Tax Working Group
Te Awheawhe Tāke

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This paper contains advice that has been prepared by the Tax Working Group Secretariat for consideration by the Tax Working Group.

The advice represents the preliminary views of the Secretariat and does not necessarily represent the views of the Group or the Government.

Appendix A: Productivity

Further information on productivity and promoting the right balance between the productive and speculative economies

July 2018

Prepared by the Inland Revenue Department and the New Zealand Treasury

How tax can contribute to productivity

Purpose

1. The tax system affects wellbeing through many potential channels. The Secretariat has previously provided an assessment framework that identifies how the tax system contributes to the four capital stocks that underpin future wellbeing in the Treasury's Living Standards Framework.

2. The Group's Terms of Reference note the Government's objective for the tax system to promote the long-term sustainability and productivity of the economy. The Group has discussed these issues a number of times. The purpose for this paper is to bring together the analysis to support the interim report.

What is productivity and how does it relate to wellbeing?

3. Productivity makes a critical contribution to living standards. Productivity, which is defined as the ratio of output to input, is generally measured with regard to material living standards (eg, the output of goods and services produced per unit of input). Material living standards are an important determinant of wellbeing, but not the only determinant.

4. Labour productivity, usually measured as output per hour worked, is closely associated with average material living standards. Labour productivity is a function of capital intensity and multi-factor productivity. Multi-factor productivity reflects growth in output that cannot be attributed to growth in inputs. Innovation – the process of creating and adopting knowledge and technology by firms – is a key determinant of multi-factor productivity.

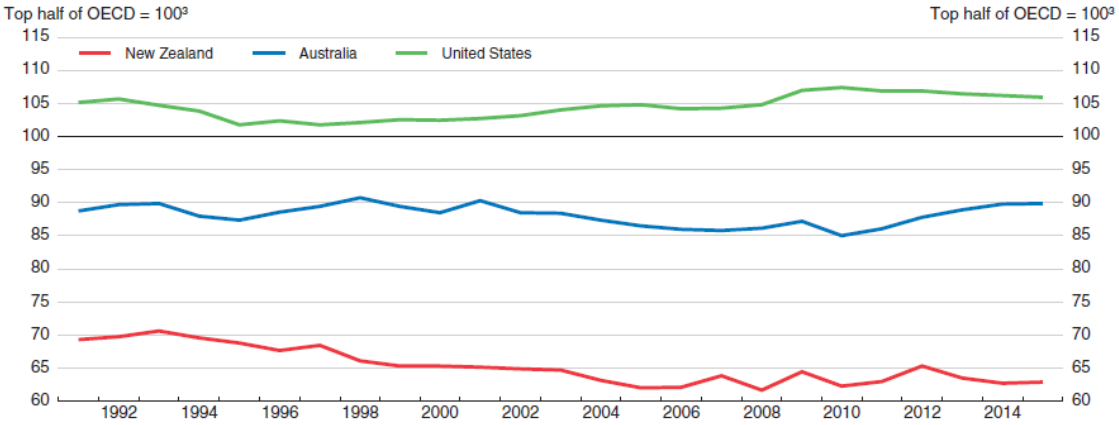
5. Productivity can also be cast more broadly than material living standards. Inter-generational wellbeing is supported by capital stocks that support future well-being. Standard economic growth models can be expanded by adding in additional capital stocks to the production function, and by adding other dimensions of human wellbeing to the utility function (Smith, 2008). This is done by Arrow, Dasgupta, Goulder, Mumford, & Olesen (2012) in their inclusive wealth model. Incorporating the main non-market elements into a standard economic model raises both measurement and technical challenges.

