Should South Australians Really Be “Down in the Mouth”? Macroeconomic Performance

Economic Issues

No. 44

Should South Australians Really Be Down in the Mouth? Macroeconomic Performance

Authors:

Assoc Professor Michael O'Neil, Executive Director, SACES
Steve Whetton, Deputy Director, SACES
Darryl Gobbett, Visiting Fellow, SACES
Professor Christopher Findlay AM, University of Adelaide

June 2015

South Australian Centre for Economic Studies

ISSN 1445-6826

Published by: South Australian Centre for Economic Studies
PO Box 3192
Rundle Mall SA 5000
AUSTRALIA
Telephone: (61+8) 8313 5555
Facsimile: (61+8) 8313 4916
Internet: http://www.adelaide.edu.au/saces
Email: saces@adelaide.edu.au

Subscription and Corporate Membership:

Information on Corporate Membership of the SA Centre for Economic Studies may be obtained by contacting the Centre or at our website, www.adelaide.edu.au/saces

Executive Director's Note

Welcome to the forty fourth issue of *Economic Issues*, a series published by the South Australian Centre for Economic Studies as part of its Corporate Membership Program. The scope of Economic Issues is intended to be broad, limited only to topical, applied economic issues of relevance to South Australia and Australia. Within the scope, the intention is to focus on key issues – public policy issues, economic trends, economic events – and present an authoritative, expert analysis which contributes to both public understanding and debate. Papers will be published on a continuing basis, as topics present themselves and as resources allow.

This paper is the first of four papers in the Economic Issues series to review South Australia's macroeconomic performance with reference to historical developments and more recent history, including a pointer to sustainable comparative advantages; a second paper examining South Australia's economic prospects going forward; a third examining regulation and industry policy; and a fourth, a consideration of policy responses.

The authors of this paper are Associate Professor Michael O'Neil (Executive Director, SACES), Steve Whetton (Deputy Director, SACES), Darryl Gobbett (Visiting Fellow, SACES) and Professor Christopher Findlay AM, Executive Dean, Faculty of the Professions, University of Adelaide. The views expressed in the report are the views of the authors.

Michael O'Neil
Executive Director
SA Centre for Economic Studies
June 2015

Recent Issues Papers

43. "Exceeding the Limit: How Excessive Speeding Fines May Undermine Community Engagement with Government Road Safety Policies", by Michael O'Neil and Lauren Kaye, June 2015.
42. "Structural Change: Lessons from Port Augusta's Experience in the 1990s", by Michael O'Neil, July 2014.
41. "The Labour Market, Competitiveness, Employment and Economic Prospects", by Michael O'Neil, Lauren Kaye and Mark Trevithick, June 2014.
40. "Providing Local Economic Stimulus and Promoting Local Economic Development: Possibilities for Councils in South Australia", by Michael O'Neil, Cliff Walsh, Anthony Kosturjak and Mark Trevithick, October 2013.
39. "The Task of Strengthening Regional Development", by Michael O'Neil, September 2013.
38. "Localism: Learning from Federal Nation Building (Economic Stimulus) Projects", by Michael O'Neil, Steve Whetton and Suraya Abdul Halim, September 2013.
37. "Re-Thinking Social Policy: Place-Shaped As Well As People-Focussed", by Cliff Walsh and Michael O'Neil, May 2013.
36. "South Australian Centre for Economic Studies: 30 Year Anniversary", by Gary Banks AO and Gary Sturgess AM, April 2013.
35. "Is Adelaide a University City?", by Michael O'Neil and Mark Trevithick, April 2013.
34. "Assisting Regions and Communities to Cope with Structural Change: Context, Objectives, Principles and Good Practice", by Cliff Walsh and Michael O'Neil, August 2011.
33. "The Economic Consequences of the Euro" by Colin Rogers, July 2011.
32. "Banking Competition: The Rhetoric and the Reality" by Dr Penny Neal, May 2011.
31. "South Australian Labour Markets: 2000 to 2010" by Michael O'Neil and Mark Trevithick, February 2011.
30. "Migration Trends in South Australia, 1998/99 to 2008/09" by Mark Trevithick, January 2011.
29. "Decline and Rejuvenation: The Provincial Cities of South Australia" by Michael O'Neil, Mark Trevithick, Daisy McGregor and Antony Pietsch, January 2011.
28. "Re-Thinking the Approach to Regional Development in South Australia", by Michael O'Neil and Cliff Walsh, December 2010.
27. "Identifying the Main Economic Issues Facing the South Australian Wine Industry", by Nicola Chandler, April 2010.
26. "Nuclear Power in Southeast Asia: Implications for Australia and Non-Proliferation", by Andrew Symon, April 2009.
25. "The Global Economic Crisis of 2008: Some Thoughts on Causes and Remedies", by Colin Rogers, January 2009.
24. "Assisting Injured Workers Return to Work: The Economy Needs You!", by Michael O'Neil and Peter Lumb, November 2008.
23. "A Review of the Literature of Active Labour Market Policies", by Michael O'Neil and Penny Neal, June 2008.
22. "Self Managed Superannuation Funds: Some Public Policy Issues Regarding Their 'Decumulation' Phase, by Owen Covick, April 2008.
21. "Australia's Productivity Growth in the 21st Century", by Dean Parham, September 2007.
20. "Building a Local Defence Industry: Workforce Requirements 2006-2010", by Michael O'Neil, Steve Whetton and Edwin Dewan, March 2007.
19. "Running on Empty: The Risk of Continuing to Dither While the Empty Light is Flashing", by Professor Peter Cullen, AO, FTSE, January 2007.
18. "South Australia's Recent Productivity Performance" by Jim Hancock and Wing Hsieh, April 2006.
17. "Mining the Labour Market: The Estimated Demand for Labour in the SA Mining Sector, 2006-2014" by Michael O'Neil and Paul Huntley, April 2006.
16. "Australia's New Trade Agreements: Beneficial Liberalisation or Harmful Policy?" by Andrew Symon, November 2005.
15. "Wind Generation and the South Australian Economy" by Stephen Nelson, April 2005.
14. "South Australia's Overseas Exports" by Paul Huntley, March 2005.
13. "The 2004/05 South Australian Budget" by Jim Hancock, July 2004.
12. "The Relative Decline of Manufacturing Employment in South Australia" by Anthony Kosturjak and Joshua Wilson-Smith, July 2004.

