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The economy

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Abstract

The rapid expansion and diversification of the economy in the twentieth century brought immense wealth and many new opportunities to many Australians. Real per capita income grew nearly sixfold in the century following Federation. When the first federal parliament met on 9 May 1901, Australia was still suffering the effects of the 1890s downturn, and it would wait another seven years until average incomes returned to their pre-Depression peak of 1891. The following four decades were marked by the uncertainty surrounding two world wars and an inter-war Depression. Higher levels of real income began to be achieved by the mid-1930s but it was not until the second half of the century that incomes rose sharply over a long period that was briefly interrupted by the minor recessions of the early 1980s and early 1990s.

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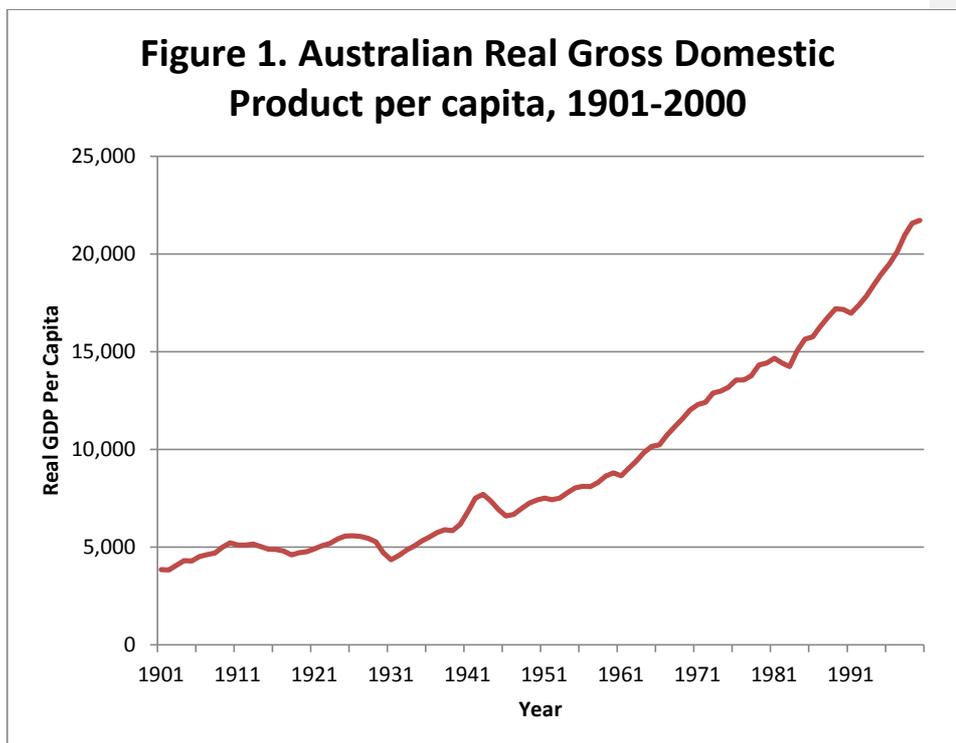
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The economy

Simon Ville

The rapid expansion and diversification of the economy in the twentieth century brought immense wealth and many new opportunities to many Australians. Real per capita income grew nearly sixfold in the century following Federation. When the first federal parliament met on 9 May 1901, Australia was still suffering the effects of the 1890s downturn, and it would wait another seven years until average incomes returned to their pre-Depression peak of 1891. The following four decades were marked by the uncertainty surrounding two world wars and an inter-war Depression. Higher levels of real income began to be achieved by the mid-1930s but it was not until the second half of the century that incomes rose sharply over a long period that was briefly interrupted by the minor recessions of the early 1980s and early 1990s. (See Figure 16.1.)¹

¹ Australian GDP estimates are contested terrain. The original aggregations of N.G. Butlin (*Australian Domestic Product, Investment and Foreign Borrowing 1861–1938/39*, Cambridge University Press, 1962) to World War 2 have been modified and updated especially by Matthew W. Butlin ('A Preliminary Annual Database 1900/01 to 1973/74', Discussion Paper 7701, Reserve Bank of Australia, May 1977) and Ian W. McLean and Jonathan J. Pincus ('Living Standards in Australia 1890–1940: Evidence and Conjectures', *Working Papers in Economic History*, no. 6 (Canberra: Department of Economic History, ANU, 1982). Bryan Haig ('New Estimates of Australian GDP: 1861–1948/49', *Australian Economic History Review*, 41, 1 (2001): 1–34) contests N.G. Butlin's figures. Angus Maddison (*The World Economy: Historical Statistics*, Paris: OECD, 2003) drew extensively on Butlin but chose Haig's revised data for 1911–12 to 1938–39. Leandro Prados de la Escosura ('International Comparisons of Real Product, 1820–1990', *Explorations in Economic History*, 37 (2000): 1–41) criticises Maddison's use of a recent constant prices base year, but the latter receives support from Stephen Broadberry and Douglas A. Irwin ('Lost Exceptionalism? Comparative Income and Productivity in Australia and the UK, 1861–1948', *Economic Record*, 83, 262 (2005): 262–74). The benefit of the Maddison data is that they enable cross-country comparisons using a consistent methodology.



Source: Groningen Growth and Development Centre (GGDC) – Angus Maddison Homepage, ‘Statistics on World Population, GDP and Per Capita GDP, 1–2008 AD’, table 3 <<http://www.ggdc.net/MADDISON/oriindex.htm>>, accessed 1 April 2012 . Constant prices in 1990 International Geary–Khamis dollars.

Accompanying substantial improvements in wealth were advances in wellbeing more broadly. Working conditions for many employees improved, partly as a result of industrial restructuring and innovation, but also because of greater attention to health and safety practices that were codified into statutes in most States by the 1970s. Across the twentieth century, the length of time that employees were required to spend at the workplace was also reduced with the shortening of the working day, working week and even working life.² Households benefitted from a widening range of new consumer durables, which removed much of the physical labour and reduced the time of many daily

² Ian McLean, ‘Economic Wellbeing’, in Rodney Maddock and Ian W. McLean (eds), *The Australian Economy in the Long Run* (Cambridge University Press, 1987), pp. 321–7; Michael Carter and Rodney Maddock, ‘Leisure and Wellbeing, 1911–81’, *Australian Economic History Review* 27, 1 (1987): 30–43.

chores.³ People thus had more spare time to spend outside the working day, which spurred much greater consumption of leisure services such as professional sport, theatre and cinema.⁴

More time and more money generated a third improvement in wellbeing: greater choice. Higher incomes achieved through shorter hours of work put individuals and households in a position where they could choose between work and leisure, knowing that a preference for more of the latter would not risk putting them below the poverty line. There is some evidence to suggest that leisure preferences were stronger in the first half of the century, especially among men, than in the second, although part-time work has become more common in recent decades.⁵ The growth of branding and mass retailing meant Australians could make more choices as consumers as well as producers.⁶ Improvements in choice have been particularly important for women, whose role in the economy has diversified from primarily household managers to increased participation in the workforce and higher education.⁷ Indeed, some of the apparent improvement in wealth represented by rising gross domestic product (GDP) reflects women entering the workforce and hiring professional services for help with domestic tasks that were formerly part of the non-monetised household economy. In a similar fashion, the professionalisation of sport commercialised formerly amateur activities. Underpinning these improvements was a significant increase in average life expectancy, which enabled higher levels of income, leisure time and choice to be enjoyed over a longer period. Between 1901–10 and 2004–06 male and female life expectancy at birth increased by 42 and 43 per cent respectively, from 55 to 78 and 58 to 83 respectively.⁸

³ Tony Dingle, 'Electrifying the Kitchen in Interwar Victoria', *Journal of Australian Studies*, 22 (1988): 119–27.

