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*Productivity in Australia:
From Policy to Prosperity*

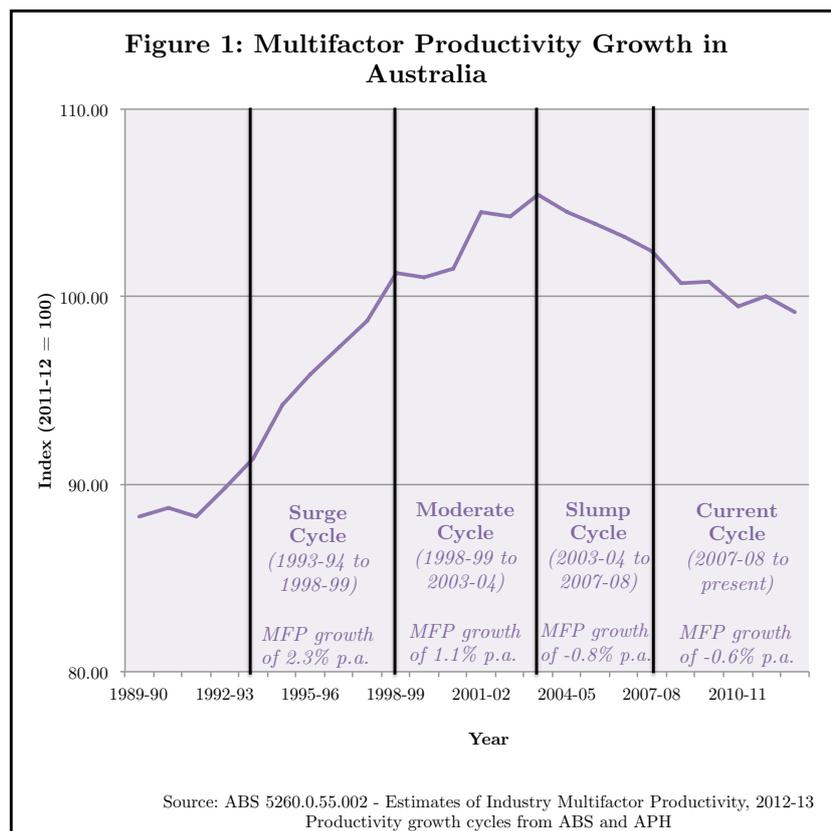
Productivity in Australia: From Policy to Prosperity

“Productivity isn’t everything, but in the long run it is almost everything. A country’s ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker.”

Paul Krugman 1994, The Age of Diminishing Expectations, p. 11

(1,992 Words)

Australia’s multifactor productivity (MFP) growth entered a period of stagnation in 2004/05 after surging 1.7% per annum in the 1993/94-2003/04 growth cycles. Since then, MFP growth has been weak, contracting 0.8% annually in the most recent growth cycle to 2007/08 (Figure 1).



Many theories have been proposed to explain the recent decline, including the effect of bottlenecks and capacity limitations (The Economist 2005), infrastructure and skills inadequacies (Department of Industry 2009), and a downward recovery in work intensity (Quiggin 2011). However, the leading determinants of the recent MFP

contraction, outlined in 2012 to the Senate by then-Chairman of the Productivity Commission Gary Banks, are acutely declining MFP in particular sectors of the economy, and the absence of new pro-productivity reforms.

The impact of weak MFP growth is real and far-reaching. By virtue of the definition of MFP - the efficiency of the main primary factors of production (labour and capital) in generating value added - weak MFP growth jeopardises the long-run living standards of all Australians (Productivity Commission 1999, p. xiii). Low MFP growth also reduces the speed at which the economy can grow over the medium term without generating inflationary pressures. To combat the decline, Governments should consider policies that either directly drive firms to enhance their practices through competition, or offer them the flexibility and capacity to respond to changes in incentives.

