24 Mar 2022

Productivity Inquiry
Productivity Commission
GPO Box 1428
Canberra City ACT 2601

Thank you for the opportunity to provide a submission to support the early scoping for the Productivity Commission's (PC's) 2022 Productivity Review. The Tech Council of Australia (TCA) strongly supports the proposed focus areas of the review and the vital voice the PC provides to the national policy debate. Therefore, we welcome the opportunity to contribute to the early direction of this important review.

About the Tech Council of Australia (TCA)

The TCA is Australia's peak industry body for the tech sector. The Australian tech sector is a pillar of the Australian economy, contributing $167 billion per annum, and employing 861,000 people. This makes the tech sector equivalent to Australia's third largest industry, behind mining and banking, and Australia's seventh largest employing sector.

The TCA represents a diverse cross-section of Australia's technology sector, including start-ups, SMEs, nation-leading providers of digital software and services, and online platforms and suppliers of critical technologies of social and strategic importance to Australia. This means the TCA has a direct interest in the fundamental economic settings that underpin productivity growth in Australia.

The tech sector is deeply intertwined with almost all sectors of the national economy, meaning strong economic fundamentals are in the sector's direct interests. Further, the success of the tech sector in Australia directly relies on settings that support innovation and tech adoption, access to capital, access to talent, and fit-for-purpose regulation. As a result, the tech sector has a direct interest in almost all proposed areas of focus in this review.

The Australian tech sector is a key driver of productivity across our economy

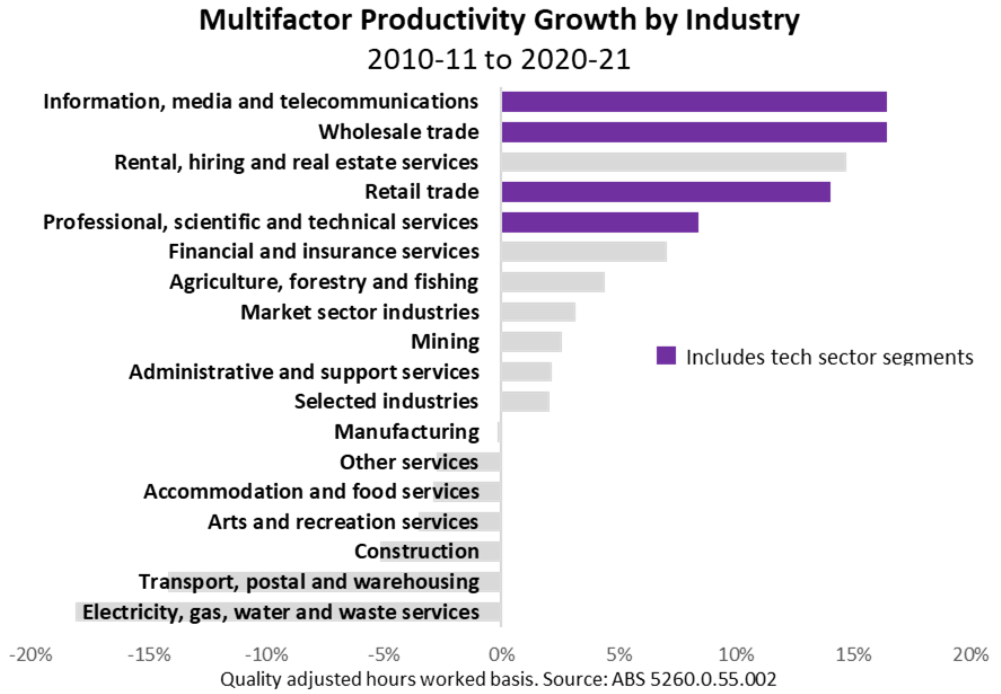
After strong investment in recent decades, Australia has a deeper tech sector than many would realise. Technology sector activity contributed $167 billion to Australia's GDP in 2020-21.[1] This represented 8.5 per cent of Australia's total economic output, and makes the technology sector equivalent to the third largest contributor to GDP in Australia. The tech sector is rising in prominence quickly: it was only the ninth largest in 2016, when the PC's 'Shifting the Dial' report was being prepared.

Unlike some sectors, the economic contribution of the tech sector is intertwined closely with Australia's wider economy and society. In early 2021, 861,000 Australians were employed in tech sector occupations. This places the tech sector as the seventh-largest employer in Australia, providing jobs for 6.6 per cent of Australian workers. By comparison, Australia's largest and second-largest contributors to GDP (mining and finance) hire just 1.9 per cent and 3.7 per cent of workers respectively. Tech sector jobs are also growing fast: the number of Australians employed in the sector has grown 66% since 2005, compared to an average growth rate of 35% nationally. This continued during the COVID-19. As millions of

[1] The technology sector includes segments of 'Information media and telecommunications', 'Professional, scientific and technical services', 'Retail trade' and 'Wholesale trade' and the share of tech intensive activity in industries across the economy. Source: ABS 5204.0 and analysis of the tech sector's share of national aggregates commissioned by the TCA.

businesses digitised to keep their businesses open, 65,000 new tech sector roles were created at the height of the pandemic.

Critical for this review, also setting the tech sector apart is its contributions to multifactor productivity in Australia. From 2010-11 to 2020-21, the overall productivity of market sector industries grew just 3.2 per cent — 0.3 per cent annually. By comparison, productivity of 'Information, media and telecommunications' by 16.4 per cent — outpacing the market sector average by 412 per cent. Other industries that include segments of the tech sector also all at least doubled national average productive growth over the past decade.[2]



Further, the tech sector catalyses direct productivity benefits to other parts of the economy. This is especially clear when examining where Australia's tech sector is particularly strong. Of the Australian tech sector's $570 billion in total market capitalisation, 96 per cent specialises in business-to-customer and business-to-business software, financial technologies, and technologies that support life sciences and health.[3] This means Australia's tech sector specialises in delivering products that either make other businesses more efficient, or support services that directly improve Australians' health outcomes.

Business-to-business software (32 per cent ($182b) of the tech sector's total market cap) plays an especially obvious role in enhancing productivity across the wider economy. The local tech sector is accelerating technological diffusion to SMEs and other industries through software and services supporting collaboration and productivity (e.g. Atlassian), enterprise resource planning (e.g. Xero), and supply chain management (e.g. Wisetech).

However, Australia's tech sector is smaller proportionately than most of our peers. The direct tech sector contributes 3.8% of Australian GDP which is significantly below the US (10.2%), UK (8.1%), and Canada (6.8%).[4] Across the OECD, Australia also ranks 31st out of 38 countries on ICT's relative contribution to total Gross Value Added.

Productivity-enhancing reforms that address barriers to innovation and adoption would equip Australia's tech sector to catch up to our peers, delivering spillover benefits to the rest

[2] TCA-commissioned analysis defines the tech sector as including segments of Professional, scientific and technical services, Information media and telecommunications, and Retail and Wholesale trade.

[3] Source: ASX data as at 7 December 2021.

[4] techcouncil.com.au/wp-content/uploads/2021/08/TCA-Tech-sectors-economic-contribution-full-res.pdf

of the Australian economy. To build Government ambition for such action, the TCA has set a target for the tech sector to contribute $250B to GDP by 2031,[5] which would bring Australia's tech sector contribution in line with Canada's.[6]

The TCA supports the productivity enablers flagged by the PC as a basis for review

We welcome the PC's proposed focus on the following factors as a platform for evaluating Australia's policy performance and to identify priorities for productivity-enhancing reform:

- an openness and access to leading technologies, business innovation and data use;
- the skills, capability and culture to take up new technology and data, and a workforce and businesses that explore, innovate and adapt;
- markets that facilitate resources moving in a timely way to higher value uses; and
- institutions and regulatory frameworks that support these features, and are efficient and effective in their contribution to improving Australians' wellbeing.

