

The ACT and its region: economic relationships and key drivers of economic growth

Report by Access Economics Pty Limited for the
Chief Minister's Department

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GLOSSARY

ABS	Australian Bureau of Statistics
ACR	Australian Capital Region – while the ACR includes the ACT, for the purpose of analysis in this report the ACR is separated from the ACT in most instances.
ACT	Australian Capital Territory
AER	Australian Energy Regulator
ANU	Australian National University
ASFR	Age-Specific Fertility Rates
CFR	Completed Fertility Rate
CGC	Commonwealth Grants Commission
CIT	Canberra Institute of Technology
COAG	Council of Australian Governments
GDE	Gungahlin Drive Extension
GDP	Gross Domestic Product
ICRC	Independent Competition and Regulatory Commission
LGAs	Local Government Areas
NSW	New South Wales
SLA	Statistical Local Area
SSD	Statistical Subdivisions
TFR	Total Fertility Rate

SUMMARY

This report examines the economic interactions between the Australian Capital Territory (ACT) and the rest of Australia, with a key focus on the immediate region. It then explores the implications of these linkages for the ACT Government.

In brief, the ACT is not only the seat of National Government; it is an 'emporium' for the people of southern New South Wales (NSW). People travel into that emporium to access a variety of public and private services, work opportunities, commerce and other facilities.

These include hospital treatments, jobs in the Commonwealth public service, restaurants and the airport. Similarly, residents of the ACT travel over the border, though in different numbers, for a different mix of reasons and mostly to destinations further afield.

THEME 1: DEMOGRAPHICS, CATCHMENT AND LINKAGES

A focus on the neighbours

There are various geographic representations of the ACT's economic catchment area. The traditional depiction concentrates on our immediate neighbours, a region that has been defined as the 'Australian Capital Region' (or ACR). In brief:

- ❑ Queanbeyan has the strongest regional economy, not merely because it services much the same district as the ACT itself, but also because many ACT workers live in Queanbeyan or Jerrabomberra.
- ❑ Similar factors help employment to population ratios in the Yass Valley.
- ❑ The ski fields of the Snowy River also stand out as a relatively employment rich district.
- ❑ However, there is notable weakness in inland farming districts such as Goulburn and the surrounding regions. Much of this area has been in drought since 2002-03 (and indeed, water is a notable constraint to the future growth of the region unless new water catchments or linkages are built and the pricing of water sales is changed).
- ❑ The Eurobodalla and the Bega Valley have very low employment to population ratios. In part that is explained by the popularity of these regions with retirees, but the collapse of forestry as a major employer over the past decade has also had a notable impact.

In general terms, ACT residents enjoy higher incomes than the wider Australian population and the surrounding ACR. In the 2006 Census, median individual income for the ACT stood at \$722 per week, compared to \$466 for Australia and \$448 for the ACR. It is a similar story for median household income, with the ACT reporting \$1,509 per week, Australia reporting \$1,027 per week, and the ACR reporting \$872 per week.

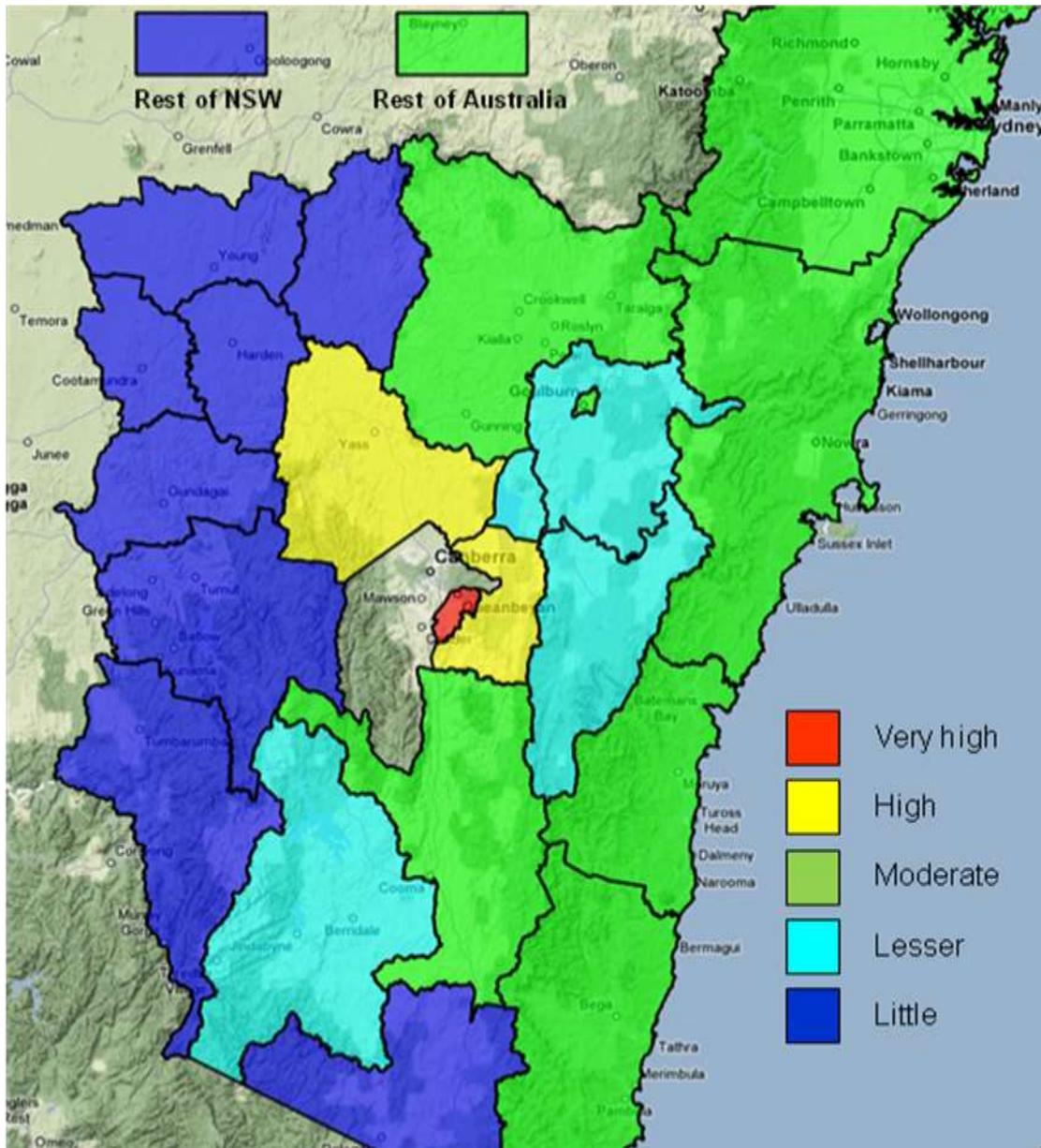
Hence household incomes in the ACR are slightly more than half of those in the ACT, the unemployment rate is significantly higher while participation rates are somewhat lower. Importantly, the ACR demographic structure and projections imply that ageing is somewhat more of an issue in the ACR than is the case for the ACT. This suggests that the ACR service population (those in the ACR accessing ACT services) will increase in the future especially for public hospital separations.

These divergences between the ACR and the ACT have important policy implications and need to be incorporated into ACT planning and remuneration (from place of residence) estimates and negotiations into the future (i.e. with both NSW and in the CGC processes).

A wider lens

Yet that traditional representation of the catchment area is arguably too simple. The map below shows the relative importance to the ACT of the Statistical Local Areas (SLAs) within the region, as well as the adjoining areas of the Illawarra and Sydney.

The map picks up both the flow of economic inputs to the ACT (measured by the number of people coming to their place of work within the ACT from that area), as well as trade in outputs (measured using the relative output strength of the SLAs in the region in combination with the depth of the transport links between those SLAs and the ACT relative to their links to other major urban centres such as Sydney).



The key zones are those of **Very high importance** (shown in red) and **High importance** (in yellow). Over three-quarters of the workers who travel from interstate to Canberra each day to work (more than 17,500 people) live in the commuter belt including Queanbeyan, Jerrabomberra and the semi-rural areas surrounding Canberra. Moreover, this region is estimated to be a relatively heavy user of the ACT’s service sector (especially where the

ACT has a degree of relative service depth – such as in specialty retail, as well as some parts of property and business services, finance and insurance, and community services).

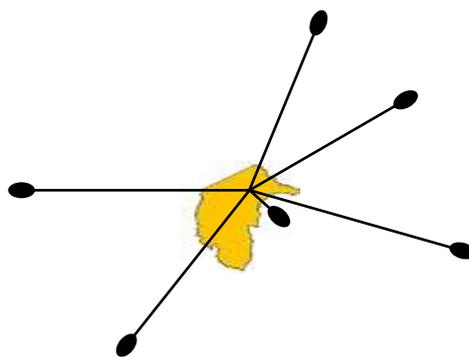
Also shown on the map are areas of **Moderate importance** to the ACT (in green) and **Lesser importance** (in sky blue). The South Coast (particularly south of Milton-Ulladulla), Cooma and Goulburn are readily linked to the ACT by the road network. The relative importance of the 'rest of NSW' and 'rest of Australia' is indicated in the labelled boxes at the top of the map. The other State capitals are linked to the ACT by air, and Sydney is linked by road, air and (some) rail. For the ACR regions (the southern South Coast, Cooma and Goulburn) trade in both inputs and outputs is less pronounced. The higher travel time means that fewer ACT workers live in these districts, the telephone or the Internet may become relatively more attractive modes of service shopping for these residents than travel to the ACT. However, travel to Sydney may offer more options for 'trade in outputs' than travel to the ACT.

The remainder of the area (in darker blue) is of **Little importance** in terms of workers supplied or output trade linkages to the ACT both due to lower populations and also topographical considerations (such as the lack of easy access to the ACT from the west).

Businesses in the ACT also buy from and sell to countries all around the world - indeed, the ACT trades more with some countries overseas than it trades with nearby regions. Due to the importance of Commonwealth public service and the seat of National Government to the ACT, the Territory has strong linkages across Australia as a whole, with frequent travel occurring between Canberra and the rest of the nation, and the rest of the nation 'buying' centralised Federal Government services from the ACT.

Therefore the simple summary is that, outside the 'commuter belt' regions close to the ACT border (such as Queanbeyan, Jerrabomberra, Wamboin, Bungendore and Murrumbateman), the next most important regions for their economic interactions with the ACT are Sydney, Melbourne, the south coast of NSW, Brisbane, the rest of Queensland and Adelaide. This is followed by nearby regional centres such as Cooma, Yass, Goulburn and the ski-fields.

As such, a geographic representation of the ACT's economic linkages is not confined to the traditionally defined 'Australian Capital Region', but looks somewhat more like this (not to scale):



The frequency of transactions with the catchment

The economic linkages of the ACT can best be described in four levels of frequency.

1. **Daily:** the commuter belt – people from nearby areas of NSW that travel in and out of the ACT most weekdays for employment and schooling, and a (much smaller) number of people that live in the ACT and do the reverse commute.
2. **Weekly:** the commerce belt – people from NSW (and some from further afield) travelling in and out of the ACT on approximately a weekly basis for activities such as shopping, recreation, sport, restaurants, regular business meetings (such as Federal Parliament sittings) and other regular economic interactions.
3. **Periodic:** the service and tourism linkages – people from NSW (and further afield) travelling in and out of the ACT for major health services, tourism, infrequent business meetings and the like.
4. **Permanent migration:** people from all around Australia and the world (though mainly from NSW) moving in or out of the ACT on a permanent basis.

The transport and related policy implications of the catchment

Given these economic linkages, the main road links and air links are more important for facilitating the economic linkages of the ACT than links with small towns in southern NSW.

Outside the important commuter belt that helps to supply the Canberra labour market, most of the economic linkages are with regions that are several hundred kilometres away.

That said, the importance of the commuter regions should not be downplayed. Good workers are hard to find. Skill shortages will remain a challenge over the coming decade as the baby boomers retire. As such, the ACT Government could examine measures to make trans-border movements easier for people that want to supply the ACT labour market. The ACT labour market cannot afford unnecessary impediments to the supply of labour. This could include short term accommodation for itinerant workers, as well as good transport links for commuters.

Of course, making it easier to travel across the border may raise concerns that better links will encourage more people to cross the border to access ACT Government services. Even so, the benefits from increased commerce, labour supply and the like will tend to far outweigh any increase in the usage of services.

This is sometimes referred to as the ‘liberalisation paradox’¹ in the context of liberalising aviation links, but it also applies more broadly to ACT’s transport links. Here’s how it works:

- People wanting to access some services (such as the hospital) will do so regardless of the transport links into the ACT – their demand is very inelastic (that is, unresponsive to cost and congestion).
- People wanting to visit the ACT for tourism, entertainment, recreation and shopping are far more sensitive to cost and congestion. They will only choose to come and spend money in the ACT if it is convenient and good value to do so.

¹ See, for example, Forsyth (2007) at <http://www.bitre.gov.au/publications/38/Files/08Forsyth.ppt>.

- ❑ Further compounding this, the 'captive' population of outbound travellers (ACT residents) have no choice but to use ACT transport links to travel in and out of the ACT – that is, their demand is also unresponsive to both cost and congestion.
- ❑ Meanwhile inbound visitors have multiple choices of where to spend their money – they won't come and spend in the ACT if the costs outweigh the advantages to them, so they are sensitive to cost.
- ❑ **Improvements to transport links thus tend to increase inbound tourism more than outbound (and cause inbound visitors to substitute away from other competing destinations).**

That is, improvements in the linkages between the ACT the rest of Australia will tend to generate more gains in economic welfare than it costs in the form of increased cross border consumption of ACT Government services (in any case, the latter are redressed, albeit imperfectly, through the Commonwealth Grants Commission).

The prospects of a net gain to the ACT – by maximising the income flows that can be generated within the ACT from servicing the catchment regions population with restaurants, retail, accommodation, entertainment and cultural experiences – suggests a role for policy in improving the ease with which residents in the surrounding Local Government Areas (LGAs) can visit the ACT.

Put simply, each cross border trip into the ACT is an income generating opportunity for the ACT – to the extent that these opportunities generate income for the ACT this will offset the cost of service provision to the surrounding LGAs.

Demographics – here and near here

Along with the Northern Territory, the ACT has the highest rates of long term population migration, meaning that it has a very transient population. Unlike the NT, the ACT also has very high levels of short term cross border movements. While short term interstate movements are difficult to compare, the ACT appears to have (by a considerable margin) the highest rate of cross border movements, relative to the size of its population, of any State or Territory in Australia – though a more appropriate point of comparison to the ACT may be LGAs of a roughly similar size, such as Newcastle, Geelong or the Gold Coast.

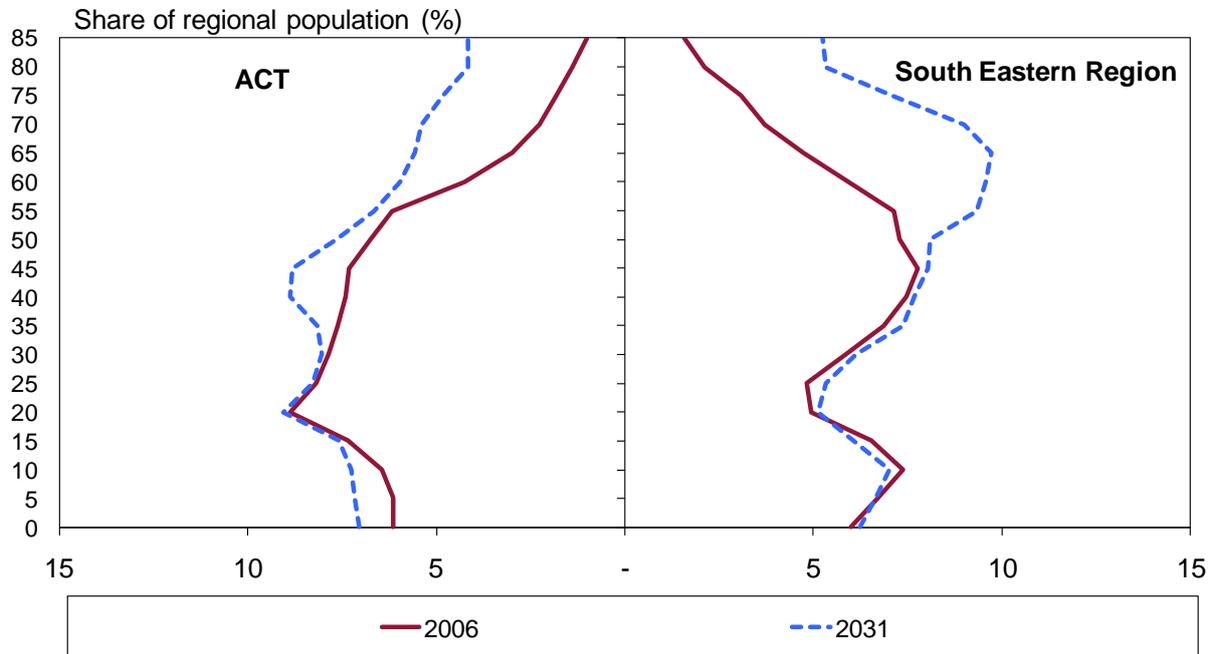
Looking ahead, ACT population growth rates are expected to slow more rapidly than nationally over coming decades, and to take longer to begin growing in level terms than the nationally equivalent.

This is due to two factors:

- ❑ The national increase is boosted by international migration increases, which is a relatively small component of local population growth (the ACT accounts for just 0.5% of international migration – compared to 1.6% of total national population);
- ❑ An expectation of downward pressure on interstate migration to the Territory.

The following chart illustrates the expected ageing of the South Eastern Region and local ACT population.

Population pyramid for the ACT and its surrounding region



Relative to the South Eastern region of NSW, the ACT has a younger population structure due to the ongoing inflow of relatively younger people, as a result of interstate migration and the relatively high incidence of the outflow of retirees. The South Eastern region of NSW has a smaller economy than that of the ACT itself, and an implication of the above chart is that more rapid retirement in the local region than in the ACT means that the ACT's economy may grow relative to the South Eastern region as time passes.

The service population

Relative ageing also changes demand patterns. For example, a higher weighting of older people increases demand for services – particularly for public hospitals. In turn, that raises another key set of issues.

It has long been recognised that the ACT acts as a service centre for the surrounding region.

This makes sense and allows for a more efficient use of resources within Australia. To some extent many regions face similar dilemmas when the cost of providing services to a given population differs from the revenue raising base of the municipality.

However the ACT is disadvantaged by this process more so than most regions.

As the Commonwealth Grants Commission rightly points out:

“The cross border flow of services is in both directions — some New South Wales residents use ACT services and some ACT residents use New South Wales services. If the incoming and outgoing flow of services were exactly the same, the net effect would be zero and neither State would incur additional service delivery costs.

However, the flow of ACT services to New South Wales residents far exceeds the flow of New South Wales services to ACT residents and the ACT incurs additional service delivery costs for which it may not be reimbursed by New South Wales.[emphasis added] In making a cross border assessment, it is the net cross border flow of services that is relevant.”

The table below provides an estimate of the service population for the ACR. That is, it presents estimates of the actual service usage by people not residing in the ACT. It covers key areas and usage rates actually documented by existing data for:

- ❑ **Education** – based on students enrolled in the ACT education system.
- ❑ **Health** – based on public hospital separations performed in the ACT.
- ❑ **Health service population** – presents an estimate of the population from which public hospital separations are drawn based on separations per ‘000 people.
 - This figure estimates the population that ACT services users are drawn from.
- ❑ **Law and order** – based on data for the number of defendants taking up time in the ACT magistrates court.
- ❑ **Traffic infringements** – based on traffic infringement notices issued in the ACT.
- ❑ **Road usage** – based on the number of cross boarder vehicle movements entering, using the ACT road network, and leaving.
- ❑ **Employment** – an estimate from census data of the number of people who work inside the ACT.

SERVICE POPULATION ESTIMATES

ACR service population estimates - excl. ACT	1996	2006	2016	2026
ACR population	205,719	233,561	256,061	279,769
Education - No. students in ACT	4,135	4,494	4,121	4,054
Health - No. public hospital separations in ACT	14,282	16,215	17,777	19,423
Health service population - No. people	68,543	77,820	85,317	93,216
Law and order - No. defendants ACT magistrates court	2,605	2,958	3,243	3,543
Traffic infringements - No. people	4,031	4,576	5,017	5,481
Road usage - Cross border vehicle movements per day	109,527	124,350	136,329	148,952
Employment - No. people working inside the ACT (census)	16,939	19,231	21,084	23,036

ACT service population estimates - only ACT	1996	2006	2016	2026
ACT population	308,251	334,225	373,991	402,264
Education - No. students in ACT	59,115	55,648	55,294	61,157
Health - No. public hospital separations in ACT	51,575	55,921	62,574	67,305
Health service population - No. people	308,251	334,225	373,991	402,264
Law and order - No. defendants ACT magistrates court	16,633	18,035	20,181	21,706
Traffic infringements - No. people	38,658	41,915	46,902	50,448
Road usage - Total vehicle movements per day	n.a.	n.a.	n.a.	n.a.
Employment - No. people working inside the ACT (census)	162,586	176,286	197,260	212,173

Combined service population estimates - ACR + ACT	1996	2006	2016	2026
Combined ACT and ACR population	513,970	567,786	630,052	682,033
Education - No. students in ACT	63,250	60,142	59,415	65,211
Health - No. public hospital separations in ACT	65,857	72,136	80,352	86,728
Health service population - No. people	376,794	412,045	459,308	495,480
Law and order - No. defendants ACT magistrates court	19,239	20,993	23,424	25,250
Traffic infringements - No. people	42,688	46,491	51,919	55,929
Road usage - Total vehicle movements per day	n.a.	n.a.	n.a.	n.a.
Employment - No. people working inside the ACT (census)	179,525	195,517	218,344	235,209

Source: ACT Government, Australian Institute of Health and Welfare, ACT Treasury submission to Commonwealth Grants Commission review 2004, Australian Bureau of Statistics (ABS) Special data request, Access Economics.

The broad analysis of the differences between the ACT population and the ACR indicates that the costs of service provision to non-ACT residents are going to see a relative increase over the projection period:

- ❑ In particular, as the population ages at a faster rate in the ACR, public hospital separations will increase. That is important because ACR separations are often more expensive than the average separation for the ACT population as these are often related to chronic (age related) conditions.
- ❑ For education this trend works in reverse, with the number of school age children expected to decline in the ACR population, therefore reducing the cost of providing cross border education services.
- ❑ For most other service provision categories, the overall increase in the number of people in the service population leads to increasing demand for service use.

While the ACR will age, this will occur in combination with overall population growth. However, the ageing of the ACR may also be augmented by retirees from the ACT moving into the ACR over the projection period.

Overall these trends add pressure to the cost of service provision both in terms of the aggregate numbers and their demographic composition.

THEME 2: ECONOMIC TRENDS, THE OUTLOOK AND RELATED POLICY IMPLICATIONS

The macro backdrop

The ACT is a small and open economy, and that combination makes it especially sensitive to changes in the economic environment. The recent strength of the global economy has been driven by the emerging (energy-hungry) economies of China, India and the smaller industrialising economies in Asia. In turn, its impact on Australia has been considerable. Because the boom in emerging markets has pushed up commodity prices, it has also boosted each of the \$A, corporate profits as a share of the economy, sharemarkets, and engineering and commercial construction.

It has also added to Federal Government revenues, leading both to a rapid expansion in the numbers employed in the Australian public service, and to a related commercial construction boom, particularly in offices.

Looking forward over the medium-term, the transformation of China and India is likely to continue to dominate the global economic environment for the next decade.

However, three points should be noted. First, the current moderation in growth in the developed world (and the potential for recession in the United States) suggests a more modest short term global outlook.

Second, despite that, Australia's short term problems revolve more around high inflation than they do the slowdown in the developed world. That suggests the Federal Government will be under a degree of pressure to make the 2008-09 Budget a tough one so as to assist the Reserve Bank in its task of reining in inflation.

Third, and most substantively, current commodity prices are well above the cost of production – and still rising for iron ore and coal. Although it may take several years or more

to eventuate, it is likely that those strong commodity prices will eventually evoke a strong supply response for commodities (iron ore and coal not just from Western Australia and Queensland, but also from elsewhere around the globe). As and when that occurs, there could be a notable slowdown in gains in the Federal tax take. That period could be a difficult one for the ACT economy if it is accompanied by Federal spending restraint.

Macroeconomic policy implications

There are a number of options available to the ACT Government in addressing medium term economic pressures. In sum, economic growth matters, meaning that policy should focus on the Federal Treasury's 3Ps framework (participation, productivity and population) so as to increase the supply-side potential of the ACT economy.

The ACT Government can contribute to raising economic growth prospects by ensuring individuals have the right incentives and that markets can operate efficiently with minimum regulatory interventions.

THEME 3: INDUSTRIES AND INFRASTRUCTURE

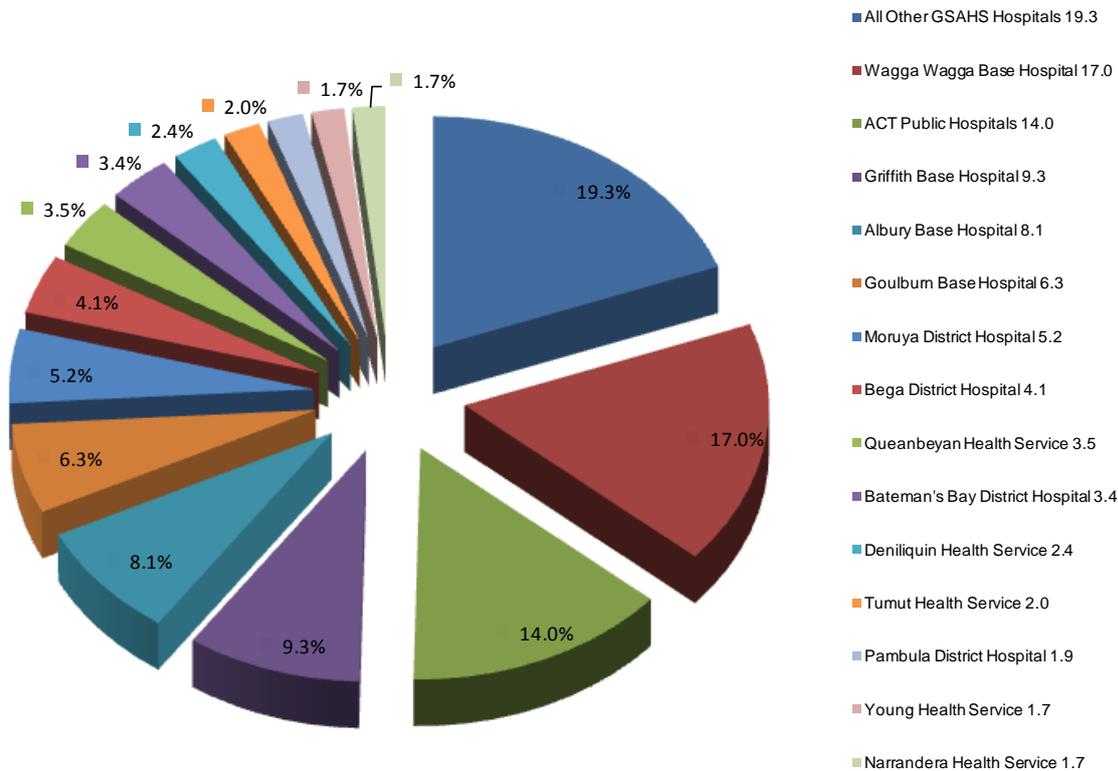
The policy focus of the ACT should facilitate growth and seek to minimise impediments to the operations of efficient markets. This includes in particular ensuring that infrastructure development keeps pace with demand for road, air, rail and public transport, as well as with regards to land release for both residential and commercial development.

Industrial and business development must be facilitated by the use of flexible and efficient regulation and planning practices.

There are large numbers of cross-border flows between the ACT and NSW relating to infrastructure usage:

- ❑ In 2007, 1,607 NSW residents were enrolled in ACT public schools, with a further 3,021 in ACT non-government schools. 17% of all students enrolled in courses at the Canberra Institute of Technology (CIT) were residents of NSW.
- ❑ Additionally, there are strong utilities linkages, as the electricity, gas and water services of the ACT also supply Queanbeyan and other nearby areas of NSW.
- ❑ It is in the area of health services however, where these cross-border infrastructure linkages are most pronounced. In 2005-06, there were 16,215 hospital separations for residents of the Greater Southern region of NSW in ACT public hospitals. This means ACT public hospitals are effectively the second largest provider of hospital services to NSW residents in the Greater Southern NSW Area Health Services, after the Wagga Wagga hospital (see chart below).

**HOSPITAL SEPARATIONS OF RESIDENTS OF NSW
GREATER SOUTHERN AREA HEALTH SERVICE, 2005-06**



Source: GSAHS Annual Report 2005-06, ACT Government

THEME 4: SWOT

Strengths

In an Australia in which demand has caught up with supply (leading to persistent skill shortages), the demands of policymaking (and the drivers of prosperity) are now different.

As stressed above, policy is no longer looking to create the next job, but the next worker.

Once seen in that light, the standout strength of the ACT in any SWOT analysis is the extent to which it is already performing well on the supply-side front. In brief, the ACT already has what the rest of the nation is aiming for: a highly skilled and highly productive workforce earning high incomes that is more likely to participate in the workforce than seen nationally.

Policies that aim at maintaining this competitive advantage of the ACT will maximise the growth potential of the Territory. In many cases this means keenly focussing policy within the constraints of the supply-side fundamentals – participation and productivity – in a simple regulatory framework.

Overall, maintaining and building upon the ACT's existing strengths of a skilled workforce and a willingness to participate in the workforce will enable the ACT to sustain its economic growth prospects. The challenge will be to harness these skills and facilitate the successful transition between the public and private sectors.

Weaknesses

Australia is operating in a supply constrained environment rather than one where demand is limiting the capacity of the national and local economies to expand. This has significant implications for policy development.

This means that as the national economy progressively embraces this new policy environment, growth in the Commonwealth public service could become less of a driver of growth in the ACT. In effect this means that the ACT's key strength – high levels of participation and productivity – is also a relative weakness because it will become increasingly difficult to improve upon such high levels in this environment.

Opportunities

It is absolutely critical that the ACT gets its policy frameworks right. This means understanding exactly what we are aiming for, the context within which we are operating, and how best to achieve the goals of the ACT and region. It is surprising how often such fundamental questions are not addressed early on in the policy development process.

Policy should be aimed at minimising the constraints on activity from regulation, and on maximising the free flow of resources into the ACT while providing an efficient and effective safety net for those individuals most at risk:

- ❑ Overall, decisions should be set within a framework that facilitates opportunity and minimises intervention in markets (particularly avoiding cross-subsidisation).
- ❑ The ACT needs to take the opportunity to drive the national debate forward by example. This means that the ACT should aim to adopt a first mover approach in policy which would allow it to embrace economic change within the supply constrained medium term environment.
- ❑ All governments must minimise their call on resources, and carefully assess the case for and against policy intervention. Interventions should be limited to genuine need, such as market failure or a desire to improve fairness. Where there are cases of inequality, this requires the reallocation of resources to those most disadvantaged in the community. This in turn requires means testing of expenditure policies against relevant yardsticks.

Threats

The strong global economy has fuelled the corporate tax take, which in turn has fuelled higher Federal Government spending. As the national administrative centre, the ACT has benefited notably from that trend through both direct effects (such as increased employment in the Federal public service) and indirect effects (such as the recent boom in commercial construction, including office building).

However, there are a number of risks in continuing this trend.

The current moderation in growth in the developed world (and the potential for recession in the United States) suggests a more modest short term global outlook. The threat of financial turmoil also poses a threat to medium term growth prospects.

Yet Australia's short term problems revolve more around high inflation than they do the slowdown in the developed world. That suggests the Federal Government will be under a degree of pressure to make the 2008-09 Budget a tough one so as to assist the Reserve

Bank in its task of reining in inflation - this could well have significant implications for the ACT.

Finally, current commodity prices are well above the cost of production – and still rising for the likes of iron ore and coal. Although it may take several years or more to eventuate, it is likely that those strong commodity prices will eventually evoke a strong supply response for commodities. This could mean a notable slowdown in gains in the Federal tax take at some point in the future.

As a result, the period ahead could be a difficult one for the ACT economy, especially if it is accompanied by Federal spending restraint.

Regardless of what happens to the broader economy, the ACT Budget faces intergenerational pressures within the ACT and the region which are likely to add to the pressures on the bottom line – making it more difficult to meet the ACT's fiscal strategy and financial objectives.

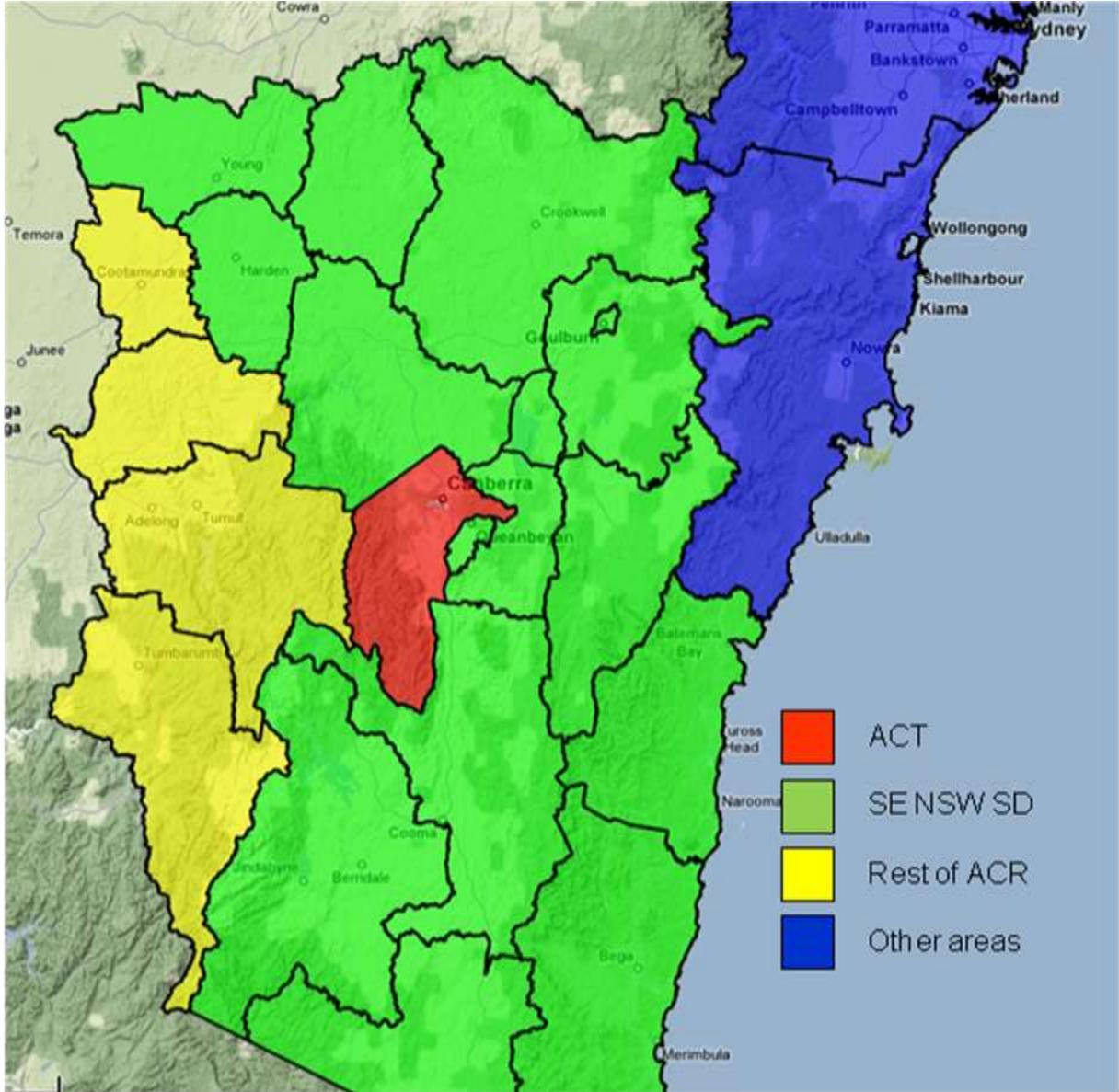
The most appropriate way for dealing with this threat is to pursue policies which facilitate economic growth. There are a number of more specific policies with the potential to help achieve this, including:²

- ❑ Maximising educational attainment and early intervention for children at risk;
- ❑ Increasing high school retention rates (though the earlier the intervention the better for less well performing students);
- ❑ Facilitating an environment that encourages highly skilled people to spend time working in the ACT (in both public and private sector positions);
- ❑ Ensuring that the regulatory burden of operating in the ACT is less than in other States and Territories;
- ❑ Also considering the impact of regulatory burdens in other jurisdictions. (That is, the aim is not to get the best possible set of regulations in the ACT but, in cases where other jurisdictions also have relatively good regulations, to consider the benefits of harmonisation in reducing administrative and compliance burdens);
- ❑ Being a leader in the adoption of national policy initiatives aimed at improving the efficient operation of markets based on clear price signals;
- ❑ Minimising impediments to sustainable development (such as land release and infrastructure constraints); and
- ❑ Limiting industry assistance to simply smoothing the path of changes to required resource reallocation across the economy and the region.

² A number of research papers have been written by the Federal Treasury outlining the link between education and participation. For example see, Kennedy and Hedley of Treasury in a 2003 Working Paper, Gruen and Garbutt in a 2004 paper and Davis and Ewing in a 2005 paper.

ACT CATCHMENT MAPS

Regions in the report



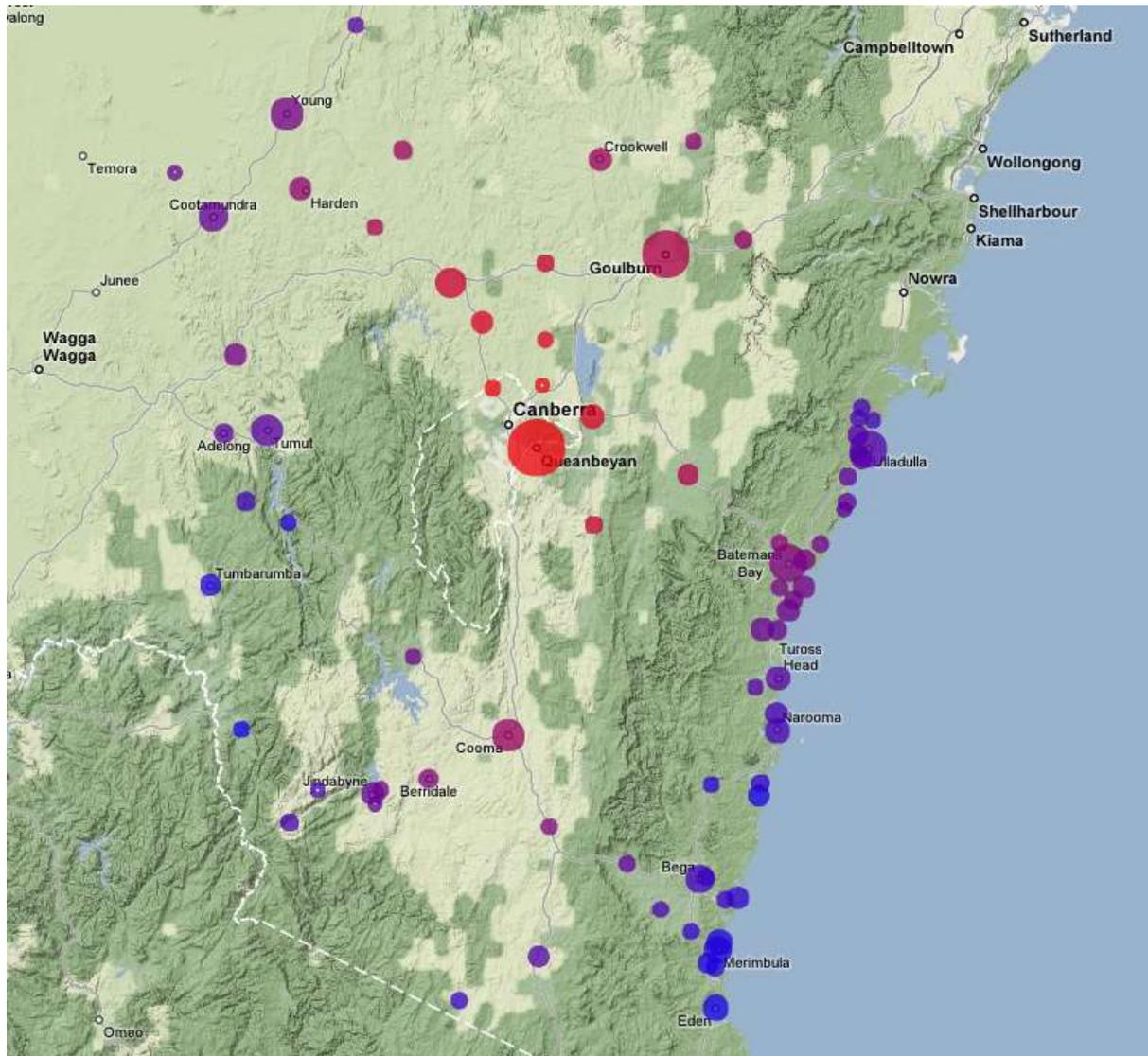
RED: ACT

Green: South Eastern NSW Statistical Division

Yellow: additional SLAs in the ACR

Blue: additional areas referred to (Sydney and Illawarra SDs)

Size and proximity of towns surrounding Canberra



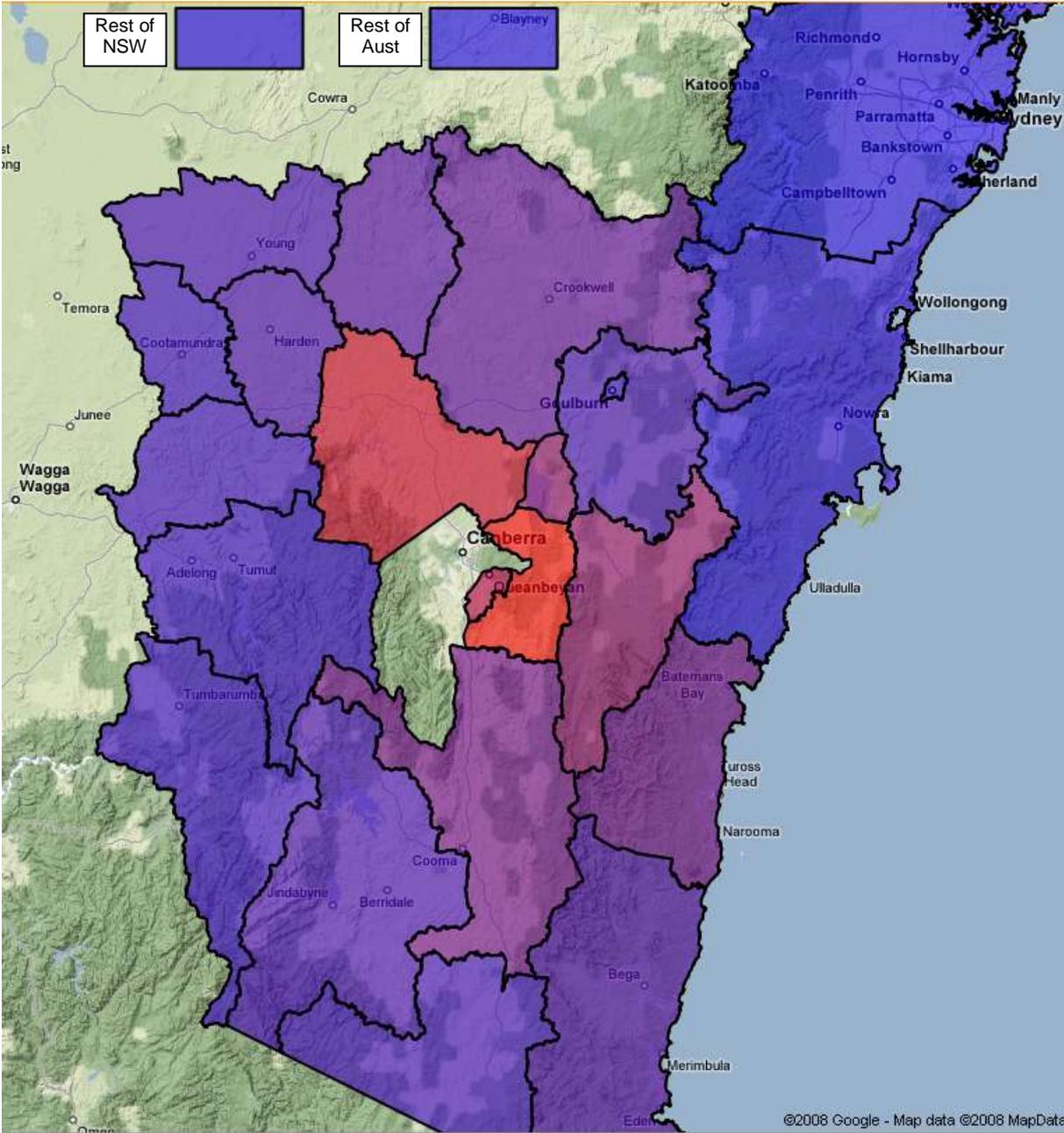
This map shows the size of the towns surrounding Canberra and their proximity to Canberra.

The size of the 'dot' indicates the size of the town, in terms of population.

If a 'dot' for Canberra was included on the map, it would be around 10 times the size of Queanbeyan and would eclipse many of the other 'dots'.