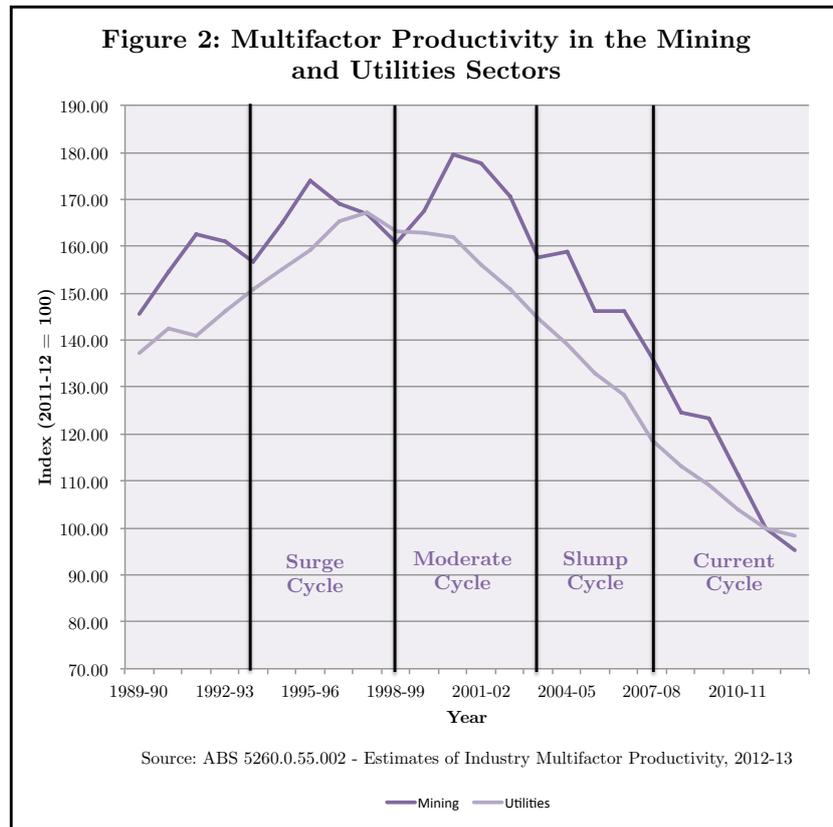
Determinants of Decline: Sectoral Explanations

The theory that Australia's poor MFP performance since 2003/04 can be attributed to acute declines in specific sectors of the economy, namely mining and utilities, has gained sizeable currency. Indeed, the Productivity Commission (2010, p. 68) estimated that these sectors, along with the temporarily drought-stricken agricultural sector, accounted for 80% of the decline in MFP over the last growth cycle to 2007/08 (Figure 2).

From 2000/01 to 2010/11, hours worked in mining doubled and the real value of the sector's productive capital stock increased 80% as firms rushed to meet China's insatiable appetite for resources. Meanwhile, increasing commodity prices made extracting capital-intensive marginal deposits profitable. During the same period, output from the mining sector increased only 37%, due to the length of time between the initiation and completion of individual mining projects, precipitating in a 4.5% annual contraction in mining MFP (Eslake 2011, p. 229).

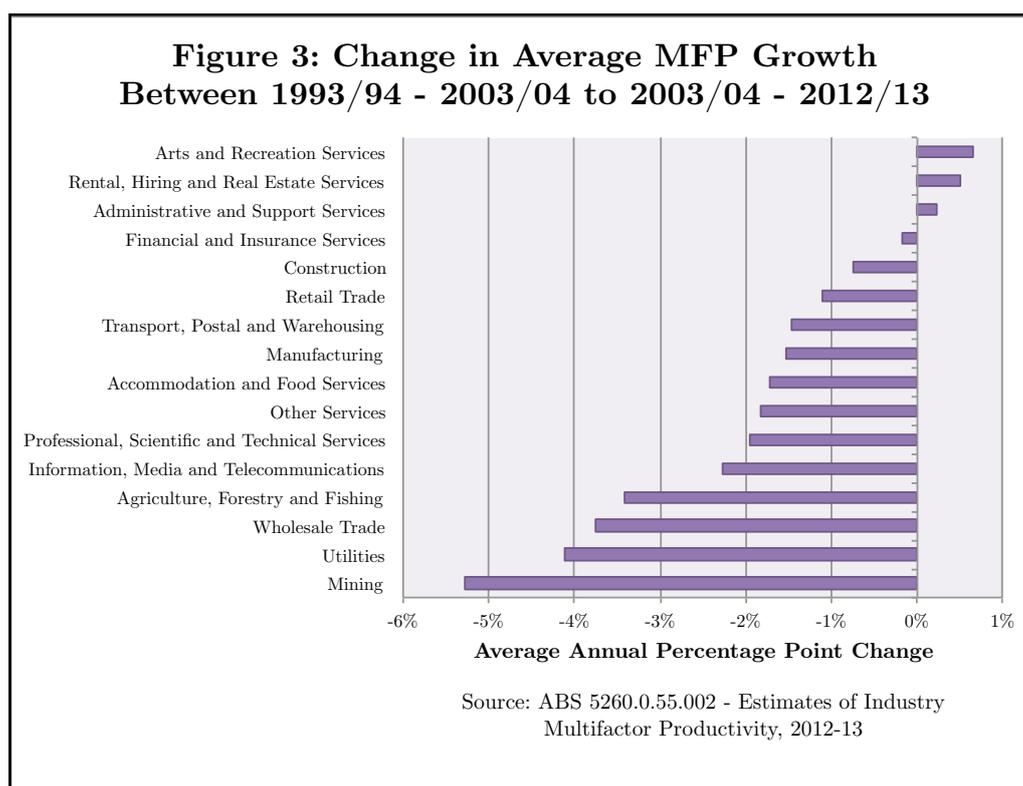
Meanwhile, the confluence of investment to meet renewable energy obligations and perverse incentives encouraging over-investment in state-owned networks saw hours