These factors align with the three goals we consider key to a thriving local tech sector:

1. **Investment and financing:** improving access to financing, incentivising R&D and tech sector investment, and facilitating technology adoption across the economy;
2. **Jobs and skills:** growing the pipeline of Australian tech workers, improving access to skilled migration, and enhancing support for Employee Share Schemes; and
3. **Fit-for-purpose regulation:** ensuring Government agencies work with industry to develop and implement targeted, proportionate, and future-focused solutions.

The similarities are a natural result of the tech sector being linked closely to many industries across Australia. As a result, many of the TCA's policy interests are in systemic settings that support a dynamic, competitive, and innovative economy. We have also identified sector-specific issues and solutions that if addressed, offer spillover benefits to all industries that use technology to deliver cost-effective, high-quality goods and services.

We would strongly support the 2022's productivity review covering these issues, including through updates to the following Supporting Papers:

- Supporting Paper 8: Upskilling and Retraining;
- Supporting Paper 12: An Overview of Innovation Policy; and
- Supporting Paper 13: Regulation in the Digital Age.

The TCA has identified specific outcomes that would deliver meaningful progress in each of our three priority areas, which we have detailed below. We commend these as areas that would benefit from in-depth investigation in the forthcoming Productivity Review.

1. Investment and financing

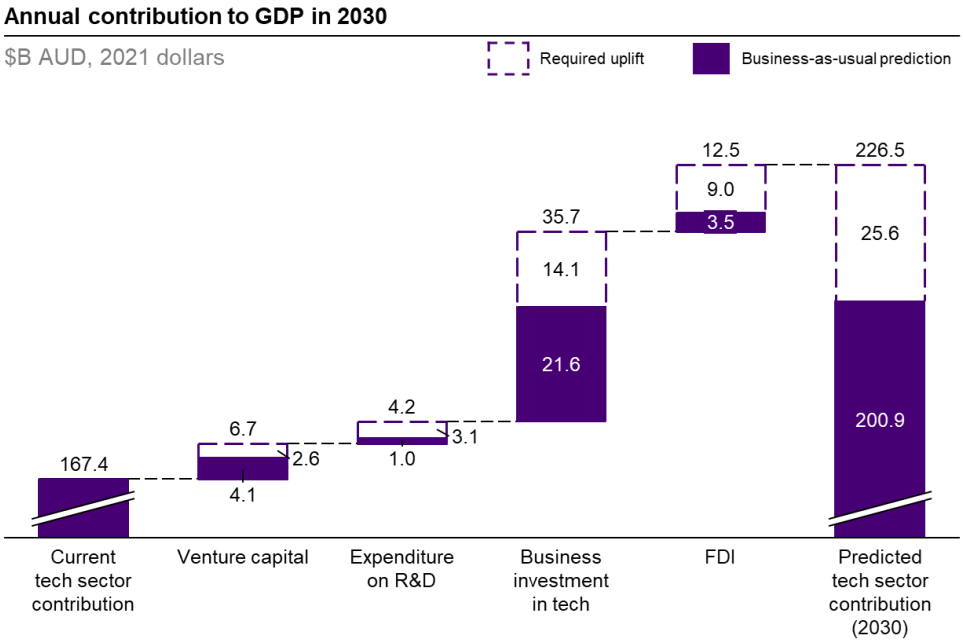
To accelerate the contribution of Australia's tech sector to productivity and the economy more broadly, additional capital is needed through:

- Growth in local venture capital,
- Attracting foreign direct investment,
- Encouraging business investment in tech adoption; and
- Investments in R&D, both by the private and public sector.

Significant uplift is required across all four channels, as highlighted in the chart below. Compared to Canada as an economic peer, Australia has particular room for improvement on foreign investment and encouraging business investment in tech adoption. When

[5] techcouncil.com.au/wp-content/uploads/2021/10/2021-October-Roadmap-to-Deliver-One-Million-Jobs.pdf
[6] See footnote 4 (exhibit 18).

comparing foreign investment stocks as a percentage of GDP, Canada hosts 30 per cent more investment in tech despite Australia hosting more foreign capital overall.[7] Canada also invests 30 per cent more in ICT as a proportion of gross fixed capital formation.[8]



Expected and required uplift in tech sector investment to match Canada in % GDP terms.[9]

We identify four action areas warranting further investigation that would ensure investment in Australia supports productivity to the greatest extent possible.

1(a): Access to capital (capital supply)

As the PC's 'Shifting the dial' report recognised in 2017, access to capital is a key limiting factor for the tech sector. In particular, tech start-ups without access to debt financing rely on equity markets to raise capital. This means start-ups are competing with incumbents that have simpler and more affordable access to capital (as only debt financing is tax-deductible). Further, this means frontier businesses are competing directly for capital supply with opportunities to speculate on asset prices in secondary markets.

1(a)(i): Domestic capital supply

The TCA would welcome the PC investigating how incentivising capital from secondary markets, and toward new innovative businesses, stands to unlock additional private sector capital for productivity-enhancing activity.

The merits of this have been recognised through the creation of tax incentives for early stage investors, through tax incentives to invest in Early Stage Innovation Companies (ESIC), and Early Stage Venture Capital Fund Limited Partnerships (ESVCLPs). However, each of these schemes are limited both in terms of the businesses and the capital sources that are eligible (ESVCLPs are effectively inaccessible to retail investors).

[7] Australia: 52.1% (total), 1.53% (tech). Canada: 47.5% (total), 1.97% (tech). 2020 data.
Source: OECD.Stat, Venture capital investments; ABS 5352; Statistics Canada Table 36-10-0009-01; ABS National Accounts; Statistics Canada National Accounts; UK ONS National Accounts

[8] 8.11% (Australia) compared to 10.53% (Canada) in 2019. Source: OECD, ICT Access & Usage by Businesses

[9] Source: IMF, World Economic Outlook; DFAT, Australian industries and foreign direct investment; Statistics Canada, Canadian direct investment abroad and foreign direct investment in Canada, by industry; OECD, R&D tax expenditure and direct government funding of BERD; OECD, Venture capital investments; OECD, ANBERD database; ABS, National accounts; Statistics Canada, National accounts; Accenture analysis

We recommend considering the merits of expanded incentives for Australians to invest in primary capital markets, including tech sector businesses. Avenues to explore include:

- the contribution of early-stage investment to Australia's economic landscape (as the market segment most dependent on equity capital);
- evidence of inelastic capital supply in response to higher secondary market prices. OECD research suggests this is the case in the housing market,[10] countering arguments that higher asset prices stimulate investment efficiently; and
- evidence of negative link between ASX PE ratios and new private business investment, to show a bias for secondary equity markets cannibalises primary capital supply. Comparing pre-COVID trends in All Ords PE ratios and new private business investment suggests a negative link (with the exception of the GFC, when both fell).

We also recommend considering the merits of equitable tax treatment for businesses that rely on equity markets to invest through an Allowance for Corporate Equity (ACE).

- Tech start-ups and other businesses that rely on equity financing face a tax disadvantage compared to businesses with readier access to debt.
- This is because businesses with debt can deduct interest payments from their taxable income, but the cost of equity financing is not recognised by the tax system.
- This means start-ups and other businesses that use equity financing need to make a higher return on investment to remain viable.
- The ANU's Tax and Transfer Institute released a report in March 2022 advocating an ACE as the most practical tax option to support productivity-enhancing investment.[11]

1(a)(ii): Enhancing access to foreign investment

As the Australian tech sector relies on equity financing, it is particularly reliant on foreign investment as a source of operational funding. Two thirds of all start-up investment last year involved international capital.[12] As a result, an open and attractive foreign investment regime directly underpins investments in productivity-enhancing innovation in Australia.

The TCA would strongly welcome Productivity Commission review of Australia's foreign investment regime, recent policy changes and evidence of their likely impact on Australia's ability to attract capital. Engagement with TCA members reveals that issues around foreign investment screening issues are a leading, if not the leading, regulatory issue for many tech businesses.

