5 June 2019

Judy Kavanaugh
Inquiry Director
New Zealand Productivity Commission
Wellington 6143

Via website: www.productivity.govt.nz/make-a-submission

Dear Ms Kavanaugh,

Technological change and the future of work

Chartered Accountants Australia and New Zealand (CA ANZ) welcomes the opportunity to provide a submission to the New Zealand Productivity Commission on the *Technological change and the future of work* Discussion Document. We have focused our feedback on key areas where we consider we can add the most value. Appendix A provides our detailed submission and Appendix B provides more information about CA ANZ.

Key Points:

- We support the four scenarios identified in the Discussion Document and suggest that the Commission consider an additional scenario in which economic and labour market outcomes diverge widely amongst different parts of the economy or society and which may be hidden by a net-economy wide approach. We also support further work on consequences of labour mobility, wage effects, demographic and geographic effects and how technological adaptation will interact with other drivers of change.
- We recommend further policy work is undertaken to consider balancing the benefits of technological adoption, worker protections, and labour market outcomes. We suggest that this work includes investigating an ethics framework for automation and artificial intelligence, ensuring that accident compensation policies are fit for an older workforce, and further investigating the concept of an 'independent worker'.
- We support the Government ensuring the education and skills-training sector is fit for the future, including appropriate assistance for retraining workers disrupted by technology, and policy settings that enable acquisition of adaptable skills and life-long learning.
- It is important to ensure that future policy settings to incentivise innovation, export growth, and foreign direct investment are efficient, transparent and sustainable.

Should you have any questions about the matters discussed in this submission or wish to discuss them further, please contact Karen McWilliams via email at karen.mcwilliams@charteredaccountantsanz.com or phone (612) 8078 5451 or James Liddell via email at james.liddell@charteredaccountantsanz.com or phone (09) 3676034.

Yours sincerely,

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Appendix A

General comments

CA ANZ supports the purposes of this inquiry. Disruptive technological change has the potential to create opportunities and risks for New Zealand workers and the economy, and it is appropriate that the country is prepared for change. CA ANZ has considered some of these issues before in the following publications:

- *The Quest for Prosperity: how can New Zealand keep living standards rising for all?* (2017)
- *The Future of Trade: are we ready to embrace opportunities?* (2017)
- *The Future of Talent: opportunities unlimited* (2017)
- *The Future of Work: how can we adapt to survive and thrive (2016)*

Predicting future technological developments, or even the rate of change in technological adaptation, is a particularly difficult and fraught exercise. The same is true for attempting to predict how the labour force will change. Previous predictions that technological developments would result in higher productivity and fewer hours worked each week (for example, by Keynes) have not been borne out. For that reason we think it is important to consider a wide range of possible future scenarios and what policy options may be needed, but only implement policy changes where there are clear economic or labour market shifts.

Specific feedback

Comments on the four scenarios

Below we provide general feedback on the four scenarios, as well as high level specific comments on:

- labour mobility
- other potential drivers of change
- some possible effects on wages
- demographic and geographic effects.

Our general approach is that there is a high degree of uncertainty in all of these areas, and that further work should be undertaken on the scenarios particularly in the areas we have identified.

General comments

The four scenarios identified in the Discussion Document are broad enough to cover most future economy-wide scenarios. However, because they are broad and consider changes of capital and labour productivity, wages, unemployment, income inequality and working arrangements relative to the average conditions in the present day, they consider the economy and society as a whole. It is possible that technological change and labour market changes will vary significantly across different sectors of the economy. If this is the case, taking a net economy-wide approach may not be the most useful approach, for example when considering what policy changes are necessary, as an average may hide widely divergent outcomes. We recommend the Commission considers a scenario or scenarios where the rate of technological change and labour market effects diverge widely in different sectors of the economy.

Labour mobility

We are aware that the international literature contains a wide range of estimates for the effects of technological change on the labour market and productivity. In our own survey of Australian labour force participants, reported in *The Future of Work: how can we adapt to survive and thrive*, we found that two thirds of early-career Australians expected their job would not exist or would fundamentally change in the next 15 years. One in five employees with five or fewer years' experience thought their current job would

not exist in 15 years and a further 47% thought their job would require very different skills. Interestingly, more experienced employees were less likely to expect such fundamental changes to their jobs.

It is unclear whether the rate of labour mobility change will increase, decrease or continue at current rates, but changes could have profound economic and social effects. These effects could vary greatly by industry, demography, and geographic region, but it is difficult to predict what will happen with any certainty.

Other drivers of change

We think it is important to note that technological change will not be the only significant driver of labour force or productivity change. Some other drivers may be:

- changing consumer demographics and preferences
- different social attitudes driving changes to the international mobility of people and capital
- globalisation and liberalisation (or retrenchment) of trade, for example opening or closing markets and shifting balances of trade
- transition to a low emissions economy.

How these and other drivers interplay, particularly with technological developments, is difficult to predict, and they could have different consequences under each of the scenarios.

