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SUBMISSION TO PRODUCTIVITY COMMISSION'S FIRST FIVE-YEARLY PRODUCTIVITY REVIEW: INCREASING AUSTRALIA'S FUTURE PROSPERITY

The 'too many bad decisions' hypothesis

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The Commission is particularly interested in new and novel ideas because there is already a strong awareness of many reform options that parties would like to see implemented. More of the same is not likely to be helpful. (Productivity Commission Discussion Paper, p 17)

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The Government's Terms of Reference for the Commission state that the Review should examine why (measured) MFP productivity growth has stalled:

Examine the factors that may have affected productivity growth, **including an** assessment of the impact of major policy changes, if relevant, and

The Commission should support analysis with modelling where possible and qualitative analysis where data is not available and this is appropriate. (p 23, emphasis added)

This brief submission sketches a methodology that might assist in understanding the disappearance of Australian MFP growth over the past decade, and could help point to how future growth in productivity and living standards could be rebuilt.

This submission outlines the methodology in broad and mainly qualitative terms. With the limited time and resources available, the submission does not attempt to develop or accurately enumerate the suggested methodology. The Commission might wish to experiment with it, subject it to 'sensitivity testing', and (if it is found to be promising) develop it further in this first five-yearly productivity review.

2. Productivity growth flows from competition

Productivity growth is a means to an end for both the community and for businesses. For the community it is the means to sustainable real growth in living standards, and for businesses, it is one of the key means to increasing company profit, winning customers, gaining market share over competitors, or other possible numeraires for corporate success.

On this view, productivity growth is the normal outcome of competitive markets oriented to profit and to meeting consumer demand. Rates of productivity growth will fluctuate with scope for technological catch-up, trends in technology and the like. But the disappearance of productivity growth for a sustained period might suggest, *a priori*, markets which have suffered a diminution of competition or been subject to policy interventions that overwhelmed competitive forces to focus business on objectives other than profit and consumer satisfaction.

Any such re-focusing by policy away from competition for profit and consumer satisfaction need not be a problem, of course. Perhaps the policy focus is on an objective beyond measurement in 'real net national disposable income' (RNNDI). For example, perhaps governments want Australia to contribute to global efforts to control climate change, or equalize educational opportunity, or some other objective that is not captured in national accounting data.

If that were the case, governments' responses might logically be that they don't care about the disappearance of measured productivity growth. But governments don't know the trade-offs they are making among economic and non-economic or

unmeasured objectives in any well informed or even roughly enumerated way, and they do profess to be concerned about the decline in measured productivity.

The questions hidden behind any policies directed partly or mainly to non-RNNDI objectives would be:

- how much growth in productivity and RNNDI per capita is Australia trading off by policies to pursue its non-economic objectives? and
- how successful are those policies in achieving those non-economic objectives?

The methodology sketched in this submission might help the Commission to clarify such questions.

3. The 'too many bad decisions' hypothesis

The Commission's Discussion Paper provides a brief but magisterial survey of many of the overarching policy and technology influences potentially affecting measured and non-measured productivity growth, and recounts many possible proximate general causes of the stagnation of Australian multifactor productivity (MFP) growth and of growth in RNNDI per capita.

However, in traversing the productivity issues and seeking to place Australian experience in the context of similar slow-downs in many OECD economies, I was left with the sense of a potentially serious gap in the many hypotheses to be explored in the Review.

The 'missing hypothesis' is of a more fine-grained, micro-economic nature: that Australia's productivity growth has disappeared in part because Commonwealth, State and Territory governments have taken a sustained series of very costly decisions either to mis-spend large sums, or intrusively regulate how businesses operate, with no prior social cost-benefit analysis and no realistic prospect of pay-off from the policies (either in MFP growth, RNNDI per capita, or in many cases, in any other way).

This could be called the 'too many bad decisions' hypothesis. Good public policy processes that used to identify policy designs and public investments with high returns have apparently broken down over the recent decades.

In 2005, coincidentally at about the time multi-factor productivity growth disappeared, Gary Banks reflected on the general structural policy reform processes that had served Australia well over the preceding two decades: <u>Structural Reform Australian-style:</u> <u>lessons for others?</u> He stressed policies to increase competition and strengthen market signals, and transparent public analysis that showed the community the hidden costs of bad policies.

