

## Promoting future productivity growth

- 7.1 Productivity surged in the 1993-94 to 1998-99 cycle, and has since declined. Boosting productivity growth in spite of the challenges outlined in chapter 5 will be assisted by well-targeted public policy.
- 7.2 This chapter discusses how government can boost productivity through a range of public investment and regulation initiatives. The agenda of the current government is described under each heading.

### **The national policy approach to facilitating productivity growth**

- 7.3 Government policy decisions cannot by themselves raise the level of productivity growth. Rather, sensible government intervention in markets, through investment in infrastructure and human capital or modifying regulatory frameworks, lifts productivity by enabling firms to allocate resources more efficiently.
- 7.4 Professor Green opined on the role of government in meeting the challenge of raising the level of productivity growth:
- I think government can only do so much to facilitate change. It cannot prescribe change. It cannot prescribe good or productive behaviour. But it can facilitate it, and it needs to find flexible and agile ways of doing so.<sup>1</sup>
- 7.5 The Treasury described the role of public policy in responding to the productivity challenge:

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1 Professor R Green, *Transcript*, 11 March 2010, p. 8.

Public policy settings also play a vital role in achieving productivity growth as they affect the environment in which firms operate. Policy is important for improving the efficiency of resource use in the economy as it can support well-functioning markets, remove distortions and enhance flexibility, responsiveness and dynamism at the level of the firm and the individual.<sup>2</sup>

7.6 They went on to discuss how policy intervention can facilitate productivity:

Policy can also promote an operating environment in which workers and firms have the incentives and the capacity to continually adapt to take advantage of opportunities, which in turn improves productivity. Addressing market failures in the areas of infrastructure, innovation and human capital also provides an important avenue for productivity gains.<sup>3</sup>

7.7 A 2009 OECD study on *The Political Economy of Reform* also noted that maintaining strong macroeconomic policy allows governments to continue reform agendas. The report commented:

One of the most robust findings to emerge from recent econometric work on the political economy of structural reform is that sound public finances tend to be associated with more reform.<sup>4</sup>

7.8 This is akin to the introduction of reforms which involve compensation or inducement for economic benefits expected to be shared more broadly. An example of this was the national competition payments paid by the Commonwealth to the States in the 1990s in return for the States implementing the lion's share of National Competition Policy reforms. The payments were made in recognition that the benefits were expected to accrue to the national economy.

7.9 The Manufacturing Alliance argued that in using public policy to facilitate productivity growth, governments should, where possible, focus on economy-wide drivers of productivity growth.<sup>5</sup>

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2 The Treasury, *Submission no. 10*, p. 3.

3 The Treasury, *Submission no. 10*, p. 3.

4 OECD, *The political economy of reform: Lessons from pensions, product markets and labour markets in ten OECD countries*, 2009, p. 41.

5 The Manufacturing Alliance, *Submission no. 14*, p. 6.

7.10 In a similar vein, the Productivity Commission (PC), while discussing taxation policy in evidence to the Committee, described the risks associated with ‘picking winners’ based on current productivity levels in particular sectors:

...it is terribly humbling to look back over the unpredictable course of productivity movement and its surges. If we had been sitting here back in the late eighties and we were wondering where productivity acceleration was going to come from...we would not have guessed wholesale and retail trade...it is just a reminder that neutrality is a tremendously important principle in tax system design here and it is a word of caution about the sort of magic ingredient approach to productivity growth.<sup>6</sup>

7.11 Australia has already implemented substantial microeconomic reforms; however, there is still room to build on this platform. As Treasury notes, the PC identified a number of issues in infrastructure markets that could benefit from further reform in order to efficiently allocate resources and minimise waste:

Such measures include pricing and regulatory reforms that encourage private sector participation, and the promotion of efficient outcomes in public investment through the development of methodologies for making efficient and transparent investment decisions.

The Productivity Commission (2006) has estimated that improving productivity and efficiency in energy, transport, infrastructure and other activities could, after a period of adjustment, increase GDP by nearly 2 per cent.<sup>7</sup>

## Key productivity drivers and current policy frameworks

7.12 A number of areas were repeatedly identified in evidence to the inquiry as being key future contributors to driving higher productivity growth. The discussions elucidated are detailed below under the relevant key categories, followed by a summary of the key policy initiatives being undertaken in these areas.

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6 Mr T O’Brien, Productivity Commission (PC), *Transcript*, 23 October 2009, pp. 13-4.

7 The Treasury, *Submission no. 10*, p. 11.

7.13 The Manufacturing Alliance summarised the views expressed in many submissions. It emphasised the importance of infrastructure, skills and innovation as drivers of productivity, stating that:

A significant reform agenda around investments in infrastructure, skills and innovation is also what is required for Australia to achieve a significant acceleration in long-term productivity growth.<sup>8</sup>

## Human capital investment

7.14 There is a growing interest in the role of human capital in increasing economic efficiency and social wellbeing. COAG's reform agenda includes a key focus on building Australia's human capital to promote productivity growth. Human capital refers to the knowledge, skills, competencies and attributes acquired by workers through education and experience which increases their value in the marketplace.

7.15 The OECD has described human capital as 'the fundamental building block for growth strategies in the knowledge-based economy'<sup>9</sup> and acknowledged that there is a broad consensus that human capital is a key determinant of GDP per capita growth.

7.16 While Australia's first two waves of reform were largely focused on incentives and flexibility, the PC suggested that if Australia is looking to make substantial increases in productivity, there is relatively more to be done in the area of building capabilities in the human capital areas of health and education.<sup>10</sup> The PC has estimated that specifically targeted reforms in the areas of health and education which improve workforce productivity could add 3 per cent to annual GDP.<sup>11</sup>

7.17 The PC has acknowledged that boosting human capital is essential, but will not be without effort:

The stimulus of intensified competition and the gains of flexible markets remain, but further productivity improvement is now in the more difficult terrain of improving human capital and innovation.<sup>12</sup>

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8 The Manufacturing Alliance, *Submission no. 14*, p. 6.