New Zealand's productivity performance

The productivity problem and New Zealand's productivity performance

6. New Zealand has a long standing challenge of low labour productivity relative to top performers in the OECD.

Figure 1 – Labour productivity (GDP per hour worked)



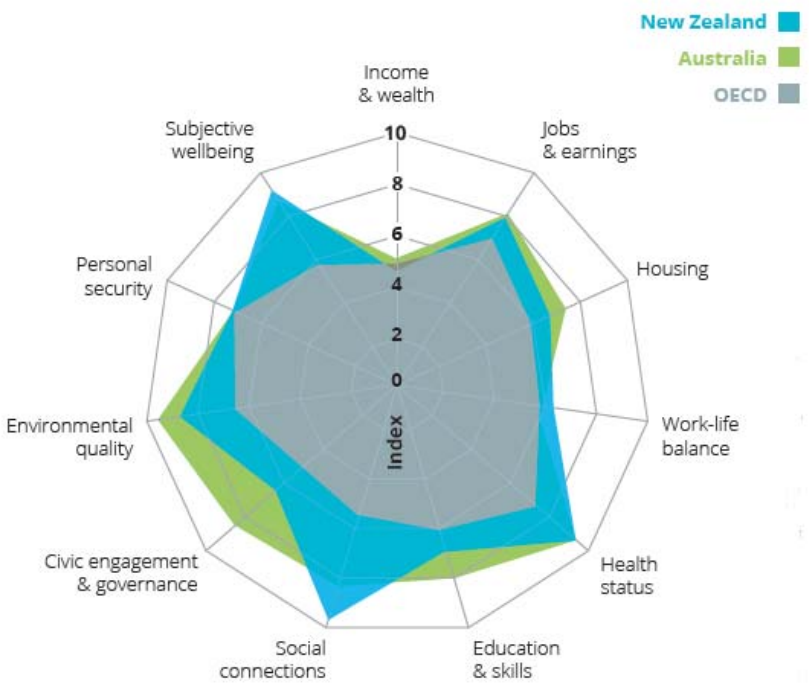
1. 1996-2015 for Austria; 1995-2014 for Australia, Ireland, Japan, Portugal and Spain.
2. Average of the 20 countries for which data are available.
3. Population-weighted average for the top 17 OECD countries for labour productivity, calculated using 2010 purchasing power parity exchange rates.

Source: OECD (2017)

7. Compared to the OECD, New Zealand's low per capita incomes stand out as an area of weakness for wellbeing (Jia and Smith, 2016; figure 2).

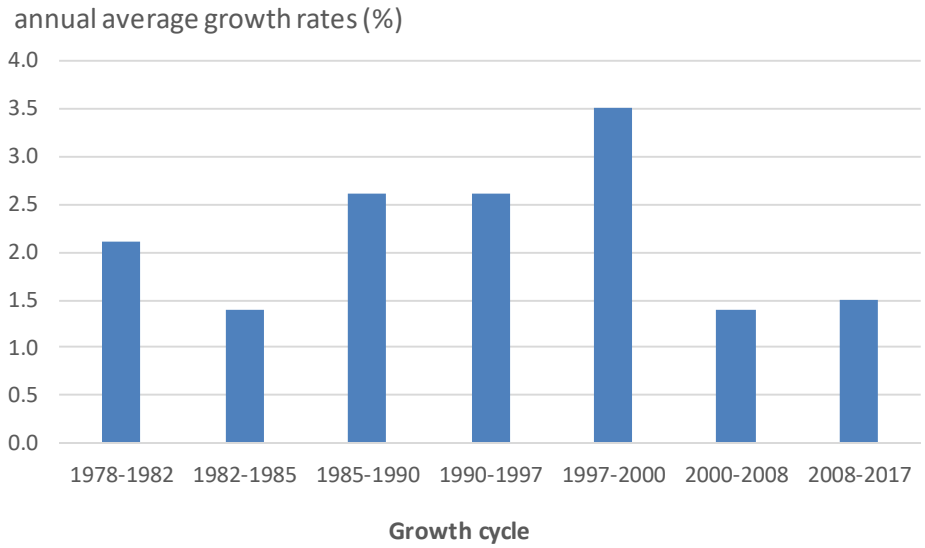
8. Globally, there has been a slowdown in productivity growth in advanced economies in the last two decades. Productivity growth has also slowed in New Zealand (figure 3). The causes for global slowdown are still debated, but a slowing in technological diffusion and crisis legacies are key reasons. In recent years, New Zealand has had strong output growth supported by growth labour inputs, with a rapidly growing population, but weaker growth in capital per worker.