⁴ Richard Cashman, *Paradise of Sport: A History of Australian Sport* (Sydney: Walla Walla Press, 2010); Wray Vamplew and Brian Stoddart (eds), *Sport in Australia: A Social History* (Cambridge University Press, 1994); John Tulloch, *Australian Cinema: Industry, Narrative and Meaning* (Sydney: Allen & Unwin, 1982).

⁵ Carter and Maddock, 'Leisure and Wellbeing, 1911–81'; Australian Bureau of Statistics, 'Work', in *Measures of Australia's Progress, 2010*, cat. no. 1370.0 (Canberra: ABS, 2010).

⁶ Greg Whitwell, *Making the Market: The Rise of Consumer Society* (Melbourne: McPhee Gribble, 1989).

⁷ Alison L. Booth and Hiau Joo Kee, 'A Long Run View of the University Gender Gap in Australia', *Australian Economic History Review*, 51, 3 (2011): 254–76; Glen Withers, Anthony M. Endres and Len Perry, 'Labour', in Wray Vamplew (ed.), *Australians: Historical Statistics* (Sydney: Fairfax, Syme & Weldon Associates, 1987), p. 145.

⁸ Australian Bureau of Statistics, *Australian Social Trends, March 2011*, cat. no. 4102.0 (Canberra: ABS, 2011).

Modern comparative measurements of national wellbeing rank Australia highly. The United Nations Human Development Index has been calculated annually among about 180 nations since 1990 and is based on longevity, knowledge and standard of living. It has consistently ranked Australia among the top few nations.⁹ The Economist Intelligence Unit's quality of urban life indicator regularly ranks Australian cities very highly.¹⁰ Finally, Australia has fared well in international surveys of happiness conducted since the 1940s.¹¹

Australia's story since Federation is ostensibly a process of rapid, transformational economic modernisation, but the narrative is a complex and often dichotomous one. Figure 16.1 shows that much of the income growth occurred in the second half of the century, which was less affected by major disruptive events. However, the inclusion of a broader wellbeing spectrum tempers this story – much of the reduction in working hours, the introduction of household innovations, and increases in life expectancy occurred in the first half of the century. The inter-war Depression, for example, belies the expansion in consumer industries and services, while World War 2 motivated advances in the organisation and technology of manufacturing in Australia, as it did elsewhere. Finally, the impact of improved nutrition on living standards is suggested through anthropometric studies showing rising heights among army recruits when comparing the two world wars.¹²

Everyone did not share equally in this enhanced wellbeing. Income, and particularly wealth, continued to be unevenly distributed, although progressive taxation regimes and the growing social wage associated with public provision of services appear to have helped to narrow the income gap. The historical evidence to measure inequality is limited by few data points and differing forms of measurement over time. The conclusions of different writers are not always consistent but point to a secular decline in inequality

⁹ United Nations Human Programme (UNDP), 'Human Development Index (HDI)' <<http://hdr.undp.org/en/statistics/hdi/>>, accessed 21 October 2011.

¹⁰ Economist Intelligence Unit, 'Liveability Ranking Report August 2011' <https://www.eiu.com/public/topical_report.aspx?campaignid=liveabilityAug2011>, accessed 21 October 2011.

¹¹ Andrew Leigh and Justin Wolfers, 'Happiness and the Human Development Index: Australia Is Not a Paradox', *Australian Economic Review*, 39, 2 (2006): 176–84.

¹² Greg Whitwell and Stephen Nicholas, 'Weight and Welfare of Australians, 1890–1940', *Australian Economic History Review*, 41, 2 (2001): 59–75.

between the 1930s and 1970s.¹³ Anthony Atkinson and Andrew Leigh's study of the income share of the wealthiest 10 per cent broadly confirms these trends. They also find that in the final two decades of the century inequality appears to have risen slightly due to lower top marginal tax rates, skill-based technological change and shifting attitudes to inequality.¹⁴

Notable for their absence, however, are Aboriginal and Torres Strait Islander people who appear not to have shared substantially in most of the improvements in both income and wellbeing. Indeed, it was not until after the 1967 constitutional amendment that serious attempts were made to collect widespread information about the Indigenous population. The census of 1971 confirmed Indigenous people had been left behind on most wellbeing indicators. Analysis of census returns over the following 30 years has revealed evidence of a slow process of 'closing the gap' on most key indicators, significantly in unemployment rates, school attendance and post-school qualifications.¹⁵

Finally, in spite of the rapid advances of the last 100 years, Australia's relative economic standing internationally has declined for most of the century. In the middle of the nineteenth century, Australia, along with New Zealand, had the highest per capita income in the world. By the 1920s it had been matched or surpassed by New Zealand, the United States, Canada and the United Kingdom.¹⁶ This 'lost exceptionalism' has been widely debated among economic historians who seek to understand whether this was merely an expected adjustment as the small population denominator grew rapidly or if Australian competitiveness was in decline.¹⁷ However, there has been some reversal since the early 1990s with Australia's per capita GDP growing more quickly than the

¹³ Ian McLean, 'Economic Wellbeing', pp. 331–5.

¹⁴ Anthony B. Atkinson and Andrew Leigh, 'The Distribution of Top Incomes in Australia', *Economic Record*, 83, 262 (2007): 247–61.

¹⁵ Jon C. Altman, Nicholas Biddle and Boyd H. Hunter, 'A Historical Perspective on Indigenous Socio-Economic Outcomes in Australia, 1971–2001', *Australian Economic History Review*, 45, 3 (2005): 273–95.

¹⁶ Ian McLean, 'Australian Economic Growth in Historical Perspective', *Economic Record*, 80, 250 (2004): 332, table 1b.

¹⁷ Stephen Broadberry and Douglas A. Irwin, 'Lost Exceptionalism? Comparative Income and Productivity in Australia and the UK, 1861–1948', *Economic Record*, 83, 262 (2007): 262–74; Bryan Haig, 'Real Product and Productivity of Industries since the Nineteenth Century: A Comment on "Lost Exceptionalism" by Broadberry and Irwin', *Economic Record*, 84, 267 (2008): 511–14.

Organisation for Economic Co-operation and Development (OECD) average.¹⁸ Table 16.1 compares Australia's twentieth-century growth performance with some key advanced industrial or resource-based economies. It shows a mixed picture, with Australian incomes growing more quickly than the United Kingdom, New Zealand and Argentina but more slowly than the United States, Canada and Norway.

Table 16.1. Index of comparative real gross domestic product per capita, 1901–2000

Year	Argentina	New Zealand	UK	Australia	USA	Canada	Norway
1901	100	100	100	100	100	100	100
1913	132	122	111	134	119	144	129
1929	152	125	124	137	155	164	178
1938	141	153	141	153	137	147	224
1950	173	200	156	193	214	235	286
1973	277	294	270	336	374	447	595
1991	242	316	363	442	512	590	1,001
2000	298	385	457	566	638	726	1,320

Source: Groningen Growth and Development Centre (GGDC) – Angus Maddison Homepage, 'Statistics on World Population, GDP and Per Capita GDP, 1–2008 AD', table 3
<http://www.ggdc.net/MADDISON/oriindex.htm>, accessed 1 April 2012. Based on constant prices in 1990 International Geary–Khamis dollars.

The debate is of broader significance because understanding the country's role in the international or global economy is rightly a key concern of Australian economists and economic historians. Australia's characterisation as a highly internationalised economy is confirmed by figures that measure international trade's share of GDP, the migrant proportion of the population and the magnitude of foreign investment.¹⁹ Exponents of staple theory have emphasised the importance of export-led growth through the foreign earnings from key commodities, while the consequences of protection for the Australian economy have generated equal discussion. Among recent major contributions to Australian economic history, David Meredith and Barry Dyster used Australia's role in

¹⁸ Charles Bean, 'The Australian Economic "Miracle": A View from the North', in David Gruen and Sona Shrestha (eds), *The Australian Economy in the 1990s* (Canberra: Reserve Bank of Australia, 2000), p. 74.

