund the elimination of inefficient and/or regressive state taxes and more closely align the funding of current government expenditure with taxes that fall directly or indirectly on current consumption.

These reforms require careful examination of the impact of both the tax changes themselves and the distribution across the community of the net gains in national income over time from the entire package of reforms. This should include taking into account any adjustment assistance or compensatory transfer payments that may be required for some groups to maintain equity. Any package must aim to be revenue neutral.

## Discussion

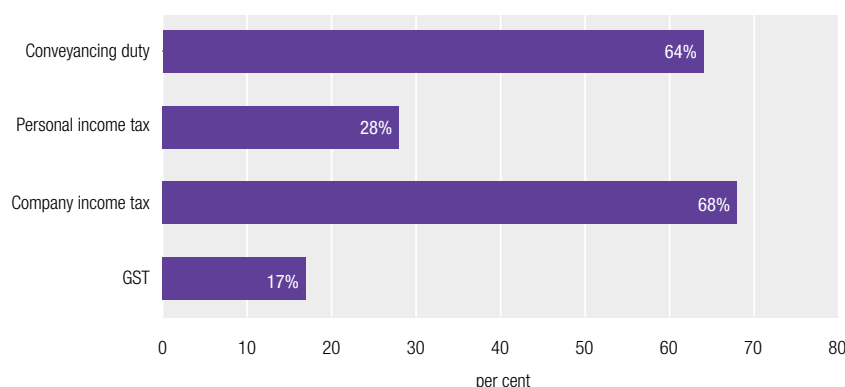
All taxes influence behaviour and distort decision making by businesses and/or households. The classic example is the Window Tax, first imposed in England in 1696. This tax was imposed based on the number of windows in a home, as the name suggests, and resulted in tenants boarding up their windows and new homes being built with far fewer windows than would have been otherwise.<sup>39</sup> Other taxes influence behaviour less obviously but with greater consequences for the economy. Measuring how a tax distorts behaviour is the means of estimating the economic costs associated with the tax and calculating how much it ultimately reduces household living standards. A common way of summarising this cost is the excess burden of a tax which refers to the loss in living standards as a result of the tax above and beyond the revenue raised.

To allow comparisons between taxes, measures of the excess burden per dollar of revenue raised are used to rate the efficiency of each tax. The marginal excess burden (MEB) of taxes refers to the economic cost per dollar of additional revenue raised from a small increase in the tax rate.



Research undertaken for ACOLA estimated the MEB by modelling a five per cent increase in the major taxes in the Australian tax system. This modelling assumed that governments spend the additional revenue on lump sum payments to households. This way, households are assumed to receive a full dollar of value from the additional government spending. The loss in living standards from the higher tax rate is compared to the net revenue raised, to estimate the economic cost per additional dollar of revenue and is described in the chart below.

**FIGURE 5**  
**MARGINAL EXCESS BURDEN OF KEY TAXES**



Source: Independent economics, 2015, Australia's Comparative Advantage: economic scenarios, page 5.

The Henry Review also found that land taxes had a MEB equivalent to the GST.<sup>40</sup> The reason is that, in general, a tax will have a relatively low MEB if it is applied at a low rate to an immobile base. Such a tax is likely to have only a modest impact on economic choices. Conversely, a tax will have a relatively high MEB if it is applied at a high rate to a mobile base. It is likely to heavily distort economic choices relative to a situation in which the tax was not applied. Company tax is a highly mobile source of revenue for governments.

As a small, open economy, Australia faces a mobile world supply of capital funding. Company tax, which is a tax on the returns to capital, discourages foreign investment in Australia because it increases the hurdle to the pre-tax rate of return needed from an investment before it can deliver the post-tax return required. Company income tax is an inefficient tax because it applies a medium tax rate of 30 per cent to a highly mobile base.

The mobility of the company tax base is exacerbated by so-called profit shifting. Foreign multi-national companies who invest in Australia may be able to reduce their liability for Australian company tax by shifting some of their Australian-sourced profits to other jurisdictions that have lower rates of company tax.

Conveyancing duty applies to transactions in both residential property and commercial property. For owner-occupiers of residential property, it applies when moving from one residence to another. It acts as a disincentive to moving, so the current stock of residential land and housing is used less efficiently. Because of residential conveyancing duty, families are less likely to move to a different house as their needs change. The effective tax rate

of conveyance duty is very high because a large amount of conveyancing duty is collected from the relatively narrow base of moving costs. While the amount of residential conveyancing duty is calculated using the value of the residential land and structure, this is not the economic base for the tax because liability for conveyancing duty is only triggered by moving. So the economic base for the tax is moving costs and is relatively mobile as people can alter their behaviour to minimise the associated liability for conveyancing duty by choosing not to move.