Figure 2 – Dimensions of OECD's Better Life Index



Source: Au and Karacaoglu (2018), OECD

Figure 3 - New Zealand labour productivity growth



Note: Growth cycles are periods determined by Statistics New Zealand. A growth cycle (often called business cycle) is the period between two peaks of output, that is, a 'peak to peak' time period. Data is for 'former measured sector' industries for which there is productivity data over this time period. 2008-2017 is an incomplete cyle.
Source: Statistics New Zealand

9. There are a number of explanations, but no single compelling explanation for New Zealand's long term productivity underperformance. Some of the key issues that have been emphasised in productivity analyses (eg, The Treasury (2014), OECD (2017), Conway (2017) and Conway (2018)) are:
    - New Zealand's capital shallowness and high cost of capital, which has led to concerns about low levels of private saving.
    - Lack of exposure to international markets and constraints on export performance. Concern about a high and volatile real exchange rate and limited participation by New Zealand firms in global value chains.
    - Unique combination of small market size and distance from large markets has led to low levels of competition.
    - Limited firm innovation, possibly connected to low levels of competition, industry structures, lack of international connectedness, and low business R&D.
    - The level and distribution of education and skills.
    - Barriers to urban development, including infrastructure and land use regulation.

10. There is also debate about the role of population growth, agglomeration, housing market imbalances and capital market development for productivity performance.

11. Looking ahead, some of the key issues for future productivity performance include the future of work, disruptive technological change, natural capital and resource scarcity and the links between social capital and productivity.

Tax policy and productivity

12. Tax policy is important for productivity through multiple channels.

13. Macroeconomic stability is a prerequisite for sustainable growth. The tax system primarily supports a stable and sustainable macroeconomic environment by collecting sufficient government revenue. Excessive fiscal deficits can reduce economic growth or create instability.

14. Tax policies and administration can impact long-term productivity since it influences resource allocation, investment in physical and human capital, innovation and natural resource management. Tax revenue is necessary to finance productivity-enhancing public goods or subsidise externalities. However, there is no simple relationship between tax and productivity and expectations should be modest about how much tax reform could realistically deliver.

15. There is a vast literature on how the mix of tax bases and tax rates (average and marginal) can affect rates of productivity growth (for example, OECD, 2017; Gemmell, Kneller, and Sanz, 2014). Optimal income tax theory also provides a framework for considering the design of tax and welfare systems to balance both efficiency and distributional objectives, based on the seminal work of Mirrlees (1971).

16. Tax can impede productivity by reducing incentives for resources to flow from low performing firms to high performing firms. This can be caused by differences in the

effective tax treatment of different types of assets or sources of finance (IMF, 2017). Differential tax treatment across firms can occur because of firm characteristics, not just tax design (Bartolini, 2018). For instance, taxation may constrain investment in cash-constrained firms more than for firms that have easier access to credit.

17. Tax administration is important for efficiency as well as revenue collection. Tax evasion and avoidance is associated with resource inefficiency and may be a way for the least productive firms to survive (IMF, 2017). Therefore, tax compliance may be important for productivity.

18. While distributional outcomes are directly relevant to vertical equity, there is also debate about the links between income inequality and economic growth. This debate is not settled. Recent IMF research has found that lower inequality is correlated with faster and more durable growth, for a given level of redistribution. It is less clear whether tax settings that increase redistribution can lead to higher growth, and the answer likely depends on context and policy design. The IMF work suggests that redistribution generally has a limited impact on growth, except in extreme cases (IMF, 2014).