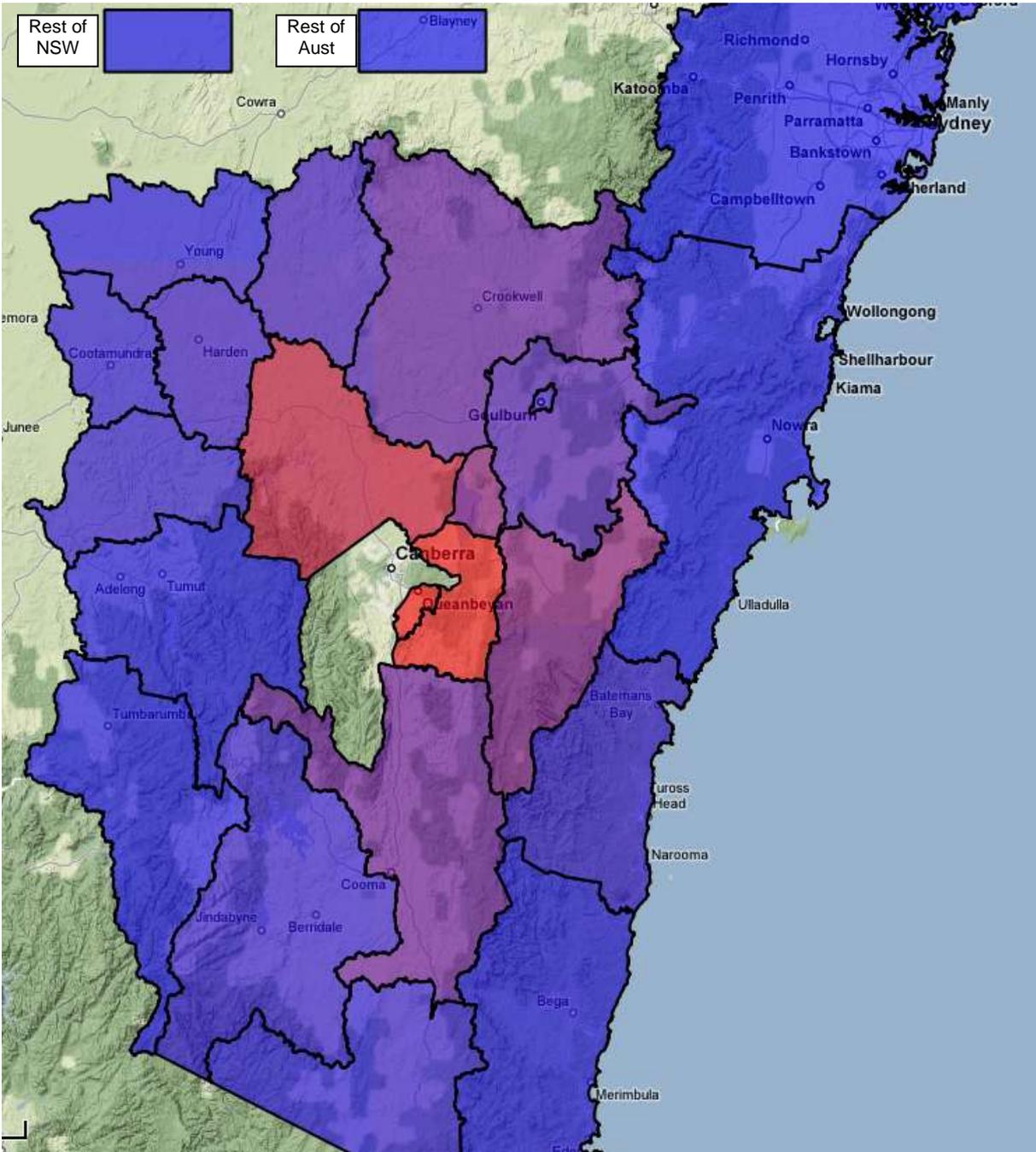
The colour of the dot indicates how far it is from Canberra by road. Red is closest, and blue is furthest by road.

Proportion of those living in NSW 2006 that lived in ACT 2001



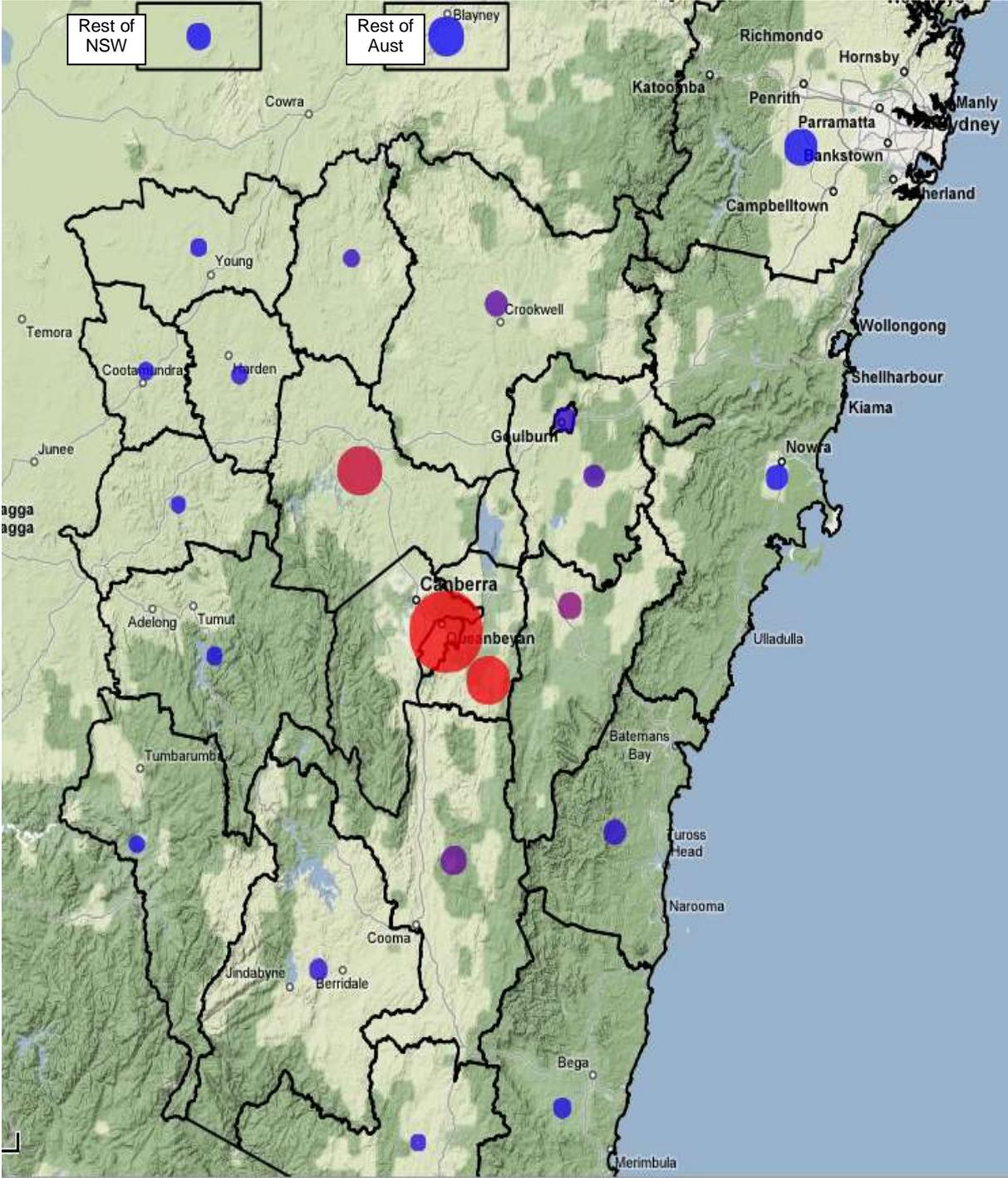
This map shows the proportion of those living in each LGA in NSW in the 2006 census that had lived in the ACT in the 2001 census. Blue indicates zero, with red being the maximum of the range.

Proportion of those living in NSW and working in the ACT



This map shows the proportion of those living in each LGA in NSW in the 2006 census that worked in the ACT at the time of the census. Blue indicates zero, with red being the maximum of the range.

Canberra's non-ACT-resident workforce, by location



This map shows the absolute numbers (rather than % of their LGA) of where Canberra's workforce comes from (excl ACT residents working in the ACT). The size of the 'dot' is the number of workers. The colour is the share of workers in that LGA.

Outside Queanbeyan, Yass and the balance of Palerang (eg Bungedore and Wamboin), more people travel to Canberra to work from the rest of NSW and the rest of Australia than from other LGAs in the ACR.

1. CATCHMENT AND LINKAGES

1.1 DEFINING THE CATCHMENT

The Australian Capital Territory's (ACT's) economic catchment consists of the areas from which it buys (an input-based measure of the catchment) and the areas to which it sells (an output-based measure of the catchment).

This report will examine both, with:

- ❑ the input assessment concentrating on labour flows to and from the 'commuter belt' regions close to the ACT border such as Queanbeyan, Jerrabomberra, Wamboin, Bungendore and Murrumbateman, and
- ❑ the output assessment using a range of indicators such as the relative nature of industries, infrastructure, transport links and usage, the utilities, the role of Canberra Airport, and social linkages such as in sport and recreation.

There are various geographic measures of the ACT's economic catchment, ranging from the traditional depiction within southern New South Wales (NSW) to the degrees of economic interaction that the ACT has with Sydney, Melbourne, the ski fields, the south coast, Brisbane and Adelaide.

Arguably, the ACT's economic linkages resembles an 'octopus' more than it resembles the traditional view of it as a contiguous block of southern NSW.

However, the combination of the availability of detailed data and the various regions that the data is collected for can make consistent comparisons difficult.

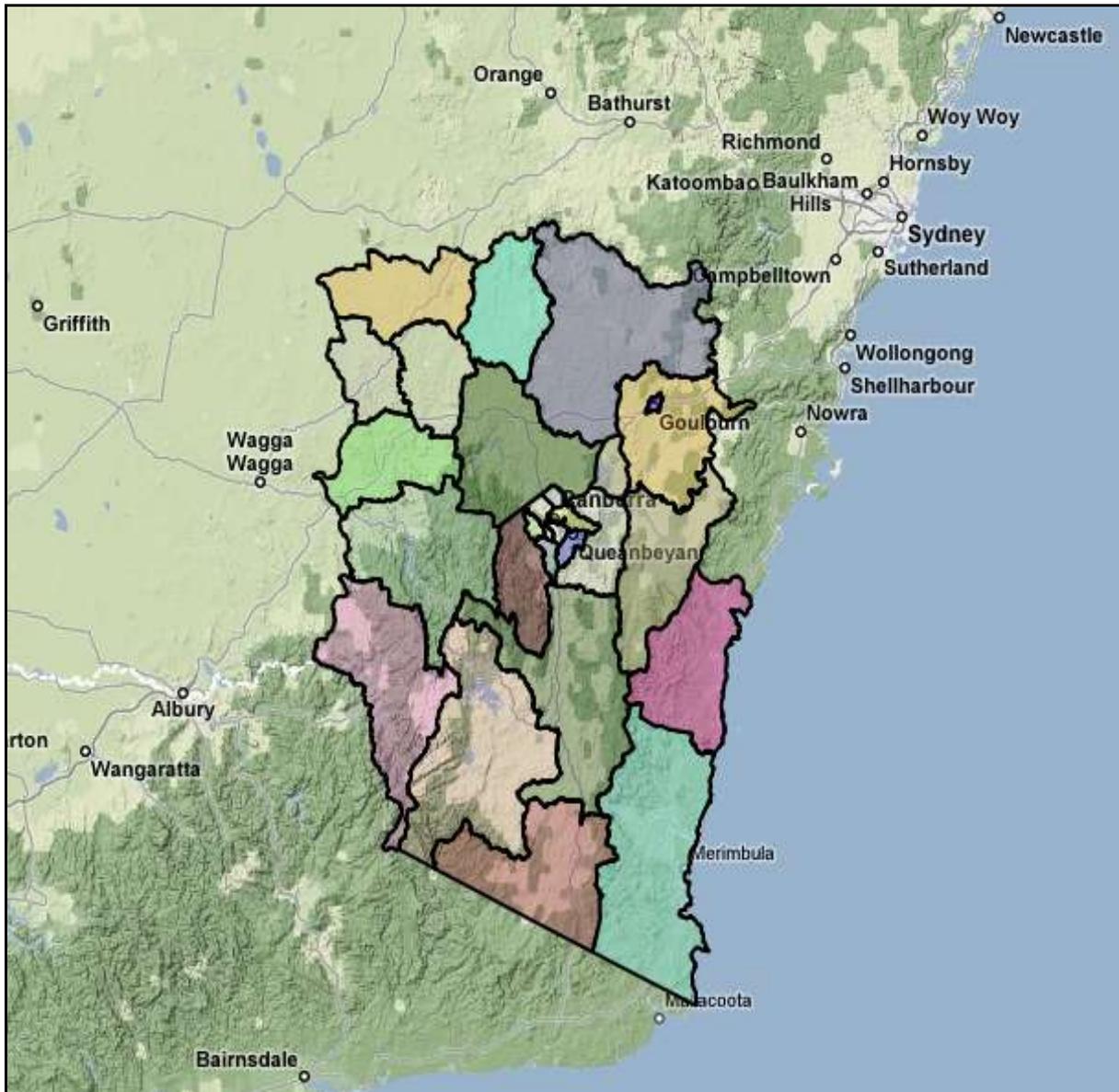
Figure 1.1 below shows one fairly broad region that has been defined as the "Australian Capital Region" (ACR).

The region consists of the ACT, where the individual Statistical Subdivisions (SSDs) that the Australian Bureau of Statistics (ABS) uses for reporting purposes are identified, and 19 regional Statistical Local Areas (SLAs)³.

Data is not always available at the SLA (or LGA) level. The four western SLAs (Cootamundra, Tumut, Gundagai and Tumbarumba) lie outside the broader South Eastern region – which is the level at which many regional statistics are available. In these cases this report concentrates on the remaining region to the exclusion of these.

³ The ACT SSDs correspond to the various "Towns" that make up Canberra – Woden, Tuggeranong, Belconnen etc. The SLAs are usually equivalent to Local Government Areas (LGAs), although two local shires, Goulburn Mulwaree and Palerang, are divided into two distinct SLAs. In the Canberra context, the SSDs within the ACT are of a similar magnitude to SLAs outside the State – SLAs in Canberra, which correspond to suburbs, are generally relatively small compared to the usual SLAs found across Australia.

FIGURE 1.1: THE AUSTRALIAN CAPITAL REGION



1.2 CURRENT POPULATION STRUCTURE OF THE TRADITIONAL CATCHMENT

Section 1.4 of this report considers the demographics of the ACT. This section does the same for the 'traditional' definition of the catchment.

In brief, Figure 1.2 shows that:

- ❑ The largest population is in Queanbeyan, an area which on this definition also includes Jerrabomberra.
- ❑ The next largest population is in Eurobodalla on the south coast of NSW, spread across Batemans Bay, Nelligen, Durras, Mogo, Broulee/Tomakin, Moruya, Tuross Head, Narooma and Tilba.
- ❑ Further down the coast lies the Bega Valley, including Bega itself, as well as Merimbula, Eden, Pambula, and Bermagui.

□ Then comes Goulburn, the Yass Valley, Young, and smaller centres.

FIGURE 1.2: POPULATION IN THE ACR

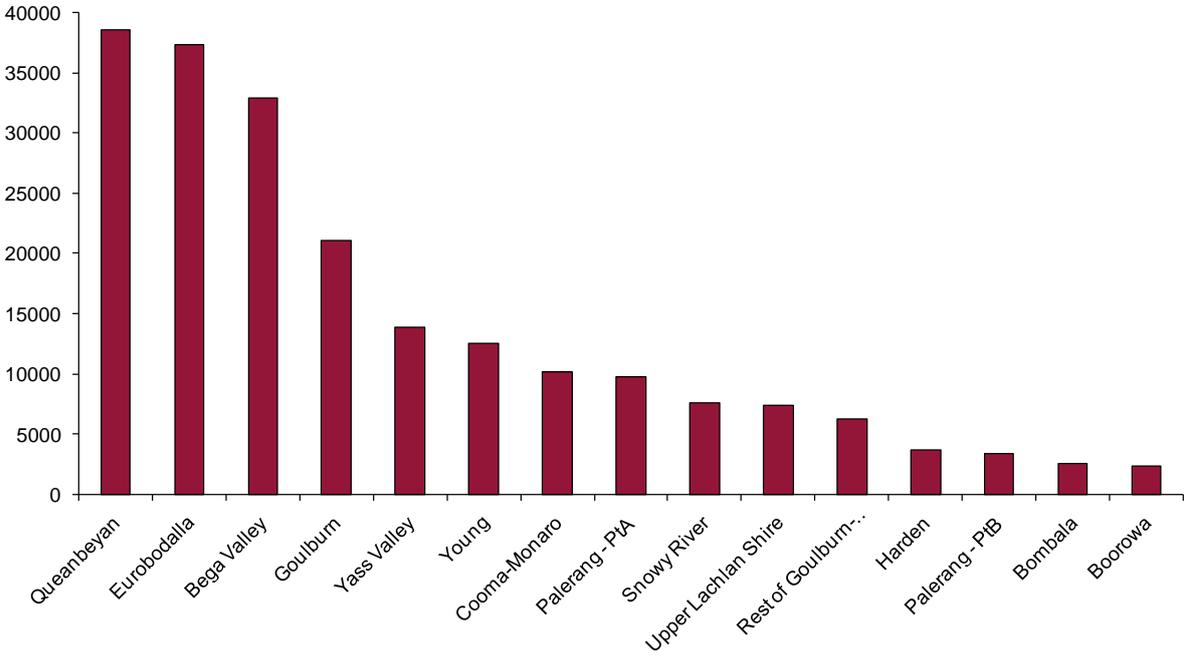


Figure 1.3 shows the distribution of employment in the ACR, while Figure 1.4 helps put that into context by showing employment to population ratios in these regions (the share of the total population in employment).

FIGURE 1.3: EMPLOYMENT IN THE ACR

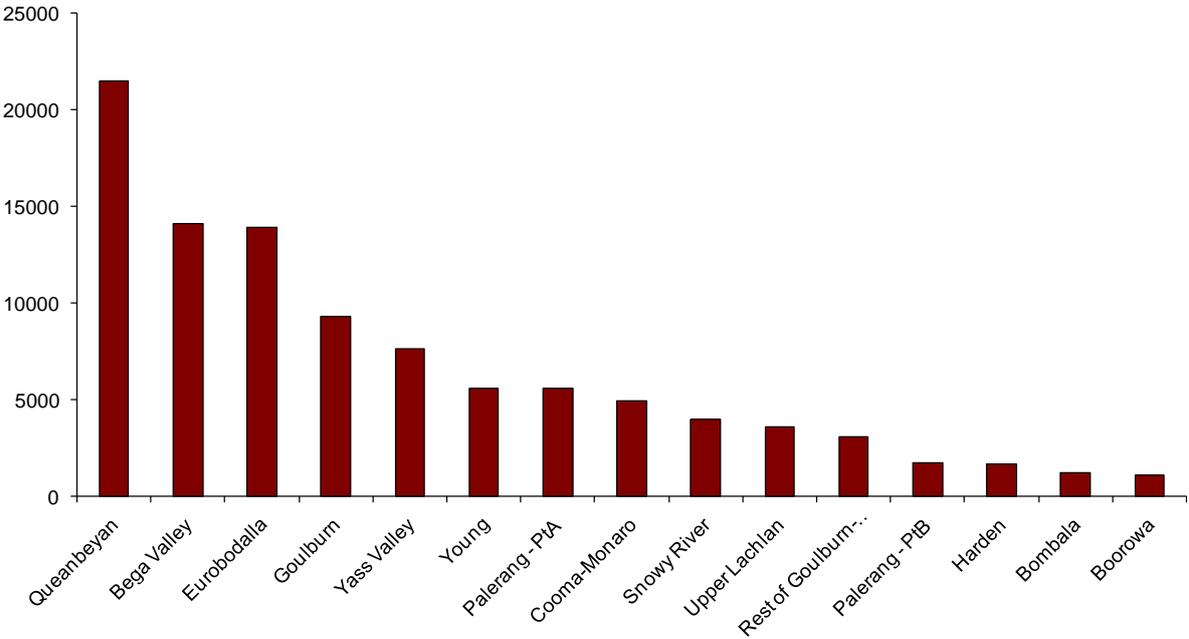


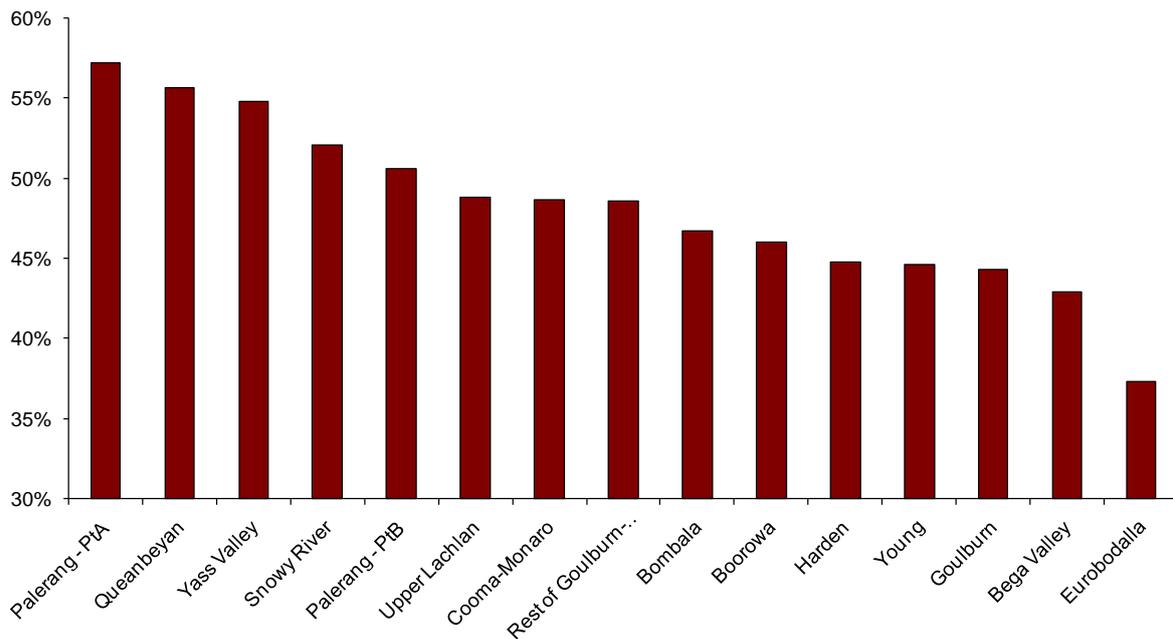
FIGURE 1.4: EMPLOYMENT TO POPULATION RATIOS IN THE ACR

Figure 1.4 shows that:

- ❑ Queanbeyan has the strongest regional economy, not merely because it services much the same district as the ACT itself, but also because many ACT workers live in Queanbeyan or Jerrabomberra.
- ❑ Similar factors help employment to population ratios in the Yass Valley.
- ❑ The ski fields of the Snowy River also stand out as a relatively employment rich district.
- ❑ However, there is notable weakness in the employment bases of the inland farming districts (such as Goulburn itself, but also the surrounding regions). Much of this area has suffered severe rainfall deficiencies since 2002-03 (and indeed, water is a notable constraint to the future growth of the region unless new water catchments or linkages are built and the pricing of water sales is changed).
- ❑ Moreover, both the Eurobodalla and the Bega Valley have very low employment to population ratios. In part that is explained by the popularity of these regions with retirees, but the collapse of forestry as a major employer over the past decade has also had a notable impact here.

1.3 CURRENT ECONOMIC STRUCTURE OF THE TRADITIONAL CATCHMENT

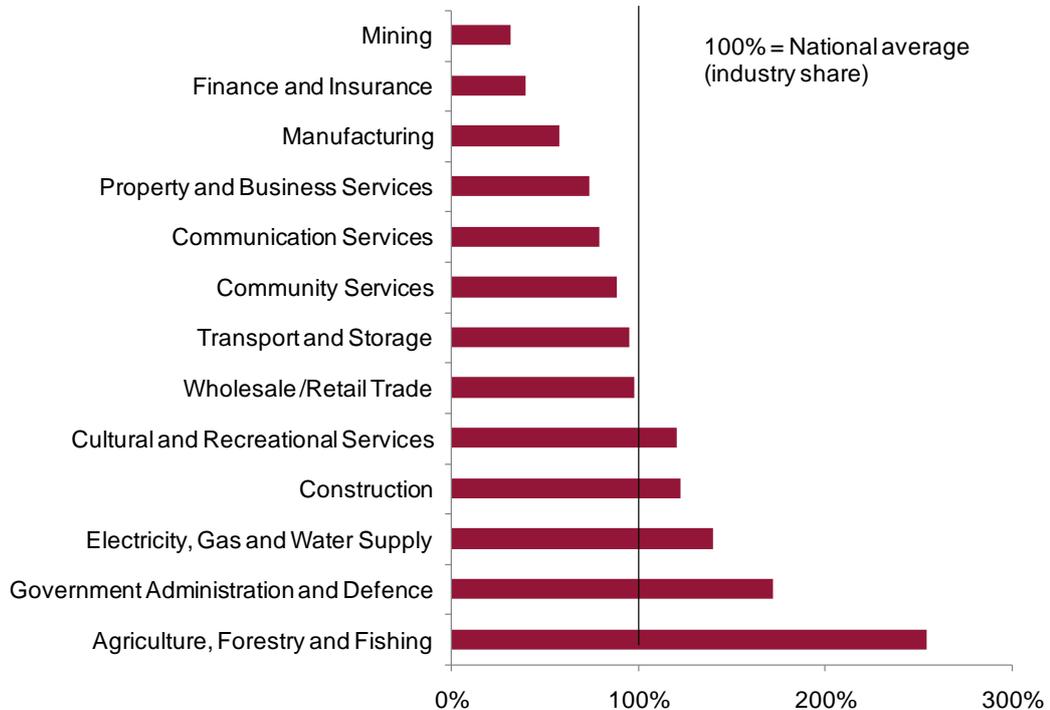
Section 2 of this report considers the current structure of the ACT economy. This section does the same for the 'traditional' definition of the catchment.

Whereas the demographic data for the traditional catchment area is rich, the same is not true for the matching employment data (on a labour force survey basis). The discussion here uses the 'South East' region of NSW (SE NSW), which for these purposes is similar to the ACR shown above (specifically it excludes - Cootamundra (A), Gundagai (A), Tumut shire (A) and Tumbarumba (A)).

Figure 1.5 puts the employment intensity of the ACR into context within the national economy, by comparing the relative importance of employment in different sectors in the ACR versus the same sectors nationally.

(To interpret the latter, it says, for example, and not surprisingly, the farm and forestry and fishing sector is two and a half times larger as a share of the ACR's employment base than it is of the national employment base).

FIGURE 1.5: SE NSW EMPLOYMENT COMPARED TO THE NATIONAL INDUSTRY MAKE-UP

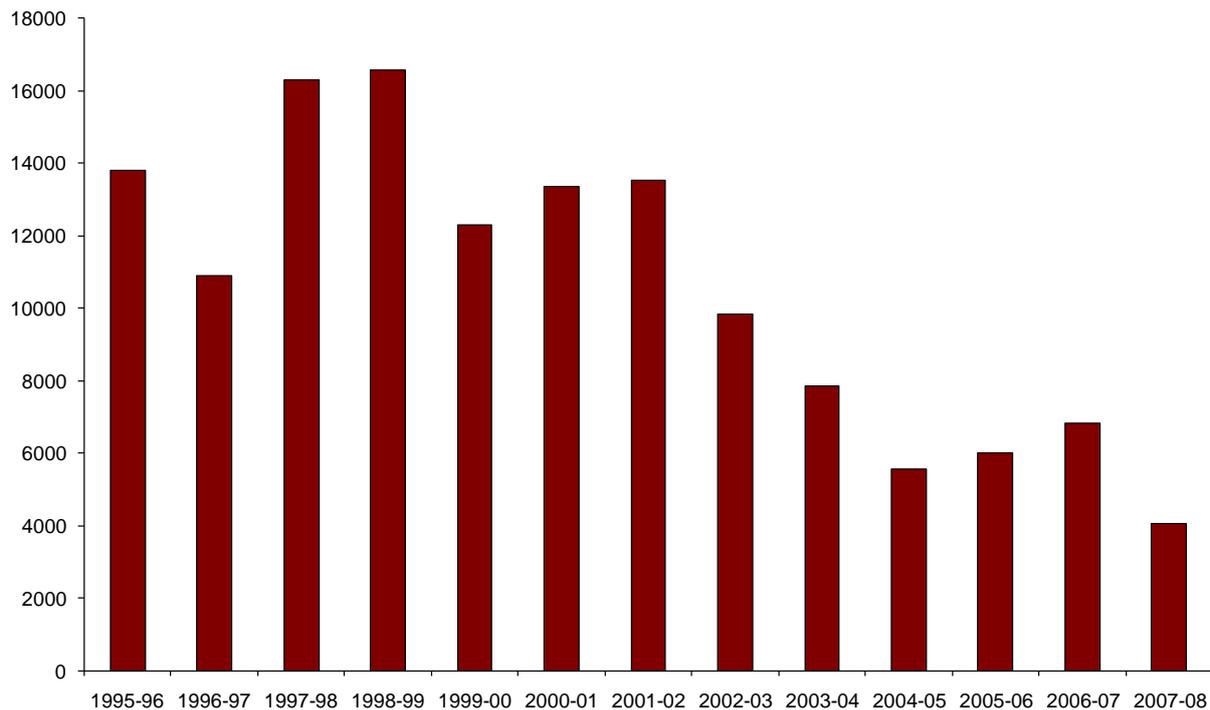


Source: ABS 6291.0, Access Economics calculations.

Such charts are useful, in that they are an indicator of the 'revealed comparative advantage' of a region – if they show a region is over-represented in one sector and under-represented in another, that tends to be the case for a reason.

In brief:

- ❑ The farm, forestry and fishing sector of the ACR's southern coast is its stand-out area of revealed comparative advantage. Relative to the rest of Australia, the ACR clearly has considerable strengths in this sector.
- ❑ Yet this sector has also been on the wrong side of economic developments for some time now. As Figure 1.6 shows, this decade to date has seen employment in the sector drop back to a third of the levels seen in the 1990s, as the timber industries of the ACR's southern coast lost out to environmental concerns and changed forestry practices. That said, this is still an area of relative strength for the traditional catchment area, as reinforced by the development of Visy's pulp mill at Tumut in recent years.

FIGURE 1.6: EMPLOYMENT IN AGRICULTURE, FORESTRY AND FISHING IN SE NSW OVER TIME

- ❑ The ACR is also relatively over-represented in the Government administration and Defence sector, in part due to the strong Defence presence that spills over from the ACT into the ACR. However, the relative strength of this sector is also partly indicative of the relative weakness of the ACR – employment to population ratios are weak in much of the region (see Figure 1.4 above), and due to the relatively high concentration of retirees.
- ❑ Even allowing for the importance of employers such as Snowy Hydro, the relative over-representation of the utilities sector arises partly because of a lack of economies of scale in the ACR. (Indeed, the lack of economies of scale in the ACR is a recurring theme in this report.) There is relatively more employment in such sectors because Australia as a whole is relatively more urbanised than the ACR, and some services – including the utilities – are geographically spread out as a result. In turn, that tends to lower productivity and, other things equal, raise employment in the sector relative to the rest of Australia.
- ❑ The relative over-representation of cultural and recreational services owes much to the recreation activities based on both the South Coast and on the NSW ski fields.
- ❑ Finance and insurance services can, for example, often be traded over the phone, meaning that the employment centres for these sectors tend to be concentrated in larger towns.
 - Indeed, even large towns found themselves on the wrong side of employment trends in this sector in the 1990s, with the likes of Adelaide and Hobart both complaining that they lost employment in this sector to Sydney and Melbourne in that decade.
- ❑ Similar comments also apply to property and business services – while often an accountant, lawyer, real estate agent, architect or IT provider will be local, some of these services are increasingly sold at a distance over the phone or the internet.
- ❑ The manufacturing sector is also relatively under-represented. Again, the ACR lacks the useful economies of scale in manufacturing, though the sector has clear niches (for

example, the roof trusses used in building homes in the ACT will often use south coast timber that has been milled and manufactured in a Queanbeyan plant).

- ❑ Although the wholesale and retail sector shows up on this chart as close to the matching Australian average, it is again worth making the point about economies of scale. As discussed later in this report, for example, Canberra's 'city-State' layout means less 'corner stores' and more malls, with the latter having higher turnover per employee than their ACR equivalents.
- ❑ Most other sectors – such as mining – show a relative degree of under-representation.

The relative employment intensities between the ACT and ACR help to indicate the economic linkages between the two – who buys what from whom.

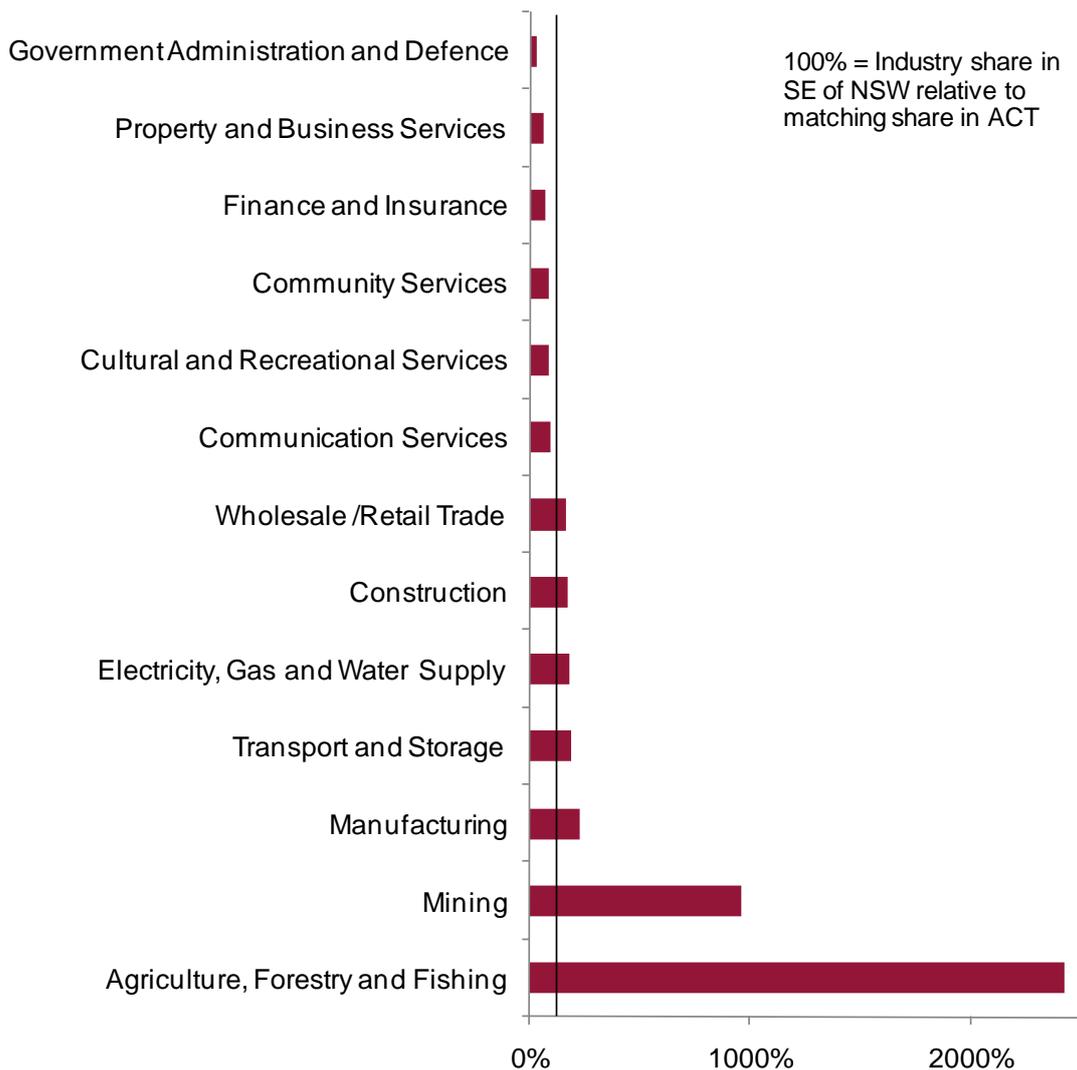
High ratios tend to suggest the ACT as a buyer of the output of the ACR, and vice versa.

That is because, although production patterns by region can be quite different, consumption patterns will tend to be more similar. For that reason, deviations in relative production patterns will tend to indicate that surpluses are being sold to other regions (in Australia and around the world), while relative shortfalls in production will tend to indicate purchases from other regions (in Australia and around the world).

These will tend to be most accurate in indicating trade flows across regions within Australia where international trade in these products is low (as is the case for many services):

- ❑ For example, there is little international trade in government services – meaning that the relative over-representation of the ACT (and under-representation of the ACR relative to the ACT) will tend to suggest that the ACR buys such services from the ACT. That is because, along with the rest of Australia, the ACR buys the centralised government services that the ACT offers as the seat of National Government and its administration.
- ❑ Similarly, the ACT is the largest economy in the region, and residents of the ACR may often turn to the ACT in their purchasing of property and business services (such as financial planning) and finance and insurance.

FIGURE 1.7: SE NSW EMPLOYMENT COMPARED TO THE ACT INDUSTRY MAKE-UP



Source: ABS 6291.0, Access Economics calculations.

The relative size of these two economies also needs to be remembered here. For example, although Figure 1.7 shows manufacturing as having a ratio above 100% – meaning manufacturing bulks slightly larger as a share of the ACR economy than it does of the ACT economy – the ACT is the bigger of the two, and clearly also offers the potential for manufacturing purchases to the ACR. The above noted the example of ACT residents buying roof trusses manufactured in Queanbeyan. On balance it is likely that the trade balance in manufacturing between the ACT and the ACR goes the other way – for example, with the ACT selling the likes of printing services to the ACR.

Relative importance of the ACR

The economic catchment of the ACT has been previously depicted as a contiguous, roughly rectangular geographical area of southern NSW, with the ACT in the centre. It ends neatly at the Victorian border to the south and stops short of Sydney in the north.

The map below shows our assessment of the relative importance of each SLA within the region, as well as the adjoining areas of the Illawarra and Sydney. The relative importance

ACT and hence of more importance. So (for example), the Eurobodalla and Queanbeyan have similar sized populations, but the Eurobodalla Shire is as close to Sydney as it is to Canberra and Sydney, making it relatively less important to Canberra than Queanbeyan.

We have divided these regions into five levels of importance. These are:

Very high importance (shown in red). This area consists of the Queanbeyan City area. Over half the workers who travel from interstate to Canberra each day to work (close to 12,000) come from this area. Moreover, this region is considered to be a relatively heavy user of the ACT's service sector (especially where the ACT has a degree of relative depth – such as in specialty retail, as well as some parts of property and business services, finance and insurance, and community services).

High importance (in yellow). This zone covers the remainder of the 'commuter belt' of small towns near the ACT border to the east and north-west. The eastern section (a component of the Palerang Shire that the ABS has traditionally included in the Canberra-Queanbeyan region) is of increasing importance with a very strong population growth rate, while the north-western section is slower growing and is far more critical to the ACT at its southern end (around Murrumbateman, Sutton and Gundaroo) than to the north towards Yass. Both supply around 3,000 workers to the ACT at present. These regions also 'trade' outputs with the ACT, though typically not to the same intensity as Queanbeyan City residents.

Moderate importance (in green). This zone consists three separate sections:

The South Coast – Bega Valley and Eurobodalla Shires and the Illawarra region. The southern sections of the Illawarra (particularly around Milton-Ulladulla) are most important here, roughly as far from Canberra as Narooma.

Goulburn (the urban portion of the Goulburn-Mulwaree Shire), the Upper Lachlan Shire and Cooma-Monaro Shire. This component includes towns just beyond the 'commuter belt' (such as Gunning to the north and those travelling along the Monaro Highway from the south). These areas are more important than the surrounding areas discussed below mainly because of their higher populations (Goulburn's population is over 21,000, the remainder of the shire just 6,000).

Sydney and the rest of Australia. These areas are of relatively high importance to Canberra both because of their overall importance to the country, but also due to the relatively large number of people working in the ACT who still reside in Sydney (and to a lesser extent Melbourne). Indeed, the 2006 census recorded over 2,500 workers living in Sydney or States other than NSW who worked in the ACT.

Trade in both inputs and outputs is less pronounced in this zone. For the ACR regions (the southern South Coast, Goulburn, the Upper Lachlan Shire and Cooma-Monaro Shire):

- ❑ the higher travel time means that fewer ACT workers live in these districts, while
- ❑ the telephone or the Internet may become relatively more attractive modes of service shopping for the residents than travel to the ACT; or
- ❑ travel to Sydney may offer more options for 'trade in outputs' than travel to the ACT.

Lesser importance (in sky blue). The remainder of the area to the east of Canberra is included in this area – being the areas of relatively low population in the Goulburn-Mulwaree and Palerang Shires. The snow fields (Snowy River Shire) are also included.

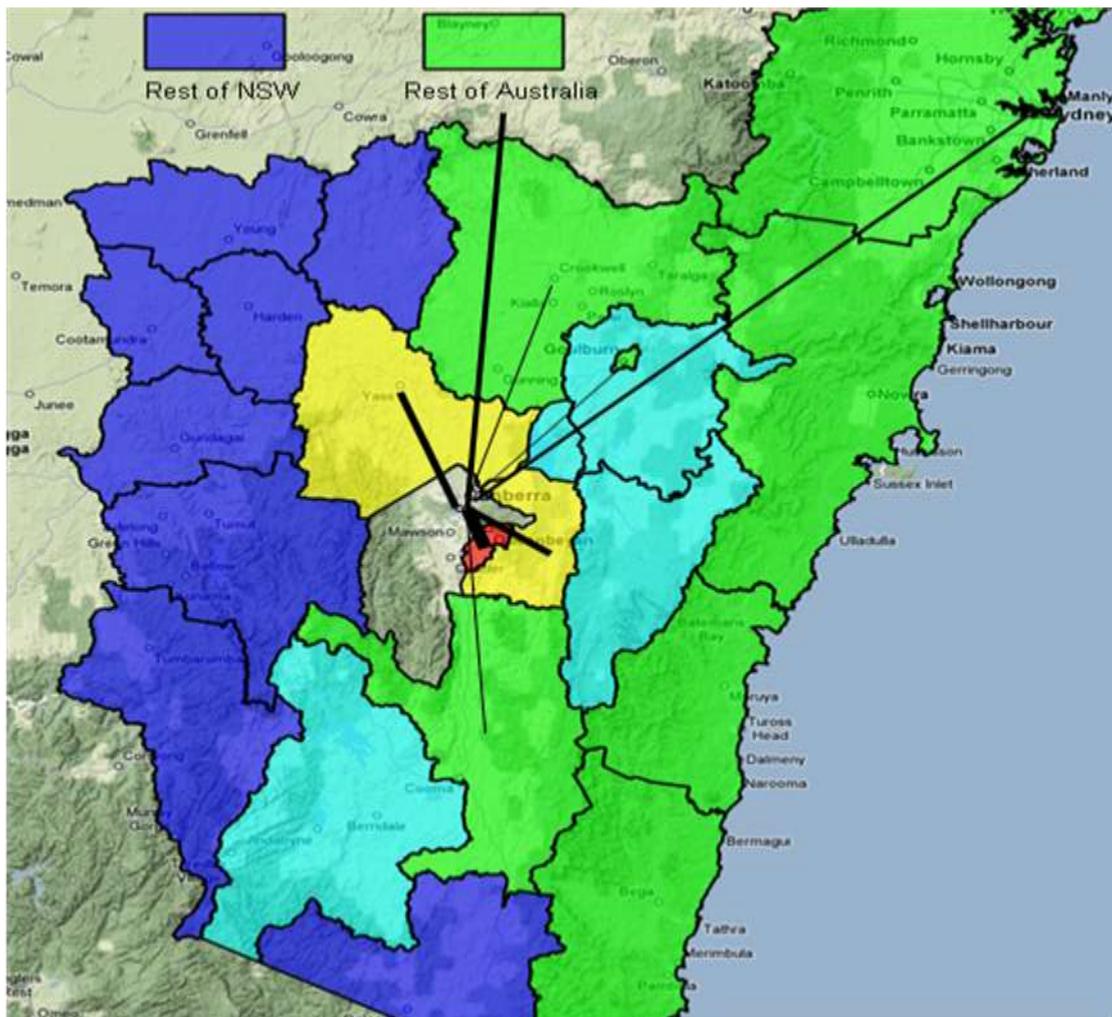
Little importance (darker blue). The final shires are to the west of the ACT (Young, Harden, Cootamundra, Gundagai and Tumbarumba) as well as Bombala to the far south. These are relatively small in population and provide very few workers to the ACT economy (a total of just 120). The 'Rest of NSW' is less linked to the ACT than the States outside of NSW – particularly in terms of the number of workers in Canberra who travel in from outside the ACT.

As the map indicates, outside the 'commuter belt' regions close to the ACT border, such as Queanbeyan, Jerrabomberra, Wamboin, Bungendore and Murrumbateman, the next most important regions for their economic interactions with the ACT are Sydney, Melbourne, the south coast of NSW, Brisbane, the rest of Queensland and Adelaide.

This is followed by the regional centres in southern NSW, such as Cooma, Yass and Goulburn and, finally, the ski-fields. Businesses in the ACT also buy from and sell to countries all around the world (indeed, the ACT trades more with some countries overseas than it trades with nearby LGAs). Due to the importance of Commonwealth public service and the seat of national government to the ACT, the Territory also has strong linkages across Australia, with frequent travel occurring between Canberra and the rest of the nation.

As such, a geographical representation of the ACT's economic linkages looks somewhat more like this (see Figure 1.9):

FIGURE 1.9: RELATIVE IMPORTANCE OF THE REST OF AUSTRALIA TO THE ACT



The thickness of the lines indicate the number of workers that the areas supply to the ACT, the most important being Queanbeyan and the other ‘commuter belt’ areas, and the next most important being Sydney and the ‘rest of the Australia’.

1.4 ACT DEMOGRAPHIC PROJECTIONS

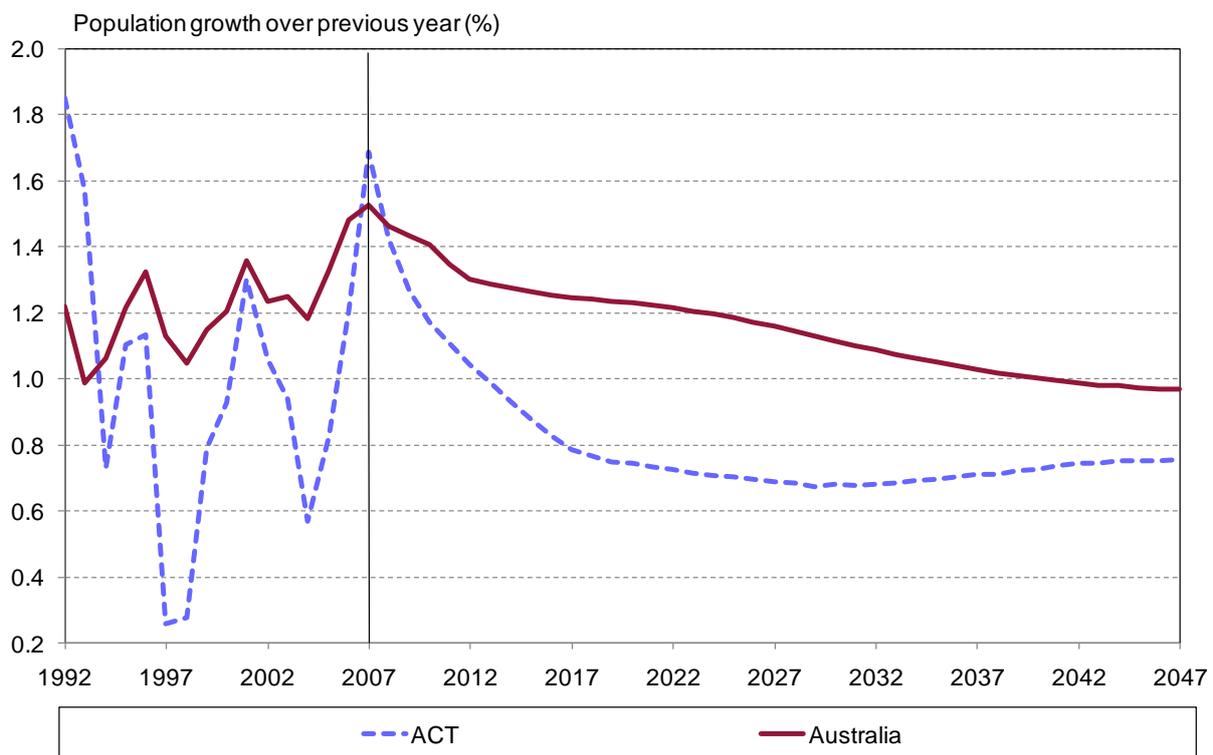
Overall population growth forecasts are shown in Figure 1.10. After an extended period of below-average growth rates since the early 1990s, the past year saw a sharp acceleration in the ACT’s population growth.