¹⁹ Ian McLean, 'Growth in a Small Open Economy: An Historical View', in Bruce Chapman (ed.), *Australian Economic Growth: Essays in Honour of Fred H. Gruen* (Melbourne: Macmillan, 1989), p. 16, table 1.2.

the international economy as the organising framework for their textbook.²⁰ More specifically, Ian McLean has referred to the ‘synchronous behaviour’ that has linked vicissitudes in Australia’s economic performance to events in the international economy.²¹ Thus the inter-war Depression, the post–World War 2 boom, the recessions of the early 1980s and 1990s, and the boom that followed into the new century were all global economic trends. As a small player, Australia has been largely beholden to trends in the global economy as a receiver rather than a transmitter of economic linkages. Of importance in this relationship are both the direct economic linkages through factor and product markets such as the international flows of labour, capital and technology, and linkages through public policy in response to conditions in the increasingly global economy. The geographic locus of those linkages has moved over time.

The shifting focus of economic and business activity

Economic expansion involved changing patterns of economic activity geographically, organisationally and across sectors. At a broad sectoral level, manufacturing’s share of economic activity progressed in the form of an inverted ‘U’ shape, rising through the first half of the century but thereafter falling by 2000 to a share similar to that at Federation. The resource industries, despite cyclical volatility associated with overseas demand, generally lost share of GDP but continued to dominate exports. The diverse and under-recorded services sector held the largest broad share at the beginning of the century and continued to increase its dominance as the century progressed. This increase was due in part to the growth of specialist firms providing services previously hidden within vertically integrated corporations.²² While different measures of economic activity, such as output, employment and capital formation, provide some variations in the magnitude and timing of these trends, the overall conclusions remain the same. As one might expect, the services and manufacturing sectors have dominated employment, while most farms and mines have been more land and capital-intensive.

This pattern of structural change is consistent with generalisations of the way economies develop: that is, a shift occurs from primary to secondary industry as

²⁰ David Meredith and Barrie Dyster, *Australia in the Global Economy: Continuity and Change* (Cambridge University Press, 1999).

²¹ McLean, ‘Growth in a Small Open Economy’, pp. 7–10; Ian W. McLean, *Why Australia Prospered: The Shifting Sources of Economic Growth* (Princeton University Press, 2013), pp. 18–19, 100–1.

²² Michael Carter, ‘Services’, in Maddock and McLean (eds), *The Australian Economy in the Long Run*, pp. 222–3.

economies industrialise, with the latter in turn yielding ground to services in the post-industrial age. It also broadly approximates the distribution of economic activity across the twentieth century in other developed economies such as the United Kingdom, the United States and Canada.²³

The contribution of the sectors to international trade, however, sets Australia apart from many economically developed nations. Resource exports have remained dominant (about 75–95 per cent of visible exports), far exceeding the sector's diminishing share of GDP (about 10–25 per cent) and helping to pay for negative balances from manufacturing imports.²⁴ At its mid-century peak, manufacturing's approximately 30 per cent share of GDP was similar to many industrialised nations but its share of exports remained much lower.²⁵ The non-tradable nature of many services meant that their contribution to the international sector was much less than to the domestic economy. Exceptionally, education services expanded rapidly in the final two decades of the century to become the biggest export earner after coal and iron ore as large numbers of foreign students studied in Australia. Australia is thus part of a small group of developed resource-based economies that include Norway, New Zealand and Canada.

The broad sectoral trends conceal significant innovation and change at a higher level of disaggregation, which has generally been more difficult to measure with precision. Within manufacturing, individual industries and their products rose and fell in response to innovation, the entrance of foreign multinationals, changing consumer tastes, and trade policy. In the early years of the century, manufacturing was clustered in bulky, low-value goods that used basic technology, such as in building materials, clothing and primary metals – though some continuous process, mass-production technology was emerging in food processing industries such as milling, brewing and distilling. Manufacturing's expansion after 1918 was broadly based, drawing on traditional industries such as foods and textiles, and emergent sectors, particularly electrical equipment and vehicle construction and use. The disruption to sea trade during World War 2 provided the opportunity to expand through import substitution into sectors such as machine tools, in

²³ Ibid., pp. 198–200.

²⁴ John W. Freebairn, 'Natural Resource Industries', in Maddock and McLean (eds), *The Australian Economy in the Long Run*, p. 160; Ian McLean, 'Why Was Australia So Rich?', *Explorations in Economic History*, 44, 4 (2007): 635–56.

²⁵ Kym Anderson, 'Tariffs and the Manufacturing Sector', in Maddock and McLean (eds), *The Australian Economy in the Long Run*, pp. 166–9.

which producers had previously been uncompetitive compared with large-scale foreign enterprises.

In the 1950s and 1960s industrial expansion was viewed as the path to further economic development in Australia, which fostered increases in protection through quotas and local content requirements to support import substitution in particular industries. Symptomatic of this were the government incentives in favour of local production of engines and chassis that motivated the first entirely Australian-built car in 1948 by Holden.²⁶ By the end of the 1960s, manufacturing's share of GDP had begun to decline. Tariff policy played a complex role: on the one hand, the shelter provided by persistently high tariff levels, peaking in the 1970s, weakened underlying international competitiveness; on the other, subsequent tariff reductions pushed domestic producers out of business. Other factors included the emergence of new industrial nations in Southeast Asia with lower labour costs, while the rising global scale of manufacturing made it difficult for a nation with a small labour force and market to build international competitiveness in many industries.²⁷ By the final decades of the twentieth century, a smaller but technologically more sophisticated manufacturing sector found a competitive niche in sub-industry sectors such as vehicle components. As a result, manufacturing raised its share of merchandise exports, particularly elaborately transformed products that have gone through several manufacturing stages.²⁸

The resources sector diversified similarly. The nineteenth-century staples of wool, wheat, coal and gold yielded share to the exploitation of a widening range of resources including refrigerated food products, oil, gas, uranium, iron ore, bauxite, alumina, nickel, manganese, fertilisers and fish farming. These advances drew upon high levels of technological innovation brought about by interaction between the resources sector and enabling institutions such as universities, government research institutes and the capital goods industries. This ability to develop new resource industries and products on a

²⁶ Robert Conlon and John Perkins, *Wheels and Deals: The Automobile Industry in Twentieth-Century Australia* (Aldershot: Ashgate, 2001), pp. 115–23.

²⁷ Colin Forster, 'Economies of Scale and Australian Manufacturing', in Colin Forster (ed.), *Australian Economic Development in the Twentieth Century* (London: Allen & Unwin, 1970), pp. 123–68.

²⁸ David Meredith and Barrie Dyster, *Australia in the Global Economy*, 2nd edn (Cambridge University Press), pp. 12–13.

regular basis goes a long way to explaining why Australia dodged the so-called resource curse that causally links resource intensity to retarded economic growth.²⁹

The pattern of development across the twentieth century confirms the notorious cyclical instability of resource industries, dependent both upon the vagaries of nature for production and the whims of industrialising nations for demand. The heavy reliance on resource exports consequently led to significant vicissitudes in the terms of trade across the century.³⁰ Agricultural and pastoral output was enduring the tail end of the drought and economic crises of the 1890s at the time of Federation. The two world wars brought boom conditions for Australia's pastoral industries due to the British government's acquisition of Australian wool at generous official prices. Curtailment of overseas demand between the wars adversely affected Australia's resources industries. In the 1950s and 1960s, innovation, further wars in Korea and Vietnam, and Japanese industrialisation contributed to a restoration of healthy conditions and a spike in the terms of trade. The 1970s and much of the 1980s witnessed a return to difficult international trading conditions. More recently, the secular boom of the 1990s and the industrialisation of China have provided enormous opportunities for Australian miners.