The role of tax policy in lifting New Zealand's productivity performance

19. The potential gains from reducing resource misallocation are large. Resource misallocation across firms in New Zealand is likely to be significant. Firm-level productivity analysis for New Zealand finds that there is a wide dispersion of firm productivity levels and that the allocation of resources across firms detracts from aggregate productivity, especially in some service industries (Conway, 2016). The Productivity Commission highlights a lack of competition and slow technological diffusion as likely drivers of resource misallocation in New Zealand.

20. New Zealand's tax system is likely to be less distortionary than most other countries. It therefore seems unlikely that the tax system is the main driver in the wide productivity dispersion across firms, but it could be playing a role. For example, there is international evidence that corporate taxation can affect rates of firm productivity convergence (Bartolini, 2018; Gemmell, Kneller, McGowan, Sanz, and Sanz-Sanz, 2018).

21. Base broadening could enable lower tax rates. Reducing marginal tax rates on individual income would increase returns to work, saving and investment (see Appendix B). This would likely have modest positive impacts on labour supply and long-term productivity.

22. As non-neutral tax treatment of different assets can create resource misallocation, this suggests attention to the way that capital income is taxed, depreciation rules for buildings (Appendix C) and the effects of inflation (see Appendix E).

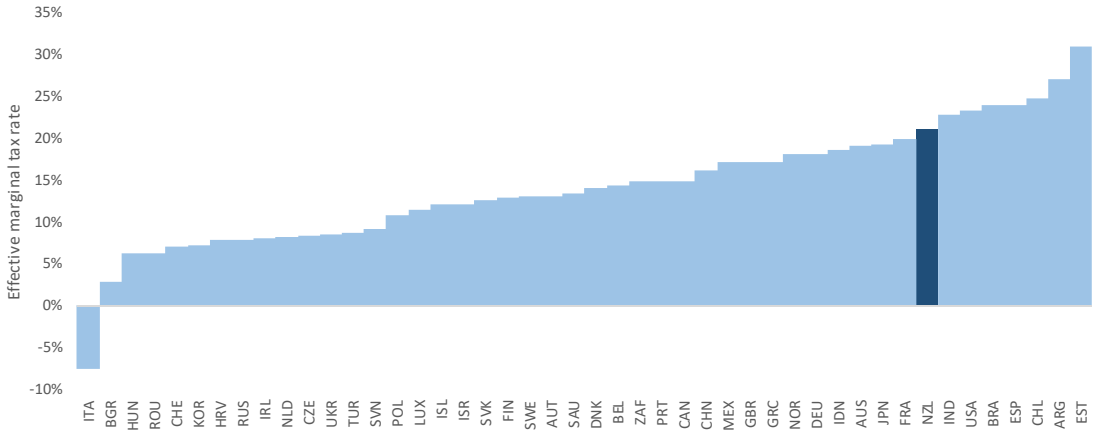
23. New Zealand's high effective tax rates on business income could be dampening levels of business investment. As shown in figure 4 below, New Zealand's effective marginal tax rate on corporate income is high relative to most OECD and G20

countries on this measure.[1] The level of effective tax rates may be important for overall rates of business investment, which is lower than the OECD median.

24. Reductions in the company tax rate could attract foreign investment and lift productivity although, on balance, appear to have a marginal net benefit for New Zealand compared with other revenue-reducing options (as discussed in previous secretariat papers). If other countries continue to lower their company tax rates, this will be adding to transfer-pricing pressures. At some stage it may be sensible for New Zealand to consider also lowering its company rate and this should be continue to be closely monitored.

25. At present, the most effective approach to reducing effective tax rates on business investment would be through efficiency-enhancing improvements to the corporate income tax base. Restoring deductibility for building depreciation would, in principle, both improve investment efficiency and reduce the effective tax rate on business investment which would encourage productive business investment. Relaxing loss continuity rules would reduce disincentives for firms to take on risk. They would also remove an impediment to firms issuing new capital.