That is no surprise. As discussed later in this report, recent years saw the Federal Government spend some of the company tax windfall from the China boom on the ACT – both directly via an increase in the number of public servants, and indirectly as well, most notably via the provision of new office space for many ACT public servants.

That combination led to a pick up in growth rates in the Territory, good employment gains, and a fall in unemployment.

The recovery across the past three years saw improvements in all components of growth – natural increase (which has risen from 2,700 in 2003-04 to 2,950 in 2006-07, international migration (which has increased from 450 to 800 over that time) and interstate migration (which has moved from a net loss of 1,600 in 2003-04 to a net gain of 1,900 in 2006-07).

FIGURE 1.10: POPULATION GROWTH RATE FORECASTS



The projections outlined here anticipate a general slowing in national population growth rates, driven mainly by a relatively strong increase in deaths in the Australian population due to overall demographic ageing. This will be offset by a continuation in the rise in the number of births seen nationally due to rising number of women of childbearing age, with fertility rates remaining constant (see Figure 1.12), and a long term rise in the number of net

international migrants to Australia (after a short term decline from current high levels of migrant inflow – see Figure 1.11).

As Figure 1.11 shows, while population growth rates gradually fall nationally, actual growth is increasing in level terms after a short term downturn in migration.

FIGURE 1.11: COMPONENTS OF POPULATION GROWTH IN AUSTRALIA

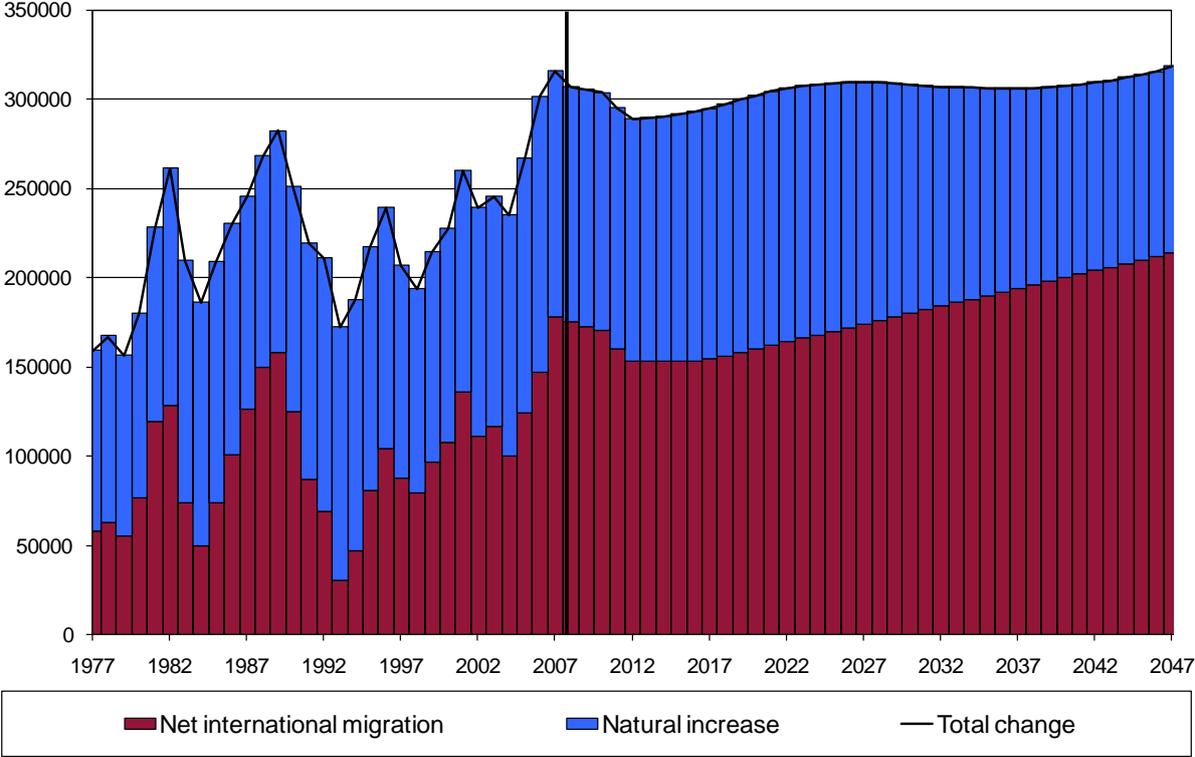


FIGURE 1.12: COMPONENTS OF NATURAL INCREASE IN AUSTRALIA

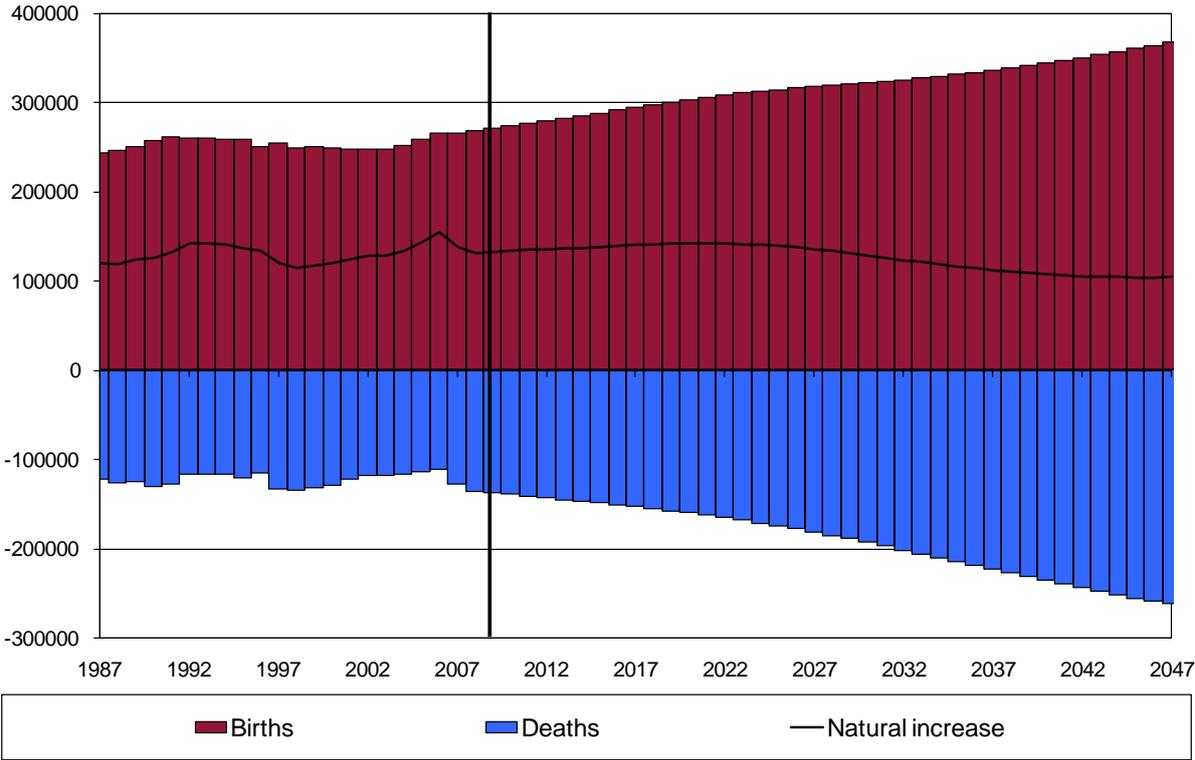


FIGURE 1.13: COMPONENTS OF POPULATION GROWTH IN THE ACT

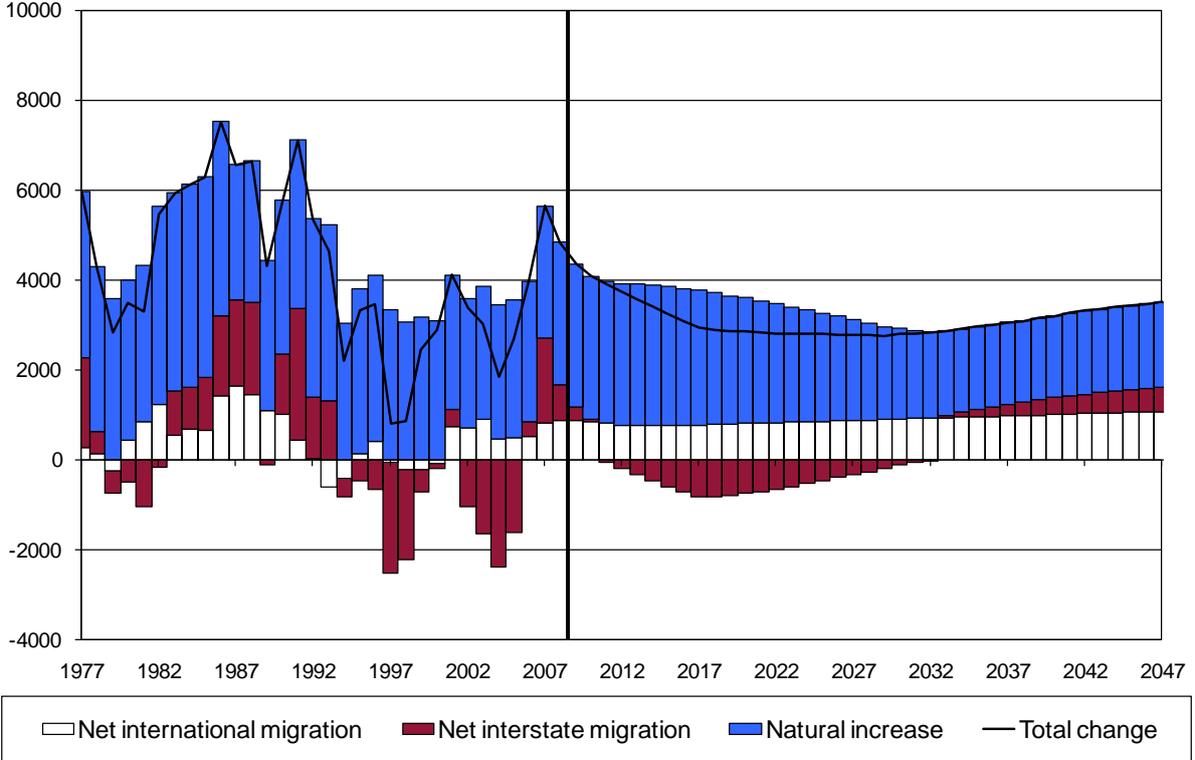
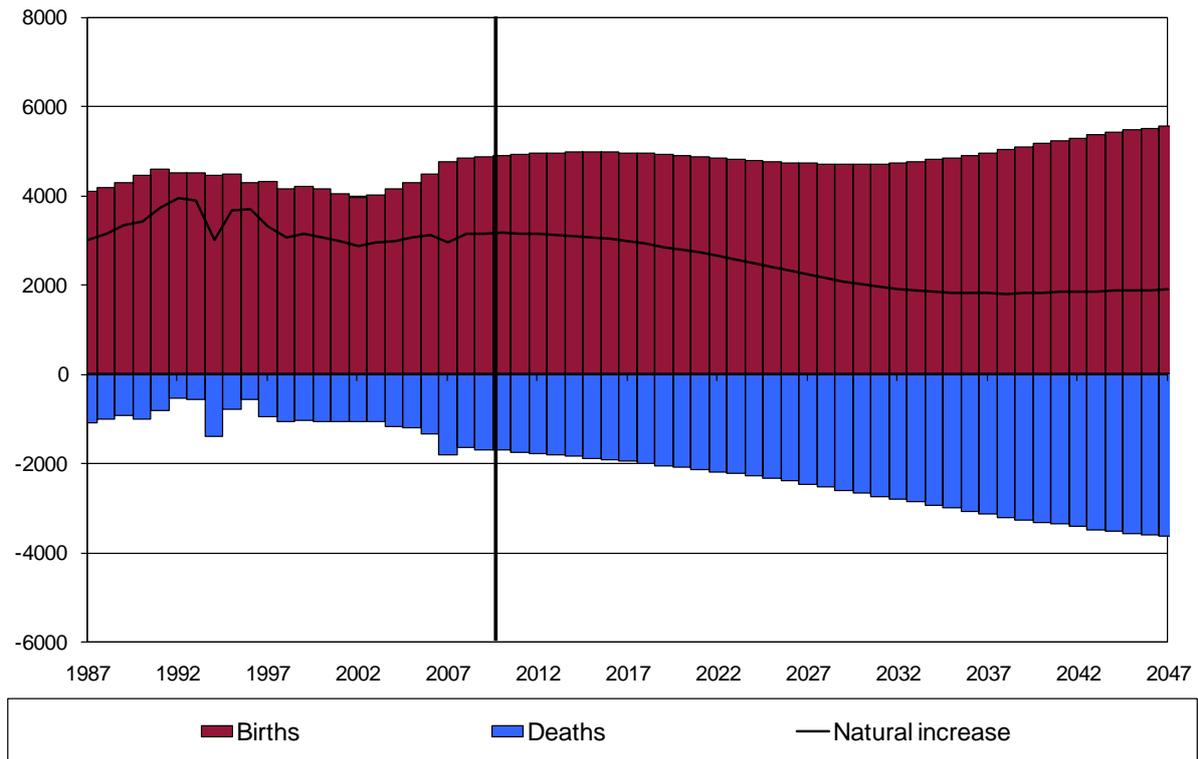


FIGURE 1.14: COMPONENTS OF NATURAL INCREASE IN THE ACT



Local population growth slows more rapidly than nationally and (as shown in Figure 1.13) takes longer to begin growing in level terms than the national equivalent. This is due to two factors:

- ❑ The national increase is boosted by international migration increases, which is a relatively small component of local population growth (the ACT accounts for just 0.5% of international migration – compared to 1.6% of total national population);
- ❑ An expectation of downward pressure on interstate migration to the Territory.

More broadly, and as the economic backdrop to those demographic projections, Access Economics is of the view that the sharp lift in Federal spending in recent years (see Figure 2.3 later) has been the prime cause of the lift in the ACT economy and its population gains. Some of the recent pace of growth in real Federal expenditures per head is likely to linger. However, some of it may dissipate if commodity prices eventually ease, reducing the relative size of the company tax take as they do so (see Figure 2.1 later). Accordingly, that may reduce employment momentum in the ACT, and hence its population momentum as well.

Even so, the strength of recent population gains in the ACT means that, compared with the most recent ABS population projections (ABS Catalogue 3222.0), the demographic projections in this report sit at the higher end (2047 population here is 466,800, ABS medium projections are 399,300 while the high case is 527,800).

TABLE 1-1: SUMMARY OF ASSUMPTIONS

Rates	AE (2007)		ABS Series A (High – 2005)		ABS Series B (Medium – 2005)	
	ACT	Australia	ACT	Australia	ACT	Australia
Fertility (TFR)	1.63	1.80	1.74	1.90	1.53	1.70
Life expectancy at birth (2047)						
Males	88.99	87.54	91.64	91.46	84.41	84.24
Females	91.01	90.58	94.99	94.14	88.46	87.67
Migration levels (average 2012-2047)						
International	900	180,200	700	140,000	550	110,000
Interstate	-130	n/a	1,000	n/a	-500	n/a
Population						
Est. June 2047 ('000s)	466.8	33,208.6	527.8	32,294.1	399.3	27,801.9
Ave. growth rate (2007-47)	1.06%	1.54%	1.53%	1.46%	0.64%	0.97%

The far higher international migration assumptions used in these projections (compared with the matching ABS projections) are a partial cause of these projections being above those of the ABS (although international migration adds more to the national than the ACT results).

An additional driver is the fertility rate assumptions (a national TFR of 1.8 is used here, compared with an ABS medium assumption of 1.7, and high assumption of 1.9).

The ABS also uses a different interstate migration methodology (using a set net movement level, rather than separately identifying inward and outward movement). The ABS medium case assumption is a net loss of 500 per year, while the high case sees the ACT gain 1,000 persons annually in the longer run. As Figure 1.13 shows, Access Economics' methodology gives a level closer to the high case assumption, particularly after the first decade of the forecast period – and even then, net movements are always slightly in the ACT's favour.

FIGURE 1.15: POPULATION PYRAMID FOR THE ACT

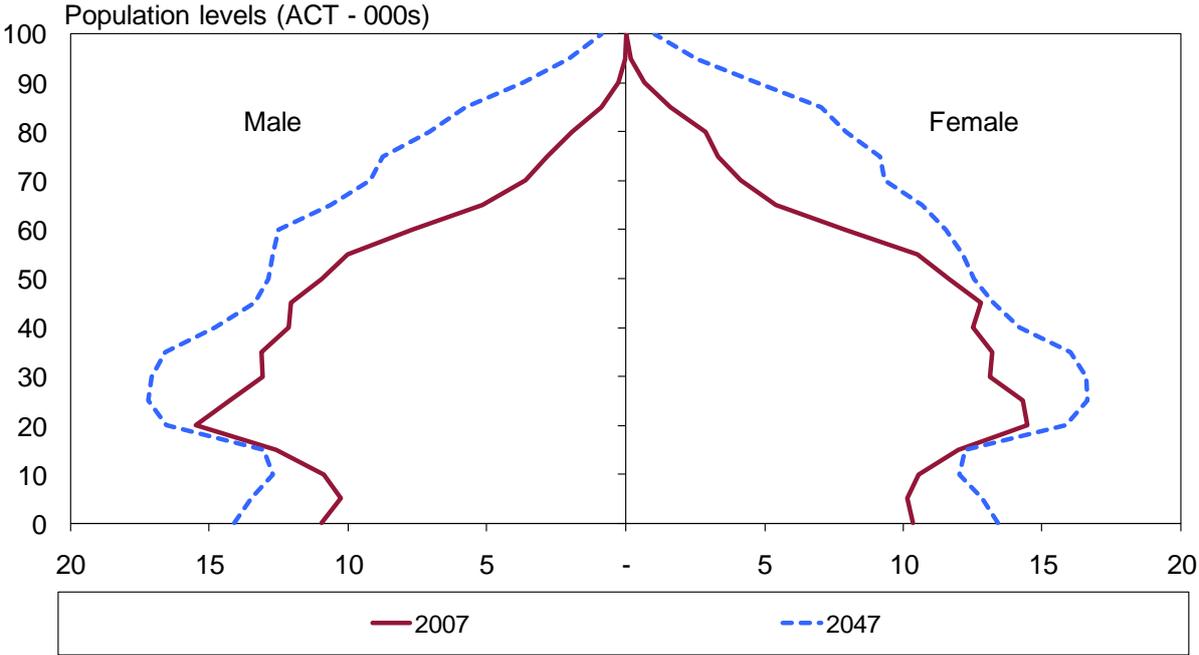


FIGURE 1.16: MEDIAN AGE PROJECTIONS (ACT AND AUSTRALIA)

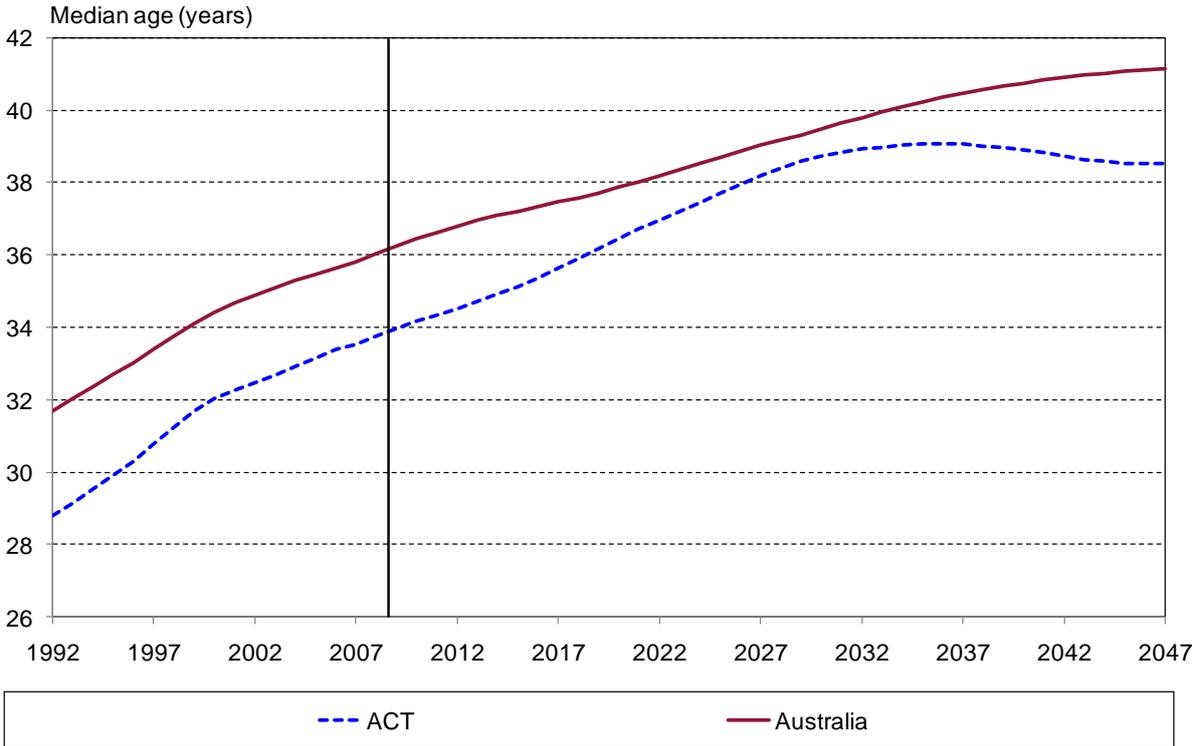
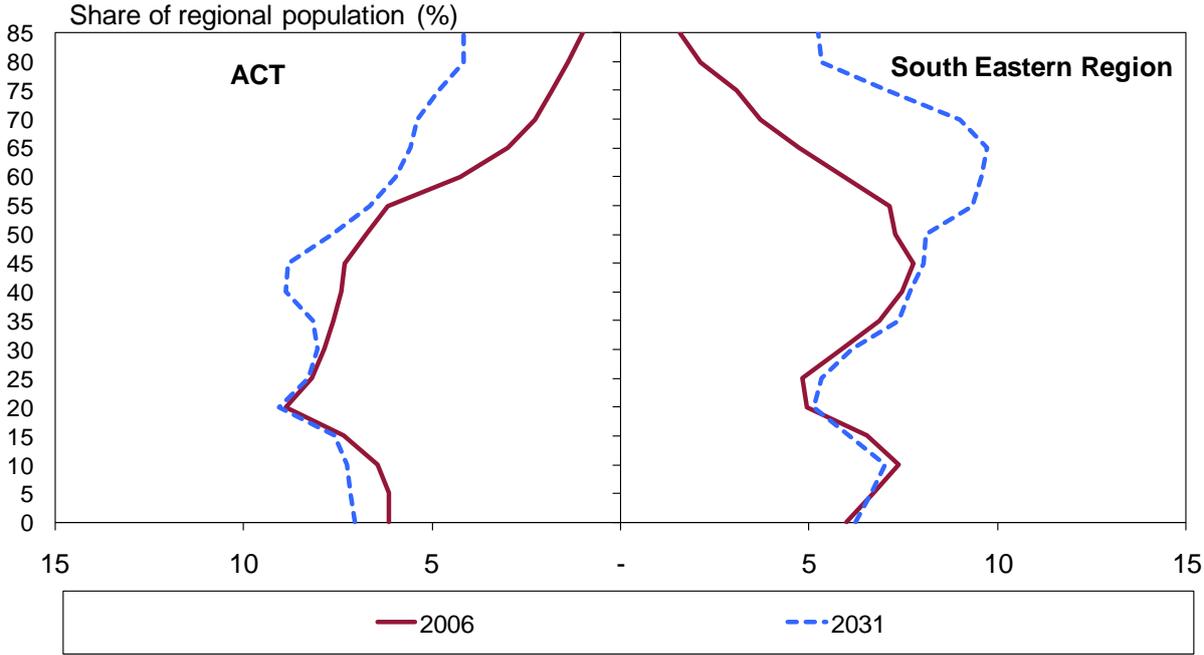


Figure 1.15 and Figure 1.16 illustrate the expected ageing of the national and local population. While generally increasing more rapidly in the early years of the projection, ACT median ages stabilise slightly earlier due to the ongoing inflow of relatively younger persons due to interstate migration (and a relatively high impact from outflow of retirees).

FIGURE 1.17: POPULATION PYRAMID FOR THE ACT AND ITS SURROUNDING REGION

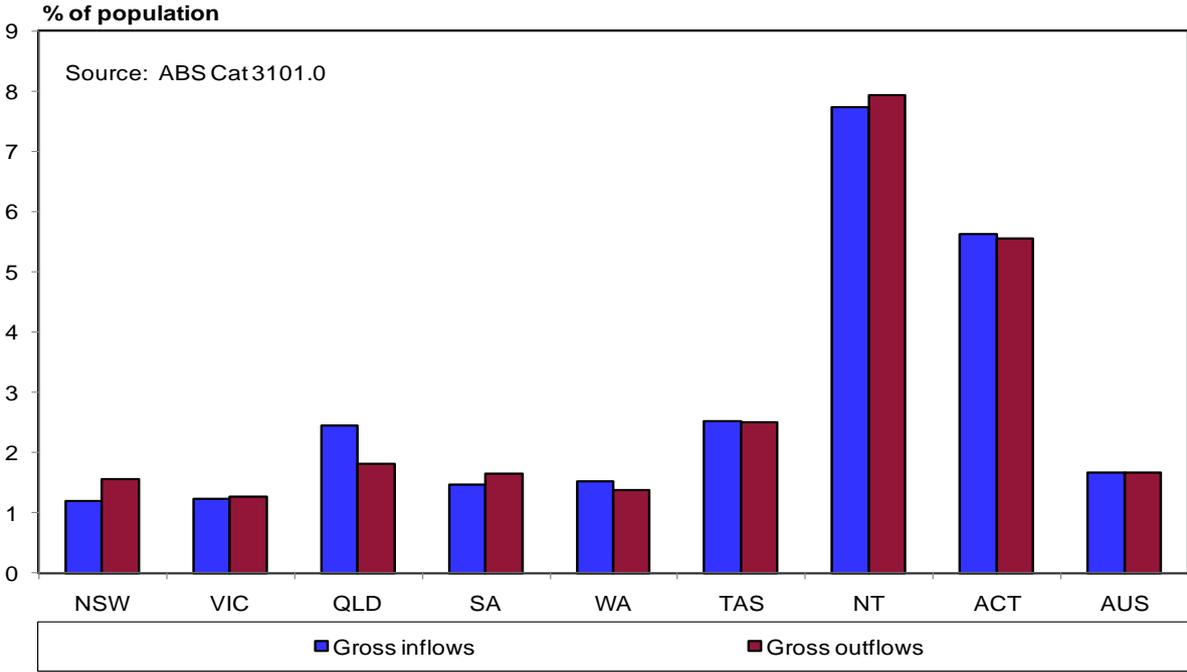


This impact of retirements on age structure in ACT and the surrounding region is also evident in Figure 1.17. This figure shows both the increase in total population across time (the “shares” in both 2006 and 2031 are relative to total 2006 population in the region) as well as the greater increase in population aged over 60 in the surrounding South Eastern Region.

1.5 THE ACT’S POPULATION LINKAGES

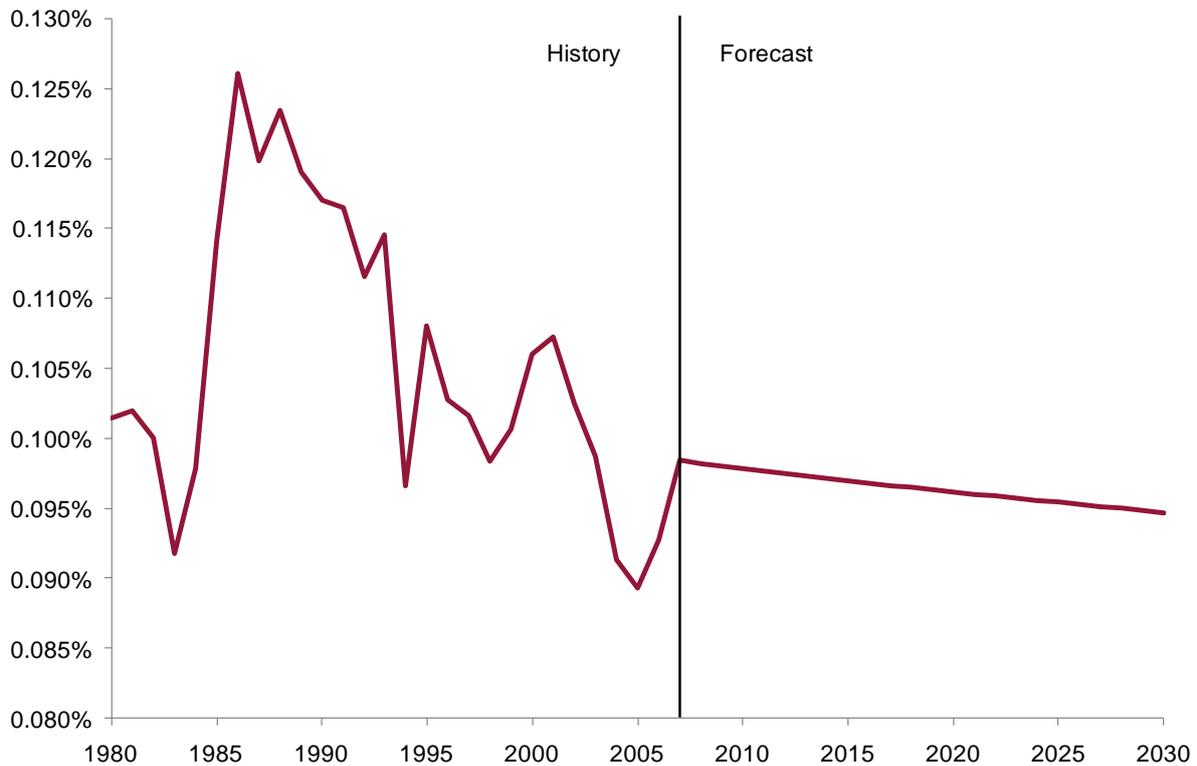
Canberra has a highly mobile population. As Figure 1.18 shows, the ACT and the Northern Territory see much higher rates of movement than the national average.

FIGURE 1.18: INTERSTATE MOVEMENT RATES (2006)



Rates and levels of interstate migration in Australia have gradually trended upwards until the past few years (with a slight decline recorded since 2002). Recent trends have started to rebound. Figure 1.19 shows the proportion of the population in the rest of Australia that has been moving to the ACT in history and in our forecasts (the axis shows that, each year, around 1 in every 1,000 non-ACT residents in Australia moves to the ACT). This rate has trended down over time (and our forecasts allow for a general continuation in that trend after an initial rebound).

FIGURE 1.19: SHARE OF THE POPULATION OUTSIDE THE ACT MOVING TO THE ACT

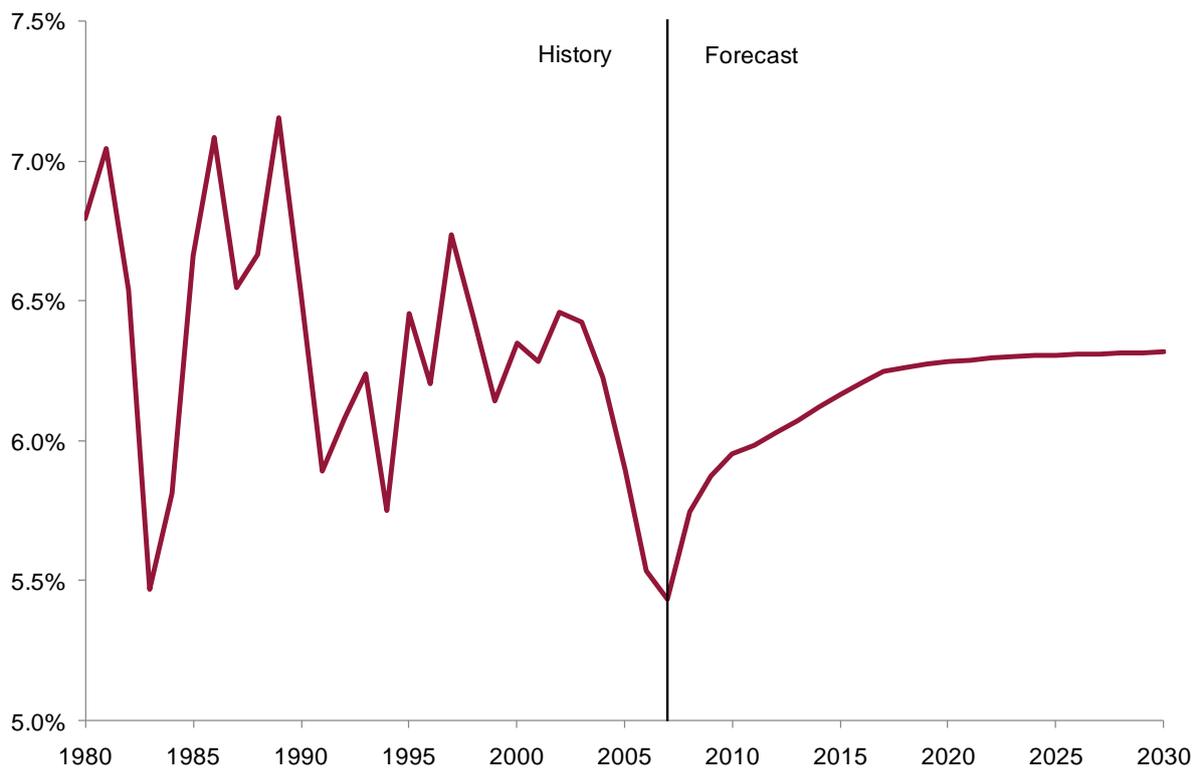


Similarly, Figure 1.20 shows the proportion of the local population that moves interstate each year. The ACT is the second-most mobile population nationally in this measure (behind the Northern Territory), with roughly three times the rate of outflow to the rest of the country.⁴

In line with national trends, the forecasts also foresee a slightly increase in the rate of outflow in the near term, but relative stability in the later years (around 6%).

⁴ This is, in many respects, a less-than-perfect comparison. The rate of movement depends crucially on where the 'line' or boundary is drawn. So, for example, a move from Canberra to Queanbeyan counts as an interstate movement, but a move from Perth to Broome, a much larger move in most respects, does not.

FIGURE 1.20: SHARE OF THE POPULATION INSIDE THE ACT MOVING INTERSTATE

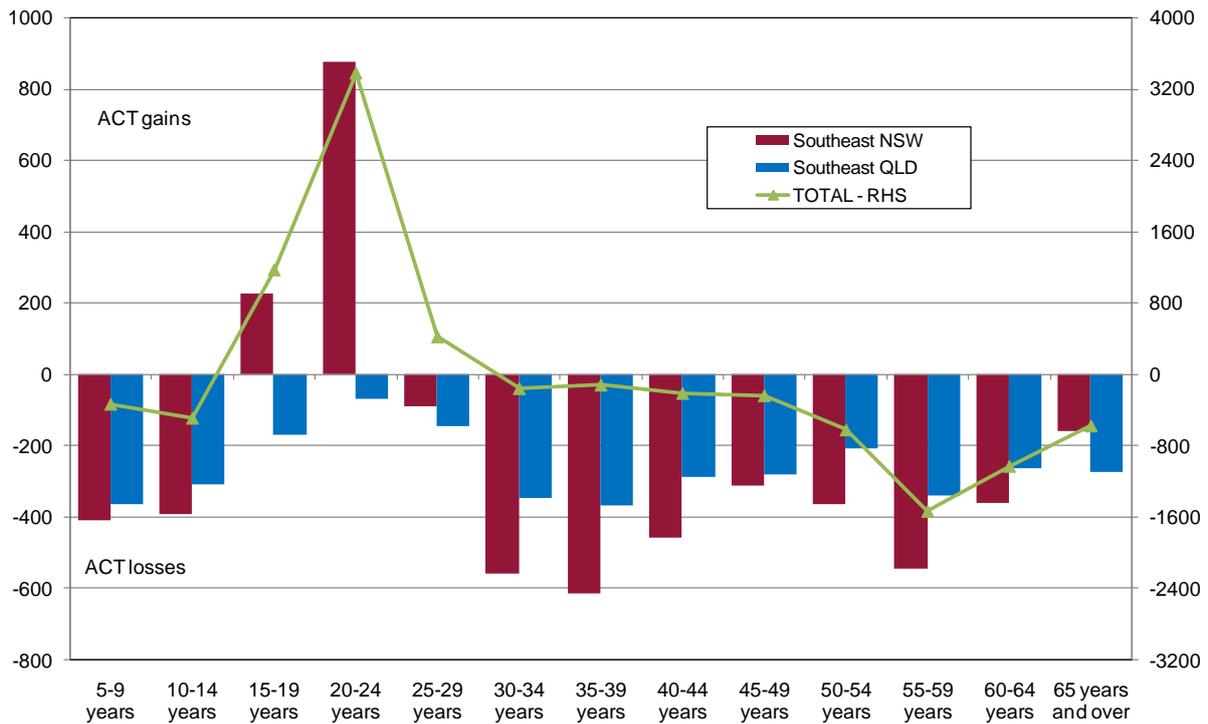


More detailed regional movements are available from the census, which tracks movements across the last year and last five years (that is, from mid-2005 to mid-2006 and mid-2001 to mid-2006).

Key differences can be found in both the levels of net movement and the age-structure of that movement across different regions of Australia. By way of comparison, Figure 1.21 compares net movement (by age) across the past five years between the ACT and the South Eastern region of NSW and between the ACT and the south-eastern section of Queensland⁵ (South Eastern Queensland).

⁵ This data covers combinations of Statistical Divisions (SDs). The South Eastern SD (south-eastern NSW) is consistent with the broad South Eastern NSW region, while South Eastern Queensland has been defined as the combination of the Brisbane Major Statistical Division, the Gold Coast SD and the Sunshine Coast SD.

FIGURE 1.21: NET POPULATION MOVEMENTS TO THE ACT (2001-06)



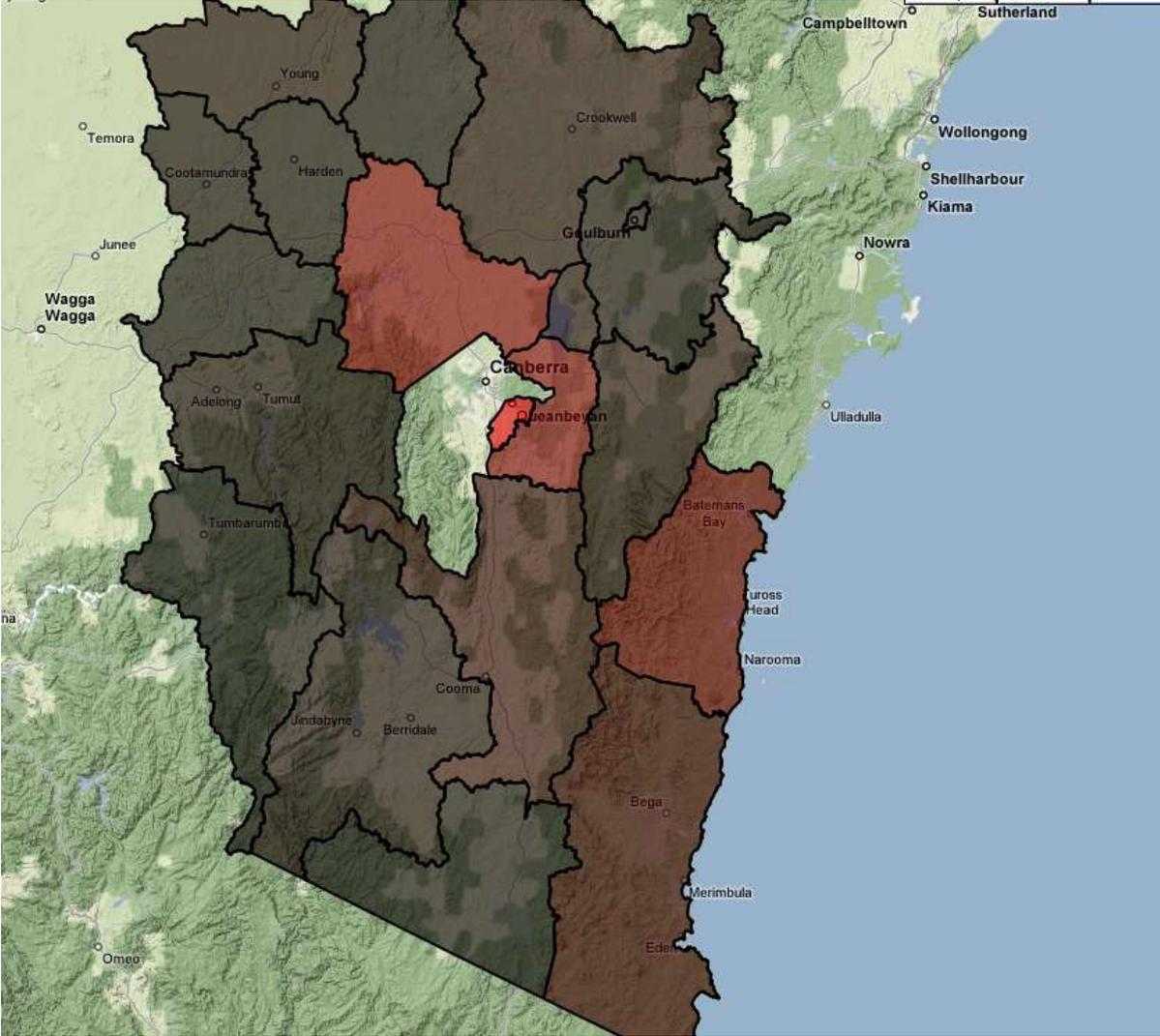
Across the past five years, the ACT has lost a similar level of population to both regions (3,200 to South East NSW and 3,400 to South East Queensland), although the absolute flows to and from the NSW region are roughly 2,500 more in each case.

However, the age-structure of that flow in net terms is very different. The ACT has lost population from all age groups to Southeast Queensland (around 300 people from each 5-five age cohort), but has gained significantly from Southeast NSW in terms of those aged 15-24 (and, probably, particular those aged 18-24) – adding around 160 people each year. That gain (relatively to the losses seen to Southeast Queensland) has been offset by larger losses in two groups, those aged 30-45 and those aged 50-59. The first may be affected by movements of established families to Jerrabomberra and other relatively close areas, while the second may reflect retirement of the population to coastal areas.

The final line in the chart illustrates how the particular trends for these two regions can both mirror overall trends, with the ACT typically gaining young adults, both to tertiary education and public service graduates (a trend seen in the movement from Southeast NSW), but losing population particularly aged 50 and over.

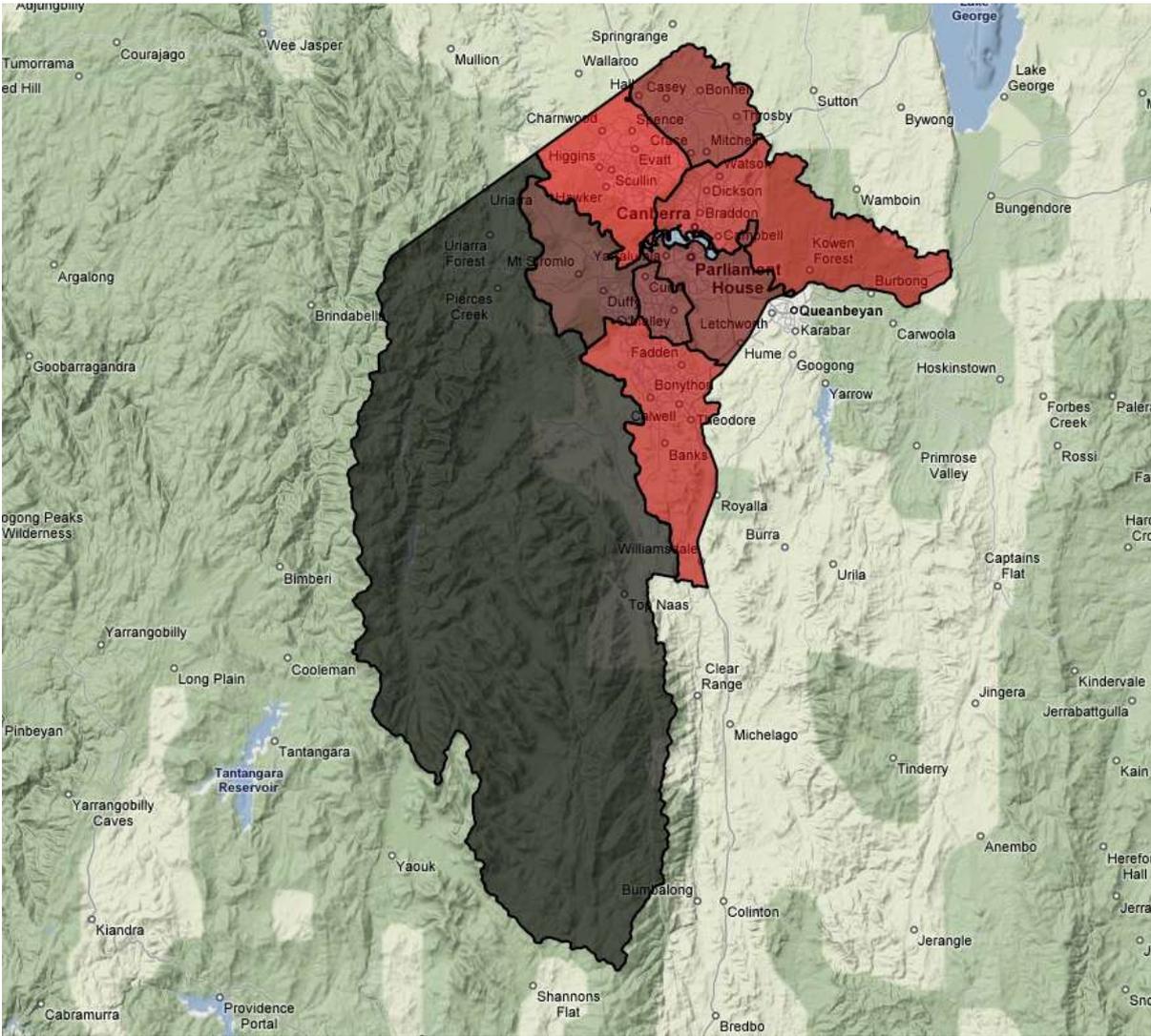
Some more detailed figures of movement from the ACT outward to the local region can be seen in Figure 1.22 which shows the number of people in 2006 who lived in the ACT in 2001. The redder the colour, the more people – ranging from 3,450 in Queanbeyan to just 31 in Bombala. Beyond this region, the key destinations for migrants from the ACT (on an SLA basis) were Randwick and North Sydney, Wagga Wagga and Shoalhaven – Part B (which is the remainder of the South Coast south of Kiama (excluding Nowra itself).