But by 2013, Banks asked: were we witnessing the <u>Return of the rent-seeking society?</u> His tentative examples included prospective local construction of submarines to replace the Collins class, the carbon abatement industry and the swing back to heavier regulation of (and union authority in) the labour market.

Australia's policy advisory community and media commentariat has arguably continued to view Australian policy-making though the golden haze of good policy processes and outcomes in those earlier decades of the Hawke, Keating and Howard prime ministerships. Perhaps the view from 2005 still prevails, rather than the view from 2013 and more recently.

Consider an analogy: it is widely noted that uninterrupted GDP growth for some 25 years may have destroyed prudent awareness among younger generations of how quickly fiscal deficits can get out of hand, debt can accumulate, economies can stagnate and jobs can be lost. Perhaps by the same process, several decades of successful structural reforms and comfortable, if not stellar, per capita income growth have bred complacency as to the amount of bad public investment and regulatory burdens we have now loaded on to the economy through the breakdown of good microeconomic policy processes. Each individual bad decision may produce just a grimace and a shrug, but they add up in their burden on the economy, and in the re-emergence of a rent-seeking mentality.

This submission hypothesizes that over the last decade, Australian policies have led to cumulatively huge spending or investments with zero or negative direct outcomes measured in RNNDI. They have led to direct reductions in measured MFP growth in the industries concerned: higher value of inputs used to produce the same value, or even a lesser value of outputs. Moreover, in some important cases they may have had negative impacts on other industries' productivity by inflating the cost of those industries' inputs without increasing their outputs. Continuing strong population growth has also crimped RNNDI per capita.

Furthermore, regulatory actions or inactions have probably elevated costs to business with no pay-off in RNNDI per capita and with the dissipation of resources that might otherwise — if allocated by competition rather than the necessity of meeting regulatory processes — have yielded innovations and new work processes that could have raised productivity growth and economic opportunities.

This submission briefly sketches, qualitatively, some of the key possible policy failures that either have already contributed to killing MFP growth, or will be damaging its recovery:

- Some mis-spends have been mostly on labour with no increase in the value output (think education).
- Some mis-spends have been mainly on capital with little increase in the value of output (think NBN).
- Some looming large mis-spends are on both capital and labour (think submarine procurement).
- Some mis-regulation has been inflating intra-firm costs with no increase in value of output (think equal employment opportunity reporting).
- Some mis-regulation has ruled out the emergence of new, innovative, high-productivity industries, or grossly hindered the expansion of others (think bans on fracking, or the lawfare permitted under current laws against Adani).

Some mis-regulation has totally distorted the structure of entire areas of critical
infrastructure, wasting enormous amounts of capital and destroying both
industry competitiveness and household budgets (think renewable energy and
other policies trying to affect the global climate, or at least to join Australia to
international agreements to that end).

To be sure, some or all of these policies may be producing non-measureable outputs that some see as benefits: playing the good global citizen; making students more tolerant of sexual diversity; making labour markets fairer for women, or whatever. Proponents of these policies are often dismissive of economic concerns. For example, the former Minister who can fairly claim to be the father of the NBN once simply asserted that its benefits were 'inestimable', as if that closed any consideration of how to prioritise the roll out of faster broadband access to those who value it most and could use it most productively, while making best continued use of existing adequate broadband infrastructure for those with other priorities such as mobile connectivity.

Claims of non-economic or 'inestimable' benefits deserve evaluation by the Productivity Commission. To this writer, most such claims seem empty, and the only reason they flourish in our democracy is that the policies' practical effects for good or ill are undocumented, and their opportunity costs are never made clear. Absent that vital information, the policies may make some voters feel better about themselves and their governments' policies. But that is transient satisfaction when its consequence is reduced growth of living standards, narrowing opportunities and, as the Commission's Discussion Paper rightly notes "greater dispute over shares of a smaller than expected pie" (p 1).

Even where some industries have continued to show MFP growth, the subtractions from productivity growth in other industries may have become large enough to contribute to zero MFP growth in the economy as a whole, or in the market sector of the economy.