worked in the utilities sector increase 73% and the real value of the productive capital stock increase 35%. Output increased only 15% over the same period as new transmission infrastructure remained redundant during off-peak periods. Correspondingly, MFP declined 3.6% annually.



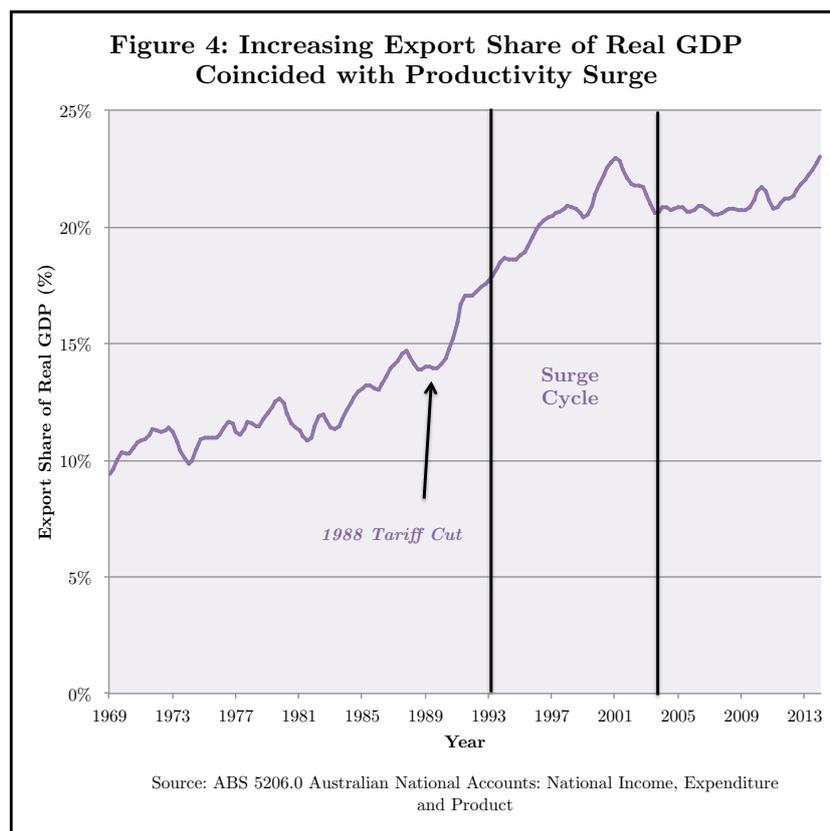
Recently, more nuanced arguments have emerged from Eslake (2011), Parkinson (2011) and D’Arcy and Gustafsson (2012) arguing that the decline is more broad-based. D’Arcy and Gustafsson (2012, p. 27) demonstrated that when mining and utilities are excluded from consideration, MFP growth was still 1.5% lower in the 2003/04-2010/11 period than in the 1993/94-2003/04 growth cycles (Figure 3).