The GST is one of a suite of taxes on labour. By raising consumer prices, it reduces the purchasing power of labour income. Payroll tax is likely to have a similar effect, as firms pass it on in higher prices. Personal income tax also taxes labour, but in the more direct way of reducing after-tax wages. In the long run, all three taxes have a similar effect of establishing a tax wedge between the real producer wage paid by firms and the real after-tax consumer wage received from employment.

When all of these taxes are taken into account, labour income is seen to be taxed at a medium-high rate. However, the labour income tax base is only moderately mobile. Consequently, GST has a relatively low MEB of 17 cents per dollar of revenue. This could be reduced further by broadening the GST tax base to include basic foods. This base broadening would reduce the extent to which the GST distorts consumer spending patterns in favour of goods and services that are currently GST free, and would be accompanied by measures to neutralise the potential impact on equity.

While personal income tax and GST might be expected to have similar MEBs, the progressive nature of the personal income tax system results in a MEB of 28 cents per additional dollar of revenue, compared to 17 cents for GST. However, the higher MEB for personal income tax largely reflects its greater progressivity, which is designed to promote equity.

The first goal of a tax system, generating sufficient revenue, faces many pressures including an ageing population, rising health costs and rising community expectations. These present demands for increased tax revenues.

The second goal, of not being economically distortive, faces the pressures of relentless economic and technological change. Newly emerging economies transform the competitive landscape and new technologies increase the international mobility of skills, capital and labour. Australia needs to respond with a high rate of physical and human capital investment and innovation, and this creates pressures for lower and more efficient taxes.

In many countries (since all face much the same pressures) tax systems are being recast to more clearly distinguish their impact on the present and the future. The task of raising revenues for current government purposes is being concentrated on the personal incomes and consumption of current generations. Taxes that would more directly damage saving and investment, and thereby have their main impact on the future, are being reduced.

The relatively 'big government' welfare states of western and northern Europe (including the United Kingdom) are employing dual tax systems with low company tax rates and relatively high consumption tax rates, and with higher taxes on labour income than on savings.



Other countries that are lagging in this trend are nonetheless keeping their effective capital tax rates low. For example, company taxes in the United States are low in effective terms (that is, there are many base concessions despite high headline rates) while in the most East Asian economies statutory company tax rates are low. The relative weakness of consumption or personal income taxes in these other countries results either in large budget deficits or limited social spending (or both).

The issue here is that whatever our society decides to spend on public sector activity each year should be overwhelmingly funded by transfers from the private consumption of the current generation. This does not mean necessarily only through consumption taxes, because personal income taxes also largely transfer consumption spending power and do so on a more progressive basis (that is, linked to capacity to pay) than consumption taxes. In essence, personal income taxes and consumption taxes need to be adequate to meet most of the required burden of taxation.

Past tax reform in Australia has given us a reasonably broad tax base (GST, capital gains, fringe benefits and fewer sectoral exemptions) and lower tax rates (rate reductions and dividend imputation). This reform has generally supported allocative efficiency with greater tax neutrality, although it may have added to administrative and compliance costs.

One key element did not change compared with most other countries. Taxes on personal income in most countries are split between social security taxes and personal income taxes. The social security taxes apply only to labour income or its small business equivalent, not to the returns to saving such as interest or dividends. Australia's comprehensive personal income tax therefore has a greater intrinsic bias against saving and investment than personal tax regimes in most other countries.

There are two key elements to tax reform:

1. Increase the tax systems competitiveness; and
2. Securing adequate finances for government expenditure.

A lower company tax rate is probably the most powerful option available for increasing the efficiency and competitiveness of the Australian tax system. Theoretical and empirical evidence support the view that a small open economy such as Australia would be best served by lower statutory and effective company tax rates.<sup>41</sup> It is notable that virtually all comparable countries (small, open, developed) now have company tax rates well below 30 per cent, whether welfare states in northern Europe, developed city-states, or emerging economies in our own East Asian region.

The case for a lower company tax rate is largely based on providing a strongly supportive setting for business investment and innovation, vital to Australia's capacity to sustain high employment growth, a more diverse economic base, and to compete and thrive as a trading country. A lower company tax rate is likely to attract more direct foreign investment from overseas, and particularly favours both locally and foreign owned companies in start-up and growth phases as they retain and reinvest earnings.

Reducing the corporate tax rate is also generally assessed to offer two other important benefits. First, it reduces incentives for tax minimisation through profit shifting, which can have adverse real effects on the economy. Second, it reduces the tax bias in favour of higher corporate borrowing.