FIGURE 1.22: POPULATION OUTFLOW FROM THE ACT (2001-06)



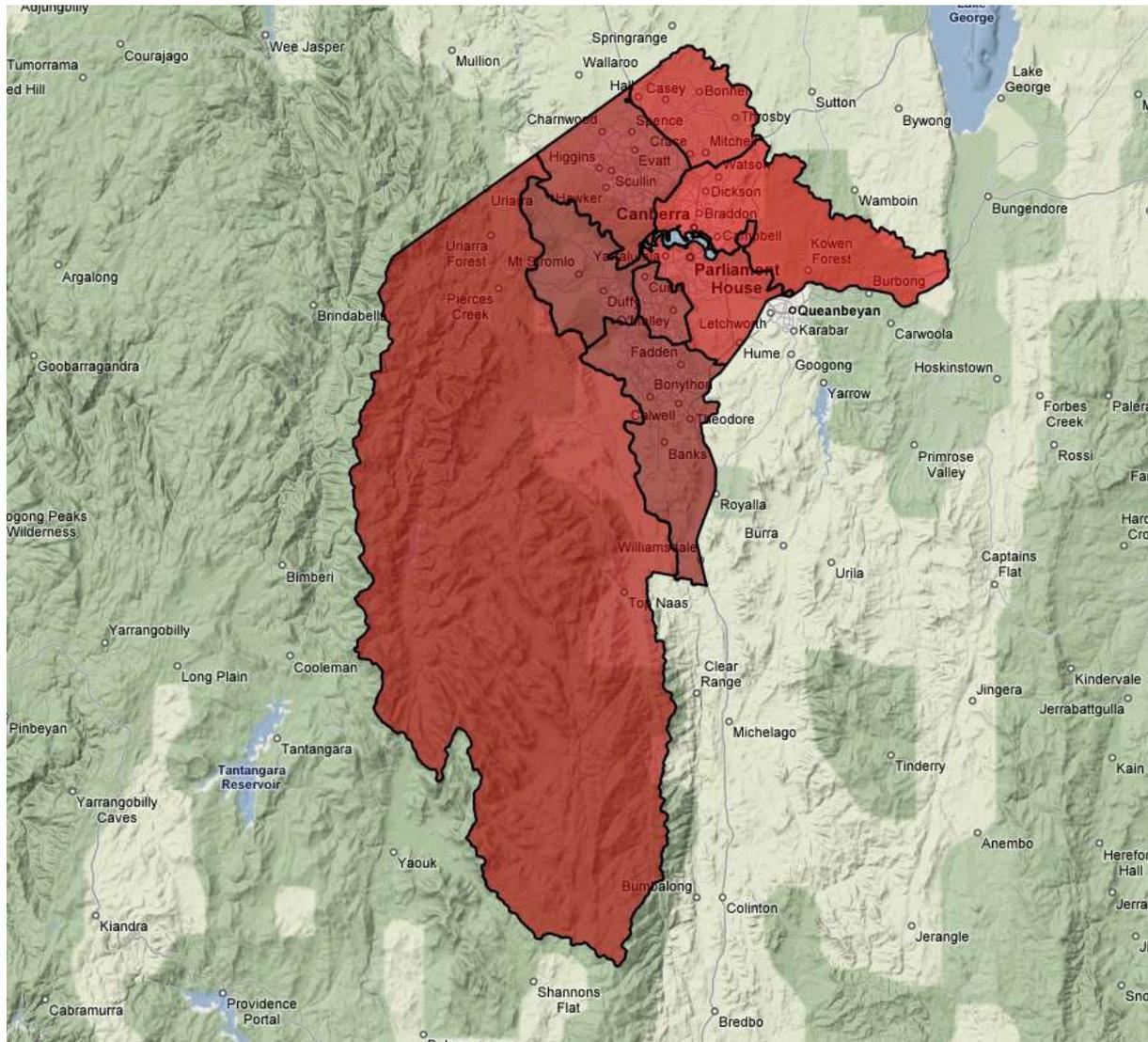
A similar result for population flows from NSW (in total) to various regions of the ACT is shown in Figure 1.23.

FIGURE 1.23: ABSOLUTE POPULATION FLOWS FROM NSW TO THE ACT (2001-06)



The relative rate of inflow compared to the total population is a better measure. It is shown in Figure 1.24. The comparison shows that inflows (in relative terms) are far more even (ranging from just under 6% in Weston Creek to 12% in North Canberra). However, the greatest concentration of former NSW residents in the ACT is in the inner areas of North and South Canberra.

FIGURE 1.24: RELATIVE INFLOWS FROM NSW (2001-06)



1.6 RELATIVE SIZE

The ACR's economic scale is rather less than that of the ACT, despite its size.

The simplest illustration of that may be seen in Figure 1.25, which shows employment in the ACR as a ratio to that in the ACT.

Figure 1.25 shows that ACR employment has averaged about 53% of ACT employment since the start of the 1990s, and remains close to that ratio today.

This measure considerably understates the relative strength of the ACT, as it ignores the relatively higher incomes here. However, this measure is still useful in that it is easier to get a longer run of history on an employment basis.

The employment ratio has displayed volatility over time, most notably in response to the decline in the forestry sector on the south coast.

(The measure is also a reminder of the inherent volatility in small area employment data – the surge in the ratio to mid-2003 arises from a rapid lift in estimated ACR employment in the construction sector that then dissipated again.)

FIGURE 1.25: ACR EMPLOYMENT AS A RATIO TO ACT EMPLOYMENT



The figure also contains forecasts. Access Economics projects that the ACR’s ratio to ACT employment will stay in the 53% range seen over time (and today) through to about 2016, but that it may ease somewhat thereafter.

There are a couple of points arising here. First, the relative constancy of that ratio through to 2016 is not because both regions don’t feel the effects of baby boomer retirement until 2016. Rather, both regions do feel it, but at relatively constant rates for several years, in part because the demographics of the ACT itself mean that the Territory is relatively over-represented among those approaching retirement age over the next decade.

It is the period beyond 2016 that is perhaps of interest. Not surprisingly, it suggests that the demographics of the ACR will work against it at that time – both because of the age structure of the ACR, and because of the ACR’s relative attractiveness to retirees (including a number of retirees from Canberra).

The slow fall-off in the employment relativity between the ACR and the ACT has implications for the pace of growth of private incomes.

For example, think of two people – one about to retire, the other still working. After retirement, the retiree is no longer earning a wage, so his or her private (after-tax) income shrinks, while some parts of their private spending (such as the unsubsidised part of health spending) will also increase as the retiree ages.

Although the tax burden of the retiree will go down and his or her subsidies received from Federal and State/Territory Governments would rise, the retiree’s overall income will shrink sharply due to the loss of wage income and the rising costs to his or her private pockets of the unsubsidised portion of health care costs.

The remaining worker is worse off to the extent taxes are raised to cover the shortfall on the Federal and State/ Territory Government Budgets, but the retiree could be worse off still if government spending is cut (as retirees are relative beneficiaries of government spending).

Now think of two regions, one ageing faster than the other. The same broad conclusions apply – that the faster ageing region will be worse off, and that could be worse off still if the looming pressures from ageing and relative health price increases on Federal and State/Territory Budgets is resolved through spending cuts rather than tax increases.

That is, of course, a highly simplistic ‘tale of two regions’. Yet it provides a stylised picture of the ACT versus the ACR in the years to come. The ACR is older and ageing faster than the ACT.

Not merely will population and participation grow less fast in the ACR than in the ACT, but so too will private and total incomes per head.

That therefore suggests coming decades will see a modest but non-negligible easing in the importance of the ACR as a regional economy, with the latter shrinking by perhaps 3½ to 4% by 2030 compared with its current standing relative to the ACT economy.

Moreover, the above is based solely on employment. As noted, this overstates the ACR’s relative importance given the high incomes of the ACT. In turn, that raises an additional point. Although it has not been true in the past few years, white collar wages tend to grow faster than blue collar wages over time.

That increase in the relative return to skill has been evident in Australia and throughout most of the OECD for several decades. If that trend were to continue into the future, it would suggest that the relative decline of the ACR’s economic influence over time may become more pronounced than suggested by the above discussion.

Working the other way, the relative weakness in income prospects for the ACR ignores the wealth of its retirees, which means that the region’s relative spending power (and hence its potential as a purchaser of the goods and services that the ACR sells) will not decline as much as its incomes.

JOURNEY TO WORK

Based on 2006 Census data 22,530 people travel into the ACT, see Table 1-2. The strongest link between the capital and the region is Queanbeyan with about 11,700 crossing the border; this accounts for about 50 % of those do. The remaining ACR region contributes about a third of those to journey into the ACT for work. There is also a significant level of persons who travel from Sydney – about 1,150 – into the ACT.

TABLE 1-2: JOURNEY TO WORK INTO THE ACT, 2006

	North Canberra / Belconnen	Woden Valley / Western Creek	South Canberra / Tuggeranong	Gungahlin-Hall	Australian Capital Territory - Bal*	Total ACT
ACR	8120	2192	7827	687	405	19231
Queanbeyan (C)	4450	1468	5372	222	200	11712
Palerang (A) - Pt A	1342	306	1144	106	53	2951
Yass Valley (A)	1622	187	694	279	60	2842
Balance of ACR	706	231	617	80	92	1726
Illawarra	114	15	76	4	27	236
Sydney	525	97	308	27	185	1142
Rest of NSW	187	39	111	7	62	406
Rest of Australia	729	115	422	23	226	1515
Total usual residents living outside the ACT and working inside the ACT	9675	2458	8744	748	905	22530

Source: 2006 Census of Population and Housing, Customised Data Request. * includes Remainder of ACT, Canberra and ACT Undefined and No Fixed Address

It should be noted at this point that there is a higher level of persons coming into the ACT than leaving the ACT for work. With 22,530 making the journey into and 12,760 making the journey out of the ACT there is a differential of 9,770 persons.

Of those travelling out of the ACT for work approximately 3,600 journey into Queanbeyan, see Table 1-3 and about 650 travel to the rest of the ACR. In total the ACR accounts for about a third of all work destinations for the ACT. The remaining two thirds journey to the rest of NSW and Australia; compared to 10 % making the journey into the ACT.

TABLE 1-3: JOURNEY TO WORK OUT OF THE ACT, 2006

Place of work	Woden Valley		South	Gungahlin- Hall	Australian Capital Territory - Bal*	Total ACT
	North Canberra / Belconnen	/ Western Creek	Canberra / Tuggeranong			
ACR	1174	619	2083	360	12	4248
Queanbeyan (C)	874	537	1910	265	9	3595
Balance of ACR	300	82	173	95	3	653
Rest of NSW	402	151	380	134	17	1084
Not Stated / Rest of Australia	2991	1112	2563	728	34	7428
Total ACT usual residents working outside the ACT	4567	1882	5026	1222	63	12760

Source: 2006 Census of Population and Housing, Customised Data Request. * includes No Usual Address

The first point from this is there is a higher proportion and level of persons from Queanbeyan who travel into the ACT than those from the ACT travelling to Queanbeyan. This is a reflection of the larger economic base in the ACT and the higher employment prospects for those who live in Queanbeyan and Jerrabomberra; this is the same again for the ACR region.

1.7 ACT CATCHMENT AND LINKAGES

The following tables provide a snapshot of the economic outcomes of the ACT and the ACR.

These include income, labour market outcomes, participations rates and population by age.

Table 1-4 provides this summary information for Australia; while Table 1-5 does the same for the ACT; and Table 1-6 does the same for the 18 sub-regions of the ACR (more information on each sub-region within the ACR can be found in Appendix A).

TABLE 1-4: AUSTRALIA

	Weekly Income (\$ per week)			Median Individual Income	Median Household Income
	ACT	Australia			
			722	1,509	
			466	1,027	
Industry of Employment					
	Australia	ACT			
Primary Industry	387,818	579			
Manufacturing etc.	1,041,468	5,928			
Construction	709,848	9,612			
Trade	1,429,559	17,813			
Government	608,595	53,082			
Professional Serv.	2,542,590	52,502			
Services	2,384,306	36,765			
Total	9,104,184	176,281			
Labour Force 2006 Census			Unemployment Rate		
	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
ACT	176286	6204	182,490	3.4	2.3
Australia	9104185	503802	9,607,987	5.2	4.1
Employment to Population Ratios					
	Employed to population Ratio		Participation rate (Labour force as a proportion of Working Age Population (15 - 64))		
ACR	40.8%		67.0%		
ACT	52.7%		76.1%		
Australia	44.0%		68.8%		
Population '000					
	1996	2006	Growth 1996-2006	2016	2026
0-14	3,911.3	4,050.1	3.5	4,283.0	4,697.7
15-64	12,196.3	13,964.2	14.5	15,641.1	16,882.2
65+	2,203.1	2,687.1	22.0	3,757.3	5,139.3
Total	18,310.7	20,701.5	13.1	23,681.4	26,719.2

Source: ABS 2006 Census, DEWR Small Area Labour Markets (December 2007). Note these calculations are compiled using different methodologies to the standard labour force estimates to account for the limited data in the ACR.

In general terms, **ACT residents enjoy higher incomes** compared with the wider Australian population and the surrounding ACR. Median individual income for the ACT stands at \$722 per week, compared to \$466 for Australia and \$448 ACR. It is a similar story for median house hold income with the ACT reporting \$1509 per week with Australia reporting \$1,027 per week and \$872 per week.

The ACT also stands out with **higher participation levels** than the wider Australian community; with a participation rate of 76 %. Australia has a participation rate of about 69 %. This outcome may be driven by higher skills in the ACT and flexible working arrangements of the Federal Government; allowing mothers to remain in employment. Similarly the ACT has a higher employed person to total population ratio of 52.7 %; with 44 % for Australia. One reason for this may be the highly transient population of the ACT, with young professionals coming to Canberra. Canberra also has a younger population than in the Australia and more importantly in the ACR.

TABLE 1-5: CANBERRA

	Weekly Income (\$ per week)			Median Individual Income	Median Household Income
	ACT	Australia	ACR		
				722	1,509
				466	1,027
Industry of Employment					
	ACT	Australia			
Primary Industry	579	387,818			
Manufacturing etc.	5,928	1,041,468			
Construction	9,612	709,848			
Trade	17,813	1,429,559			
Government	53,082	608,595			
Professional Serv.	52,502	2,542,590			
Services	36,765	2,384,306			
Total	176,281	9,104,184			
Labour Force 2006 Census			Unemployment Rate		
	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1
Population '000					
	1996	2006	Growth 1996-2006	2016	2026
0-14	67.8	62.6	-7.7	69.3	72.5
15-64	218.1	239.9	10.0	253.1	257.5
65+	22.4	31.8	41.9	51.5	72.3
Total	308.3	334.2	8.4	374.0	402.3

Source: ABS 2006 Census, DEWR Small Area Labour Markets (December 2007)

By comparison household incomes in the ACR are slightly more than half of that in the ACT (see Table 1-6). The unemployment rate is significantly higher, while participation rates are

somewhat lower. Importantly the ACR age cohorts imply that ageing is somewhat more of an issue within the ACR than is the case in Canberra. Of course this implies that the ACR service population (those in the ACR accessing ACT services) will increase especially for public hospital separations.

These divergences between the ACR and the ACT have important policy implications and need to be incorporated into ACT planning and remuneration (from place of residence) estimates and negotiations into the future with NSW and the Commonwealth Grants Commission. The following section 1.8 presents estimates of the ACR service population by major service use.

TABLE 1-6: THE AUSTRALIAN CAPITAL REGION



	Median	
	Individual Income	Household Income
Weekly Income (\$ per week)		
ACR	448	872
ACT	722	1,509
Australia	466	1,027
Industry of Employment		
	ACR	ACT
Primary Industry	9,104	579
Manufacturing etc.	8,489	5,928
Construction	8,018	9,612
Trade	14,147	17,813
Government	11,452	53,082
Professional Serv.	23,426	52,502
Services	23,651	36,765
Total	98,287	176,281

	Labour Force 2006 Census			Unemployment Rate	
	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
ACR	98295	5485	103780	5.3	N/A
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

	Population '000				
	1996	2006	Growth 1996-2006	2016	2026
0-14	46.6	47.1	1.1	43.4	44.2
15-64	130.6	150.2	15.0	160.4	162.6
65+	28.5	36.2	27.1	52.3	73.0
Total	205.7	233.6	13.5	256.1	279.8

Source: ABS 2006 Census, DEWR Small Area Labour Markets (December 2007)

1.8 SERVICE POPULATION

It has long been recognised that the ACT acts as a service centre for the surrounding region in this case defined as the ACR. This makes sense and allows for a more efficient use of resources within Australia. To some extent many regions face similar dilemmas when the cost of providing services to a given population differs from the revenue raising base of the municipality. However the ACT is disadvantaged by this process more so than most regions.

As the Commonwealth Grants Commission rightly points out:

“The cross border flow of services is in both directions — some New South Wales residents use ACT services and some ACT residents use New South Wales services. If the incoming and outgoing flow of services were exactly the same, the net effect would be zero and neither State would incur additional service delivery costs.

However, the flow of ACT services to New South Wales residents far exceeds the flow of New South Wales services to ACT residents and the ACT incurs additional service delivery costs for which it may not be reimbursed by New South Wales.[emphasis added] In making a cross border assessment, it is the net cross border flow of services that is relevant.”

Table 1-7 provides an estimate of the service population for the ACR, i.e. it presents estimates of the actual service usage by people not residing in the ACT. It covers key areas and usage rates actually documented by existing data for:

- ❑ Education – based on students enrolled in the ACT education system.
- ❑ Health – based on public hospital separations performed in the ACT.
- ❑ Health service population – presents an estimate of the population from which public hospital separations are drawn based on separations per ‘000 people.
 - This figure estimates the population that ACT services users are drawn from.
- ❑ Law and order – based on data for the number of defendants taking up time in the ACT magistrates court.
- ❑ Traffic infringements – based on traffic infringement notices issued in the ACT.
- ❑ Road usage – based on the number of cross boarder vehicle movements entering, using the ACT road network, and leaving.
- ❑ Employment – an estimate from census data of the number of people who work inside the ACT.

TABLE 1-7: SERVICE POPULATION ESTIMATES

ACR service population estimates - excl. ACT	1996	2006	2016	2026
ACR population	205,719	233,561	256,061	279,769
Education - No. students in ACT	4,135	4,494	4,121	4,054
Health - No. public hospital separations in ACT	14,282	16,215	17,777	19,423
Health service population - No. people	68,543	77,820	85,317	93,216
Law and order - No. defendants ACT magistrates court	2,605	2,958	3,243	3,543
Traffic infringements - No. people	4,031	4,576	5,017	5,481
Road usage - Cross border vehicle movements per day	109,527	124,350	136,329	148,952
Employment - No. people working inside the ACT (census)	16,939	19,231	21,084	23,036
ACT service population estimates - only ACT	1996	2006	2016	2026
ACT population	308,251	334,225	373,991	402,264
Education - No. students in ACT	59,115	55,648	55,294	61,157
Health - No. public hospital separations in ACT	51,575	55,921	62,574	67,305
Health service population - No. people	308,251	334,225	373,991	402,264
Law and order - No. defendants ACT magistrates court	16,633	18,035	20,181	21,706
Traffic infringements - No. people	38,658	41,915	46,902	50,448
Road usage - Total vehicle movements per day	n.a.	n.a.	n.a.	n.a.
Employment - No. people working inside the ACT (census)	162,586	176,286	197,260	212,173
Combined service population estimates - ACR + ACT	1996	2006	2016	2026
Combined ACT and ACR population	513,970	567,786	630,052	682,033
Education - No. students in ACT	63,250	60,142	59,415	65,211
Health - No. public hospital separations in ACT	65,857	72,136	80,352	86,728
Health service population - No. people	376,794	412,045	459,308	495,480
Law and order - No. defendants ACT magistrates court	19,239	20,993	23,424	25,250
Traffic infringements - No. people	42,688	46,491	51,919	55,929
Road usage - Total vehicle movements per day	n.a.	n.a.	n.a.	n.a.
Employment - No. people working inside the ACT (census)	179,525	195,517	218,344	235,209

Source: ACT Government, Australian Institute of Health and Welfare, ACT Treasury submission to Commonwealth Grants Commission review 2004, ABS Special data request, Access Economics.

Note: This table is based on the average service usage grossed up to estimate the service population from the relevant region. While a useful estimation technique, actual policy costing or projection would require that this methodology be applied to a more detailed data set to allow for specific demographic cohort effects and service delivery cost estimates per service unit provided (based on service complexity).

These figures provide a coherent framework allowing us to forecast the general service population of ACT – inside and outside the capital's boarder. In effect, these numbers represent the relevant population who are likely to use ACT services.

The broad analysis of the differences between the ACT population and the ACR as outlined in Section 1 above, indicates that the costs of service provision to non-ACT residents is going to see an overall increase over the projection period.

- In particular, as the population ages at a faster rate in the ACR, public hospital separations will increase. Importantly ACR separations are often more expensive than the average separation for the ACT population as these are more chronic - age related - conditions.
 - The ACT averages 6.0 people per public hospital separation (as a share of the relevant population), while the ACR region has an average of 4.8 people per public hospital separation performed in the ACT (again as a share of the relevant service population).
 - This translates to 0.17 public hospital separations per person in the ACT as opposed to 0.21 (ACT) public hospital separations in relevant ACR population.
 - Finally the ACT averages 167 public hospital separations per 1,000 people, while the ACR averages 208 public hospital separations per 1,000 people again for the relevant population.

- The relevant ACR population is backed out using average separations for NSW per 1,000 persons (from the separations performed in the ACT).
- For education this trend works in reverse with the number of school age children expected to decline in the ACR population, therefore reducing the cost of providing services.
- For most other service provision categories the overall increase in the number of people in the service population leads to increasing demand for service use.

It should be noted that, while the structure of the ACR ages, this occurs in combination with an overall population growth. However, this outcome may also be augmented by retirees from the ACT moving into the ACR over the projection period.

Overall these trends add pressure to the cost of service provision both in terms of the aggregate numbers and their demographic composition.

A higher weighting of older people increases demand for services – particularly for public hospitals.

2. ECONOMIC ACTIVITY AND OUTLOOK

2.1 THE GLOBAL CONTEXT – IMPLICATIONS FOR THE ACT

The global growth in the five years to 2007 was the fastest since the 1960s. It has had important implications for the economic environment that the ACT operates in, although so to does the current financial turmoil and more modest global growth outlook.

The ACT is a small and open economy, and that combination makes it especially sensitive to changes in the economic environment – in particular those that impact on Federal Government’s fiscal stance.

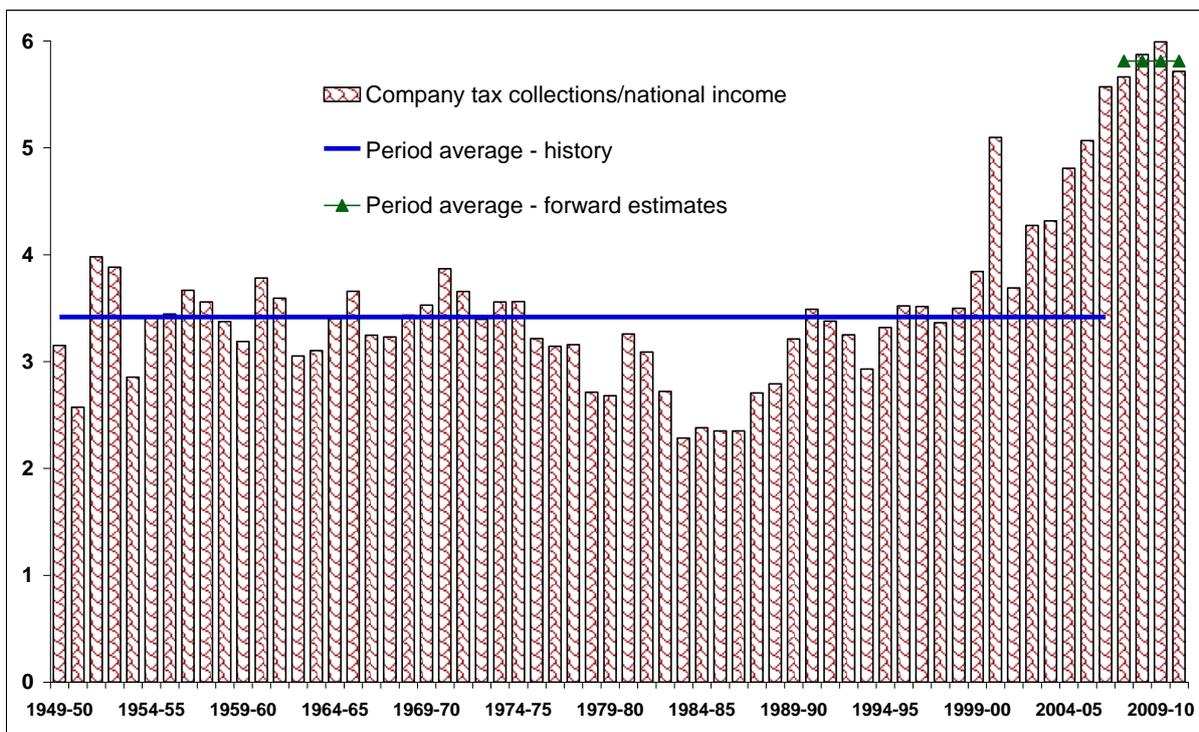
The recent strength of the global economy has been driven by the emerging (energy-hungry) economies of China, India and the smaller industrialising economies in Asia.

In turn, its impact on Australia has been considerable. Because the boom in emerging markets has pushed up commodity prices, it has also boosted each of the \$A, corporate profits as a share of the economy, sharemarkets, and engineering and commercial construction. It has also added to Federal Government revenues.

Figure 2.1 shows company tax collections in Australia as a share of national income over time. Since World War Two the average has been 3.4% of Gross Domestic Product (GDP). The average across the four years of the forward estimates (last updated in the Federal Government’s Mid-Year Economic and Fiscal Outlook released in October 2007) factor in 5.8% of GDP.

In 2008-09 dollars, and compared with the post-WW2 average, that is a commodity-driven windfall of \$29 billion of company tax revenue in each year across the forward estimates.

FIGURE 2.1: CORPORATE TAX COLLECTIONS AS A SHARE OF GDP OVER TIME



More broadly, Figure 2.2 maps out Federal tax revenues raised per person over time in today's dollars.

FIGURE 2.2: FEDERAL TAX REVENUE PER PERSON IN TODAY'S DOLLARS (INCLUDING GST)

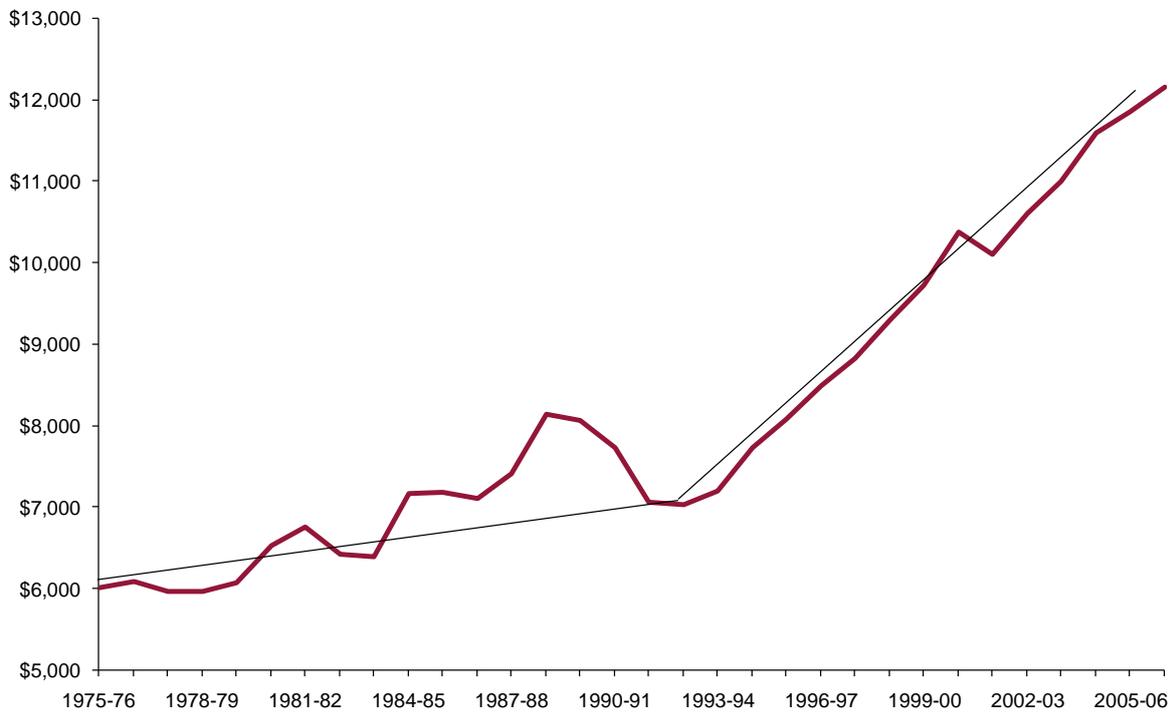
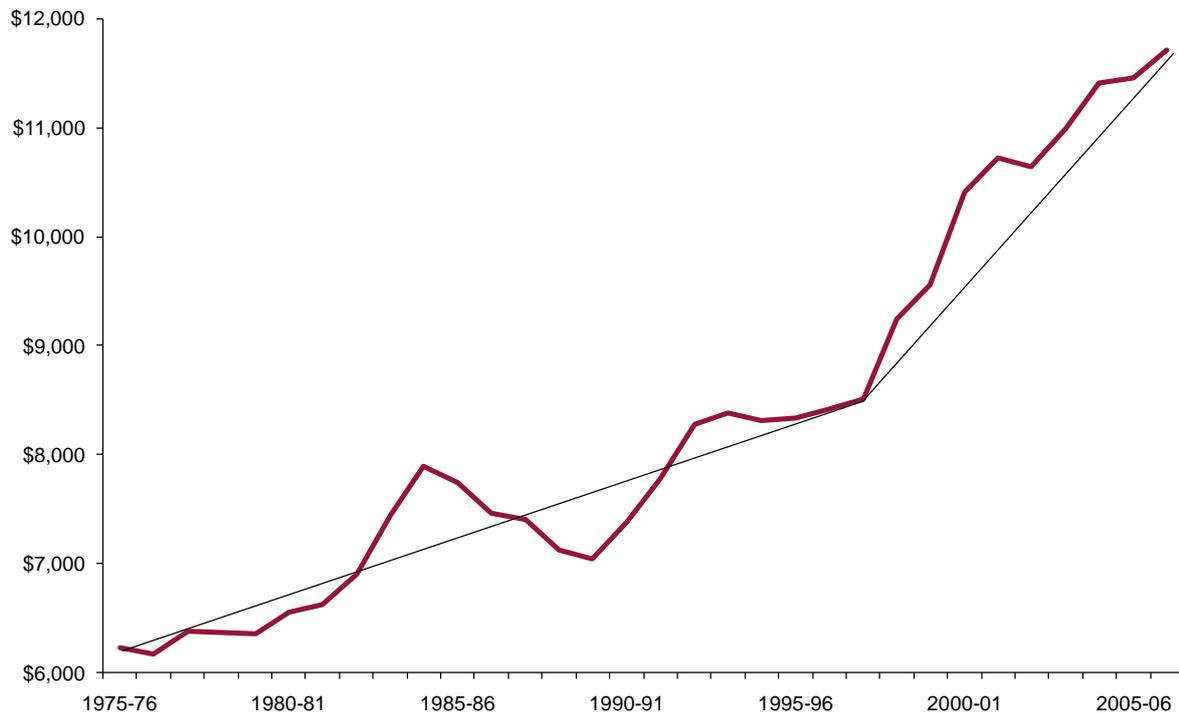


Figure 2.2 shows the extent to which the burden of government has grown. The Federal tax take (including GST) rose relatively slowly from 1975-76 to 1992-93, lifting by \$1,019 per head across that 17 year period. However, in the 14 years to 2006-07, tax revenue per person per year in today's dollars is estimated to have risen by a further \$5,123, to \$12,153 – and it is still growing at a seemingly inexorable rate.

Similarly, the matching figure on Federal Government spending tells the same story. The Federal spend (excluding interest costs and asset sales) rose slowly from 1975-76 to 1997-98, lifting by \$2,285 per head across that 22 year period. But in the nine years to the estimated level in 2006-07, spending per person in today's dollars rose by a further \$3,207, to be \$11,716 per head – see Figure 2.3.

This latter picture helps to put the impact of the boom in the global economy in general (and emerging markets in particular) into context for the ACT. The strong global economy has fuelled a strong increase in Federal Government spending and, as the national administrative centre, the ACT has benefited notably from that trend.

**FIGURE 2.3: FEDERAL SPENDING PER PERSON IN TODAY'S DOLLARS
(EXCLUDING INTEREST AND ASSET SALES)**



Looking forward over the medium-term the transformation of China and India into modern industrial economies is likely to continue to dominate the global economic environment for the next decade.

However, three points should be noted. First, the current moderation in growth in the developed world (and the potential for recession in the United States) suggests a more modest short term global outlook.

Second, despite that, Australia's short term problems revolve more around high inflation than they do the slowdown in the developed world. That suggests the Federal Government will be under a degree of pressure to make the 2008-09 Budget a tough one so as to assist the Reserve Bank in its task of reining in inflation.

Third, and most substantively, current commodity prices are well above the cost of production – and still rising for the likes of iron ore and coal. Although it may take several years or more to eventuate, it is likely that those strong commodity prices will eventually evoke a strong supply response for commodities (iron ore and coal not just from Western Australia and Queensland, but also from elsewhere around the globe). As and when that occurs, there could be a notable slowdown in gains in the Federal tax take.

That period could be a difficult one for the ACT economy if it is accompanied by Federal spending restraint.

2.2 NATIONAL CONTEXT – IMPLICATIONS FOR THE ACT

The medium term implications of the ongoing economic expansion in China have direct implications for Australian growth. It means that Australia could well continue to grow solidly through the global credit crunch – and a potentially severe developed world slowdown. This

means that the problems in Australia will continue to be ones of prosperity in the short to medium term – inflation and capacity constraints.

Australia is operating in a supply constrained environment rather than one where demand is limiting the capacity of the national and local economies to expand. This has significant implications for policy development.

That changes the drivers of growth – if we want a bigger economy and more jobs, it is now no longer sufficient to simply boost demand so as to encourage greater use of underutilised resources (such as the unemployed).

It means that we are no longer looking to create the next job – the demand side of the economy. Rather policy should be focused on providing the next employee – the supply side.

For government, this is a fundamental change, and one being recognised relatively slowly. It means that a key task of policymakers lies in increasing participation, productivity and, where possible, reducing the government's call on the nation's resources. This means directly doing so through minimising the size of the public service, and indirectly via reducing the regulatory burden on business.

In turn this means that policy should be focused on improving the capacity of well functioning markets based on clean price signals to determine the cost of goods and services provided in Australia. Australia's ability to reduce cross subsidisation (and regulation) and to let markets determine the price and quantity of goods and services supplied will maximise the efficiency of resource allocation in the economy.

Why is this important? In a supply-constrained environment, maximising the efficiency of resource allocation is a key means by which competition can keep price growth as low as possible. Stable prices support confidence and business transactions based on competition and the efficient allocation of the economies resources. This combination will maximise productivity in the economy which improves the relative living standards of all Australians.

Australia and the ACT will continue to face the challenge of managing the reallocation of resources within the economy to the areas where demand is greatest (and where industry has the greatest capacity to pay for labour resources). The scale of these global forces makes rowing against the tide costly. That means that the best medium term strategy for Australian policymakers at all levels of government should be to minimise the disruptions caused by this transition. That means basing growth strategies around core competitive advantages and minimising the cost of regulation and the use of national resources by the government sector.

A key strength for the ACT within this national economic context is that the ACT already has what the rest of the nation is aiming for: a highly skilled and highly productive workforce earning high incomes and more likely to participate in the workforce than seen nationally.

Policies that aim at maintaining this competitive advantage of the ACT will maximise the growth potential of the ACT. Most importantly, this should be done while understanding the economic backdrop of the global and national economic environment.

In some cases this may mean making the ACT region the first to adopt new policy initiatives that would allow the ACT to swim with the tide of economic change required to navigate within this supply constrained medium term environment.

This probably means that government policies should embrace change and strive for a flexible environment which allows the economy to reallocate resources according to demand and market prices.

2.3 INTERGENERATIONAL IMPLICATIONS FOR THE ACT

Demographic change is another important consideration within this supply constrained medium term environment.

Luckily for the ACT, being a small porous economy (that is, one with relatively large population inflows and outflows) provides a buffer from some of the impacts of ageing. In many cases ACT retirees head elsewhere to enjoy the fruits of their labours.

However, despite the ACT having a relatively younger population than the national average, ageing is still going to occur. In addition to this, as the ACT's broader regional population catchment ages more rapidly than that in the ACT, this also affects the cost of service delivery in the ACT.

These future pressures on the ACT Budget are likely to add to the pressures on service provision – making it more difficult to meet the ACT's fiscal strategy and financial objectives. There are a number of options available to the ACT Government in addressing this. For instance, it could run deficits, raise debt levels or raise taxes.

Alternatively, the government could ensure a policy environment that is conducive to sustained economic growth combined with keeping a close eye on spending to ensure its quality and appropriateness with regards to meeting key community objectives.

- ❑ Running deficits and funding them through more debt is likely to be unsustainable over the longer term amid higher and compounding interest repayment costs.
- ❑ The ACT public may be unwilling to pay more in taxes and increased taxes will also be a burden on economic growth – especially if they are levied on activities in an inefficient way which distorts decisions on resource allocation.
- ❑ The better choice is for the policy environment to facilitate economic growth. Higher growth is likely to mean better living standards as well as an increased capacity for the government to pay for public services.

In sum, **economic growth matters**.

The ACT Government can contribute to raising economic growth prospects by ensuring individuals have the right incentives and that markets can operate efficiently with minimum regulatory interventions or impediments.

There are a number of more specific policies with the potential to help achieve this, including:

- ❑ increasing high school retention rates;
- ❑ maximising educational attainment especially in early childhood;
- ❑ ensuring effective early intervention for children at risk;
- ❑ facilitating an environment that encourages highly skilled people to spend time working in the ACT;
- ❑ this will contribute to strong productivity growth and innovation;
- ❑ continuing to ensure that the regulatory burden of operating in the ACT is less than in other States and Territories;

- ❑ being a leader in the adoption of national policy initiatives aimed at improving the efficient operation of markets based on clear price signals; and
- ❑ minimising impediments to sustainable development (such as land release and infrastructure).

In a recent paper prepared for the Business Council of Australia “How are the States Faring” Access Economics noted that:

Federal Treasury has been urging faster productivity growth and higher levels of participation, as the resultant increase in the size of the economy would directly address many of the risks associated with slowing growth and rising deficits – in essence, a larger pie will reduce the competition over the slices from it as Australia ages.

Federal Treasury researchers have also been making the point that one way to increase both productivity and participation is to have a higher skilled workforce. Productivity rises due to increased skills, and participation rises as those increased skills lead to higher wages, a reduced likelihood of unemployment and (typically) better working conditions.

These points have been made by Kennedy and Hedley of Treasury in a 2003 Working Paper, Gruen and Garbutt in a 2004 paper and Davis and Ewing in a 2005 paper. For example, Kennedy and Hedley note (at page 15) that: “For both males and females, those who had not completed year 12 schooling had noticeably lower participation rates than those who had completed year 12.”

That places education centre stage in the fight for prosperity.

2.4 CURRENT STRUCTURE OF THE ACT ECONOMY

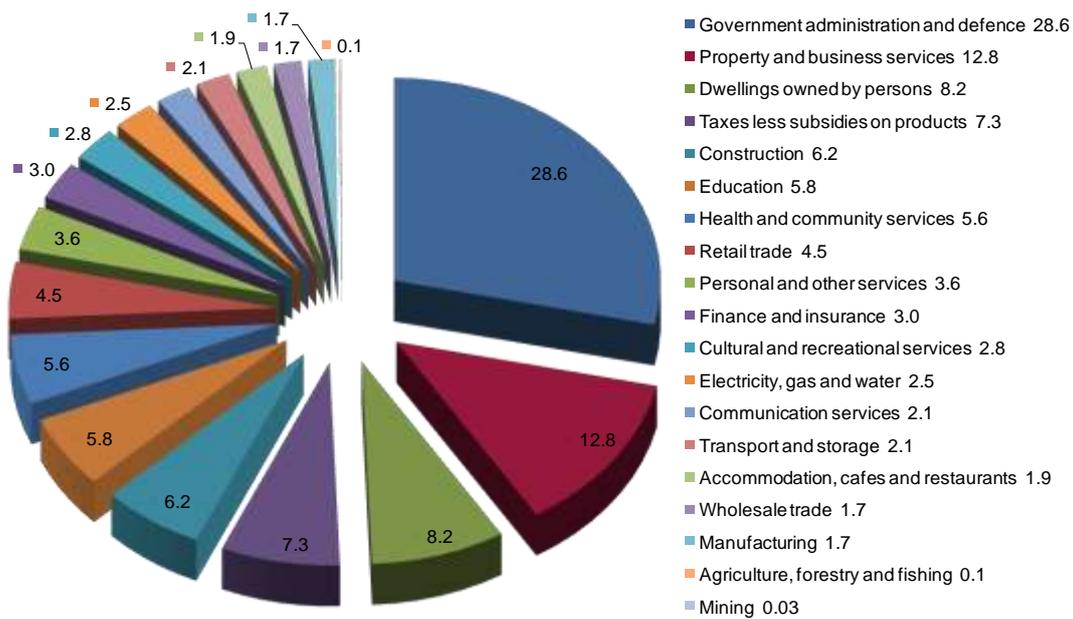
The ACT economy is unique. The figures below outline the structure of the economy. Comparatively speaking, the ACT is somewhat of a ‘one industry town’, with the Commonwealth and Territory public services accounting for six times more employment than the average for the nation – and almost 30% of the ACT’s total workforce.

This has some advantages. For example, it provides the ACT with a stable income base, as well as a large pool of relatively younger people with very high productivity levels and large disposable incomes.

Figure 2.4 shows the average share of output produced by the different sectors in the Territory since 2000 (estimated using the new ABS chain volume sectoral output data). The ACT industry output shares indicate that:

- ❑ The ACT is very much a service-based economy, centred around the public service, which accounts for a large share of output – almost 30% alone.
- ❑ Property and Business Services, Retail Trade, Education and Health and Community services account for another third of output.

FIGURE 2.4: THE ACT ECONOMY – INDUSTRY SHARES % OF OUTPUT VOLUMES



Source: ABS 5220.0; Access Economics.

- Construction accounts for around 6% of output in this period; this is slightly larger than usual, given the boom in construction of office and retail space since 2000.
- The remaining industries are relatively small in terms of their overall share of output.
 - Agriculture and mining appreciably contribute little to output compared to other industries in the Territory (and with other economies in Australia).

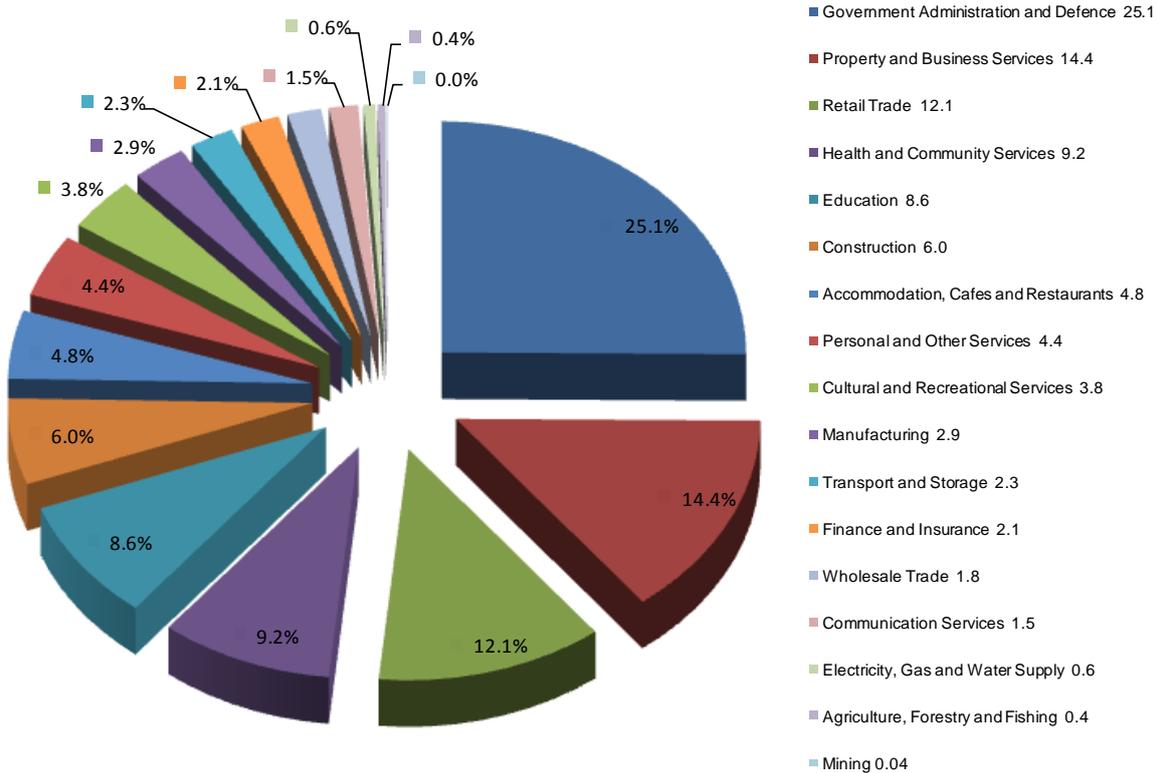
Figure 2.5 shows the associated employment shares that are attributable to these sectors since 2000.

The combined public service sectors (Commonwealth and Territory), Property and Business Services and Retail Trade – the three largest employers – account for around 52% of employment in the ACT.

In comparison, the national average shows the top three employers as Retail Trade, Property and Business Services and Manufacturing but combined these industries only account for around 38% of total employment.

A key feature of the economy in the ACT – fewer industries with a higher share of employees – implies that growth rates are closely tied to the decisions made by the Commonwealth Government with regards to departmental expenditure and expansion. However, this also means that a large proportion of gross disposable incomes in the ACT are sourced from what is usually a relatively stable base.

FIGURE 2.5: THE ACT ECONOMY – INDUSTRY SHARES % OF TOTAL EMPLOYMENT



Source: ABS 6291.0; Access Economics.

In many cases given the relative size of the ACT, goods and some services can often be sourced more cheaply from other States – many goods and services have larger economies of scale than is efficient to produce in the ACT. This is an advantage for a small economy as it allows the ACT to focus on its existing competitive advantages.