11. "An Ageing Australia: Small Beer or Big Bucks?" by Gary Banks, May 2004.
10. "Enhancing Trust in Australia's Tax System" by Owen Covick, April 2004.
9. "Inquiry into the Management of Electronic Gaming Machine Numbers" by Michael O'Neil and Steve Whetton, April 2004.
8. "Review of the South Australian Economy, 1990-2003" by Michael O'Neil, Penny Neal and Anh Thu Nguyen, March 2004.
7. "Darwin: A Gateway to Asia?" by Andrew Symon, March 2004.
6. "Innovation Activity and Income Levels: A Summary of Indicators" by Jim Hancock, Marianne Herbert and Steve Whetton, April 2003.
5. "The SA Labour Market Through the 1990s" by Anthony Kosturjak, February 2003.
4. "The 2002/03 Commonwealth Budget" by Owen Covick, August 2002.
3. "An Assessment of the Impact of Gaming Machines on Small Regional Economies" by Michael O'Neil and Steve Whetton, May 2002.
2. "Timor Sea Natural Gas Development: Still in Embryo" by Andrew Symon, August 2001.
1. "The 2001/02 South Australian Budget" by Jim Hancock, August 2001.

In this, the first of four papers on the recent performance of the South Australian economy and possible policy implications, we look at the macroeconomic outcomes of the last two decades.

The accepted narrative about South Australia's economy is one of sustained underperformance relative to the other states, with the exception of Tasmania.

… keeping pace with the other manufacturing states

This narrative is borne out by the headline data on economic performance. For example, gross state product (GSP) grew at an average rate of 2.3 per cent per annum over the 24 years to 2013/14[1], significantly lower than the national average over that period of 3.1 per cent per annum. Western Australia and Queensland drove national growth over this period with average growth rates in GSP of 4.6 per cent and 4.1 per cent respectively. New South Wales and Victoria moderately outperformed South Australia over this period, growing at an average rate of 2.5 per cent and 2.8 per cent respectively.

The level of GSP per capita similarly underperforms, with GSP per capita 85 per cent of the national average (although still reasonably respectable at $57,000), and only 57 per cent of that produced by Western Australia.