A second priority for delivering a more efficient and competitive tax system is to remove the several remaining inefficient taxes levied (mainly) by state governments. These are inefficient mainly because they are single level source taxes which raise business costs and distort economic choices. Part of their efficiency cost arises from distorting specific design features such as thresholds and exemptions. Particularly as currently designed, state stamp duties, conveyance duties, taxes on insurance and, to a lesser degree, payroll taxes have high efficiency costs.<sup>42</sup>

The state and local governments share a potentially efficient tax base in land rent. However, the full efficiency benefits of this base are realised only with an efficient annual tax imposed on a comprehensive, unimproved land value base. Instead, land taxes in Australia often apply on the basis of a limited range of land uses, on land sales, in some cases on improvements and often on a rising scale linked to total land holdings.

A universal payroll tax potentially would be efficient. However, most countries levy such a tax as part of the social security tax system, for which the Australian equivalent is compulsory superannuation. In this context, the current high threshold state payroll tax is probably quite distorting in a number of labour markets. While it might be possible to reduce these costs by imposing a universal tax, the better solution would be to replace the tax entirely with a broadly based consumption tax.

Removing the inefficient taxes would likely result in reduced prices. This provides the opportunity for replacement by consumption taxes with a low net price impact, just as the introduction of the GST in 2000 in large part replaced or reduced other inefficient taxes. To achieve these outcomes, the Henry Review suggested that the tax system should be reformed in order to:

- Concentrate revenue collection on four efficient tax bases – personal income tax, company tax, taxes on immobile rents (land and natural resources) and private consumption;
- Abolish other taxes (unless they efficiently meet other specific policy goals);
- Shift relative burdens toward less mobile bases (including reducing the company tax rate to 25 per cent broadly matching movement in overseas company tax rates since 2000), with greater burdens instead on consumption and rents;
- Reform and reduce the taxes on savings, both for retirement and for general savings, making each more neutral and fit-for-purpose; and
- Improve efficiency and equity in other taxes, transfers and charges (in areas like roads, alcohol, means tests and participation incentives).

CEDA's recommendations in this chapter are designed to move in the direction recommended by the Henry Review.

# eight federalism

Australia's Federation has served it well, with evidence suggesting it has significantly improved the efficiency of government and led directly to improved standards of living for Australian citizens.



To improve the operation of the Federation, it is important that its strengths are enhanced and the imbalances that create overlap, duplication and needless expense are reduced.

Australia should improve the Federation to reduce duplication and overlap and to create dynamic efficiency by either:

- Reassigning roles and responsibilities along with revenue to reduce the vertical fiscal imbalance. This approach strengthens the independent fiscal strength of the states; or
- Adopt explicit models for sharing responsibilities that effectively eliminate the vertical fiscal imbalance without formally changing revenue responsibilities. This approach formalises federal entanglements and explicitly creates a marketplace to encourage innovation.

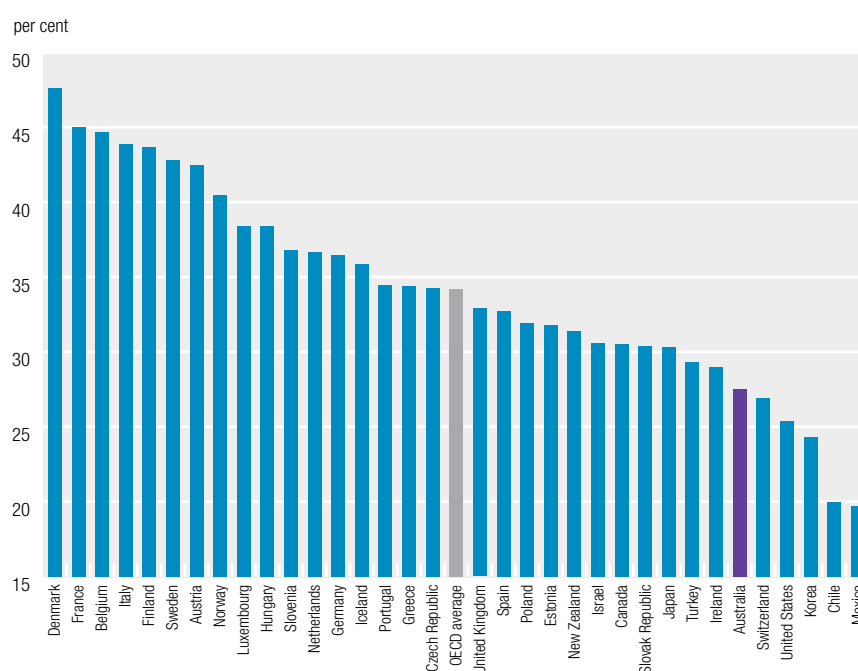
## Discussion

A defining characteristic of a federation is that it involves multiple governments with distinct jurisdictional powers sharing the same geographic space. A major issue is how a federation assigns responsibilities for providing services between central and state governments and how the revenue raising capacity is attributed. The funding arrangements include the choice and assignment of taxing instruments, the resolution of vertical fiscal imbalances between the central and state governments, and addressing differences in the fiscal capacities of different state governments through horizontal fiscal equalisation.