9 OECD, *Micro Policies for Growth and Productivity*, Final Report, 2005, p. 9.

10 Mr G Banks, PC, *Transcript*, 23 October 2009, p. 7.

11 PC, *Submission no. 20*, p. xv.

12 PC, *Submission no. 20*, p. 37.

- 7.18 In a research report published by the OECD, Mr Roope Uusitalo stated that:
- ...it is widely realized that an increasingly complex society and rapid technical change requires a highly educated workforce, if the country wishes to succeed in the international competition.<sup>13</sup>
- 7.19 He then noted that investing in human capital through education is a productivity enhancing investment:
- Education policy is directed to meet the skill needs of the modern workplace and to improve the performance of the individuals in the labour market. In fact, education is seen almost as a universal cure to some of the most severe economic problems such as unemployment and poverty. Human capital is also regarded as key factor in generating higher productivity and economic growth.<sup>14</sup>
- 7.20 Further, at the launch of the *Education at a Glance 2009* indicators, the Secretary-General of the OECD argued that human capital investment is a vital component of recovering from economic downturns. Benefits accrue to both the individual and the wider economy through higher economic growth.<sup>15</sup>
- 7.21 A paper by Forbes et al, *The effects of education and health on wages and productivity*, released in March 2010, examined the impact of improved health and education upon an individual's earning capacity and productivity in the workforce.<sup>16</sup>
- 7.22 The study's methodology utilised hourly wages as an indicator of labour productivity. It also noted that 'intangible characteristics such as motivation and work ethic' had an impact on the productivity of an individual. The paper acknowledged that this proxy for productivity would only work in 'reasonably competitive markets' but that differences in wages provide a useful indicator of health and education impacts on labour productivity.
- 7.23 Extensive modelling of the productivity outcomes from human capital investment accruing to the wider Australian economy (for example GDP gains) has not yet been undertaken.
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13 Mr R Uusitalo, *Essays in Economics of Education*, 1999, p. 7.

14 Mr R Uusitalo, *Essays in Economics of Education*, 1999, p. 7.

15 Mr A Gurria, OECD, *The return to investment in education*, 8 September 2009.

16 Forbes, M, Barker, A, Turner, S, *The effects of education and health on wages and productivity*, PC Staff Working Paper, March 2010, p. xiii.

## Education

- 7.24 While Government has a role to play in developing human capital through formal education and training, Treasury acknowledged that there are policy challenges for government in ensuring Australia's education and training system is effective and responsive, with a focus on flexibility.<sup>17</sup>
- 7.25 The Department of Education, Employment and Workplace Relations (DEEWR) stated that the development of skills and capabilities:
- ...is a process that begins at birth, and develops through childhood into adulthood and throughout life. Skill accumulation occurs through early childhood learning, schooling, higher education, vocational education and training and work.<sup>18</sup>
- 7.26 The Australian Chamber of Commerce and Industry (ACCI) stated that Australian industry needs a skilled, flexible and motivated workforce equipped with the skills and knowledge required to meet the needs of employers.<sup>19</sup>
- 7.27 In the *Intergenerational Report 2010*, the Australian Government highlighted a number of initiatives it has introduced to support the development of human capital and increase labour force participation. These included increasing incentives to work through personal income tax cuts, increases in the Child Care Rebate and the introduction of Paid Parental Leave. Reforms in the education, employment services and health sectors have also been aimed at boosting workforce participation.<sup>20</sup>
- 7.28 The Government has acknowledged that in addition to maintaining policy settings which promote human capital, targeted assistance may also be required to assist those facing multiple, entrenched disadvantage.<sup>21</sup>
- 7.29 The PC noted that due to the current fiscal environment Australia is facing, 'spending a lot on education and health is going to be trickier than it was before'.<sup>22</sup>

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17 The Treasury, *Submission no. 10*, p. 13.

18 Department of Education, Employment, and Workplace Relations (DEEWR), *Submission no. 19*, p. 5.

19 Australian Chamber of Commerce and Industry (ACCI), *Submission no. 7*, p. 58.

20 The Treasury, *Intergenerational Report 2010*, p. 27.

21 The Treasury, *Intergenerational Report 2010*, p. 104.

22 Mr G Banks, PC, *Transcript*, 23 October 2009, p. 7.

- 7.30 The committee queried representatives from DEEWR on whether there had been a comprehensive study of the results from other countries prior to it reaching the conclusion that investment in human capital was a key focus of raising the rate of productivity growth. A representative from DEEWR stated:

My advice to the committee would be that we are incredibly well served by the evidence here. It is much clearer than it was 15 years ago. The neuroscience and the implications of the neuroscience for policy for young children and the transitions into and early years of school are pretty much beyond refute. That is not debated really. There is very solid research on teacher quality and education as well.<sup>23</sup>

- 7.31 The Australian Institute of Mining and Metallurgy described the education and training challenges in their sector:

Despite the short term decline in commodity prices, expectations of skills needs to meet demand over the medium term continue to be high...With significant numbers of skilled workers and professionals due to retire, sustaining investment in meeting the future skills needs of the minerals sector remains a priority.

Traditional sources of supply of labour such as South Africa, Brazil, China and India are now facing their own growth challenges/labour shortages, and can no longer necessarily be relied upon to 'fill the gaps' for the Australian minerals sector. We need to plan adequately to meet our own professional skills needs.<sup>24</sup>

- 7.32 In December 2008, the Australian Government released the *Review of Australian Higher Education*, which was led by Professor Denise Bradley. The recommendations of the review included national targets for degree attainment, Commonwealth-subsidised places for qualified students, strengthened accreditation processes for universities, and a national accountability framework.<sup>25</sup>

- 7.33 In response to the review, the Government announced additional funding for higher education and research of \$5.4 billion over four years. This includes establishing the Tertiary Education Quality and Standards Agency, a package to improve participation amongst low socio-economic

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23 Mr R Griew, DEEWR, *Transcript*, 30 October 2009, p. 6.

24 Australian Institute of Mining and Metallurgy, *Submission no. 13*, p. 15.

25 Australian Government, *Review of Australian Higher Education*, December 2008.

status students, and a target of 40 per cent of 25 to 34 year-olds holding a bachelor degree or higher by 2025.<sup>26</sup>

## Health

7.34 Discussions on human capital investment tend to focus on education; however the concept goes further than this. The OECD defines human capital as

...the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being.<sup>27</sup>

7.35 Accordingly, human capital encapsulates the whole person. A person's health is a critical component in their wellbeing—personal, social, as well as their productivity.

7.36 Good health is a form of capital which can enable individuals to increase their lifetime earnings.<sup>28</sup> More broadly, a healthier population will be a better workforce, as more people can participate at higher intensity. This has significant implications for the level of productivity.