TCA members report that reforms in 2021 have exacerbated issues further, particularly due to uncertainty around processing times and whether proposed investments are captured by mandatory notification requirements. This has forced TCA members to accept less favourable terms for investment than they would accept otherwise and incur additional administrative burden.

In sum, uncertainty around FIRB processing times increases the cost of capital for Australian businesses that depend on access to foreign equity to operate. For example:

- A start-up with $3 million of seed funding and 10 staff will incur around $125,000 in monthly costs, giving it 24 months before its funds reach zero.
- Raising capital requires 6 months of buffer and can take 1-2 months. Even before considering FIRB, the start-up must go to market after no more than 16 months.

[10] https://doi.org/10.1787/5kgk9qhrnn33-en

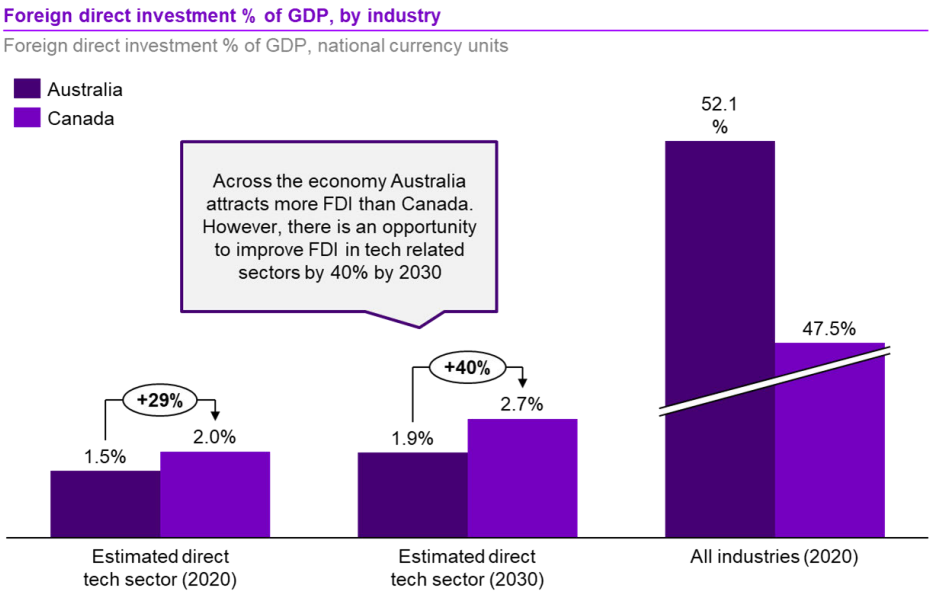
[11] https://taxpolicy.crawford.anu.edu.au/sites/default/files/uploads/taxstudies_crawford_anu_edu_au/2022-03/ttpi_corporate_income_tax_report.pdf

[12] 67% per cent of investments by value involved foreign capital in 2021. Sourced from private data on start-up capital raises collected by TCA members.

- Once considering the risk of FIRB delays, especially if related to a critical technology, the firm needs to start fundraising just 10 months after opening their doors.
- Raising capital earlier hits start-ups' cost of capital through lower valuations, with local businesses losing more ownership for the same amount of investment.
- Equity costs are exacerbated further as a result of competing for capital with investments that offer faster and more certain returns.

The TCA notes that in 2020, the PC used OECD analysis to model the impact of Australia tightening its foreign investment screening to match the restrictiveness of New Zealand. [13] Based on 2019 data and the results of this modelling, the TCA calculates that such a tightening would have cut annual inbound investment by over US$1 billion[14], and annual economic output by over AU$5.2 billion.[15] While the OECD's FDI Regulatory Restrictiveness Index is not yet updated for 2021, its methodology makes clear that Australia's policy changes will push us in the wrong direction.[16]

Also missed in national aggregates are the concentrated impacts on sectors and opportunities that bear the brunt of policy change. As noted earlier in comparison to Canada, Australia is lagging behind our peers in attracting FDI to the tech sector, even while FDI elsewhere has increased.



Australian tech sector FDI as a percentage of GDP, compared to Canada.[17]

Exacerbating this, the tech sector has been one of several key targets of recent tightened foreign investment regulation and is particularly vulnerable to these changes through its reliance on equity capital to operate (as flagged above). In particular, the tech sector has felt the impact of reforms to tighten mandatory notification requirements and loosen decision timeframes in January 2021, and reforms in 2022 that significantly broadened the definition of critical infrastructure (the latter has flow-on impacts for mandatory notification requirements).

Practical action is both possible and necessary to enhance this key driver of productivity. Other markets — particularly the United Kingdom and United States have more successfully

[13] Foreign Investment in Australia - Productivity Commission

[14] UNCTAD data on FDI inflows, available here.

[15] ABS National Accounts data for 2019 (GDP, chain volume, seasonally adjusted), available here.

[16] OECD methodology available here: http://dx.doi.org/10.1787/5km91p02zj7g-en

[17] OECD.Stat, Venture capital investments; ABS 5352; Statistics Canada Table 36-10-0009-01; ABS National Accounts; Statistics Canada National Accounts; UK ONS National Accounts

balanced security and investment objectives while continuing to ensure the administration of foreign investment screening is transparent, predictable, and responsive.

The TCA has developed a range of options to improve Australia's foreign investment regime that would support the tech sector and wider economy, and would welcome the opportunity to provide this to support the PC's inquiry. These options cover ways to:

- Improve clarity and controls around decision period extensions,
- Offer local businesses risk-based 'advance notice' for decision periods,
- Enhance transparency and accountability of FIRB decisions,
- Adjust fee structures to improve incentives and accessibility, and
- Update governance to align regulation with wider policy goals.

As one example of potential action, the United States grants 'excepted foreign state' status to Australia and several other security partners. This offers simpler processes for investment from sources assessed to have effective and aligned screening systems of their own. As this decision is based on domestic regulatory and security-based considerations, such action is not restricted by international trade and investment obligations.

Despite Government policy objectives seeking out trusted investment in strategic sectors, a lack of explicit acknowledgment imposes significant uncertainty on investors from these countries. Over half of all foreign investors in tech start-ups were from the United States in the last four years,[18] and Five Eyes partners alone account for almost half of all foreign investment in Australia.[19] Action targeting low-risk investment sources would reduce uncertainty for a significant part of Australia's investor base.

1(b): Incentivising productive investment (capital demand)

We strongly support the PC's proposal to focus on the role of Government in encouraging businesses to innovate and take up new technologies. As the PC notes, technology adoption and innovation are vital for sustainable improvements in national productivity, and by extension, Australians' living standards.

Significant barriers and externalities exist that mean without Government action, Australian businesses will underinvest in technological advancement. The TCA encourages the PC take the opportunity of this Productivity Review to investigate the case for encouraging digital adoption alongside encouraging R&D, and actions that can further support both.

1(b)(i): Encouraging digital adoption

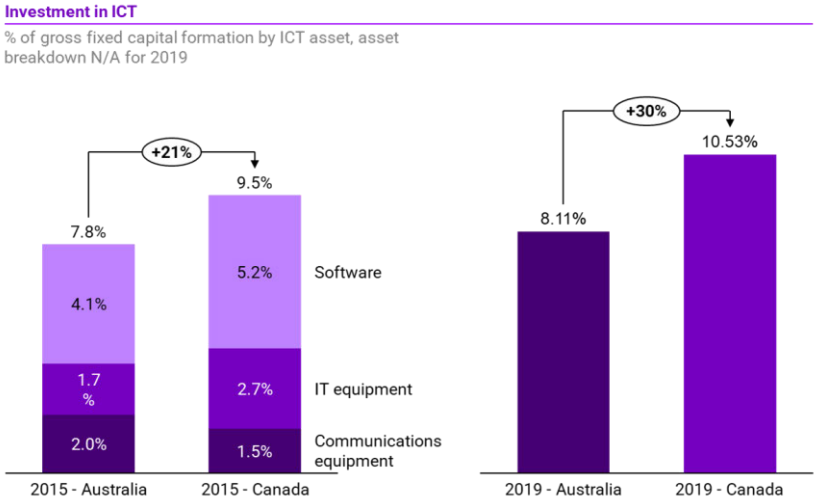
Widespread adoption of digital technologies is essential for Australia to fully realise the productivity benefits of innovation. Businesses that invest in taking up digital technologies gain access to competitive advantages. On the face of it, this might suggest that market incentives are sufficient to encourage digital uptake.