As the two sectors only employ 2% of the labour force and 19% of the non-housing capital stock to produce 11% of the nation’s output, Eslake (2011, p. 231) argued that it is statistically implausible that they contributed to the majority of the decline.



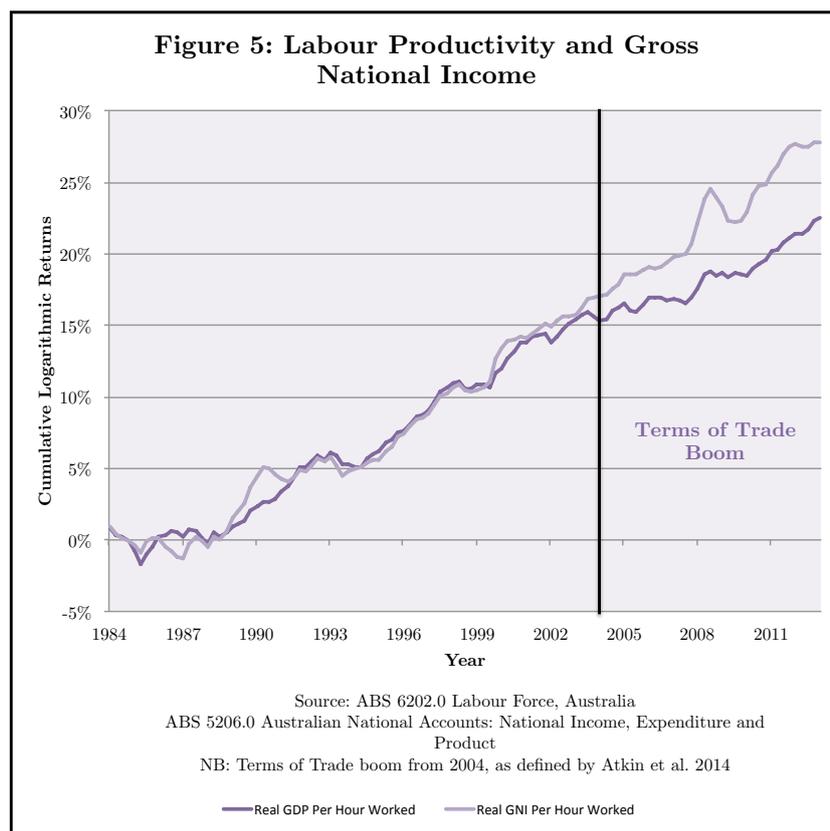
Determinants of Decline: The Role of Reform

According to Parkinson (2011, p. 2), the real culprit behind Australia's recent poor MFP performance is the "fading effect of previous reforms and the lack of significant new productivity enhancing reforms since the turn of the century". The OECD (2010, p. 14) and D'Arcy and Gustafsson (2012, p. 30) agree with this prognosis, labelling it the "most widely accepted explanation for the acceleration and subsequent slowing in productivity growth over the past two decades". Indeed, the economic reforms of the 1980s and 1990s were plenty: privatisation of SOEs, removal of trade barriers, financial market liberalisation, competition and tax reform, and labour market decentralisation (Productivity Commission 1999, p. 15). The nexus between these microeconomic reforms and Australia's staggering productivity surge between 1993/94-2003/04 is undisputed. The reforms placed pressure on firms to compete internationally, evidenced by the increasing role of exports in Australia's GDP (Figure 4).



Many of the reforms, such as tariff cuts and adoption of ICT, were ‘one-offs’ implemented gradually. The 1993/94-2003/04 growth cycles were effectively a ‘catch-up’ period in which high MFP growth was a temporary phenomenon as firms responded to changes in policy. One can think of MFP growth as the economy operating closer to an outward shifting production possibility frontier (PPF) (Davis & Rahman 2006).

The impetus for additional productivity-enhancing reforms has declined during the previous 23 years of uninterrupted economic growth. The recent slump in MFP growth has coincided with a record increase in the terms of trade, allowing Australia to enjoy the same level of gross national income growth experienced during the 1993/94-2003/04 growth cycles (Figure 5). This has reduced the incentive to implement politically difficult productivity-enhancing reforms. Inaction on addressing productivity growth will “cement poor outcomes into the future” (Parkinson 2011, p. 22).



