5

Australia's future productivity growth rate—the challenge

The Australian economy in the 21st century

5.1 The productivity growth rates achieved in the 1990s are, by historic international and domestic performance comparisons in the same period, stand-out results. Similarly, the current declining productivity growth rate of the unfinished cycle commencing 2003-04, is a markedly low productivity growth cycle, albeit productivity is at a much higher level than it was pre-1990.[1] This can be seen pictorially in Figure 5.1 (overleaf) which shows the average MFP growth rates within productivity cycles, 1964-65 to 2007-08.

5.2 Boosting productivity growth is vital for the future living standards of Australians, and, as the Australian Chamber of Commerce and Industry (ACCI) highlighted, even half the average productivity growth of the 1990s would yield significant economic prosperity into the future:

> If Australia could sustain half of the productivity growth improvement achieved during the 1990s, real cumulative GDP for the next four decades would be some $2000 billion higher than if average productivity growth rates slipped back to the levels recorded during the 1970s and 1980s.[2]

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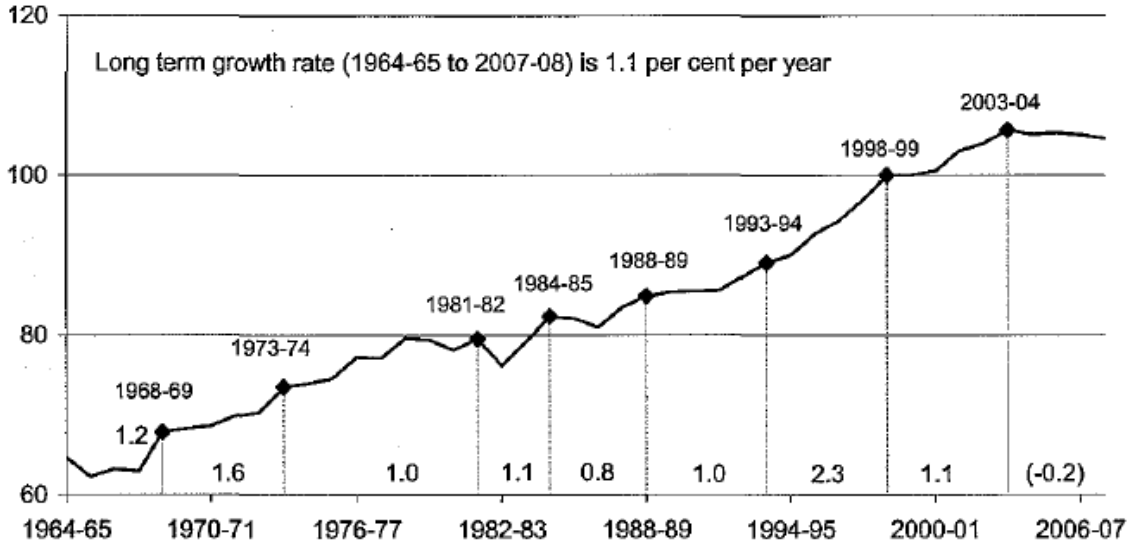
1 The highest level of productivity recorded since 1964 per MFP indexes was 100.6 in 2003-04. Despite MFP being relatively high compared to the 1990s productivity growth period, its growth is trending down.

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

Figure 5.1 Market sector MFP index and average growth rates within productivity cycles, 1964-65 to 2007-08 *(Index 1999-2000 = 100)*



Source *Productivity Commission, Submission no. 20, Figure 2, p. ix. (Market sector using ANZSIC93 categories.)*

5.3 The Australian economy has experienced significant structural change since the reforms of the 1980s. The manufacturing sector's share of GDP and employment has fallen from around 30 per cent in the mid 1950s to under ten per cent in the new millennium. The services sector contributions to GDP and employment have gradually displaced some of the manufacturing and agricultural sectors' shares. This is in line with structural change in most OECD countries.[3]

5.4 Since the start of the resources boom in 2003-04 the mining sector has delivered unprecedented prosperity to Australia. It has brought about a reversal of the terms of trade situation from that of the 1980s, reaching previously unmatched levels.[4] The Australian resources sector was minimally impacted by the Global Financial Crisis (GFC)—the buoyancy in this sector is attributable to China's ongoing demand for raw materials.[5] The Governor of the Reserve Bank of Australia (RBA) commented in February 2010:

3 Pilat, D et al, 'The changing pattern of manufacturing in OECD economies', *OECD Science, Technology and Industry working papers, no. 2006/9*, p. 11.

4 Australia's terms of trade index ranged between 54.8 and 70.3 in the 1980's, and rose to a high of 118.3 in September 2008. In December 2009 it was 102.5: ABS, *Balance of Payments and International Investment Position*, Cat. no. 5302.0, December 2009, p. 24.

5 Commodity prices were initially subdued, but have bounced back. Index of Commodity Prices 1 March 2010 <http://www.rba.gov.au/statistics/frequency/commodity-prices.html>.

> In 2010 the terms of trade could once again reach a very high level, a level in fact exceeded in modern times only by the extraordinary level seen in 2008.[6]

5.5 This has meant the mining sector is driving Australian economic growth, but as previously discussed in Chapter 3, it lags in productivity growth.

5.6 Given the significant and expected ongoing structural change in the Australian economy, coupled with the demands of major demographic and environmental issues, achieving the very high rates of productivity growth recorded in the 1990s will be increasingly difficult.

5.7 Since September 2008 the world economy has faced the biggest financial crisis since the Great Depression. Although Australia has fared relatively well during this downswing, with the economy growing at 0.9 per cent in the December 2009 quarter, it now faces constrained fiscal, and looming supply side, pressures.

5.8 The RBA echoed this sentiment at its February 2010 hearing with the House Economics Committee, stating:

> Now we must turn our attention to the challenges of managing an economic expansion. Issues of capacity, productivity, flexibility, adaptation to structural change and so on will all come back to the fore, as they should. For our community to tackle those challenges successfully, one important condition is monetary and financial stability.[7]

The challenge presented by structural change

5.9 Australia has been experiencing gradual structural change in the economy over the last fifty years; with the services sector contributing to a growing proportion of GDP relative to the manufacturing and agricultural sectors. This change has also been accompanied by a change in the demand for inputs (economic resources) for particular sectors.

5.10 One of the most significant recent triggers for structural change in the Australian economy has come from the burgeoning mining sector. This sector has expanded considerably since 2003-04 with industry gross value

6 Mr G Stevens, Reserve Bank of Australia (RBA), House of Representatives Standing Committee on Economics, *Transcript,* 19 February 2010.

7 Mr G Stevens, RBA, House Standing Committee on Economics, *Transcript*, 19 February 2010, p. 4.

added at basic prices more than doubling, from $34 523 million in 2003-04 to $89 482 million in 2008-09.[8] There have also been affiliated impacts on the services sector, and to a lesser extent, the manufacturing sector, supporting the mining sector.

