Koi Tū
Conversation

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NEW ZEALAND'S ECONOMIC FUTURE: COVID-19 AS A CATALYST FOR INNOVATION

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KOI TŪ:
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INFORMED FUTURES

Koi Tū: The Centre for Informed Futures is a non-partisan, evidence based, transdisciplinary think tank. Its report, *The Future is Now: the Implications of COVID-19 for New Zealand*,[1] focused on the opportunity for extensive reflection on New Zealand's longer-term direction following the significant inflection point created by the pandemic. That report and other commentaries have highlighted the opportunity to give greater consideration to how we can move down a path that will enhance sustainability, resilience and social cohesion for the benefit of current and future generations of New Zealanders.

This think piece extends those discussions by focusing an economic lens on the issues, considering what we might do differently to improve our standard of living while continuing to progress our long-term sustainability goals in the face of significant global uncertainty. We have chosen to focus here on a number of core issues that create the potential for New Zealand's economy to grow through diversification into high value-added industries. We will explore these and other aspects of our economic development further in focused conversations, which will be reported in future papers in this series.

1 https://informedfutures.org/wp-content/uploads/Koi-Tū-The-Future-is-Now.pdf

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EXECUTIVE SUMMARY

In considering our ongoing response to, and recovery from the coronavirus pandemic, there is broad consensus, as highlighted in the recent election, that New Zealand should seek to protect and enhance its relatively high level of social cohesion and strive to increase its resilience in the face of uncertainty and change.[2] This entails a commitment to dealing with inequalities and inequities, to addressing long-standing issues of intergenerational disadvantage, to more effectively meet our obligations under the Treaty of Waitangi, and to confronting the issues of post-colonialism. Along with this there is a broad desire to advance our economic, social, cultural and environmental well-being. What is less agreed are the pathways necessary to make significant progress towards these goals.

It is clear, however, that we need to think about how we can further build and diversify the economy by cultivating high value-added industries that provide increasing incomes while reducing our environmental footprint. Climate change, as well as the consequences of COVID-19, are likely over the longer-term to affect market and domestic attitudes to traditional staples of the New Zealand economy – particularly ruminant products and high-volume tourism. Export education may be compromised going forward by the enhanced move towards on-line education, which has been accelerated by COVID-19. The future socioeconomic challenges and opportunities will be closely linked to how we manage and take advantage of the rapidly changing technological landscape.

Although our short-term priority must be on the recovery from recession, the subsequent rebalancing and potential for restructuring provides us with an opportunity to rethink our reliance on these sectors and to explore adjustments to our current economic model.

Some goals seem clear:

- To grow the economy, diversify the economic base, and increase productivity while recognising the expectation of greater resilience, sustainability, and social justice
- To expand the 'weightless' economy
- To promote technology adoption and reduce the environmental footprint of the primary sector

To make progress towards these goals, New Zealand needs comprehensive policies that address: research and innovation, the role of cities and agglomeration, housing and taxation, and demographic and workforce issues. None are easy issues, and all require open conversation on the way forward. In this initial contribution we open the conversation on these topics; they will be dissected further along with other aspects of the economy in ongoing conversations in the Koi Tū Conversations series.

2 https://informedfutures.org/social-cohesion-in-a-post-covid-world/

INTRODUCTION: RETHINKING OUR ECONOMIC MODEL

Despite New Zealand's increased rate of growth in income per head since the early 1990s, the economy still follows a productivity trajectory that will ultimately fall short in delivering the increases in income necessary to sustain and enhance our living standards. This failure will affect our ability to fulfil our social contract, which is underpinned by commitments to equitable access to healthcare, education and employment.

Added to this are two accelerating trends that have a potential to undermine our current economic model: climate change and rapid technological advancement. Along with COVID-19, these trends will affect groups within our society differently and have the potential to increase inequality. This necessitates serious deliberation on how to adapt and restructure our economy accordingly, particularly as we look to emerge from the pandemic-induced recession.

The sudden impact of the COVID-19 pandemic has underscored the reliance of our economy on the tourism, international education and primary sectors. Tourism and international education have been hit hard by the border closure, while our ability to continue to produce and export primary products has somewhat cushioned the blow from the global recession. Significant changes in global supply chains, which have until now tended to prize efficiency over resilience, may emerge from the COVID-19 experience and ongoing geostrategic issues.

It is time for fresh thinking about how we do business. Given our geographical isolation and the need to reduce the impact of extractive industries, our most important asset will be knowledge. Yet building this asset will require new strategies, and a significant change in direction and focus for the New Zealand economy. While there has been lip-service to such a direction over recent decades from all political parties, the necessary policy settings and commitments to make it a reality remain lacking, or are, at best, incomplete and disconnected.