If there proves to be force in the 'too many bad decisions' hypothesis, it gives us a big advantage: policies within our control can resuscitate MPF growth merely by reversing the bad decisions where possible and making better ones in future, through processes such as social cost-benefit analysis that we know how to use and that have served us well in the past. (In contrast, if the problem was more that there was no new global general purpose technology coming down the turnpike, there might be very little Australian policy could do about that.)

Adam Smith reassuringly observed that "There is a great deal of ruin in a nation".¹ Australia's decade of microeconomic policy miscarriages have clearly not (yet) been large enough to lead to ruin. But have they been large enough to explain some or most of the disappearance of productivity growth? That is an empirical question which the methodology outlined below might be able to help clarify, at least in an approximate way.

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¹ Adam Smith, Correspondence of Adam Smith, Letter to John Sinclair, 1782.

4. 'Organic' explanations of the ebb and flow of productivity growth, versus a missing 'key factor' approach

There is a danger in a focused study of measured productivity that it turns into a quest for a missing magic ingredient or ingredients. Historical studies can add to this danger, as there have been clearly been some periods of high productivity growth in the past when profitable diffusion of a new general purpose technology², occurring in the context of competitive markets and a favourable investment climate, contributed to the sustained acceleration of productivity growth in several of the industrial economies (including Australia's).³

With that background, there is a tendency to search for 'the next big thing' – usually, the next big technological breakthrough. This is likely to be a futile search with many false starts, and doomed to long frustration. New general purpose technologies tend to have arisen only every generation or two. They are much more likely to arise first in some other part of the world than in Australia⁴, and they take decades to diffuse into productive applications through the economy.

One interesting recent reprise of the arguments around technology and productivity growth stresses that there are plenty of patents lodged and more R&D and engineering work than ever, but capitalizing on new ideas involves trial and error. Modern polities are increasingly intolerant of any error, which might be some of the problem in the quest for technologically-driven productivity growth.⁵

It is an advantage of the more 'organic' view of the ebb and flow of productivity growth advanced in this submission that it focuses attention on practical policies to increase competition, reduce the burden of unproductive regulation, improve policy evaluation before expensive commitments are undertaken, and decrease policy mistakes as the key to restoring productivity growth.

5. Is it possible to enumerate the 'too many bad decisions' hypothesis?

In an economy of Australia's size, if governments waste \$10 billion here and \$10 billion there, pretty soon we are talking real money. In fact, governments have been wasting

² A 'general purpose technology' is a term used by economic historians to describe a large technological breakthrough important enough to have a protracted aggregate impact on economic organisation. Examples include electricity and information technology. See Boyan Jovanocic and Peter Rousseau, *General Purpose Technologies*, Chapter 18, Handbook of Economic Growth, 2005.

³ Commonwealth Treasury, <u>A more productive Australia - policy and technology</u>, Economic Roundup, Winter 2001.

⁴ Australia registers only a few percent of the world's patents, for example.

⁵ Greg Ip, <u>The Economy's Hidden Problem: We're Out of Big Ideas: Dwindling gains in science, medicine and technology hold back growth: is America too risk-averse?</u>, Wall Street Journal, 6 December 2016.

resources at up to \$50 billion a decision. These are all real resources that could have been earning high returns if competitively allocated, but instead have been used to produce zero or negative returns in the industries they affect. What's worse, they raised costs to consumers and to other industries so that higher productivity alternatives elsewhere may have been suppressed.

The table at Attachment A sketches a framework that the Commission could use to discuss and roughly enumerate the significance of policies and regulation destroying measured MFP growth at the industry and sector levels. Since some of the worst effects are likely to arise from measures raising the price of buildings, infrastructure and energy supplies used extensively by other industries, it would be desirable for the Commission to use input-output analysis or general equilibrium modelling to put some scale to adverse whole-of-economy effects.

In the space of this submission, it is possible only to note some of the broad characteristics of interesting major areas of policy failure that might particularly repay Commission study in its productivity review. Some of these areas give rise to interesting and challenging issues of productivity measurement, and all involve to some degree the failure to evaluate claimed non-economic 'outputs' beyond RNNDI.

A. Renewable energy policies

Utilities including electricity generation are only about 3% of GDP. But the small share of GDP is misleading in that there has been a huge over-investment in capacity without any increase in the quantity of output. Moreover, there can be no other industry more essential to more businesses and households than electricity generation. As recent failures show, disruption to supply causes huge costs (and sometimes irrecoverable damage) from the humble supermarket refrigerator to the giant aluminum smelting pot line.