… slower employment growth …

This weak performance in growth of economic output has been reflected in the labour market. Over the same time period, South Australia experienced the second lowest employment growth among the states at 1.3 per cent per annum with only Tasmania experiencing lower growth (1 per cent) and well below the national average of 2.1 per cent. The labour market participation rate in South Australia was only 62.4 per cent of the population aged over 15 compared to 65 per cent nationally. And over the last four year South Australia has had an unemployment rate below the national average in only 6 of the 48 months.

These indicators of relative weakness of total output largely reflect relatively weaker initial conditions and a slower than average population growth rate but more recently there are signs of other sources of underperformance.

Over the past 21 years South Australia's population growth has been well below the national average growing at 0.7 per cent per annum compared to 1.4 per cent per annum

… South Australia performs much better …

When we look at indicators of the ***per capita*** welfare of its residents South Australia performs much better. Growth in GSP per capita over these 24 years is exactly in line with national average at 2.0 per cent per annum. Hence the relatively lower level of GSP per capita reflects longer term factors rather than any recent "shocks" or policy errors as it was at its current share of 85 per cent of the national average back in

1989/90 when GSP data first became available in the national accounts.

Similarly with the labour market performance, the greater part of South Australia's relative underperformance is its relatively older population. If South Australia had the same age profile as Australia as a whole then it would have an employment participation rates of 64.4 per cent (for 2012/13), almost 2 percentage points higher than the actual participation rate, and only 0.7 percentage points below the national average,[2] **i**mplying a lower unemployment rate and/or skill shortages. However, leaving aside this exercise in adjustment, the facts are that South Australia has a relatively older population, higher unemployment and a lower participation rate.

Long term growth

The relatively low level of per capita income in South Australia (exceeding only Tasmania) has been a long-standing phenomenon, pre-dating the start of the ABS's GSP series in the early nineties.

… agriculture and mining boost per capita GSP …

Looking at the very long run,[3] South Australia enjoyed the highest per capita GSP in Australia in the 1870s driven by a combination of a very export focussed, innovative, agriculture sector (with the colony becoming a net exporter of wheat to New South Wales within a few years of its establishment); unusually good growing conditions for wheat which led to cropping extending beyond its sustainable range (e.g. beyond Goyder's line); and the massive copper resources discovered in Wallaroo and Burra.

The return to normal climatic conditions in the 1880s forced wheat farming to retreat south of Goyder's line significantly reducing output. At the same time, the major (known) copper deposits were exhausted. These two factors led GSP per capita to decline sharply, with relative incomes falling to the lowest in Australia. South Australia can arguably be said to have started with a very favourable comparative advantage with highly efficient and world class agriculture (wheat and wool) and the world's largest and highest quality copper mines and is now back in that position (arguably with a more diversified agricultural sector) but with a comparatively less well equipped labour force and political institutions.

… the depression and federation settlement …

The 1890s depression then hit South Australia harder than the other colonies, and the 'federation settlement' of a high wage economy protected by trade barriers on manufactured goods worked against South Australia's primarily agrarian economic base, leading to prolonged economic weakness. Indeed, GSP per capita did not exceed its 1880 level until a temporary boom in 1925 and it was not sustainably exceeded until the early 1940s.

… defence manufacturing was the start …

The most important factor in pulling South Australia out of its prolonged slump was the relocation of substantial manufacturing activity to Adelaide during the Second World War (as Adelaide was seen as safe from attack) (Sinclair, 2009). This reinforced a notable shift in the economic development strategy of the Butler and Playford state government in the 1930s towards encouraging the development of a manufacturing sector. Although the extent to which manufacturing grew in South Australia after WW2 was not substantially different from the rest of the country it continued to grow as a share of GDP for longer, not peaking until 1967/68, whereas in the rest of Australia (except Victoria) its share of output peaked in the late fifties.

South Australia also experienced very rapid population growth and urbanisation. Contributors in the 50s-70s were natural increase followed by international migration while over that period interstate migration tended to even out (before becoming more persistently negative in net terms from the mid-1970s onwards).

In 1927 South Australia had a population of 495,000, 280,000 of whom lived in Adelaide (57 per cent, only slightly more urban than the Australian average). The state’s population grew at an average rate of 2 per cent per annum over the next 40 years, and Adelaide’s population at an annual rate of 2.5 per cent. As a result, by 1967 South Australia had a population of just under 1.1 million and Adelaide 770,000. The 71 per cent of the state’s population living in Adelaide was significantly higher than the national average of 58 per cent.[4]

… one factor in the “low cost state” …

This substantial urbanisation was a direct policy choice of the Butler and Playford governments, with the objective of using population growth (including migration) to constrain any increases in wages that might otherwise have been expected to result from the increase in economic activity.