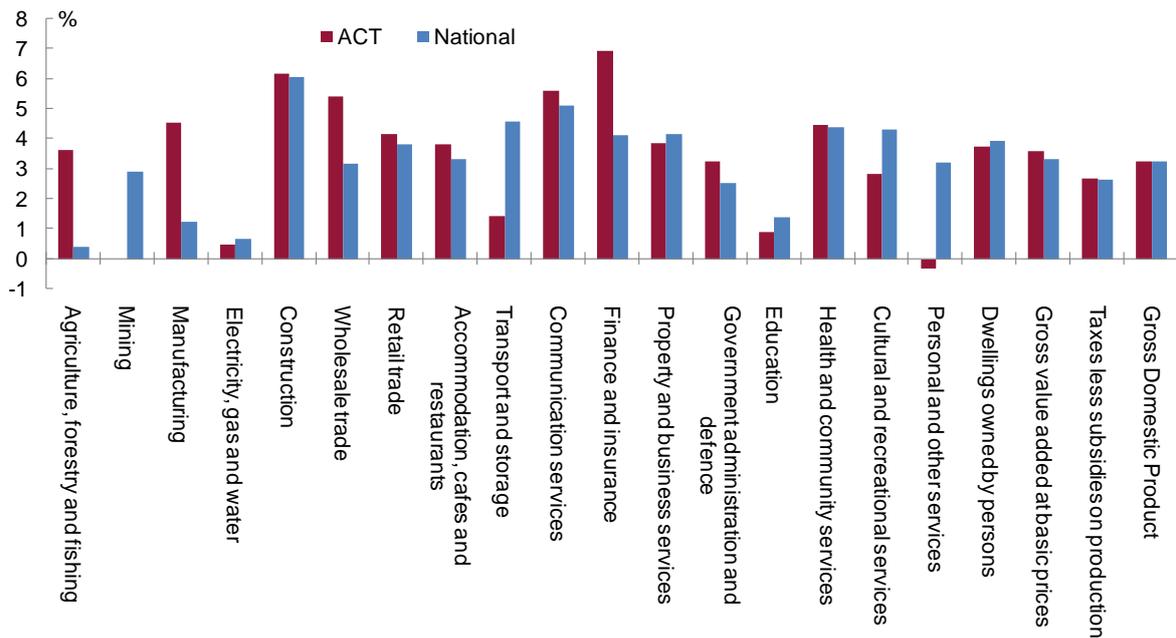
In the ACT for example:

- ❑ Manufacturing, wholesale trade and Transport and storage all account for somewhat smaller shares of average industry employment than is the average for the nation.

However, while smaller in absolute scale, in some cases the industries operating in the ACT are in niche markets where opportunities for growth are stronger, as evidenced by their often more dynamic growth (albeit from a smaller base).

For example, Figure 2.6 shows that growth in manufacturing, wholesale trade and finance and insurance industries based in the ACT have significantly outperformed the national average since the beginning of the decade.

FIGURE 2.6: AVERAGE INDUSTRY VOLUME GROWTH, 2000-2007



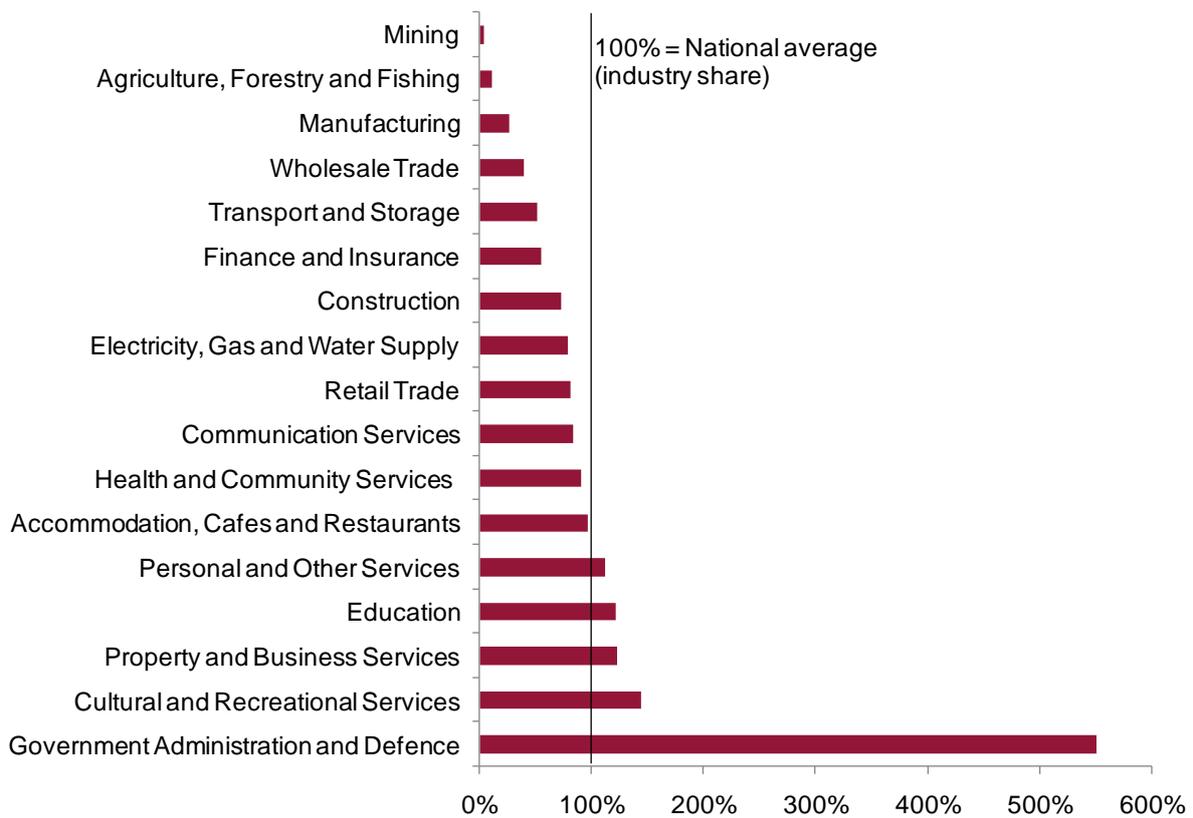
Source: ABS 5220.0; Access Economics.

The construction boom in the ACT has also played an important role since 2000, with the ACT outperforming even the national average – which has been the strongest growing sector over the period.

Overall the ACT economy has performed in line with average growth rates in the National economy, with the majority of sectors broadly in line with national average growth rates.

To put the ACT’s employment intensity into context within the national economy, Figure 2.7 compares the relative importance of employment in different sectors in the ACT versus the same sectors nationally. Figure 2.7 indicates that the Government Administration and Defence sector is over five times larger as a share of the ACT economy than it is of the national economy.

FIGURE 2.7: ACT EMPLOYMENT COMPARED TO THE NATIONAL INDUSTRY MAKE-UP



Source: ABS 6291.0; Access Economics.

This feature makes it relatively attractive to operate highly skilled service-based businesses in the ACT, as there are a relatively larger proportion of highly skilled professionals in the Territory than in other capital cities.

Aside from the obvious niche in Canberra with regards to political influence, the presence of lobbyists and national bodies in Canberra also draws from this well trained pool of Commonwealth and Territory public servants.

This sees the ACT also outperforming on the likes of ‘Property and Business Services’. This concentration of highly skilled professionals also underpins the ACT’s relatively higher productivity levels compared to the national average. It is only recently that this dominance has been rivalled by the massive growth in the mining-intensive regions. However this also reflects and the significant capital equipment invested per employee.

The ACT also has a relatively larger share of employment in cultural and recreational services (than the national average) which is not surprising given the important role the ACT fills as the Nation’s Capital housing the core national institutions.

The ACT is under represented in Farming, Mining, Manufacturing, Wholesale Trade, Transport and Storage and in Construction relative to the national make-up. This is important as this actually allows the ACT to specialise in industries where productivity is relatively higher per hour worked (that is, highly skilled services).

Highly decentralised sectors such as Education, Accommodation, Cafes & Restaurants and health and community services are broadly in line with the national average employment shares.

The ACT's retail sector is relatively smaller (averaging around 12% of employment since 2000) than the national average – partly as the ACT's public sector impacts on the relative share of employment for many sectors, and partly as Canberra's satellite city layout means a higher concentration of large malls with higher turnover per employee as opposed to each suburb having a significant set of roadside strip shops.

Hence productivity is relatively higher in some of the ACT's industry sectors than those in other States because of the geographical and political context behind the make up of the ACT.

In many cases this reflects the ACT making use of the comparative advantages of the larger States by simply importing the goods and services produced by the industries that the ACT does not have the scale to support, while making the best use of its own highly skilled workforce to concentrate in its areas of competitive advantage.

Essentially, for the ACT to compete with economies of scale and scope in the larger States, the Territory's economy needs to find relative areas of comparative advantage.

Importantly this implies from a policy perspective that industry assistance to develop infant industries with an aim of increasing employment and reducing the ACT's intra-state import bill would be a mistake.

To date most of these comparative advantages are found in the skills of the people who live and work in the ACT. As a result it is no surprise to see that much of this comparative advantage relates to service industries. The ACT has developed relatively larger industry shares (compared to the national average) in Government Administration and Defence, Cultural and recreational services, Property and Business Services, Personal and Other Services and lastly Education – with the ACT providing educational services to the surrounding region as well as to many overseas students.

2.4.1 CONCLUSIONS AND POLICY IMPLICATIONS REGARDING INDUSTRY STRUCTURE

That these industries are relatively large in the ACT's industry mix reflects the fact that statistics show the population has relatively more highly educated people who have high levels of productivity and who participate more in the labour market for skilled services jobs.

For policymakers this is the area where the ACT has the largest comparative advantage, it is retaining these highly skilled individuals and continuing to attract these new recruits that may well require more thought.

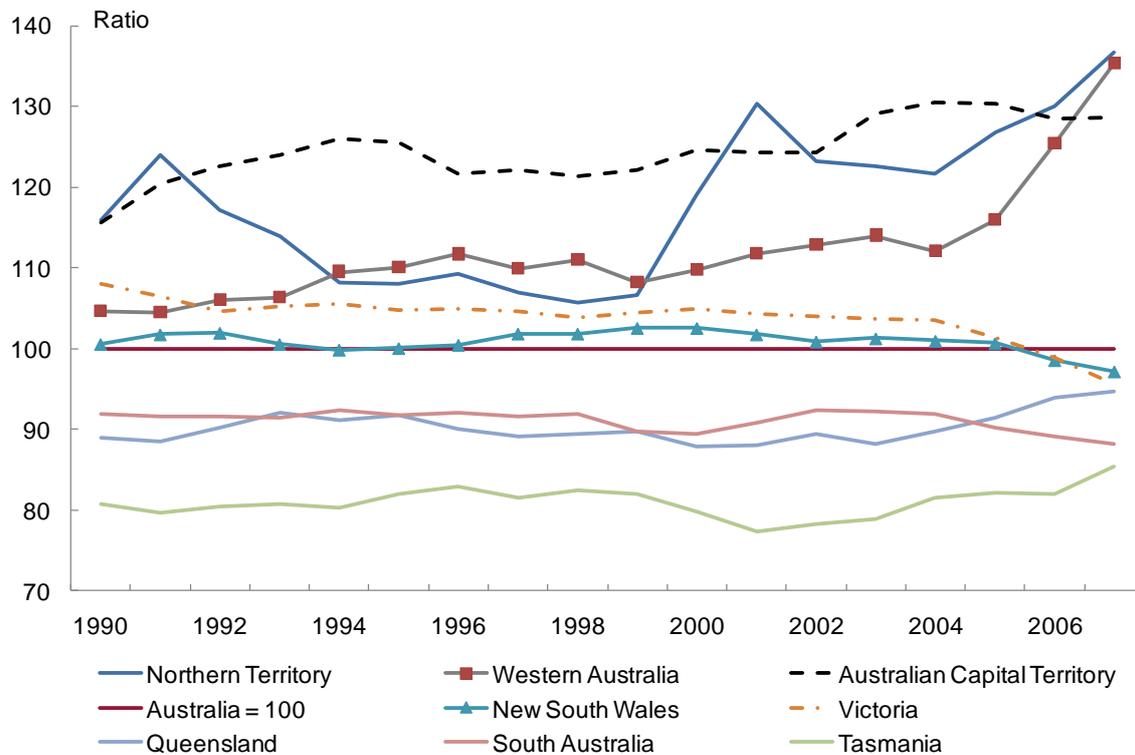
Of course continuing to improve the general level of educational attainment in the ACT (and in the ACT's catchment region) and improving school retention is a core part of this longer-term strategy. This will improve participation and long-run productivity for the ACT and the surrounding region.

The ACT regularly pulls highly skilled people from other States to gain experience and train up in the public service. This makes the ACT a relatively attractive place for new high skilled service industry start ups to set up operations. Improving the attractiveness of the ACT as a place for service industry businesses (and those working for these companies) may warrant further research.

2.5 HOW HAS THE ACT ECONOMY BEEN PERFORMING?

Relatively speaking the ACT is one of the standout economies of the nation. Output per person as shown in Figure 2.8 has been much higher on average in the ACT than in any other State or Territory.

FIGURE 2.8: GROSS STATE PRODUCT PER CAPITA



Source: ABS 5220.0

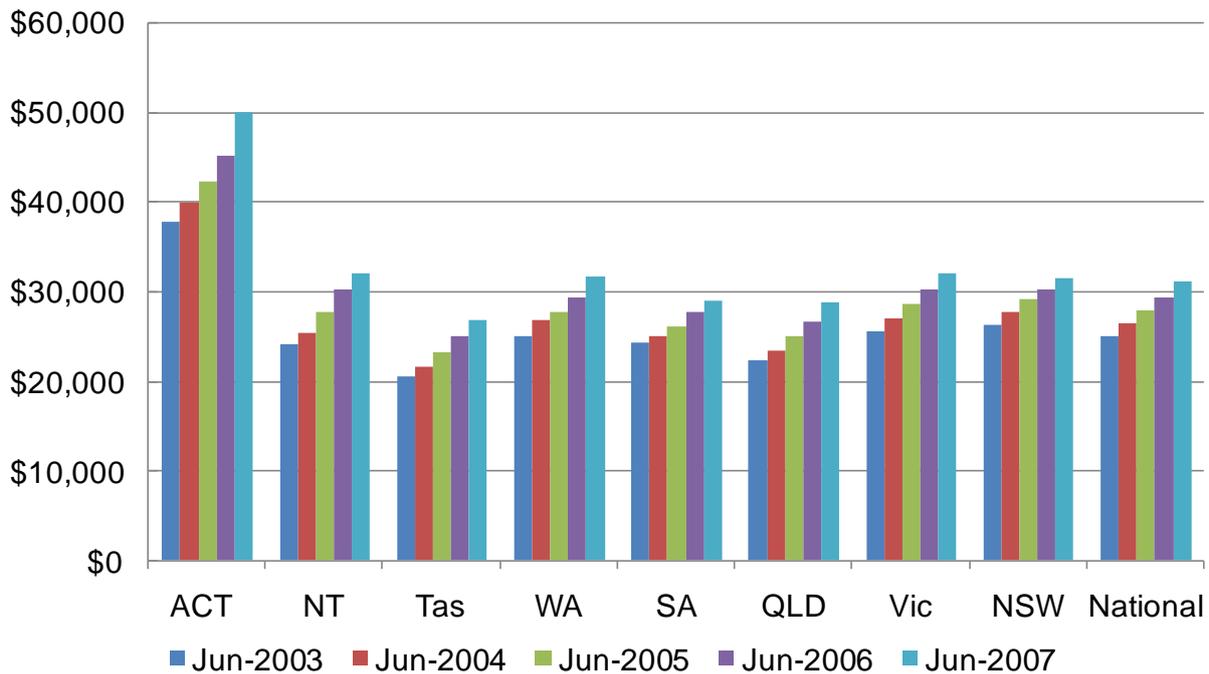
Only recently amid the mining and investment boom has the Northern Territory and Western Australia surpassed the level of output per person reached on average in the ACT.

Of course there is more to this than meets the eye. The ACT has very strong output per capita, in part, based on significant contribution of Commonwealth and Territory public servants – output from this industry sector is not based on output but rather on inputs as there is no market to price the outputs effectively.

Regardless of the intricacies around the data, incomes and education are generally higher in the ACT. Many economic studies have drawn the link between high levels of education, participation and productivity so the ACT has somewhat of a natural comparative advantage in the provision of skilled service industries. Going forward this will be one of the key industry sectors that will no doubt continue to grow at a faster rate than the broader ACT economy.

Figure 2.9 indicates that ACT households have been among the biggest recipients – at least with regards to disposable income – of the booming national economy. Between 2003 and 2007 nominal household incomes have increased by around \$12,000 on average (growing by 32.6%). The national average was less than half of this figure around \$6,000 (growing by 23.9%).

FIGURE 2.9: HOUSEHOLD GROSS DISPOSABLE INCOME PER CAPITA, \$



Source: ABS 5220.0

As the ACT economy has grown and matured so too has the diversity of industries that have developed and the services offered by ACT businesses. In fact, as shown in Figure 2.6 above, the ACT has outperformed in a number of industries relative to the national average.

Why has this been possible? Because the ACT has relatively smaller scale industry sectors this means that many of the firms operating here are more dynamic. These firms are able to quickly adapt into new markets as move as tastes change and as new opportunities present.

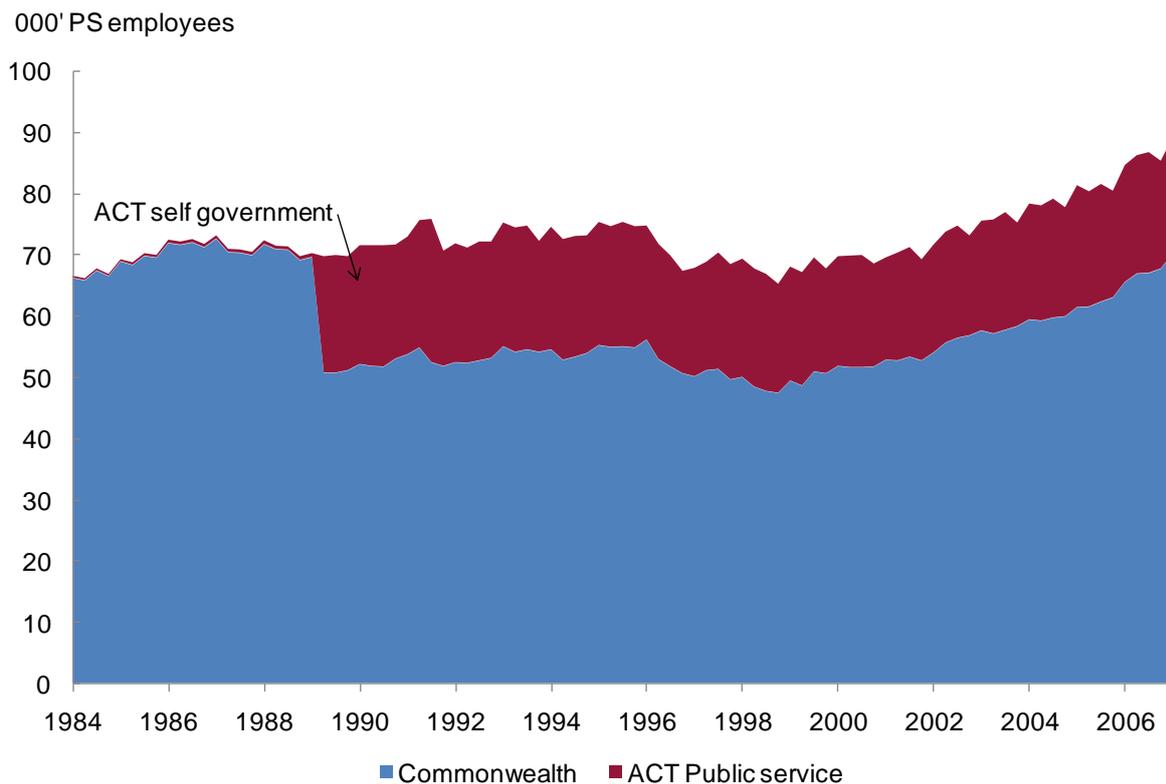
By not directly competing with the likes of China, for example, the ACT has seen relatively strong growth in manufacturing since 2000 (despite declining output between 1990 and 1998 as industry resources were reallocated into areas of competitive advantage).

Greater diversification in the ACT's sectoral base is to be expected as the economy matures and new opportunities open up competitive advantages in some sectors and see growth rates slow in the more mature sectors.

In part, this process has seen growth in the government sector become relatively less important to the ACT economy over time – that is, up until recently the government sector has been growing at a slower rate than many other industry sectors (in terms of volume output, since 2000 average growth in most of the ACT's industries has outpaced growth in government related activity, see Figure 2.6).

That said Figure 2.10 shows that the government sector remains an important influence in the ACT and has grown recently. The ACT public sector currently employs around 19,000 people and this has remained relatively constant. While the Commonwealth employs around 70,000 people in the ACT.

FIGURE 2.10: THE GOVERNMENT SECTOR IS STILL RELATIVELY IMPORTANT



Source: ABS Cat. No. 6248.0.55.001.

In fact since 2000 Commonwealth employees working in the ACT have increased from around 50,000 to the current 70,000 strong work force.

In total around 89,000 people in the ACT work in the broader public service (or around 47.5%) – note this is a broader definition than used in the industry analysis above in Figure 2.4 which classifies only those who work directly in the government and defence industry (that is, not nurses and teachers etc).

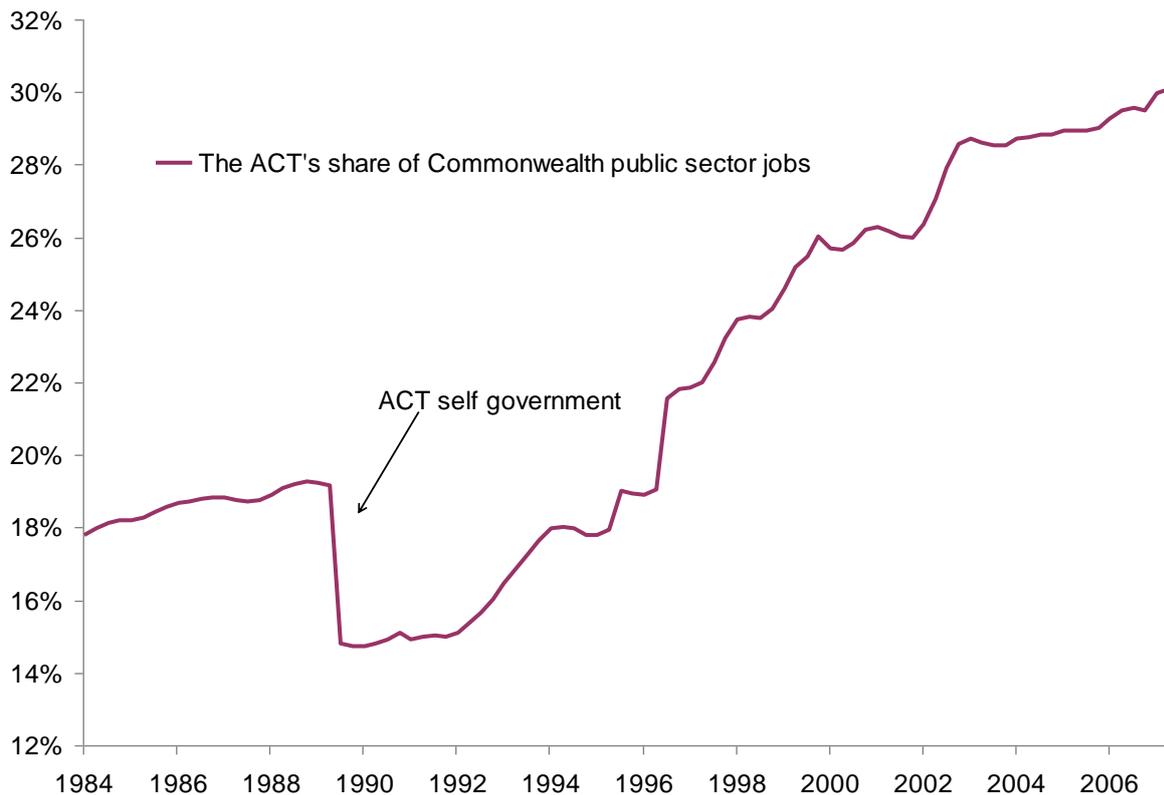
It is clear that since 2000, Commonwealth public servant numbers have been on the rise, and in addition to this there has also been a more than proportionate increase in the number of senior executive officers, and managers as opposed to more junior staff.

The past decade has seen considerable change in the structure of the Commonwealth public service. The early years were characterised by a period of restructure and reduction in size and functions followed by several years of sustained growth since 2000.

As well, there have been changes in the composition of the APS, particularly a shift towards a higher classification profile, higher levels of female employment and an ageing workforce.

Importantly for the ACT, Figure 2.11 shows that Commonwealth public sector employment is also becoming increasingly centralised in the ACT. Or, in other words, **the ACT's share of Commonwealth public sector jobs is increasing, at the same time size the public service has also been increasing.**

FIGURE 2.11: THE ACT IS ALSO RECEIVING AN INCREASING SHARE OF PUBLIC SERVICE JOBS



Source: ABS Cat. No. 6248.0.55.001, trend data. To improve consistency over time, this series includes adjustments made by Access Economics to exclude Telstra employees in the ACT and nationally.

Since early in 2000, the pace of growth in Federal public service numbers housed in the ACT has increased – as have the demands on the public service from stronger spending and increased numbers of programs to administer. The proportion of spending per person in Australia is around record high levels as benefits to families have been significantly increased – in many cases across the board with all household income quintiles seeing increased Commonwealth assistance.

Recent growth has been the fastest recorded in the past two decades.

That said, the new Federal Labor Government has indicated that, while it will constrain growth in public service employment, it will only be constrained to grow in line with overall employment growth in the national economy.

For the ACT this means that the recent growth in public servant numbers will eventually slow somewhat from recent rates of growth – although that said, economy-wide growth in employment growth has been very strong recently so it is somewhat unclear what this will actually mean for the ACT economy. Over the medium term national employment is forecast to average around 1 ¾ percent – this would represent a significant slowing in Commonwealth public service employment growth from current rates of around 5% per year.

This brings us to another important issue – What has a large government sector meant for output growth in the ACT?

An important implication for the ACT of being overweight in providing government services comes from an unlikely source. The volatility in output for the ACT is actually contained – in

that the ACT experiences lower volatility on a range of measures relative the national average.

In large part, this is due to the overall stability in disposable income growth and demand provided by public service income. Table 2-1: Estimates of volatility shows that the ACT is the only State or Territory that ranks lower than the average of volatility estimates at the national level. The absence of both mining and agriculture – as significant shares of the ACT’s industry make up – have helped hold down volatility in output.

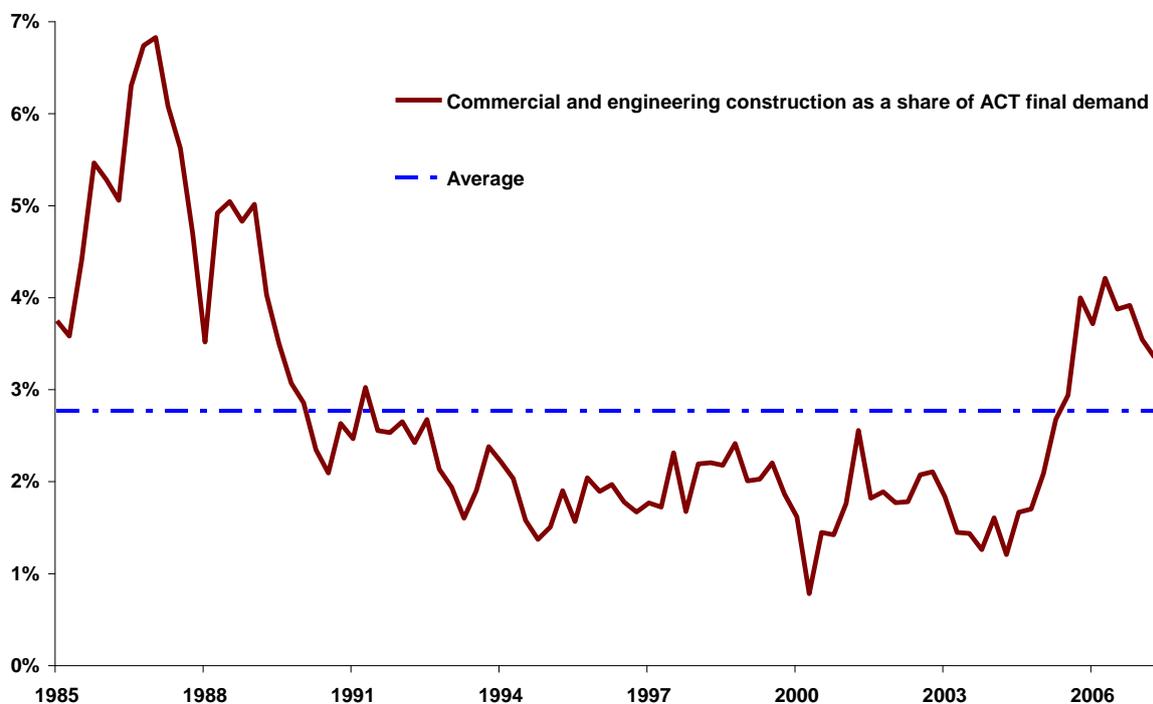
TABLE 2-1: ESTIMATES OF VOLATILITY

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Australia
	State								
St. Deviation	2.1	2.7	2.9	2.3	4.2	3.5	5.9	1.8	2.3
Abs. Deviation	1.6	1.7	2.2	1.6	2.9	2.6	4.3	1.4	1.5
Variance	4.6	7.2	8.3	5.2	17.7	12.1	34.5	3.3	5.2
	Ratio to Australia								
St. Deviation	0.9	1.2	1.3	1.0	1.8	1.5	2.6	0.8	1.0
Abs. Deviation	1.1	1.1	1.4	1.0	1.9	1.7	2.9	0.9	1.0
Variance	0.9	1.4	1.6	1.0	3.4	2.3	6.6	0.6	1.0

Source: ABS Cat. No. 5220.0.

The table has been put together using current price output growth for each State deflated by the national consumption deflator to arrive at an adjusted measure of spending power in each State. Essentially this means that for the ACT these volatility estimates indicate that the stability of spending power (using national prices) in the ACT relative to other parts of the country is extremely high. People who live in the ACT are generally better placed to cope with periods of economic turmoil (and continue to maintain a base level of spending) than is the rest of the nation.

FIGURE 2.12: COMMERCIAL CONSTRUCTION AS A SHARE OF THE ACT ECONOMY



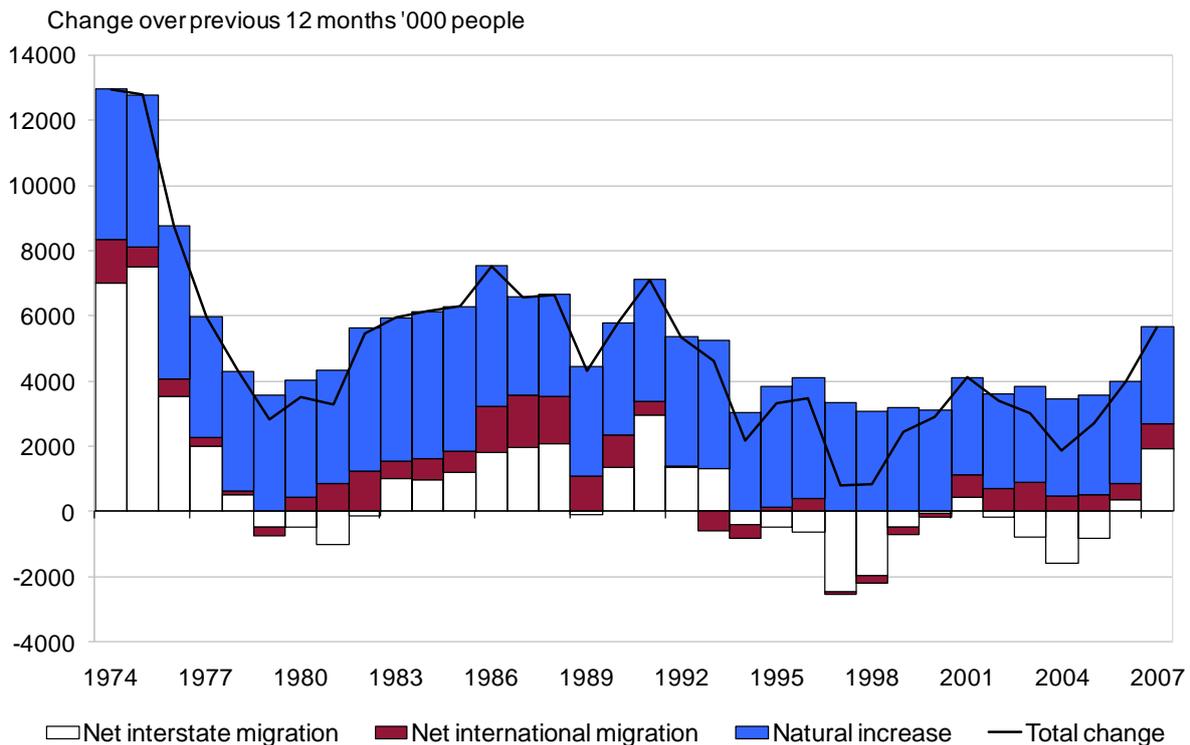
Source: ABS Cat. No. 6206.0.

The ACT also has relatively more muted swings in the construction cycle as well. Again this is impacted to some extent by Federal spending. That said, the recent cycle has seen very

strong growth. Figure 2.12 shows, the impact of Federal public sector construction spending in the ACT economy has led to a significant increased of the construction sector as a share of the ACT economy – reaching highs not seen since the late 1980s.

And to date much of this construction has been to accommodate new white collar workers in the ACT, and to build new retail space in the city and surrounding centres. The driver of much of this activity is most clearly shown in the significant tick up in population growth for the ACT. Figure 2.13 indicates that 2007 in particular saw growth stemming from all quarters of the population matrix, the ACT gained from net interstate migration, net international migration as well as strong growth from natural increase (or high fertility rates).

FIGURE 2.13: THE COMPONENTS OF ACT POPULATION GROWTH

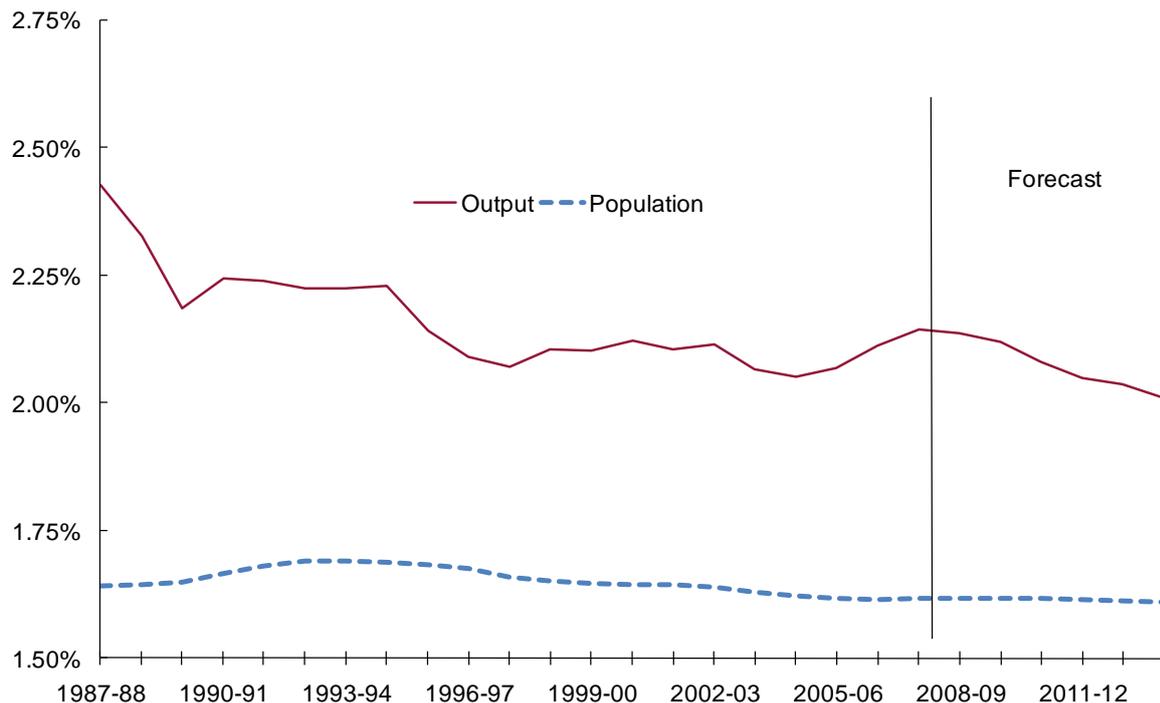


Source: ABS; Access Economics.

That said, and as Figure 2.12 also shows, the ACT’s commercial construction cycle appears to have peaked already. Although construction activity remains very high (and is set to maintain momentum, as the later discussion on infrastructure notes), it has already lost some relative strength.

2.6 HAS GROWTH IN THE ACT ECONOMY PEAKED?

The ACT economy has been growing rapidly in recent years, increasing as a share of national output. However, looking forward with a medium-term view it is unlikely that the ACT will continue to outpace growth in the national economy (see Figure 2.14).

FIGURE 2.14: ACT SHARES OF OUTPUT AND POPULATION

Source: ABS 5206.0, 6202.0; Access Economics.

Many of the key drivers behind the recent strong performance are likely to moderate over the coming decade.

There are some longer term factors relevant here. In particular, the impetus from population growth is projected to slow for the ACT over the next decade, largely due to the impacts of ageing – our projections reflect the forecasts from the Access Economics Demographic Model.

Moreover, there has been a strategic policy shift (not just in Australia but internationally) towards tax cuts as opposed to higher spending, and minimal growth in the size of government. While it is unclear at this stage how these ideological principals will impact on government size in Australia the impact of ageing will in fact force many changes on Australian governments in the next decade.

Access Economics views this as likely sign that smaller government will be one of the results. It is almost inevitable that as fiscal pressures build and the costs of service delivery – particularly for health care – increase size of government will also come under increasing pressure. Most recently the trend to larger government has slowed (although it has not stopped). This may well lead to more moderate growth in public sector contributions to output growth in the ACT in the decade ahead. This implies that ACT policymakers need to act quickly and keep abreast of developments that may act to slow growth rates in the region and increase the costs associated with service delivery.

There has been a greater focus on core public sector tasks. There has long been a move towards greater competition, outsourcing and open access to government contracts. This has allowed the private sector to compete for what were traditionally public service functions. In many cases these organisations are not necessarily based in the ACT. To the extent that policy can be used to minimise the costs of operating (particularly in comparison to other capital cities and minimise the regulatory burden of doing business in the ACT compared to other regions) then these changes need to be fast tracked ahead of developments in other

regions. The ACT may also benefit from maximising businesses access to hire out of the ranks of the highly skilled workers in the Commonwealth public service.

For some time now there has been a shift to a greater focus on public sector productivity. This means that increasingly departments can do more with less. The ABS tends not to have good measures of productivity in the public sector (as it is difficult to estimate non-market sector output with out the assistance of well functioning markets). However, it is clear that office-based work environments have participated strongly in the productivity gains from adopting new technologies. To some extent slower employment growth as a result of more productive government departments will be offset by rising real incomes for public servants. Eventually though slower employment growth will take its toll on the output of the ACT.

The strength of the Australian economy over such an extended period of time has, other things equal, tended to shift activity elsewhere (for example, to Perth and Brisbane and Darwin, rather than to Canberra). Given that the most likely path of growth in the emerging economies of Asia will continue to be strong, it is likely that this trend will continue (if at a somewhat slower pace over the next decade than the last).

2.7 FORECAST PERFORMANCE OF THE ACT ECONOMY⁶

There are more immediate factors relevant here too. Canberra's population fortunes are closely tied to the matching fortunes of its economy. As the economic news has been consistently good, ACT population growth moved back above the national average in mid-2007 (see Figure 1.10 earlier), and entered 2008 starting to approach the rapid rates of gains seen in the population frontrunners of Western Australia and Queensland.

That turnaround essentially arose because China's strength has generated a profit boom, and Federal taxes have benefited from a healthy share of that. In turn, and although much of the extra Federal revenue has been handed back as personal income tax cuts, much of it also financed additional spending decisions in recent years.

Strong gains in Federal spending have been boosting Canberra's economy through two channels:

- ❑ First, it led to a direct boost to public service numbers, which grew by more than 6% in 2006-07.
- ❑ Second, some of the strength in Federal revenues has financed new office blocks and revamped retail facilities in Canberra.
- ❑ Or, in other words, the rapid increase in public spending generated a matching gain in private spending, leaving construction strong.

However, as seen in Figure 2.12 above, the construction sector is already easing, and hence some of the heat has gone out of Canberra's private sector boom.

That is showing up in an easing back of retail growth (especially for those malls outside the still booming Canberra Centre), while job growth has consolidated as key construction projects wind back.

⁶ These forecasts reflect forecasts generated using Access Economics AEM model and use slightly different population scenarios from the specific 'middle ground' population scenario requested by the Chief Ministers Office.

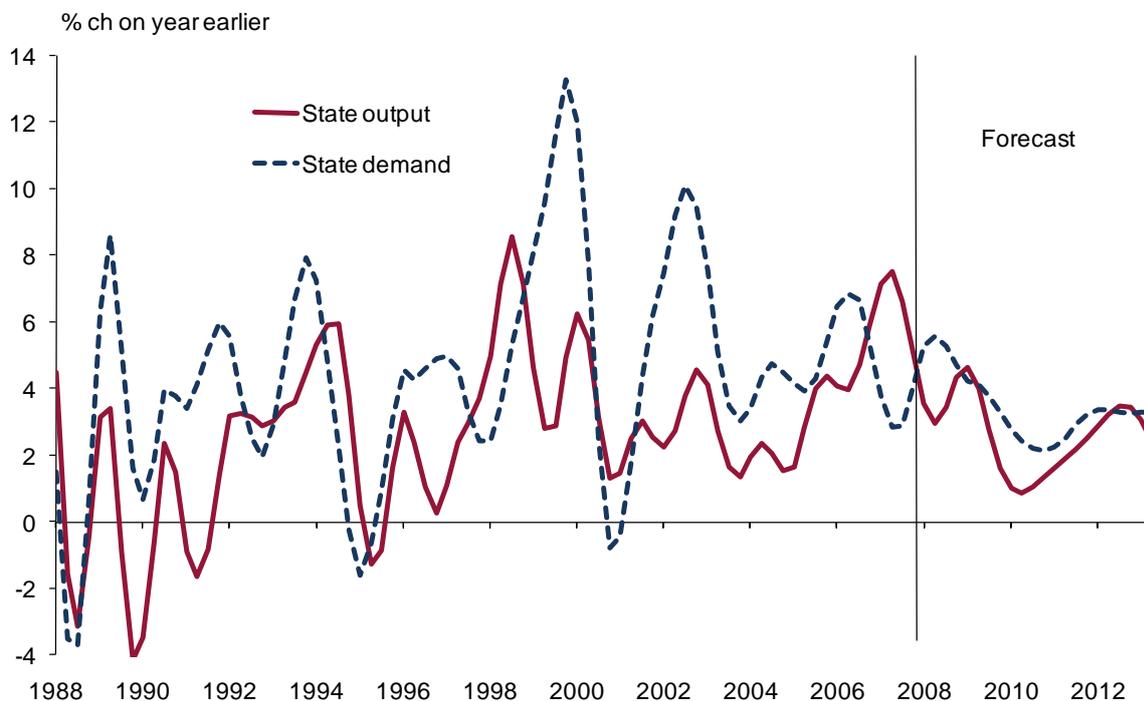
That still leaves the ACT economy travelling well – unemployment is very low, job vacancies are strong and population gains are excellent.

Much depends on the new Federal Government’s spending policies. As discussed above, it is possible that these will see slower spending growth in coming years than that evident in recent years.

However, that does not appear to be a risk for 2008-09, which leaves the short term outlook for the ACT more than solid.

As Figure 2.14 and Figure 2.15 show, Access Economics sees the bigger challenge across the three years from 2009-11. That is where the potential for Federal spending cutbacks may see the above trend growth of recent years in the ACT partly offset by a period of slower gains.

FIGURE 2.15: ACT OUTPUT AND DEMAND GROWTH

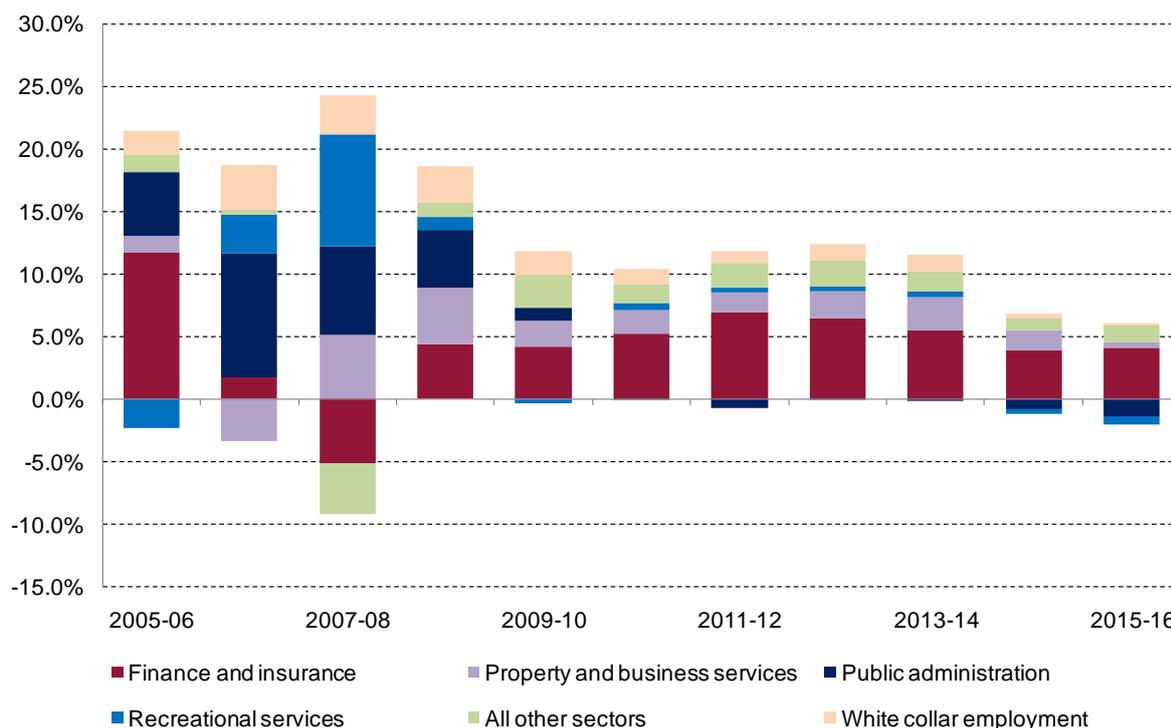


Source: ABS; Access Economics.

Figure 2.16 projects that the impetus behind employment growth could increasingly fall to the private sector in the ACT:

- As the economy heads out to 2015-16 it is likely that public administration will be a net negative contributor to growth.
- Finance and insurance and property and business services will be the more dynamic sectors utilising the highly skilled highly productive labour force in the ACT.

FIGURE 2.16: ACT – STACKED EMPLOYMENT GROWTH BY SECTOR



Source: Access Economics.