5.11 When structural change occurs economic resources will flow to those sectors demanding the greatest share of the economy's inputs. This has happened in Australia since the start of the mining boom in 2003-04 with significant labour movements into the mining sector.[9]

5.12 When resources flow to sectors in this way it does not necessarily mean that resources flow to their more efficient use. This was highlighted in the Productivity Commission (PC) submission, where it noted that an improvement in the terms of trade may 'lead to a decline in productivity if resources are reallocated to more profitable but less productive activities'.[10]

The rise of the services sector

5.13 The services sector now accounts for approximately 72 per cent of the Australian economy (gross value added at basic prices).[11] It is likely the overall proportion has slipped from approximately 76 per cent in 2004-2005 to 72 per cent due to the impact of the Global Financial Crisis.

5.14 The highest contributing sector to the economy was the Financial and Insurance Services sector at 10.8 per cent gross value added (GVA[12]), followed by the manufacturing sector at 9.4 per cent GVA. The manufacturing sector continued its steady decline from 12.2 per cent at the start of the century, whilst the mining sector took third ranking at 7.7 per cent GVA, a steady increase from 5.4 per cent in 2000-2001.[13]

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8 Australian Bureau of Statistics (ABS), *Australian System of National Accounts*, Cat. no. 5204.0, 2008-09, p. 28.

9 In November 2005 trend employed persons in mining was 128, 200, but by November 2009 it was up to 162,500. In contrast, manufacturing employment fell by 32,600. ABS, *Australian Labour Market Statistics*, Cat. no. 6105.0, January 2010.

10 Productivity Commission (PC), *Submission no. 20*, p. 5, Figure 1.2.

11 ABS, *Australian System of National Accounts*, Cat. no. 5204.0, 2008-09, p. 28. The 2008-09 National Accounts use ANZSIC06 industry classifications taking the market sector from 16 to 20 industry classifications.

12 Gross Value Add is a concept similar to GDP for each industry sector. The total of all industry sectors is GDP.

13 ABS, *Australian System of National Accounts*, Cat. no. 5204.0, 2008-09, p. 28.

5.15 In December 2009 the Australian System of National Accounts utilised, for the first time, Australian and New Zealand Standard Industrial Classifications 2006 (ANZSIC06). ANZSIC06 expanded the market sector classifications previously detailed in ANZSIC93 from 16 to 20 industry classifications. According to the Australian Bureau of Statistics (ABS):

> Expanding the definition of the 'market sector' to include new industries reflects the growing influence of services industries in the Australian economy.[14]

5.16 The services sector is now represented in (ANZSIC06) by 16 of the 20 industry classifications—the remaining four sectors being Agricultural, Forestry and Fishing; Mining; Manufacturing, and Ownership of Dwellings.[15] Of these sixteen services industries only nine are currently included in the market sector MFP estimates.[16]

5.17 The expansion of the services sector as a share of all industries in the market sector of the economy since the early 1960s, at the 'expense' of agriculture and manufacturing sectors is captured in Figure 5.2. The services sector is now dominating not only GDP but also the percentage of total employment.[17]

14 ABS, *Australian System of National Accounts*, Cat. no. 5204.0, 2—8-09, p. 28.

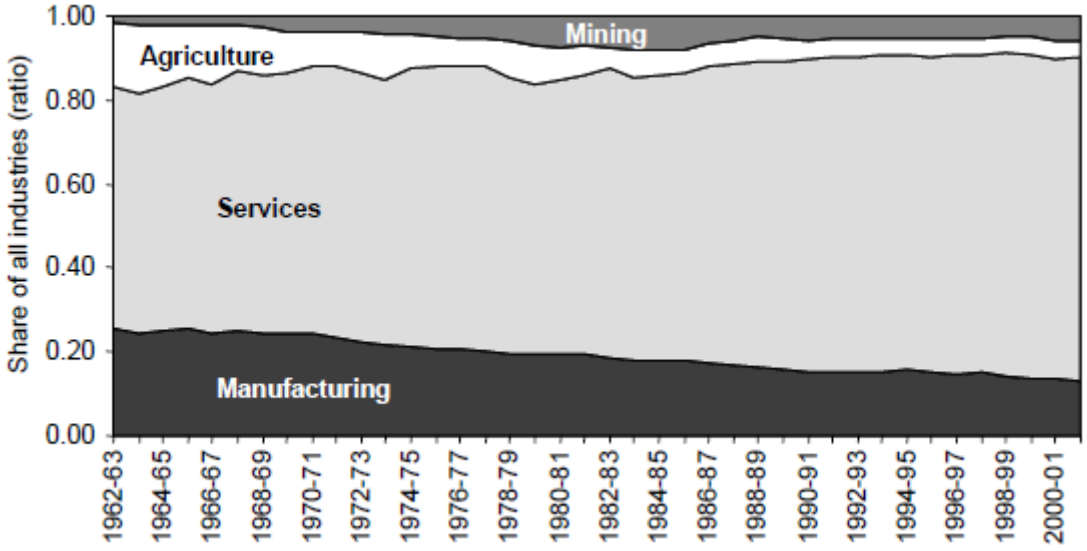
15 ABS, *Australia and New Zealand Standard Industrial Classification 2006 (ANZSIC06)*, Cat. no. 1292.0.

16 Experimental MFP estimates which included ANZSIC categories M, N, and S were released 5 February 2010: ABS, *Experimental Estimates of Industry Multifactor Productivity*, 2008-09, Cat. no. 5260.0.55.002. Refer paras 2.57—2.62 for more explanation.

17 Refer House of Representatives Standing Committee on Economics, Finance and Public Administration, *Servicing our future*, May 2007, p. 6.

Figure 5.2 Changes in the composition of the Australian economy

1962-63 to 2001-02 (Current prices)



Source *Productivity Commission, Trends in Australian Manufacturing, Commission Research Paper, 2003, p. 18.*

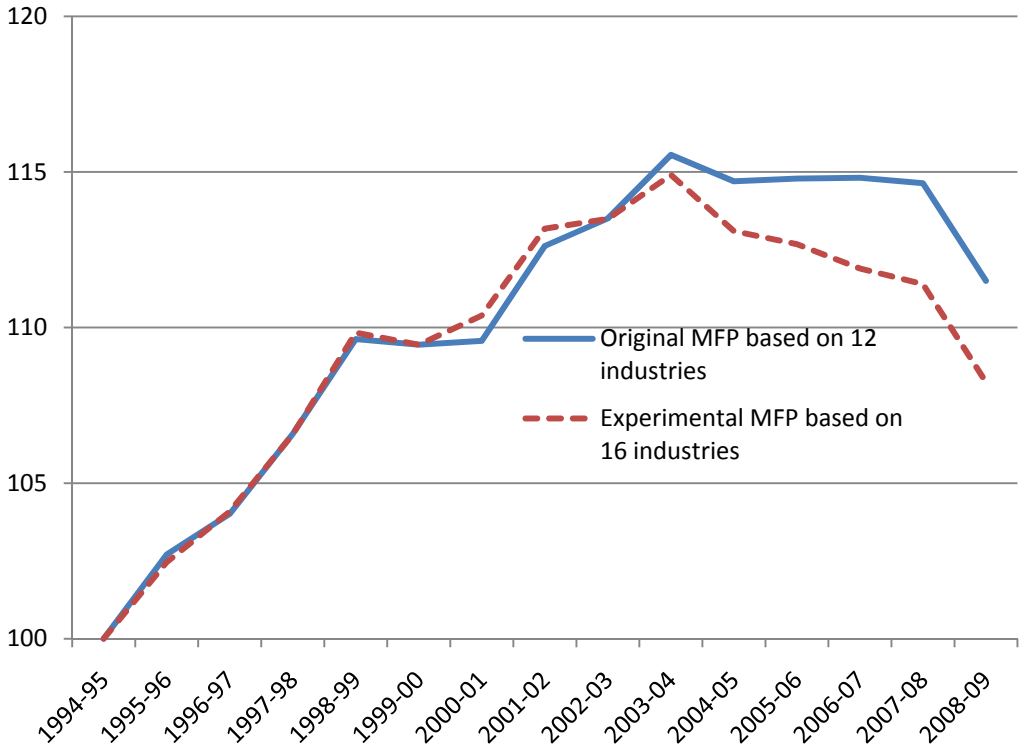
5.18 As discussed in Chapter 2, one of the limitations of the official MFP estimate is that productivity in the services sector is largely unrecorded. However, even if there was a robust official estimate, measuring productivity in this sector is difficult because of the obstacles in capturing the output from the services sector. One of the main impediments is the ability to measure the quality of outputs for non-physical products.