TRENDS AND CHALLENGES

Climate change poses a significant threat to our current economic model. Quite apart from ethical imperatives to act now, an inevitable global shift against the consumption of carbon-intensive goods and services will heavily impact both tourism and agriculture. It is better that we make necessary changes now, of our own accord and at our own pace, than to have the changes effectively imposed on us through a sudden loss of markets in environmentally-conscious trading blocs and partners.

Rapid technological progress will continue unabated around the globe regardless of the choices we make in New Zealand. Many of these advances will open-up new possibilities for those who are wealthy enough to afford them, particularly in education and health, two sectors of the economy that have traditionally had heavy State involvement to promote equitable access and uptake. Recent and potential advances in medicine, such as biologics and gene-based treatments and therapies, represent a potential leap forward in tackling life-threatening conditions. Yet these methods are likely to be resource intensive, and therefore expensive.

The advent of artificial intelligence will see increasing automation not only of routine jobs, but of complex tasks, putting many existing jobs in jeopardy, and changing the nature of work.[3] Substantial investments will be necessary to ensure that the next generation of workers are poised to benefit from technology rather than be replaced by it or suffer reductions in living standards. The nature of education will undergo substantive change.[4] If the State cannot find the necessary resources to make the investments in equitable and inclusive education, then each successive wave of technological achievement will primarily benefit the children of the wealthy, who can afford to make the requisite investments.

The net effect of these impacts on the future wellbeing of society is uncertain. A range of new life-science technologies, of which gene editing is an example, and the application of data, robotic and sensor technologies together with new food production systems, is likely to increasingly benefit those production and food systems globally where they are adopted.[5] Uptake will result in higher returns and lower environmental footprints for early adopters relative to the laggards. Is New Zealand ready to have a meaningful conversation about whether, and how, we will take advantage of such technologies?

CHANGING DIRECTION - TOWARDS A KNOWLEDGE ECONOMY?

Many of our home-grown businesses are already pushing the frontiers of knowledge by developing new ideas and processes in the IT, medical, agritech and manufacturing sectors. But we have yet to reach a critical mass of labour, capital and expertise in these sectors that catalyses further entrepreneurship and creates the capacity to market globally and earn at scale in the knowledge economy.

Multinational companies (MNCs) are core to global innovation systems – yet they have little or no productive or research footprint in New Zealand. This is a very different positioning to other small advanced economies that have succeeded with a knowledge strategy in which foreign direct investment, principally via MNC investments, has been encouraged in order to leverage existing talents and resources with the country. Attracting MNCs and foreign direct investment to New Zealand will be critical if we are to diversify our economy and grow its 'weightless' component, including knowledge production, innovation, and high value-added services.

3 https://www.productivity.govt.nz/assets/Documents/0634858491/Final-report_Technological-change-and-the-future-of-work.pdf

4 This is subject to separate enquiry by Koi Tū.

5 https://informedfutures.org/wp-content/uploads/The-Future-of-Food-The-Primary-Sector.pdf

KNOWLEDGE AGGLOMERATIONS: A PATHWAY TO A MORE PRODUCTIVE AND SUSTAINABLE ECONOMY?

International comparisons highlight the role of cities as the hubs of innovation, although this has not been a dominant part of the New Zealand strategy to date. Cities exist because they are productive. London produces 23% of UK gross domestic product yet contains only 13% of its people,[6] while Copenhagen accounts for 43% of Danish GDP[7] but only 35% of the total population. The efficiencies derived from firms and households locating close together are referred to as *agglomeration effects*. Agglomeration benefits include deeper and wider labour markets for employees and firms, greater specialisation in the supply of inputs to production, and knowledge spillovers through local networks.

Firms in the same industry often cluster together in specific cities in order to take advantage of the benefits of agglomeration. In doing so, they further enhance agglomeration benefits of the city, increasing the incentives for other firms in the same industry ('*localisation economies*') and firms from other industries ('*urbanisation economies*') to locate in the city, creating a self-reinforcing positive feedback loop.

By some measures, Auckland is already more productive than other parts of New Zealand, but still has low efficiency compared to other global cities.[8] A city of scale, to which Auckland might aspire, is likely to engender both localisation and urbanisation economies, whereas smaller, more specialised cities are more likely to benefit from localisation economies.

However, to date New Zealand has largely avoided making decisions to promote innovation hubs. Instead, activity is mostly dispersed, assuming regional development to be a sufficient driver of economic development. Regional development is clearly desirable for a range of reasons, but to compete in a technologically progressive world and to attain advantage for New Zealand, an innovation strategy that deliberatively fosters knowledge+intensive hubs needs urgent attention. Despite COVID-19 changing much about the ways of working, the nature of innovation means that it significantly benefits from agglomeration.

Succeeding in the knowledge economy over the next 50 years will almost inevitably require further development of our largest and most internationally positioned city, Auckland, into a hub for knowledge-intensive businesses. This approach does not ignore focused opportunities for knowledge production in other cities with universities and research institutes, but it is hard to imagine a knowledge-intensive New Zealand that does not have Auckland – its only international city of scale – as its prime knowledge hub.