In addition, particularly under Playford, the Housing Trust was used to develop housing in the vicinity of potential industrial sites (with Elizabeth the most significant example) holding down rents to reduce demands for higher wages that might have followed from the growth of manufacturing. Housing Trust accommodation was only available to those in paid work at that time. The Housing Trust was also a major supplier of industrial land, holding down costs to roughly half the levels of similar cities such as Brisbane and Perth (Marsden 1996).

This combination of wartime investment and government policy meant that South Australia entered the 1970s, and the Whitlam government’s first moves to reduce the substantial barriers to imports of manufactured goods, with an economy that was more dependent on manufacturing than other jurisdictions (and was particularly dependent on consumer durables (including cars) and textiles clothing and footwear) and which had neither the substantial services sectors of New South Wales or Victoria, nor the mineral resources of Western Australia or Queensland.

As a result the gains in relative incomes over the 1950s and 1960s were reversed and by 1973/74 GSP per capita in South Australia was the second lowest in the country (Sinclair 2009), where it has remained up to the present, despite the more recent changes in the structure of the local and national economies.

Structural change in the last two decades

… on-going compositional change in response to …

South Australia's economy has experienced substantial compositional change over the past three decades, reflecting the interplay of international, national and South Australia domestic issues.

Pivotal factors include:

- the emergence of Japan, South Korea, Taiwan, Thailand and China, as major consumer goods and automotive parts manufacturers and exporters;
- the sharp increase in food, mineral and energy demands from the growing Asian economies since the mid-2000s, with the related impacts on local skilled labour demand and the $A;
- the Global Financial Crisis;
- Australian interest rates being generally higher than in the major economies and the $A being very volatile;
- the reduction, beginning in the mid-1970s, and continuing through the 1980s and 1990s, in national industry protection, particularly for those sectors of most importance to South Australian manufacturing, i.e. motor vehicle parts and assembly; textiles, clothing and footwear; furniture and white goods;
- the general ongoing concentration in Sydney and Melbourne of financial and professional services head offices and management;
- demographic change, with the South Australian population growing more slowly than nationally while ageing faster; and
- substantial budget constraints on the Government.

Looking at growth in *constant price terms* across the two decades to 2012/13, South Australia's best performing industries have generally been relatively skilled and knowledge intensive, with the highest growth rates in gross value added occurring in the following:[5]

- Construction (4.9 per cent per annum);
- Information and media and telecommunications (4.5 per cent per annum);
- Wholesale trade (4.4 per cent per annum);
- Professional, scientific and technical services (4.2 per cent per annum); and

- Financial and insurance services (4.2 per cent per annum).

The worst performing industries have been:

- Rental, hiring and real estate services (0.9 per cent per annum);
- Manufacturing (0.7 per cent per annum); and
- Other services (0.4 per cent per annum).

Only three of South Australia's industries outperformed the national average in average growth rates over the two decades to 2012/13

- Agriculture (SA 2.8 per cent per annum vs Aus 2.4 per cent)[6];
- Wholesale Trade (SA 4.4 per cent per annum vs Aus 4.2 per cent)[7]; and
- Public administration and safety (SA 3.4 per cent per annum vs Aus 2.6 per cent).

with the weakest sectors in terms of growth rates relative to the nation average being

- Rental, hiring and real estate services (SA 0.4 per cent per annum vs Aus 2.7 per cent); and
- Administrative and support services (SA 1.6 per cent per annum vs Aus 3.5 per cent).

… mining, while small, has solid prospects …

Mining is taking a larger role in the South Australian economy but it is still small in the national context:

- at $3.9 billion in 2012/13, mining accounted for only 4.1 of South Australia's GSP compared to 9.6 per cent at the national level;
- South Australia accounts for only 2.7 per cent of Australia's mining industry; and
- South Australia's mining industry over the two decades to 2012/13 grew at 3.2 per cent per annum compared to the national average at 4.1 per cent.

However, mining exploration has been strong, with South Australia on average receiving almost 8 per cent of national exploration spending in minerals and energy over the past four years.

Interstate migration – what is the story?