7.37 In addition, the impact of health upon productivity goes further than merely curing illness; preventative health and improving the general wellbeing of the population is important. The Australian Food and Grocery Council discussed how it is working with governments to ensure that people eat well:

We are critically aware of the role of food in health, particularly in the current preventive health debate. We have long been talking about food and the food industry being a part of the solution to the health challenge that the nation faces.

Notwithstanding that, we still have the dilemma that there is a lot of evidence that many consumers are not eating in a manner which is appropriate to their good health, so we are moving more closely and working with government in a number of areas to specifically look at how the food industry collectively rather than at an individual company level can make changes to the food

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26 Australian Government, *Transforming Australia's Higher Education System*, 2009.

27 OECD, *Human Capital: How what you know shapes your life*, 2007, p. 29.

28 OECD, *Human Capital: How what you know shapes your life*, 2007, p. 11.

supply that make it even easier for consumers to select healthy diets.<sup>29</sup>

- 7.38 In its submission, DEEWR discusses how giving people the best chance to achieve positive health outcomes begins at birth:

Building resilience through the life-cycle needs to be at the centre of Australia's agenda for productivity over the upcoming decades. An agenda around building resilience might start with giving every child the best possible start in life through integrated health, development and care from birth with later interventions in the middle years.<sup>30</sup>

- 7.39 The Australian Society for Medical Research submitted that improved funding in the health and medical research (HMR) sector would provide a sound return:

Historically, the productivity of the Australian HMR sector has significantly enhanced the health and wellbeing of the nation, with a direct impact on economic returns through decreased hospital stays, reduced Medicare and PBS costs and a healthier, more productive workforce.<sup>31</sup>

- 7.40 A more productive health system will contribute to economic growth. The PC noted that if all jurisdictions within Australia were to operate their health systems at best practice, there is a potential one per cent improvement in GDP.<sup>32</sup>

- 7.41 The Australian Bureau of Statistics stated that the productivity measurement of human capital tends to focus upon the education dimension rather than the health dimension:

...possibly at some future point we could open that door a little further and actually try to capture health outcomes as part of that as well by using administrative and other data from the health system – though I do not know how you would do it – to supplement the educational data. You could perhaps incorporate that into productivity estimates in that simple way in the longer term.<sup>33</sup>

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29 Dr G Annison, Australian Food and Grocery Council, *Transcript*, 30 October 2009, pp. 22-23.

30 DEEWR, *Submission no. 19*, p. 2.

31 Australian Society for Medical Research, *Submission no. 31*, p. 5.

32 Mr G Banks, PC, *Transcript*, 23 October 2009, pp. 6-7.

33 Mr J Russo, Australian Bureau of Statistics, *Transcript*, 23 October 2009, p. 27.

## Physical and spatial Infrastructure investment

7.42 The PC noted the role that government plays in the provision of physical capital infrastructure in Australia:

Largely because of their natural monopoly characteristics and widespread community benefits, the majority of economic or 'network' infrastructure assets in Australia – our roads, bridges, railways, ports and airports, electricity generation and distribution networks, and telecommunication networks – have traditionally been owned and operated by governments.<sup>34</sup>

7.43 It went on to describe how in recent years the private sector has become more involved in physical capital, and how the adequacy of investment requires rigorous and ongoing analysis:

An assessment of the 'adequacy' of investment in public infrastructure therefore requires consideration of government investment in these industries, private sector investment, and the regulatory environment that influences investment decisions.<sup>35</sup>

7.44 In 2008 the Australian Government established Infrastructure Australia to:

...provide advice on nationally significant infrastructure and urban systems which promote Australia's productivity, with a particular focus on the quality and efficiency of transport, water, energy and communication infrastructure and the development and liveability of major cities across Australia.<sup>36</sup>

7.45 Major infrastructure challenges identified by Infrastructure Australia include developing more effective ports and associated land transport systems, developing a National Freight Network and improving transport within major cities.<sup>37</sup>

7.46 Current infrastructure initiatives are outlined below under relevant headings.

### Ports

7.47 DIISR noted the land side supply-chain issues concerning Australia's five main container ports:

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34 PC, *Submission no. 20*, p. 31.

35 PC, *Submission no. 20*, p. 31.

36 Department of Infrastructure, Transport, Regional Development and Local Government (DITRD LG), *Supplementary submission no. 29.1*, p. 6.

37 DITRD LG, *Supplementary submission no. 29.1*, p. 7.

For businesses that export and import through these ports, efficient port services and associated supply chains are crucial to their international competitiveness. DIISR undertook some initial consultations with stakeholders about the opportunities and challenges in providing efficient sea freight supply chains to support business competitiveness now and in the future. This confirmed that there are concerns about inefficiencies in the land-side freight supply chains, which it is estimated impose millions of dollars per year of unnecessary costs on businesses.<sup>38</sup>

7.48 To address this concern:

DIISR recently commissioned two pilot studies to obtain data about inefficiencies in the land-side supply chain corridors for two of Australia's major container ports, Sydney and Melbourne. DIISR is investigating whether there is a need for the further work in this area.<sup>39</sup>

7.49 ACCI also noted the infrastructure bottlenecks which occur at Australian ports.<sup>40</sup>

7.50 Infrastructure Australia is also developing a National Ports Strategy and National Freight Strategy, to be provided to COAG in 2010. These will outline the Government's plan to deliver efficient ports and transport links, enhancing productivity and export capacity.<sup>41</sup>

## Land transport

7.51 In its submission, ACCI noted the importance of an efficient and cost effective freight network to Australian businesses and households. This network would be best delivered through both road and rail, to create:

...an Australian freight transport system that encourages an efficient mix of transport modes and provides a seamless movement of freight along the entire logistics chain.<sup>42</sup>

7.52 To address this need, the Government is investing almost \$36 billion on land transport infrastructure over the next six years as part of its Nation

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38 Department of Innovation, Science and Research (DIISR), *Submission no. 26*, p. 21.