Price of Poor Productivity: Living Standards

Declining MFP jeopardises the future growth of Australia's income and living standards. The nature of productivity growth - extracting additional output from a fixed level of inputs - implies an inextricable link to income growth. The unprecedented efflorescence in living standards since the mid-19th century is almost all accounted for by increasing productivity. Emerson (2014) estimates that 80% of the growth in GDP per capita in Australia over the last 40 years is derived from MFP growth.

Treasury's Intergenerational Reports (IGR) demonstrate the impacts of even a small decrease in projected productivity growth on future incomes. Between the 2002 IGR and the 2010 IGR, the projected rate of labour productivity growth (a weighted component of MFP growth) declined from 1.75% to 1.6%, coinciding with a \$7,000 reduction in forecast GDP per capita by 2050. According to the 2010 IGR, if Australia could lift its labour productivity growth above the 30-year average of 1.6%

p.a. to 2%, real GDP per capita in 2049-50 would be 15% higher than if it were to grow at the average rate (Treasury 2010, p. 22). With an ageing population expected to take 0.5% p.a. off real GDP per capita growth over the next four decades, and terms of trade that are expected to decline, productivity growth will be the pivotal determinant of future living standards, making addressing the recent slowdown all the more pressing (ABS 2010).

Price of Poor Productivity: Inflation

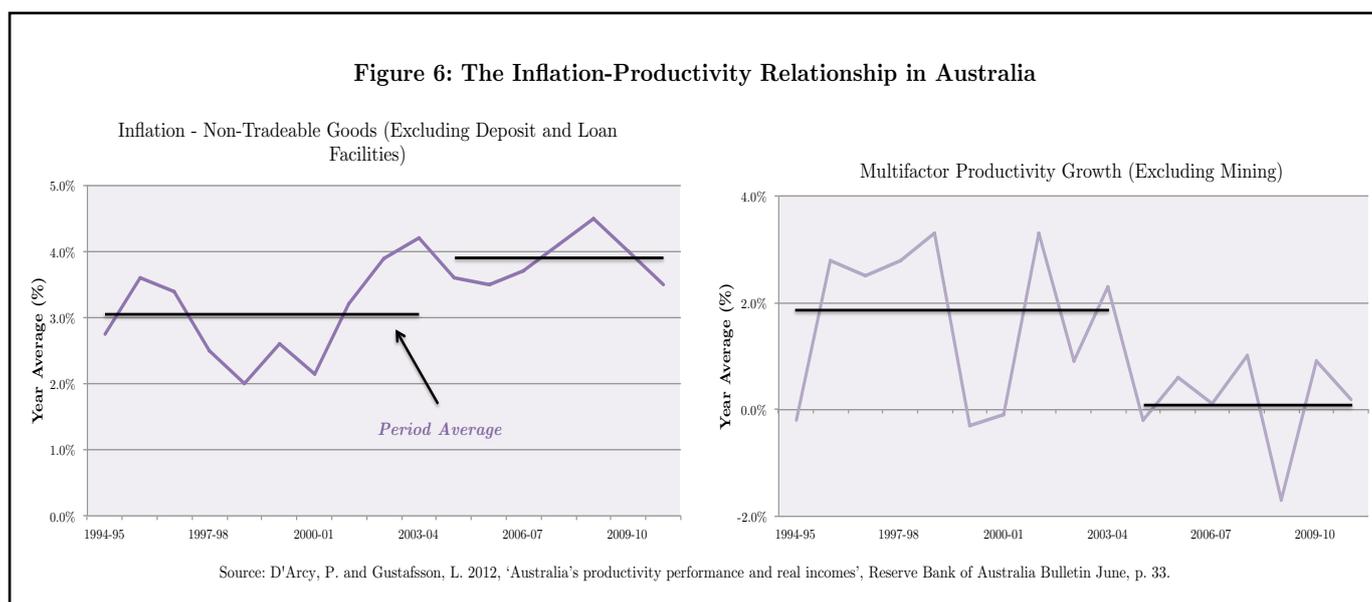
Over the medium term, weak productivity growth causes various unfavourable economic outcomes. Due to the role of MFP growth in generating additional output, negative MFP growth is associated with downward pressure on employment growth and domestic demand (Productivity Commission 1999, p. 28).