Figure 4 – Effective marginal tax rate on corporate income, OECD and G20 countries, 2017



Source: Oxford University Centre for Business Taxation

26. High real effective rates of taxation on capital income may also be reducing private saving and investment, with potentially negative effects for productivity. Some commentators suggest that reducing the taxation of capital income relative to labour income should be considered in light of the capital shallowness of the New Zealand economy. Andrew Coleman's submission made this argument and noted that most OECD countries do not tax capital income and labour incomes at the same rates in practice (through, for example, social security taxes, dual income tax systems or EET

[1] The estimates from Oxford University Centre for Business Taxation are based on modelling assumptions and are unlikely to accurately reflect all the details of tax systems, including New Zealand's. The estimate for the United States predates recent corporate tax reform.

for retirement saving). Even within the current TTE framework, there is concern that inflation is causing effective tax rates to be much higher than statutory rates. Comprehensive inflation indexation of interest income, income expenses, depreciation and inventory is an option that could be pursued in the longer term. This option requires considerable further analysis of its costs and benefits, but the Group may wish to recommend that this option be investigated further (see Appendix E).

27. The context of potentially introducing a CGT is relevant. Increasing the taxation of capital income (via a CGT) is likely to increase effective tax rates on some investments, and thereby reduce levels of investment. By itself, this is likely to have a negative impact on productivity and economic growth. However, base broadening could enable lower tax rates or other revenue-reducing measures to mitigate these effects.

The productive and speculative economies

28. The Group's Terms of Reference require you to report on whether the tax system promotes the right balance between supporting the productive economy and the speculative economy. This raises question about how the "speculative" and "productive" parts of the economy should best be defined. The amount of real resources devoted to speculative trading in asset markets is not measured directly in the national accounts. In practice, the term "speculative economy" seems often to be used in association with high house prices.

29. A working definition of "productive" and "speculative" could have regard to the Haig-Simons definition of economic income: consumption of goods and services plus changes in net wealth. The speculative economy could be defined as changes in financial capital (asset prices) that generate income for some that do not reflect underlying fundamentals, create undue inter-generational wealth transfers or create investment signals that reduce long-term productivity. It is important to note that asset price movements do not directly change the allocation of physical capital, but can create incentives for real resources (labour, physical capital etc) to flow to particular activities.

30. A productive economy could be defined as one which supports sustainable increases in the consumption of goods and services. This should also encompass sustainability in terms of natural and social capital to support future wellbeing.

31. Under the above definition, capital gains income caused by distortions or government failures (eg, supply restrictions) could be broadly considered as generating unproductive outcomes. Land and house price appreciation of the last two decades has a range of contributing factors, but can be seen as the outcome of demand-side factors (high population growth and low interest rates) interacting with supply-side constraints (land use regulation). This has inter-generational distributional impacts and may also have detracted from productivity performance.

32. Land price appreciation could impede productivity through a number of potential channels, although there is limited evidence for these hypotheses in New Zealand:
    - *Investment allocation:* excessive real investment in land development – while the current housing shortage suggests there has not been excessive real investment in housing, the large average size of New Zealand dwellings could be a potential consequence.
    - *Saving:* high land prices may also change aggregate saving behaviour and investment behaviour of different households – and it is possible that wealth effects from land price changes have macroeconomic consequences through its impact on aggregate saving behaviour (eg, older cohorts save less because their wealth has increased via house price appreciation).
    - *Labour mobility:* High house prices may reduce labour mobility so that workers do not re-locate to places where they would be most productive.
    - *Macroeconomic risk*: High levels of household debt associated with high house prices may impede productivity growth by increasing the risk of a financial crisis and increasing New Zealand's cost of capital if investors command a greater risk premium.

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