5.19 In addition, the level of productivity growth in the services sector is likely to reach an optimal level sooner than in other sectors due to its high reliance on labour inputs and this may pull down aggregate productivity growth. This can be seen by the inclusion of the four new services sectors[18] into experimental aggregate MFP estimates as shown in Figure 5.3.

18 Experimental MFP estimates for Rental, hiring and real estate services (Category L); Professional, scientific and technical services (Category M); Administrative and support services (Category N), and Other Services (Category S) were released 5 February 2010: ABS, *Experimental Estimates of Industry Multifactor Productivity*, 2008-09, Cat. no. 5260.0.55.002.

Figure 5.3 Impact of including additional service industries on aggregate productivity

1994-95 to 2008-09 MFP levels



Source *ABS, Experimental Estimates of Industry Multifactor Productivity, 2008-09, Cat. 5260.0.55.002.*

The limits of labour productivity

5.20 It is hard to achieve very high levels of productivity growth in sectors characterised by high levels of labour input, as the services sector tends to be. This is because many services are personalised, and as such there is a limit to what can be physically achieved in a given time.[19] For example, enormous economies of scale and efficiency improvements have been achieved in mass produced clothing, yet an individual tailor operates in much the same way as they have for decades.[20]

5.21 Service sectors also tend to have low capital to labour ratios. For example, the labour share of Retail Trade income and Accommodation and Food Services income comprises 71 per cent and 64 per cent respectively; whilst the labour share of Mining income and Agricultural income is 19 per cent

19 For example hair cutting is individualised and can't be incorporated into a production line, nor can caring for an ill person or providing architectural services to individuals.

20 House of Representatives Standing Committee on Economics, Finance and Public Administration, *Servicing our future: inquiry into the current and future directions of Australia's services export sector*, May 2007, p. 9.

and 39 per cent respectively.[21] Clearly not all services are as labour intensive as these two industry sectors but most services rely on human 'inspiration and/or perspiration' and, as such, have higher labour inputs.

5.22 Dr George Barker of the Centre for Law and Economics (CLE) indicated that productivity growth is difficult where labour inputs predominate:

> We are finding that capital is very important, of course, because labour without capital is not very productive.[22]

5.23 Australian labour productivity growth in the period 1993-94 to 2003-04 was higher in manufacturing and agriculture than it was in all but two services sector industries.[23] In the current unfinished cycle to 2008-09, labour productivity has fallen in all but one services sector, retail trade.[24]

5.24 Falling labour productivity in a large and growing sector of the economy is a concern. As MFP growth is labour productivity growth minus the effect of capital accumulation on productivity, labour productivity growth therefore generally exceeds MFP growth, except where capital deepening is unchanged. Consequently, falling labour productivity growth will generally mean falling aggregate productivity growth. ABS evidence to the inquiry points out the close association between labour productivity and living standards:

> As growth in labour productivity has a close long term relationship with growth in labour earnings, labour productivity is often regarded as a basic indicator of improvements in economic living standards over time.[25]

5.25 As mentioned by ACCI, Australia appears to have exhausted its capital deepening capacity (capital to labour ratio) with the long-term rate of capital deepening stabilising at around 1.1 per cent per annum (as shown in Figure 5.4):

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21 ABS, *Experimental Estimates of Industry Multifactor Productivity, Australia: Detailed Productivity Estimates*, Cat. 5260.0.55.002, Table 12: Income shares for value added based estimates of MFP (ISVA), 29 January 2010.

22 Dr G Barker, Centre for Law and Economics ANU, *Transcript*, 30 October 2009, p. 40.

23 House of Representatives Standing Committee on Economics, Finance and Public Administration, *Servicing our future*, May 2007, p. 8.

24 Comparison of 1993-94 to 2003-04 and 2003-04 to 2008-09 using ABS, *Experimental Estimates of Industry Multifactor Productivity, Australia: Detailed Productivity Estimates*, Cat. no. 5260.0.55.002, Table 4: Labour Productivity Indexes, 29 January 2010.

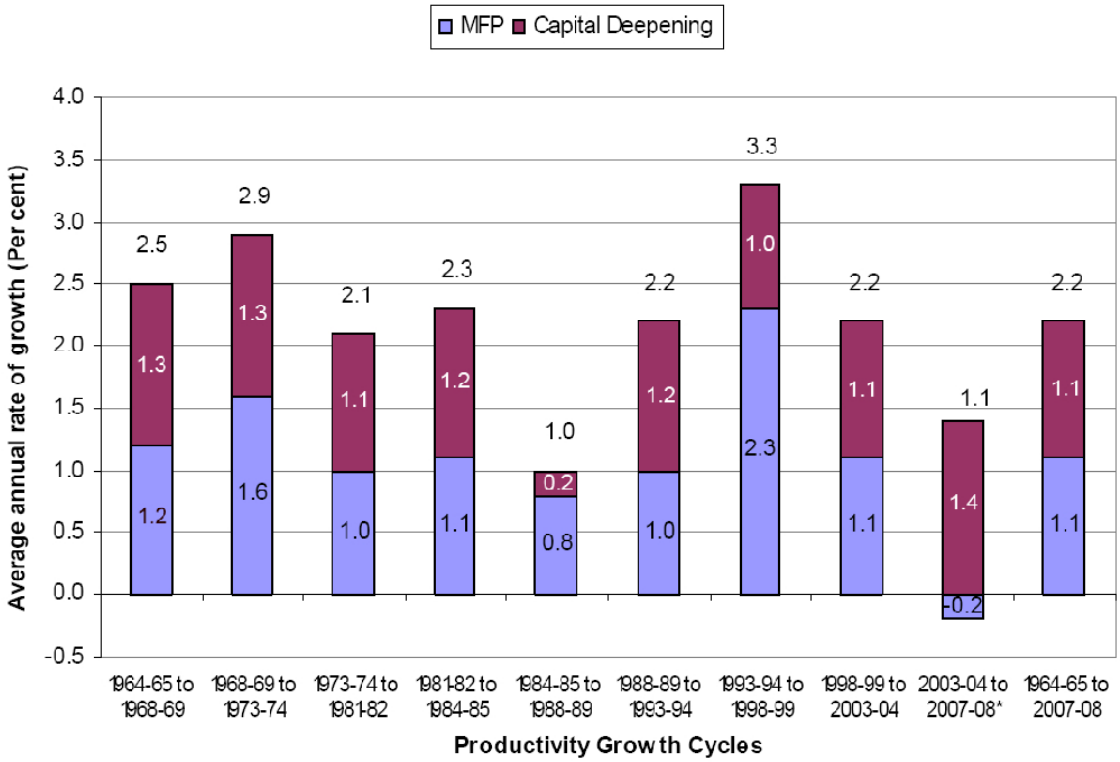
25 ABS, *Submission no. 16*, p. 2.