However, in practice, Australian businesses — particularly SMEs — face barriers to investing in digital adoption. As noted below in comparison to Canada, Australian investment in ICT is behind our peers. But is not an issue limited to Australia: OECD analysis shows small businesses use digital technologies less intensively than larger firms.[20] As the OECD notes, "this weighs heavily on aggregate productivity performance as SMEs account for the bulk of employment and activity in many OECD and G20 countries". Australia is no exception.

[18] 52% of foreign investors, 2018-21. Sourced from private data on start-up capital raises collected by TCA members.

[19] ABS 5352.0 (International Investment Position), 2021 data.

[20] https://www.oecd.org/global-forum-productivity/events/Spurring-growth-and-closing-gaps.pdf



Australian business investment in ICT compared to Canada.[21]

The OECD and Xero[22] note a range of practical barriers to digital adoption that might otherwise be in a business' self-interest. These span three broad categories:

- **Resource constraints**: Many businesses — particularly SMEs — cannot afford to make investments in their long-term productivity if these do not offer an immediate payoff. This forces businesses to fall into 'false economies', where a need to cover operating expenses ends up costing them more in the long run.
- **Information complexity**: Many firms, particularly SMEs, face information and management gaps that mean they lack information on the likely payoff of digital investments for their business. This means businesses require critical mass to afford the expertise to uncover opportunities to digitise, and the benefits of doing so.
- **Stability and profitability**: Many firms are loss-making when investing in future expansion, and start-ups in particular must focus on their immediate success. This limits the impact of tax incentives that are spread over multiple years through depreciation, and only provide any benefit to businesses once they turn a profit.

Further, digital adoption offers spillover gains to productivity and confidence including:

- **Network effects**: Many digital investments, such as eInvoicing, offer cascading benefits to the wider economy as more businesses adopt them. Further, through supply chains, more efficiently-delivered upstream goods and services will ultimately flow through to consumers and other end-users.
- **Competition**: A digitally-enabled economy expands consumer choice and through it, encourages businesses to invest in delivering more attractive goods and services. Incentivising competitive businesses — particularly SMEs — to digitise will encourage other businesses to improve the quality and affordability of their own products.
- **Information security**: As the OECD and Xero note, SMEs in particular lack the resources and knowledge to invest in protecting their data and mitigate against cyber security threats. Incentives to digitise will encourage businesses, particularly SMEs, to invest in protection the security of consumer information.

The TCA encourages the PC to investigate the barriers and spillover benefits of digitisation, including the factors outlined above. We also recommend reviewing the effectiveness and limitations of existing measures including in the tax system, with a particular focus on small businesses. Due to the factors above, Australia continues to underinvest in digitisation.

[21] Source: OECD, Investment by asset; OECD, ICT Access and Usage by Businesses.

[22] https://www.xero.com/content/dam/xero/images/xsbi/one-step-report-nov-2021.pdf

In our 2022-23 pre-Budget submission, the TCA recommended introducing an 'innovation credit' to accelerate digitisation. The credit, modelled on Singapore's Productivity & Innovation Credit (PIC) Scheme, would act as an investment allowance on digital investments that is refundable for SMEs and scales based on the intensity of the investment.

We recommend investigating the merits of tax incentives such as an innovation credit, and exploring wider options that also encourage digital adoption by improving:

- **Refundability:** so new and expanding businesses, particularly small businesses, have access to the same incentive to invest as incumbents that have reached profitability;
- **Depreciation rates:** by moving to instant write-offs for digital investments to enhance incentives for businesses with high discount rates; and
- **Tax offsets:** to compensate for information asymmetries, resource constraints and spillover benefits that lead to underinvestment in digitisation.

1(b)(ii): Encouraging innovation

CSIRO research has found that every $1 of R&D spending creates an average of $3.50 in national economic growth.[23] As the CSIRO notes, this is because R&D creates positive spillovers, benefiting Australians far beyond the entity making the initial investment. Incentives are vital for private R&D investment, and our system is due for an update that backs software development as a modern form of manufacturing.

Australia shows great promise as a global tech leader. Yet investment in R&D represents just 1.9% of GDP, behind the OECD average of 2.4%, and further behind partners such as Japan (3.2%) and the US (2.8%). Global partners including the UK and the US are also setting ambitious R&D targets and commitments, viewing tech as a 'new metric of global power'. Accenture research found that increasing Australia's R&D contribution to meet global peers would increase investment by $5-13b per year.[24]

Software R&D is often non-linear and innovates by integrating pieces of knowledge that were previously separate. Australia's prescriptive requirement to show a 'systematic progression of work' is often at odds with how this R&D is performed. This creates regulatory burden and risks excluding software R&D that brings together prior knowledge in new, untested ways.

This issue impacts almost half of all R&D in Australia. Investment in ICT-based research has been Australia's leading R&D field since 2015, and accounted for 40 per cent of all research spending in 2018-19. This research supports all facets of our economy, society and security, including manufacturing, mining, health sciences and cyber security. Further, as noted earlier, our tech sector specialises in products that enhance business productivity and support health services, meaning more software R&D would support economy-wide outcomes.

Other markets have modernised their R&D tax framework to recognise new types of research and development. For example, introduced in 2019, New Zealand's RDTI was designed with software claimants in mind. Critically, NZ requires a "systematic approach", rather than a "systematic progression of work". This approach allows more flexibility around how businesses show "a planned, logical investigation to solve a problem".

However, Australia is yet to take similar action. This affects all businesses across the economy that invest in digital R&D, and has particularly strong impact on SMEs and start-ups that have less resources and experience in navigating complex Government processes.

We recommend for the PC to assess the merits of action to enhance and streamline access to the RDTI. The TCA recommends the following options:

[23] https://blog.csiro.au/value-innovation-investment/

[24] https://techcouncil.com.au/wp-content/uploads/2021/08/TCA-Tech-sectors-economic-contribution-full-res.pdf

- updating RDTI criteria and processes to better reflect modern forms of R&D and to bring Australia into line with other markets,
- piloting an improved Advance Findings model to provide greater certainty and clarity for industry, particularly SMEs, and
- enhancing access to industry expertise within the review process for RDTI applications to ensure review processes are consistent and technically informed.

We also recommend considering the recent introduction of a 'patent box' for medical and biotechnology innovations. The measure offers businesses a concessional tax rate if they commercialise eligible innovations locally. We recommend assessing the merits of expanding patent boxes to other public interest areas, including critical technologies.

The TCA would also welcome evaluation of direct public funding — such as grant programs and Cooperative Research Centres — and recommendations on whether new targeted action is warranted for emerging public interest areas. In particular, there is merit in options to enhance reliable access to critical technologies as this issue becomes a larger priority.

2. Jobs and skills

The TCA strongly supports the PC's proposed focus on well-functioning labour markets. Improving productivity and Australians' wellbeing requires action to ensure workers are empowered to take up the opportunities that more productive uses of capital will create.

As discussed earlier in this submission, the tech sector has experienced strong jobs growth (66% growth since 2005 compared to 35 nationally) and is now equivalent to the seventh biggest employing sector in Australia. As of 2021 there were 861,000 people employed in the tech sector across the nation, and as noted earlier, the rate of tech sector jobs growth nearly doubled the economy-wide average since 2005.