Possible effects on wages may include high-skill, high wage roles

Technology adoption and increased international connectivity may act together to depress local wages, even for skilled labour, under various scenarios. For example, international freelancing arrangements now allow organisations to source labour via freelancing websites where freelancers (also known as “virtual global workers”) bid for work. This includes highly skilled work, such as computer programming, accounting, law, project management and technical writing, which can be undertaken via distance at significantly lower prices than organisations could source in the local market.

Demographic and geographic effects

Technological change may affect different sectors of society and different geographical areas. New Zealand, like many western countries, has an ageing population; people are working until later in life. We are aware of reports showing older jobseekers experience age discrimination, and there is a perception that older workers and jobseekers are less adaptable to new technologies. In scenarios where technological adaptation increases, it is possible that older workers and jobseekers will be disproportionately affected. Conversely, there may be more opportunities for older people to engage in work if more job opportunities are created.

There is evidence that sectors that are more knowledge-intensive, particularly the service sector, display clustering effects known as economies of agglomeration. In scenarios where technological adaptation increases it is possible that we will see further clustering. This would have benefits for innovation and entrepreneurship in those clusters and is most likely to occur in New Zealand’s larger population centres. It is possible that this could drive further urbanisation and exacerbate the ‘zombie town’ phenomenon. Technology may allow certain businesses to be run from anywhere, so the opposite affect may also be apparent: further development of ‘connected’ businesses run from the regions. Again, it is difficult to predict what the region-specific or net effects will be, but there is the possibility for widely differing outcomes in different industries or regions.

Appendix A

Monitoring impacts on the labour market

We agree that the future is uncertain and that an approach characterised by keeping options open, collecting and monitoring information, continuing engagement, and taking action when necessary is an appropriate approach.

The following indicators, amongst others, would be useful for monitoring the effects of technological change on the labour market:

- technology (or computer) use at work
- median income
- nature of employment (i.e. contractor, employed, self-employed)
- number of jobs worked per person or number of income sources (to track 'gig economy' work and secondary employment).

Labour market policy objectives

We support the policy objectives proposed in the Discussion Document.

Over the last decade there has been increasing discussion in academic circles and mainstream media of the importance of dignity in work. There is the possibility for technology to enable more dignified work and we suggest this be considered for inclusion as an additional labour market principle.

Worker protection policies

We support the Commission considering which policies may be needed to balance technological opportunities and economic growth with protection for workers. Below we provide comments on:

- the need to consider accident compensation policy changes for an older workforce
- further investigating the concept of 'independent work'
- the need to investigate ethical frameworks for using technology to monitor staff and to make automated decisions.

Accident compensation protection

With an ageing workforce and expected policy changes to incentivise workers to remain in the labour market for longer, there may be conflicts with the current policy settings of New Zealand's worker accident compensation scheme. Accident compensation can currently only be paid for a maximum of two years after a worker over the age of 65 is injured. If the age of entitlement to NZ superannuation is raised to encourage older workers to remain in the workforce, accident compensation policy settings will also need to change.

Independent workers

We agree that a large-scale increase in the proportion of independent contractors presents a challenge for everyone. Whilst it increases flexibility for workers and for employers, it has the potential to make workers more vulnerable and also could lead to greater costs for firms as they seek to fill positions experiencing greater turnover due to the independent nature of the work. The concept of 'independent worker', somewhere between an employee and an independent contractor, is an interesting concept that may address the vulnerabilities experienced by lower skilled and lower paid workers, who generally are unable to command the conditions that more skilled independent contractors can. We support the Government undertaking more policy work to assess this and other options.

Privacy, monitoring of staff, and automated decision-making

Appendix A

The Commission rightly identifies the potential for increased monitoring of staff and discrimination against people with new technologies. We have previously considered some of these ethical issues in our paper *Machines can learn, but what will we teach them?*

We agree that there is the potential for significant business opportunities through greater use of such technology but that these also come with significant risks. We are aware of the use of artificial intelligence-enabled facial recognition technology to monitor the moods of employees in at least one large organisation in Australia, and technology companies advertising products that monitor employees' written communications to determine staff moods and levels of engagement. Our position is that there is a need for fairness and privacy for people subject to these types of technology, and that every person's autonomy and right to make decisions should be respected. There is also the potential for automated decision-making to affect employees and jobseekers (as well as consumers). Consideration needs to be given to the ethics of removing human oversight at various stages of decision-making in hiring and business processes.

Australia is currently undertaking an inquiry into ethics and artificial intelligence that will consider some of these issues. The New Zealand Government should consider undertaking work in this area to ensure that an appropriate ethical framework is in place that delivers fairness and harnesses the benefits of this technology. We recommend that employment and privacy legislation dealing with issues such as these be principles-based and flexible to keep pace with rapid changes in technology

Possible new work trends

Our previous research in Australia, reported in *The Future of Work*, found that workers expected to move around more in the future, not just by changing employers but also by changing industries; three in five people looking to change jobs in the next ten years expected to pursue work in a different industry, a different role, or both. New technologies that improve workers' access to information about new job opportunities and match them with roles may facilitate increased voluntary job mobility, particularly amongst young workers, who tend to have shorter job tenure compared to older workers. It is becoming apparent that a job for life has diminishing importance in modern society and many individuals will likely have a number of different careers. This has significant implications for skills training and education.