> In summary, Australia's labour productivity growth during the 1990s was due to stronger MFP growth or improved efficiency rather than additional capital deepening.[26]

5.26 Note, however, that even though there has been additional capital deepening in the unfinished productivity cycle, of 1.4 per cent to 2007-08[27], this reflects very strong business investment in the mining sector since 2003-04, rather than capital investment in other sectors.[28]

5.27 This suggests that future productivity growth in the services sector is likely to be boosted by a focus on improved technical efficiency rather than a focus on capital deepening.

Figure 5.4 Growth in labour productivity and capital deepening over productivity cycles



Source *ACCI, Submission no. 7, p. 10. Note the productivity cycle 2003-04 to 2007-8 is an incomplete productivity cycle.*

26 ACCI, *Submission no. 7*, p. 10.

27 The Treasury, *Submission no. 10*, p. 5.

28 Labour productivity in the mining sector is now running at -5.2 per cent in the unfinished cycle to 2008-09. ABS, *Experimental Estimates of Industry Multifactor Productivity, Australia: Detailed Productivity Estimates*, Cat. no. 5260.0.55.002, Table 4: Labour Productivity Indexes, 29 January 2010.

5.28 That said many service sectors have achieved productivity growth through innovative use of new technology. For example, information technology has improved efficiencies for retailers and wholesalers by better tracking of stock and significant efficiencies at the point of sale. The CLE notes:

> In 2003, Australia had a 12.3 percentage point advantage in terms of ICT contribution to labour productivity over and above that of Europe.[29]

5.29 It was noted in many submissions to the inquiry that R&D activity is closely associated with innovation and productivity growth. However, the services sector has a lower proportion of research and development (R&D) activity than it does of aggregate output and employment, with the mining and manufacturing sectors leading.[30]

5.30 The Manufacturing Alliance noted that while the development and application of new technologies within a service oriented firm are key to productivity growth, it is critical to have the management and workforce capability to exploit this. They stated:

> The transformation of productivity in the services sectors is intimately linked to the development and application of information technologies which in turn require the effective development of a wide range of complementary investments in management and other organisational and often intangible assets.[31]

Assessing quality of service outputs

5.31 Measuring quality of outputs in the services sector is particularly challenging due to the production of non-physical outputs. This is not a new phenomena, as outlined by the RBA in 1995:

> There are inherent difficulties in identifying the productivity of non-market industries where it is hard to obtain the market value of output, and also of service industries where it is hard to measure the quality of output. And yet these industries comprise a large and increasing share of the economy.[32]

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29 Centre for Law and Economics, ANU, *Submission no. 6*, p. 9.

30 House of Representatives Standing Committee on Economics, Finance and Public Administration, *Servicing our future*, May 2007, p. 9.

31 The Manufacturing Alliance, *Submission no. 14*, pp. 5-6.

32 RBA, *Proceedings of a Conference – Productivity and Growth*, July 1995, p. 4.

5.32 Whilst this issue was identified decades ago it has not gone away. It is increasingly important to identify ways of incorporating quality assessments into service provision inputs and outputs to gauge productivity growth. This is because quality is what sets services outputs or outcomes apart and the services sector continues to dominate the economy.

5.33 One of the priority recommendations of the recently formed *Commission on the Measurement of Economic Performance and Social Progress* (the 'Stiglitz-Sen-Fittousi Commission') is the need to improve the measurement of non-market service sectors of the economy.[33] Soon after the recommendations of the Stiglitz-Sen Commission were released in September 2009, the Secretary to the Treasury, Dr Ken Henry, drew attention to the importance of the recommendation.[34]

5.34 In the same presentation, Dr Henry particularly emphasised the difficulty in valuing output in the health and education services sectors, sectors for which not even experimental productivity growth statistics have been formulated. He stated:

> ABS measures of the value of output of the health and education services sectors are based on the cost of production, with the split between quantity and price largely based on relevant wage cost indices. This means, for example, that if it takes one doctor twice as long to perform the same medical procedure to the same quality as another, then the first doctor is calculated to have produced twice as much.[35]

5.35 The PC also commented that productivity measures fail to adequately capture quality:

> Moreover, measures of productivity imperfectly capture the underlying concept (for reasons including the imperfect valuation of quality improvements).[36]

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33 Commission on the Measurement of Economic Performance and Social Progress, *Report of the Commission on the Measurement of Economic Performance and Social Progress,* Professor J. Stiglitz, Professor A Sen and Professor J-P Fitoussi, 14 September 2009, p. 14.

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

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

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

5.36 It went on to note the importance of understanding the underlying reasons for productivity growth in an industry, to determine the appropriateness of any given policy response.[37]

The dominance of the mining sector

5.37 As was discussed in Chapter 3, the mining sector currently drives Australian economic growth. Since the start of the resources boom around 2003 this sector has more than doubled its contribution to GDP and notably increased its share of the labour market.[38]

5.38 However, as discussed in paragraphs 3.87 to 3.91, it has been the main contributor to the aggregate productivity decline. This has been mainly due to additional labour inputs and massive capital deepening without a commensurate increase in output.

5.39 At a public hearing of the House Economics Committee, an Assistant Governor of the RBA noted the productivity paradox associated with the mining sector:

> …the prices we are getting are historically high and that is allowing the mining companies to extract ores and coal and iron ore that is probably of lower standard than otherwise would be mined but the price is high, and that ultimately helps our living standards.[39]

5.40 The sector is expected to continue to invest heavily in further capital expenditure over the next 2 years.[40] The Australasian Institute of Mining and Metallurgy noted the extended times for current mining investment to translate into additional outputs. They noted that mining exploration expenditure may realise outputs up to ten years away:

> That is, there is a delay of approximately three years between the commencement of construction of new mining projects, and the project reaching normal output capacity. If we are to further include exploration expenditure as an input, the lead time between

37 PC, *Submission no. 20*, pp. 35-6.

38 ABS, *The Australian System of National Accounts*, Cat. no. 5204.0, 2008-09, Industry Gross Value Added, p. 28; ABS, *Australian Labour Market Statistics*, Cat. no. 6105.0, January 2010, p. 30.