CEDA's major research report for 2013, *A Federation for the 21st century*, highlighted the ways in which Australia's Federation has benefited the nation. These include the six Cs of checks on power, choice in voting options, customisation of policies, cooperation, competition and creativity. These benefits are such that, despite having an extra layer of government, federations have proportionately fewer public servants and lower public spending than unitary states. For OECD countries over the last 50 years federations have achieved a 15 per cent gain in GDP relative to unitary states, after controlling for other factors.<sup>43</sup> As a consequence, they found that Australia's Federation had increased the nation's prosperity by \$4507 per head in 2006 dollars. CEDA's report also included practice examples of these benefits with former Victorian Premier the Hon. John Brumby describing how these Cs directly influenced policy development and execution.

In Australia, public sector employment has declined from 25 to 16 per cent of total workforce employment and relatively low levels of public servants are a feature of federations. Federations also encourage more efficient services, meaning that the cost of government, measured as a share of GDP, is lower in Australia than in almost all comparable countries despite having comparable services. This is described in the chart on page 60.

**FIGURE 6**  
TOTAL TAX REVENUE AS A PERCENTAGE OF GDP, OECD COUNTRIES 2013



Source: OECD, Revenue statistics 2015

However, Australia's Federation is bedevilled by a range of problems. In particular, Australia's Federal Government receives a relatively high share of national tax revenue which results in two key deviations from best practice federations by:

- Duplication by the Commonwealth of state government services (for instance in education and health); and
- Over-prescriptive funding arrangements for state government services that prohibit flexibility and innovation through Special Purpose Payments (SPPs) and National Partnership Payments (NPPs).

Based on cross-country regression analysis that estimated the likely GDP gain for Australia from reform based on a shifting of some revenue raising from the Commonwealth to the states, it was estimated there would be a GDP gain of seven per cent from a shift to the OECD average for federations and a gain of 10 per cent for a larger shift to the average level of the three OECD best-practice federations of Canada, Germany and Switzerland.<sup>44</sup>

## Addressing the vertical fiscal imbalance

The formation of Australia's Federation represented a formal collaboration of the self-governing colonies (which became states) of Australia. In federating, they determined a rather limited number of functions would be the preserve of the Commonwealth.

The states have extensive powers, but the exercise of many of them does not necessarily carry great fiscal cost. Looking at the aggregate spending of the states/territories on the traditional functional basis, it is notable that just a few dominate the budgets (see Table 3).

**TABLE 3**  
**STATE AND TERRITORY GENERAL GOVERNMENT SPENDING 2012–13**

Function	Spending (\$b)	Percentage of total state spending	Commonwealth spending (\$b)
Health	57.7	27.1	61.1
Education	52.7	24.8	29.3
Social security/welfare	15.3	7.2	131.7
Public order and safety	21.4	10.0	3.9
Transport	23.2	10.9	5.6
All other	42.5	20.0	na
TOTAL spending	212.8	100.0	na
Plus net new capital	11.0	na	na
Own source revenue	118.3	55.6	na

Source: ABS Government Finance Statistics, Catalogue 5512.0, May 2014

Note: In this table, Commonwealth spending includes specific purpose transfers to the states that, when spent by them on the relevant function, are included in their spending.

This table shows that three functions, health, education and welfare (HEW), are together especially important in state budgets. A small part of that spending relates to policy and regulation of these sectors, but the major part is spent on service delivery essentially for the benefit of the household sector, allocated either as universal entitlements or as needs based services. In these three areas the Commonwealth also has a major, often larger, funding and/or service delivery role. In these areas also, private or other non-government service providers are very well established and often receive full or partial funding from the Commonwealth and states either directly or indirectly.

To some degree, the Commonwealth and state funded functions are substitutable. The result is dual, or at least parallel, service provision in the health, education and welfare sectors, with one set of services predominantly state supplied or funded and other sets largely (and often separately) Commonwealth funded.

There are two separate but not exclusive approaches to resolving this inefficiency in the Australian Federation, particularly to encourage innovation and incentivise creative policy tensions between jurisdictions. They both require more formal attribution about roles and responsibilities along with revenue raising co-commitments.

The first approach involves creating clearly defined relationships between revenue and responsibilities with the intent to strengthen the relative fiscal independence of the states. Given the administrative advantages of national tax collection, revenue sharing arrangements have been suggested, as have systems that would give the states the right (with personal income tax) to separately set their own tax rates. Revenue base sharing is also an issue in the interface between state and local government, as both share real property-related tax bases. In 2000, the entire net revenues of the new GST were assigned to the states, in a major set of changes that combined tax and federation reform.