On one estimate, Australia's renewable energy sector received subsidies (including the Renewable Energy Target, feed-in tariffs and other green policy costs) worth \$2.8 billion in 2013-14.6 The value of capital investments induced by these subsidies over recent years would be many times larger.

It is intrinsic to renewable energy targets (RETs) that the capital investments they induce in today's renewable technologies are 'needless', and are subtractions from MFP, properly conceived, for many reasons.

First, the renewables capital cost is excess to existing capital stock that was already adequate to meet peak demand stably, reliably and cheaply. The intermittent output of renewables means existing capital stock sufficient to meet peak demands must still be kept available. (Often, the existing plants have to be kept idling (and emitting CO2), given the second-to-second unpredictability of solar and wind output and lags in getting synchronous rotating machinery up to speed for a stable grid, as evidenced in the recent

⁶ Principal Economics, *Electricity production subsidies in Australia*, August 2016.

complete and extended blackout of South Australia.) The amount of excess capital capacity of renewables required to meet any particular RET is very large, as nameplate capacities are only briefly delivered in practice.⁷

Second, the higher the proportion of renewables in a system, the greater the difficulty and cost of maintaining essential voltage and frequency stability in the grid, and the lower the reliability of the grid. Grid stability and reliability requires high overall contributions to supply from rotating synchronous machinery of traditional base load power plants.⁸ This problem was clearly understated (or just plain denied) in key official submissions to the Warburton Review of the Commonwealth's RET.

Third, as has been apparent for some years from UK and German experience, even as high renewables penetration into an electricity supply mix greatly raises costs to industrial consumers and households, it destroys the profitability of keeping existing base load generators available on standby for both predictable and unpredictable troughs in solar and wind power. So growth in renewables raises the 'need' for subsidies throughout the sector, and to energy intensive industry, and to households to combat 'energy poverty'. One UK wag observed of their energy sector and its customers: 'Everybody is getting subsides, and everybody is going broke!'

The problems are already severe in South Australia with renewables production at about 33% and aiming for 50% by 2020. Base load power plants in South Australia have been closed, and more large-scale base-load, coal-fired capacity will soon be closed in Victoria, reducing capacity in the national electricity grid to help South Australia.

Farmers and small businesses in South Australia are now reportedly buying stand-by diesel generators, and the State's Treasurer has advised a large miner to build its own power station if it wants reliable electricity supply. Recent failures have led to calls for more heavy investment in interconnecting lines in the grid to try to plug what will clearly be increasingly frequent outages — more looming overinvestment in inputs with no increase in outputs. Imagine what this will do to MFP growth in the electricity sector, properly measured.

(http://www.brookings.edu/~/media/research/files/papers/2014/05/19 low carbon fut ure wind solar power frank/net benefits final.pdf)

⁷ At a guess, to deliver say 25% of electricity demand from renewable sources might take 125% of total demand in installed nameplate capacity of wind and solar generation, on top of the 100% of demand supplied by baseload capacity to start with. Brookings research has estimated "...it takes 4.28 MW of wind capacity to produce the same amount of electricity with the same degree of reliability as 1 MW of off-peak coal plant capacity. Similarly, it takes 7.30 MW of solar capacity to produce the same amount of electricity with the same degree of reliability as 1 MW of off-peak coal plant capacity."

⁸ John Morgan, <u>Book Review of 'Energy in Australia – Peak Oil, Solar Power and Asia's Economic Growth'</u>, 9 February 2014

⁹ Meredith Booth, <u>Long hard battle to keep lights on in summer</u>, The Australian 8 December 2016; Michael Owen, <u>BHP Billiton fury over call to switch to DIY power</u>, The Australian, 2 December 2016,

Australian electricity costs have gone from being among the lowest in the OECD to being among the highest just with energy policies to date, and RETs ranging between 23% nationally and 100% (the latter in the ACT). With proposals to raise some state RETs and the national RET to 50% (mostly over incredibly short time frames, in terms of available locations for wind turbines and solar farms, or construction of renewables facilities), serious cost increases and increasing system failures are likely to multiply beyond recently observed crises in South Australia.