39 Dr P Lowe, RBA, House of Representatives Standing Committee on Economics, *Transcript*, 19 February 2010, pp. 33-34.

40 ABS, *Private New Capital Expenditure and Expected Expenditure*, Cat. no. 5265.0, December 2009, p. 9.

> exploration and proving up a mineral resource (to the point where it becomes viable) can take ten years or more.[41]

5.41 Given the expected ongoing surge in mining investment it is not unreasonable to assume that this could result in an extended period of low productivity growth emanating from the mining sector and dragging aggregate productivity growth down.

Other major challenges for future productivity growth

Australia's growing population

5.42 While Australia's population growth is slowing, it is still projected to grow from 22 million currently to 35.9 million by 2050.[42] This growth is attributed to both natural increase (the fertility rate exceeding the mortality rate) and net overseas migration.

5.43 This brings significant challenges for future public policy. As the Treasury commented:

> …you have to think about a range of questions there, particularly about what that means for urban infrastructure and also about the way in which the government delivers services. The answers to those questions are going to depend critically on the quality of the policy settings that we have in place and the quality of the policy decisions that are taken, with many of those taken today…there is an ongoing need for those of us who are in the public sector to look at making sure that, given that resources are finite and will prove increasingly so over time, we are operating as efficiently as possible without under-providing public goods.[43]

5.44 The majority of this population growth will occur in cities, placing further pressure on infrastructure and representing a major productivity challenge. Populations of more than 7 million in Sydney and Melbourne, and double current levels in Brisbane and Perth, will contribute to further urban congestion issues. The Bureau of Infrastructure, Transport and Regional Economics has estimated that the social cost of avoidable

41 Australasian Institute of Mining and Metallurgy, *Submission no. 13*, p. 3.

42 The Treasury, *Intergenerational Report 2010*, p. 5.

43 Mr J McDonald, The Treasury, *Transcript*, 23 October 2009, p. 71.

congestion was $9.4 billion in 2005, and projects that this cost will rise to $20.4 billion by 2020 unless action is taken.[44]

5.45 Congestion represents a significant quality of life and productivity issue. Combating congestion through improvements to road and public transport infrastructure will reduce the time spent by the workforce getting to work, enabling the better matching of skills with shortages.[45] Reduced congestion will also reduce freight costs to business.[46]

5.46 Urban sprawl brought about by the expanding population in major cities is placing further demand on public infrastructure. Master Builders Australia notes that Australia has a competitive advantage in low cost and well serviced urban land;[47] productivity will decline if greater demands are placed on already over-stretched infrastructure. For example, there have been significant increases in usage of urban rail services, with an average increase of 22 per cent in the five years to 2007-08,[48] without a corresponding increase in the level of services provided.

5.47 The Department of Infrastructure, Transport, Regional Development and Local Government described the need for action:

> One of the current productivity challenges that we face is the rapid urban growth in Australia's major cities, and that requires us to rethink our approach to the development of our cities and is driving the need for better long-term infrastructure investment and planning in relation to cities. Indeed, the Prime Minister spoke at the Business Council of Australia on 27 October [2009] ... about the government's commitment to longer term reform of city planning in the interests of national productivity and sustainability.[49]

5.48 Investment in new public infrastructure such as hospitals and schools will be necessary to provide the services demanded by the growing population. As the PC noted:

> …there is an imperative for the range of human services to be delivered more efficiently as well as more effectively. Services in

44 Bureau of Transport and Regional Economics, *Exhibit no. 7*, p. xv.

45 The Manufacturing Alliance, *Submission no. 14*, p. 20.

46 Mr G Dolman, Bureau of Infrastructure, Transport and Regional Economics, Department of Infrastructure, Transport, Regional Development and Local Government (DITRDLG), *Transcript*, 26 November 2009, p. 9.

47 Master Builders Australia, *Submission no. 17*, p. 3.

48 Dr P Laird, *Submission no. 15*, p. 8.

49 Ms L O'Connell, DITRDLG, *Transcript*, 26 November 2009, p. 2.

> the areas of education, health, child care and aged care are all important to Australia's future productivity and the wealth and the well-being of the community generally.[50]

5.49 Water is very important for industrial development and productivity growth, which must occur to service a larger population. Supply has been a significant issue for Australia in recent years, with significant water-restrictions in place across the country.[51] Resolving these supply issues will bring major economic benefits. Mr Simon Mottram submitted that:

> ...almost limitless water supply…removes a major hurdle preventing industrial growth. It would also provide security and certainty, in supply and pricing of water resources, thus allowing industry to plan further into the future, or tackle projects with greater risk, or need of greater investment where water is an issue.[52]

5.50 In addressing the challenges outlined above, it is essential that economic resources are used in the most efficient manner possible. Public and private investments in infrastructure and human capital are essential to facilitate this efficiency. Without these investments, economic resources will be diverted to more marginal uses, with a resulting decline in productivity.

5.51 For example, existing infrastructure is unlikely to provide social services efficiently in major cities subject to urban sprawl. Hospitals currently operating at or near capacity will be unable to operate as efficiently when demand increases due to the growing population.

5.52 However, a larger population also brings benefits to productivity. In its submission, the Treasury noted that the large population of the United States brings economies of scale, specialisation and trade.[53] As our population grows, we can expect to accrue some of these advantages in Australia. Further, the *Intergenerational Report 2010* noted that population growth

> ...puts pressure on infrastructure and services, but will continue to contribute to economic growth. It can be socially and

50 Mr G Banks, PC, *Transcript*, 23 October 2009, p. 2.

51 20 per cent of the reduction in productivity growth since 2003-04 has been attributed to the utilities sector, which is in part dealing with water supply issues.

52 Mr S Mottram, *Submission no. 27*, p. 2.

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

> environmentally sustainable provided governments plan and invest, well ahead of time, for a larger population.[54]

5.53 The benefits of a larger population for productivity are discussed further in Chapter 6.

5.54 As noted above, population growth can be a driver of productivity growth, but infrastructure and public policy settings need to support it.[55] Sensible investment and planning will ensure that the benefits of population growth outweigh its costs.

The ageing population

5.55 Australia's growing population is also ageing. The number of people of working age to support persons 65 years and over will fall from 5.0 currently to 2.7 in 2050. This is a challenge facing most countries.[56] Life expectancy at birth will rise from 79.9 for males and 84.4 for females in 2010 to 86.0 for males and 89.8 for females in 2047.[57] Population ageing was cited as a long-term challenge in a number of submissions, including ACCI, the PC, the Treasury, the Australian Bureau of Agricultural and Resource Economics (ABARE), the Department of Education, Employment and Workplace Relations (DEEWR), and the Tasmanian Treasury.