The services omnibus includes business, personal, leisure and public services. The mix within each of these subsets varied across the century. Business activities, originally designed to support the supply chain of primary industries, such as finance, auctioneering and shipping, broadened with the economy to include more accounting, law, communications, property and consultancy or advice activities. Leisure services grew, aided by shorter working hours. Wholesale and retail services remained relatively important but with some major changes in form, particularly the growth of mass retailing through department and chain stores. Public services grew with the expanding role of government in health, education and defence.

Transport services, vital for an expansive and distant nation like Australia, were transformed by new technologies. Land-based public transport yielded ground to the family car by the 1950s, while the rising provision and falling cost of air travel overwhelmed shipboard passenger travel from the 1960s, although seaborne freight

²⁹ Jeffrey D. Sachs and Andrew M. Warner, 'The Curse of Natural Resources', *European Economic Review*, 45, 4-6 (2001): 827-38.

³⁰ Meredith and Dyster, *Australia in the Global Economy*, 2nd edn, pp. 65, 103, 183, 227, 254, 320.

remains the dominant mode of conveyance.³¹ Within the household budget, new technologies led to shifts in service provision – whitegoods replacing domestic service from the interwar period, live theatre and music giving way following World War 2 to ‘entertainment systems’ and, more recently, computers. Ironically, the effect in each case has been to increase the demand for manufactured goods that use the general-purpose technologies of electricity, the internal combustion engine and the microchip.

In spite of Federation, Australia remained firmly within the sphere of British economic influence for several decades as Australia’s principal trade, investment and migration partner. Up to World War 1, 44–47 per cent of Australian exports went to Britain, from where Australia received 53–61 per cent of its imports. This reflected the complementary relations between a merchandise and a commodity-based economy, so that Australia exchanged wool and wheat for British manufactures.³² By 1914, 44 per cent of Australia’s long-term stock of international capital had come from the United Kingdom.³³ Finally, nearly 80 per cent of immigrants arriving in Australia on the eve of World War 1 came from the United Kingdom and Ireland.³⁴ Australia’s subservience to the needs of the British Empire was apparent in other ways – it was part of the ‘sterling bloc’ of countries that was established following devaluation of the pound in 1931, all of which linked their currency to that of Britain, kept their gold reserves in London, and participated in the 1932 Ottawa Agreement of an ‘imperial preference’ customs union.

Yet Australia gradually broke away from British mediation of its international economic relations to build trade and investment with most major economies, including the USA, Canada, Japan, China and the principal Western European countries. Reorientation occurred in several phases. By the inter-war years the USA was increasing its share of Australian exports and imports, a trend that continued through to the 1960s. By then, though, Australia’s export market had begun to shift again – towards Japan, whose steel mills became eager consumers of Australian coal and iron ore as a result of

³¹ Graeme Davison, *Car Wars: How the Car Won Our Hearts and Conquered Our Cities* (Sydney: Allen & Unwin, 2004); Jim Davidson and Peter Spearritt, *Holiday Business: Tourism in Australia since 1870* (Melbourne University Press, 2000), ch. 10.

³² Meredith and Dyster, *Australia in the Global Economy*, 2nd edn, p. 68, table 3.1.

³³ *Ibid.*, p. 45, table 2.2.

³⁴ David Pope and Glenn Withers, ‘Wage Effects of Immigration in Late Nineteenth Century Australia’, in Timothy J. Hatton and Jeffrey G. Williamson (eds), *Migration and the International Labour Market, 1850–1939* (London: Routledge, 1994), p. 242.

that nation's rapid industrialisation. Similarly, China had become the principal destination of Australian exports by the 1990s.³⁵

These trading shifts were mirrored relatively closely by investment, particularly with the arrival of large numbers of American manufacturing multinationals into Australia from the 1920s including Ford (1925), General Motors (1926) and Monsanto (1928), followed in turn by Japanese firms such as Mitsubishi (1926), Toyota (1958) and Sumitomo (1961). American and Japanese firms transferred skills, technology and organisational thinking that were vital to the modernising Australian economy. By the 1980s there were major investment flows in the opposite direction as Australian firms engaged in resources, services and manufacturing expanded overseas, particularly in Europe and the United States but also to smaller affiliates in New Zealand and Asia.³⁶ Australia's outward stock of foreign direct investment increased in nominal terms from \$2 billion to \$117 billion between 1980 and 2003; as a share of GDP, this was a remarkable rise from less than 2 per cent to 23 per cent.³⁷

Within Australia, the key geographic shifts in economic activity were associated with rising levels of urbanisation. The urban share of population rose from 49 to 86 per cent between 1901 and 1981 before declining slightly in the following two decades.³⁸ Sydney and Melbourne consolidated their leadership as the principal economic and demographic conurbations. This trend, related largely to rising manufacturing output and the growing services sector, motivated heavy investment in urban utilities such as water, gas, electricity and sewerage. While the rural sector's share of output gave up some ground, the relocation of the international wool market from London to the Australian port cities required substantial new investments in sale rooms, display and storage warehouses to

³⁵ Meredith and Dyster, *Australia in the Global Economy*, 2nd edn, p. 192, table 8.4; Kym Anderson, 'Australia in the International Economy', in John Nieuwenhuysen, Peter Lloyd and Margaret Mead (eds), *Reshaping Australia's Economy: Growth with Equity and Sustainability* (Cambridge University Press, 2001), pp. 38–9.

³⁶ David Merrett, 'Australian Multinationals in Historical Perspective: "Do You Come from a Land Down Under?"', in Howard Dick and David Merrett (eds), *The Internationalisation Strategies of Small Country Firms: The Australian Experience of Globalisation* (Cheltenham: Elgar), pp. 26–7.

³⁷ *Ibid.*, p. 25, table 2.3.

³⁸ J.C. Caldwell, 'Population', in Vamplew (ed.), *Australians*, p. 40; Graeme Hugo, 'A Century of Population Change', in Australian Bureau of Statistics, *Year Book Australia, 2001*, cat. no. 1301.0 (Canberra: ABS, 2001).

support the new auction system.³⁹ Many foreign buyers from Europe and Japan set up offices in Sydney and Melbourne to be close to the market. Sydney and Melbourne's growing domination of urban manufacturing and services reflected an increasing regional specialisation in economic activity as Western Australia, South Australia and Queensland developed their resource-based industries, particularly mining, timber and agriculture.

Big business, both Australian and foreign-owned, became an essential part of the landscape of the Australian economy in the twentieth century. Initially, the largest enterprises were government-owned, a consequence of public responsibility for major forms of infrastructure such as railways and postal communications originating in the colonial socialism of the late nineteenth century. The Victorian Railways and New South Wales Railways managed the largest portfolios of capital and labour before 1914. Some utility industries, such as electricity, came under government ownership from the 1920s and a further, though temporary, phase of public ownership occurred after World War 2.

However, the predominant feature of the emergent business economy was the rise of large-scale corporations reaching out across a national landscape. Multinationals flocked to Australia, attracted by the growing local consumer market and the need to jump tariff barriers. Domestic firms responded to similar impulses and were able to seek funding from the emerging local capital market as new issues became easier to raise and more firms were regularly traded on the state-based stock exchanges. As was the case in other nations, the largest firms tended to cluster in the expanding manufacturing sector, although diversifying resource firms provided an additional dimension to corporate expansion in Australia: for example, the miner Broken Hill Proprietary (BHP) began steel production in Newcastle (1915) and Port Kembla (1935), while the Colonial Sugar Refining Company (CSR) diversified into building materials, beginning with vinyl flooring (1949) and hardboard (1959). Large-scale enterprise also moved increasingly into farming as the number of family farms halved to little more than 100,000 in the second half of the century, but their average size rose to meet scale imperatives and competition from corporate producers.