However, the most direct and immediate impact of Australia's recent productivity slowdown is a reduction in the speed at which the Australian economy is capable of expanding over the medium term without exceeding the Reserve Bank's inflation target band of 2-3% (D'Arcy & Gustafsson 2012, p. 23).

Looking over 51 years of historical data, Kiley (2003, p. 392) found that the productivity-inflation relationship is noticeably stronger than both the employment-inflation relationship represented by Phillips Curve correlations and the monetary aggregate-inflation relationship represented in quantity theory correlations. When MFP decreases, firms face more rapidly increasing unit labour and unit capital costs which they recover by raising prices. This effect is stronger than the counteracting effect of slower aggregate demand growth, which is also associated with slower productivity growth, precipitating in an adjustment period characterised by upward pressure on inflation (Yellen 2005, p. 1) (Figure 6). This high inflation period persists until workers accept a lower rate of wage growth to compensate for the lower productivity growth and firms adjust their investment plans (Yellen 2005, p. 1).

Recently, the inflationary pressures from weak MFP growth have been offset by the record rise in the terms of trade. However, with the terms of trade forecast to

decline, growth of nominal factor incomes must decelerate to accommodate the RBA's inflation target (Connolly & Gustafsson 2012, p. 34).



From Policy to Productivity: Drivers of Productivity

As Banks (2012, p. 6) stressed, Government policies do not increase productivity by themselves. Since measured MFP represents the accumulated productivity results achieved in individual organisations, it is sensible to conclude that productivity “begins in workplaces”. Government policies that directly drive productivity within firms are, according to Banks (2012, p. 7), the most efficacious “pro-productivity” initiatives, as they increase the external pressure on firms to perform better through competition and innovation. These policies reward high productivity enterprises with increased market share and sanction those with poor practices.

Nicodème and Sauner-Leroy (2004, p.3) theorised that reforms which facilitate market entry transpire in enhanced allocative efficiency within a firm as a reduction in market power incites incumbent firms to reallocate resources toward their best use. Resultant competition increases productive efficiency, which is the capacity for a firm to reduce the under-utilisation of production factors, by reducing managerial slack. Competition also augments dynamic efficiency, which is the incentive for firms to

innovate, pushing out the PPF in the long-run. Nicoletti and Scarpetta (2003) lent credence to this theory, finding that MFP increased in all countries studied, invariant of prior technology levels, following reforms facilitating market entry.

Whilst many of the reforms of the 1980s and 1990s were ‘one-offs’, there remain many policy options available to the Commonwealth and State Governments to drive MFP growth. These include, but are not limited to: ceasing government assistance to industries without “genuine market failure” (Eslake & Walsh 2011, p. 8), removing favourable treatment for high cost local suppliers in public sector procurement (Eslake & Walsh 2011, p. 8), abolishing remaining tariffs (Irvine 2013), dismantling anti-dumping provisions (Kirchner 2013, p. 1), and most importantly, widespread tax reform (Hilmer 2011 and Banks 2012, p. 18).

From Policy to Productivity: Enablers of Productivity

Whilst reforms that directly drive productivity are powerful tools, Banks (2012, p. 7) also emphasises the necessity of implementing reforms that enable productivity increases. These reforms give firms the flexibility and capabilities required to respond to competitive incentives, allowing the economy to operate closer to the PPF (Department of the Senate 2012).

Enhancing capabilities, which Banks (2012, p. 8) defines as “the resources...needed to devise productivity-enhancing changes and support them effectively”, enables productivity growth by encouraging firm-level innovation and extracting the maximum potential from a firm’s people. Granting firms further flexibility to respond to incentives also enables productivity growth by giving them the potential to rearrange production processes (Productivity Commission 2008). Indeed, Kent and Simon (2007, p. 26) found that the removal of workplace regulation is associated with a surge in MFP growth over subsequent years. In an Australian context, enterprises would be benefited by a comprehensive review of current regulation arrangements, with a focus on those believed to be onerous or costly.