5.56 Ageing provides two significant broad challenges for the economy: first, greater pressures associated with service provision and social security for persons over 65; and second, a smaller portion of the population at working age, slowing the rate of economic growth per capita. As expressed by ACCI, these challenges increase the imperative to ensure that the remaining workforce is more productive:

> Strong productivity growth is crucial in the future in order to counteract the projected detrimental effects of an ageing population will have on the growth in living standards following lower average workforce participation.[58]

5.57 Health and aged care are already very significant components of government spending; and will rise as a portion of GDP as the population ages. Treasury projects that health spending will rise from 3.7 per cent of GDP in 2009-10 to 6.9 per cent in 2046-47, and aged care spending will rise

54 The Treasury, *Intergenerational Report 2010*, p. xv.
55 The Manufacturing Alliance, *Submission no. 14*, p. 20
56 The Treasury, *Intergenerational Report 2010*, p. viii.
57 The Treasury, *Intergenerational Report 2010*, p. 155.
58 ACCI, *Submission no. 7*, p. 5.

from 0.8 per cent to 1.9 per cent over the same period. In real dollar terms, spending on health and aged care will rise from $2 550 per capita in 2009-10 to $8 900 per capita in 2046-47. Aged and service pensions will also rise from 2.6 to 4.2 per cent of GDP, or from $1 480 per capita to $4 240 per capita in real dollar terms. [59]

5.58 Ageing will bring about a decline in workforce participation, as a higher portion of the population is of retirement age.

5.59 With a smaller portion of the population able to participate in the workforce, investment in education to build capacity is critical. This will enable Australia to maximise participation:

> A schooling system that delivers excellence and equity in outcomes for all students is the foundation for supporting productivity and participation both now and in the future.[60]

5.60 DEEWR went on to emphasise the importance of:

> …a schooling system that enables all Australians to reach their full potential and participate fully in Australia's society and economy, by ensuring that all have the key foundation skills necessary for higher level work, training and life-long participation.[61]

5.61 Improving the quality of education will maximise participation, and increase the productivity of the workforce. Treasury noted that education and training improves both productivity and participation.[62]

5.62 An individual's productivity is 'largely determined by their educational attainment, skills and experience'. However, the benefits go further: 'increases in educational attainment may translate into increases in aggregate productivity that exceeds changes in the productivity of individual workers reflected in wage changes'.[63]

5.63 Australia's young people are critical to productivity growth. DEEWR submitted that:

> We will need to engage with young Australians to ensure they feel they belong and are valued by society and thus are connected and

59 The Treasury, *Intergenerational Report 2010*, pp. 156-7.

60 Department of Education, Employment and Workplace Relations (DEEWR), *Submission no. 19*, p. 9.

61 DEEWR, Submission no. 19, p. 9.

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

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

> contributing to mainstream Australian economy, society and culture.[64]

Workforce participation

5.64 With a smaller working population, it is critical that opportunities are maximised for particular groups to participate in the workforce, with Professor John Quiggin commenting that:

> ...what we need to be looking at is providing people with the kinds of flexibility that may enable them to make the most productive contribution to society, both in the workforce and out of it.[65]

5.65 Further, education and healthcare impact on participation. ACCI noted that health condition affects participation in the workforce, as well as a person's quality of life. On education, ACCI noted PC modelling which indicated that:

> An additional year of schooling can increase the workforce participation rate by around 0.5 per cent for males and 4 per cent for females.[66]

5.66 A high-quality healthcare system can provide improved participation rates, as a person's health condition affects their capacity to work. ACCI noted that a healthier population will have more people in the workforce, and less people relying upon government benefits.[67]

5.67 Removing barriers to the participation of women in the workforce will provide a boost to productivity while serving underlying social goals. DEEWR commented on initiatives such as paid parental leave and childcare support which assist women to work, recognising that:

> …there is a strong economic argument here, especially given the challenges that we face in participation levels with an ageing population, to make sure that we are not losing public investment in the skills of a big section of our workforce.[68]

5.68 Flexibility in workforce arrangements can allow continued participation for groups in the community who might otherwise leave the workforce. Such arrangements include part-time work, working from home and job-

64 DEEWR, *Submission no. 19*, p. 8.
65 Professor J Quiggin, *Transcript*, 19 November 2009, p. 13.
66 ACCI, *Submission no. 7*, pp. 23-4.
67 ACCI, *Submission no. 7*, p. 23.
68 Mr R Griew, DEEWR, *Transcript*, 30 October 2009, p. 15.

sharing. These particularly apply to women, and older workers who wish to have a 'staged retirement'. They also contribute to workplace morale, which lifts productivity by improving work intensity when on the job.

Impacts of climate change and the mitigation of climate change

5.69 Climate change is a major issue for Australian public policy, and has impacts for productivity in two dimensions: the real effects of climate change on the economy; and the effects of policies designed to mitigate the effects of climate change. At the time of writing, legislation to introduce a Carbon Pollution Reduction Scheme, which features an emissions trading scheme, was before the Parliament.

5.70 The real effects of climate change are evident in many agricultural regions experiencing higher than average temperatures and lower than average rainfall in the past decade.[69] This has led to a fall in production and productivity growth in many agricultural industries. ABARE submitted that 'the influence of climate change could see these effects become more frequent or more prolonged', with 'declines in crop yields, pasture growth and livestock production' and rising production costs.[70] This has significant impacts for Australian productivity growth and GDP given agriculture's contribution to GDP is 2.8 per cent.

5.71 Maintaining the competitiveness of the agricultural sector will require firms to:

> Efficiently adapt to, and mitigate, the effects of climate change on production processes…Productivity growth will depend on the ability of firms to innovate in response to these new and growing environmental pressures.[71]

5.72 Climate change threatens the availability of water, as well as increasing the likelihood of extreme weather events. The Australian Food and Grocery Council expressed its concern about the uncertainty of the impact of climate change, which threatens the availability of resources for Australian food manufacturing.[72]

5.73 Adopting efficient policy to mitigate against climate change is essential to Australia's international competitiveness and productivity. The PC stated:

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69 Australian Bureau of Agricultural and Resource Economics (ABARE), *Submission no. 23*, p. 14.

70 ABARE, *Submission no. 23*, pp. 14-5.

71 ABARE, *Submission no. 23*, p. 18.

72 Dr G Annison, Australian Food and Grocery Council, *Transcript*, 30 October 2009, p. 17.

> I guess the point we have made…is that getting the design of the regulatory framework right will be very, very important for productivity…this is the biggest regulatory challenge Australia has ever faced and by implication the potential for regulatory burdens and so on from not designing the system well is quite high.[73]

5.74 The PC went on to stress that, given the high costs involved in meeting the challenge of climate change, productivity growth is particularly important:

> The way in which we have invoked the whole challenge is that given the costs that are undoubtedly going to accompany that regime it is another reason for making sure that the rest of our economy is as efficient as possible so that we can be generating the income growth that is going to be needed to sustain that cost over time.[74]

5.75 ABARE agreed that productivity growth will be particularly necessary in industries such as agriculture which are directly affected by mitigation policies:

> The mitigation response to climate change also is likely to impose an additional productivity drag, if you like, on the agriculture sector in terms of the increased cost. If we are looking at maintaining profitability in agriculture, the likelihood, is that we are going to need to increase productivity growth from what it has been in the past rather than the slight decline that we have seen recently.[75]

5.76 With the current Australian economy reliant on coal, increased energy costs pose a risk to productivity growth. In its submission ACCI noted Australia's relatively low energy costs. It also stated that:

> Australia's international competitiveness and economic and social well-being depend on reliable, affordable and sustainable energy supplies. They are important inputs for most business activities and are essential for supporting basic quality of life.[76]

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73 Mr G Banks, PC, *Transcript*, 23 October 2009, p. 14.