Further, tech workers are dispersed across all sectors of the economy - of the 861,000 Australians currently employed in tech sector roles, 517,000 (60 per cent) are embedded in other sectors.[25] This means addressing tech sector worker shortages will support productivity across the board. Tech sector workers also aid industries in developing and adopting technologies, amplifying the potential productivity benefits.

The TCA's headline jobs goal is for Australia to employ 1 million people in tech jobs by 2025 and 1.2 million by 2030. This means an additional 93,000 additional workers by 2025 and 275,000 by 2030, compared to our business-as-usual predictions. These figures reflect analysis commissioned by the TCA on workforce requirements should Government improve access to capital and strengthen incentives to invest in long-term productivity.

Labour supply is a pressing issue for tech firms. The sector faces a systemic shortage of qualified workers, and has done so for many years despite:

- offering 32% higher entry wages over the economy-wide average,[26]
- having a gender pay gap half the size of comparable sectors,[27] and
- offering VET-educated workers 35% more than their average expected pay.[28]

This highlights a structural disconnect between workforce demand and the systems that empower workers to take up high-value opportunities. In our Roadmap to One Million Jobs report, the TCA breaks down the sector's future workforce needs into three cohorts:

- New Australian workers with tech-related qualifications,
- Existing and returning Australian workers upskilling or reskilling into tech roles, and

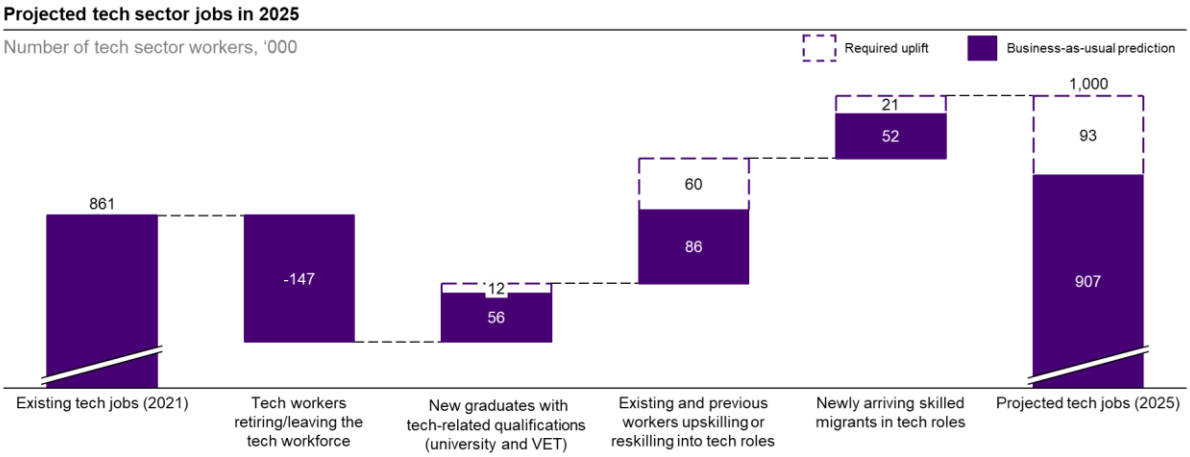
[25] https://techcouncil.com.au/wp-content/uploads/2021/10/2021-October-Roadmap-to-Deliver-One-Million-Jobs.pdf

[26] Collancer analysis of HILDA data from 2001 to 2021, commissioned by the TCA.

[27] As above. Tech sector yearly earnings gender pay gap of 9ppt relative to 18ppt in comparable sectors.

[28] As above. Hourly earnings basis.

- Newly arriving skilled migrants.



The Australian tech sector's workforce requirements in 2025.[29]

As noted above, analysis commissioned by the TCA predicts that 146,000 Australians with prior work experience will need to transition into the tech sector by reskilling, upskilling and rejoining the workforce. That includes an additional 60,000 Australians that would not otherwise transition. Training young people to enter the sector is also critical, with an additional 12,000 students needing to enter the tech sector by 2025 on top of the status quo. Migration will also remain vital for accessing experience and expertise not available locally.

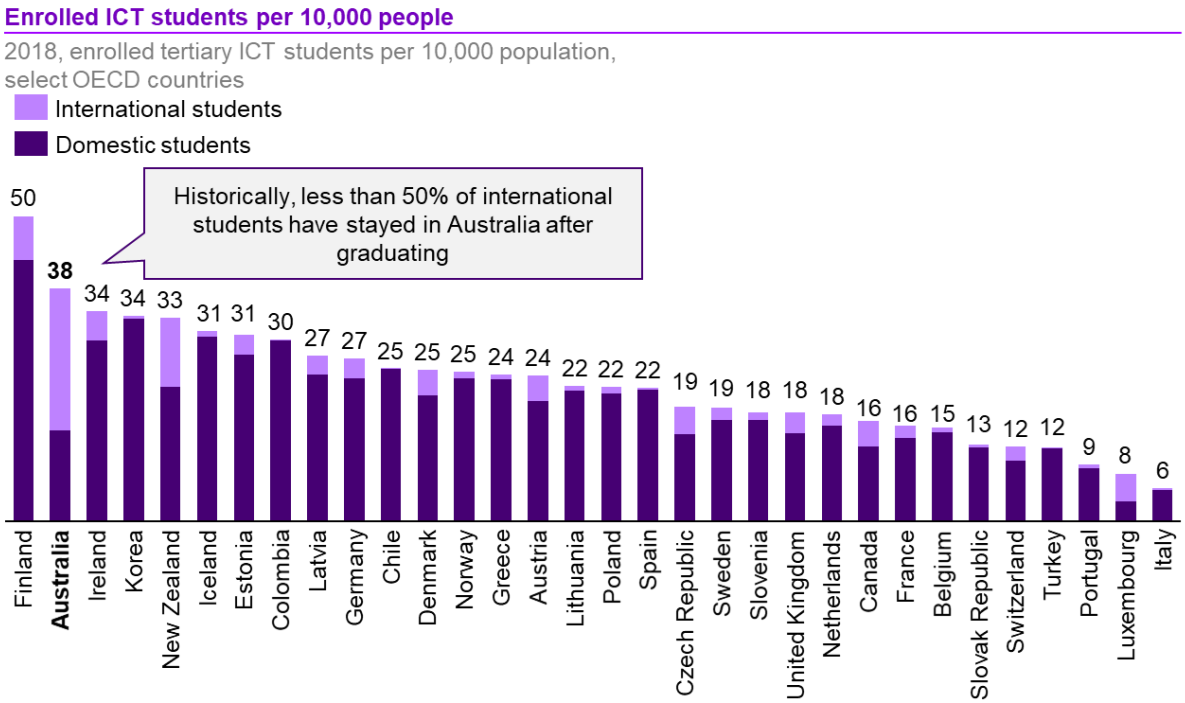
The TCA has identified four line of policy effort that would enhance the ability of Australia's labour market to match workers with tech sector opportunities more productively:

A. An agile, accessible and attractive training sector,
B. Supporting reskilling, transitions and participation,
C. Encouraging employee ownership to align compensation with value, and
D. Migration policy that unlocks high-value global talent.

2(a): An agile, accessible and attractive training sector

Education and training has been a significant source of supply for tech workers, with Australia ranking high among the OECD for ICT enrolments relative to its population. However, Australia has been reliant on international students, with relatively low rates of domestic enrolments. Given fewer than half of international students typically remain in Australia after graduating, enrolment figures overstate Australia's future workforce supply.