To dramatically reduce the vertical fiscal imbalance in Australia's Federation Terry Moran AC makes a series of recommendations in CEDA's report *A Federation for the 21st Century* in his chapter *Governments, subsidiarity and saving the Federation*.<sup>45</sup> These reform suggestions are based on opportunities created by recent successes in the Federation, notably the successive waves of the National Reform Agenda which established broad, measurable, strategic outcomes for state governments and embedded the idea of devolution into the delivery of services in Australia. The specific reforms suggested represent one approach to addressing the vertical fiscal imbalance by:

- Recognising the primacy of state responsibility for schooling and the Commonwealth acknowledge this by providing a fixed portion of income tax to fund the service;
- The states could develop a land tax or property charge, with a broader base of application but at a much lower rate than currently applies. The majority of the funds generated from this land tax could then be hypothecated to improve public transport;
- State governments could extend road use charging to existing road networks within cities which, in addition to the fuel taxes collected by the Commonwealth from specific jurisdictions, would be hypothecated to building and maintaining roads; and
- The Commonwealth public service focusing on providing strategic and technical advice rather than on service delivery.

An alternative approach to reducing the consequences of the vertical fiscal imbalance in Australia is that underpinning a range of recent reforms. These reforms, at various stages of implementation and acceptance, to health, education, and the National Disability Insurance Scheme (NDIS) illustrate how establishing a 'voucher' system can radically change government services and introduce dynamic efficiency. This approach can be expanded to a range of other government services. In the process it can reshape the Federation and introduce dynamic efficiency into a range of areas that currently lack appropriate incentives.

Making government service provision more citizen-centric, with the Commonwealth contribution to the price paid to a service provider nationally consistent and equitable, and increasing provider accountability and transparency, would create a more competitive environment. The states would retain responsibility for managing service delivery and the ability to make choices about the level of service provision they fund.

Adopting the activity based funding model in education, as has been proposed, healthcare, as had been agreed, and in key areas of welfare, as is being implemented in the NDIS, would substantially eliminate the vertical fiscal imbalance. It would also create a basis for providing equitable and efficient service delivery throughout the nation.

This second approach to reducing the disincentives of the vertical fiscal imbalance seeks to create explicit responsibility and funding sharing arrangements that enhance dynamic efficiency in the Federation. These reform options are premised on the development of pricing, or price related mechanisms. Examples include privatisation and market development in utilities, casemix funding for hospitals, the development of a market for disability services, needs based loadings (prices) for school funding, road tolling, and in part contested markets for higher education.

The Competition Policy Review noted:

*"Many government services have not previously been exposed to competition because of concerns about the impact on vulnerable consumers, especially in regard to access and outcomes that may accentuate inequality. Well-functioning markets, governed by policies and laws that are fit for purpose, can help to deliver access and equity."*<sup>46</sup>

Creating a market in government services involves a range of critical decisions, specifically it is important to:

- Define the service explicitly, the basis for comparing outcomes and a key to introducing dynamic efficiency;
- Establish the public benefit of the service and, in the process, determine the public versus private contribution and the state and Federal contributions; and
- Determine appropriate regulatory settings and frameworks and at what level of government they should be established.



CEDA has previously described how adopting this approach in the VET sector transformed it from a government supply driven model to a customer centric one, with public and private providers each offering services in a national training market. The VET sector has private and public contributions, requiring the public benefit of training to be explicitly quantified for different courses, as well as state and Commonwealth funding for different programs depending on the scope of public benefit.

However, the VET sector experience also highlights the importance of establishing robust regulations and maintaining appropriate gatekeepers. It also shows the importance of clear funding commitments from all relevant spheres of government as the VET sector experienced a decline in state funding following the national partnership agreements.<sup>47</sup>

In the case of healthcare, the voucher system is referred to as activity based funding or casemix funding and involves the government paying hospitals based on the number and type of patients they saw. Introducing an efficient price for activities replaced ad hoc negotiations between the state and individual hospitals with an equitable treatment for all patients irrespective of their individual location or service provider.

Setting an efficient price for a service also provides invaluable information for managers and clinicians, allowing them to identify inefficient practices and target unnecessary costs. The merit of casemix can be seen when comparing the cost of treatment in Victoria, which has operated the system since 1993 and has costs that range from 90 per cent less than the next most efficient state to approximately 70 per cent of the least efficient state.<sup>48</sup> It was estimated that extending an activity based funding model to all hospitals would have generated \$928 million a year in healthcare savings.<sup>49</sup>

A 2011 intergovernmental agreement would have captured those savings and embedded improved dynamic efficiency into the healthcare system. After a transition period, this approach was anticipated to generate \$928 million a year in healthcare savings.