74 Mr G Banks, PC, *Transcript*, 23 October 2009, p. 14.

75 Mr P Gooday, ABARE, *Transcript*, 23 October 2009, p. 61.

76 ACCI, *Submission no. 7*, p. 52

5.77 ACCI went on to argue that climate change mitigation policy should not exceed that of our international competitors, which would risk compromising

> ...the relative competitive advantage Australia achieves through less expensive energy costs.[77]

5.78 Firms will need to adapt and innovate to meet the challenges posed by the new economy which incorporates climate change mitigation policies. For example, the agriculture sector will need to utilise new methods to reduce water consumption and low carbon emissions.[78]

5.79 While climate change presents a great challenge, it also provides great opportunities. ACCI contended that we should focus internationally: contributing to climate change mitigation through innovation which enables developing countries to reduce their carbon emissions.[79] The Treasury suggested that in the medium to long-term, mitigating against and adapting to climate change will provide boosts to productivity.[80] For example, energy producers will have strong incentives to innovate aggressively, with the end result being new energy sources which require fewer inputs.

5.80 Likewise, the South Australian Government stated that:

> …by facilitating the growth of high-value add 'cleantech' industries… Australians can profit from the economic opportunities which come with the transition to a carbon constrained economy.[81]

5.81 The Australian Institute of Mining and Metallurgy argued that use of technology is the key to meeting the challenge of climate change. This provides Australia with a competitive advantage as we have 'extensive expertise in clean coal research' and are 'at the forefront of energy efficiency improvements in the production of key commodities'.[82] Sound government policy can facilitate innovation and cement this competitive advantage.

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77 ACCI, *Submission no. 7*, pp. 53-4.

78 CSIRO, *Adapting Agriculture to Climate Change: Preparing Australian Agriculture, Forestry and Fisheries for the Future*.

79 Mr G Evans, ACCI, *Transcript*, 23 October 2009, p. 35.

80 Mr T McDonald, The Treasury, *Transcript*, 23 October 2009, p. 75.

81 Government of South Australia, *Submission no. 22*, p. 15.

82 Australian Institute of Mining and Metallurgy, *Submission no. 13*, pp. 18-19.

Macroeconomic policy constraints

5.82 Meeting the challenges identified above, and facilitating the drivers of productivity growth into the future, will require public investment.

5.83 However, following the Global Financial Crisis federal, state and local governments are operating in a fiscally constrained environment. Australia's fiscal response to the crisis was swift and large—'amounting to 5 ½ per cent of GDP, the third largest in the OECD'.[83] This action reversed the budget surplus in a very short period of time, resulting in tightening of the 2009-2010 Budget and the Australian Government committing to a 2 per cent per annum cap on real spending growth, to enable the budget to return the budget to surplus in 2015-16.[84]

5.84 The PC in its submission referred to the constrained fiscal environment and how this will impact on Government spending choices:

> …governments' initiatives to boost productivity growth will need to be attentive to fiscal and resource costs; initiatives with low fiscal cost, such as regulatory reforms, would seem particularly attractive in an era of fiscal consolidation.[85]

5.85 ACCI alluded to the importance of a sound fiscal position to the Government's capacity to provide productivity-enhancing infrastructure and services:

> … to ensure the sustainability of the Government budget in the future and the ability to fund its reform agenda on Australia's health, education and taxation system and etc. which will enhance Australia's productivity, the Government needs to impose strict discipline to rein in its spending and improve the efficiency of public sector.[86]

Setting a productivity growth target

5.86 The 2010 Intergenerational Report, released in January 2010, noted that labour productivity has slowed in the last decade, averaging only

83 Mr G Banks, PC, *Back to the Future: Restoring Australia's Productivity Growth*, Presentation to the Melbourne Institute Australian Economic and Social Outlook Conference 'The Road to Recovery', 5 November 2009.

84 The Hon Wayne Swan MP, *Budget Paper No. 1: Budget Strategy and Outlook*, p. 1-11.

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

86 ACCI, *Submission no. 7*, p. 21.

1.4 per cent growth, compared with 2.1 per cent in the 1990s.[87] The report then projects that if annual labour productivity growth were to average 2 per cent over the next 40 years it would result in an average 3 per cent real annual GDP growth over the period, and culminate in 15 per cent higher real GDP per capita in 2049-50.[88]

5.87 The Prime Minister referred to the intergenerational report findings in a number of public speeches in January 2010. He noted an example in the report of projected economic outcomes to 2049-50, using a 2 per cent per annum average labour productivity growth rate.[89]

5.88 Given that average labour productivity growth since 1964 has averaged 2.3 per cent per annum[90] raising average aggregate labour productivity growth to 2 per cent per annum over the next forty years should be comfortably achievable. However, given recent structural changes in the economy and the fact that in the current unfinished cycle labour productivity has approximated only 1.1 per cent,[91] Australia has some way to go to return to its long-term average.

5.89 The references to projections based on a 2 per cent labour productivity growth rate per annum were interpreted by various economic commentators as a government target for multifactor productivity growth.

5.90 However, the government does not have an official productivity growth rate target.

5.91 The committee concluded in Chapter 4 that Australia is best to benchmark against its own performance, rather than against the performance of other nations. A productivity growth rate target would provide a means of benchmarking domestic productivity performance over time.

5.92 Having a productivity growth rate target is also a means of providing greater awareness of what drives long-term economic growth. According

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87 The Australian Government, *Australia to 2050: future challenges, the 2010 Intergenerational Report*, January 2010, p. 22. Also reflected in media release The Hon Wayne Swan MP, Government's Productivity Agenda to Tackle Future Challenges, Canberra, 1 February 2010. Website accessed 22 March 2010, <http://www.treasurer.gov.au/DisplayDocs.aspx?doc=pressreleases/2010/007.htm&pageID=003&min=wms&Year=&DocType=0>

88 The Treasury, *Intergenerational Report 2010*, p. 22.

89 Prime Minister of Australia, the Hon Kevin Rudd MP, Building Australia's future: beginning a building decade for a stronger Australia, Speech to Australia Day reception, Melbourne, 18 January 2010. <http://www

90 ABS, *Australian System of National Accounts*, Cat. no. 5204.0, 2007-08, p. 23.

91 ACCI, *Submission no. 7*, p. 10.

to a Telstra report released in February 2010 on business attitudes and behaviours towards improving Australian productivity, there is far from universal understanding amongst Australian CEOs about technical productivity measures.[92] Additionally, fewer firms were prioritising productivity in their business plans than they were in the previous year.