[29] Source: Department of Education, Skills and Employment (2021) uCube, NCVER (2021), Total VET students and courses 2020, Department of Home Affairs (2021) Temporary Residents (skilled) visas granted pivot table, ABS Census Longitudinal Dataset, Accenture (2021) *The economic contribution of Australia's tech sector*, Accenture analysis



Australian VET enrolments relative to select OECD countries.[30]

Low international student numbers due to COVID-19 will likely exacerbate workforce issues over at least the next 3-5 years. Australia will need to encourage more domestic enrolments in tech fields, and explore ways to utilise graduates from other disciplines. In our 'Roadmap to One Million Tech Jobs Report', we noted the importance of:

- Better tracking of emerging skill requirements and occupations;
- A tech workforce strategy that attracts new workers and supports existing workers to transition from roles in other sectors, and
- Reform to make Australia's education and training system more responsive to emerging needs.

2(b): Supporting transitions and participation

Reskilling, upskilling and reengaging Australian workers is already the primary way tech jobs are filled. Analysis undertaken by Accenture for the TCA has found this trend will only increase in future. The analysis forecast that 146,000 Australians with workforce experience will need to transition into the tech sector by 2025. This includes an additional 60,000 Australians that will not transition without policy action.

For this reason, we strongly support the PC's proposed focus on markets that facilitate labour moving in a timely way to higher value uses. Beyond the tech sector, we recognise that this will require the PC to examine the effectiveness of Australia's social support system in supporting the structural adjustment of Australians.

Linking early and mid-career Australians to tech sector opportunities

Typically, discussions around structural adjustment focus on workers locked into industries, regions and businesses that are in decline. Equally important is linking workers to sources of labour demand, of which the tech sector is a leader. As noted earlier, tech jobs are a

[30] OECD.Stat, Enrolment by field; OECD.Stat, Share of international, foreign and all students enrolled by field of education; OECD.Stat, Population data; Australian Universities International Directors Forum (2017), International Employment Outcomes: Where are they now?, Accenture analysis.

productive and fast-growing source of employment that accelerate productivity gains economy-wide.

The sector requires better pathways into tech jobs through early to mid-career transitions, and a more responsive training system. Contrary to popular assumption,the tech sector is highly accessible to VET-trained workers. Forty-two percent of workers in the tech sector do not have a university degree, and VET-trained entrants generally only experience a 3% pay gap relative to university graduates. In other high-paying industries, the average pay gap between workers with university and VET qualifications is 18%.

The TCA's view is that Australia's training system is geared towards training for younger people post-school, rather than for mid-career training. This is a barrier to more workers making successful transitions into fast-growing sectors, such as the tech sector. We would be pleased to share with the PC detailed recommendations on how the training system could be reformed to better support mid-career training needs.

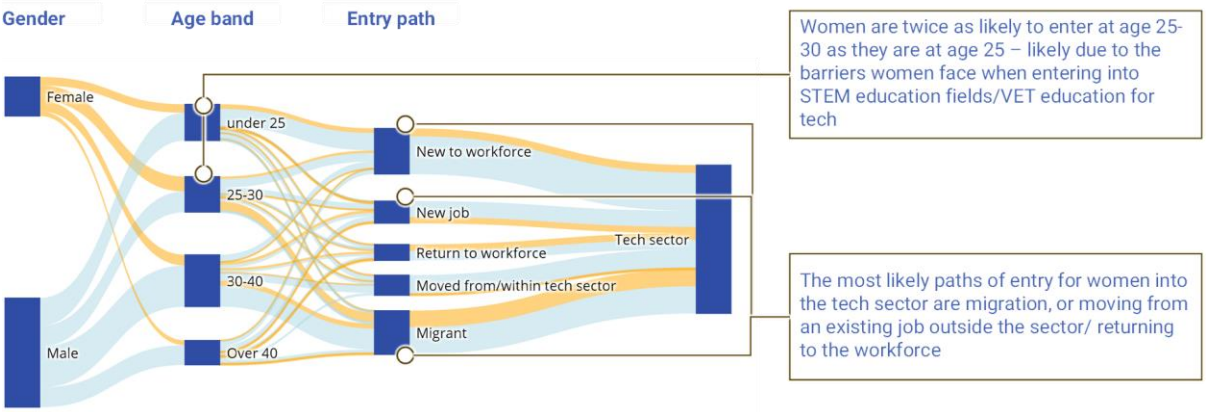
The TCA also strongly supports the focus of 2017's 'Upskilling and retraining' paper on employee attitudes as a barrier to transition. In 2022's update, we recommend for the PC to investigate wider demographic-based barriers to training.

TCA research has also found that women are highly underrepresented in the tech sector, and female pathways into tech differ from men. Australian women are most likely to enter the tech sector between the ages of 25 and 30 from an existing job or after temporarily leaving the workforce.[31] This is likely due to the barriers women face when entering into relevant VET and STEM fields.

To attract more new, transitioning and returning female workers, a key TCA priority is encouraging Government to back a women's skilling campaign that highlights the opportunities the sector offers.

Entry pathways into the tech sector across gender and age

000s of entries, field of study and entry path, 2001-2020



Note: Only includes identifiable entries into the sector, requiring a change in job identified in HILDA data – as such the total number of entries is likely underestimated for individuals who did not change job during their time in the survey. Migration is likely underestimated due to the longitudinal nature of HILDA data, and relatively low frequency of sample "top up"

Supporting mobility of existing workers

Attracting, recruiting, and reskilling Australians into the tech sector is a mutually beneficial opportunity for the tech industry, workers, governments, and the training sector. For this reason, the TCA strongly supports the PC preparing an update to its 'Upskilling and retraining' Supporting Paper to the 2017 Productivity Review.

The OECD has noted previously that Australia's sector and location-specific approach to structural adjustment support risks leaving many workers without much-needed support. It

[31] Collancer analysis of HILDA data from 2001 to 2021, commissioned by the TCA.

recommends Australia move toward a system that "covers all sectors of the economy", where assistance is "tailored to the circumstances and needs of displaced workers.[32]

To address this, we recommend considering the merits of nationally consistent criteria to identify workers at risk of structural displacement and linking eligibility to targeted support in transitioning to growing sectors. Australia's current approach tends to target specific regions (and previously targeted specific businesses and sectors).

Removing barriers to participation

The TCA welcomes a strong focus on barriers and drivers of workforce participation in this year's productivity review. The tech sector recommends including two key considerations when considering recent trends in participation, and measures that could enhance it further.

First, we recommend the PC investigate the opportunities created for improvements in participation as a result of Australia's COVID-19 experience. Specifically, the pandemic accelerated investments in digital infrastructure across the economy to facilitate remote working.

The TCA encourages the PC to consider the ongoing benefits that digital investments have for workforce participation by expanding Australians' capacity to work, and to take up a wider range of higher-paying roles. We would welcome examination of how to lock in and build on these gains, including through support for digital investments (see discussion on encouraging digital adoption earlier in this submission).

Second, we support the PC investigating wider barriers to workforce participation, including in the tax and transfer system. As raised above, women are highly underrepresented in the tech sector and stand to contribute greatly to the necessary growth in tech sector employment over the coming decade. Disincentives for secondary earners to participate in the workforce — which overwhelmingly hit women — hurt productivity in the tech sector, and all sectors where greater female engagement stands to support jobs growth.

2(c): Encouraging employee ownership to align compensation with value

Ensuring workers are available and mobile is key to the Australian tech sector and productivity more broadly. However, as the PC acknowledges, equally key is ensuring that workers are moving in a timely way to higher value uses.

The demand side of the labour market is a distinct issue for start-ups in the tech sector that have great productive potential but — as raised earlier in this submission — depend on equity capital to operate and are highly resource constrained. Even if the roles in start-ups stand to create more value than comparable roles, these employers are simply too young to have the cash necessary to compete with large incumbents.

The result is a mismatch between the potential value of a role, and the remuneration that an employer can offer. This mismatch is exacerbated further where value creation is externalised through wider benefits to Australia's economy, society, security or environment — benefits which tech sector business often offer.