Given the foregoing problems, measuring MFP in electricity generation is an interesting issue. The price of electricity output may be rising rapidly as environmental policies take their toll, but the quantity of electricity being delivered is essentially the same, and the 'quality of electricity' (i.e. the stability and reliability of supply) will likely continue to decline. This should be an interesting measurement elaboration issue for the Commission.

A further interesting productivity measurement issue for renewables is a 'partial productivity indicator' devised by engineers: the 'energy rate of return on energy invested' (EROEI). Estimates of that measure typically show that present renewable technologies can barely generate for delivery into the grid, over their lifetime, the energy used in their own manufacture. They do not generate sufficient net energy to support a modern standard of living. Seeking to reduce the intermittency problem of renewables (eg by adding battery storage, pumped hydro storage or liquid sodium storage) only worsens the EROEI arithmetic.¹⁰

Advocates of renewables would argue that we are not getting just electricity from our RET policies, but also 'carbon reduction' which is not valued in RNNDI. That is true, but the Commission could usefully explore what 'carbon reduction' is worth: it is a proximate objective behind which lie the objectives of controlling global climate trends and/or meeting non-binding international agreements. The real value of the Australian electricity sector's contribution to those objectives, post-Trump, would round to zero.

Australia's electricity grid is beginning to teeter on the brink of collapse from irresponsible policies. Much damage has already been done to the electricity input costs of industry and households, and worse will shortly follow. Focus on how these policy mistakes are damaging Australian productivity and RNNDI should be an important part of the Commission's report.

B. Bans on fracking and gas development; mining regulation and lawfare

Various states now have bans on fracking and some even ban other gas exploration. The regulatory and lawfare obstructions to mining and especially coal developments

¹⁰ An accessible short summary of these ideas is: John Morgan, <u>Book Review of 'Energy in Australia – Peak Oil, Solar Power and Asia's Economic Growth'</u>, 9 February 2014.

chronicled by Gina Rinehart and illustrated in the Adani project are well known. These sectors amount to about 9% of GDP.

The potential of fracking is little understood in Australia. Few would know that it has greatly reduced wholesale electricity prices in the US and led to the relocation of energy intensive industries from the EU to the US. Perhaps more surprisingly, by substituting for coal in US electricity production, fracked gas in the US has reduced global greenhouse gas emissions by more than all the windmills and solar panels in the world.¹¹

The Commission has long examined the ebb and flow of mining sector MFP growth as new investments are made and output then slowly begins to come on stream. Very large increases in output and decreases in time to production in Australian mining and energy production would be facilitated by contesting bad legal and regulatory settings.

Put the other way around, the multiplication of bans on fracking and mining, interactive with the costs of renewable energy policies mentioned in the preceding section could interact to be devastating to the Australian energy sector's MFP performance in the decade ahead. These areas and their interactions deserve prominent attention by the Commission in its study.

C. The National Broadband Network

The economic failures of the NBN are so clear as to not need elaborating here:

the thing is a dud, a donkey, a pasty pachyderm, and it would have been much worse if the original FTTH plan had gone ahead.¹²

It will end up costing \$50 billion; according to Alan Kohler's sources, it will by 2020 have about 8 million customers. Average access charges are now \$43/month, compared to \$15/month for Telstra's ADSL. Only 15% customers are prepared to pay premia for the faster NBN connection speeds. About 30% are choosing speeds that are exceeded by ADSL and comparable to speeds available through wireless, and are naturally only prepared to pay ADSL or wireless charges for the privilege.¹³

While this \$50 billion is mostly a bygone, it remains a 'teachable moment': it shows what phenomenal sums can be wasted with impunity in the modern microeconomic policy environment, and over the timeframe in which MFP growth has not-so-mysteriously disappeared.

The NBN is worth a Commission post mortem to illustrate all the problems that arise when a giant project proceeds slowly, with bad initial governance and at huge cost, on

¹¹ Sources for these claims are conveniently available at pp 44-45 of <u>ACMA Investigation</u> Report no 3266 of 7 July 2014.

¹² Alan Kohler, *I was wrong on NBN: It's a turkey*, The Australian, 15 October 2016.