This needs to be complemented by industry-specific clusters in other cities. Some sectoral clusters (most obviously agriculture) will likely not be Auckland-based. Clusters are best formed organically from the decisions and actions of individual businesses, but the environment needs to be created for them to thrive and be effective. This is where clear industrial and urban strategies, and smart policy development, are needed.

6 https://www.ons.gov.uk/economy/grossdomesticproductgdp/bulletins/regionaleconomicactivitybygrossdomesticproductuk/1998to2018

7 https://www.oecd.org/cfe/DENMARK-Regions-and-Cities-2018.pdf

8 Maré D, Graham D. 2013. Agglomeration elasticities and firm heterogeneity. Journal of Urban Economics, 75, 44–56.

We see four benefits from creation of industry clusters that are focused on the production of knowledge:

1. **Productivity.** Our standard of living is ultimately driven by the ability to do more with less. We need to cultivate sectors that are poised to benefit from and contribute to technological advances. A range of technologies offer scope for such advances in knowledge-intensive services, elaborately transformed manufactures and specific parts of agriculture, but other commodity sectors and tourism offer fewer prospective gains.
2. **Sustainability.** Air travel and livestock farming have substantial carbon footprints and disproportionately contribute to our carbon emissions. A shift towards a knowledge-based economy that leverages local research and development would better help us meet our commitments under the Zero Carbon Act, the Living Standards Framework and the Sustainable Development Goals.
3. **Value-added.** Many primary commodities and tourism are subject to intense international competition. Concentrating international tourism at the top end of the market offers one way to transition to a higher value-added and a more sustainable industry. Primary production also requires significant investment in R&D and in a range of technologies to maintain its competitiveness and grow its value across future decades[9] while protecting environmental quality. High-tech services and manufacturing offer the potential for firms to specialise in niche areas and wield market power over a broad base of overseas consumers. This is not a question of 'either/or' but rather accelerating the building of sectors of the economy where significant opportunities exist.
4. **Diversification.** Our over-reliance on a small number of industries amplifies our susceptibility to global shocks. Complementing our existing strengths by developing additional sources of export revenue would mitigate threats to our prosperity over both the short and long run.

CULTIVATING THE KNOWLEDGE ECONOMY THROUGH EDUCATION AND R&D

Universities play a central role in the knowledge economy, both in the creation of new ideas and processes through research, and particularly in the education and training of a workforce that meets the needs of rapidly-expanding private sector companies that put research and development at the heart of their business models.

Indeed access to a suitable highly educated workforce is a key criterion for any major company in making an investment. Silicon Valley would not exist without Stanford University, which provided the knowledge and graduates that underpinned the rise of several generations of tech-giants, including Hewlett Packard, Apple and Google.

To support economic growth through private sector innovation, policies will be required that significantly reorient research and the education sector towards this goal.

9 https://informedfutures.org/the-future-of-food-the-primary-sector/

TERTIARY RESEARCH AND EDUCATION ACTIVELY COLLABORATING WITH THE PRIVATE SECTOR

Upgrading our tertiary sector to be a more active participant in the ecosystem of ideas and innovation will require concentrated and strategic investment by government in tertiary institutions, leveraging existing areas of international-quality expertise and scaling them up significantly to cultivate industry clusters. Such resources will also help universities recruit top academics from the global talent pool, an approach Singapore has used to great effect in building-up its tertiary institutions over the past thirty years. The presence of key thought leaders in academia is a key criterion for major companies and investors in making investments in a country or region.

TERTIARY SECTOR SPECIALISATION

Universities that are world-ranked in their areas of specialisation act as a magnet both to top global academic talent and to private industry. For example, Singapore and Israel have invested heavily in their most research-intensive universities: the National University of Singapore and Nanyang Technological University, and the Weizmann Institute of Science, respectively. This has elevated these institutions to the level where they can compete on a level footing with the more established and well-known research universities in the United States and Europe. Their ranking creates magnets for both companies and outstanding students.

New Zealand could learn from these experiences and emulate components of these models by building on existing strengths in the STEM and related fields that underpin knowledge and innovation ecosystems. This will require clear and overt specialisation within the tertiary education sector to support differentiated areas of excellence. There needs to be clear guidance from both the Ministry of Education and the Tertiary Education Commission as to purpose, mission and scale within the university sector.