39 DIISR, *Submission no. 26*, p. 21.

40 Mr G Evans, ACCI, *Transcript*, 23 October 2009, pp. 30-1.

41 DITRD LG, *Submission no. 29.1*, p. 7.

42 ACCI, *Submission no. 7*, p. 55.

Building Program,<sup>43</sup> investments which will help ease the congestion issues noted in Chapter 5.<sup>44</sup>

7.53 Key road investments as part of the Nation Building Program include the Ballina and Tarcutta Bypasses and upgrade of the Great Western Highway in New South Wales; the Pacific and Ipswich Motorways and Bruce Highway in Queensland; and the Western Ring Road upgrade in Victoria.<sup>45</sup>

7.54 Regarding rail, Dr Philip Laird submitted that:

...rail productivity needs to improve in Australia and this will require effort on many fronts. This will include...the upgrading of infrastructure.<sup>46</sup>

7.55 In a supplementary submission, the Australian Rail, Tram and Bus Union argued that rail infrastructure has been neglected by governments and private operators:

Rail infrastructure, with few exceptions, has suffered from years of underinvestment. This lack of investment has effectively 'come home to roost' in recent years, including a number of privatised rail networks reverting to government ownership after a lack of investment by their private sector operators (whether foreign or Australian owned).<sup>47</sup>

7.56 Key rail investments as part of the Nation Building Plan include works between Sydney and Newcastle; upgrades between Melbourne and Adelaide; a dual track link between West Werribee and Southern Cross in Melbourne;<sup>48</sup> and funding for the planning, development and construction of nine metropolitan public transport projects across Australia.<sup>49</sup>

7.57 Dr Laird noted that despite a 1945 study recommending that Victoria and South Australia convert their railways to standard gauge, this has not yet occurred throughout both states. The existence of different gauges between states is a major impediment to railway productivity.<sup>50</sup>

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43 DITRDLG, *Submission no. 29.1*, p. 1.

44 Ms P O'Connell, DITRDLG, *Transcript*, 26 November 2009, p. 4.

45 DITRDLG, *Submission no. 29.1*, pp. 2-3.

46 Dr P Laird, *Submission no. 15.1*, p. 1.

47 Australian Rail, Tram and Bus Union, *Submission 30.1*, p. 2.

48 DITRDLG, *Submission no. 29.1*, p. 9.

49 Ms P O'Connell, DITRDLG, *Transcript*, 26 November 2009, p. 4.

50 Dr P Laird, *Transcript*, 4 December 2009, pp. 25-7.

## City planning

- 7.58 Rapid urban growth in Australia's major cities places pressure on city planning. The Australian Government, through COAG, has announced long term reform to the planning of cities, to enhance productivity and sustainability. This will link infrastructure funding to national criteria.
- 7.59 The Department of Infrastructure, Transport, Regional Development and Local Government described the benefits which will flow from a national approach to city planning:
- National criteria for capital city planning systems will ensure cities have strong, transparent and long term plans in place to manage population and economic growth; plans which will address climate change, improve housing affordability and tackle urban congestion.<sup>51</sup>
- 7.60 Considerations in strategic city planning include:
- ...construction and upgrade of national significant infrastructure, such as transport corridors, intermodal connections and communications and utilities networks. To encourage investment of private capital in these projects, an effective framework for private sector investment and innovation in urban infrastructure must be provided, thus also easing fiscal constraints on all levels of government.<sup>52</sup>
- 7.61 COAG agreed that all states will have plans which meet the national criteria<sup>53</sup> in place by 2012, to be independently reviewed by the COAG Reform Council.<sup>54</sup>

## Communications and the digital economy

- 7.62 The digital economy can be defined as:
- ...a global network of economic and social activities that are enabled by information and communications technologies, such as the internet, mobile phones, sensor networks et cetera.<sup>55</sup>

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51 DITRDLG, *Submission no. 29.1*, p. 9.

52 DITRDLG, *Submission no. 29.1*, p. 10.

53 Includes integration across functions (i.e. land use, transport and infrastructure) and levels of government, priorities for future spending and policy and effective implementation arrangements.

54 COAG, *7 December 2009 Communiqué*, p. 8.

55 Mr R Windeyer, Department of Broadband, Communications and the Digital Economy (DBCDE), *Transcript*, 25 February 2010, p. 2.

7.63 The Department of Broadband, Communications and the Digital Economy (DBCDE) stated that a focus on the digital economy is critical to Australia's future productivity:

The position we have put is that the digital economy is the key to Australia's future economic prosperity and wellbeing and the task of transforming Australia's economy and society into a successful digital economy is a significant one that requires long-term focus.<sup>56</sup>

7.64 DIISR note that improved telecommunications infrastructure provides a springboard for innovation :

The availability of an advanced telecommunications infrastructure enables innovations such as flexible manufacturing systems, just-in-time management systems, distributed data networks, advanced services, improved intra- and inter-corporate information flows, greater access to customers and faster flows of information inputs to innovation.<sup>57</sup>

7.65 With ICT considered essential to enable productivity growth, DBCDE stated that:

...when you start looking at ICT use then there are questions about both the infrastructure availability and the capacity of it. In the Australian context the national broadband network is the next stage of investment in the next level of capacity of our communications infrastructure, which will then provide a platform for a whole lot of innovation and new services and applications to emerge.<sup>58</sup>

7.66 The National Broadband Network (NBN) was announced on 7 April 2009, and involves investment of up to \$43 billion over eight years to provide 90 per cent 'fibre to the premises' coverage, delivering speeds of 100 megabits per second. Remaining coverage will be through wireless and satellite services. The Government established NBN Co Ltd to roll out the network simultaneously in metropolitan, regional and rural areas.<sup>59</sup>

7.67 The Tasmanian Government Department of Treasury and Finance noted that the NBN would:

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56 Mr R Windeyer, DBCDE, *Transcript*, 25 February 2010, p. 2.

57 DIISR, *Submission no. 26*, p. 20.

58 Mr R Windeyer, DBCDE, *Transcript*, 25 February 2010, p. 7.

59 Prime Minister, Treasurer, Minister for Finance, Minister for Broadband, *Joint Media Release: New National Broadband Network*, 7 April 2009.