TABLE 2-2: SPECIFIC SECTOR EMPLOYMENT FORECASTS

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Finance and insurance	3,886	3,952	3,747	3,910	4,073	4,284	4,578	4,871	5,139	5,339	5,554
% change	11.7%	1.7%	-5.2%	4.3%	4.2%	5.2%	6.9%	6.4%	5.5%	3.9%	4.0%
Property and business services	26,052	25,160	26,432	27,639	28,216	28,740	29,193	29,849	30,634	31,133	31,285
% change	1.3%	-3.4%	5.1%	4.6%	2.1%	1.9%	1.6%	2.2%	2.6%	1.6%	0.5%
Public administration	46,747	51,364	54,998	57,541	58,111	58,054	57,639	57,612	57,509	57,024	56,222
% change	5.1%	9.9%	7.1%	4.6%	1.0%	-0.1%	-0.7%	0.0%	-0.2%	-0.8%	-1.4%
Recreational services	23,023	23,753	25,891	26,147	26,049	26,205	26,309	26,392	26,499	26,393	26,206
% change	-2.3%	3.2%	9.0%	1.0%	-0.4%	0.6%	0.4%	0.3%	0.4%	-0.4%	-0.7%
All other sectors	82,721	83,028	79,671	80,583	82,764	84,022	85,723	87,494	88,938	89,720	90,938
% change	1.4%	0.4%	-4.0%	1.1%	2.7%	1.5%	2.0%	2.1%	1.6%	0.9%	1.4%
White collar	152,772	158,264	163,169	167,887	170,918	172,936	174,560	176,829	179,132	179,919	180,105
% change	1.9%	3.6%	3.1%	2.9%	1.8%	1.2%	0.9%	1.3%	1.3%	0.4%	0.1%
Total employment	182,429	187,257	190,739	195,819	199,212	201,305	203,441	206,218	208,718	209,609	210,206
% change	2.0%	2.6%	1.9%	2.7%	1.7%	1.1%	1.1%	1.4%	1.2%	0.4%	0.3%

2.8 INVESTMENT PROJECTS

2.8.1 BACKGROUND

The ACT accounts for around 2% of Australia’s GDP and is home to around 1.6% of Australia’s population. Heavily reliant on the Commonwealth and Territory Governments, public servants comprise a significant share of employment in the ACT (around 47%), and have a strong influence over income and hence investment growth.

The good news for the ACT economy is that the Federal government’s budget position is very strong and demands on public servants are increasing. That has pushed up job vacancies and sent unemployment rates back down to around record lows, even despite reductions in ACT Government employment numbers. Strong employment demand has also improved population prospects in recent times.

While the ACT does not receive many direct benefits from the resources boom, the indirect benefits are notable. That is due to the strength of the corporate tax revenues flowing to the Commonwealth Government thanks to surging commodity prices. As growth in commodity prices moderates, the Commonwealth Budget is likely to tighten over the medium term as current levels of spending are clearly unsustainable. That could pose some notable challenges for the ACT economy over the coming decade not the least of which will be noted in coming investment trends.

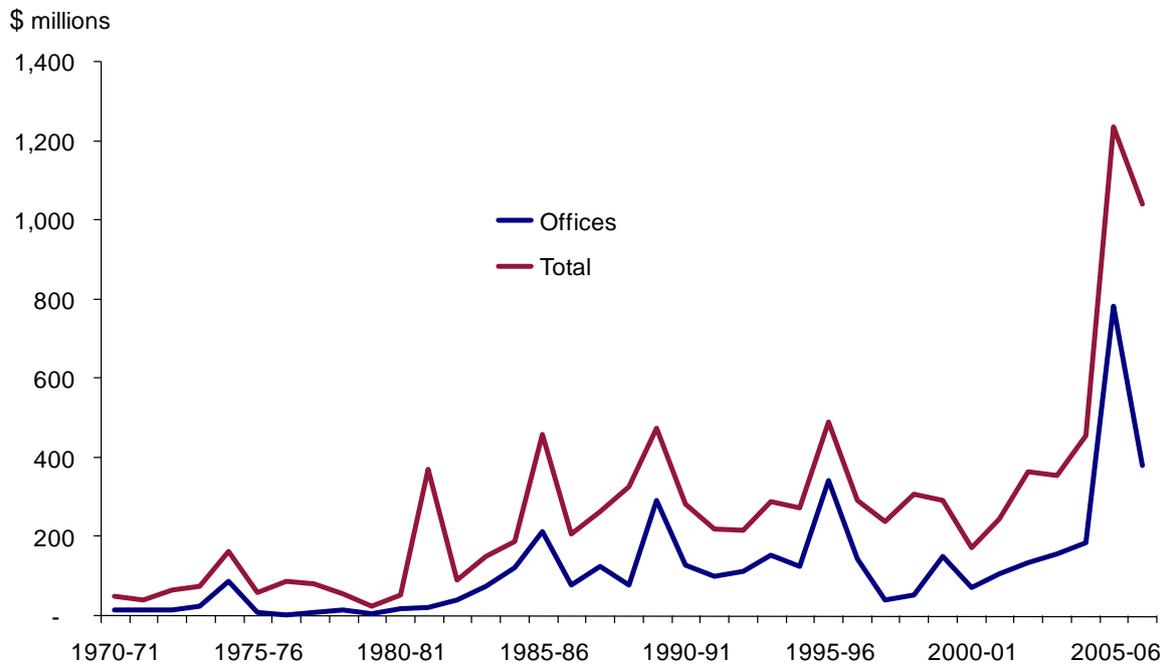
2.8.2 INVESTMENT TRENDS

While the ACT lacks the natural resources of larger States, it has benefited uniquely from the sharp rise in commodity prices that are spurring the Australian economy at present. An astounding lift in company profits has increased the Federal Government’s tax take substantially. In turn, that has led to a greater number of public servants hired in Canberra and to an upgrade of office space for Federal Departments.

While Canberra’s investment schedule is typically dominated by commercial construction projects, the last three years have been usually strong. Demand generated by the Federal Government has seen construction jump notably, with the ACT actively seeking workers from other States – particularly NSW – to fill the void.

The lift in commercial construction has been concentrated mainly in office and retail facilities. Demand for office space – a function of the burgeoning number of public servants – has soared. Figure 2.17 shows the impact of that strong demand on office building approvals. The latter regularly contributes more than half of the value of building approvals in the ACT in any year, and was the major reason behind the sharp rise in total building approvals in the ACT in 2005-06.

FIGURE 2.17: VALUE OF ACT NON-RESIDENTIAL BUILDING APPROVALS



Source: ABS 8731.0

Retail construction has also been strong. A healthy labour market has attracted workers from interstate, lifting Canberra’s population, while wage gains and tax cuts have meant that retail

sales have been performing relatively well. That has led to the construction of a number of new retail facilities, including an extensive renovation of the city centre.

2.8.3 PROJECTS

While Canberra's investment agenda includes some large-scale developments at various stages of planning, there are also a large number of smaller works adding to the current boom in the ACT. The strongest activity is in the finance, property and business services sector (buoyed by office projects) closely followed by community and other services (see Table 2-3).

The biggest project currently in planning is the development of the Canberra Technology City, which involves building around 20 "next generation" multipurpose data centres at Hume and 8 to 10 smaller centres at Belconnen. The project is valued at around \$1 billion. At this stage the project is in the early planning stages, with a final commitment still in the offing.

TABLE 2-3: SUMMARY OF ACT INVESTMENT PROJECTS (WHERE \$ VALUES ARE AVAILABLE)

	Under construction	Committed	Under consideration	Possible	Total	Per cent of total
Electricity, Gas & Water	145	0	200	70	415	7.9
Transport & Storage	439	32	0	112	583	11.1
Communication	150	0	0	0	150	2.9
Trade	100	100	0	0	200	3.8
Finance, Property & Business services	150	0	67	1,000	1,217	23.3
Government	359	0	153	0	512	9.8
Community & Other services	619	98	412	77	1,206	23.0
Accommodation	0	40	0	0	40	0.8
Mixed use	300	0	600	10	910	17.4
TOTAL	2,262	270	1,432	1,269	5,233	100.0

Source: Access Economics *Investment Monitor*.

Major engineering projects do not normally contribute substantially to the investment agenda in the ACT however a number of large-scale projects are currently underway. The ongoing construction of the Gungahlin Drive Extension (GDE) parkway (due to be completed in the latter half of 2008) has been a boon, while the \$300 million expansion of the Canberra Airport is also notable. The airport upgrade will be under construction under 2010, with runway and terminal upgrades still to be undertaken.

As in other Australian jurisdictions, water security is a concern in the ACT. A \$145 million expansion of the Cotter Dam will significantly boost Canberra's water supplies from 2011.

With the completion of a number of office and retail developments recently, non-residential construction in Canberra has dipped back. A major upgrade to the Canberra Centre (including the construction of office space and new retail facilities) has now been completed, as has new office space for the Department of Prime Minister and Cabinet, a new retail outlet facilities at the airport and an upgrade of the National Convention Centre.

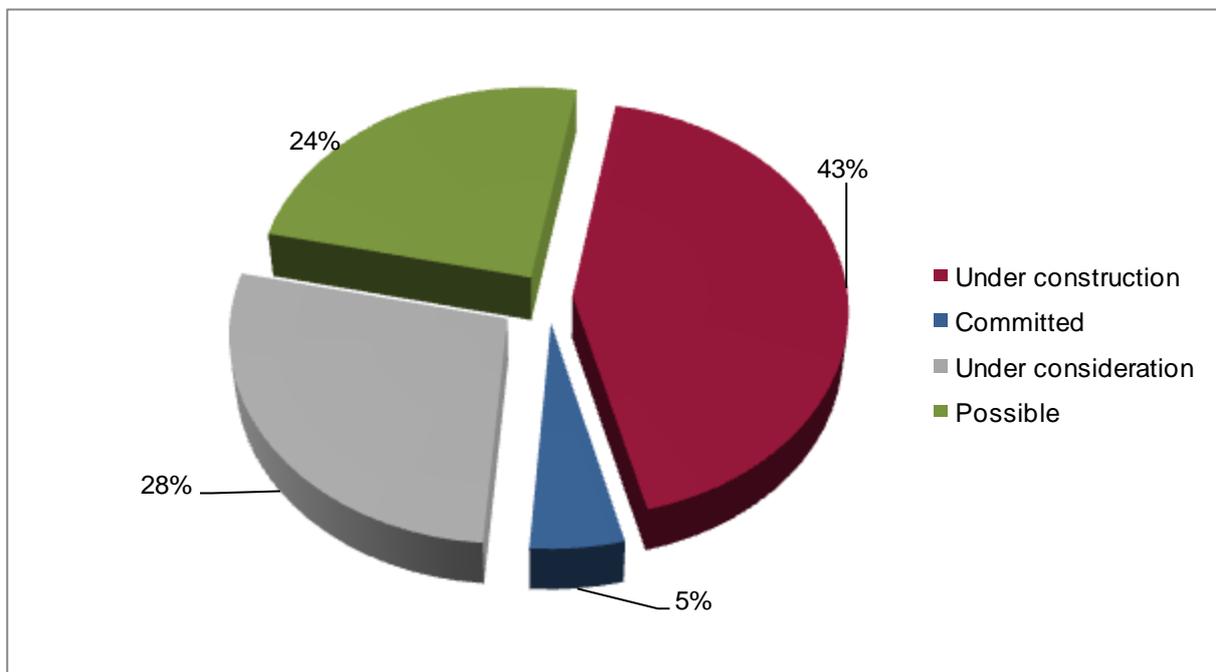
Work currently underway includes a new building to house the Federal Attorney-General's Department as well as an upgrade of the National Gallery of Australia and the construction of

a new National Portrait Gallery. The Doma Group’s \$300 million Hotel Realm development in Barton is almost complete, as is the construction of the Alexander Maconochie Centre.

Future works include an expansion and renovation of the Westfield shopping centre in Belconnen, including a relocation of the Belconnen bus interchange, set to get under construction in 2009, and the development of a business and research precinct between the Australian National University (ANU) and the city.

The risk for the ACT is whether this current upswing will be maintained. The current snapshot from Access Economics’ *Investment Monitor* database shows that investment in the ACT is quite evenly balanced between projects that are relatively certain (under construction or committed) and those that are in early planning stages (under consideration and possible). This could mean investment levels are maintained at current levels, but much will depend on how many planned projects come to fruition. In addition, the future investment pipeline is dependent on a few large projects which may or may not materialise.

FIGURE 2.18: SHARE OF ACT INVESTMENT PROJECTS (WHERE \$ VALUES ARE AVAILABLE)



Source: Access Economics *Investment Monitor*.

3. INDUSTRIES AND INFRASTRUCTURE

3.1 INDUSTRIES

As discussed above, the public sector is an important industry in the ACT, along with the 'professional services' sectors of the economy they comprise about two thirds of employment. Table 1-4 to Table 1-6 is based on where people live, Table 3-1 is based on where people work and provides a better indication of the industry structure in the ACT.

The industry with the highest level of employment is the government sector with 31.7% of employment. The next largest industry is Professional, scientific & technical services with about 10% of employment; this industry along with Administrative & support services, education & training and Health care formed the basis of the professional services industries discussed above; and, in total consist of about 30% of employment.

TABLE 3-1: EMPLOYMENT BY INDUSTRY, ACT 2006

Industry	Total	Per cent
Agriculture, forestry & fishing	425	0.23
Mining	50	0.03
Manufacturing	4,626	2.49
Electricity, gas, water & waste services	1,206	0.65
Construction	9,359	5.03
Wholesale trade	2,789	1.50
Retail trade	15,789	8.49
Accommodation & food services	10,336	5.56
Transport, postal & warehousing	4,319	2.32
Information media & telecommunications	4,229	2.27
Financial & insurance services	3,794	2.04
Rental, hiring & real estate services	2,495	1.34
Professional, scientific & technical services	18,470	9.93
Administrative & support services	4,625	2.49
Public administration & safety	58,924	31.67
Education & training	16,494	8.87
Health care & social assistance	16,365	8.80
Arts & recreation services	3,372	1.81
Other services	6,386	3.43
Inadequately described/Not stated	2,002	1.08
Total	186,055	100.00

Source: 2006 Census

At the ANZSIC level retail trade is also an industry with high importance in the territory with about 8.5% of employment. The sector has gone through some change recently with the opening of Brand Depot at the airport and the substantial development of the Canberra Centre. Future developments in the sector include the bulky goods precinct at Fyshwick.

Retail is also a large industry and employer in the Queanbeyan region with about 12.6 % of employment in Queanbeyan, see Table 3-2. Manufacturing is the major employer in Queanbeyan with 13.6 % of employment. The town has two principle industrial sites in the north of the city along Yass Road and in the west of the city near Canberra Avenue.

Construction is also a large employer in the city with 12.5 % employment. It is arguable that these may be employees who are based in Queanbeyan but provide construction services to the surrounding region. This may include the building of the defence installation near Bungendore and Canberra projects including the GDE, Canberra Centre and the airport developments.

TABLE 3-2: EMPLOYMENT BY INDUSTRY, QUEANBEYAN 2006

Industry	Total	Per cent
Agriculture, forestry & fishing	29	0.30
Mining	21	0.22
Manufacturing	1,302	13.62
Electricity, gas, water & waste services	273	2.86
Construction	1,195	12.50
Wholesale trade	309	3.23
Retail trade	1,202	12.58
Accommodation & food services	592	6.19
Transport, postal & warehousing	554	5.80
Information media & telecommunications	44	0.46
Financial & insurance services	121	1.27
Rental, hiring & real estate services	218	2.28
Professional, scientific & technical services	387	4.05
Administrative & support services	167	1.75
Public administration & safety	924	9.67
Education & training	632	6.61
Health care & social assistance	879	9.20
Arts & recreation services	150	1.57
Other services	429	4.49
Inadequately described/Not stated	130	1.36
Total	9,558	100.00

Source: Census 2006

Table 3-3 outlines employment by industry for the ACR. In the ACR only 7.1% of employment in the government sector, significantly less than in the ACT. It is noteworthy that this may change in the future with the building of the defence installation between Bungendore and Queanbeyan.

TABLE 3-3: EMPLOYMENT BY INDUSTRY, ACR 2006

	Total	Per cent
Agriculture, forestry & fishing	7884	10.6
Mining	186	0.3
Manufacturing	6381	8.6
Electricity, gas, water & waste services	1316	1.8
Construction	5052	6.8
Wholesale trade	2004	2.7
Retail trade	9998	13.4
Accommodation & food services	7785	10.5
Transport, postal & warehousing	3269	4.4
Information media & telecommunications	620	0.8
Financial & insurance services	1111	1.5
Rental, hiring & real estate services	1239	1.7
Professional, scientific & technical services	2836	3.8
Administrative & support services	1521	2.0
Public administration & safety	5245	7.1
Education & training	5529	7.4
Health care & social assistance	7641	10.3
Arts & recreation services	1431	1.9
Other services	2634	3.5
Inadequately described/Not stated	711	1.0
Total	74393	100.0

Source: Census 2006

Agriculture is a large employer in the region with 10.6% of employment, significantly higher than the ACT and Queanbeyan with 0.23% and 0.30% respectively.

Tourism

There is a significant amount of cross border tourism activity between the ACT and NSW. This encompasses leisure, work-related and other reasons for travel. Table 3-4 shows overnight cross border tourism between the ACT and the regions of NSW and other States of Australia, and Table 3-5 shows the same for day trips.

Sydney and the regions of South East NSW dominate cross border tourism into and out of the ACT. Sydney accounts for almost half of all overnight visits into the ACT, and 32% of overnight visits to NSW from the ACT. This is due to several factors, notably the proximity of the two cities, an anticipated large amount of flow of individuals for business, and the sheer population size of Sydney for visits to the ACT.

TABLE 3-4: OVERNIGHT CROSS-BORDER TOURISM, VISITOR NIGHTS ('000) 2006-07

Main NSW region	From ACT	To ACT
South Coast	1,079	215
Illawarra	106	144
Sydney	1,308	1,304
Snowy Mountains	76	32
Capital Country	243	72
The Murray	88	51
Riverina	68	60
Explorer country	313	221
Hunter	65	216
North Coast NSW	269	170
Northern River / Tropical NSW	199	77
Big Sky Country	72	189
Outback	56	25
Central Coast Region	125	85
Blue Mountains	73	30
NSW Total	4,140	2,893
Melbourne	485	776
Brisbane	427	657
South Australia	397	413
Western Australia	92	172
Tasmania	66	176
Northern Territory	24	72
Rest of Victoria	224	156
Rest of Queensland	722	242
Total	6,576	5,557

Source: *Tourism Research Australia*

The other significant destination for overnight visits from the ACT is the South Coast, a popular destination with residents of the ACT for weekend getaways.

After these, the next most frequent travel occurs to interstate destinations – particularly Melbourne and Brisbane.

As is to be expected, due to its proximity the region immediately around the ACT is also significant for day visits across the border. These visitors may be quite regular, and generally cross the border for access to retail and services unavailable closer to home.

It goes almost without saying that daytrips between the ACT and States outside of NSW are quite limited, and Table 3-5 shows this to be the case. There is a reasonable expectation that the majority of day trips between the ACT and these more distant States are business related.

Irrespective of this fact, however, some of the data included seem unrealistically low. In particular, the number of zero entries would seem to be inaccurate. These numbers may be attributable to a small sample size, or a recording error in the case where an estimate is less than 1,000.

TABLE 3-5: DAY TRIP CROSS-BORDER TOURISM, PERSONS ('000) 2006-07

Main NSW region	From ACT	To ACT
South Coast	113	105
Illawarra	7	40
Sydney	221	573
Snowy Mountains	125	125
Capital Country	235	367
The Murray	6	22
Riverina	29	51
Explorer country	45	58
Hunter	23	5
North Coast NSW	0	0
Northern River/Tropical NSW	16	0
Big sky country	0	0
Outback	0	0
Central Coast Region	23	5
Blue Mountains	8	27
Lord Howe Island	0	0
Other NSW	0	0
NSW Total	853	1,378
Melbourne	22	10
Brisbane	0	0
South Australia	0	9
Western Australia	0	0
Tasmania	20	5
Northern Territory	0	3
Rest of Vic	42	na
Rest of Qld	0	0
Total	937	1,405

Source: Tourism Research Australia

Aside from business-related trips, some of these day visitors may be visiting the ACT enroute to the NSW ski fields. Although there is an airport at Cooma, for those air passengers not travelling from Sydney it is generally more direct to fly into Canberra and travel the remainder of the way by land. To this end, several coach operators run regular bus services between Canberra and the ski fields during the winter. In particular, Transborder and Greyhounds both run a daily service from Canberra Airport, while Snowscene Express runs two services every Friday and Sunday. Several other operators also run daily services from the Jolimont Centre and Canberra Train Station.

There are many special events and festivals that are held on an annual basis in the ACT. Some of these events with attendance figures for 2006 are outlined in Table 3-6. It is likely that the majority of the attendees are locals from within the ACT, however it is reasonable to expect that a large number also attend from the broader Southern NSW region for most events, with some particularly large events such as Floriade and culturally significant events such as ANZAC Day attracting persons from greater distances.

TABLE 3-6: ATTENDEES, SELECTED EVENTS AND EXHIBITIONS IN THE ACT, 2006

Event	Attendees
Anzac Day Dawn Ceremony	27,000
Anzac Day National Ceremony	16,000
Australia Day Live 6 Concert	35,000
Bass in the Place Dance Party	10,000
Canberra Balloon Fiesta	9,545
Canberra Nara Candle Festival	5,000
Celebrate in the Park (Celebrate Canberra)	30,000
Circus of the Air (Celebrate Canberra)	10,000
Floriade	375,151
FM 104.7 Skyfire	120,000
Lighting of the Canberra Christmas Tree	5,000
Multicultural Festival	135,711
National Science Festival	109,000
New Year's in the City	5,000
ParkLive (Australia Day)	3,000
Remembrance Day	2,360
Royal Canberra Show (a)	131,000
Spring Home and Leisure show	22,000
Summer in the Capital Festival	14,126
Summernats	101,400
Tropfest	17,500

(a) 2007 Figures

Sources: Tourist attraction venues, Data available on request, as quoted in ABS, Australian Capital Territory in Focus

As Australia's capital city, Canberra is host to a large number of attractions of cultural significance. Visitor numbers to these for 2005 and 2006 are detailed in Table 3-7. Again, it is expected that a reasonable proportion of these are visitors from within the ACT (Visitor data was only available for the National Museum of Australia, see Table 3-8). The most important sites are, perhaps unsurprisingly, New Parliament House and the Australian War Memorial. Although most of these sites are free many visitors will stay overnight, thereby spending money on accommodation and other consumption items.

TABLE 3-7: VISITORS TO MAJOR ATTRACTIONS, 2005 AND 2006

Attraction	2005	2006
Australian Institute of Sport (AIS) – Arena Events	74,583	44,673
Australian Institute of Sport (AIS) – Tours	117,736	124,915
Australian National Botanic Gardens	445,586	478,113
Australian War Memorial	842,725	833,245
Canberra Deep Space Communication Complex	63,315	65,467
CSIRO Discover Centre	51,934	59,428
National Archives of Australia	40,437	32,342
National Gallery of Australia	399,378	439,813
National Film and Screen Archives	na	66,211
National Museum of Australia	480,450	585,835
National Science & Technology Centre (Questacon)	407,316	349,579
Old Parliament House	296,926	235,395
Parliament House	889,523	889,427

Sources: *Tourist attraction venues, Data available on request, as quoted in ABS, Australian Capital Territory in Focus*

TABLE 3-8: VISITORS TO NATIONAL MUSEUM OF AUSTRALIA, BY PLACE OF RESIDENCE, 2006-07

Place of Residence	Proportion
ACT	33.0%
NSW	27.4%
Victoria	10.1%
Queensland	7.8%
South Australia	5.0%
Western Australia	3.4%
Tasmania	1.1%
Northern Territory	1.1%
Overseas	11.0%
Total	100.0%

Source: *National Museum of Australia*

3.2 INFRASTRUCTURE

3.2.1 EDUCATION

Schools

In 2006 there were 63,512 students enrolled in schools in the ACT, 61.1% of whom were enrolled in government schools. Table 3-9 shows enrolment numbers by school type.

TABLE 3-9: STUDENTS ENROLLED IN SCHOOLS IN THE ACT, 2006⁷

School Type	Government	Non-Government	ACT Total
Preschool	3,624	NA	3,624
Primary School	18,873	11,854	30,727
High School	10,020	9,348	19,368
College	5,989	3,481	9,470
Special Education	322	NA	322
Total Enrolments	38,828	24,684	63,512

Source: ACT Department of Education and Training

TABLE 3-10: AVERAGE SCHOOL SIZE BY REGION OF THE ACT, 2006

	Preschool	Primary School	High School	College	Non-Government
North Canberra	30	283	797	558	481
South Canberra	31	303	730	918	937
Woden Valley	31	253	777	846	527
Weston Creek	39	201	615	-	225
Belconnen	38	246	594	635	476
Tuggeranong	59	295	482	882	560
Gungahlin	112	483	395	-	592
Other ACT	37	63	-	-	-

Source: ACT Department of Education and Training

Cross-Border Education

A significant number of students enrolled in schools in the ACT are residents of NSW; in 2007 these students totalled 1,607 in government schools (4.42% of total enrolments) and 3,021 in non-government schools (see Table 3-11 for details). The ACT Treasury notes that this is not necessarily a reflection on the standards of education received in the two regions, rather it is generally a question of convenience for the families concerned, with parents that cross the border daily for work.

This cross border usage imposes costs on the ACT Government, as the NSW Government does not fully rebate the cost of the provision of these education services, and as the number of students for which the ACT receives funding is based upon standard age participation rates, rather than actual numbers of NSW students enrolled in the ACT (*ACT Rejoinder Submission to the 2004 Review, p. 156*).

⁷ Except preschool figures: from 2004

TABLE 3-11: STUDENTS ENROLLED IN ACT SCHOOLS BY RESIDENCY, 2006 & 2007

Government 2006				
	ACT	NSW	Total	% from NSW
Primary School	18,646	563	19,209	2.93%
High School	9,599	595	10,194	5.84%
College	5,650	410	6,060	6.77%
Total	33,895	1,568	35,463	4.42%
Non-Government 2006				
	ACT	NSW	Total	% from NSW
Primary School	10,828	988	11,816	8.36%
High School	7,959	1,382	9,341	14.79%
College	2,966	556	3,522	15.79%
Total	21,753	2,926	24,679	11.86%
Government 2007				
	ACT	NSW	Total	% from NSW
Primary School	18,289	569	18,858	3.02%
High School	9,471	639	10,110	6.32%
College	5,653	399	6,052	6.59%
Total	33,413	1,607	35,020	4.59%
Non-Government 2007				
	ACT	NSW	Total	% from NSW
Primary School	10,983	999	11,982	8.34%
High School	7,991	1,458	9,449	15.43%
College	2,955	564	3,519	16.03%
Total	21,929	3,021	24,950	12.11%

Source: ACT Government

Tertiary and Other Post-School Education

The ACT has superior tertiary education facilities when compared to the rest of Australia, with four universities in the ACT. The Australian National University (ANU) consistently rates as the best Australian university on international comparisons, and the University of Canberra, Australian Defence Force Academy and the Australian catholic university also service the ACT and surrounding population.

Of the 11,984 students studying at ANU in 2003, 62% reported their place of usual residence as within the ACT.

The Canberra Institute of Technology (CIT) provides a broad range of post-school education courses, funded primarily by the ACT Government (*CIT Annual Report, 2006*). Table 3-12 outlines the number of persons enrolled in the vocational and training sector in the ACT.

TABLE 3-12: STUDENTS ENROLLED IN VOCATIONAL EDUCATION AND TRAINING, ACT, 2004-06, '000

	2004	2005	2006
Males	10.8	11.1	11.3
Females	11.5	11.8	12.2
Persons	22.3	23.0	23.6

Source: ABS, Australian Capital Territory in focus 1307.8, 2007

In 2006 10% of those enrolled in CIT programs were enrolled as part of an apprenticeship or traineeship, while just under 17% of students were residents of NSW.

The relatively high provision of tertiary education services in the ACT has contributed to the economic strengths in the ACT; as the Canberra-Queanbeyan labour force has the highest proportion of workers with a degree or higher non-school qualification of any Australian capital city, with 35.6% of the labour force holding such a qualification (*ACT, A Social Atlas, 2008*). This is reflected in the industries of comparative advantage identified in the 2003 ACT Economic White Paper, including Education, Information and Communication Technology, Biotechnology, and Government Administration and Defence.

3.2.2 HEALTH

The ACT has two public hospitals (the Canberra Hospital in Garran and Calvary Hospital in Bruce), and five private hospitals. This is a relatively high level of health service provision, with both the major hospitals providing a broad range of general and specialised services. These services attract usage from across the ACT as well as from residents of NSW.

Surrounding the ACT is the Greater Southern Area Health Service of NSW Health, the area and services of which are detailed in Appendix D (Figure D1). There are six hospitals or smaller level health services in the area surrounding the ACT, the largest of which is Goulburn Base Hospital, with 106 beds.

A large number of NSW residents from the region, however, travel to the ACT when they require hospital services. Table 3-13 shows the number of NSW who were treated in ACT public hospitals for 2006-07, and shows a total 18,424 NSW residents were treated, around 91% of whom were from Southern NSW. Kidney and urinary tract services were those most used by NSW residents in the ACT, accounting for around 32% of all separations, followed by musculoskeletal and connective tissue illnesses (11%) and those relating to the circulatory system (9%).

TABLE 3-13: NSW RESIDENTS TREATED IN ACT PUBLIC HOSPITALS, 2006-07

Type of service	Male	%	Female	%	Separations	%
Surgical	2,482	23.6	2,189	27.7	4,671	25.4
Other	654	6.2	501	6.3	1,155	6.3
Medical	7,396	70.2	5,202	65.9	12,598	68.4
Total	10,532	100	7,892	100	18,424	100
Area in NSW						
Non-Southern Area	922	8.8	749	9.5	1,671	9.1
Southern Area	9,610	91.2	7,143	90.5	16,753	90.9
Total	10,532	100	7,892	100.0	18,424	100.0

Source: ACT Government

The figures from 2005-06 produce an even more notable result. Comparison of Table 3-14 and Table 3-15 shows that the total number of NSW residents treated in ACT public hospitals in 2005-06 was in fact greater than the total number of patients treated in the region of NSW surrounding the ACT. This suggests a heavy reliance on the health services of the ACT by residents of Southern NSW.

TABLE 3-14: NSW RESIDENTS TREATED IN ACT PUBLIC HOSPITALS, 2005-06

Type of service*	Male	%	Female	%	Separations	%
Surgical	2,329	23.3	2,148	26.8	4,477	24.9
Other	656	6.6	452	5.6	1,108	6.2
Medical	6,994	70.1	5,412	67.5	12,406	69.0
Total	9,979	100	8,012	100	17,991	100
Area in NSW						
Non-Southern Area	908	9.1	868	10.8	1,776	9.9
Southern Area	9,071	90.9	7,144	89.2	16,215	90.1
Total	9,979	100	8,012	100	17,991	100

Source: ACT Government

TABLE 3-15: NSW REGION HOSPITAL SEPARATIONS, 2005-06

Health Service	Separations
Braidwood Multi-Purpose Service	169
Cooma Health Service	2,829
Goulburn Base Hospital	7,273
Queanbeyan Health Service	4,046
Tumut Health Service	2,264
Yass Health Service	749
Total	17,330

Source: Greater Southern Area Health Service Annual Report, 2005-06

The nearest NSW regional hospital to the ACT, Queanbeyan Hospital is presently undergoing redevelopment which will increase its capacity from 49 beds to around 60 beds. This redevelopment also includes an emergency department almost double the size of the present one, and an additional operating theatre and procedure rooms (*NSW Health Media Release*). This redevelopment is expected to be complete by mid 2008. Additionally, the new Commonwealth Government made an election campaign promise to open a GP Super Clinic in Queanbeyan to reduce pressure on Queanbeyan Hospital. Both of these projects can be expected to reduce the number of NSW residents from the Queanbeyan region using ACT hospital services, and the improvements should also reduce numbers of patients that need to be transferred from Queanbeyan to ACT hospitals for appropriate care.

TABLE 3-16: SEPARATIONS BY STATE/TERRITORY OF USUAL RESIDENCE, 2005-06

State or Territory of Usual Residence	ACT	NSW
New South Wales	17,592	1,388,752
Victoria	212	5,815
Queensland	151	11,476
Western Australia	30	500
South Australia	66	665
Tasmania	25	282
Australian Capital Territory	53,997	2,557
Northern Territory	7	191
Other Australian territories [©]	0	n.p.
Not elsewhere classified ^(d)	56	n.p.
Not reported	0	0
Total	72,136	1,420,463

Source: ACT Government

The cross border flows for health reasons do not move in only one direction. Table 3-16 shows that there were 2,557 hospital separations for ACT residents in NSW hospitals in 2005-06. A large number of these are expected to be ACT residents who were visiting NSW at the time of their health incident, however, it is also expected that some proportion would be ACT residents who are closer to a NSW hospital than they are to an ACT hospital, for example those who live in the Oaks Estate area are closer to Queanbeyan. In the long term, the future planned residential development of the Kowen Plateau without associated development of health infrastructure in that part of the ACT may lead to increased health-related service flows from the ACT into NSW.

3.3 TRANSPORT

ACT Community Roads

Total road length in the ACT as at January 2007 was 2,595km, with a total replacement value of \$5.5 billion (Council of Australian Governments - COAG Report 2007 pp.18-19). Almost all of this is urban roads, with some 1,800km of urban municipal roads and 435km of urban territorial roads. Table 3-17 outlines the transport expenditure in the ACT, with \$164 million being spent in 2005-06, up from \$160 million in 2003-04.

TABLE 3-17: ACT ROAD CONSTRUCTION AND MAINTENANCE EXPENDITURE, 2003-04 – 2005-06, \$M

	2003-04	2004-05	2005-06
Transport	155	144	152
Communications and Other Transport	5	12	12
Total	160	156	164

Source: Government Finance Statistics, Australia, 2005-06, ABS, Cat. No. 5512.0, as quoted in ABS, Australian Capital Territory in focus 1307.8, 2007

There is generally only minimal congestion on roads in Canberra, except in the case of a road incident, however there are some areas where traffic is becoming more regularly built up during the morning and afternoon peaks, in particular the roads accessing the developing areas of Gungahlin.

National and Regional Roads - Linkages with the Region

There are four major inter-regional road linkages from the ACT:

The Federal Highway is an 80km dual carriageway road that connects the northern end of Canberra to the Hume Highway, approximately 10km south of Goulburn and is the main Highway to Sydney. The highway also provides access to the Kings Highways (to the south coast) via Macs Reef Road. Table 3-18 shows traffic data on the vehicles per day travelling into and out of the ACT on the Federal Highway.

TABLE 3-18: FEDERAL HIGHWAY TRAVEL INTO AND OUT OF THE ACT

Federal Highway	Direction	Weekday Average (VPD)	Weekend Average (VPD)	Weekly Average (VPD)	AM Peak (VPH)	PM Peak (VPH)
	Canberra	7,900	7,200	7,250	750	400
	North interstate	7,050	4,150	5,750	300	950

Source: Territory and Municipal Services unpublished traffic data, count date Canberra direction 16/6/2006 North interstate direction 10/4/2004

The Barton Highway is a 62km highway that connects to the Hume Highway, approximately 5km east of Yass. The Barton Highway forms part of the main route from Canberra to Melbourne, and more locally connects Yass and Murrumbateman with the ACT. It is dual carriageway for the 15km within the ACT and the last 6km before connecting to the Hume Highway, and one lane each way with overtaking lanes for the remainder, passing through the town of Murrumbateman. The Barton Highway is not currently at the standard of the Federal Highway, but, there are plans to convert the road to dual carriageway with bypasses. Table 3-19 shows traffic data on vehicles per day travelling into and out of the ACT on the Barton Highway.

TABLE 3-19: BARTON HIGHWAY TRAVEL INTO AND OUT OF THE ACT

Barton Highway	Direction	Weekday Average (VPD)	Weekend Average (VPD)	Weekly Average (VPD)	AM Peak (VPH)	PM Peak (VPH)
	Canberra	5,500	4,950	5,350	650	350
	Yass	5,650	4,950	5,500	350	700

Source: Territory and Municipal Services unpublished traffic data, count date 20/9/2005

The Monaro Highway runs south of Canberra to Cooma, ultimately connecting with the Princes Highway at Cann River in Victoria. The Monaro Highway connects Canberra to the NSW Ski Fields, and also forms part of the main route from Sydney to the Ski Fields. Between Canberra and Cooma there are occasional overtaking lanes, with dual carriageway close to Canberra. Table 3-20 shows traffic data on the number of vehicles per day travelling into and out of the ACT on the Monaro Highway. The information was gathered outside of the ski season and so underestimates the total number of vehicles that travel in the winter months.

TABLE 3-20: MONARO HIGHWAY TRAVEL INTO AND OUT OF THE ACT

Monaro Highway	Direction	Weekday Average (VPD)	Weekend Average (VPD)	Weekly Average (VPD)	AM Peak (VPH)	PM Peak (VPH)
	Canberra	2,350	2,800	2,450	250	150
	Cooma	3,100	2,650	3,000	200	300

Source: Territory and Municipal Services unpublished traffic data, count date 10/10/2006

The Kings Highway is the main road to the NSW south coast, travelling through Queanbeyan and several small NSW towns, connecting with the Princes Highway on the coast at Batemans Bay. It is one lane each way with occasional overtaking lanes throughout.

The three main roads linking the ACT with Queanbeyan are Lanyon Drive, Canberra Avenue and Pialligo Avenue. Pialligo Avenue runs from north Queanbeyan and connects to Canberra International Airport. The road is accessed via Yass Road near the industrial estate in north east Queanbeyan and Oaks Estate Road north of the city. The road is single carriageway to the airport and is congested during peak times, though construction is underway for an upgrade around the airport.

Table 3-21 shows traffic data on the number of vehicles per day travelling into and out of the ACT on Pialligo Avenue. As expected, the road provides access for Queanbeyan residents (and the surrounding towns) to the employment lands in central and northern Canberra. 1,500 cars use the road in the AM peak time with 1,400 using the road in the PM peak time. It is anticipated the growth in the airport employment lands will increase the relative importance of the Pialligo Avenue linkage.

TABLE 3-21: QUEANBEYAN EAST TRAVEL INTO AND OUT OF THE ACT

Pialligo Avenue	Direction	Weekday Average (VPD)	Weekend Average (VPD)	Weekly Average (VPD)	AM Peak (VPH)	PM Peak (VPH)
Via Oaks Estate Road	Canberra	3,350	1,750	2,900	450	250
	Queanbeyan	3,900	1,950	3,350	200	550
Via Yass and Sutton Roads	Canberra	6,900	3,950	6,050	1,050	400
	Queanbeyan	6,500	3,850	5,750	300	850
Total	Canberra	10,250	5,700	8,950	1,500	650
	Queanbeyan	10,400	5,800	9,100	500	1,400

Source: Territory and Municipal Services unpublished traffic data, count date 5/2/2007

Canberra Avenue is the busiest road link between Queanbeyan and the ACT and the only dual carriageway road. Data from 2003 suggests vehicles per day of 16,550 into Canberra and 15,900 from Canberra. Further during peak periods the link has the highest use with 2,600 cars using the road in the morning and 2,050 afternoon peak time.

Canberra Avenue connects Queanbeyan to Fyshwick. The route is suited to Queanbeyan traffic travelling into the employment, social and retail lands of Canberra's south and north. Table 3-22 shows traffic data on the number of vehicles per day travelling into and out of the ACT on Canberra Avenue.

TABLE 3-22: QUEANBEYAN WEST TRAVEL INTO AND OUT OF THE ACT

Canberra Avenue	Direction	Weekday Average (VPD)	Weekend Average (VPD)	Weekly Average (VPD)	AM Peak (VPH)	PM Peak (VPH)
Harman to Newcastle St	Canberra	16,550	10,900	14,950	2,600	1,000
	Queanbeyan	15,900	10,450	14,350	800	2,050

Source: Territory and Municipal Services unpublished traffic data, count date 11/8/2003

Lanyon Drive connects Queanbeyan to the Monaro Highway, the route is suited to those travelling to the southern parts of the ACT, such as Tuggeranong. Jerrabomberra residents also use Lanyon Drive to access the Monaro to travel north. Table 3-23 shows traffic data on the number of vehicles per day travelling into and out of the ACT on Lanyon Drive.

TABLE 3-23: QUEANBEYAN SOUTH TRAVEL INTO AND OUT OF THE ACT

Lanyon Drive	Direction	Weekday Average (VPD)	Weekend Average (VPD)	Weekly Average (VPD)	AM Peak (VPH)	PM Peak (VPH)
Lanyon Drive	Canberra	10,050	8,250	9,350	1,000	800
	Queanbeyan	10,150	8,150	9,450	600	1,050

Source: Territory and Municipal Services unpublished traffic data, count date 7/4/06

Lanyon Drive has about 10,000 movements into and out of the ACT, with 1,000 movements into the ACT during the AM peak time and 1,050 movements out of the ACT in the PM peak time.

Major Roads within the ACT

There are also several major roads within the ACT that are significant routes through Canberra, and which connect Canberra to the inter-regional highways. Such important routes include:

- ❑ Majura Road connects the Federal Highway just inside the ACT border to the north with Pialligo Avenue just inside the ACT border to the east. This road is part of the “National Highway 23”, and forms the connecting link between the Federal and Monaro Highways, meaning it is a significant link in the route between Sydney and the ski fields, as well as a truck freight bypass of Canberra. The road is currently one lane in each direction and with the development of the airport precinct at the southern end is facing significant constraints.
- ❑ Parkes Way is one of the main routes connecting the Belconnen region to the city centre.
- ❑ Northbourne Avenue connects the city centre with the Federal Highway, as well as servicing much of North Canberra.

Investment

The primary road infrastructure underway at present in the ACT is the roads around the airport noted above and the GDE, which links the growing region of Gungahlin from the Barton Highway to the Glenloch Interchange. The interchange is a busy hub linking roads north to Belconnen, south to Tuggeranong and east along Parks Way into the City and Airport. The road also provides for more efficient inter-regional movements and better access to the surrounding regions of Canberra to the National Highways.

The two lane GDE may need further investment in the future. A SMEC assessment of the GDE – based on traffic analysis – states a 4 lane road with full grade-separations of interchanges will ultimately be required.

It has been proposed that the Majura Road be upgraded and made the primary road connection between Gungahlin and the Monaro Highway. The Majura Road is insufficient to meet needs as a Canberra bypass for freight, and the inadequacy of this road will increase as development of the airport at the southern end continues. Widening of this road and improvement of the quality of the linkages it provides will improve the flow of traffic on the Majura Road during peak periods, and also has the potential to improve flow on alternative routes such as Northbourne Avenue.

The Barton Highway, although well developed within the ACT, is an important road linkage for the residents of the ACT beyond its borders. As the fastest route to Melbourne, Adelaide and south west NSW, there is significant passenger and freight demand for this road to be improved.

Rail

Canberra is currently serviced by a spur on the Sydney Melbourne rail line. The previous Canberra Spatial Plan allowed for a potential high speed rail link to Sydney, which is intended to travel along Majura Road past the airport and then along the Monaro Highway.

There is some question, however, as to whether such a rail link would be worthwhile. The present train line, in conjunction with coach buses and air links, seem to meet the current non-car transport demands for Sydney-Canberra travellers, and the construction of such a high-speed rail link was estimated in 2001 to cost \$4.5 billion to construct.

Train passenger movements into and out of the ACT were significantly lower in 2006 than 2005, with year-on-year falls of some 10% in total passengers. The fact that Canberra is not conveniently located on a main train line may partly explain this fall, or alternatively this may be due to increased airline competition making flying a more desirable alternative. Private transport may also be seen as a superior alternative.

TABLE 3-24: TRAIN PASSENGER MOVEMENTS INTO AND OUT OF THE ACT, 2005-06

	2005	2006	% change 2005-06
Origin Canberra	50,331	44,942	-10.7
Destination Canberra	52,438	47,508	-9.4

Source: State Rail NSW and data available on request, as quoted in ABS Australian Capital Territory in focus 1307.8, 2007

Buses

ACTION buses runs services within the ACT, but does not operate services into NSW. These routes are serviced by Deanes into the Queanbeyan area, and Transborder into the Yass area.

In the year 2005-06 the ACTION bus service had 16.93 million passengers up 4.24 % from the previous year, see Table 3-25. The 4.24 % increase in passenger numbers was done with a slightly higher kilometre numbers – 23.45 million – up 0.48 % over the previous year.

TABLE 3-25: SUMMARY OF ACTION BUS SERVICES, 2004-05 – 2005-06

		2004-05	2005-06	% change
Passengers boarding	'000	16,240	16,928	4.24
Bus kilometres	'000	23,339	23,450	.48
Buses in fleet	no.	391	387	-1.02
Employees (FTE)	no.	700	712	1.71

Source: ACTION Authority Annual Report, 2004-05 and 2005-06 as quoted in, ABS, Australian Capital Territory in focus 1307.8, 2007

The numbers of passengers taking long-distance buses in and out of the ACT was significantly lower in 2005 than in 2006, as seen in Table 3-26. The rates flowing in both directions have fallen in virtually identical proportions. Without further information it is

impossible to determine whether these falls are a result of fewer people travelling in and out of the ACT, or whether bus timetables do not match the plans of those travelling, leading to a higher rate of use of private means of transport.

TABLE 3-26: BUS PASSENGER MOVEMENTS INTO AND OUT OF THE ACT, 2005-06

	2005	2006	% change 2005-06
Origin Canberra	21,723	18,934	-12.8
Destination Canberra	21,718	19,027	-12.4

Source: CountryLink and data available on request, as quoted in ABS Australian Capital Territory in focus 1307.8, 2007

Transborder in the year to February 2008 reported an average of 188 full fare passenger movements per day on the Yass-Canberra route, and around 1,000 concession passenger movements per day. These concession numbers are primarily school students, and the bus routes access approximately 50 schools.

Deane's Buslines operates services out of Queanbeyan with about two thirds of the timetables traffic consisting of cross border activity. Deane's estimate that they carry around 2,000 full fare paying passengers per day, and around 5,000 concession passengers per day. Assuming similar rates of patronage for each timetabled service, this equates to around 4,600 passenger movements into and out of the ACT per day.

3.4 CANBERRA AIRPORT

Objective 6 of the *2008 Canberra International Airport Preliminary Draft Master Plan* is to "Develop Canberra International Airport as a multi-modal transport hub for passenger and freight connections". The development plans are large-scale with significant potential impacts for the ACT and its region.

Airports are a crucial part of the infrastructure of a modern economy. The primary economic function and wider social importance of airports is to facilitate the efficient movement of people and freight in and out of the region it serves. In providing the runways, taxiways, terminals and road links for this purpose, inevitably significant parcels of land remain on airport sites for ancillary developments that are not directly related to their core economic purpose. Where this surplus land can be put to a better use (rather than being left as an unproductive paddock beside a runway), it can improve the overall allocation of resources in the economy.

A complex balance needs to be struck between the aviation services needed by the local community and the implications of developments for planning, infrastructure provision, traffic congestion and aircraft noise. The main economic value of the airport to the ACT community is the availability of convenient direct flights to a range of destinations. Over time, the airport is likely to attract direct flights to more Australian cities and some selected international destinations such as Auckland and Singapore. This will be of considerable benefit to residents of the ACT.