Conclusion

Securing Australia's future prosperity necessitates arresting the decline in MFP growth. The downward pressure from the mining sector on measured MFP growth is likely to abate as mining projects reach full production, just as occurred in the agricultural sector following the end of the drought (Eslake 2011, p. 229). The utilities sector, which has consistently placed downward pressure on MFP, is likely to continue to do so into the future until reforms address the existence of the rents that enable inefficiencies to persist (Forsyth 1998, p. 298). As Australia's terms of trade decline, the effect of the nation's recent productivity performance will become apparent (Atkinson et al. 2014, p. 61 and Carmody 2013). Incomes will grow at a slower rate, or not at all, unless policies are put in place to encourage firms to compete and innovate, allowing the economy to grow without significant inflationary pressure. A new round of reforms that drive firms to enhance their practices by exposing them to competition, combined with policies that enable flexibility and capacity, is the most effective path to achieving a new productivity surge reminiscent of the one enjoyed in the 1990s.

Reference List

Atkinson, T., Caputo, M., Robinson, T. and Wang, H. 2014, 'Australia After the Terms of Trade Boom', *Reserve Bank of Australia Bulletin March*, pp. 55-62.

Australian Bureau of Statistics 2010, *Measures of Australia's Progress*, Australian Bureau of Statistics, Canberra, viewed 20 June 2014,

<[http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1370.0~2010~Chapter~Productivity%20and%20progress%20\(5.5.1\)](http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1370.0~2010~Chapter~Productivity%20and%20progress%20(5.5.1))>

Australian Bureau of Statistics 2013, *Estimates of Industry Multifactor Productivity Growth*, Australian Bureau of Statistics, Canberra, viewed 20 June 2014,

<<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/5260.0.55.0022012-13?OpenDocument>>

Australian Bureau of Statistics 2014a, *Australian National Accounts: National Income, Expenditure and Product, March*, Australian Bureau of Statistics, Canberra, viewed 20 June 2014,

<<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/5206.0Mar%202014?OpenDocument>>

Australian Bureau of Statistics 2014b, *Labour Force, Australia, June*, Australian Bureau of Statistics, Canberra, viewed 25 July 2014,

<<http://www.abs.gov.au/ausstats/abs@.nsf/mf/6202.0>>

Banks, G. 2012, 'Productivity policies: The "to do" list', Proceedings of the Securing the Future: 2012 Economic and Social Outlook Conference, Melbourne,

<http://www.pc.gov.au/___data/assets/pdf_file/0009/120312/productivity-policies.pdf>

Carmody, C. 2013, 'Slowing productivity growth - a developed economy comparison', *Economic Roundup Issue 2*, viewed 25 June 2014,

<<http://www.treasury.gov.au/PublicationsAndMedia/Publications/2013/Economic-Roundup-Issue-2/Economic-Roundup/Slowing-productivity-growth>>

Connolly, E. and Gustafsson, L. 2013, 'Australian Productivity Growth: Trends and Determinants', *The Australian Economic Review*, vol. 46, no. 4, pp. 473-482.

D'Arcy, P. and Gustafsson, L. 2012, 'Australia's productivity performance and real incomes', *Reserve Bank of Australia Bulletin June*, pp. 23-36.

Davis, G. and Rahman, J. 2006, 'Perspectives on Australia's productivity prospects', Proceedings of the Productivity 2006 Conference, Canberra,

<<http://www.pc.gov.au/research/conferences/productivityperspectives/pp2006/davis/?a=61083>>

Department of Industry 2009, *Innovation and Raising Australia's Productivity Growth*, Department of Industry, Canberra, viewed 1 July 2014,

<<http://www.industry.gov.au/innovation/reportsandstudies/Documents/InnovationandRaisingAustraliasProductivityGrowth.pdf>>

Department of the House of Representatives 2010, *Standing Committee on Economics: Report on Productivity Growth Trends*, Department of the House of Representatives, Canberra, viewed 5 July 2014,

<http://www.aph.gov.au/parliamentary_business/committees/house_of_representatives_committees.html?url=economics/productivity/report/chapter%203.htm>

Department of the Senate 2012, *Senate Standing Committee on Economics: Answers to Questions on Notice 31 May 31*, Department of the Senate, Canberra, viewed 5 July 2014,

<http://www.aph.gov.au/~media/Estimates/Live/economics_ctte/estimates/bud_1213/Treasury/answers/BET1330_Waters_PC.ashx>

Department of the Treasury 2002, *Intergenerational Report 2002*, Department of the Treasury, Canberra, viewed 30 June 2014,