Efforts must be made to have at least one globally high-ranked university achieving at least the level of the leading Australian universities, which is where the comparison should appropriately be made. In the latest QS World University Rankings, ANU is ranked at 31st in the world with four other Australian universities ranked in the top 50. Notably, New Zealand's highest ranking university, the University of Auckland, is ranked at 81st, and is only the seventh highest ranked university in Australasia. Beyond that, specific fields of expertise might be determined and located strategically across the university system, so as to attain the scale necessary to enable specific knowledge-based industries that leverage existing strengths. Current policy settings that promote excessive competition among our universities should be replaced with settings that promote more collaboration and coordination between our universities such that they are competitive with the rest of the world in identified areas of specialisation.

RESTRUCTURING PUBLIC RESEARCH AND DEVELOPMENT INSTITUTIONS

It is accepted by virtually every advanced country that balanced public and private sector investment in research and development is core to economic growth as well as for positive environmental and social outcomes. Our public funding of research and development lags behind other OECD countries. New Zealand Government expenditure on research and development was 0.6% of GDP in 2017, while Singapore, Denmark, Switzerland and Korea invest well over 1% of GDP in public R&D. Private sector investment grows in response to public sector investment. Despite oft-stated political support to increase the investment in R&D over the past decade, the reality is that we remain well below the level needed. In addition, New Zealand's industry structure and firm size constrain private sector R&D activities.[10] Most of our firms are of too small a scale to undertake significant R&D programmes, while we have few firms in R&D-intensive sectors such as pharmaceuticals and defence.

A transition to a knowledge economy will require prioritizing research and development expenditures in areas of pre-existing expertise or expertise that will leverage off identified potential. To achieve this we should reassess the 1990s model that silos publicly-funded research between Crown Research Institutes (CRIs) and universities, and which currently focuses their activities through distinct incentives in ways that are not necessarily strategic. Our approach to public R&D is unusual in that over 50% of our public science expenditure occurs within government institutes which are set up as Crown-owned companies – a framing which itself drives behaviours that may not meet the boarder needs of New Zealand. Most other countries have moved well away from this model. Denmark, for example, merged their equivalents of CRIs and universities years ago in rationalising their tertiary and research sector. Finland has similarly merged universities and technological institutes, and the Netherlands has developed the Wageningen cluster to bring land-based activities together.

Singapore still has the Agency of Science, Technology and Research (A-STAR) as a set of government owned institutes, but which operate very differently to CRIs. The Singaporean model of institutes is based on funding via large block grants, a large commitment to basic research and a strategic role of focusing that research and workforce development to attract industry to be based in Singapore and to spin out activity. A-STAR does not generally undertake or incentivise short-term and non-strategic industry support activities. The links between A-STAR institutes and the University system is very close, aided by geography but also through governance relationships. The centrality of the national research strategy and its overall coordination for Singapore's development is owned at the level of the National Research Council headed by the deputy prime minister.

INCENTIVISING KNOWLEDGE TRANSFER TO INDUSTRY

Advancing the innovation economy can be assisted by better promoting the transfer of knowledge from the public to the private sector. In this regard, incentives matter. Universities have been more innovative in this regard than CRIs. For example, universities allow their staff and students to share in the upside in their discoveries, while CRIs do not.

10 Crawford R, Fabling R, Grimes A, Bonner N. 2007. "National R&D and Patenting: Is New Zealand an Outlier?", New Zealand Economic Papers, 41(1), 69-90.

Existing incentives in both CRIs and universities need to be revisited. The Performance Based Research Fund (PBRF) system designed for universities now creates little traction to shift performance. Contrary to the individually-based PBRF measurement system, knowledge generation is increasingly moving to being team-based and interdisciplinary or transdisciplinary, and thus these aspects should be the basis for the measurement of excellence. Global commentary is increasingly focused on the limitations of such individually oriented incentives in the tertiary sector. The balance of mission-led and investigator-led research needs to be reevaluated.

The CRIs are effectively incentivised in large part to focus on short-term issues and to be very industry focused, but with less ability to operate strategically. The dominant nature of short-term incentives and the corporate model can deviate the CRIs from a longer-term focus which needs to be strategically integrated with national opportunities, rather than simply determined within the CRI. Further, the short-term nature of CRI-funding can 'crowd out' scientific input by the private sector. The CRIs are effectively in competition with each other and with the universities for resources. They are somewhat isolated from the obligations of workforce development.

Both CRIs and universities are burdened with high administrative requirements and costs related to research management. It is somewhat surprising that of all the sectors that have received support from the taxpayer in the immediate post-COVID period, the university sector has had to absorb large costs and income loss: they will almost certainly be downsizing at the very time investment is essential to the nation's future. In general in recessionary times, student numbers increase.

The very limited investment in social science research is extraordinary, given that so much of the government expenditure and the range of issues ahead of us in adapting to technological innovation and addressing societal and environmental issues require quality engagement with social sciences and humanities.