The advantage of creating an efficient price for a government service is that it ensures government services are more clearly focused on what consumers require. To be successfully implemented it requires clear separation of the government roles of policy (including funding), regulation and service delivery. It has the potential to introduce significant innovation in the delivery of the services, while encouraging a greater diversity of providers.

The separate funding by the states of their share of HEW markets, at an aggregate level, underlies the shortfall in their own revenues relative to their own spending (this is known as vertical fiscal imbalance). The states rely, in aggregate, on revenue transfers from the Commonwealth because they are unable to meet the service delivery costs of the HEW functions.<sup>50</sup> If instead state service providers had the same or similar funding bases as non-government service providers with the Commonwealth meeting the major part of the cost directly or by subsidies or assistance to clients, the current level (indeed perhaps all) vertical fiscal imbalance would disappear.

Establishing vouchers for a range of government services can also virtually eliminate the vertical fiscal imbalance in the Federation, something that is not possible with any realistic tax reform package. The states rely, in aggregate, on revenue transfers from the Commonwealth because they are unable to meet the service delivery costs of health, education and welfare functions. Rather than using an indirect approach, such as the Commonwealth Grants Commission, establishing an explicit basis for variability in service delivery in education, healthcare or other areas, creates a more equitable basis for Federal Government intervention.

nine

# workplace relations

Australia has a highly flexible economy. Each year over half a million businesses enter or exit the market, and these are not just small businesses. Over the past decade the ASX 50 and ASX 200 have both had turnover of approximately 50 per cent.

Fair Work Au



Likewise, the labour market experiences a high degree of flexibility with over a million workers changing jobs each year. Of these, approximately 600,000 change industry and around 450,000 change their occupation.<sup>51</sup> The continuing forces of globalisation and digital disruption are likely to exacerbate the importance of this flexibility to ensure that the largest number of Australians are employed as possible. In order to thrive, economies and the businesses and people that constitute them, must be free to respond and adapt to new conditions.

Australia's workplace relations facilitate economic flexibility and, broadly, does so well. However, there are rigidities in the industrial relations system which make Australia's unemployment rate one per cent higher than it needs to be.

This suggests that Australia could reduce its sustainable unemployment rate by:

- Easing (but not abolishing) unfair dismissal laws; and
- Making the role of the Fair Work Commission less prescriptive.

These changes should seek to make the Australian labour market more agile and better positioned to create the high value jobs of the future. They should not seek to position Australia as a low labour cost destination.

## Discussion

Australia's economy is well positioned to adapt to changing international circumstances and respond flexibly to changing domestic preferences. Businesses are forced to innovate and seek to improve their productivity and those that are unable to compete exit the market.

Australia's \$1.6 trillion economy comprises of over two million businesses and 11.5 million employees. Like most developed economies, the majority of our output and employment is produced by the services sector (79.9 and 86.7 per cent respectively).<sup>52</sup> This is facilitated by the countries highly educated workers. More than 50 per cent of the workforce has a qualification and more than two fifths of workers in the business services and social services industries have a Bachelor's degree or above.<sup>53</sup>

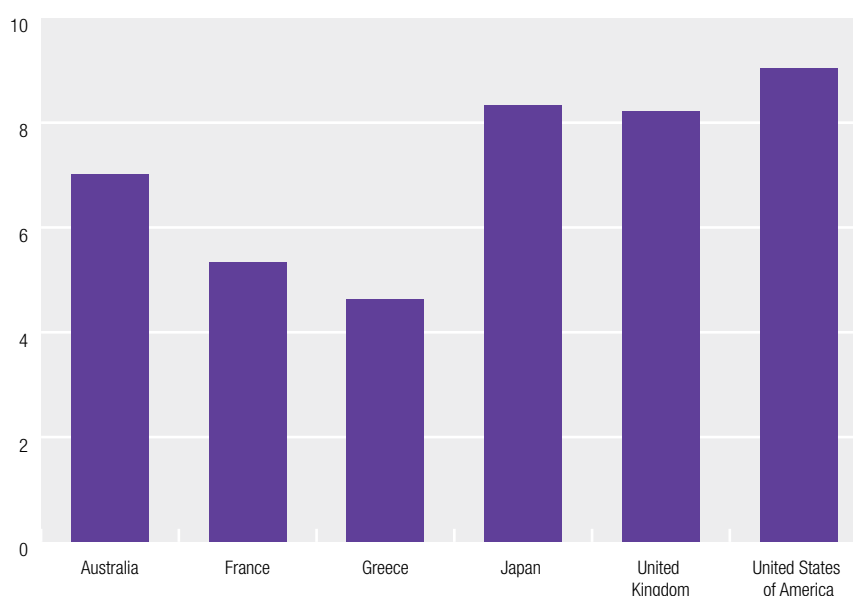
An emerging challenge for Australia is that, in the past, productivity changes that have disrupted businesses and employment have been centred in Australia. This may not be the case in the future. As the digital economy continues to disrupt existing businesses, the high value jobs created can be located, potentially, anywhere. Consider the automation involved in mining. If a mine is operated remotely it will require a minimal maintenance staff, but the higher value jobs overseeing the operations and optimising activity could be located anywhere. This means it is important to have a labour market that allows the innovative businesses of the future to emerge.