...lead Tasmania to a higher productivity growth path. It will provide optic fibre to over 200 000 homes and businesses across Tasmania over the next five years, and transform electronic communication and access to information in the State.<sup>60</sup>

7.68 The NBN addresses concerns that current ICT infrastructure is insufficient to satisfy demand for affordable broadband in metropolitan and non metropolitan areas.<sup>61</sup>

7.69 While the fixed line services provided by the NBN will assist firm productivity, DBCDE commented that a combination of high-speed fixed line and wireless services is important for a mobile workforce.<sup>62</sup>

7.70 Radio spectrum is a finite resource which is required to operate wireless communication services. The Australian Mobile Telecommunications Association (AMTA) described the infrastructure challenges facing the wireless broadband and telecommunications industry:

To put it simply, spectrum is what carries mobile signal. The more activity on spectrum; the more congestion. We are, in another feature of this digital world, seeing a huge increase in appetite for vision, not just voice. People want to see things as well as hear them. That has got a capacity impact on networks. Bandwidth hungry applications are common. This all means essentially that we are anticipating constraints on our infrastructure, and that is our level of spectrum access.<sup>63</sup>

7.71 Dr George Barker argued that access to spectrum is an area where the government could make a significant impact upon productivity growth:

...the way in which the incentives are created for people to trade in spectrum rights is very important. Spectrum rights get allocated to the parties that value them the most. At the moment, even with the parts of the spectrum that are in the marketplace, some of them are locked up in specific uses and are not tradeable. The ability to use spectrum more intensively is growing... I think that spectrum reform is certainly an area in the ICT sector where you could see considerable contribution is to growth at low cost.<sup>64</sup>

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60 Tasmanian Government, Department of Treasury and Finance, *Submission no. 24*, p. 9.

61 Government of South Australia, *Submission no. 22*, p. 3.

62 Mr R Windeyer, DBCDE, *Transcript*, 25 February 2010, p. 4.

63 Mr C Althaus, Australian Mobile Telecommunications Association (AMTA), *Transcript*, 20 November 2009, p. 4.

64 Dr G Barker, Centre for Law and Economics, ANU, *Transcript*, 30 October 2009, p. 38.

- 7.72 With the switch from analogue to digital-only television transmission due to be completed by 2013, radiofrequency spectrum will be freed up. The Government released a Digital Dividend Green Paper in January 2010, seeking comments on potential uses for the 126MHz of UHF spectrum which will become available.<sup>65</sup>
- 7.73 The AMTA submitted that a significant portion of this spectrum should be allocated to the mobile telecommunications industry, arguing that this is the highest value use for the spectrum, and:
- ...any alternate use would not generate the same economic and social benefits to the community.<sup>66</sup>
- 7.74 In addition, the 2.5 GHz band of spectrum is being considered for reallocation. This spectrum is currently used primarily by free-to-air TV broadcasters for electronic news gathering. As this spectrum has been identified internationally as being suitable for wireless internet services, the Australian Communications and Media Authority (ACMA) is currently identifying other spectrum which might be suitable for electronic news gathering. A discussion paper on this issue was released by ACMA in January 2010.<sup>67</sup>

## Innovation and R&D

- 7.75 Public support for R&D comes in two forms. First, publicly funded R&D in universities and government research agencies, and second, the R&D Tax Concession.
- 7.76 The R&D Tax Concession commenced in 1985, and is the largest single innovation expenditure by government – over \$500 million per annum. It provides an increased deduction (150 per cent in the period 1985–96, 125 per cent thereafter) to be claimed on the volume of R&D expenditure, and this then reduces tax payable with tax loss firms entitled to carry the additional deduction forward.<sup>68</sup>
- 7.77 Trend analysis suggests a strong correlation between business expenditure on research and the R&D Tax Concession. However, it has been argued

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65 Australian Government, *Digital Dividend Green Paper*, January 2010.

66 AMTA, *Submission no. 4*, p. 10.

67 Australian Communications and Media Authority, *Review of the 2.5 GHz band and long-term arrangements for ENG: Discussion paper*, January 2010.

68 Cutler & Company, *Venturous Australia*, August 2008, pp. 101-102.

that other factors such as the internationalisation of the Australian economy are also responsible for increased R&D spending by firms.<sup>69</sup>

7.78 In the 2009-10 Budget, the government announced a simplified R&D Tax Credit to replace the Tax Concession.

7.79 DIISR noted three aspects of government support for innovation capacity: research in the public sector can support productivity through enhancing innovation; there are spill over benefits from government support; and improved management in firms can increase productivity.<sup>70</sup>

7.80 The PC noted the distinction between R&D with a direct commercial aim and R&D as a public good:

While the Commission has found little evidence to support fears of underinvestment in research with direct commercial applications, there are potential benefits from public support for more basic or strategic research, where the returns can be difficult for an organisation to adequately appropriate.<sup>71</sup>

7.81 The Manufacturing Alliance argued that public investment in innovation has been neglected, and contributed to the productivity slowdown:

At the end of the day (like the case of infrastructure investment), sub optimal investments in the nation's innovation system, a lack of attention to successful strategies for the diffusion and take up of advanced technologies such as ICT, and lack of attention to the role of public policy in encouraging innovation at the firm level all played some part in the slowing of economy wide productivity growth.<sup>72</sup>

7.82 In addition, the Australasian Institute of Mining and Metallurgy argued that future capacity within its industry depends on relatively speculative R&D work being conducted. Accordingly, it advocated strengthening the R&D Tax Concession.<sup>73</sup>

7.83 The 2008 Review of the National Innovation System, *Venturous Australia*, led by Dr Terry Cutler, called for an increase in public funding levels for research in universities and government research agencies, transformation

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69 Cutler & Company, *Venturous Australia*, August 2008, pp. 103-104.

70 Mr T Lowndes, DIISR, *Transcript*, 23 October 2009, p. 43.

71 PC, *Submission no. 20*, p. 42.

72 Manufacturing Alliance, *Submission no. 14*, p. 10.

73 Australasian Institute of Mining and Metallurgy, *Submission no. 13*, p. 22.

and rationalisation of the R&D Tax Concession and management assistance for innovative firms.<sup>74</sup>

7.84 *Powering Ideas: An Innovation Agenda for the 21<sup>st</sup> Century* was prepared in response to the Cutler Review, and outlines the Government's innovation agenda. Initiatives designed to enhance innovation capacity includes: grant and tax incentives to overcome market failures that discourage innovation, support for industries undergoing structural change; funding of vital research that would not be done by the private sector; and supporting the identification and implementation of innovative changes in business.<sup>75</sup>

7.85 The 2009-10 budget provided \$8.58 billion for science and innovation, an increase of 25 per cent on the previous budget.<sup>76</sup>

7.86 The PC noted the benefits that government assistance can provide in supporting R&D, particularly for more basic or strategic research where results of the R&D are shared across the sector. However, it stressed the importance of policy design:

But, again, careful design and evaluation are needed to ensure that support measures actually give rise to additional R&D activity, such that the benefits to society exceed the costs (PC 2007a). It seems unlikely that the extension of tax concessions will induce sufficient additional R&D to warrant the revenue forgone, and the costs of raising it elsewhere.<sup>77</sup>

7.87 The Treasury agreed that government support measures should be carefully developed:

On the other hand, increased funding or tax concessions for specific R&D will not necessarily have a significant impact on productivity (PC 2007). Specific R&D will only increase productivity up to the point at which the cost of encouraging additional innovation exceeds the benefits to the economy of that innovation.<sup>78</sup>

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74 Cutler & Company, *Venturous Australia*, August 2008, pp. 4-8.