Passengers and Linkages

Table 3-27 shows annual passenger movements in and out of Canberra Airport.

TABLE 3-27: PASSENGER MOVEMENTS, CANBERRA AIRPORT, TO 2006-07

International Airlines			
Year	In	Out	Total
2003-04	-	-	-
2004-05	994	1,002	1,996
2005-06	-	-	-
2006-07	-	-	-
Major Domestic Airlines			
Year	In	Out	Total
2003-04	900,367	892,305	1,792,672
2004-05	981,742	972,766	1,954,508
2005-06	1,008,934	1,002,718	2,011,652
2006-07	1,025,890	1,025,237	2,051,127
Regional Airlines			
Year	In	Out	Total
2003-04	251,648	259,102	510,750
2004-05	255,671	266,530	522,201
2005-06	265,580	272,897	538,477
2006-07	316,376	319,833	636,209

Source: BTRE

3.5 UTILITIES

Many of the utility services in the ACT also service the south east region in particular Queanbeyan. In recognition of this, there are several agreements between the ACT and NSW Governments concerning infrastructure and future developments. This includes the *Cross Border Region Settlement 2006*, which provides that future settlement in the region should maximise the efficient use of existing infrastructure and services. Many of these agreements on cross border behaviour, however, remain quite open-ended and subject to interpretation. In general many of the essential services are provided from national sources. In the case of electricity and gas, supply to the ACT is provided by a national grid with almost no generation capacity in the Territory.

3.5.1 WATER

Water Infrastructure and Linkages

The bulk of the ACT's water supply comes from dams within NSW, mostly the Googong Dam and the three reservoirs along the Cotter River, and Queanbeyan is also serviced by the ACT water supply. Under the ACT and NSW Government's *Cross Border Water Supply* agreement, the ACT Government has the power in managing water resources in the Googong Dam, while NSW governs planning, development and environmental management in the wider catchment area including the Dam. This relationship arises from the *Seat of Government Acceptance Act 1909 (Cth)*, which provides paramount rights to the use and control of waters of the Queanbeyan and Molonglo Rivers and their tributaries which lie to the east of the Cooma-Goulburn railway to the ACT. The provision of water services in the ACT is controlled by ACTEW Corporation, and managed by ActewAGL.

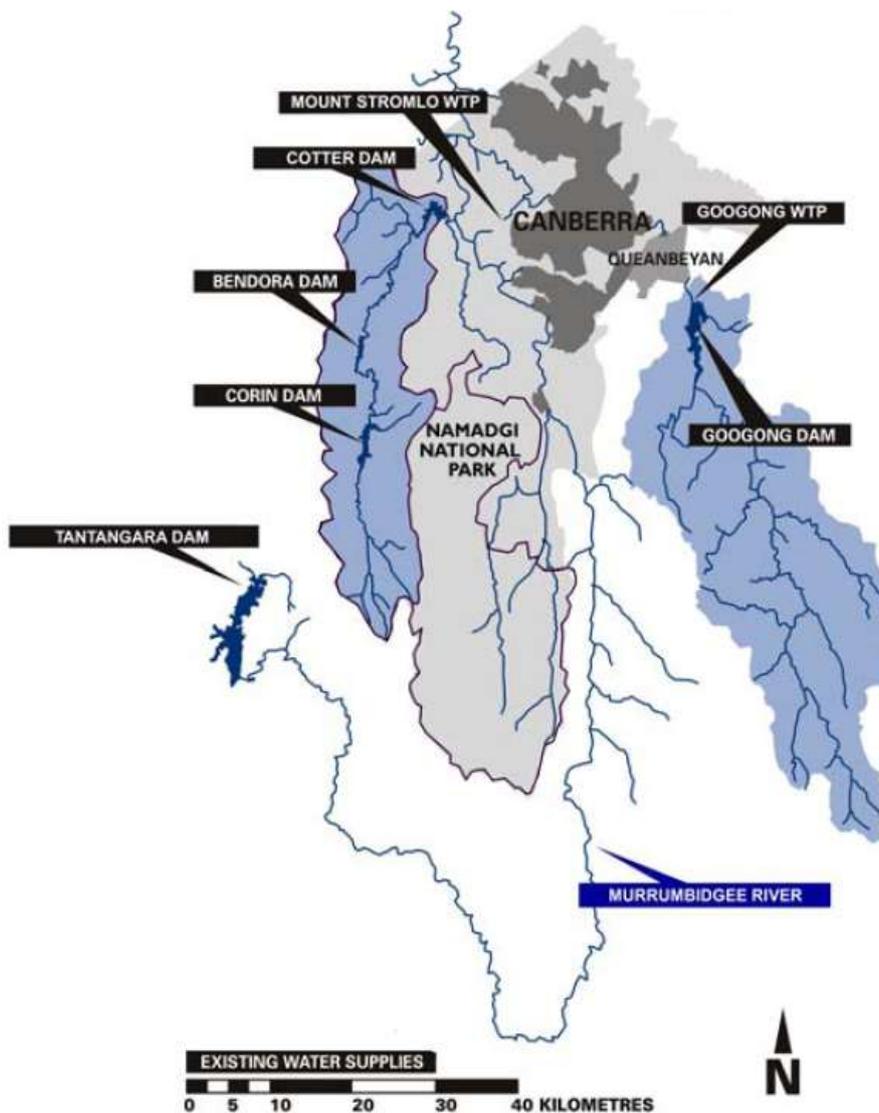
There is also scope for the ACT to utilise the water reserves of nearby rural NSW towns, including the supply to Tumut. This linkage may prove an important one in the future as the ACT may begin to outgrow its water supply. Estimates presented to COAG by the ACT Government suggested that there may be need for a new water supply in the near future, as

the current dams can meet demand for a population up to around 405,000 (COAG 2007 p.49). Access Economics projections estimate this population figure being reached in 2027.

In recognition of this approaching capacity, ACTEW Corporation has identified the need to secure the water supply for the ACT into the future. Some strategies suggested in the 2005-06 to 2008-09 *Statement of Corporate Intent* include working to achieve substantial reductions in per capita water consumption (goals of 12% by 2013 and 25% by 2023), and increased use of recycled water.

A recent development in water has seen the Memorandum-of-Understanding on Murray-Darling Basin reform. The MoU for the first time will provide for whole of basin cooperative management. The Commonwealth will now work with the basin States to agree on priority water saving projects to be earmarked for Federal funding. The policy framework is likely to increase the linkages between the ACT and the surrounding region as policy makers seek to address the challenges of water security.

FIGURE 3.1: WATER CATCHMENT OF THE ACT AND REGION



Source: ACT Infrastructure, *Five-Yearly Report to the Council of Australian Governments*, ACT Chief Minister Department, January 2007

Water Consumption

Figure 3.2 shows total water consumption rates for houses serviced by ActewAGL. This includes all of the ACT as well as Queanbeyan and some parts of NSW. Consumption rates have declined in recent years, partly due to increasingly stringent water restrictions as drought has placed stress upon the ACT's water supplies.

FIGURE 3.2: WATER CONSUMPTION IN ACT AND REGION, 2002-03 TO 2006-07, GL '000



Source: ACTEWAGL Annual Report 2007, based on consumption of water provided by ACTEWAGL to the ACT and Queanbeyan water market

3.5.2 ELECTRICITY

Electricity Consumption

Table 3-29 provides a summary of electricity consumption in the ACT and its immediate region for the four years to 2004-05.

Consumption over the period has increased from 2,516 MWh in 2001-02 to 2,717 MWh in 2004-05. Residential consumption has remained relatively steady at about 1,100 MWh where non-residential has increase from 1,427 to 1,583 over the period.

TABLE 3-28: ENERGY MARKET IN THE ACT AND REGION, 2001-02 TO 2004-05

	2001-02	2002-03	2003-04	2004-05
<i>Consumption (MWh)</i>				
Residential	1,089	1,079	1,134	1,134
Non-residential	1,427	1,467	1,503	1,583
Total	2,516	2,546	2,637	2,717
<i>Customers ('000)</i>				
Residential	124.8	126.6	128.5	130.5
Non-residential	13.0	13.3	12.7	13.0
Total	137.9	139.9	141.4	143.6

Source: ICRC, *Licensed Electricity, Gas and Water and Sewerage Utilities Performance Report for 2004-05*

Electricity Infrastructure and Linkages

Capital expenditure on the electrical network by ActewAGL totalled \$35 million in 2006-7, including pole inspection and replacement, replacement of a failed power transformer at the Fyshwick zone substation and modification to substations to improve OH&S outcomes and meet substation fence security standards.

Less than 1% of the ACT's electricity needs are met through generation within the ACT, the remainder is supplied from interstate sources.

The electricity market in the ACT does not presently face any significant capacity constraints. Transmission services within the ACT come primarily from TransGrid, through the Canberra Substation in West Belconnen and the Queanbeyan Substation. ActewAGL and TransGrid are currently working to establish a second major bulk supply to the ACT by 2009, further securing the provision of electricity services in the ACT.

Players in the market

Historically the ACT's electricity supply came from the government business operation ACTEW (since October 2000 ActewAGL). ActewAGL is the established and dominant player in the market. The electricity market in the ACT was opened to full retail contestability on 1 July 2003, and the new entrants to the market include;

- ❑ Country Energy (which distributes electricity throughout most of country NSW, including the areas surrounding the ACT); and,
- ❑ Energy Australia (which distributes electricity to Sydney, the Central Coast and Hunter region) (*State of the Energy Market 2007*).

Electricity Regulation

ActewAGL is the only firm licensed for electricity distribution throughout the ACT, and has been regulated by the Independent Competition and Regulatory Commission (ICRC) which acts under the *ACT Utilities ACT 2000*, as well as National Electricity Law.

The National Electricity Market extends across the eastern States and South Australia, and includes the ACT. The national framework has influence the policy making in the ACT with regards to electricity supply; including the disaggregation of the retail and distribution arms of ActewAGL.

The Australian Energy Regulator (AER) has been charged with regulation of the transmission, distribution and retail markets for electricity in the ACT, from the beginning of 2008. The AER provides for streamlining of energy regulation across States that was not previously possible, and will be an asset insofar as the harmonisation of policies between the States, and particularly between NSW and the ACT.

3.5.3 GAS

Gas Consumption

Table 3-30 provides a summary of the gas market in the ACT and immediate region for the period 2002-03 to 2006-07. Gas consumption has bounced around 7,000 to 7,650 TJ over the period, with 7,301 TJ of consumption in the 2006-07 financial year. The decline in gas consumption in 2004-05 has been attributed to an unusually warm winter.

TABLE 3-29: SUMMARY OF THE ACT AND REGION GAS MARKET 2002-03 TO 2006-07

	2002-03	2003-04	2004-05	2005-06	2006-07
Quantity of gas supplied (TJ)	7,014	7,647	7,294	7,657	7,301
Network connections				103,834	106,952
Length of main	3,740	3,786	3,841	4,322	4,386
Trunk receiving	9	9	9	9	9
District regulating stations	82	84	84	84	84

Source: ActewAGL Annual Report 2007

The level of infrastructure has increased slightly each year, as the length of the mains is increased, however the improved infrastructure provision has not been met with uniform increases in gas usage in the territory.

Gas Infrastructure and Linkages

In 2001 construction of the Hoskintown-Canberra gas pipeline was completed, at 22km, this is a relatively short gas pipeline, which runs off the main gas pipeline to Sydney. The gas is sourced primarily from the

- ❑ Cooper Basin in South Australia, transmitted to Sydney via the Moomba pipeline, to which the Hoskintown-Canberra route connects (ICRC 2007 p.14);and,
- ❑ Gippsland Basin via the Eastern Gas Pipeline.

In essence the distribution arm of ActewAGL acts as resellers for the producers of gas outside the ACT, as none is produced within the Territory borders.

The ACT gas distribution network distributes gas through the ACT and Queanbeyan, extending out as far as Bungendore. As gas distribution is relatively new to the ACT, the infrastructure is presently in good condition.

Players in the market

Gas services in the ACT have historically been provided by the Australian Gas Light Company (since October 2000 part of ActewAGL). On 1 July 2002 the gas retail base of ActewAGL was opened to full retail contestability; this gas base includes the ACT and Queanbeyan. New entrants to this market are Sun Gas Retail, Country Energy and Energy Australia.

There is presently a single licence for gas distribution in the ACT, which is held by a joint venture between ActewAGL and Alinta, as with electricity the retail and distribution energy arms of ActewAGL are separately managed.

Gas Regulation

At the end of 2007, full regulatory responsibility for the various ACT gas markets was deferred to the AER. The AER will take responsibility for regulation of the gas transmission network Australia-wide, and regulation of the distribution and retail markets in all States and territories bar those of WA (where it remains in the hands of the Economic Regulation Authority) and the retail markets in the NT and Tasmania (where the retail market is unregulated). This should benefit the ACT and players in its gas markets through streamlining and a reduction in the complexity of Australian energy regulation.

3.6 SPORT AND RECREATION

Competition Sport

There are a large number of club sports teams that are based in Southern NSW that travel regularly to the ACT for competitions. Table 3-31 to Table 3-35 show numbers of teams registered in ACT competitions by their home location. Many of these teams regularly visit the ACT to play, and in doing so utilise ACT Government-provided sports facilities, but also will spend money on goods and services provided in the ACT.

TABLE 3-30: RUGBY LEAGUE TEAMS BY REGION, 2007

Grade	ACT	Queanbeyan	Rest of NSW	Total
Boys	332	15	12	359
Girls	131	7	1	139
Total Juniors	463	22	13	498
Adults	192	7	10	209
Total	655	29	23	707

Source: Capital Football

TABLE 3-31: CRICKET TEAMS BY REGION, 2006-07

Grade	ACT	Queanbeyan	Rest of NSW	Total
Men's Seniors	30	5	0	35
One Day	9	1	3	13
Women's	5	1	0	6
Total	44	7	3	54

Source: ACT Cricket; Note data on junior teams unavailable at time of publication

TABLE 3-32: RUGBY UNION TEAMS BY REGION, 2008

Grade	ACT	Queanbeyan	Balance of NSW	Total
Adults				
Premier Division	7	1	0	8
Monaro Division	4	1	10	15
Women's	5	1	1	7
Total	16	3	11	30

Source: ACT Brumbies; Note data on junior teams unavailable at time of publication

TABLE 3-33: AFL TEAMS BY REGION, 2007

Grade	ACT	Queanbeyan	Balance of NSW	Total
Mens	28	3	5	36
Juniors	106	13	4	123
Womens	7	0	1	8
Total	141	16	10	167

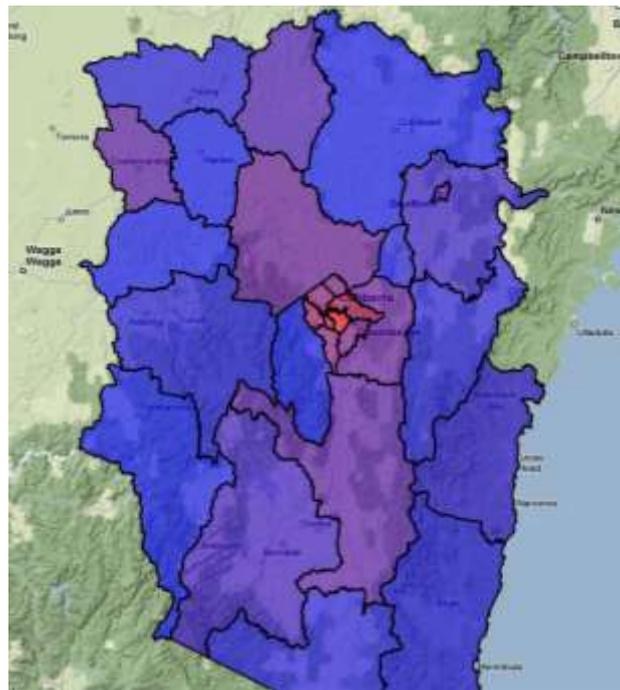
Source: www.sportingpulse.com

TABLE 3-34: SOCCER TEAMS BY REGION, 2007

Grade	ACT	Queanbeyan	Balance of NSW	Total
Womens	71	1	2	74
Mens	120	6	8	134
Junior Girls	91	5	1	97
Junior Boys	199	12	8	219
Total	481	24	19	524

Source: Capital Football Annual Report 2007

FIGURE 3.3: PARTICIPATION OF SPORTING TEAMS IN ACT COMPETITIONS, PER CAPITA



Professional Sport

The three most significant professional sports events in the ACT insofar as crowd attendance in 2006 were Rugby Union (accounting for 16% of all sports attendees), Rugby League (14%) and Australian Rules football 11%).

In 2006 a total of 124,816 persons attended the Brumbies seven 'home' matches, played at Bruce Stadium (*ACT in Focus, 2007 p.166*). A significant number of these are likely to be regular attendees rather than a one-off as with other events, indeed there were 9,600 persons who had Brumbies membership, meaning this group attended most or all of the

home games. The Brumbies market themselves as “ACT and Southern NSW Brumbies” and so it is likely that a proportion of these attendees are cross-border visitors.

A total of 138,270 persons attended the Canberra Raiders 12 ‘home’ matches in 2006, also played at Bruce Stadium. Of these attendees, 74% of the tickets were purchased by Raiders Members.

Table 3-36 provides details on Canberra Raiders account holders by region. ACT members holders contribute almost 70% of all account holders, with Queanbeyan about 12% and the other region accounting for 18%. The Other category includes Raiders membership class *One-Eyed Members*, this class allows persons to join the club without being season ticket holders. Given the benefits of priority tickets to away games this membership class includes persons from outside the Canberra area who want to watch the Raiders at away games.

TABLE 3-35: RAIDERS ACCOUNT* HOLDERS BY REGION

Region	%
ACT	69.9
Queanbeyan	11.8
Other**	18.4
Total	100.0

Source: Canberra Raiders information available on request.

* Note: The table figures are based on account holders. One account holder can have many season tickets (for example a family pass).

** includes Raiders One-Eyed Members – out of state entitles member to one out of State game.

The North Melbourne Kangaroos AFL team brought three of their ‘home’ matches to the ACT in 2006, played at Manuka Oval. A total of 34,024 persons attended these three games. In the absence of Kangaroos memberships in the ACT, it is impossible to tell at what rate these individuals were repeat customers, or what level of cross-border activity occurred.

4. SWOT ANALYSIS

4.1 STRENGTHS

In an Australia in which demand has caught up with supply (leading to persistent skill shortages), the demands of policymaking (and the drivers of prosperity) are now different. As stressed in this report, policy is no longer looking to create the next job, rather policy should be focused on providing the next worker.

Once seen in that light, the standout strength of the ACT in any SWOT analysis is the extent to which it is already performing well on the supply-side front. In brief, the ACT already has what the rest of the nation is aiming for: a highly skilled and highly productive workforce earning high incomes that is more likely to participate in the workforce than seen nationally.

It is hard to overstate the importance of this to the ACT's level of economic performance.

The impact of productivity can be seen in the average weekly individual incomes detailed in Appendix A. This data, drawn from the 2006 Census, shows average weekly individual incomes in the ACT were 55% above the national average and 61% above the average in the ACR. This gap is partly due to participation, with individuals in the ACT more likely to be in the workforce. However, the larger component of this outperformance arises from the relative skill levels of the ACT workforce, allowing workers to command a higher-than-average return in the marketplace.

Moreover, households in the ACT are relatively larger than their ACR equivalents – making them more effective economic units, better able to draw on economies of scale (for example in their purchasing). This can be seen in the average weekly household incomes detailed in Appendix A. This data shows the outperformance on average weekly household incomes in the ACT versus those in the ACR rises to 73% (versus a difference of 61% based on the average incomes of individuals).

These strengths in productivity and participation improve fairness outcomes in the ACT as well. For example, low levels of unemployment continue to minimise service delivery costs and allow the Territory to focus on those in genuine need.

Policies that aim at maintaining this competitive advantage of the ACT will maximise the growth potential of the Territory. In many cases this means keenly focussing policy within the constraints of the supply-side fundamentals – participation and productivity – in a simple regulatory framework.

Overall, maintaining and building upon the ACT's existing strengths of a skilled workforce and a willingness to participate in the workforce will enable the ACT to sustain its economic growth prospects. The challenge will be to harness these skills and facilitate the successful transition between the public and private sectors.

Of course continuing to improve the general level of educational attainment in the ACT (and in the ACT's catchment region) and improving school retention is a core part of this longer-term strategy. This will improve participation and long-run productivity outcomes for the ACT and the surrounding region.

- ❑ The ACT regularly pulls highly skilled people from other States to gain experience and train up in the public service. This makes the ACT a relatively attractive place for new high skilled service industry start ups to set up operations. Improving the attractiveness

of the ACT as a place for service industry businesses (and those working for these companies) may warrant further research.

- ❑ While importing talent is a key strength of the ACT – developing a local talent base is just as important. This means improving the general level of educational attainment and improving the quality of our educational institutions.

Government regulation and interaction with households can be more readily streamlined in the ACT. Sustaining and strengthening this environment of effective yet minimal interaction should be a key part of future policy development.

In addition the ACT has a number of other core strengths that can be developed further as the policy opportunities arise, including:

- ❑ High level of cross-border activity, which provides opportunity to draw on resources and incomes from the surrounding region;
- ❑ Its population size means that Canberra has all the facilities and infrastructure of a city, but without the congestion and pollution problems of a large metropolis; and,
- ❑ Locating in Canberra provides business with proximity to the Commonwealth Government – important given the increasing centralisation of Government services in Canberra.

4.2 WEAKNESSES

Australia is operating in a supply constrained environment rather than one where demand is limiting the capacity of the national and local economies to expand. This has significant implications for policy development.

For government, this is a fundamental change, and one being recognised relatively slowly. It means that a key task of policymakers lies in increasing participation and, where possible, reducing the government's call on the nation's resources. This means directly doing so through minimising the size of the public service, and indirectly via reducing the regulatory burden on business.

This means that as the national economy progressively embraces this new policy environment, growth in the Commonwealth public service could become less of a driver of growth in the ACT. In effect this means that the ACT's key strength – high levels of participation and productivity – is also a relative weakness because it will become increasingly difficult to improve upon such high levels in this environment.

Being a small economic region the ACT's sphere of influence in COAG style negotiations can be somewhat negated and this may limit the ability of the government to directly influence national policy agenda outcomes.

4.3 OPPORTUNITIES

All policy decisions matter, whether they are decisions that affect the way Australia interacts with international economies or decisions targeted at the local community.

In a supply constrained economy, these policy decisions matter even more because the choices people make with regards to where to live and work are less constrained by employment opportunity. For a highly skilled and productive workforce – as is attracted to the ACT – this is an even more salient point.

This creates a very important opportunity for ACT policy makers.

It is absolutely critical to get policy frameworks right. This means understanding exactly what we are aiming for, the context within which we are operating, and how best to achieve the goals of the ACT and region. It is surprising how often such fundamental questions are not addressed early on in the policy development process.

The current policy context is underpinned by a supply constrained economy where local regions have to compete for workers and other resources. It is no longer sufficient to simply boost demand such as the competition between State and Territory jurisdictions – often involving payroll tax concessions and/or other inducements – to ‘attract’ a high profile employer to a given region. As the Productivity Commission has noted, such competition is at best a zero sum game among States, and leads to losses at the national level. Moreover, if such inducements lead to a resource allocation which is different to the one the market would have made, it means the ‘winning’ jurisdiction is a direct loser.

Rather policy should be aimed at minimising the constraints on activity from regulation, and on maximising the free flow of resources into the ACT while providing an efficient and effective safety net for those individuals most at risk:

- ❑ Overall, the decisions taken in the ACT should be set within a framework that facilitates opportunity and minimises intervention in markets (particularly avoiding cross-subsidisation).
- ❑ The ACT needs to take the opportunity to drive the national debate forward by example. This means that the ACT should aim to adopt a first mover approach in policy which would allow it to embrace economic change within the supply constrained medium term environment.
- ❑ All governments must minimise their call on resources, and carefully assess the case for and against policy intervention. Interventions should be limited to genuine need, such as market failure or a desire to improve fairness. Where there are cases of inequality, this requires the reallocation of resources to those most disadvantaged in the community. This in turn requires means testing of expenditure policies against relevant yardsticks.

In sum, the ACT Government could ensure a policy environment that is conducive to sustained economic growth combined with keeping a close eye on spending to ensure its quality.

4.4 THREATS

The strong global economy has fuelled the corporate tax take, which in turn has fuelled higher Federal Government spending. As the national administrative centre, the ACT has benefited notably from that trend through both direct effects (such as increased employment in the Federal public service) and indirect effects (such as the recent boom in commercial construction, including office building).

However, there are a number of risks in continuing this trend.

The current moderation in growth in the developed world (and the potential for recession in the United States) suggests a more modest short term global outlook. The threat of financial turmoil also poses a threat to medium term growth prospects.

Yet Australia’s short term problems revolve more around high inflation than they do the slowdown in the developed world. That suggests the Federal Government will be under a

degree of pressure to make the 2008-09 Budget a tough one so as to assist the Reserve Bank in its task of reining in inflation this could well have significant implications for the ACT.

Finally, current commodity prices are well above the cost of production – and still rising for the likes of iron ore and coal. Although it may take several years or more to eventuate, it is likely that those strong commodity prices will eventually evoke a strong supply response for commodities. This could mean could be a notable slowdown in gains in the Federal tax take.

As a result, the period ahead could be a difficult one for the ACT economy, especially if it is accompanied by Federal spending restraint.

Regardless of what happens to the broader economy, the ACT Budget faces intergenerational pressures within the ACT and the region which are likely to add to the pressures on the bottom line – making it more difficult to meet the ACT's fiscal strategy and financial objectives.

The most appropriate way for dealing with this threat is to pursue policies which facilitate economic growth. There are a number of more specific policies with the potential to help achieve this, including:⁸

- ❑ Maximising educational attainment and early intervention for children at risk;
- ❑ Increasing high school retention rates (though the earlier the intervention the better for less well performing students);
- ❑ Facilitating an environment that encourages highly skilled people to spend time working in the ACT (in both public and private sector positions);
- ❑ Continuing to ensure that the regulatory burden of operating in the ACT is less than in other States and Territories;
- ❑ Also considering the impact of regulatory burdens in other jurisdictions. (That is, the aim is not to get the best possible set of regulations in the ACT but, in cases where other jurisdictions also have relatively good regulations, to consider the benefits of harmonisation in reducing administrative and compliance burdens);
- ❑ Being a leader in the adoption of national policy initiatives aimed at improving the efficient operation of markets based on clear price signals;
- ❑ Minimising impediments to sustainable development (such as land release and infrastructure constraints); and
- ❑ There should be no case for industry assistance that is not focused on simply smoothing the path of changes to resource reallocation across the economy and the region.

There are a number of other threats facing the ACT particularly in the current supply-constrained environment.

⁸ A number of research papers have been written by the Federal Treasury outlining the link between education and participation. For example see, Kennedy and Hedley of Treasury in a 2003 Working Paper, Gruen and Garbutt in a 2004 paper and Davis and Ewing in a 2005 paper.

- ❑ While the ACT has a highly educated labour force and a good capital base, these resources are mobile. This means they could shift elsewhere for a greater reward if private or government sector growth slows.
- ❑ There is a high dependence on public sector activity. If the new Federal Government decides to boost supply and limit price pressures by constraining government spending, then this could have adverse effects on the ACT. As the *Economic White Paper* notes, public sector cutbacks in 1996 led to a severe downturn in the ACT economy [p.6], and there is real risk that this may occur again.
- ❑ The relatively strong levels of private sector activity currently taking place may not last (for example in commercial construction, where activity is already falling as a share of the ACT economy).
- ❑ Increased geographical dispersion of residential areas (Gungahlin, Tuggeranong, future Molonglo Valley development) may reduce the effectiveness of the current transport infrastructure.
- ❑ Too much focus on increasing population size without regard to productivity (the use of net migration as a policy monitoring indicator for community outcomes, *Canberra Spatial Plan*, p.37) may reduce overall living standards over time as the administrative and service costs increase while growth moderates.

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APPENDIX A: ACT CATCHMENT AND LINKAGES

AUSTRALIA



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
ACT	722	1,509
Australia	466	1,027

Industry of Employment	Australia	ACT
Primary Industry	387,818	579
Manufacturing etc.	1,041,468	5,928
Construction	709,848	9,612
Trade	1,429,559	17,813
Government	608,595	53,082
Professional Serv.	2,542,590	52,502
Services	2,384,306	36,765
Total	9,104,184	176,281

	Labour Force 2006 Census			Unemployment Rate	
	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
ACT	176286	6204	182,490	3.4	2.3
Australia	9104185	503802	9,607,987	5.2	4.1

	Employed to population Ratio	Participation rate (Labour force as a proportion of Working Age Population (15 - 64))
	ACT	40.8%
ACT	52.7%	76.1%
Australia	44.0%	68.8%

	Population '000				
	1996	2006	Growth 1996-2006	2016	2026
0-14	3,911.3	4,050.1	3.5	4,283.0	4,697.7
15-64	12,196.3	13,964.2	14.5	15,641.1	16,882.2
65+	2,203.1	2,687.1	22.0	3,757.3	5,139.3
Total	18,310.7	20,701.5	13.1	23,681.4	26,719.2

CANBERRA



	Weekly Income (\$ per week)	Median Individual Income	Median Household Income
ACT		722	1,509
Australia		466	1,027

Industry of Employment

	ACT	Australia
Primary Industry	579	387,818
Manufacturing etc.	5,928	1,041,468
Construction	9,612	709,848
Trade	17,813	1,429,559
Government	53,082	608,595
Professional Serv.	52,502	2,542,590
Services	36,765	2,384,306
Total	176,281	9,104,184

Labour Force 2006 Census

Unemployment Rate

	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

Population '000

	1996	2006	Growth 1996-2006	2016	2026
0-14	67.8	62.6	-7.7	69.3	72.5
15-64	218.1	239.9	10.0	253.1	257.5
65+	22.4	31.8	41.9	51.5	72.3
Total	308.3	334.2	8.4	374.0	402.3

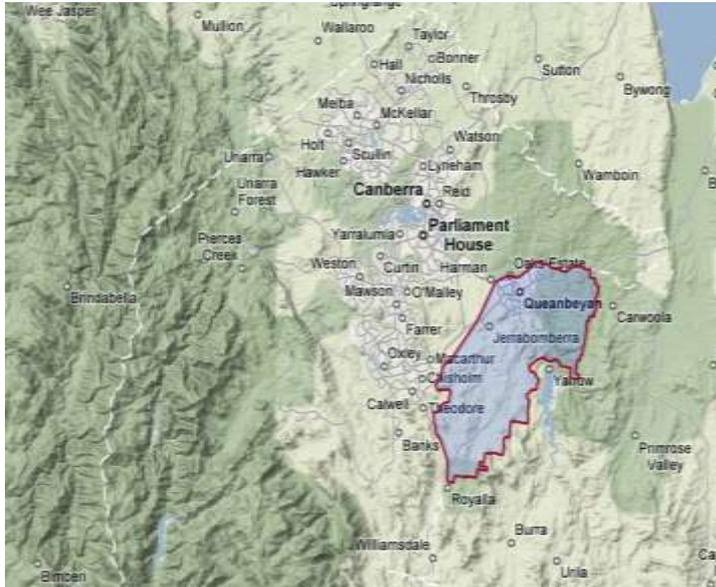
THE AUSTRALIAN CAPITAL REGION



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
	ACR	448
ACT	722	1,509
Australia	466	1,027
Industry of Employment		
	ACR	ACT
Primary Industry	9,104	579
Manufacturing etc.	8,489	5,928
Construction	8,018	9,612
Trade	14,147	17,813
Government	11,452	53,082
Professional Serv.	23,426	52,502
Services	23,651	36,765
Total	98,287	176,281

	Labour Force 2006 Census			Unemployment Rate	
	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
ACR	98295	5485	103780	5.3	N/A
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1
Population '000					
	1996	2006	Growth 1996-2006	2016	2026
0-14	46.6	47.1	1.1	43.4	44.2
15-64	130.6	150.2	15.0	160.4	162.6
65+	28.5	36.2	27.1	52.3	73.0
Total	205.7	233.6	13.5	256.1	279.8

QUEANBEYAN



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Queanbeyan (C)	641	1,181
ACT	722	1,509
Australia	466	1,027

	Industry of Employment	
	Queanbeyan (C)	ACT
Primary Industry	78	579
Manufacturing etc.	1,462	5,928
Construction	1,661	9,612
Trade	2,401	17,813
Government	4,657	53,082
Professional Serv.	4,391	52,502
Services	4,240	36,765
Total	18,890	176,281

Labour Force 2006 Census

Unemployment Rate

	Employed	Unemployed	Labour Force	DEEWR December	
				Census 2006	2007
Queanbeyan (C)	18,889	569	19,458	2.9	1.6
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

Population '000

	1996	2006	Growth 1996-2006	2016	2026
0-14	6.6	8.1	23.4	8.1	8.8
15-64	20.3	26.4	29.9	30.6	33.5
65+	2.4	3.4	39.9	5.7	8.9
Total	29.3	37.9	29.3	44.4	51.2

COOMA-MONARO



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Cooma-Monaro (A)	433	828
ACT	722	1,509
Australia	466	1,027

	Cooma-Monaro (A)	ACT
Industry of Employment		
Primary Industry	399	579
Manufacturing etc.	424	5,928
Construction	357	9,612
Trade	698	17,813
Government	438	53,082
Professional Serv.	1,111	52,502
Services	1,011	36,765
Total	4,438	176,281

Labour Force 2006 Census

Unemployment Rate

	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
Cooma-Monaro (A)	4,438	221	4,659	4.7	1.9
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

Population '000

	1996	2006	Growth 1996-2006	2016	2026
0-14	2.2	2.1	-7.2	1.7	1.6
15-64	6.3	6.5	1.8	6.2	5.6
65+	1.4	1.6	18.4	2.1	2.8
Total	10.0	10.2	2.1	10.1	10.1

PALERANG PART A



	Median Individual Income	Median Household Income
Weekly Income		
Palerang Pt A	728	1,669
ACT	722	1,509
Australia	466	1,027

Industry of Employment	Palerang (A) -	
	Pt A	ACT
Primary Industry	159	579
Manufacturing etc.	309	5,928
Construction	450	9,612
Trade	515	17,813
Government	1,086	53,082
Professional Serv.	1,302	52,502
Services	1,078	36,765
Total	4,899	176,281

Labour Force 2006 Census

Unemployment Rate

	Employed	Unemployed	Labour Force	DEEWR	
				Census 2006	December 2007
Palerang (A) - Pt A	4,902	221	4,659	4.7	N/A
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

Population '000

	1996	2006	Growth 1996-2006	2016	2026
0-14	1.7	2.1	26.3	2.2	2.6
15-64	4.7	6.8	44.1	8.2	9.5
65+	0.4	0.7	81.4	1.4	2.3
Total	6.8	9.6	41.7	11.8	14.4

PALERANG PART B



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Palerang Pt B	401	811
ACT	722	1,509
Australia	466	1,027

	Palerang (A) -	
	Pt B	ACT
Primary Industry	301	579
Manufacturing etc.	99	5,928
Construction	106	9,612
Trade	154	17,813
Government	176	53,082
Professional Serv.	348	52,502
Services	333	36,765
Total	1,517	176,281

Labour Force 2006 Census

Unemployment Rate

	Employed	Unemployed	Labour Force	DEEWR December	
				Census 2006	2007
Palerang (A) - Pt B	1,518	55	1,573	3.5	N/A
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

Population '000

	1996	2006	Growth 1996-2006	2016	2026
0-14	0.6	0.6	0.0	0.5	0.5
15-64	1.9	2.2	16.2	2.2	2.1
65+	0.4	0.5	27.5	0.9	1.1
Total	2.9	3.3	14.5	3.5	3.8

EUROBODALLA



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Eurobodalla (A)	344	632
ACT	722	1,509
Australia	466	1,027

	Eurobodalla (A)	ACT
Industry of Employment		
Primary Industry	409	579
Manufacturing etc.	871	5,928
Construction	1,263	9,612
Trade	2,309	17,813
Government	737	53,082
Professional Serv.	3,217	52,502
Services	3,423	36,765
Total	12,229	176,281

Labour Force 2006 Census

Unemployment Rate

	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
Eurobodalla (A)	12,229	1,229	13,458	9.1	6.3
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

Population '000

	1996	2006	Growth 1996-2006	2016	2026
0-14	6.4	6.4	0.2	6.4	6.8
15-64	17.6	22.0	24.9	25.4	26.9
65+	6.4	8.2	27.3	11.7	16.8
Total	30.4	36.6	20.2	43.5	50.4

BEGA VALLEY



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Bega Valley (A)	368	697
ACT	722	1,509
Australia	466	1,027

	Bega Valley (A)	ACT
Industry of Employment		
Primary Industry	1,061	579
Manufacturing etc.	1,296	5,928
Construction	1,145	9,612
Trade	2,055	17,813
Government	570	53,082
Professional Serv.	3,030	52,502
Services	3,309	36,765
Total	12,466	176,281

Labour Force 2006 Census

Unemployment Rate

	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
Bega Valley (A)	12,463	937	13,400	7.0	4.2
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

Population '000

	1996	2006	Growth 1996-2006	2016	2026
0-14	6.7	6.3	-5.1	6.0	6.3
15-64	17.2	20.2	17.9	22.4	23.0
65+	4.5	5.9	32.0	8.8	12.9
Total	28.3	32.4	14.7	37.3	42.1

BOMBALA



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Bombala (A)	383	734
ACT	722	1,509
Australia	466	1,027

	Bombala (A)	ACT
Primary Industry	379	579
Manufacturing etc.	98	5,928
Construction	40	9,612
Trade	120	17,813
Government	74	53,082
Professional Serv.	224	52,502
Services	173	36,765
Total	1,108	176,281

Labour Force 2006 Census

Unemployment Rate

	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
Bombala (A)	1,108	64	1,172	5.5	2.3
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

Population '000

	1996	2006	Growth 1996-2006	2016	2026
0-14	0.7	0.5	-22.1	0.4	0.3
15-64	2.0	1.7	-15.6	1.4	1.1
65+	0.4	0.5	7.3	0.6	0.7
Total	3.1	2.6	-13.8	2.4	2.2

SNOWY RIVER



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Snowy River (A)	542	1,051
ACT	722	1,509
Australia	466	1,027

Industry of Employment	Snowy River (A)	ACT
Primary Industry	305	579
Manufacturing etc.	162	5,928
Construction	328	9,612
Trade	367	17,813
Government	226	53,082
Professional Serv.	620	52,502
Services	1,526	36,765
Total	3,534	176,281

	Labour Force 2006 Census			Unemployment Rate DEEWR	
	Employed	Unemployed	Labour Force	Census 2006	December 2007
Snowy River (A)	3,540	83	3,623	2.3	1.9
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

	Population '000			2016	2026
	1996	2006	Growth 1996-2006		
0-14	1.3	1.5	16.3	1.4	1.5
15-64	4.5	5.4	18.4	5.9	6.3
65+	0.5	0.7	49.4	1.4	2.0
Total	6.3	7.6	20.4	8.7	9.8

TUMBARUMBA



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Tumbarumba (A)	387	798
ACT	722	1,509
Australia	466	1,027

	Tumbarumba (A)	ACT
Industry of Employment		
Primary Industry	431	579
Manufacturing etc.	260	5,928
Construction	69	9,612
Trade	134	17,813
Government	120	53,082
Professional Serv.	255	52,502
Services	260	36,765
Total	1,529	176,281

	Labour Force 2006 Census			Unemployment Rate	
	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
Tumbarumba (A)	1,528	86	1,614	5.3	2.9
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

	Population '000				
	1996	2006	Growth 1996-2006	2016	2026
0-14	0.9	0.7	-16.6	0.5	0.5
15-64	2.4	2.4	-3.3	2.1	1.8
65+	0.5	0.6	24.3	0.7	0.9
Total	3.8	3.7	-2.9	3.4	3.2

TUMUT SHIRE



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Tumut Shire (A)	385	777
ACT	722	1,509
Australia	466	1,027

Industry of Employment	Tumut Shire (A)	ACT
Primary Industry	791	579
Manufacturing etc.	811	5,928
Construction	289	9,612
Trade	659	17,813
Government	190	53,082
Professional Serv.	972	52,502
Services	925	36,765
Total	4,637	176,281

Labour Force 2006 Census

Unemployment Rate

	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
Tumut Shire (A)	4,638	318	4,956	6.4	4.3
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

Population '000

	1996	2006	Growth 1996-2006	2016	2026
0-14	2.6	2.3	-9.9	1.9	1.7
15-64	7.2	7.1	-1.5	6.9	6.5
65+	1.6	1.8	14.0	2.3	2.9
Total	11.4	11.3	-1.2	11.2	11.1

GUNDAGAI



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Gundagai (A)	375	730
ACT	722	1,509
Australia	466	1,027

Industry of Employment

	Gundagai (A)	ACT
Primary Industry	428	579
Manufacturing etc.	164	5,928
Construction	109	9,612
Trade	207	17,813
Government	98	53,082
Professional Serv.	286	52,502
Services	368	36,765
Total	1,660	176,281

Labour Force 2006 Census

Unemployment Rate

	Employed	Unemployed	Labour Force	DEEWR	
				Census 2006	December 2007
Gundagai (A)	1,659	91	1,750	5.2	3.6
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

Population '000

	1996	2006	Growth 1996-2006	2016	2026
0-14	0.9	0.9	-4.9	0.7	0.6
15-64	2.3	2.3	0.6	2.1	1.9
65+	0.5	0.6	15.9	0.8	0.9
Total	3.8	3.9	1.4	3.6	3.4

COOTAMUNDRA



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Cootamundra (A)	360	660
ACT	722	1,509
Australia	466	1,027

	Cootamundra (A)	ACT
Primary Industry	355	579
Manufacturing etc.	333	5,928
Construction	167	9,612
Trade	418	17,813
Government	158	53,082
Professional Serv.	728	52,502
Services	687	36,765
Total	2,846	176,281

Labour Force 2006 Census

Unemployment Rate

	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
Cootamundra (A)	2,847	221	3,068	7.2	5
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

Population '000

	1996	2006	Growth 1996-2006	2016	2026
0-14	1.8	1.5	-14.6	1.2	1.1
15-64	4.7	4.6	-4.0	4.2	3.8
65+	1.3	1.5	21.1	1.9	2.2
Total	7.8	7.6	-2.4	7.3	7.1

HARDEN



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Harden (A)	354	652
ACT	722	1,509
Australia	466	1,027

	Harden (A)	ACT
Primary Industry	479	579
Manufacturing etc.	115	5,928
Construction	63	9,612
Trade	176	17,813
Government	68	53,082
Professional Serv.	299	52,502
Services	296	36,765
Total	1,496	176,281

	Labour Force 2006 Census			Unemployment Rate	
	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
Harden (A)	1,498	81	1,579	5.1	3.2
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

	Population '000				
	1996	2006	Growth 1996-2006	2016	2026
0-14	0.9	0.7	-19.4	0.6	0.5
15-64	2.4	2.3	-4.8	2.1	1.8
65+	0.6	0.7	18.1	0.9	1.0
Total	3.9	3.7	-4.5	3.5	3.4

YOUNG



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Young (A)	369	692
ACT	722	1,509
Australia	466	1,027

	Young (A)	ACT
Primary Industry	868	579
Manufacturing etc.	560	5,928
Construction	355	9,612
Trade	943	17,813
Government	197	53,082
Professional Serv.	1,095	52,502
Services	966	36,765
Total	4,984	176,281

	Labour Force 2006 Census			Unemployment Rate	
	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
Young (A)	4,986	330	5,316	6.2	3.7
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

	Population '000				
	1996	2006	Growth 1996-2006	2016	2026
0-14	2.7	2.9	7.9	2.6	2.5
15-64	7.0	7.6	8.4	7.8	7.4
65+	1.7	2.0	18.0	2.5	3.1
Total	11.4	12.5	9.7	12.8	13.1

BOOROWA



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Boorowa (A)	367	655
ACT	722	1,509
Australia	466	1,027

	Boorowa (A)	ACT
Industry of Employment		
Primary Industry	435	579
Manufacturing etc.	37	5,928
Construction	54	9,612
Trade	76	17,813
Government	52	53,082
Professional Serv.	186	52,502
Services	150	36,765
Total	990	176,281

	Labour Force 2006 Census			Unemployment Rate	
	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
Boorowa (A)	987	47	1,034	4.5	2.3
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

	Population '000				
	1996	2006	Growth 1996-2006	2016	2026
0-14	0.6	0.5	-12.5	0.4	0.3
15-64	1.6	1.5	-4.5	1.4	1.2
65+	0.4	0.4	13.0	0.5	0.6
Total	2.5	2.4	-3.8	2.3	2.1

UPPER LACHLAN



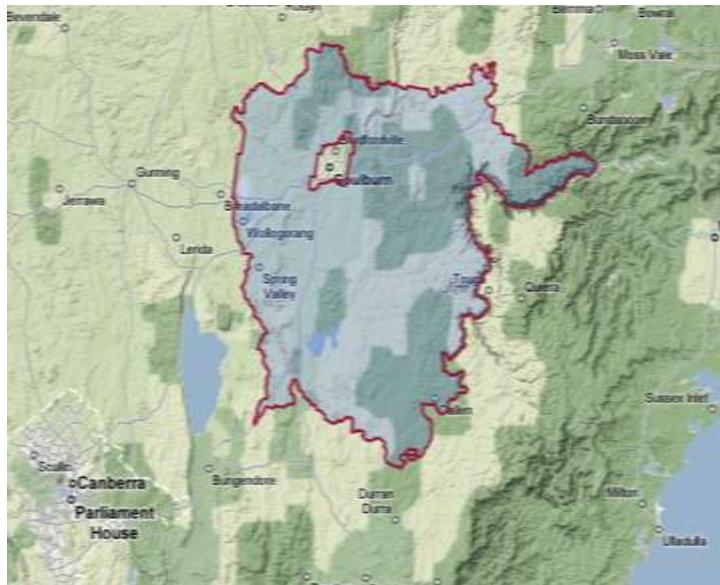
Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Upper Lachlan (A)	374	731
ACT	722	1,509
Australia	466	1,027

	Upper Lachlan (A)	ACT
Primary Industry	1,012	579
Manufacturing etc.	153	5,928
Construction	217	9,612
Trade	311	17,813
Government	293	53,082
Professional Serv.	681	52,502
Services	553	36,765
Total	3,220	176,281

	Labour Force 2006 Census			Unemployment Rate	
	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
Upper Lachlan (A)	3,218	125	3,343	3.7	N/A
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

	1996	2006	Growth 1996-2006	2016	2026
0-14	1.7	1.5	-14.6	1.2	1.2
15-64	4.6	4.6	-0.3	4.4	4.2
65+	1.0	1.3	26.5	1.7	2.2
Total	7.3	7.3	0.1	7.4	7.6

GOULBURN- MULWAREE BALANCE



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Goulburn Mul (A) Bal	433	1,019
ACT	722	1,509
Australia	466	1,027

	Goulburn Mulwaree (A) Bal	ACT
Industry of Employment		
Primary Industry	333	579
Manufacturing etc.	225	5,928
Construction	217	9,612
Trade	385	17,813
Government	261	53,082
Professional Serv.	666	52,502
Services	631	36,765
Total	2,718	176,281

	Labour Force 2006 Census			Unemployment Rate	
	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
Goulburn Mulwaree (A) Bal	2,717	110	2,827	3.9	3.2
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

	Population '000				
	1996	2006	Growth 1996-2006	2016	2026
0-14	1.0	1.3	25.1	1.2	1.3
15-64	2.9	4.1	44.4	4.4	4.6
65+	0.4	0.8	89.0	1.4	2.0
Total	4.3	6.2	44.5	7.0	7.9

GOULBURN- MULWAREE



Weekly Income (\$ per week)	Median Individual Income	Median Household Income
Goulburn Mul (A)	404	790
ACT	722	1,509
Australia	466	1,027

	Goulburn Mulwaree (A)	ACT
Primary Industry	171	579
Manufacturing etc.	755	5,928
Construction	510	9,612
Trade	1,442	17,813
Government	971	53,082
Professional Serv.	2,234	52,502
Services	2,294	36,765
Total	8,377	176,281

	Labour Force 2006 Census			Unemployment Rate	
	Employed	Unemployed	Labour Force	Census 2006	DEEWR December 2007
Goulburn Mulwaree (A)	8,380	618	8,998	6.9	3.6
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

	Population '000				
	1996	2006	Growth 1996-2006	2016	2026
0-14	4.9	4.1	-15.7	3.5	3.1
15-64	13.9	13.7	-0.9	12.9	11.6
65+	2.8	3.2	16.7	4.2	5.2
Total	21.5	21.1	-2.0	20.5	19.9

YASS VALLEY



	Median Individual Income	Median Household Income
Weekly Income		
Yass Valley (A)	546	1,165
ACT	722	1,509
Australia	466	1,027

	Yass Valley (A)	ACT
Industry of Employment		
Primary Industry	710	579
Manufacturing etc.	355	5,928
Construction	618	9,612
Trade	777	17,813
Government	1,080	53,082
Professional Serv.	1,781	52,502
Services	1,428	36,765
Total	6,749	176,281

	Labour Force 2006 Census			Unemployment Rate DEEWR	
	Employed	Unemployed	Labour Force	Census 2006	December 2007
Yass Valley (A)	6,750	182	6,932	2.6	1.4
ACT	176,286	6,204	182,490	3.4	2.3
Australia	9,104,185	503,802	9,607,987	5.2	4.1

	Population '000				
	1996	2006	Growth 1996-2006	2016	2026
0-14	2.6	3.0	17.0	2.8	2.9
15-64	7.1	9.0	26.7	9.7	10.0
65+	1.3	1.7	25.8	2.8	4.3
Total	11.1	13.7	24.3	15.3	17.2

APPENDIX B: FORECASTING METHODOLOGY

The AE-Dem model is a detailed forecasting tool that projects the possible future path of Australia's population. Population is modelled by individual year of age and by males and females. Population is further split by State and Territory.