… need to halt loss of skilled labour …

Despite the apparent contribution of knowledge intensive industries to past growth, South Australia now appears to 'bleed' skilled labour.[8]

Of those who were resident in South Australia in 2006, 12 per cent of those who have a post graduate degree were resident in a different state/territory in 2011, as were 8 per cent of those who have a Bachelors' degree.[9]

This is a significantly greater rate of interstate migration than in Victoria, where the equivalent figures were 6 per cent and 4.5 per cent respectively.

If South Australia had had the same rate of outward skilled migration as Victoria, in 2011 it would have had 1,800 more residents with a postgraduate degree, and 4,700 more residents with a bachelors' degree.

This issue is of particular importance for South Australia's future growth prospects for at least four reasons:

- first, economic growth globally is principally occurring in the more knowledge and skill intensive sectors;
- second, in the "traditional" sectors such as Agriculture, Mining and Manufacturing it is the rapidly increasing application of more knowledge and skill that is driving growth;

… importance of building an educated and skilled population …

- third, the global workforce is becoming more educated with the emerging economies in particular increasing their "tertiary enrolment ratios", i.e. the proportion of the respective age cohort enrolled in tertiary education. The Economist magazine notes (28/3/2015) that over the last 20 years the number of countries with an enrolment ratio over 50 per cent rose from 5 to 54; and
- fourth, South Australia has a likely lower than Australian average enrolment ratio for Qualifications above Certificate Level IV for domestic students. (In 2014 an estimated 8 per cent of the South Australian population 15 – 74 was at this level of study. This was about the national average. South Australia's proportion of tertiary students on Temporary Visas was 57.8 per cent, however, compared with the national average of 44.6 per cent.) Source: ABS, Education and Work, Australia, May 2014.

We can therefore ill afford to lose many skilled people interstate or overseas.

In summary

How then should we understand South Australia's economic history and performance including the trials and tribulations of the last two decades.

By the 1870s South Australia had achieved the highest per capita Gross State Product on the basis of our comparative advantage and trade in wheat, wool and the mining output of copper. Into the next century, our per capita GSP fell to approximately 85 per cent of the national average and remained at that level for some time. The labour force participation rate has consistently remained at some 2 percentage points below the national average and in the last two decades population growth averaged half the national rate (SA: 0.7 per cent; Aus: 1.4 per cent).

… a return to the past …

Back to the future – or a return to the past – it is once again agricultural output and mining (still in embryo) that offer real prospects for economic growth, value adding, exports and income although how we approach the development of each sector will be different from the past. Mining is poised to take a larger role in the South Australian economy although it is still small in terms of contribution to GSP and employment, while agriculture continues to outperform the national average growth rate. There are excellent, well established and exporting food processing manufacturers, similarly in medical instrumentation and products and obviously the wine industry that illustrate the potential of manufacturing in the South Australian economy.

The relocation of defence manufacturing to South Australia during the Second World War and the economic development strategy in support of manufacturing that followed combined to pull South Australia out of a prolonged slump, with strong population growth and urbanisation, but was then challenged with the reduction of barriers to imports of manufactured goods that started in the early 1970s. The gains in relative incomes were reversed. The gains in international and interstate migration were reversed. The lessons for the national government with respect to state economic development and defence manufacturing need to be considered in any decision related to the submarine contract and the AWD project.

Economic growth globally and growth in traditional sectors such as agriculture, mining and manufacturing, in which South Australia has proven advantages and strengths is increasingly reliant on the quality of human capital – on the knowledge and skills of a highly trained workforce. This is the real challenge for South Australia – to raise the quality and skills of our workforce and stop the "bleeding" of skilled labour in out-migration.

… not on a post-manufacturing path …

South Australia is not necessarily on a post-manufacturing path.

Rather there are current and emerging industries where South Australia appears to have a comparative advantage.

Much of the "down in the mouthness" about South Australia reflects the various impacts on employment, incomes, spending and confidence of the changes in the South Australian manufacturing sector, particularly in motor vehicle assembly and components.

In our forthcoming second paper in this Series, we look at changes over the last 20 years or so in South Australian manufacturing in some detail and in comparison with New South Wales and Victoria. We believe that more detailed analysis helps provide some important pointers regarding areas where South Australia appears to have some comparative advantage in manufacturing and that there should, in turn, be some confidence that with the appropriate public policy settings, South Australia will maintain a strong manufacturing base.

These further ideas about appropriate policy settings will be set out in our third and fourth papers.