75 DIISR, *Submission no. 26*, p. 8.

76 DIISR, *Submission no. 26*, p. 8.

77 PC, *Submission no. 20*, pp. 42-3.

78 The Treasury, *Submission no. 10*, p. 12.

## Workplace capacity

7.88 At a public hearing, Professor Roy Green discussed how there is a strong link between management capability and the productivity of firms. His research has found that Australian management is not best practice, especially in smaller firms.<sup>79</sup>

7.89 Professor Green went on to discuss various programs that have been run by government in the past to improve what he terms workplace development, which involves improving the performance of whole organisations. He called for more investment in this area:

Certainly we know from experience overseas that this is one of the most cost-effective ways of improving the productivity performance of organisations to invest in workplace development, including innovation capability. The kinds of programs that do this are those that connect companies to services that can make improvements to their capacity as well as to the general level of workplace and management skill.<sup>80</sup>

7.90 To improve capability in small to medium enterprises to operate at best practice, the Enterprise Connect program provides business reviews addressing technology and management. This program, focused on firms with turnover of \$2 million to \$100 million, identifies areas which would enable these firms to improve their productivity, and assists them to implement changes in those areas.<sup>81</sup>

## Regulatory reform, harmonisation and reducing red-tape

7.91 Excessive and inappropriate regulation places time and cost burdens in business, reducing their ability to be adaptable, responsive and innovative.<sup>82</sup> The PC in 2006 estimated that the compliance costs of regulation in Australia could be as high as 4 per cent of GDP.<sup>83</sup>

7.92 The productivity benefits of an improvement in regulatory quality were described by Mr Banks of the PC:

It is very clear that there is a big payoff to productivity from reducing the drag on enterprise performance. It has two sides to it.

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79 DIISR, *Exhibit no. 11*.

80 Professor R Green, *Transcript*, 11 March 2010, p. 4.

81 Mrs J Zielke, DIISR, *Transcript*, 23 October 2009, p. 44.

82 PC, *Submission no. 20*, p. xiv.

83 PC, *Potential Benefits of the National Reform Agenda*, p. 153.

One is just the deadweight cost of the paperwork and secondly is the inhibition of innovation and flexibility, particularly for small enterprises where you are often tying up the decision maker in doing red tape kind of work.<sup>84</sup>

- 7.93 The Government's Better Regulation Agenda encompasses regulatory reforms at the Commonwealth level, and a National Partnership Agreement through COAG at the inter-jurisdictional level. This is a component of the third wave of reforms, continuing microeconomic reforms which have taken place since the 1980s.

### Commonwealth level regulatory reform

- 7.94 The Department of Finance and Deregulation aims to reduce the level of poorly designed and unnecessary regulation. It assists government agencies and departments to comply with Regulatory Impact Analysis requirements, and provides policy advice on ways to reduce the costs of regulation.<sup>85</sup>
- 7.95 The Minister for Finance and Deregulation is using Better Regulation Ministerial Partnerships with portfolio ministers to progress enhancements to substantive areas of Commonwealth regulation. Partnerships include the Health Technology Assessment Review, to improve regulation around assessment processes for medical technology; and improving Product Disclosure Statements for financial services, to present information in an uncomplicated manner without compromising investor protection.<sup>86</sup>
- 7.96 As announced in the February 2009 *Updated Economic and Fiscal Outlook*, the Government is undertaking a review of pre-2008 Commonwealth subordinate legislation and other regulation, to document those regulations which impose net costs on business and identify scope to improve regulatory efficiency.<sup>87</sup>

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84 Mr G Banks, PC, *Transcript*, 23 October 2009, pp. 10.

85 Department of Finance and Deregulation (Finance), *2008-09 Annual Report*, p. 29.

86 Finance, *2008-09 Annual Report*, p. 29.

87 The Hon W Swan MP and The Hon L Tanner MP, *Updated Economic and Fiscal Outlook*, February 2009, p. 26.

## National Partnership Agreement to Deliver a Seamless National Economy

7.97 Inconsistency and duplication of regulation across the federation is an impediment to productivity growth. Mr Banks of the PC elaborated on this point:

Another point we have made is that there is still some scope to reduce some of the red-tape burdens and regulatory inflexibilities....A federation has benefits but it also has costs. One of the costs is where you get regulation that passes its use-by date because it was designed for a particular jurisdiction when we now need national regulation in a global economy.<sup>88</sup>

7.98 In a 2005 position paper, ACCI described the problem of inconsistent regulation:

Increasing mobility and flow of Australian businesses and workers has raised concerns about separate, overlapping and conflicting regulation between state jurisdictions. This ad hoc regime increases the costs of complying with regulation without any associated increase or change in economic activity.<sup>89</sup>

7.99 To progress reforms in areas of Commonwealth and state responsibility, in 2007 COAG agreed to a National Partnership Agreement to Deliver a Seamless National Economy (NPA). This encompasses 27 areas of regulatory reform known as deregulation priorities, 8 areas of competition reform, and improving processes for regulation making and review.<sup>90</sup>

7.100 Regulatory reform includes harmonising regulation across the Commonwealth, states and territories through coordinated national approaches, and national regulatory schemes administered by the Commonwealth. This will deliver more consistent regulation across jurisdictions and reduce compliance costs to business.

7.101 Of these reforms, the Department of the Prime Minister and Cabinet (PM&C) stated that occupational health and safety (OH&S) stands out for its importance to productivity:

Certainly the OH&S was one of the key ones. There was a lot of priority put on to OH&S...if you talk to firms – there is a lot of engagement, a lot of liaison with business in Australia – one thing that they will talk about is how important it is to them to have

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88 Mr G Banks, PC, *Transcript*, 23 October 2009, p. 7.