 $^{^{13}}$ David Glance, $\underline{\it Why~aren't~more~customers~flocking~to~the~NBN?}$ Lifehacker.com.au, 20 May 2016.

the basis of planning on a napkin, rather than a rigorous, transparent social cost-benefit analysis and a clear business case.

From a productivity perspective, it allows the Commission to raise public awareness that things that might be nice to have come with opportunity costs, and are not worth doing if the beneficiaries are not prepared to pay for them, or have objectives and tastes different from those of the policy class.

D. Construction industry industrial relations costs

It has been estimated that Australian commercial construction costs are 20 to 30% above levels in other advanced countries. Construction times are also extraordinarily long:

- Empire State Building, New York, USA Ground breaking was on March 17,
 1930. Construction soon began and the building officially opened May 1, 1931
 just 410 days during the Great Depression.
- Pentagon, Washington DC, USA Construction began September 11, 1941. First employees moved in on April 30, 1942 with the building officially opened on January 14, 1943 - 490 days during World War II.
- Sydney Light Rail extension running from Circular Quay at the northern end of the Central Business District to the south-eastern suburbs of Randwick and Kingsford. commenced in October 2014 and is expected to take five to six years to complete between 1,825 days and 2,190 days.
- New Royal Adelaide Hospital. Commenced June 2011, completed September 2016 - approximately 1,900 days. 14

The construction sector generates about 8% of GDP. It is not clear to me whether the sector's performance has deteriorated over the last decade. But even if it has always been bad, and has therefore not contributed to the MFP growth disappearance of the last decade, removing bad work practices would clearly generate a large growth in the sector's MFP, and the pervasive role of construction input into infrastructure and commercial output generally would offer further pay offs.

E. Education policies

The Commission notes that education is one part of the non-market sector where the value of output is assumed to be the value of inputs, and measured productivity growth is therefore always zero. Its Discussion Paper rightly notes (p 3) the need for different measurement approaches.

The productivity growth of the education sector, properly conceived, is clearly negative. Increased expenditure on labour inputs (and on covered outdoor learning areas after the global financial crisis) has been significant, while educational outcomes measured as literacy and numeracy have gone backwards – in some cases recording absolute falls, as well as falls relative to other countries' education systems. (In many cases, the other

¹⁴ Catallaxy files, *Construction, Contemporary style*, 6 December 2016.

countries are poorer than Australia and devote many fewer resources to education, which provides a sharp comparison in productivity terms.)

Defenders of Australian performance would argue that the system is achieving other things better, and perhaps it is. But a defender would have to put an unusually high weight on 'Safe Schools' innovations in penis tucking and unusually little weight on educational fundamentals to justify the schools sector's worsening performance.

Given the pervasiveness of education services in shaping citizens who can work productively, undertake training in the workforce, or start tertiary studies without remedial education, it would be valuable for the Commission to articulate simple sector-specific measures which drove home just what negative productivity performance Australian governments have been financing in the education sector.

F. Social engineering regulation of business

There are any number of examples to choose from as illustration, but a conveniently recent case is of a tiddler: the Workplace Gender Equality Agency, which costs the taxpayer \$5 million a year, and employs 25 female and 5 male staff.

However, even small government agencies can waste large amounts of resources in businesses. Almost 5,000 organisations reported to the Agency in 2015-16, with an overall gender balance of 49.7% women and 50.3% men. (I'll pass over the obvious question.) Such Agencies can wield unjust forms of punishment for 'non-compliance':

Non-compliant organisations may not be eligible to tender for contracts under Commonwealth and some state procurement frameworks, and may not be eligible for some Commonwealth grants or other financial assistance.¹⁵

Seventy-four businesses were deemed non-compliant this year, and one victim, Kennards Self Storage, was commendably clear-headed in its CEO's reaction:

My company does not discriminate for race, age, sex or religion.

If someone has a good attitude, not afraid of work and willing to learn they're a starter in our view. This is not a particularly profound or enlightened perspective — it is just common sense. It is good for business.

I can confirm that we do discriminate against time-wasting bureaucracies. The WGEA is a prime example of unnecessary government intrusion into the activities of businesses. My business has much more productive endeavours to pursue than filling out paperwork for government agencies like WGEA.

The WGEA impost is 100 per cent pure overhead.