While minnows compared with the leading firms of Britain or the United States, the largest firms were mammoths within Australia. For better or worse, they cast shadows

³⁹ David Merrett, Stephen Morgan and Simon Ville, 'Industry Associations as Facilitators of Social Capital: The Establishment and Early Operations of the Melbourne Wool Brokers Association', *Business History*, 50, 6 (2008): 781–94.

over local business longer than those of their overseas counterparts.⁴⁰ The quintessentially Australian term 'big end of town' intimates a group of collusive and self-seeking corporate leaders. In practice, however, these large firms drove cost-reducing scale efficiencies in production, served as receptacles for technical change and labour training, and achieved transaction cost economies through internalising many business transactions. The smallness of the domestic economy made it impossible for more than one or two firms in most industries to attain the scale to be internationally competitive. In most cases, looking to build scale through overseas expansion was problematic due to distance and an emphasis upon resource industries often unsuited to internationalisation. From about the 1980s, however, more Australian firms expanded abroad, motivated by a mix of country and firm-specific advantages, the increased competitiveness of Australian firms through domestic economic reform and the opportunity to exploit expanding overseas markets. This unfinished story remains one of limited achievement as firms across various sectors, including finance, banking, mining, communications, brewing and construction, pulled back investment by the end of the century.

The economic benefits wrought by large-scale enterprise were entirely consistent with a culture of cooperation and collusion. As early as 1914 H.L. Wilkinson drew attention to the large number of trusts covering many sectors of the economy, including coal, tobacco, flour, fruit and shipping, many of which were colluding to raise prices or limit output.⁴¹ Despite the passage of the *Australian Industries Preservation Act* eight years earlier, partly to combat such practices, and Wilkinson's desire to see government act decisively, collusion continued. By 1969 over 1,000 trade associations had been registered under the terms of the *Trade Practices Act* of 1965.⁴² Cooperation among firms also brought broader benefits, particularly through sharing know-how and capital equipment, a significant consideration for a small and distant economy, as the federal government came to recognise by the 1990s.⁴³

⁴⁰ Grant Fleming, David Merrett and Simon Ville, *The Big End of Town: Big Business and Corporate Leadership in Twentieth-Century Australia* (Cambridge University Press, 2004), p. 29, table 2.11.

⁴¹ H.L. Wilkinson, *The Trust Movement in Australia* (Sydney: Critchley Parker, 1914).

⁴² R.D. Freeman, 'Trade Associations in the Australian Economy', in Colin A. Hughes (ed.), *Readings in Australian Government* (Brisbane: UQP, 1968), pp. 38–42.

⁴³ Bureau of Industry Economics, *Beyond the Firm: An Assessment of Business Linkages and Networks in Australia* (Canberra: AGPS, 1995).

The largest corporations at Federation were typically both owned and managed by the same small group of entrepreneurs, often family-based. By the final decades of the century Australia had belatedly followed the common pattern of modern corporate development of divorcing ownership from control with the expansion of small shareholders and large institutional investors. Foreign multinationals provided local exposure to best overseas practices in organisational structure and governance.⁴⁴ There were also points of difference from the experience of other nations. The vast distance of the Australian continent presented challenges of coordination for service industries such as banking, pastoral agency, and retailing. This encouraged a form of ‘organic’ multidivisional organisation whereby the company leveraged its core competences in branches spread far and wide but ultimately relied upon a significant degree of autonomy at each location.⁴⁵ That they chose their local staff carefully benefitted the largest firms, which could draw upon an internal labour market of known and trusted employees seeking to build their career within a single firm.

Drivers of economic growth

The sources of a nation’s economic growth and development can be examined at different levels. Increases in the scale of supply and demand will generate expanded economic activity. The sources of supply and demand, though, rarely remain unchanged: as was seen in the previous section, the patterns of activity altered as the Australian economy grew. Productivity, an increase in outputs relative to a given level of inputs, plays a key role in several respects. Higher levels of output can often be achieved more efficiently through economies of scale. New combinations of factor inputs, often the result of technical change, can also increase production efficiency. Innovations in one sector may spill over to the benefit of other parts of the economy through production linkages or shared learning environments. Economies are unlikely to achieve sustained expansion over time without productivity gains as well as increases in inputs. One study estimates that two-thirds of Australian economic growth from Federation to 1979 was attributable to factor accumulation and one-third to increased productivity.⁴⁶

⁴⁴ Donald T. Brash, *American Investment in Australian Industry* (Canberra: ANU Press, 1966).

⁴⁵ Fleming, Merrett and Ville, *The Big End of Town*, p. 161.

⁴⁶ Andre Kaspura and Geoff Weldon, ‘Productivity Trends in the Australian Economy 1900–01 to 1978–79’, Working Paper 9 (Canberra: Department of Productivity, 1980).

At a deeper level of analysis, why have some economies fared better than others at responding to the opportunities available in the international economy and in achieving growth-inducing productivity improvements? Comparative economic history has recorded much, but agreed little, on the critical set of growth-inducing conditions for an economy, debating the role of government policy, the natural environment, social-cultural relations and the influence of institutions. While this level of analysis of causality is more profound than estimates of factor accumulation and productivity change, it is far more difficult to reach universally accepted conclusions. The deeper determinants of economic development in Australia, as in any nation, are a complex and contested terrain.

Australia's population grew steadily through the twentieth century. While expanding more slowly than in the nineteenth century, Australia stood out among most developed countries for its rapid demographic expansion.⁴⁷ Natural increase provided most of the overall growth in population, but immigration made an important contribution to the development of the workforce. Immigration's share of population increase moved in a strongly pro-cyclical manner with economic fluctuations, suggesting its importance in filling labour market shortages in upturns while not increasing unemployment rates during downturns such as in the 1930s. Government policies of selective skill criteria, assisted passages and facilitated settlement all assisted the needs of the domestic labour market. Migration contributed as much as 45 per cent to the growth of the labour force in the post-World War 2 years when the manufacturing sector, with its heavy demand for labour, grew quickly.⁴⁸ The gradual shift away from the white Australia policy provided a wider pool of foreign labour on which to draw. The earlier policy had been premised partly on the potential threat to the employment of domestic workers if large numbers of migrants had arrived from low-wage countries. David Pope and Glenn Withers have drawn attention to the contribution of migrants to aggregate demand as consumers, as well as being part of the workforce.⁴⁹

The labour force participation rate – the share of those aged between 15 and 64 working or seeking work – has remained fairly steady since Federation at between about 60 and 70 per cent, reflecting the economy's ability to continually absorb new workers as the population expanded. This aggregate statistic conceals significant changes in

⁴⁷ Angus Maddison, *The World Economy. A Millennial Perspective* (Paris: OECD, 2001), p. 188.

⁴⁸ Withers et al., 'Labour', pp. 262–3.

⁴⁹ David Pope and Glenn Withers, 'Do Migrants Rob Jobs? Lessons of Australian History, 1861–1991', *Journal of Economic History*, 43 (1993): 719–42.

workforce composition, mainly since 1945, with the growth of female workers (especially married women), the reduced participation of older male workers, and the expansion of part-time and casual employment. Reflecting broader economic trends, much of this growth occurred in manufacturing and the large, labour-intensive service sector. Employment in farming stagnated while mining's decline reflected the growing capital intensity of the sector.