89 ACCI, *Holding Back the Red Tape Avalanche: A Regulatory Reform Agenda for Australia*, p. 33.

90 COAG, *National Partnership Agreement to Deliver a Seamless National Economy*, February 2009.

consistency in the application of their workplace safety across jurisdictions.<sup>91</sup>

7.102 Mr Banks of the PC agreed that OH&S represents a crucial reform:

...I have in the past described OH&S as a bit of a litmus test for our capacity as a nation to come up with regulatory reforms that will help build the national economy.<sup>92</sup>

7.103 Progress on the agenda is monitored by the COAG Reform Council (CRC). The NPA includes provision for 'facilitation' and 'reward' payments of up to \$550 million to the states and territories, to be paid by the Commonwealth following advice from the CRC as to the achievement of key milestones.<sup>93</sup>

7.104 The PC saw regulatory reform as a leading area to maintain an economic environment conducive to private sector investment, in order to boost productivity growth in a fiscally constrained environment:

Notably, governments' initiatives to boost productivity growth will need to be attentive to fiscal resource costs; initiatives with low fiscal cost, such as regulatory reforms, would seem particularly attractive in an era of fiscal consolidation.<sup>94</sup>

## Continuing competition frameworks

7.105 Third-party access regimes enable efficient use of essential infrastructure by preventing monopoly providers from overcharging. This provides for greater competition than would otherwise be the case. Competition policy reforms over the past two decades are examined in Chapter 3.

7.106 DIISR noted the potential productivity benefits of expanding third-party access regimes.

While NCP reforms are now largely complete, DIISR's research indicates that there remain opportunities in infrastructure services where productivity improvements can be attained.<sup>95</sup>

7.107 However, the PC suggested that the Government should exercise caution in this area:

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91 Dr G de Brouwer, Department of the Prime Minister and Cabinet (PM&C), *Transcript*, 4 February 2010, pp. 15-6.

92 Mr G Banks, PC, *Transcript*, 23 October 2009, p. 7.

93 COAG, *National Partnership Agreement to Deliver a Seamless National Economy*, February 2009.

94 PC, *Submission no. 20*, p. 36.

95 DIISR, *Submission no. 26*, p. 20.

There is obviously a trade off between making it too easy for a third-party to access a facility that another investor has outlaid a lot on and ensuring that whoever has invested in that is not exploiting that monopoly position. Getting that balance right is quite hard....In broad terms the test should be that there would be a clear improvement in efficiency or welfare through that access rather than just a potential improvement in competition at the margin.<sup>96</sup>

7.108 It went on to outline the risk of overzealous competition policy:

...we have to keep vigilant that what is ostensibly a pro-competitive or pro-competition set of regulations does not inadvertently actually compromise investment and innovation.<sup>97</sup>

## Maintaining flexibility in workplaces

7.109 With the domestic and international economy constantly changing, flexibility in workplace arrangements enables employers to react quickly to changing demands. Inflexible arrangements have a detrimental impact on firm productivity.<sup>98</sup>

7.110 The PC outlined the importance of such flexibility to productivity:

...it is important to preserve the ability of organisations to engage effectively with employees to change work arrangements in response to commercial imperatives. As the economy changes, different firms and industries will come under divergent pressures in a way not amenable to enforcement of common employment conditions.<sup>99</sup>

7.111 In a speech in Melbourne on 5 November 2009, the Chairman of the PC said:

...legitimate concerns for workers' rights need to be balanced against the flexibility that firms need to implement the organisational changes and other innovations on which productivity growth ultimately depends.<sup>100</sup>

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96 Mr G Banks, PC, *Transcript*, 23 October 2009, p. 12.

97 Mr G Banks, PC, *Transcript*, 23 October 2009, pp. 12-3.

98 ACCI, *Submission no. 7*, pp. 72-5.

99 PC, *Submission no. 20*, p. 43

100 Mr G Banks, *Back to the Future: Restoring Australia's Productivity Growth*, 5 November 2009, p. 9.

7.112 At a public hearing of the House Economics Committee in February 2010, the Governor of the RBA, Mr Glenn Stevens, noted that the flexibility in workplace arrangements limited the rise in unemployment in Australia during the Global Financial Crisis. When asked to comment on the impact of the Fair Work Australia laws on unemployment, Mr Stevens said:

...of course the new arrangements are just coming in. So the test is whether the flexibility is retained. I am not saying it will not be. I cannot judge, but the question being asked is whether that is a potential risk. As I say, it is important to retain flexibility and it is very important that all the parties involved do that.<sup>101</sup>

## The importance of careful policy selection

7.113 The Secretary to the Treasury, in a recent speech on the role of fiscal policy, discussed the dilemmas in measuring the productivity outcomes in public sector services, such as health (this will be discussed further in Chapter 8). He noted the difficulty in measuring quality and quantity of these services, but went on to say:

Even if we could solve these dilemmas we would still be left with a third: the difficulty in identifying the impact of changes in government expenditures on outcomes that are also heavily influenced by individual decisions and behaviours.<sup>102</sup>

7.114 This point highlights the difficulty in estimating productivity returns from investment in certain public policies. It also shows the difficulty in influencing behaviour at the firm-level. However, Dr Henry stressed that despite the 'lack of evidence of a clear relationship between increased expenditure and better outcomes it is not to say that more expenditure will not improve outcomes'. The caveat he noted was that:

It is also clear that good program design and delivery are important for getting value for the public's money.<sup>103</sup>

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101 Mr G Stevens, RBA, *Transcript*, House of Representatives Standing Committee on Economics, p. 12.

102 Dr K Henry, *Fiscal policy: more than just a national budget*, Address to the 2009 Whitlam Institute Symposium, 30 November 2009, p. 23.

103 Dr K Henry, *Fiscal policy: more than just a national budget*, Address to the 2009 Whitlam Institute Symposium, 30 November 2009, p. 23.