Skills training and education

Changing emphasis on skills

The mix of technical skills that will be needed in the future is uncertain, as occupations that will see significant jobs growth may not currently exist, and technological adaption may change current occupations in unknown ways. However our research reported in *The Future of Talent* shows that businesses are looking less for deep technical skills and more for 'enterprise skills' such as problem solving, communication, adaptation, collaboration and innovation.

Policy responses needed

If job mobility continues to increase we think it is likely that greater support will be needed for people retraining in mid- to late career. This includes low skilled workers whose industries are automating and / or who experience redundancy, as well as higher skilled workers who need to retrain or upskill to adapt to new technologies. We reported in *The Future of Talent* that employers view on the job training, professional development and mentoring as significantly more important than formal high school or

university education for developing the skills needed for future work in their organisations. How to support organisations and individuals to train and retrain is already a key question for policymakers and will likely become more acute.

Our research in Australia, reported in *The Future of Work,* showed that access (or lack of access) to financial support for training and retraining can be a deciding factor for workers seeking to upskill or retrain: nearly one in five individuals who would use retraining support would not pursue further education if funding was not available. We agree with the need for greater Government funding to support individuals to train and retrain, and incentives for organisations to invest in staff training. We also suggest that Government considers whether current student loan settings (particularly policy settings on maximum EFTS for each person) are appropriate for a future workforce with higher retraining and lifelong learning needs.

In our sector we see tertiary students considering a career in accounting who are not learning the digital skills that we consider to be important for accounting both now and in the future. This includes use of accounting software packages. We are working with tertiary providers to address this, but think that Government should consider whether the tertiary education and training sector as a whole is currently supplying the necessary adaptable skills for the near future. As a matter of principle, we believe that the education and training systems of the future need to be dynamic and frequently reviewed to ensure that they are fit for purpose for their current time and the future.

We have previously investigated these issues and made these recommendations in our 2017 report *The Quest for Prosperity*.

Firm and economic policies

The Discussion Document identifies some high level options for improving absorptive capacity and knowledge transfer, and increasing innovation and investment. Below we make comments on:

- funding for innovation and export development
- enhancing knowledge transfer
- targeted sector investment
- increasing foreign direct investment.

Innovation and export development support

We agree with the Discussion Document's assessment that the reach of Callaghan Innovation and NZTE are limited as they focus on a small number of companies and their assistance largely is in exporting and product innovation goals. Their assistance to companies, when provided, can be of significant benefit. We support considering expanding their reach to assist more organisations.

The Discussion Document seeks feedback on what changes might be needed to R&D funding to improve returns to firms from innovation. In principle we do not believe that an R&D tax credit regime is superior to an R&D grant system to stimulate innovation, and included this principle in our submission on the *Taxation (Research and Development Tax Credits) Bill 2018*. Compliance costs for tax credit regimes can be significant, particularly for smaller businesses. We accept that an R&D tax credit scheme is in place and therefore we believe that it should be fiscally sustainable and that it strikes an appropriate balance in terms of administrative compliance.

Appendix A

Knowledge transfer

We also think there are opportunities to improve knowledge transfer and absorptive capacity in New Zealand. One of the ways this could be achieved is through greater collaboration between universities and businesses. This would help stimulate entrepreneurship, transfer research knowledge throughout industries, and stimulate research on issues affecting the business sector. We think Government can play a key role in supporting this, particularly through encouraging university-business partnerships.

Targeted sector investment

We are wary of the Government explicitly targeting specific sectors or technologies for funding assistance to boost innovation for a number of reasons, including the difficulty that governments have 'picking winners' and the vulnerabilities that such a system has to lobbying and 'pork barrel' politics. In our view Government support should be sector or technology neutral, and a more appropriate policy intervention would be to increase grant funding and innovation support through an agency such Callaghan Innovation.

Increasing foreign direct investment

We support amending the *Overseas Investment Act 2005* screening regime so that it provides greater transparency and certainty for potential overseas investors and so that it better balances the economic benefits of foreign direct investment and the need to protect the national interest. We recently submitted to the Treasury on reforming the Act to achieve this.

Appendix B

About Chartered Accountants Australia and New Zealand

Chartered Accountants Australia and New Zealand is a professional body comprised of over 120,000 diverse, talented and financially astute members who utilise their skills every day to make a difference for businesses the world over.

Members are known for their professional integrity, principled judgment, financial discipline and a forward-looking approach to business which contributes to the prosperity of our nations.

We focus on the education and lifelong learning of our members, and engage in advocacy and thought leadership in areas of public interest that impact the economy and domestic and international markets.

We are a member of the International Federation of Accountants, and are connected globally through the 800,000-strong Global Accounting Alliance and Chartered Accountants Worldwide which brings together leading Institutes in Australia, England and Wales, Ireland, New Zealand, Scotland and South Africa to support and promote over 320,000 Chartered Accountants in more than 180 countries.

We also have a strategic alliance with the Association of Chartered Certified Accountants. The alliance represents 788,000 current and next generation professional accountants across 181 countries and is one of the largest accounting alliances in the world providing the full range of accounting qualifications to students and business.