As the Productivity Commission has described, Australia has a backward looking industrial relations framework. It also tends to be more adversarial in Australia than in many other countries. The Fraser Institute's Economic Freedom of the World database compares labour markets across the globe. It examines six aspects of the labour market:

- Minimum wage;
- Hiring and firing regulation;
- Centralised collective wage bargaining;
- Mandated cost of hiring;
- Mandated cost of work dismissal; and
- Conscription.

Based on these, Australia's labour market flexibility is described in the chart below.

**FIGURE 7**  
**INDEX OF LABOUR MARKET REGULATION, 2013**



Source: Fraser Institute, Economic freedom report, 2015

The index increased from 5.43 in 1995 to 8.36 in 2005, before declining to 7.27 in 2011 following the implementation of the *Fair Work Act*. This value leaves Australia with a less regulated labour market than either France (5.89) or Greece (4.29). But it leaves us with a more regulated labour market than Japan (8.33), the United Kingdom (8.27) and the United States (9.01).

An IMF study found that, after controlling for other factors, a one-point increase in labour market flexibility measured by the Fraser Institute's index, resulted in the unemployment rate decreasing by 0.8 per cent in the medium term.<sup>54</sup> This effect was even more pronounced for youth unemployment figures where the study found that a one-point improvement in flexibility resulted in a decline of over 1.4 per cent in youth unemployment.

From a global perspective, two areas where Australia's labour markets were particularly inflexible were in regard to hiring and firing regulations, and the nation's collective bargaining arrangements. The IMF study suggests that Australia could reduce its sustainable unemployment rate by approximately one per cent by:

- Easing (but not abolishing) unfair dismissal laws; and
- Making the role of the Fair Work Commission less prescriptive.

There needs to be a focus on delivering a flexible, adaptive system that is responsive to the needs of individual sectors and workplaces. For example, providing for more flexible negotiation of penalty rates in services such as retail, tourism and hospitality that operate on all days of the week, often day and night (and in some cases 24/7), year round.

*"The Business Council's strong view is that the workplace relations system of today does not position us well for the future. Our current workplace relations system does not create an environment where innovation is encouraged to thrive. Instead, it discourages innovation and risk taking."<sup>55</sup>*

These recommendations are not intended to result in Australia being a low wage economy. South East Asia has some of the lowest wage cost economies in the world, with whom Australia could never compete on price. Instead, these changes should encourage the most productive skills matching possible.

ten

# climate change

Climate change poses a number of substantive physical risks for the world. Possible adverse consequences include threats to unique and threatened ecosystems and cultures, extreme weather events such as heatwaves and coastal flooding, and large-scale singular events such as large and irreversible sea level rises in response to increases in global mean temperature.



The consequences of climate change are likely to be unevenly distributed and were explored in CEDA's policy perspective *The economics of climate change*. The appropriate response to climate change involves adaptation and mitigation.

To address and assist in minimising climate change risks:

- The existing overview of climate risks facing Australia should be expanded to include a National Risk Register in a similar fashion to that of the United Kingdom's National Security Risk Assessment; and
- The National Risk Register should also examine strategies, for both the public and private sectors, to manage risks that account for both the probability and consequence of adverse climate events.

To ensure that resources devoted to mitigating climate change are used most effectively, Australia should:

- Estimate the social cost of carbon (or greenhouse gas emissions more broadly) for Australia under a range of scenarios and assumptions to act as a basis for assessing the merit of individual policies;
- Use the social cost of carbon, and forecasts of key energy sources, as a basis for a real options analysis of Australia's potential options to mitigate climate change.

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## Adaptation

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In Australia, the key projected consequences of climate change include: temperature increases with more hot days and fewer cool days; a rise in extreme fire-weather days in southern Australia; an increase in the incidence of droughts in southern Australia and an increase in the intensity of tropical cyclones among others. According to data compiled on weather related losses for insurers over the past few decades:

- The number of catastrophic weather events is getting larger; and
- The economic losses associated with weather-related events are trending upwards over time.