5.93 The report concludes that productivity targets within firms are important and yet only 42 per cent of firms are employing them:

> Only 42% have specific productivity targets and know what these targets are…In order for productivity to become actionable within an organisation, measures and targets need to be in place and well understood by all relevant stakeholders.[93]

5.94 Even though a technical knowledge of productivity is not essential for business success, knowledge of how efficiency improvements drive a firm's competitiveness, and ultimately profitability, is essential. Firms will never choose to focus on productivity over profit, and similarly governments will not focus on productivity ahead of GDP growth. However, as Mr Saul Eslake of the Grattan Institute recently noted, if there is an ongoing myopic focus on GDP generated by favourable terms of trade, this will not necessarily drive ongoing economic growth:

> The effects of this slowdown in productivity growth have been masked by the enormous increase in the prices Australia receives for its resources exports over the past decade. However, while the China-driven resources boom almost certainly has further to run, it seems highly implausible that it will continue for another 50 years, and it would be imprudent for policy-makers to assume that it will. Eventually, Australia's 'terms of trade' will return to the downward path which they travelled for most of the twentieth century.[94]

5.95 He states that maintaining a focus on productivity as a principal driver of future GDP will ensure policies support productivity growth, not to reach a target per se, but to improve Australia's overall wellbeing:

> …a higher rate of productivity growth, that is, more rapid growth in the value of goods and services produced for each hour of work done – provides the best means of…meeting the ongoing

92 Telstra, *Telstra Productivity Indicator*, February 2010.

93 Telstra, *Telstra Productivity Indicator*, February 2010, p. 10.

94 Mr S Eslake, Grattan Institute, '2% Productivity Growth Target is a Worthy Objective', *The Age*, 28 January 2010.

> aspirations which most Australians have for rising standards of living for themselves and their children.[95]

5.96 As ACCI noted in their submission, achieving a productivity growth rate of half the rate achieved in the 1990s will lead to real GDP $2 000 billion higher than if the rate slips back to 1970s and 1980s levels.[96]

Committee conclusions

5.97 Structural change arising from the long-term expansion of Australia's services sector and more recently, from the resurgence in the boom in the mining sector, provides the Australian economy with its principal medium-term productivity growth challenges.

5.98 Evidence to the inquiry demonstrates it will be increasingly difficult to raise productivity above its long-term average in the medium-term. The reasons are three-fold.

5.99 One reason is that it will become increasingly difficult to measure all the productivity in the economy due to the expansion of the services sector and the intertwining of products and services. Services sector outputs (or outcomes) already comprise a significant slice of GDP, over 70 per cent, and are expected to continue rising along with OECD trends.

5.100 The second reason is the proclivity of services industries to possess inherent productivity limitations that industries producing tangible products (eg consumer goods and commodities) do not have. This is due to a high labour-to-capital ratio in this sector coupled with a propensity for services to be more tailored, and as such less able to accrue efficiencies from standardisation of processes.

5.101 The third reason is the increasing dominance of the mining sector in the market sector and the massive projected capital investment activity over the short-term that will lengthen the lead times on returns to capital.

5.102 Estimating MFP for the services sector is very difficult as it requires carefully assessing the quality of services—quality is a factor which is more likely to change in this sector than is quantity of input or outputs. It is very difficult to accurately capture quality changes in data.

5.103 Additionally, the official market sector MFP estimate excludes seven of the 16 services industry categories. Experimental MFP estimates were released

95 Mr S Eslake, Grattan Institute, '2% Productivity Growth Target is a Worthy Objective', *The Age*, 28 January 2010.

96 ACCI, *Submission no. 7*, p. 7.

in December 2009 which included four of these seven industries excluded from the official estimate. The result of this inclusion was that the productivity growth estimate fell even further. This gives weight to the hypothesis that the services sector exhibits lower aggregate productivity growth than non-services sectors. It also suggests that when the remaining three services industry categories are added to the MFP estimate, namely Education and training, Health care and social assistance, and Public administration and safety; the productivity growth estimate will fall even further.

5.104 The deepening of the productivity growth decline as more service sectors are added could be the result of teething problems in the methodology, being they are experimental estimates, or that productivity in services industries is very hard to capture. It could, however, reflect an underlying trend—that as more services industries are added to the market sector MFP, it is harder to achieve a robust aggregate productivity growth estimate.

5.105 The committee recognises that the highest ranking productivity growth industries in the MFP market sector between 2003-04 and 2007-08 were in fact service industries: Communication services at 3 per cent growth, followed by Financial and insurance services. The committee believes these higher rates may be because the services in these industries are largely homogenous, now involve a high degree of 'customer self-service' and that there are reliable quantifiable proxies for measuring quality of outputs. It is also worth highlighting that both industries now record growth rates below their growth rates recorded in the cycle immediately prior to the growth surge.

5.106 This suggests that further statistical analysis by the ABS is required before additional experimental estimates are included in aggregate MFP. Moreover, the committee cautions the reliance on aggregate MFP estimates which include services sectors that produce difficult to value outputs or outcomes.

5.107 While the committee agrees with the recommendation of the Stiglitz-Sen Commission that measures to non-market activities need to be broadened, the committee believes the ABS should undertake work to consider alternative ways of estimating the economic contribution of industries which do not have neatly quantifiable outputs. This may mean using an economic measure other than traditional productivity estimates for many of the services sector industries. These estimates could be released as a complement to the traditional MFP estimates.

Recommendation 1

5.108 **That the Australian Bureau of Statistics (ABS) investigate alternative ways of measuring the optimal available use of economic resources used in services industries in the economy, either by:**

- **Excluding those services sectors which do not have straight-forward quantifiable input and output data from the aggregate MFP estimates and instead developing a separate services sector index which is not necessarily based on traditional productivity constructs; or**
- **Investigating ways to develop robust services sector MFP estimates for all services industry categories for inclusion in the aggregate MFP estimates.**

The government should ensure that the ABS is funded appropriately to conduct the study.

5.109 The committee believes achieving multifactor productivity growth rates above Australia's long-term average of 1.1 per cent is a critical long-term national goal. Rather than being something that can be overlooked in a fiscally constrained environment it is a goal that requires immediate commitment in order to meet the challenges of the future.

5.110 The longer-term challenges Australia faces, including demographic ageing, accommodating significant growth in population, maintaining strong workforce participation and dealing with the impacts of climate change add to the imperatives of achieving higher productivity growth rates.

5.111 The committee agrees that good levels of workforce participation are imperative. Productivity growth is important, but not at the expense of social wellbeing in the community by underutilising labour.

5.112 The committee acknowledges that changes to the costs of inputs arising from climate change mitigation polices may impact the profitability of firms in the short-term but are unlikely to impede productivity. On the contrary, the committee believes impetus will be created for firms to utilise costly inputs in more efficient ways, ultimately leading to more productive and profitable outcomes.

5.113 The committee supports the adoption of a national productivity growth target for the market-sector. This will ensure productivity remains a key consideration in relevant policy development.

5.114 The committee notes, however, that care should be taken in wielding productivity estimates as gospel. These measures are estimates only, not hard and fixed results. This fact was borne out in the changes to MFP estimates in the unfinished productivity cycle when the national accounts were expanded in December 2009 and MFP market sectors shifted. Also, as was discussed in Chapter 4 on international comparisons, achieving a high productivity growth rate in itself does not necessarily correlate to positive economic or social outcomes.

Recommendation 2

5.115 **That the Australian Government introduces a national aggregate productivity growth target for the medium-term to 2030; and that modelling is undertaken by the Productivity Commission to assess the appropriate level for the target.**