While politicians and economists lament the declining productivity in our economy, it is exactly this red-tape and the imposts of these bureaucracies

¹⁵ Workplace Gender Equality Agency, *Annual Report 2015-16*, October 2016.

that tax the efforts of enterprise. If the government was serious about tackling productivity it would get out of our way — it would abolish the WGEA and the abundance of other regulations they lay on. 16 (emphasis added)

The Commission has a proud history of regulatory analysis and could usefully elaborate on the cost-benefit ratio of key areas of social regulation of business.

G. Submarine procurement policies

It would be worth the Commission noting (again) that defence spending would particularly benefit from analysis in a productivity framework.

If the operation of a fleet of submarines is viewed as the output for national defence of 'submarine services', it is clear we are paying way over the odds for our inputs, and getting very few outputs, a very long time in the future. Of course the defenders of the choice will point to industry or political gains, but this is Australia's defence at stake and another \$50 billion, NBN-scale commitment we are talking about, for just 12 submarines, with delivery starting in a decade and stretching out to the 2030s.

The numbers involved are mind-boggling: Australia would be committing capital and labour resources of over \$4 billion per boat, when Israel is spending just \$0.6 billion per boat for the German Dolphin class submarine, and even the US Virginia class nuclear submarine reportedly costs about \$2 billion.

One would have to place an enormous premium on asserted superior suitability to an allegedly unique Australian strategic environment, and on unspecified and unquantified 'industrial development spin offs' to justify getting so little defence services for the dollar. We are effectively buying 12 submarines for the price of 25, to be delivered into a maritime defence environment so far in the future as to be practically unforeseeable.

When successive governments commit \$50billion each on low productivity projects, twice in a decade, the disappearance of productivity growth begins to look more foreseeable than puzzling.

6. Australia is not unique: why is productivity growth missing from other industrial economies?

The Commission's discussion paper rightly observes that Australia's productivity growth slump is mirrored in many other industrial economies.

As noted above, there have clearly been periods when major technological changes have permeated profitably and roughly simultaneously through several industrial economies that have had the framework conditions of competition and investment climate right for

¹⁶ Frank Chung, *Storage king hits out at gender cop*, news.com.au, 1 December 2016.

deployment of new technology. But in many other periods, it is likely productivity ebbs and flows in different economies according to their local conditions rather than through any international driver.

This submission proposes a means for enumerating key micro economic policy interventions that may have contributed to the collapse in Australian productivity growth. It does not purport to be a 'general theory of productivity growth cycles'. That said, it may be that general policy fashions do affect the industrial economies as a group, if to a greater or lesser degree.

In terms of the key examples in the table at Attachment A of policies that may have significantly damaged measured growth in Australian productivity, it is notable that belief in dangerous anthropogenic global warming is common to the policy elites in virtually all the industrial economies, and has driven extensive unprofitable investment in renewable energy in many OECD economies. Wherever those policies have gone furthest (as in Germany and the UK), the damage to household living standards, industry competitiveness and the survival of energy-intensive industry is apparent and is similar in nature to damage now emerging in full force in Australia.

A second example of 'anti-productivity' policies common in many OECD economies is the regulation devoted to social engineering of employment outcomes in terms of gender balance and broader 'anti-discrimination' objectives. (As noted above, these policies might have attractive objectives, but no one should be surprised if they come at a cost to measured productivity.)

A final example of common trends across many industrial economies is in education policy, where post-modern ideals take up more of the curriculum at a cost in additional teaching resources, but with no improvement (or actual decline) in traditional educational outcomes.

Thus while we do not seek to explain congruence in other countries' productivity cycles, it is possible that common policy fashions are working in the same direction of suppressing measured productivity growth to a greater or lesser extent in many economies.

ATTACHMENT A	Stylised table of productivity-detracting policies and their approximate possible effects					
	Sector share of GDP	Influence on other sectors	Scale of direct cost of policy error	Direct plus indirect impact on measured MFP	Impact on Real Net National Disposable Income per capita	Impacts outside of RNNNDI per capita
Policy mistakes						
Renewable energy policies						
Submarine procurement						
National Broadband Network						
Education						
Construction industry industrial relations						
Bans on fracking						
Lawfare against mining and energy						
Social engineering raising business costs						
Etc.						