UPSKILLING AND RESKILLING TO PROMOTE RESILIENCE TO THE CHANGING NATURE OF WORK

While current forecasts from Treasury and other organisations indicate that the unemployment rate will peak at around 7.7% as a result of this pandemic, Chief Executives of major corporates tell us that many high-skilled roles remain unfilled due to immigration restrictions,[11] highlighting long-standing structural imbalances between educational pathways and employment opportunities. The transition to a knowledge-based economy will require skilled workers. If these workers are not generated domestically through our education and skills training systems, the result will be an exacerbation of these imbalances. There is a vital need for accessible and efficient pathways for all workers to upskill and retrain across their working careers, regardless of their current skill base. Active and effective retraining programmes present a strategy to minimise the negative impacts of automation on livelihoods while maximising our human resources. Publicly-supported employment assistance in the form of a national job vacancy registry coupled with modern job matching algorithms can be deployed to enhance reskilling and re-entry into the labour force. Similar systems have been used to great effect in Denmark, which has developed an extensive range of employment assistance and retraining programmes that are expertly evaluated for their effectiveness in securing employment and raising the incomes of beneficiaries and vulnerable populations.[12]

11 Also see https://www.stuff.co.nz/business/121705957/coronavirus-skilled-workers-missing-in-covid19-economic-recovery

12 Mailbom Jonas, Michael Rosholm and Michael Svarer, Can Active Labour Market Policies Combat Youth Unemployment? IZA DP No. 7912, January 2014 http://ftp.iza.org/dp7912.pdf; Guillaume Blache. Active Labour Market Policies in Denmark: A Comparative Analysis of Post-Program Effects. 2011. https://halshs.archives-ouvertes.fr/halshs-00654181

Specialised educational institutes that meet the needs of workers looking to retrain and re-enter the workforce offer the capability to efficiently target those most in need of assistance. For example, Singapore has reacted to the changing nature of work through the creation of the life-long learning Institute.[13]

INVESTING IN AND EXPANDING EARLY CHILDHOOD, PRIMARY AND SECONDARY EDUCATION

Our tertiary institutions will not be able to produce the scientists, programmers and engineers in the numbers required to staff the knowledge clusters if the education system has not imparted the necessary skills among emerging high-school students. This requires investment at all levels of the education system, including the point where it all begins: early childhood education.

New Zealand has a long tail of educational under-achievement of school students according to the PISA[13] and TIMSS[14] international measures. Ensuring a rise in educational outcomes of our more disadvantaged students is critical to improving both equity outcomes and the productive potential of the economy. But education also needs to continue to evolve to meet the challenge of the digital age – this is the topic of a separate Koi Tū workstream. Excellent educational institutions will also help us attract global talent considering moving their families to New Zealand.

MAKING AUCKLAND A GLOBALLY COMPETITIVE HUB FOR INNOVATION

New Zealand has long been embedded in the global economy, relying on overseas markets not only for our products, but for the capital and labour required to develop our economy. The shift towards cities as the centrepiece of the modern economy requires a change in the way that we understand how countries compete in global markets. In order for New Zealand to compete to retain and attract people and capital, Auckland must be able to compete with the likes of Melbourne, Sydney, Singapore and London. The policy changes needed will in turn have spill-over benefits to other cities and regions across New Zealand. Regional development cannot be considered independently of urban policy. Significant changes need to occur to our urban geography, educational system, cultural and social amenities, fiscal and tax policies in order to create the conditions for knowledge-based clusters to grow.

TRANSFORMING THE URBAN GEOGRAPHY - MAKING AUCKLAND HOUSING AFFORDABLE

Auckland must be affordable while preserving and enhancing the amenities that make it attractive to global and local firms and talent. It will be challenging to deliver this combination of attributes without determined policy effort and coordination.

13 https://www.lli.sg/

14 Programme for International Student Assessment. https://www.educationcounts.govt.nz/publications/series/PISA/pisa-2018

15 Trends in International Mathematics and Science Study. https://www.educationcounts.govt.nz/publications/series/2571/timss-201415

Policy settings at the central and local government levels have led to burgeoning housing demand while holding back supply resulting in skyrocketing house prices. Census data reveal that while the population of Auckland increased by 11% between 2013 and 2018, the number of occupied dwellings increased by only 5.7%. The lack of policy coordination across and between the different arms of central and local government has precipitated the housing affordability crisis in Auckland that is now quickly spreading to other cities and regions.

High house prices prevent us from benefiting from agglomeration efficiencies.[16] Restoring housing affordability will be a fundamental first step towards creating the foundation for agglomeration economies to flourish.

Housing supply must respond to demand in a manner that preserves and enhances the natural amenities of Auckland and expands the mix of dwellings available to households and families. All options need to be on the table: detached housing, terraced housing and apartments. Thoughtful urban planning will be required to ensure that Auckland remains an attractive city to people from a variety of backgrounds and a variety of interests, requiring coordination and cooperation between economists, urban planners, civil and transportation engineers.