References

Athukorala, P.-C. (2010) Production Networks and Trade Patterns in East Asia: Regionalization or Globalization? ADB Working Paper Series on Regional Economic Integration, No. 56.

Australian Bureau of Statistics (ABS) (2013), 'Australian National Accounts: State Accounts, 2012-13', Cat. No. 5220.0.

_______ (2014), 'Australian Demographic Statistics, Mar 2014', Cat. No. 3101.0.

_______ (2014), 'International Trade in Goods and Services, Australia, Aug 2014', Cat. No. 5368.0.

_______ (2014), 'International Trade in Services by Country, by State and by Detailed Services Category, Calendar Year, 2013', Cat. No. 5368.0.55.004.

_______ (2014), 'Labour Force, Australia, Sep 2014', Cat. No. 6202.0.

_______ (2014), 'Mineral and Petroleum Exploration, Australia, Jun 2014', cat. no. 8412.0.

_______ (2014), 'Table Builder Database'.

Commonwealth Bureau of Census and Statistics (1928), Official Year Book of the Commonwealth of Australia, no. 21, Melbourne: Government Printer.

_______ (1968), Official Year Book of the Commonwealth of Australia, no. 54, Canberra: Commonwealth Government Printer.

Findlay, C., N. Kennedy, F. Lin, D. Parham and T. Harcourt (2012), Borders Blurred – The Changing Nature of Trade in a Globalised World, Australian Business Foundation, Sydney. http://www.nswbusinesschamber.com.au/NSWBC/media/Misc/Ask%20Us%20How/Borders-Blurred.pdf

Marsden, S. (1996), 'Playford's Metropolis', in O'Neil, B., J. Raftery and K. Round (eds), *Playford's South Australia: essays on the history of South Australia, 1933-1968*, Adelaide: Association of Professional Historians.

McLean, I.W. (2012), 'Why Australia Prospered: The Shifting Sources of Economic Growth', Princeton, N.J.: Princeton University Press.

O'Neil, B., J. Raftery and K. Round (eds), Playford's South Australia: essays on the history of South Australia, 1933-1968, Adelaide: Association of Professional Historians.

Richards, E. and D. Jaensch (1986), *The Flinders History of South Australia*, Cowandilla, S. Aust.: Wakefield Press.

Sinclair, W.A. (2009), 'South Australia and Australian Economic Development' in Shlomowitz, R. (ed), *Flinders Essays in Economics and Economic History: A tribute to Keith Jackson Hancock, Metodey Polasek and Robert Henry Wallace*, Kent Town: Wakefield Press.

Endnotes

1 Data on gross state product is only available in the national accounts produced by the Australian Bureau of Statistics (ABS) from 1989/90 onwards, due to limitations in the quality earlier data at the state/territory level.

2 This calculation changes the age mix but not participation rates within age bands. South Australians aged over 55 are less likely to be in the labour force. This accounts for 0.45 percentage points of the difference, and it may be due to a combination of higher rates of disability and early retirement due to a higher manufacturing employment share; plus higher rates of early retirement due to structural change. The participation rate for 15-19 year olds is the same as the Australian average.

3 All historical data are from Sinclair 2009. The historical narrative draws on McLean (2012), Sinclair (2009), O'Neil et al. (1996), and Richards and Jaensch (1996).

4 Data from ABS year books for 1928 and 1968.

5 Education and training grew at an average rate of 1.7 per cent over the 21 years in SA, and by 2.1 per cent in Australia as a whole (e.g. both growing at a much lower rate than their broader economies perhaps because school education and TAFEs have been trimmed back). GVA data isn't available for states at the 2-digit number, but education exports grew at an annual average rate of 15 per cent in SA over the decade to 2010/11; and nationally by 13 per cent.

6 Contributors to this result may be South Australian farms shifting away from lower yield activity such as dairy and wool towards wheat/barley/canola, plus having a series of favourable years in terms of weather, with national rates held down by drought in New South Wales in Queensland, plus the huge drop in wheat farm productivity in Western Australia due to climate change related changes in rainfall patterns and salinity.

7 There may be an element of catching up in this sector, with a few of the big retailers having set up large new SA distribution centres over the last decade,

8 The skill composition of interstate migration can only be reliably identified from Census data, as the Census collects information on the State/Territory of residence at the previous Census.

9 Data on qualifications refer to those qualifications held in 2011, the census does not link records so it is not possible to tell what qualifications those people had at the 2006 census.