Increased labour productivity was achieved mostly by improvements in the human capital of the workforce, the effectiveness with which skills were assigned to relevant tasks, and changes in the organisation and technology of production. Literacy rates were already comparatively high in the late colonial period. The growth of secondary school participation rates and increases in per capita funding of education occurred largely in the decades after 1945. Technical training and tertiary education expanded most markedly in the final years of the century. This supports the view that factor accumulation rather than factor productivity growth predominated in Australia for much of the century and created a lag compared with nations such as the United States, which had already invested more heavily in human capital.⁵⁰

Internal labour markets, as receptacles of training and of appropriate career progression and task assignment, provided an alternative avenue for improved labour productivity. Several large organisations, including the Union Bank of Australia and Victorian Railways, operated internal labour markets by the beginning of the twentieth century, although these practices emerged more belatedly among other major firms.⁵¹ American multinationals infused the latest thinking on the bureaucratic organisation of large-scale enterprise. From the late nineteenth century, American unidivisional (U-form) enterprises organised specialist career managers into functional departments (such as finance, marketing, research and production). From about the 1920s, multidivisional (M-form) enterprises decentralised operations into product or geographic divisions that competed for the firm's resources. Both structures derived primarily from the American corporate economy, which they served well in employee motivation and skill

⁵⁰ Mary MacKinnon, 'Schooling: Examining Some Myths', in David Pope and Lee Alston (eds), *Australia's Greatest Asset: Human Resources in the Nineteenth and Twentieth Centuries* (Sydney: Federation Press, 1989), pp. 102–29; Withers et al., 'Labour', pp. 265–7.

⁵¹ Andrew Seltzer and Andre Sammartino, 'Internal Labour Markets: Evidence from Two Large Australian Employers', *Australian Economic History Review*, 49, 2 (2009): 107–37; Gordon Boyce and Simon Ville, *The Development of Modern Business* (Basingstoke: Palgrave Macmillan, 2002), pp. 127, 142–3.

specialisation.⁵² Hybrid forms were adopted in Australia, for example, by CSR, but generally not until after World War 2. Insufficient scale and the persistence of family ownership constrained earlier development. By the mid-1970s most leading Australian manufacturers had adopted the M-form.⁵³

Rapid increases in the capital stock similarly emphasised factor accumulation as a driver of Australian economic growth.⁵⁴ Capital formation in the early decades extended the heavy investments in pastoralism, the railways and urban infrastructure, which had dominated expenditure prior to Federation. The railway network almost doubled in length from 20,240 kilometres in 1901 to 37,492 kilometres in 1921.⁵⁵ By the inter-war period, manufacturing was a growing consumer of capital for the construction of factories and production of modern machinery. New technology, mostly from the United States and Europe, altered the nature of production. Innovation in both new and old industries relied upon the twin general-purpose technologies of electricity and automobiles to drive growth. Scale economies through mass-production methods reduced costs and enabled market leaders to emerge such as Tooth (brewing), Henry Jones (jam), Australian Glass Manufacturers, and Herald and Weekly Times (newspapers).⁵⁶ Thus manufacturing was much better placed to contribute to the war effort in World War 2 and in turn received a greater boost than in World War 1, with substantial investments in new or existing factories by the Department of Munitions.

The critical mass achieved by some corporate leaders enabled them to invest in intangible forms of marketing capital such as branding and advertising. This was particularly the case among firms in food and drinks products such as Carlton United

⁵² Alfred D. Chandler, *Strategy and Structure: Chapters in the History of the American Industrial Enterprise* (Cambridge, MA: MIT Press, 1969), ch.1.

⁵³ Robert H. Chenhall, 'Some Elements of Organisational Control in Australian Divisionalised Firms', *Australian Journal of Management* 4, 1 (supplement) (1979): 6, 24.

⁵⁴ W.A. Sinclair, 'Capital Formation', in Forster (ed.), *Australian Economic Development in the Twentieth Century*, p. 12.

⁵⁵ Wray Vamplew and Ian McLean, 'Transport and Communication', in Vamplew (ed.), *Australians: Historical Statistics*, p. 168.

⁵⁶ Helen Fountain, 'Technology Acquisition, Firm Capability and Sustainable Competitive Advantage: A Case Study of Australian Glass Manufacturers Ltd, 1915–39', in David Merrett (ed.), *Business Institutions and Behaviour* (London: Frank Cass, 2000), pp. 89–108; Bruce Brown, *I Excel! The Life and Times of Sir Henry Jones* (Hobart: Libra Books, 1991).

Brewery and Goodman Fielder. Henry Jones was using the IXL brand as early as the 1890s to build market share and generate production scale economies. In the 1920s Bert Appleroth used a series of gimmicks and saturation advertising to promote 'Aeroplane Jelly', while Berlei focused on marketing women's undergarments that were designed scientifically to fit more comfortably.⁵⁷ In general, though, Australian firms were slow to develop brands compared with American or British ones.⁵⁸

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The boom decades of the 1950s and 1960s raised investment levels in the public and private sectors. Businesses sought to overcome the paucity of wartime investment, catch up with overseas developments in the new consumer durable industries and fill the pent-up demand for their products. Productivity surged ahead, driven by the expansion of innovative sectors in chemicals, metals and engineering – manufacturing output per employee grew at levels of above 4 per cent in the 1950s and 1960s compared with barely 1 per cent in earlier decades.⁵⁹ The suburbanisation of cities and the growth of vehicle ownership in turn motivated new public infrastructure investments in roads, utilities and telecommunications. The upshot of all this was that the 'investment ratio' of capital formation to GDP rose to the very high level of around 25 per cent.⁶⁰ Although economic growth slowed after about 1970, investment remained high and shifted towards mining, and financial, business and property services.

The growing services sector generated a series of productivity-enhancing innovations. From the 1960s a stream of advances in information technology benefitted business services by developing electronic systems for processing and storing data. This was clearly evident in the banking industry. At Westpac the milestones were electronic data storage from the 1960s and electronic processing from the 1970s, which facilitated automatic teller machines from 1980, electronic funds transfer from 1984, telephone banking from 1994 and internet banking from 1998.⁶¹ These changes improved labour

⁵⁷ Boyce and Ville, *Development of Modern Business*, p. 190.

⁵⁸ Nancy F. Koehn, *Brand New: How Entrepreneurs Earned Consumers' Trust from Wedgwood to Dell* (Boston: Harvard Business School, 2001).

⁵⁹ Graeme D. Snooks, 'Manufacturing', in Vamplew (ed.), *Australians: Historical Statistics*, p. 287.

⁶⁰ David Merrett, 'Capital Markets and Capital Formation in Australia, 1945–90', *Australian Economic History Review*, 38, 2 (1998): 148–9.

⁶¹ L. Sharon Davidson and Stephen Salisbury, *Australia's First Bank: Fifty Years from the Wales to Westpac* (Sydney: UNSW Press, 2005).

productivity and refocused capital needs from the bricks and mortar of branches to modern information and communications technologies (ICT) systems. The 1990s were a tipping point for the uptake of ICT more generally: vast improvements in computer capabilities and the demand for them transformed price–performance ratios.⁶² Australians benefitted from this shift of the terms of trade in favour of user nations. Construction and wholesale and retail trade, as well as finance, became major users. Supply chains operated more efficiently through innovations such as electronic tagging, which enabled firms to reduce inventory holdings.

Domestic personal savings emerged in the twentieth century as the principal source of investible funds for new capital formation as foreign investors responded warily to the economic turmoil of the 1890s and the local capital market began to take shape. Government banks, especially savings banks, filled the gap left by private trading banks and helped to mobilise individual savings. World War 1 brought further opportunities for individual savers through subscription to war loans.⁶³ The State-based stock exchanges, formerly drawing largely upon mining stock, diversified into manufacturing. Aided by investment advice from stockbrokers such as J.B. Were, and the growth of a financial press, investors were enticed to purchase new issues in firms that promised to make the most of exciting, occasionally dubious, overseas innovations such as sound and motion pictures, vehicle components, optical and x-ray equipment, and cordial and aerated drinks. The number of securities traded on the Melbourne Stock Exchange rose from 149 to 562 between 1907 and 1939, while the average number of shareholders in the thirteen largest companies across Australia rose from 1,029 in 1912 to 6,102 in 1954.⁶⁴ The growing maturity of capital markets provided an effective response to the high post–World War 2 investment ratio. Stock market listings grew and institutional investors (insurance companies and pension funds) exercised increasing influence, while privatisations attracted growing interest from small individual investors. The bond market matured considerably; issues became more regular, provided a more varied set of maturity dates and attracted an active secondary market.⁶⁵

⁶² Robert J. Gordon, 'Does the New Economy Measure up to the Great Inventions of the Past?', *Journal of Economic Perspectives* 14, 4 (2000): 49–74.