The forecasting methodology is essentially top-down, beginning with national totals, disaggregating these to States and Territories.

FORECASTING NATIONAL POPULATION

The most important term used in the modelling is the **cohort**, which defines a group of the population that share useful characteristics. In the model here, each cohort will be people of:

- ❑ the same gender (male or female); and
- ❑ the same age on 30 June of a given year. However, all those aged 100 and above are grouped together as if they were all the same age.

Each cohort can be defined for each State population or for the entire national population. We should note here that in all cases, the term 'State' includes the two Territories. In addition, the national total also includes population who live outside the States and the two Territories – in Australia's external Territories⁹. The population of these regions is not modelled directly, only indirectly as the difference between the national total and the sum of the States.

Occasionally we will refer to cohorts of larger groups, most often 5-year age groups. These are important for output purposes (as 5-year age and gender splits are the standard splits for many ABS publications and many Access Economics models).

At its simplest level, forecasting population involves tracking groups of people through their lifetimes. This is done by taking a cohort's population as at 30 June in a given year (either a historical estimate from the ABS annual population publication – ABS Catalogue 3201.0 – or a model forecast) and estimating what would happen to them across the following year.

Obviously, by 30 June the following year the cohort will:

- ❑ have aged by one year;
- ❑ will have their number decline due to deaths; and
- ❑ will have their number decline to migration to other countries (or, if we are modelling State populations, to other States as well) but will have be augmented by migrants arriving in Australia (or, again, also by arrivals from other States).

This could be expressed in a number of ways, but the basic equation we use is shown in equation (1):

$$Pop[age+1, gender, t] = Pop[age, gender, t-1] \times (1 - DeathRate[age, gender, t]) + NetMigrants[age+1, gender, t] \quad (1)$$

⁹ As at June 2006, this group totalled 2,380 persons (ABS 3201.0 – 30 June 2006)

The use of age and age+1 is instructive as it effectively splits the equation into two parts. The first section (previous population less mortality) is driven by age and is a measure of the previous population still alive while the second section (shown here are Net Migrants but a combination of international movements, interstate inflow and interstate outflow) is driven by age+1 and is a measure of 'new' members of the cohort (although they are transfers of existing people from other locations, rather than 'new' people)

One obvious group that are not covered by this formula are those who are unborn at the initial point in time (and are less than one year old at the end). The modelling here is effectively the same, although instead of an initial population value an estimated number of births in the year is used. Note that there are still mortality and migration effects for this group.

In other words we have the equation shown below:

$$\begin{aligned} Pop[0, gender, t] = & \\ & GrossBirths[gender, t] \times (1 - DeathRate[birth, gender, t]) + NetMigrants[0, gender, t] \end{aligned} \quad (2)$$

Here GrossBirths is driven by a combination of fertility and the number of women of child-bearing age at the start of the period. This component is discussed more explicitly below.

The less obvious group for which this modelling needs to be adjusted is at the other end of the age range – those who are 100 or more next year comprise not only those who were 99 at the start of the period (and have lived through the year) but also those who were already 100 or more at the start of the period (and, again, are still alive). Here we have a slightly more complicated version of a previous equation, namely:

$$\begin{aligned} Pop[100, gender, t] = & \\ & Pop[99, gender, t-1] \times (1 - DeathRate[99, gender, t]) + \\ & Pop[100, gender, t-1] \times (1 - DeathRate[100, gender, t]) + NetMigrants[100, gender, t] \end{aligned} \quad (3)$$

Where age=100 represents all those 100 and over. Obviously the two population groups 'merge' in this functional form.

These three versions of the population change equation underpin the entire model framework at the national level.

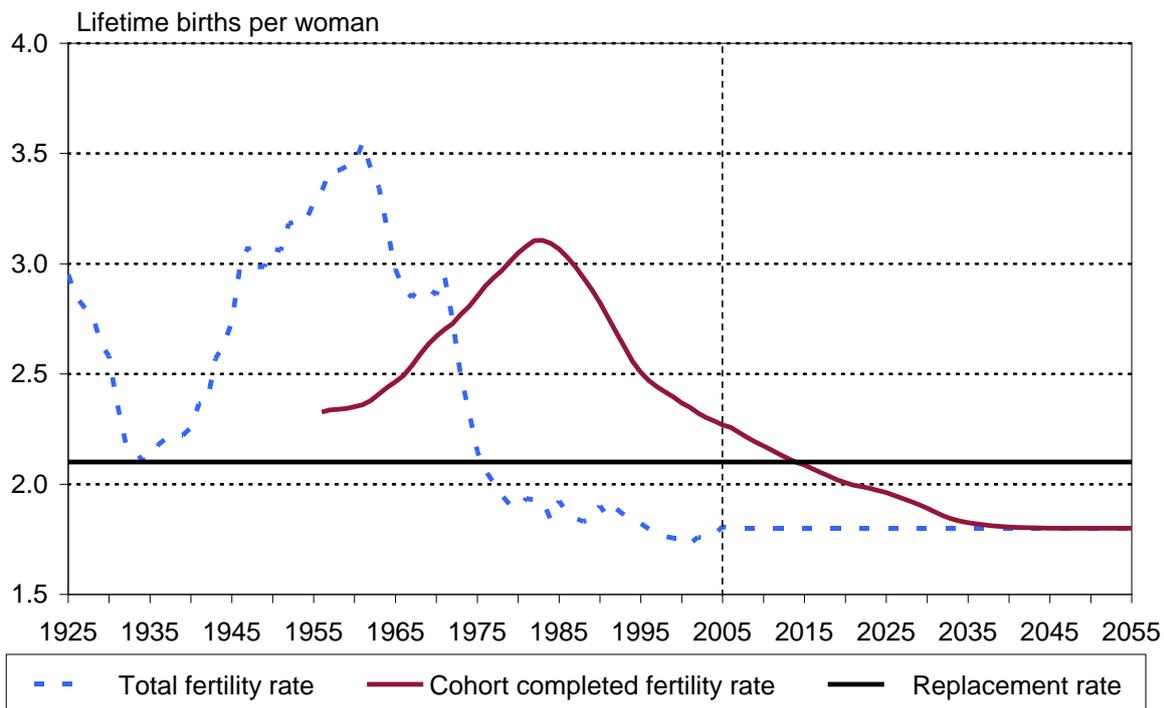
FERTILITY, BIRTHS AND SEX RATIOS

Fertility is a general term that covers the relationship between the current population (and typically the current female population) and current numbers of births. A number of measures of fertility exist, some of which are crucial in the model process.

The total fertility rate (or TFR) is the most commonly used variable in demographic modelling to determine the relationship between current population and births. It is, however, important to be clear about what the TFR is, and what it is not.

The TFR is a sum of the **current** age-specific fertility rates (ASFRs) for women across their 'reproductive lifespan' – generally modelled as between the ages of 15 and 49¹⁰. It is not really (although it is often described as) the average number of children a woman is expected to have across her life. That is because the ASFR of each age cohort changes over time – the ASFR that women currently aged 20-24 will experience when they are 30-34 will be different from the ASFR for women aged 30-34 at the present time, just as women currently aged 30-34 exhibited a different (27% higher) ASFR when they were 20-24 to women currently in the younger age group. The TFR implicitly assumes this is not the case (and so, a TFR of 1.8 effectively says that if ASFRs do not change across the next 35 years, then woman currently entering reproductive age – that is, those aged 15 years old at present – would expect to have an average of 1.8 children across their lifetime.

FIGURE B.1: TOTAL AND COMPLETED FERTILITY RATES



The comparative term (to the TFR) that best identifies an individual cohort's birth rate is the completed fertility rate (CFR) – a measure of the average number of children that women reaching the end of their reproductive lives have had. However, this can only be measured once the reproductive ages have been completed (otherwise, even now, it is only a forecast). Even as the TFR has risen in recent years, the CFR is declining and will almost certainly fall much further – indeed, as the base forecasts for TFR tend to have it stabilising in the long-term, the CFR is forecast to fall from around 2.25 at present down to 1.8 over the next generation.

Figure B1 shows the historical and forecast movements in the TFR and CFR over the past 80 years and into the forecast period. While the TFR remains basically constant at its

¹⁰ As with a number of 'short cuts' in demographic modelling, the model effectively adds the births of children to women aged outside of this range to the nearest modelled range – so children born to women aged in their fifties are accounted for by slightly increasing the probability that a 49-year old women would have a child in a given year.

current rate, the CFR takes much longer to decline to equal the TFR (which it will eventually do if ASFRs remain constant).

The third line in the chart (the **replacement rate**) is a measure of the number of births the average woman would need to maintain the population in the long term in the absence of migration from overseas. This figure is an indicative figure, which can vary from source to source, although the value used here of 2.1 is the most commonly cited in the Australian context. Other countries tend to quote lower values, 2.05 being another commonly used value. In truth, the value has probably declined toward 2 over recent years as mortality rates have declined in key age groups, although the gradual delaying of childbirth has had a mitigating effect on this trend. However, given the strong influence of migration on population levels, the value chosen will really only ever be a guide.

Modelling the number of births involves three steps:

- ❑ determining the number of women of child bearing age – specifically the number of women of each age at the start of the year;
- ❑ multiplying each value (for example, the number of women aged 22) by the likelihood that a woman of that age will have a child in the year (the ASFR at the time); and
- ❑ splitting those births into male and female components.

This formulation gives the Gross Births component of equation (2) above.

LIFE EXPECTANCY, MORTALITY RATES AND DEATHS

While mortality is a measure of the likelihood of dying, it is expressed in terms of the expected length of life for a person born today. Male and female life expectancy and mortality are separate measures and in theory they can move independent of one another, implying different movements in mortality assumptions. In practice they have increased in a similar fashion, although male life expectancy levels have risen even faster, raising them towards the higher female levels.

As with TFR (which measures a value calculated across all persons' current ages rather than one specific to a person of a given age), the life-expectancy at birth is effectively 'overwritten' as a person ages due to decreasing mortality rates over time. That is, while the estimate of life expectancy at birth for a male born today (about 79 years) relies on a series of likelihoods of dying at each age (so, there is an assumed 0.096% chance a male aged 20 at the start of the 2006 years will die this year), by the time that person reaches each age the probability of dying will almost certainly be different. In our base model, by the time that newborn reaches 20 years of age, the probability of dying in that year will be 0.061%.

The modelled likelihood of dying is a combination of three factors:

- ❑ a combination of two mortality profiles taken from the Productivity Commission's population model; and
- ❑ the expected life expectancy (measured from birth) at the time; and
- ❑ an additional factor that deals with the complications of aggregating persons aged 100 and over into a single group.

The mortality profiles themselves change over time (at least until 2050 at which point they stabilise) – so the specific profile for each year varies across the first 45 years of the projections. The AE-Dem model uses a log-linear weighted average of the two profiles – noting that if projection A (which gives an a% chance of dying in a given year) has a life

expectancy of LE_A years and projection B (which gives a $b\%$ change of dying in a given year) has a life expectancy of LE_B years, then to obtain a life expectancy of LE_C years where:

$$LE_C = xLE_A + (1-x)LE_B$$

The chance of dying in each year ($c\%$) is given by:

$$c = a^x \times b^{(1-x)}$$

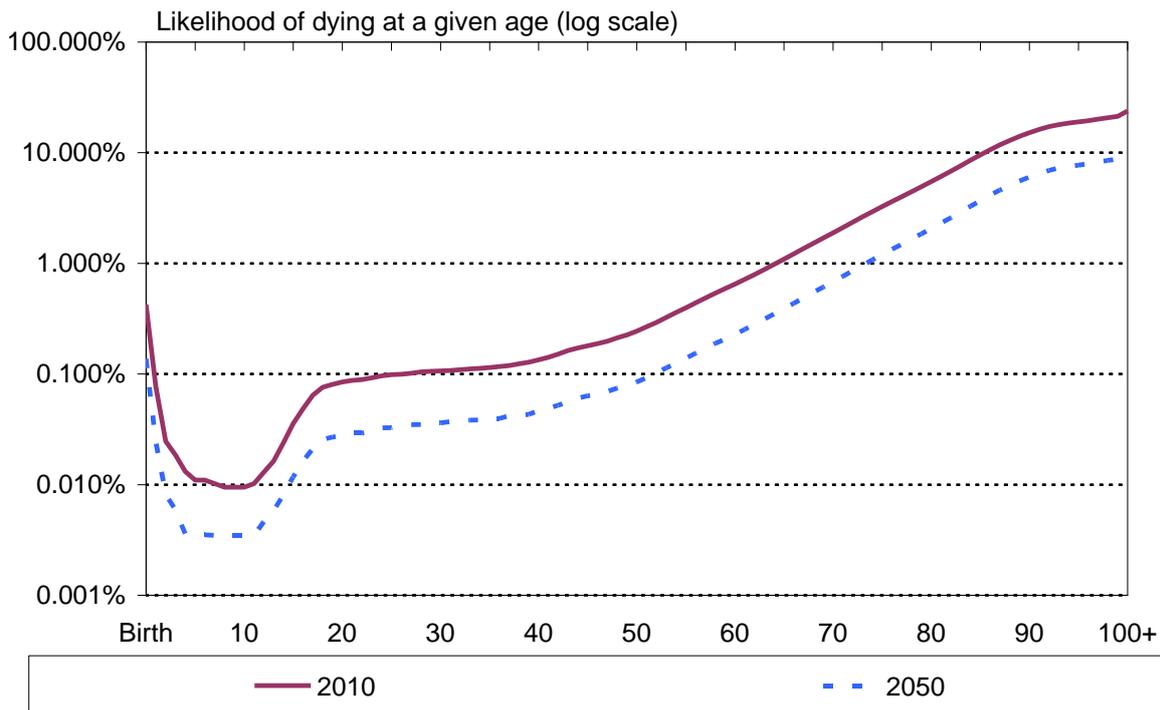
or

$$\ln(c) = x \ln(a) + (1-x) \ln(b)$$

This allows any desired life expectancy level at any point in time.

The actual mortality profiles will change over time – the following chart shows the Productivity Commissions’ ‘high’ life expectancy assumptions for males in 2010 (with a life expectancy at birth of just over 80 years) and in 2050 (with life expectancy having risen to 92.2 years).

FIGURE B.2: MORTALITY PROFILES OVER TIME



The actual level of deaths is not modelled directly at any point – the total loss of population due to mortality is never explicitly calculated (unlike the number of births or migrants). When an estimate is required (say for charting purposes) it will be calculated as a residual value.

INTERNATIONAL MIGRATION

Total migration is handled by user set assumptions in the model. Age and gender specific splits of these totals are handled by using a profile of the total across ages – which is

determined from an analysis of recent ABS data from various issues of the Migration, Australia publication (ABS Catalogue 3412.0).

International migration is determined as a share of starting population (across the last 10 years Australia has had an annual intake of migrants equivalent to around 0.56% of starting population).

Note that this is a ‘net migration figure’ and will be less than the official migration intake target used by the Government.

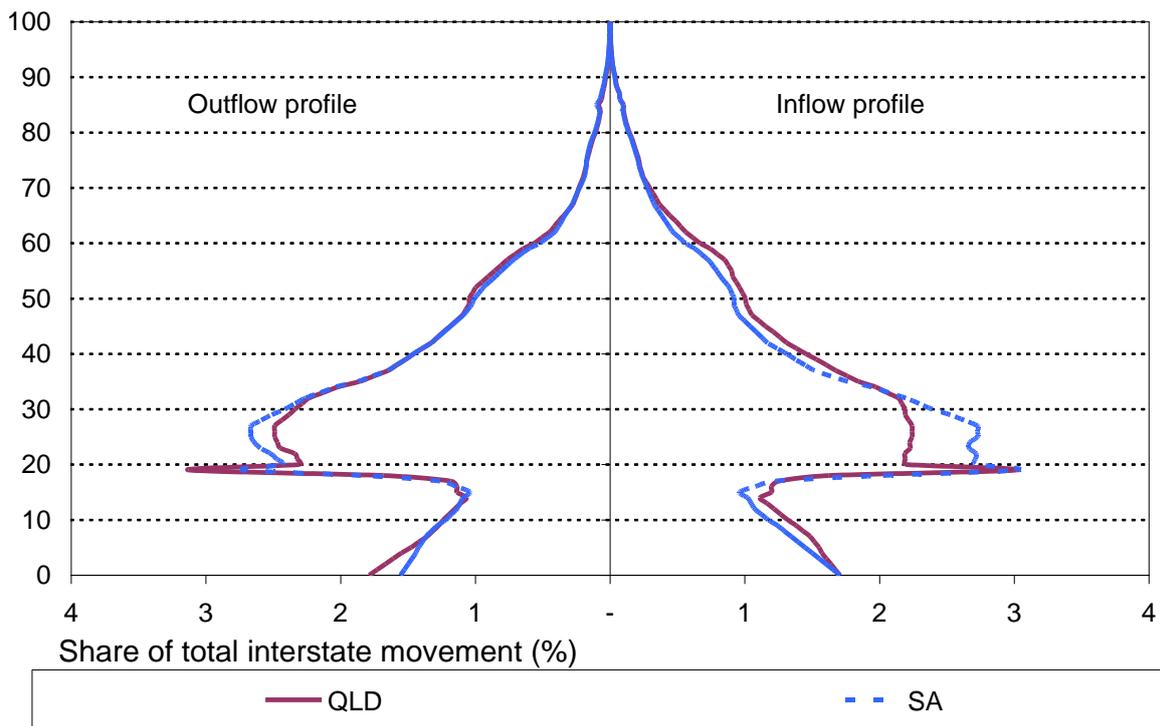
FORECASTING STATE POPULATION

Theoretically, modelling the State population levels is the same as modelling the national totals, with two exceptions:

- ❑ we need to ensure that the State totals add up to the national total¹¹; and
- ❑ we need to correctly account for interstate migration.

The second point is complicated by the fact we not only need to ensure that the same number of people **in total** leave States and arrive in others each period, but also that the total number of people moving is zero in net terms for **every age group**. This is made more difficult by the very different profiles in inward and outward migration for different States.

FIGURE B.3: AGE PROFILE OF INTERSTATE POPULATION MOVEMENTS FOR QLD AND SA



Once the interstate migration effects have been accounted for, as well as births, deaths and net international migration (see below), the total estimates for each age cohort across the

¹¹ Actually this is not strictly true as the national total includes a small component for ‘Other Territories’ which can provide some leeway in the modeling.

States are checked against the national total for that age and the results normalised (implying the share in 'Other Territories' rises in line with the national total).

RELATIVE FERTILITY RATES

State-specific fertility rates are expressed as a rate relative to the national average, reflecting the way they are presented in the ABS long-term population projections publication (ABS Catalogue 3222.0). A value of 100.0 represents fertility rates equal to the national average.

Over time, it is assumed that State ASFRs move to give a similar profile to the national assumption. This occurs across the first five years of the forecast period – although at all times the State's TFR will be a set multiple of the national rate. A similar pattern of movement over five years is assumed for the State specific sex ratio – with all States moving to the national assumption over the first five forecast years.

RELATIVE LIFE EXPECTANCIES

Life expectancies are also modelled as multiplicative offsets to the national average, with separate multiples for males and females. These assumed ratios take effect from the first forecast period – unlike the fertility assumptions there is no movement from the current ratio to the forecast over time.

SHARES OF INTERNATIONAL MIGRATION

Share of international migration are solely by assumption, based primarily on the assumptions in the ABS long term population projections (Catalogue 3222.0), with initial adjustments reflecting trends up to June 2006.

INTERSTATE MIGRATION

The model uses a calculation based on the difference between an estimated movement out of the State and the estimated movement into the State from elsewhere (with the two totals determined separately and then used to give a net result).

Ensuring net interstate migration is zero

We will essentially explain the theory of how the modelling ensures the results are consistent before the methodology of longer term projections.

The problem is ensuring that as the total level of net migration for each State are allowed to move freely (subject to the constraint of summing to zero overall) the same condition is maintained for each age group. Some States will see a larger or smaller gain or loss in population via migration, some may even move from net losers to net winners. Simply multiplying recent trends will not suffice to ensure our restrictions are met.

This is achieved by separating net interstate migration into two parts: total outward migration and total inward migration, each of which is further divided into two components which both have the property that the total movements in each sum to zero across all age groups.

The first component is based on a weighted average of movements over recent years, which are contained in various editions of the ABS Migration publication (ABS Catalogue 3412.0). Each State has its own profile of net migration by age, but the total across all States always

sums to zero for each age group. As long as the levels of inward and outward migration are a constant multiple of this amount the total migration levels will always sum to a net of zero as required.

The second component is based on the overall movement profile across all States. This component is assumed to have the same profile for each State, so if the total net movement of this type sums to zero (with some State having a positive component and some negative), then the net movement for each age group will therefore to zero.

So, interstate migration (inwards and outwards in each year) needs to satisfy the following condition:

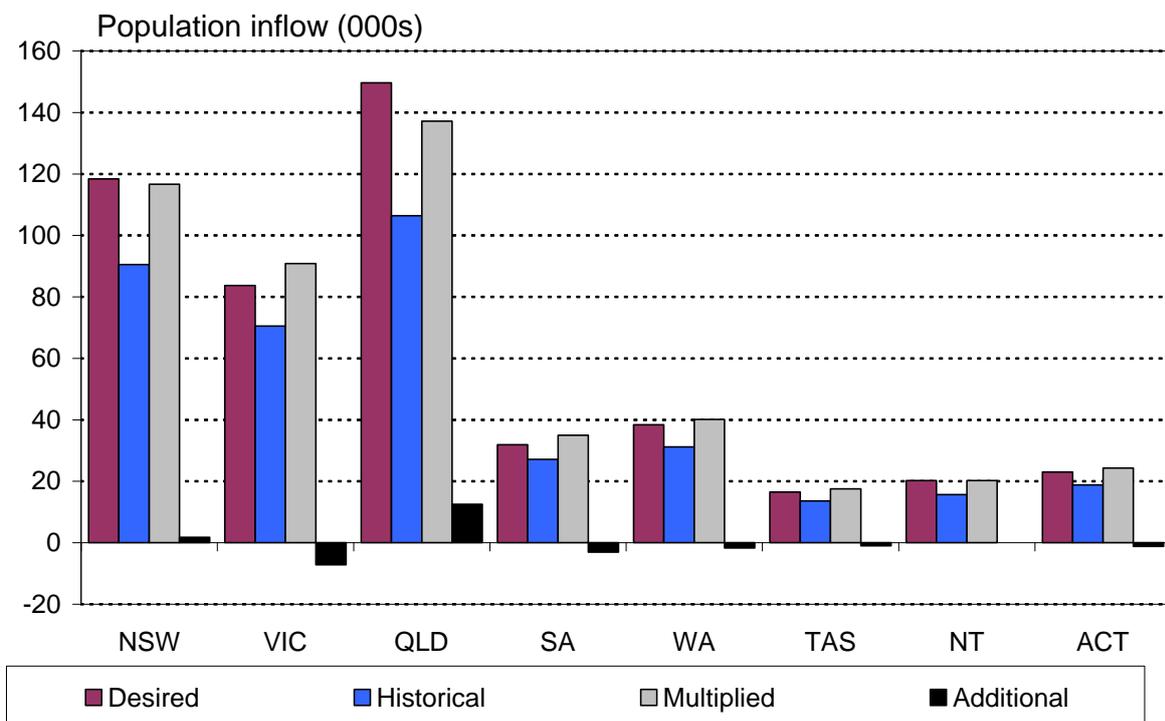
$$M_c^S = \alpha H_c^S + \beta^S A_c$$

Where M is the migration level (for each cohort and each State) α is constant across all States, H is the historic migration pattern (for each cohort and each State), β is the additional migration to each State (where the β s sum to zero) and A is the additional migration pattern (the same for each State, but specific to the cohort).

Determining the value of α is fairly straightforward, as it is the ratio between the total movements in the forecast period and the same value in the historical migration pattern. The β s are then the different between the required total migration for each State and the implied value of historic trends multiplied by α .

We can see what happens in Figure B4 below. Population inflow in this model grows more rapidly in Queensland and NSW than in others States, so additional population gains are needed in those States. However, most of the change over time (this example used an estimated total population migration flow for 2019-20) is accounted for by an increase the total movement level (by multiplying up the historical trends).

FIGURE B.4: POPULATION INFLOW



Modelled inflows and outflows over time

The modelled inflow and outflows of interstate migrants are determined as a ratio of either:

- ❑ outflows from the State as a share of the State's population; or
- ❑ inflows to the State as a share of the population of the other States combined.

So, Tasmania's population outflows have moved from 2.12% of its own population in 1976 to 2.51% of its own population in 2006. But, Tasmania's net inflows from moved from 0.060% to 0.062% of the population of all other States over the same period.

In extending this forward, the historical shares are turned into 'logit' equivalents (see below) and then a regression against time is performed to estimate how this level has changed over time. The time-trend is forecast forward and the forecast level of the logit equivalent moves towards this 'line of best fit' over time. The final estimate of share of movement (inward or outward as required) is the inverse of the logit function – returning us to a percentage measure.

The logit function turns a variable that is constrained to lie between 0 and 1 (such as a percentage movement level such as we are using) into an equivalent variable that can take any value (positive or negative) and vice versa. This is useful, because it ensures that when we extend the forecast into the future, the final share we end up with will remain between 0 and 1 (or 0% and 100%). If, for example, the share of movement had been falling over time, extending the forecast into the future may see the share of movement forecast fall to a negative value, which would not make sense.

The logit transformation (and its inverse) is given by the following two formulae. In this construction, $y(x)$ is the logit equivalent of absolute x and $x(y)$ is the absolute equivalent of logit y .

$$y(x) = \frac{1}{2} \times \ln\left(\frac{x}{1-x}\right)$$

and

$$x(y) = \frac{e^y}{e^y + e^{-y}}$$

This process is illustrated in Figure B5, which shows the results in 'absolute terms' – those we want use – and figure B6, which shows the results in the underlying logit formulation. The 'fitted' trend line in Figure B5 is a straight line – while the equivalent in Figure B6 is not.

FIGURE B.5: POPULATION OUTFLOW FROM SOUTH AUSTRALIA (ABSOLUTE)

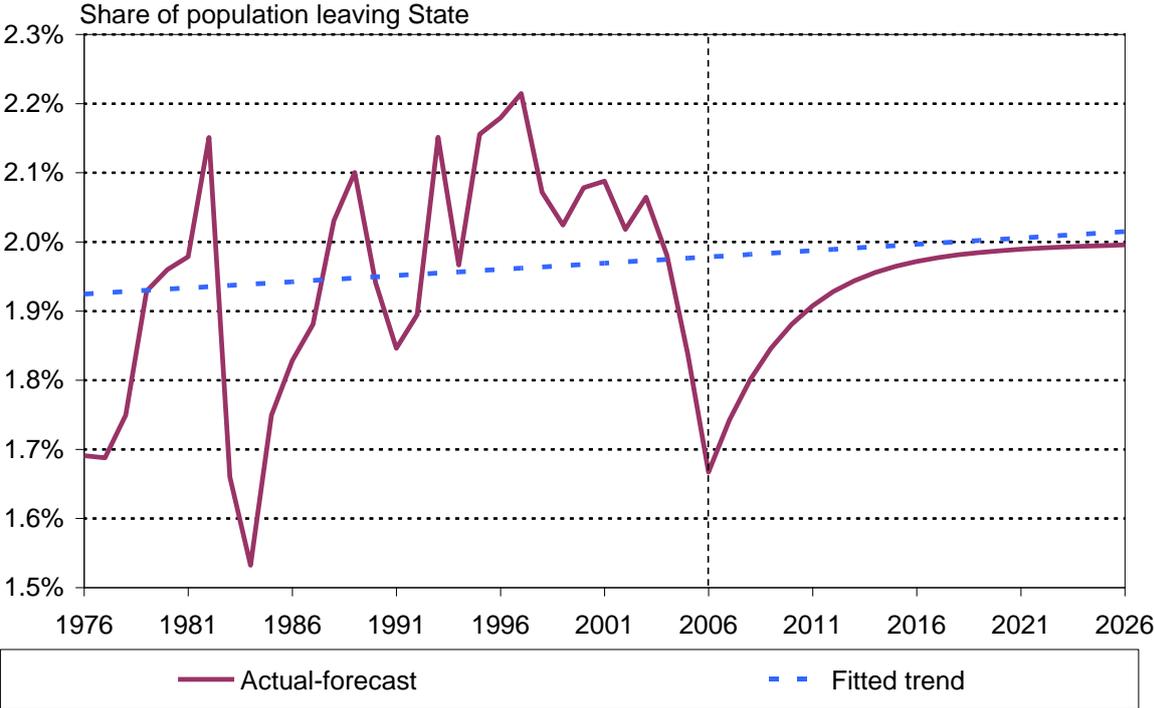
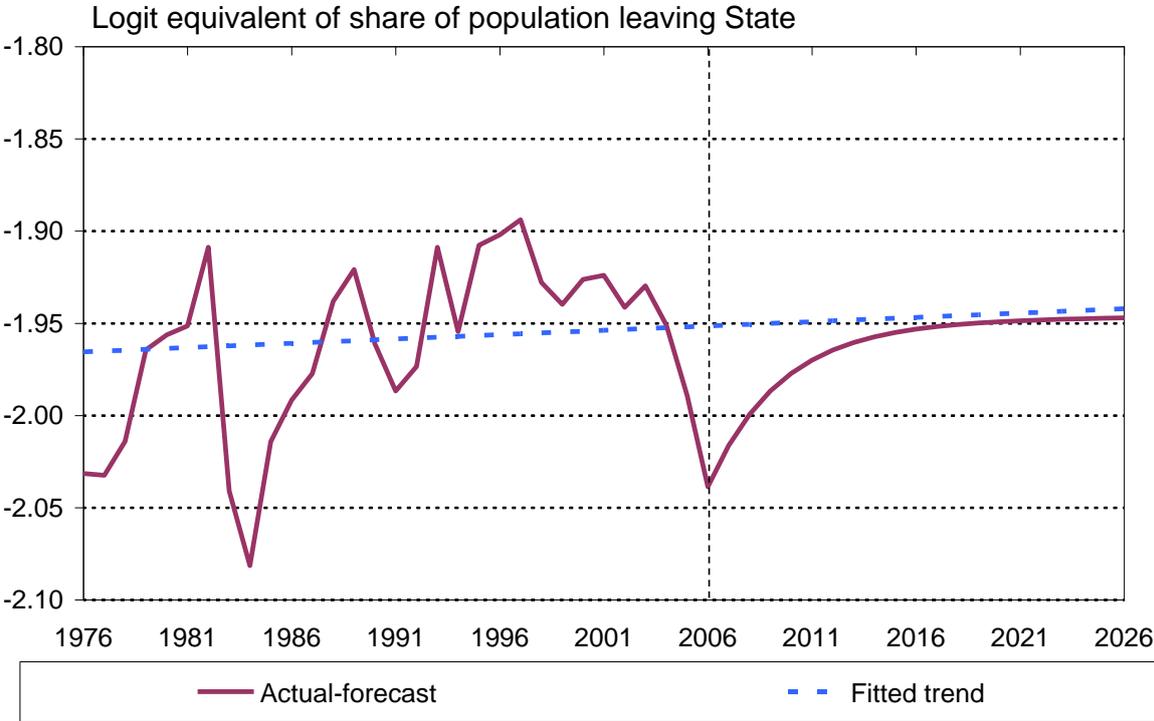


FIGURE B.6: POPULATION OUTFLOW FROM SOUTH AUSTRALIA (LOGIT)



APPENDIX C: ECONOMIC OUTLOOK DETAIL¹²

TABLE C.1: ACT – ECONOMIC DATA

Code	Units	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Gross State product	Constant price (\$m)	21,080	22,269	23,143	23,652	23,943	24,504	25,321	25,690	26,144	26,872	27,817
	% change	5.4	5.6	3.9	2.2	1.2	2.3	3.3	1.5	1.8	2.8	3.5
ACT as a share of Australian output	%	2.1%	2.1%	2.1%	2.1%	2.1%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Real final demand	Constant price (\$m)	33,686	34,832	36,605	37,893	38,735	39,904	41,220	42,530	43,815	45,630	48,131
	% change	5.8	3.4	5.1	3.5	2.2	3.0	3.3	3.2	3.0	4.1	5.5
Private consumption	Constant price (\$m)	11,203	11,568	11,921	12,103	12,376	12,780	13,129	13,501	13,822	14,221	14,639
	% change	5.0	3.3	3.1	1.5	2.3	3.3	2.7	2.8	2.4	2.9	2.9
Private housing investment	Constant price (\$m)	947	958	1,005	1,008	1,046	1,138	1,214	1,155	1,162	1,292	1,403
	% change	6.9	1.2	4.9	0.2	3.7	8.8	6.7	-4.8	0.6	11.2	8.5
Private construction investment	Constant price (\$m)	1,321	1,422	1,609	1,495	1,275	1,237	1,210	1,131	1,075	1,077	1,109
	% change	35.1	7.6	13.2	-7.1	-14.7	-3.0	-2.2	-6.5	-5.0	0.1	3.0
Private equipment investment	Constant price (\$m)	845	873	963	1,032	1,100	1,120	1,133	1,124	1,091	1,103	1,153
	% change	-4.3	3.3	10.3	7.2	6.6	1.8	1.2	-0.8	-2.9	1.1	4.5
International exports	Constant price (\$m)	7	2	0	0	0	0	0	0	0	0	3
	% change	-41.7	-67.1	-82.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	na
International imports	Constant price (\$m)	310	9	8	8	8	8	8	8	8	8	11
	% change	10233.3	-97.1	-11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.5
Industrial production	Constant price (\$m)	812	836	865	886	902	915	926	938	948	966	1,020
	% change	2.4	2.9	3.5	2.5	1.8	1.4	1.3	1.3	1.1	1.8	5.7
Retail turnover	Constant price (\$m)	4,335	4,494	4,622	4,645	4,758	5,008	5,237	5,341	5,449	5,668	5,915
	% change	6.1	3.7	2.8	0.5	2.4	5.2	4.6	2.0	2.0	4.0	4.4
International tourist arrivals	Persons ('000s)	45	45	48	52	55	58	60	61	64	67	69
	% change	3.2	1.3	6.8	6.8	5.7	6.0	3.2	2.0	4.3	5.3	2.9
Nominal gross State product	\$m	21,567	23,591	24,957	25,534	25,923	27,352	29,290	30,942	32,386	34,309	36,574
	% change	7.8	9.4	5.8	2.3	1.5	5.5	7.1	5.6	4.7	5.9	6.6
Total population	Persons ('000s)	337	343	348	352	357	361	365	369	373	376	380
	% change	1.4	1.6	1.4	1.3	1.2	1.1	1.1	1.1	1.0	0.9	0.9
Population aged 15 to 64	Persons ('000s)	274	278	283	287	290	294	297	300	303	306	308
	% change	1.6	1.8	1.5	1.4	1.3	1.2	1.1	1.0	1.0	0.9	0.8
Employment ('000s)	Persons ('000s)	188	190	196	199	201	203	206	209	210	210	212
	% change	3.8	1.1	2.9	1.8	0.9	1.1	1.4	1.2	0.4	0.2	0.7
Unemployment	Persons ('000s)	6	5	6	6	7	8	9	9	9	10	10
Unemployment rate	%	2.9	2.8	2.8	3.0	3.3	3.8	4.2	4.1	4.1	4.4	4.4
Consumer Price Index	1989-90 = 100	156.4	160.8	165.3	169.0	173.0	178.2	183.5	187.8	191.9	197.1	202.9
	% change	2.9	2.8	2.8	2.2	2.4	3.0	3.0	2.3	2.2	2.7	2.9
Average Weekly Earnings	\$	1,046.95	1,049.75	1,094.95	1,138.25	1,179.55	1,232.38	1,296.98	1,360.88	1,420.55	1,483.63	1,552.63
	% change	4.8	0.3	4.3	4.0	3.6	4.5	5.2	4.9	4.4	4.4	4.7
Labour Price Index	\$	113.05	118.08	123.25	128.23	133.15	139.43	146.85	154.18	161.05	168.28	176.20
	% change	4.1	4.4	4.4	4.0	3.8	4.7	5.3	5.0	4.5	4.5	4.7

TABLE C.2: ACT INDUSTRY GROWTH FORECAST (% GROWTH IN INDUSTRY OUTPUT)

Industry	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Agriculture, forestry, fishing	n/a											
Mining	n/a											
Manufacturing	22.3	10.1	9.2	2.9	3.6	6.5	5.3	4.0	3.5	6.2	6.1	4.4
Utilities	-3.4	2.5	-0.1	-1.7	-2.8	-0.7	-2.9	-2.6	-3.4	-1.2	-0.3	-1.3
Construction	13.7	15.5	-6.9	1.7	-1.7	8.1	4.2	1.0	9.9	9.0	5.2	3.0
Wholesale and retail trade	9.8	5.5	4.3	1.3	1.7	3.6	3.4	2.5	2.0	4.7	4.5	3.8
Transport and storage	17.0	3.0	8.0	1.8	1.0	3.5	2.9	2.5	2.3	4.3	5.1	4.7
Communication	15.4	4.6	3.2	5.4	4.9	7.5	5.3	2.7	2.8	5.3	5.3	5.1
Finance & insurance (inc. nominal industry)	16.6	4.4	8.3	2.8	2.5	5.0	3.9	2.5	2.2	4.7	4.4	3.4
Property and business services	13.1	0.2	8.9	3.1	3.4	3.9	4.3	2.9	3.0	4.0	4.7	4.7
Public administration	14.4	6.1	2.4	-1.5	0.4	0.4	0.8	-2.4	-1.3	-0.3	-1.0	-0.3
Community services	11.1	8.7	4.4	1.6	1.7	3.6	4.8	3.1	3.4	4.4	4.5	4.8
Recreational services	7.0	1.4	1.8	1.5	-0.4	1.8	-0.9	-0.8	-1.5	0.3	0.9	-0.7
Ownership of dwellings	4.8	0.5	-2.8	1.6	-1.6	1.9	-2.0	-0.1	-1.6	0.1	1.4	-1.2
Taxes less subsidies	12.9	4.6	13.8	0.7	8.2	8.0	4.1	1.2	4.9	6.9	4.7	8.5
All industries	12.1	5.5	3.4	0.9	1.3	3.2	2.4	0.6	1.7	3.1	2.8	2.7
GSP(I)	7.2	3.4	5.4	0.7	1.6	2.8	3.2	0.8	2.2	3.4	3.3	1.3

¹² These forecasts were generated using Access Economics AEM model and use slightly different population scenarios from the specific 'middle ground' population scenario used in the population projection section of this report – however the effect on economic growth rates is minimal.

APPENDIX D: INDUSTRY AND INFRASTRUCTURE DETAILS

Tourism

TABLE D.1: INTERNATIONAL VISITOR NIGHTS TO THE ACT, 2006-07

Country of Origin	Visitor Nights
New Zealand	205,641
Japan	147,307
Hong Kong	40,288
Singapore	114,460
Malaysia	82,826
Indonesia	114,783
Taiwan	26,827
Thailand	66,066
Korea	90,538
China	383,482
Other Asia	334,644
USA	167,441
Canada	30,299
United Kingdom	134,372
Germany	38,756
Other Europe	262,053
Other Countries	176,115
Total	2,415,898

Source: Tourism Research Australia

Education

TABLE D.2: ENROLMENTS AT ANU BY PLACE OF USUAL RESIDENCE, 2003

	ACT	Sydney	Other NSW	Other Australia	Overseas	Total
Undergraduate	5499	367	922	494	1010	8292
Postgraduate	1971	126	125	298	1172	3692
Total	7470	493	1047	792	2182	11984
% of Total	62%	4%	9%	7%	18%	100%

Source: ANU Statistical Services

TABLE D.3: NSW RESIDENTS ATTENDING ACT SCHOOLS, BY REGION OF NSW, 2006

Government 2006			
	Queanbeyan¹³	Non-Queanbeyan	Total NSW
Primary School	188	375	563
High School	217	378	595
College	169	241	410
Total	574	994	1,568
Non-Government 2006			
	Queanbeyan	Non-Queanbeyan	Total NSW
Primary School	487	501	988
High School	750	632	1,382
College	282	274	556
Total	1,519	1,407	2,926
Government 2007			
	Queanbeyan	Non-Queanbeyan	Total NSW
Primary School	180	389	569
High School	240	399	639
College	151	248	399
Total	571	1036	1,607
Non-Government 2007			
	Queanbeyan	Non-Queanbeyan	Total NSW
Primary School	479	520	999
High School	794	664	1,458
College	265	299	564
Total	1,538	1,483	3,021

Source: ACT Government

¹³ Includes Jerrabomberra

Health

FIGURE D.1: GREATER SOUTHERN AREA HEALTH SERVICE BOUNDARIES AND SERVICES



Source: Greater Southern Area Health Service Annual Report 2005-06

The ACT is an 'island' in the middle of the Greater Southern Area Health Service, and consequently the services provided by the GSAHS impact upon usage rates of ACT services.

APPENDIX E: COUNCIL OF AUSTRALIAN GOVERNMENTS (COAG) REFORM PROCESS

COUNCIL OF AUSTRALIAN GOVERNMENTS

The election of a new Federal Government has seen a refocus on policy priorities and the CoAG reform process. The 26 March 2008 meeting of the council crystallised the refocus in a number of areas a new agenda has been established; these include;

- water;
- streamlining the specific purpose payments (SPP) down from 92 down to a handful;
- education;
- health;
- business reform agenda
- infrastructure; and
- national approach to the challenges of climate change through an emissions trading scheme (ETS).

In many of the reform areas – infrastructure, water and climate change – much of the broad policy frame work has been set, but the form the schemes or priorities have remained open for consideration and completion at future meetings.

Water

The meeting agreed to the establishment of the Murray-Darling Basin Authority (MDBA) charged with the responsibility to centrally administer the Basin Plan. The Basin Plan will be informed by a list of priority water securing programs to be agreed upon by the basin jurisdictions and the commonwealth.

COAG has also asked the working group to look at new areas of competition reform including national water trading schemes.

Specific Purpose Payments

The Commonwealth proposes to decrease the number of specific purpose payments from 92 down to five or six new national agreements based on core government services; including;

- health;
- affordable housing;
- early childhood and schools;
- vocational educations and training; and
- disability services.

The communiqué for the 26 March meeting notes,

The new agreements will focus on agreed outputs and outcomes, providing greater flexibility for jurisdictions to allocate resources to areas where they will produce the best outcomes for the community

Education

Built into the “Education Revolution” COAG for the first time agreed to a long-term and integrated approach for all aspects of education;

- ❑ early childhood;
- ❑ schooling; and,
- ❑ vocational education and training.

COAG has agreed to a framework of common aspirations and policy directions in key areas outlined above and work force development. To drive these directions COAG has announced strategies like computer roll out and the trade training centres.

Health

The recent announcement – of a \$500 million increase in public health funding above the previously agreed level for the 2008-09 financial year – was joined by the COAG agreement on a national registration and accreditation system for health professionals. The goal of the scheme is to allow more freedom of movement – between States – for the nation’s health care professionals. This greater flexibility will provide opportunities and risks in attracting and retaining health care workers in the ACT.

COAG also agreed to a road map for the new Australian Health Agreement due to be signed in December 2008 and commence in 1 July 2009. The road map will include a review of the current indexation formulas and provide a longer term focus.

Infrastructure

In keeping with the general refocus COAG has also agreed to a national approach to planning on infrastructure. To achieve this COAG has agreed to consider the National infrastructure Audit in March 2009 to determine the needs and allocate available funds. Infrastructure Australia has also been charged with establishing best practice guidelines for public private partnerships by.

National approach to the challenges of climate

The March meeting also agreed to a co-ordinated national approach to the challenges of climate change; this included a national approach to an emissions trading scheme. This is designed to provide consistency – between jurisdictions – for investors.

Business reform agenda

The March meeting of COAG agreed to accelerating the business regulation reform agenda. The objectives of the system includes reducing regulatory burdens on business to improve Australia’s productivity performance and competitiveness. The areas of reform include;

- ❑ National harmonisation of occupational health and safety laws (OH&S);
- ❑ Early action on “hotspot” areas – in 2008 – of reform including environmental assessment, payroll tax administration, consumer policy framework and finance;
- ❑ Significant progress on five COAG hotspots, including, development assessment; building regulation; ABN and business names registration and personal property security reform; and,

- ❑ Nine new areas of reform to be added to the COAG regulation work program. Including business reporting; upstream petroleum regulation; directors' liabilities and financial services delivery.

Future areas of reform include national markets for water trading, energy and consumer policy.

Other areas of reform

The recent March meeting of COAG also saw agreements or future work direction on;

- ❑ housing;
- ❑ Indigenous disadvantage; and
- ❑ CSIRO scientific assessment of sustainable water yields.