<<http://www.budget.gov.au/2002-03/bp5/html/index.html>>

Department of the Treasury 2010, *Intergenerational Report 2010: Australia to 2050*, Department of the Treasury, Canberra, viewed 30 June 2014, <http://archive.treasury.gov.au/igr/igr2010/report/pdf/IGR_2010.pdf>

Emerson, C. 2014, 'Productivity', *Craig Emerson Economics*, viewed 10 July 2014, <<http://craigemersonconomics.com/economic-notes/2014/3/14/economic-note-no-productivity>>

Eslake S. 2011, 'Productivity: The lost decade', Proceedings of The Australian Economy in the 2000s Conference', Sydney, <<http://www.rba.gov.au/publications/confs/2011/pdf/eslake.pdf>>

Eslake, S. and Walsh, M. 2011, *Australia's productivity challenge*, Grattan Institute, Melbourne, viewed 1 July 2014, <http://grattan.edu.au/static/files/assets/ef41dc99/069_productivity_challenge.pdf>

Hilmer 2011, 'Tax cuts and competition the way to arrest productivity decline', *The Conversation*, 24 March, viewed 5 July 2014, <<http://theconversation.com/tax-cuts-and-competition-the-way-to-arrest-productivity-decline-379>>

Irvine, J. 2013, 'Forty-three ways to boost Australia's productivity', *Business Spectator*, 11 June, viewed 10 July 2014, <<http://www.businessspectator.com.au/article/2013/6/11/economy/forty-three-ways-boost-productivity>>

Kirchner, S. 2013, 'Time to dump Australia's anti-dumping system', *Issue Analysis*, no. 141, pp. /13, viewed 4 July 2014, <<http://www.cis.org.au/images/stories/issue-analysis/ia141.pdf>>

Krugman, P. 1994, *The Age of Diminishing Expectations*, The MIT Press, Cambridge.

Nicodème, G. and Sauner-Leroy, J. 2004, *Product market reforms and productivity: a review of the theoretical and empirical literature on the transmission channels*, European Commission, Brussels, viewed 30 June 2014,

<http://ec.europa.eu/economy_finance/publications/publication524_en.pdf>

Nicoletti, G. and Scarpetta, S. 2003, 'Regulation, productivity and growth: OECD evidence', *OECD Economic Department Working Paper*, no. 347, viewed 11 July 2014,

<<http://onlinelibrary.wiley.com/doi/10.1111/1468-0327.00102/abstract>>

OECD 2010, *Measuring Innovation: A New Perspective*, OECD Publishing, Paris.

Parkinson, M. 2011, *Sustaining growth in living standards in the Asian century*, Department of the Treasury, Canberra, viewed 28 June 2014,

<http://www.treasury.gov.au/~media/Treasury/Publications%20and%20Media/Speeches/2011/Sustaining%20growth%20in%20living%20standards%20in%20the%20Asian%20Century/Downloads/Sustaining_growth_in_living_standards.ashx>

Productivity Commission 1999, *Microeconomic Reforms and Australian Productivity: Exploring the Links*, Productivity Commission, viewed 2 July 2014,

<http://www.pc.gov.au/___data/assets/pdf_file/0016/8206/meraap1.pdf>

Productivity Commission 2008, *Annual Report 2007-8*, Productivity Commission, Canberra, viewed 2 July 2014,

<http://www.pc.gov.au/___data/assets/pdf_file/0006/83868/chapter01.pdf>

Productivity Commission 2010, *Annual Report 2009-10*, Annual Report Series, Productivity Commission, Canberra, viewed 2 July 2014,

<http://www.pc.gov.au/___data/assets/pdf_file/0014/103352/annual-report-2009-10.pdf>

Quiggin, J. 2011, 'Wrap-up discussion', Proceedings of the Australian Economy in the 2000s Conference, Sydney,

<<http://www.rba.gov.au/publications/confs/2011/>>

The Economist 2005, 'Special Report: Australia; The limits to growth', *The Economist*, 5 May, viewed 23 June 2014,
<<http://www.economist.com/node/3908328>>

Yellen, J. 2005, 'Productivity and inflation', *Federal Reserve Bank of San Francisco Economic Letters*, no. 2005-04, pp. /3,
<<http://www.frbsf.org/economic-research/publications/economic-letter/2005/february/productivity-and-inflation/el2005-04.pdf>>