Employee Share Schemes are a vital lever to manage this issue. Through these schemes, tech sector businesses can offer employees a direct equity stake in the success of their organisation. This allows tech businesses to channel their limited cash reserves into growth while attracting industry-leading talent. This supports competition and innovation, while drawing on workers' self-interest to direct talent toward roles offering the greatest value.

[32] https://www.oecd.org/employment/emp/Back-to-Work-Australia-AR.pdf

Australian Government analysis shows firms with share schemes are more productive and profitable compared with firms of a similar size or age, at home and internationally.[33] Further to attracting workers to the highest-potential firms regardless of their existing resources, wider research suggests that using share schemes to align pay with outcomes encourages employees to perform.

Another likely reason is based on labour economic theories of gift exchange. Research suggests that 'gifting' employees with above-market compensation tends to improve worker effort and cooperativeness.[34] One recent study supports this, finding that profit-sharing schemes can support productivity when they are offered in addition to standard wages.[35]

Key OECD nations recognise the social and economic value of profit sharing. The UK, USA and Canada each provide tax concessions for businesses with profit sharing schemes in place. France requires businesses to share profits with workers by law and offers tax concessions for businesses and workers that take further voluntary action. Japan encourages businesses to provide regular bonuses through tax concessions for firms and workers.[36]

However, using share schemes in Australia remains complex and confusing. In submissions to a House of Representatives inquiry in 2021, public and private sector groups flagged that current policy settings made share schemes more onerous, opaque, and unattractive. These submissions noted that convoluted regulations and tax rules discourage both workers and businesses alike.[37]

For example, inquiry submissions flagged complex company disclosure requirements as unnecessarily onerous for unlisted businesses (including start-ups), restricting their ability to offer shares to workers. One submission noted that these requirements are unique when compared to the UK, France, the USA and Germany. Another queried the need for disclosure requirements when offering shares to staff, given employees are already naturally familiar with the business they work for.

Regulatory and tax issues are even more challenging for companies that cannot access start-up exemptions. For instance, a company's value is also central to how employee share schemes are taxed. This complicates matters for unlisted businesses that are ineligible for the simplified valuation processes offered to start-ups. Submissions to the inquiry also note that many start-ups cannot access these exemptions due to strict limitations. For example, start-up exemptions do not apply if shares are offered to contractors or consultants. As flagged above, start-ups are also heavily restricted in their ability to discount shares for employees.

Compounding these issues is a lack of clear and comprehensive guidance for businesses looking to create employee share schemes. Public and private sector submissions to the House of Representatives' inquiry noted that guidance and templates offered by the ATO are useful, but more is needed. Submissions noted that current guidance has gaps, and our complex system means businesses may unwittingly break rules by following templates without adjusting for their own circumstances.

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33 https://www.industry.gov.au/sites/default/files/June%202018/document/pdf/the_performance_and_characteristics_of_australian_firms_with_employee_share_schemes.pdf

34 https://research.upjohn.org/cgi/viewcontent.cgi?article=1259

35 Weltmann, Dan, Joseph R. Blasi, and Douglas L. Kruse. 2015. "Does Employee Ownership Affect Attitudes and Behaviors? The Role of Selection, Status, and Size of Stake." In Advances in the Economic Analysis of Participatory and Labor-Managed Firms, Vol. 16, Antti Kauhanen, ed. Bingley, UK: Emerald Group Publishing, pp. 249–275.

36 https://www.oecd.org/employment/emp/2409883.pdf

37 https://parlinfo.aph.gov.au/parlInfo/download/committees/reportrep/024468/toc_pdf/OwningaShareofYourWorkTaxTreatmentofEmployeeShareSchemes.pdf;fileType=application%2Fpdf

The TCA recommends that the PC investigate:

- The performance of current tax and regulatory policy in supporting uptake of Employee Share Schemes, and how this compares to comparable jurisdictions;
- The productivity benefits of Employee Share Schemes – both in terms of their ability to attract labour to start-ups and encourage performance in larger businesses; and
- Policy measures to enhance productivity, based on these findings.

2(d): Migration policy that unlocks high-value global talent

The TCA is committed to filling tech sector roles with Australian workers to the greatest practical extent. However, there will continue to be a role for migration, particularly for mid- and senior level roles and as Australia approaches full employment. Given the tech sector is so young and fast-growing, the local pool of experienced workers is relatively small. This means migration is a key source of management expertise and attracting international talent for positions requiring extensive experience and scarce skills is essential.

For this reason, the TCA would welcome the PC taking this opportunity to examine how Australia's migration program could better target scarce, high-value skills needs. TCA members have emphasised that Australia's skilled occupation list is arbitrarily complex and outmoded, due to its reliance on an occupation classification system that does not recognise tech sector roles.

Specifically, the TCA would welcome the PC investigating the merits of introducing a wage-based pathway to skilled migration to Australia, alongside existing pathways. Skills lists may continue to have a role for essential roles with non-financial benefits. However, pairing this with an indexed financial threshold has significant potential to streamline migration processes for workers offering Australia significant economic value.

The TCA considers that a wage-based threshold would further build economic principles into Australia's migration program. High wage jobs in the tech sector are supply-constrained, meaning Australia is just one of many countries competing for a shallow pool of highly trained and experienced tech sector workers. Given attracting high-wage workers from overseas involves offering a significant premium to relocate, local tech businesses already have a strong incentive to prioritise local workers wherever possible.

3. Fit-for-purpose regulation in the digital age

The TCA is calling for a renewed whole-of-Government focus on regulation that achieves necessary objectives in a precise, proportionate, practical, and predictable manner. Our economy, society and security all benefit from a commitment to fit-for-purpose regulation that delivers the greatest overall benefit by adhering to best practice regulatory principles.

The TCA considers that regulatory policy design and implementation should be:

- **Informed and coordinated**, through close industry and expert collaboration,
- **Proportionate and targeted**, by targeting risks as efficiently as possible,
- **Practical and interoperable**, through alignment with global norms,
- **Integrated and holistic**, by recognising a thriving local tech sector as a key priority that also helps Australia to achieve our risk and resilience goals, and
- **Future focussed**, by accounting for longer-term and indirect impacts at the outset.

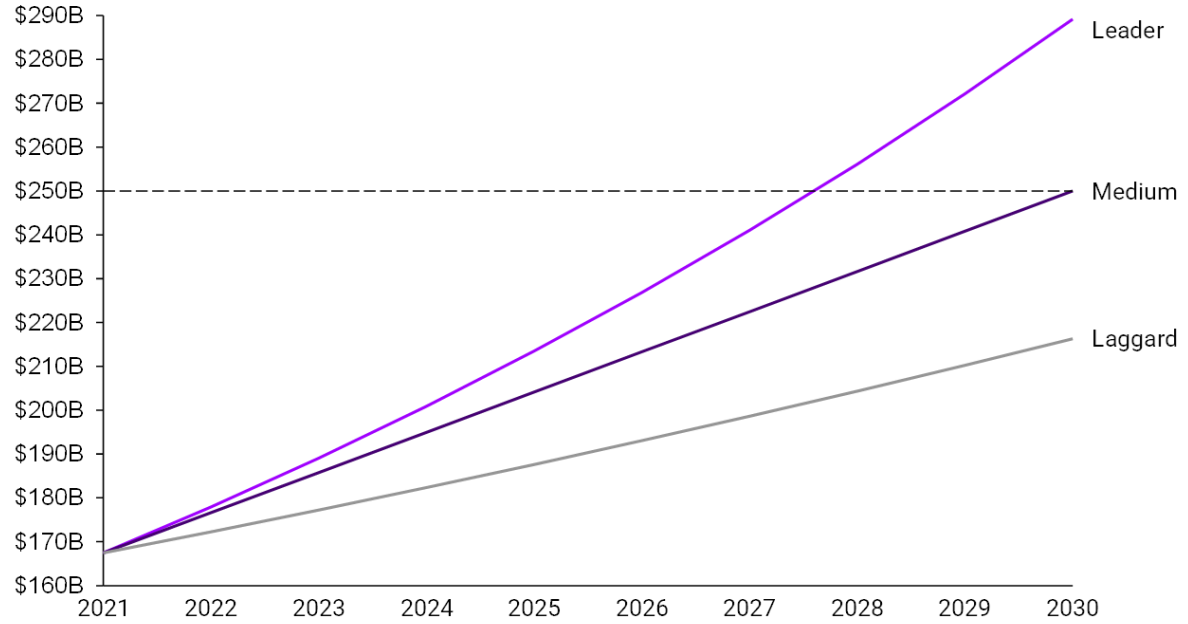
These principles have a practical impact. Analysis commissioned by the TCA has found that countries that lead in digital economy regulation experience an uplift in growth. This analysis found that nations with world-leading (holistic, coordinated and future focussed) regulatory frameworks saw average tech sector growth of over 6% per annum. Key leaders from this