Australia is already suffering from the influence of adverse climate events. An assessment of climate risks and vulnerabilities requires planning that connect the probabilities of future climate events to the abilities of people and places impacted by the event to recover. It should also examine what actions could be undertaken to reduce the consequences of events if they should occur. Governments by themselves cannot, and should not, undertake all the actions adaptation to climate change requires. However, they are key to leveraging resources across the private sector and to developing the social wide networks that underpin resilience to extreme climatic events.

Appreciating the nature of the risks facing regions can help reduce the consequences of climate risks. For instance, had a levee to protect the town of Roma in Queensland from flooding been built in 2005, it would have cost \$20 million. Since the levee was not built, \$100 million has been paid out in insurance claims since 2008 and a repair bill of over \$500 million incurred by the public and private sector since 2005.



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## Mitigation

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The changes necessary to avert climate change will be difficult and expensive, but particularly so for Australia which is a relatively unusual industrialised energy exporter. If Australia is to make the necessary adjustments, and preserve the wellbeing of its citizens, it needs to spend its national resources effectively. Yet Australia's overall policy response to climate change has not been suitable to the challenge. What has been absent from the policy debate has been a contextualisation of individual policy approaches within a wider framework that allows for comparison of policy efficacy.

The first step to quantifying the merit of different responses to climate change mitigation is to develop robust estimates of Australia's social cost of carbon. The social cost of carbon (and other greenhouse gas emissions) is an estimate of the economic damages associated with a small increase in these emissions, conventionally one metric ton of carbon dioxide, in a given year. This dollar figure also represents the value of damages avoided for a small emission reduction. The social cost of carbon is meant to be a comprehensive estimate of climate change damages and includes changes in net agricultural productivity, human health, property damages from increased flood risk, and changes in energy system costs, such as reduced costs for heating and increased costs for air conditioning.

A range of estimates can be developed to underpin the assessment of the social cost of carbon emissions to reflect different possible climate change trajectories. The United States of America Environmental Protection Agency (EPA) uses forecasts of the social cost of carbon emissions as the basis of setting regulations, some of which target carbon dioxide emissions, such as car and truck standards. While others have set standards for conventional or toxic pollutants that indirectly affect carbon dioxide emissions, such as the final rulemaking to control mercury and other toxic air pollutants from power plants. The EPA estimates that the social cost of carbon in 2050 could range from \$26 through to \$212 per metric tonne of carbon dioxide.<sup>56</sup>

Setting the social cost of carbon is an important first step in quantifying different approaches to addressing climate change. To extend this approach, and to deal more richly with the uncertainty involved, is to consider that Australia has a portfolio of possible responses to climate change. These potential responses represent the ability, but not the obligation, to undertake any combination of actions if the conditions emerge that makes them appropriate. These possible actions are in substance options – real options.

Adopting a real options investment approach to Australia's response to climate change would provide a transparent and objective basis for comparing the costs and benefits of different policy approaches and enable the nation to maximise the net benefits (gross benefits less costs) of its actions.

To implement this approach to addressing climate change, the Federal Government should:

- Develop estimates of the levelised cost of energy for a range of energy sources, an update in the fashion of the Australian Energy Technology Assessment (AETA);
- Assign probabilities to these forecasts and identifying the technological breakthroughs that would underpin reduced future levelised costs of energy assessments;
- Forecast the future costs over time for greenhouse gas emissions to determine the net present value (NPV) of alternative low greenhouse gas emissions technologies; and
- Use a real options investment approach to maximise the potential greenhouse gas emissions that Australia can efficiently mitigate.

Adopting a real options investment analysis to mitigating climate change would provide a great deal more certainty for decision makers. It would focus the political debate on exactly what Australia is buying with its efforts to mitigate climate change and point the way towards a constructive discussion on the value of various approaches to minimising climate change. Having explicit assumptions underpinning Australia's greenhouse gas emission reduction actions would allow for greater contestability, and eventually greater cohesiveness in terms of policy direction.

Key examples of ways in which the potential for low greenhouse gas emissions could be encouraged include:

- Focusing R&D on enabling specific technology breakthroughs, such as those identified as necessary for geothermal power to become commercially viable;
- Developing robust regulatory regimes for all energy sources prior to their deployment, including nuclear power;
- Working to ensure a social licence to operate exists for all energy sources, including nuclear power and wind generation;
- Integrating low greenhouse gas emissions energy sources with the transmission and distribution system; and
- Developing domestic skills in implementing the initial investments in emerging technologies.

This approach would not be technologically neutral. Instead it would focus on trying to capture as much of the potential positive net present value of each low greenhouse gas emission technology. While this may result in greenhouse gas emissions being marginally higher in the short term, Australia would be spending funds to maximise their long term reduction.

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