⁶³ Merrett, 'Capital Markets and Capital Formation in Australia, 1945–90', pp. 192–3.

⁶⁴ David T. Merrett and Simon Ville, 'Financing Growth: New Issues by Australian Firms 1920–1939', *Business History Review*, 83, 3 (2009): 569, 574.

⁶⁵ Merrett, 'Capital Markets and Capital Formation in Australia, 1945–90', pp. 140–3.

That the Australian economy was blessed with high rates of capital formation is unquestioned. Measuring the productivity of this capital is a lot more difficult, particularly the social overhead capital required in a rapidly developing economy for communications, urban utilities and housing. Railways are a case in point: they absorbed substantial volumes of investment in the late nineteenth and early twentieth centuries, but there is little agreement on how best to assess productivity of the railways due to their indirect and lagged impacts on output.⁶⁶

An alternative approach is to ask whether the best choices were made between investment alternatives and how these decisions were reached. W.A. Sinclair drew attention to the weaknesses in public investment decision making due to inadequate appraisal of, and insufficient coordination between, projects.⁶⁷ The contested opinions of policy makers at the time, and among historians more recently, have polarised into two schools of thought. The pursuit of urban-based manufacturing with the supporting infrastructure as the path to economic modernisation in most developed nations is set against the comparative advantages of primary industries based in rural communities as the traditional backbone and wealth generator of the developing Australian economy. Timothy Coghlan, government statistician for New South Wales, had warned as early as 1904 that ‘the abnormal aggregation of the population into their capital cities is a most unfortunate element in the progress of these states’.⁶⁸ This can be extended to include the idea that policy as a whole was slanted in favour of the cities due to their demographic and electoral dominance. Tariffs favoured urban manufacturing at the expense of rural exports and ‘tapered’ railway freight rates favoured large urban manufacturers at the expense of smaller rural firms in the same industries. Finally, the urban economic expansion was seen as crowding out factor markets, particularly through higher wages.

In practice, there was greater balance since tariffs were offset by substantial rural industry assistance. By lowering average charges on longer hauls, tapered freight rates also helped rural exporters and fostered a pattern of regional specialisation within States. Capital markets were often segmented, with rural funds derived from specialist providers

⁶⁶ For example, see B.R. Davidson, ‘A Benefit Cost Analysis of the New South Wales Railway System’, *Australian Economic History Review*, 22, 2 (1982): 127–50; H.M. Boot, ‘Government and the Colonial Economies’, *Australian Economic History Review*, 38, 1 (1998): 74–101.

⁶⁷ Sinclair, ‘Capital Formation’, pp. 16–23.

⁶⁸ T.A. Coghlan, *A Statistical Account of the Seven Colonies of Australasia* (Sydney: Government Printer, 1902), p. 543.

such as stock and station agents and local banks, while urban infrastructure was typically funded by government bonds. At the heart of modern Australian economic development has been the synergistic relationship between rural production and urban services (such as finance, insurance, marketing and transport), both vital to export-led development.

Land, as a factor of production, is often excluded from the modelling of developed economies on the grounds that it is insignificant to the manufacturing and services sectors. However, a broader notion of geography and environment is important to the development of all economies.⁶⁹ The rural versus urban debate is an example of the influence of geography but there is far more to be said about its role in Australia. The most enduring thesis from this perspective is Geoffrey Blainey's *Tyranny of Distance*, which emphasises the impact of Australia's remote geographic location on the country's pattern of economic development.⁷⁰ The remoteness felt by settlers in the nineteenth century began to fade in the twentieth. Steam, then motorised shipping, together with the ocean cable, shortened and regularised external and internal communication times by the early twentieth century. Subsequent technological developments, including motor vehicles, air transport, telephones and information technology, brought down the cost and improved the ease and effectiveness of transport and communications to a degree that enabled Australians to mitigate many aspects of the tyranny of distance. At the same time, key economic activities were increasingly repatriated to Australia, including commodity markets, capital markets and corporations. Finally, the industrialisation of much of East Asia in the second half of the twentieth century, along with changing immigration patterns and cultural attitudes within Australia, brought the geography of the global economy much closer to Australian shores.

Environmental challenges continued to shape the Australian economy in the twentieth century, including a harsh climate (inconsistent or low rainfall, temperature extremes) and geology (sparse river systems, semi-arid interior), which limited population settlement and agricultural expansion. These challenges were met with some carefully considered responses. Modern farming technology made better use of limited water supplies, while financial innovations helped to spread the risk between years of dearth and plenty. Our understanding of the role of the natural environment should also be appreciated through

⁶⁹ Jeffrey Sachs, 'Institutions Don't Rule: Direct Effects of Geography on Per Capita Income', NBER Working Paper 9490 (2003) <<http://www.nber.org/papers/w9490>>, accessed 21 October 2011 .

⁷⁰ Geoffrey Blainey, *The Tyranny of Distance: How Distance Shaped Australia's History*, rev edn (Sydney: Macmillan, 2001).

its munificence: the natural resource industries have continued to occupy a central place in Australian prosperity and development in the twentieth century.

Underpinning Australia's continued progress were the institutional arrangements governing economic development. Institutions are perhaps best understood as 'rules of the game' that help to constrain and encourage behaviour. As Douglass North has shown, optimal institutions must be dynamic by adapting to change as well as helping to drive it.⁷¹ The colonial institutions imported into Australia from Britain had been adapted to meet local conditions. The economic, financial, labour and climatic crises of the 1890s, together with the unification of the colonies through Federation, necessitated further institutional adaptation. British investors turned their back on many Australian companies following losses on speculative mining ventures, while the London boards of freestanding companies in Australia began to understand the growing ineffectiveness of management by remote control. Strikes by shearers, miners and maritime workers asserted the egalitarian aspirations of the Australian workforce, while colonial institutions offered no effective response to the drought. Federation provided the opportunity to design national solutions that would allow a more independent role for Australia in the global economy.

Institutional change favoured the growth of national capabilities directed largely by the regulatory hand of government. The Lyne tariff schedule of 1908 initiated a long period of import protection designed to boost domestic manufacturing. Further major increases in protection occurred with the Greene Tariff of 1921 and the Scullin Tariff of 1929–31. Many other adjustments were orchestrated by the Tariff Board, which was established in 1921 and remained influential into the second half of the century.⁷² Import quotas were also used in the 1950s. By the late 1960s the effective rate of protection for manufacturing (allowing for the impact of the tariffs on inputs as well as outputs) had reached 36 per cent.⁷³ Attempts were also made to protect domestic industry from foreign competition through the *Australian Industries Preservation Act* of 1906. Succour was

⁷¹ Douglass C. North, *Institutions, Institutional Change and Economic Performance* (Cambridge University Press, 1999).

⁷² David Merrett and Simon Ville, 'Tariffs, Subsidies and Profits: A Re-assessment of Structural Change in Australia, 1901–39', *Australian Economic History Review*, 51, 1 (2011): 49–51; Peter Lloyd, '100 Years of Tariff Protection in Australia', *Australian Economic History Review*, 48, 2 (2008): 122–30.

⁷³ Andrew Leigh, 'Trade Liberalisation and the Australian Labor Party', *Australian Journal of Politics and History*, 48, 4 (2002): 491.

similarly provided to agriculture from the 1920s through marketing boards, price support schemes, and international commodity agreements.