Unaffordable housing also erects a wall between Auckland and the rest of the country by denying households from the regions the opportunity to seek employment in the main centres. In order to create a knowledge hub in Auckland, we will need to draw, in part, on our own home-grown talent from around the country, necessitating access to affordable housing in Auckland for people moving from the regions.

Recent changes made under the Auckland Unitary Plan have led to a partial relaxation of land use regulations to allow private development to build both up and out. The impacts of these changes must be closely monitored in order to assess whether additional legislative and regulatory changes are necessary. This must include significant reform now that the Resource Management Act (RMA) is to be replaced, to enhance spatial planning that can enable a sizeable expansion in Auckland's (and other cities') housing stock. Equity considerations also call for a material increase in the stock of social housing or increased subsidies for alternate approaches. The recently released *National Policy Statement on Urban Development* [17] is in line with the proposed directions for urban policies. It will be imperative that local authorities are held to account in meeting the requirements of this National Policy Statement.

FUNDING INFRASTRUCTURE TO SUPPORT HOUSING

The increased population that underpins agglomeration will require infrastructure such as roads, sewerage and water supply, raising problems of how such infrastructure is planned and funded. The short-termism of much of our urban planning is increasingly obvious with horizontal infrastructure in a relatively parlous state. The need for dependable, quality water supplies has been highlighted repeatedly both by experience and in official reports,[18] but little has been done to rectify deficiencies in part due to funding and planning constraints. A range of options can be explored to fund infrastructure upgrades and extensions, potentially including betterment taxes on areas that benefit most from new infrastructure investments.[19]

16 Nunns, P. (2020). The causes and consequences of rising regional house prics in New Zealand. Forthcoming in New Zealand Economic Papers.

17 https://www.mfe.govt.nz/national-policy-statement-on-urban-development

18 For instance: National Infrastructure Unit. 2012. Infrastructure 2012: National State of Infrastructure Report. https://treasury.govt.nz/sites/default/files/2018-03/nsir-nov12.pdf

19 Coleman and Grimes (2010) Betterment taxes, capital gains and benefit cost ratios Economics Letters 109: 54–56

MITIGATING CONGESTION THROUGH SIGNIFICANT IMPROVEMENTS IN RAPID PUBLIC TRANSPORTATION

Building both up and out to enable population growth can potentially entail significant congestion costs, undermining the appeal of working in the city and exacerbating our carbon footprint. Densely-populated cities that have ample public transport tend to have lower carbon emissions per capita.[20] To get the most out of our cities we need to make significant improvements in public transportation to rapidly move people living in suburbs and exurbs into and out of the places where the jobs are located.[21]

In general, these rapid transit options need to be grade separated (i.e., rail and busways that are separated from roads) to ensure that the modes are not competing with cars on the roads. Public transportation should also provide rapid transit options to families that wish to locate in detached housing further from the city centre, including the exurbs of Auckland and the townships along existing rail lines to Hamilton and Whangarei.

ENABLING REGIONS TO SHARE AGGLOMERATION BENEFITS

Towns and cities around the country can share in benefits of knowledge agglomeration by contributing to the ecosystem of firms that underlie and support the knowledge-based economy. Many of the businesses ancillary to a knowledge-based export sector benefit indirectly from knowledge clustering and can be located in smaller cities. Examples include logistics hubs and call centres. Such businesses might find it more profitable to set-up outside the main centres, making it critical for regional and local government to adopt policy settings to accommodate businesses pushed or pulled out of Auckland. Further improvements in transportation between Auckland and Hamilton, Tauranga and Whangarei open up additional opportunities for ancillary businesses to locate where the cost of living is cheaper.

The issue of the long-term location of the Auckland port and the use of any land made available has significant implications for planning of not only Auckland but elsewhere. The resolution needs to be strategically based rather than on either local or national short-term political considerations. The downstream consequences for many industries and people of any decision will be major.

Auckland will also need the support of the regions as a source of home-grown Kiwi talent to fuel the knowledge economy. It will therefore be critical that envisaged improvements in early childhood, primary, secondary and tertiary education are rolled out across the country, and that there are affordable housing options in Auckland for young people and families in-migrating to the city.

Auckland need not be the only destination for industry clusters that offer stable incomes and a low carbon footprint. Cities such as Wellington, Hamilton, Christchurch and Dunedin already have incipient industry clusters in performing arts, creative arts, ICT, elaborately transformed manufactures and medicine. The blueprint we have laid out for Auckland can be adapted to these other industries and clusters, but will require clear facilitation from local and central government to support coordination across urban and education policies, including specialisation in proximate tertiary institutions to support research, development and employment in the clusters.