7.115 Similarly, the South Australian Government's submission stressed the importance of careful examination of policy areas purported to bring productivity growth:

In prioritising future initiatives it is important that Governments are well informed about the benefits likely to be obtained from each activity or investment to achieve the highest payoff to Australia's productivity and living standards.<sup>104</sup>

7.116 Mr Banks of the PC emphasised the fact that public investment in raising productivity growth requires a long term agenda and thus the public's support:

Let us face it, some of these human capital investments could take 20 years to pay off, so it is a long-term investment. Investments in education for young people and so on – improving the quality of teaching, for example, which is something we highlight – are really going to be very important for the longer term. The challenge for public policy is things with really long-term payoffs, in a sense, are politically more difficult because any change will involve some short-term disruption et cetera. If the payoffs are a decade hence – things are a little bit out of kilter.<sup>105</sup>

7.117 Public policy investments to boost productivity growth are targeted at reaping longer-term returns. Thus there is a significant opportunity cost of investing more intensively in a given area than in another. It therefore follows that where there is a heavy emphasis on public investment in certain policy areas that it is prudent to model the expected outcomes.

7.118 PM&C noted that the current PC estimates on the potential returns from COAG's human capital agenda could be strengthened by modelling analysis:

In that report, the Productivity Commission, as I recall it, was much more confident about the estimates it was making on microeconomic reform compared with the human capital agenda, because it was the first time it had really gone there. I presume in the work that COAG has asked it to do in the future it will refine a lot of the work, particularly on the human capital side, and as it gets more familiar with the initiatives that governments are taking

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104 Government of South Australia, *Submission no. 22*, p. 4.

105 Mr G Banks, PC, *Transcript*, 23 October 2009, p. 7.

will be better able to model that and come to some sort of conclusion about the impact.<sup>106</sup>

7.119 As discussed in Chapter 4, Australia can learn from the successful policy platforms introduced in other developed countries to drive productivity in relevant areas of the Australian context. In particular it can learn from analysis of 'cause and effect' of public policy on productivity outcomes. It is, however, important to remember that Australia faces unique challenges for long-term productivity growth and operates in a distinct economic, geographic, political and cultural environment distinct from other nations.

7.120 It is critical that policy-makers ensure that the desired outcome from investment in productivity growth enhancing measures is not higher productivity growth per se, but the wellbeing of Australians. As the PC stated in evidence:

Serious policy errors can arise if we lose sight of the ultimate objective of raising living standards.<sup>107</sup>

## Committee conclusions

7.121 The committee believes that public policy to boost the aggregate productivity growth rate should be primarily directed at maintaining competition in the economy and allowing firms flexibility in their workplace arrangements. Additionally, all levels of Australian government should continue to pursue reductions in red-tape, regulatory burdens on business and to strengthen regulatory consistency.

7.122 Complementing these policies which improve the macroeconomic and microeconomic environment that firms operate in, the Australian government's role in supporting productivity growth should be through assisting to strengthen firm capabilities. This can be achieved indirectly by investing in areas which improve Australia's aggregate capabilities.

7.123 Australia's aggregate capabilities include its human capital stock, which can be improved by investing in a better educated, creative, skilled and healthy workforce. The other key area is enabling firms to utilise evolving technology by ensuring there is appropriate infrastructure for these new platforms; for example providing reliable and sufficient access to radio-spectrum for fourth generation wireless applications. Once firms have appropriate and reliable access to new technology there is a higher

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106 Mr R Perry, PM&C, *Transcript*, 4 February 2010, p. 17.

107 PC, *Submission no. 20*, p. xi.

likelihood that innovation in production processes will flow from this. The committee believes innovation within firms is a key driver of aggregate productivity growth.

- 7.124 The committee notes that significant investment in information technology and communications, infrastructure and R&D will contribute to future productivity growth. The committee also recognises that measures to increase workforce participation are also essential for future economic growth.
- 7.125 The committee also notes that improving firms' management and organisational capabilities is important, especially in Australia, where small scale firms and family owned businesses predominate. Federal and state governments can support this capability in firms by ensuring appropriate education of the future workforce and by government support agencies interacting with the business community to provide networking opportunities and life-long learning.
- 7.126 Improving Australia's productivity growth rate is a broad nationwide challenge which should involve all levels of government. The committee therefore believes a summit represented by all levels of Australian government, together with relevant business, union and non-government organisation representation, be convened by the federal government to discuss and lead the establishment of a specific and integrated productivity growth agenda.

### **Recommendation 3**

- 7.127 **That at the commencement of the 43<sup>rd</sup> parliament the federal government convenes a national forum represented by all levels of government, business, unions and non-government organisations to discuss the key ingredients of a national productivity growth agenda.**
- 7.128 The committee supports the development of a specific national productivity agenda to be agreed by COAG which incorporates aspects of the current COAG reform agenda but which extends upon this. The committee believes this would bring national prominence to productivity growth as the major determinant of strong economic growth in the long-term.

**Recommendation 4**

**7.129 That COAG adopts a specific national productivity agenda. This agenda should be guided by the outcomes of the national forum outlined in Recommendation 3.**

7.130 The need for fiscal discipline provides a challenge in itself, as investment in climate change mitigation and providing for an ageing and growing population cannot be ignored. This means that public policy to boost aggregate productivity must be carefully considered, especially given it is extremely difficult to estimate the impact that policies will have on productivity with any accuracy. There is also little international research on cause and effect from public policy designed to boost productivity growth rates. This is partly because the productivity impact of policy depends on how it affects the behaviour of firms and individuals – and this can take time.

7.131 The committee therefore believes investment in an ambitious long-term human capital agenda is not only important to boost Australia's capabilities but that it will automatically feed into the inputs of all firms in all sectors with no overt decisions on their part. This workforce improvement will also feed into government service provision, which ultimately contributes to the inputs of firms in the economy.

7.132 The committee recognises that prioritising a long-term broad human capital agenda over other public policy investments has opportunity costs. This is exacerbated by the fact that the benefits of this agenda will only be realised in the medium to long-term.

7.133 The committee recognises the recent paper by Forbes et al on the *Effects of education and health on wages and productivity* provides analysis on the productivity of individuals in the workforce. However modelling of the impact of human capital investment on aggregate productivity in the Australian economy has not yet been undertaken.

7.134 The committee agrees that estimates undertaken during the PC's analysis of the *Potential benefits of the National Reform Agenda* could be strengthened by a research report which contains modelling, rather than estimates, of the return on investment in human capital in terms of aggregate productivity and ultimately GDP improvements.

7.135 The committee therefore believes more accurate modelling of potential human capital investments, and likely returns, should be undertaken to ensure Australia's investment in its aggregate capabilities is optimised.

### **Recommendation 5**

7.136 **That in the next eighteen months the Productivity Commission undertakes modelling on various aspects of human capital investment on productivity outcomes in the Australian economy and the likely time-line for returns.**