Labour markets and industrial relations became highly centralised and regulated. The industrial unrest of the 1890s fostered arbitration between employer and employee groups. The 1904 *Commonwealth Conciliation and Arbitration Act* established the Commonwealth Court of Conciliation and Arbitration to prevent and settle industrial disputes covering two or more states; by 1929 it presided over 59 per cent of wage changes.⁷⁴ A range of regulatory and conciliation bodies continued to exist at the State level.

The hand of government regulation was prominent in financial markets, particularly through the Commonwealth issue of currency from 1910, the publicly owned Commonwealth Bank in 1912, and the powers conferred on the Loan Council in 1927 to determine the volume of public sector borrowing. From World War 2 the Commonwealth Bank assumed the role of central banker and regulator of monetary policy; the central banking function was hived off to form the Reserve Bank of Australia in 1960. Government regulation of financial markets increased, particularly as a result of wartime controls in 1942 and two banking acts in 1945. As David Merrett has noted, ‘At the end of the war, the Australian privately-owned banking system was tightly regulated in almost every respect’.⁷⁵

Australians took a major leap forward in seeking to design institutions oriented towards the needs of national development. To say that these institutional arrangements built scale more than they did efficiency would be consistent with the story of factor accumulation over increased productivity. The combination of subsidised agriculture, tariffs, centralised wage fixing and regulated financial markets created a significant misallocation of resources in a high-cost, high-price economy. Besides the misallocation of resources through a heavily regulated environment, such policies became increasingly bureaucratic over time with a plethora of rules and enforcement bodies at different levels of government that made them difficult and costly to enforce. A.G. Kenwood’s analysis of Australian institutions has drawn attention, for example, to the existence by the 1920s of 10 federal and in excess of 50 State agricultural marketing authorities.⁷⁶

⁷⁴ Withers et al., ‘Labour’, pp. 250–1.

⁷⁵ Merrett, ‘Capital Markets and Capital Formation in Australia, 1945–90’, p. 137.

⁷⁶ A.G. Kenwood, *Australian Economic Institutions since Federation* (Oxford University Press 1995), p. 51.

While not the only reason for manufacturing's expansion, tariffs sheltered domestic firms from overseas competitors long after the infant industry argument had expired. The OECD's 1973 annual survey of the Australian economy attributed faltering economic performance to weak competitiveness brought on in part by protectionist policies. The Crawford Committee reached a similar conclusion six years later in support of reduced protection. Centralised wage agreements based primarily upon social justice were criticised for failing to align rewards with skills and thus discouraging human capital investment. Competition policy was criticised more for its absence, the 1906 Act having become a dead letter. During the inter-war downturn governments encouraged firms to cooperate to share costs and reduce oversupply in production, a pattern taken much further by the Department of War Organisation of Industry (1941–45), which forced rationalisation. The 1981 Australian Financial System Inquiry drew attention to distortions created by segmentation among different types of provider and the mismatch between official and market rates of interest. In addition, there was a confusing set of exchange controls, while competition from foreign banks was prohibited.

A shift in institutional arrangements began to occur in response to these pressures, bringing a change from a regulated towards a deregulated environment. Governments were also conscious of similar moves in major economies such as the United States and the United Kingdom. Centralised wage determination was under pressure from the 1950s as actual wages pushed ahead of those centrally determined. However, the principal changes emerged in the 1970s and 1980s as it became clear that the Australian economy needed to become more competitive. Centralised wage policies were gradually abandoned: indexation for the cost of living was removed in 1981 by the Australian Conciliation and Arbitration Commission and by 1993 a half of salary and wage earners were covered by enterprise-based agreements at the individual workplace.⁷⁷ Financial reforms relaxed exchange controls and the permissible activities of financial institutions, and attracted greater involvement by foreign lenders. Dismantling of the tariff regime began in the 1970s and continued through the next two decades, so that the effective rate of protection had fallen to around 5 per cent by 2000.⁷⁸ Competition policy was revitalised from the 1960s, initially directed against inter-firm collusion under the 1965 *Trade Practices Act*. Major changes occurred with 1974 legislation that established a Trade Practices Commission, concentrated on broad general guidelines rather than

⁷⁷ Ibid., pp. 129, 135.

⁷⁸ Leigh, 'Trade Liberalisation and the Australian Labor Party', p. 491.

individual cases, with powers that included consumer protection and substantial penalties. Subsequent legislation defined anti-competitive behaviour, initially by a dominance (market share) test and then by use of economic theory to predict the consequences of particular types of behaviour. The establishment of the Australian Competition and Consumer Commission in 1995 was the culmination of these policies under a principal federal authority.

Contemporary resilience or dependent fragility?

This chapter began with the story of economic achievement in twentieth-century Australia that has enabled people, on average, to become much wealthier and have a far greater choice over how to spend their longer lives. Progress came in fits and starts, and not everyone shared equally in these advances. While the century began with a belated recovery from the crises of the 1890s, it ended on the crest of an extended period of prosperity that ran for a decade and a half from 1992 until the global financial crisis (GFC) of 2007–08. Australia not only performed better than most in the 1990s, it was less seriously affected by the subsequent economic and financial crisis. Such progress and then resilience might suggest that the achievements of the twentieth century have taken on a self-sustaining nature; that an optimal set of institutions had emerged iteratively to temper regulation with market incentives; that a balanced and receptive view of Australia's role in the world economy had been achieved by casting off both dependency on Britain and a national fortress mentality; that the tyranny of distance had been tamed by modern communications and Asian industrialisation; that a modern national innovation system will sustain productivity improvements into the future; and finally that the angst of constrained industrialisation and reliance upon unpredictable resource industries had been dismissed as a falsehood.

It may be possible to talk in terms of economic maturity in some of these respects, although the story of robust future proofing reveals some sensitive fault-lines. While productivity appears to have had an enhanced role in economic progress in the second half of the twentieth century, its growth has been irregular and most recently has begun to tail off once more.⁷⁹ Recent reports on the innovation system that underpins productivity have identified some key problems. These include low investment in research compared with most OECD nations, particularly in business investment. Similarly, comparatively

⁷⁹ 'Australia's Productivity Performance', Productivity Commission Submission to the House of Representatives Standing Committee on Economics (September 2009), p. xiii indicates that productivity has been in decline since 2003.

low levels of public investment in education will restrict the vital contribution of human capital to innovation. It has also been suggested that weak communication and collaboration exists among key parts of the innovation system, especially between public bodies and industry.⁸⁰ The most recent and comprehensive analysis of innovation, *Venturous Australia*, listed 72 recommendations.

The tyranny of distance has been mitigated and Australia has engaged more independently with global society. Yet Australia remains geographically remote and there is no true substitute for face-to-face connection. Full engagement with recently industrialised and industrialising East Asia throws up sociocultural challenges as well as crystallising a dependency, for better or worse, on exporting resources and importing manufactures. Australia seeks to find its place in a plethora of regional trade blocs, none of which perceive Australia as core to its modus operandi. Australian firms continue to struggle to make an impact in their overseas ventures, as witnessed by Foster's recent drawback of its American wine interests.

At home Australia continues to espouse a fragmented form of federalism with the associated risks of a multitude of diverse, sometimes conflicting, official bodies. As economic institutions look to respond to future shifts in economic development, it is not clear whether policy reforms will be any speedier in their response than in previous eras. Such bureaucratic pluralism is symptomatic of a broader continuity of regionalist attitudes or State-based particularism, an outlook that stifles the development of a unified national economy and outlook. Socioeconomic challenges facing many developed nations are likely to operate on the Australian economy, particularly the need to respond to the effects of climate change, an ageing society, and the unfinished business of disadvantaged Indigenous communities.

⁸⁰ *Mapping Australian Science and Innovation* (Canberra: Department of Education Science and Training, 2003), pp. 28, 33, 52; *Venturous Australia: Building Strength in Innovation* (Melbourne: Cutler & Company, 2008), p. 6.