analysis included Singapore, Finland, Switzerland, Norway, the Netherlands, and the United States. On the other hand, regulatory laggards saw growth of just 2-3% per annum.[38]

Applying these trajectories to Australia, the potential economic contribution of Australia's tech sector varies greatly by 2030.

Tech sector economic contribution forecast in different regulatory scenarios

$B AUD, 2020 dollars



To this end, the TCA recommends the PC delivering an updated supporting paper on 'Regulation in the digital age' for the 2022 Productivity Review. We suggest considering regulation in three distinct phases:

a) **Policy design:** Ensuring regulation is designed from the ground up with a holistic whole-of-national interest perspective that recognises links between economic, social and security outcomes.
b) **Regulator behaviour:** Ensuring regulators fulfil their role with appropriate regard for business sector impacts, the underlying intent of regulation and how their behaviour impacts Government's wider policy objectives.
c) **Review and reform:** Ensuring regulation is reviewed regularly, objectively, and holistically against best practice regulatory principles for improvements at both a policy and implementation level.

3(a): Policy design

The TCA commends the principles outlined above as practical ways to achieve best practice regulatory design. We recommend the PC consider how these or similar principles are recognised and required within Government, such as through PM&C's Office of Best Practice Regulation.

While worthwhile, requiring policy designers to adhere to principles without wider action risks being of limited impact. Alone, mandatory process relies on 'regulating the regulators'.

[38] Notes: Leader, medium and laggard scenarios based on the historical 3 year average growth rates of the information and communications sectors in OECD countries. Leader, medium and laggard countries identified using the indicators of best practice tech sector regulation shown previously. The growth rate of Singapore's tech sector was unavailable.
Source: OECD, Value added by activity

Without action to build consensus, this can lead to situations where process-driven authority is pitted against the will of senior executives and political offices. Such contest will rarely ends in favour of the former. The TCA considers deeper efforts are required to build consensus across agencies that adhering to these principles is in the interests of all.

We recommend the PC taking this opportunity to draw on contemporary examples that highlight the increasingly interwoven links between economic outcomes and security or social objectives that are typically the target of regulation.

We would welcome the opportunity to work with the PC to draw on emerging thought on fit-for-purpose tech policy frameworks and linkages between risk, resilience and reward. The ANU's Tech Policy Design Centre and School of Regulation and Global Governance are each leading vital efforts to bring integrated thinking on complex issues into policymaking.

The TCA considers a holistic approach to regulation valuable both for highlighting a practical and proportionate approach to policy design, and for building trust across disciplines. Holistic and objective analytical frameworks that recognise where private action will manage an issue — and where it may not — will build confidence when economic agencies and business groups argue for precise and measured action.

The TCA has a direct stake in this issue due to recent Government focuses on critical technologies and infrastructure. A thriving domestic tech sector supports both our economy and our security by mitigating Australia's exposure to security risks and bolstering our resilience to supply disruptions.

Critically, strong, sovereign industries are global. They need to export, to access global investment and talent, be part of multilateral security initiatives such as AUKUS and the Quad, and to participate in global research partnerships. Where companies and industries are not global, they are likely to be dependent on government funding and vulnerable to collapse - which will jeopardise and weaken Australia's access to critical supplies.

Australia needs to take great care that in designating a technology or sector as critical, this does not lead to overly stringent regulation that needlessly stymies their availability or growth by limiting exports, investment, or access to skilled workers. Rather, if a technology and industry is genuinely critical to our national interest, we must aspire for it to be competitive and sustainable, because this also ensures it is secure.

3(b): Regulator behaviour

A common refrain from regulators is that regulations exist for a reason. But it is vital that regulators keep these reasons in mind when deciding if and how to wield their powers. We strongly support the previous Productivity Review's focus on regulator behaviour, and recognition that an excessive focus on compliance and internal flexibility creates uncertainty and compliance costs for businesses.

The TCA recommends that the PC revisit regulator behaviour as a key issue, gather business sector views on the behaviour of key regulators, and assess the impact of recent Government measures.In particular, we note that in 2021, Government released principles-based guidance for regulator performance that encourages regulators to:

- Adopt a model of continuous improvement and building trust;
- Be risk-based and data-driven; and
- Collaborate and engage with key stakeholders.

However, at the same time, Government also removed the requirement for regulators to validate their self-assessments of performance with industry stakeholders. The result is that this guidance lacks an accountability mechanism, and businesses lack a clear channel to flag gaps between regulators' self-assessments and business' lived experiences.

The TCA recommends the PC considering avenues through which Government can provide regulators with clear expectations and accountability for considering the need to minimise uncertainty and compliance costs. We particularly encourage the PC re-exploring, elevating and building on its previous conclusions in this regard (conclusions 13.5 and 13.6 in Supporting paper 13 refer).

The TCA recently submitted a similar position regarding Australia's foreign investment review framework. Specifically, the TCA considers that Treasury and FIRB should develop an operational 'investor charter' (modelled on the ATO's taxpayer charter) in close consultation with industry, and that FIRB should account for its commitments through transparent reporting.

3(c): Review and reform

While Government's current regulatory reform (deregulation) agenda is welcome, its existence reflects that Australia lacks a consistent means of evaluating Australia's regulatory system at a policy level. While regulators are (self) assessed on their performance, there is no requirement for regulations themselves to be reviewed regularly.

Revisions to Australia's regulatory ecosystem through PM&C's Regulatory Reform Division demonstrate the value of independent evaluation and reform with a view to making Australia's regulatory systems more precise, proportionate, practical, and predictable. As the PC has noted in its 'Shifting the Dial' report, regulators are, by construction, risk-averse. Independent policy evaluation is needed to identify and pursue opportunities to refine regulation with a holistic perspective.

The TCA recommends for the PC to consider the merits of a channel through which key Commonwealth regulatory systems are assessed regularly, objectively, and holistically at both a policy and implementation level. TCA members have also raised several 'quick win' regulatory reform options that would deliver practical impact. Examples include:

- Streamlined foreign investment processes for low-risk sources and greater certainty around processing timeframes;
- Simplifying border processes for migration and trade in goods - each involve significant manual handling and complexity, raising compliance costs through legal and administrative burden. Members called for:
    - expanding options for digital signatures;
    - removing requirements for physical documents to be presented for clearance of goods at the border; and
    - options to make all government permits for trade electronic;

- Simplifying the complexity of industry award information - the current digitised database is presented as data extracts, and not tailored for businesses to navigate;
- Divergent contracts across states and territories (e.g. property contracts), raising barriers to digitisation; and
- Overlapping, complex and inconsistent privacy and cyber security obligations.

We appreciate the opportunity to contribute early feedback on the scope of this important review and look forward to ongoing dialogue.

Yours sincerely,

Kate Pounder
CEO, Tech Council of Australia