20 Glaeser E.L. and M. E. Kahn (2010). The greenness of cities: Carbon dioxide emissions and urban development. Journal of Urban Economics 67: 404–418

21 https://www.sciencedirect.com/science/article/abs/pii/S0739885917300525?via%3Dihub

RESETTING TAX INCIDENCE TO ADDRESS TWENTY-FIRST CENTURY CHALLENGES

Tax policy settings must be reformed to address the global challenges and effects of transformations underway: climate change, increasing urbanisation, the changing nature of work and rising inequality. Tax reform is necessary to incentivise sustainable consumption and investment patterns, to ensure that the gains from agglomeration and urbanisation are not concentrated among wealthy households, and to mitigate rising inequality driven by the changing nature of work and increasing returns to education. The rise of the gig economy and transnational earnings in a connected-services and weightless-based economy of digital currencies will create challenges for traditional income-based government revenue collection.

TAX CARBON

A comprehensive carbon tax provides a clear price signal to households, firms and the government to invest in more sustainable technologies and production processes and to adopt more sustainable consumption patterns. A carbon tax will also incentivise further electrification of the private fleet, which is critical to reducing our carbon emissions given current projections of population growth.[22] Such a tax needs to be integrated into New Zealand's broader energy policy aimed at achieving environmental, economic and social targets.

Incremental tax increases towards a target rate provides market participants with time to anticipate future tax incidence and alter behaviour and investment patterns prior to the tax reaching levels that would otherwise significantly impact financial stability. Policy credibility will be critical to generating early behaviour change, and credibility, in turn, will require across-the-aisle political commitment.

TAX INCOME LESS

Increasing rates of self-employment through the escalation of the gig-economy will undermine the ability of the government to heavily rely on income tax. Self employment provides ample opportunities for tax avoidance and outright evasion. Increasing the tax base through the initiatives described herein, while reducing income taxes, attenuates the reliance of government finance on an increasingly fragile stream of revenue.

Tax reductions beginning at the bottom of the income distribution would assist in address increasing income inequality driven by the skilled-biased technological change and the increasing urbanisation generated by policies to support agglomeration. Income tax reductions would also help offset increases in the cost of living driven by tax increases advocated elsewhere in this think piece.

TAX LAND MORE?

Policies to support agglomeration must be funded, and funded fairly, while maintaining an incentive to maximise agglomeration efficiencies. For example, a land tax levied on the value of unimproved land would help to achieve these goals.

22 See https://transport2030.org.nz/

Many of the benefits of agglomeration are capitalised into the value of land. Proximity to the city matters – and proximate land is scarce. Landowners in Auckland are poised to reap substantial gains under policies that cultivate high tech clusters,[23] while it is the workers, entrepreneurs and investors that will supply the labour, energy and appetite for risk that will make it all happen. A land tax coupled with a reduction in income taxes rewards work while reducing the rewards from land banking and speculation.

Land taxes are both efficient and progressive,[24] and are more effective than other forms of wealth tax. They are efficient because land is immobile and fixed: landowners cannot respond to a land tax by producing less of it or by moving their land to jurisdictions where taxes are more favourable. They are progressive in that landowners tend to be wealthy, and because land is fixed and immobile, a land tax presents few opportunities for landowners to pass on tax incidence to others. In addition, because they are levied on the unimproved values, land taxes also incentivise development and intensification, further increasing agglomeration. For these and related reasons, the 2010 Tax Working Group recommended a land tax to the then government. However, their advice was not acted upon.[25]

TOWARDS A FAIRER ECONOMY

Policies to enhance technological change, including those advocated in this initial provocation, can be expected to exacerbate existing inequalities in labour earnings between the high and the low skilled as they have elsewhere. Further adjustments to our tax-transfer system may be necessary to ensure that the gains from technological advancement are shared equitably. While making the tax system more progressive by reducing taxes at the bottom of the income distribution is a good first step towards redressing inequities, further changes may be required to generate substantive upward mobility. This might include replacing the In-Work Tax Credit under Working for Families, with a more generous Earned Income Tax Credit that would boost the take-home wage for every hour worked by low-income individuals. Another component may be to create an unemployment insurance system that would protect the living standards of displaced workers, while providing additional employment assistance and work incentives.

The rise of the gig-economy and contracting undermines income stability for many households. Policymakers should keep a careful eye on the outcomes from various international trials of a universal basic income (UBI), which, when designed appropriately, can be highly progressive, and can be used to guarantee households a minimum income as we enter an era where occupations are increasingly put under threat. However, there remain significant concerns regarding whether a UBI that guarantees a sufficient basic income is fiscally sustainable, suggesting that only a payment well below the subsistence level may be feasible.

23 Greenaway-McGrevy, R., Pacheco, G., and K. Sorensen (2020). The effects of upzoning on house prices and redevelopment premiums in Auckland. New Zealand. Forthcoming in Urban Studies

24 Coleman, Andrew and Grimes, Arthur(2010) 'Fiscal, distributional and efficiency impacts of land and property taxes', New Zealand Economic Papers, 44: 2, 179 — 199

25 https://www.wgtn.ac.nz/sacl/centres-and-institutes/cagtr/pdf/tax-report-website.pdf

ATTRACTING FOREIGN DIRECT INVESTMENT, MULTINATIONAL CORPORATIONS AND ENTREPRENEURS

Multinational corporations account for the vast majority of private research and development globally. It is critical that we attract and retain activities of MNCs beyond simply their marketing function to New Zealand. Much of the policy platform outlined here can help to do that, both by creating the foundations for knowledge ecosystems, and by providing workforces with affordable and desirable locations in which to live. Carefully-directed supports for businesses that complement and scale-up expertise in our tertiary and corporate sectors should be considered.

New Zealand could also capitalise on its current reputation that reflects many factors: leadership, stability, cohesiveness, corruption-free status, environmental sensitivity and an excellent COVID-19 response. There is already evidence that this is becoming highly attractive for non-resident New Zealanders to return home, including some who have been away for many years and have skills, talents and resources that would be on great value in New Zealand's domestic ecosystem. It raises the question of whether there would be strategic value in proactively seeking to attract such individuals to return, and what incentives might assist repatriation of needed skills. There is also significant and genuine interest from entrepreneurs and wealthy individuals to settle in this country. In this regard, prohibitions on foreign investment in residential property and restrictions on other forms of foreign direct investment should be revisited to encourage entrepreneurs and to allow entrepreneurs who locate new business in New Zealand to put down roots here.

Our broader creative and cultural environment is impressive but needs to be continually invested in. However, there are real impediments to taking advantage of this window of opportunity. Some are discussed above, including the state of our cities, the ranking of our universities, and the low investment in R&D. The rules over foreign direct investment, private land and residency ownership are inhibitory and need urgent revision in order to ensure that individuals making investments in productive capacity through new business investment have an accelerated pathway to real estate ownership. The lack of a clear industrial, technology and innovation strategy is a further impediment. The clearer we are as a nation over our long-term goals for environmental sensitivity and for social justice, and for renewal of our reputation as a demonstration of a liberal democracy in the best senses of the word, the more attractive we will be.

MIGRATION AND WORKFORCE POLICY

The closing of our borders has shone a light on how both in- and out- migration operate as a 'safety valve' in our labour market, mitigating the impact of economic shocks on unemployment rates, job vacancies, wages and prices. But the broader, long-term implications of international labour mobility on our labour market need to be better understood. A clear population strategy is needed that coordinates policy across demographic change, workforce, immigration, environment, housing and urban domains, and is protected from short-term political vicissitudes. Policies to support agglomeration and innovation rely on attracting high-skilled workers to our shores. But immigration policy must be coordinated with housing and urban policies to ensure that we have the requisite dwelling stock and utility infrastructure to support increases in population. It is also critical that a population strategy coordinates with environmental policy in order to accommodate a growing population in a sustainable manner.

Over the longer term these issues cannot be separated from the issues arising from the impact of technology on the future of work, the predictable demographic changes ahead, and the unresolved issue over a longer-lived population with a retirement age that is is increasingly unrealistic for many. We need a much better understanding of the drivers of ongoing structural change in the labour market, which pre-dated COVID-19 and will persist beyond the pandemic. COVID-19 has likely accelerated the impact of some of these factors, while decelerating others.

THE WAY FORWARD

We have chosen in this initial provocation to focus in on some core issues which create the potential for New Zealand's economy to grow through high value-added diversification. Our geographical reality creates some limitations on what we can do to restructure our economy for future resilience, but equally our small size should allow us to be nimble and coordinated. The discussion here hinges on building an innovation economy for the 21st century, and promoting the benefits of agglomeration. Other aspects such as housing, taxation, industrial and technological policy, migration and workforce policy are key to this, and will be the subject of ongoing work through the Koi Tū conversation process. We have also started work on the broader implications for New Zealand of the Digital Age.

The policy platform we have outlined spans several functions and levels of government. Policy coordination and long-term thinking across these various domains will be critical. Central government must take an active role in coordinating across sectors and actors with strategic intent. But in taking that central role, avoiding partisanship will be critical. Such growth requires time, and we need clarity on the path we are following over the long term – beyond the political cycle – as business and investors abhor unnecessary uncertainty. Long-term strategy spanning political cycles has not been a strong suit in New Zealand policy making in the past, nor (with exceptions) has genuine interaction occurred between policy makers, academia, business leaders, and the wider community.

The COVID-19-induced social and economic recession has created an inflection point that provides an incentive to transform our economy in ways that allow our social and environmental futures to flourish. This takes time and, in this think piece, we have argued that it takes a coordinated strategy agreed across many sectors of government and society. Our citizens have ambitions that cannot be achieved without economic growth. Ultimately that is dependent on a flourishing, ambitious and innovative private sector.

APPENDIX

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