Chapter 5 Human Capital and Labour

This chapter looks at the contribution that people make to the productivity of Australia's major cities and the way that city structures affect labour productivity.

Human capital is what enables people to earn a living; it is the knowledge and skills that enable them to contribute to a firm's production, for which they are remunerated. The OECD defines it very broadly as 'the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being' (Liu 2012).

Human capital is a vital ingredient of economic growth, along with physical capital (plant and machinery) and infrastructure. It plays a particularly important role in the knowledge economy.

Human capital can be expanded through investments, such as formal education or on-the-job training and experience, that improve worker skill and subsequently increase their productive capacity, benefiting themselves, employers, and the broader economy.

Economists are unable to directly measure human capital (Liu 2012), but they can measure it indirectly, using indicators such as the productivity of the population, the populations' level of education, or its rate of labour force participation. This chapter considers such measures for Australian cities.

Labour force participation

The labour force participation rate is a measure of the proportion of people either currently employed or actively seeking work compared with the total working age population. The higher the labour force participation rate, the higher the potential economic output and, if everything else is unchanged, the higher the level of Gross Domestic Product (GDP) per capita.

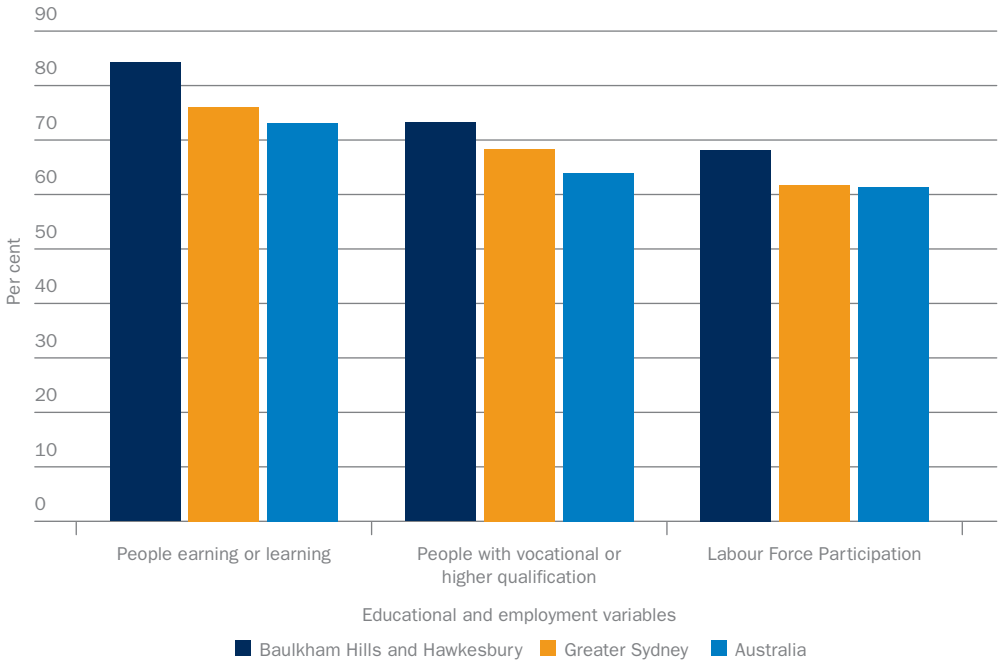
Higher workforce participation may also reduce fiscal pressures associated with welfare support and address other consequences of long-term unemployment. These include negative impacts on individual financial and psychological well-being, poorer health outcomes and the loss of employability skills (Brotherhood of St Laurence 2014).

Higher workforce participation also improves social inclusion and equity. Key benefits of this include increased social cohesion, inclusion and tolerance, reduced crime rates, strengthened social capital, increased quality of civic life (active citizenship, civic and political participation), increased charitable giving and participation in community services and technological change (that is, improved ability to adapt to and use technology) (National VET Equity Advisory Council 2011).

The *Progress in Australian Regions–Yearbook 2014* shows that those areas with a higher percentage of labour force participants have correspondingly higher levels of people with vocational or higher education qualifications along with higher levels of people aged 15 to 24 who are earning or learning (see Figure 5.1). For example, the Baulkham Hills and Hawkesbury region of Sydney has:

- a labour force participation rate of 68.2 per cent, which is 6.5 percentage points higher than the Greater Sydney region's rate of 61.7 per cent
- a higher proportion of people with vocational or higher education qualifications than the comparable figure for Sydney (nearly 5 percentage points higher)
- a higher proportion of people aged 15 to 24 who are earning or learning than experienced in the Greater Sydney region (more than 8 percentage points higher).

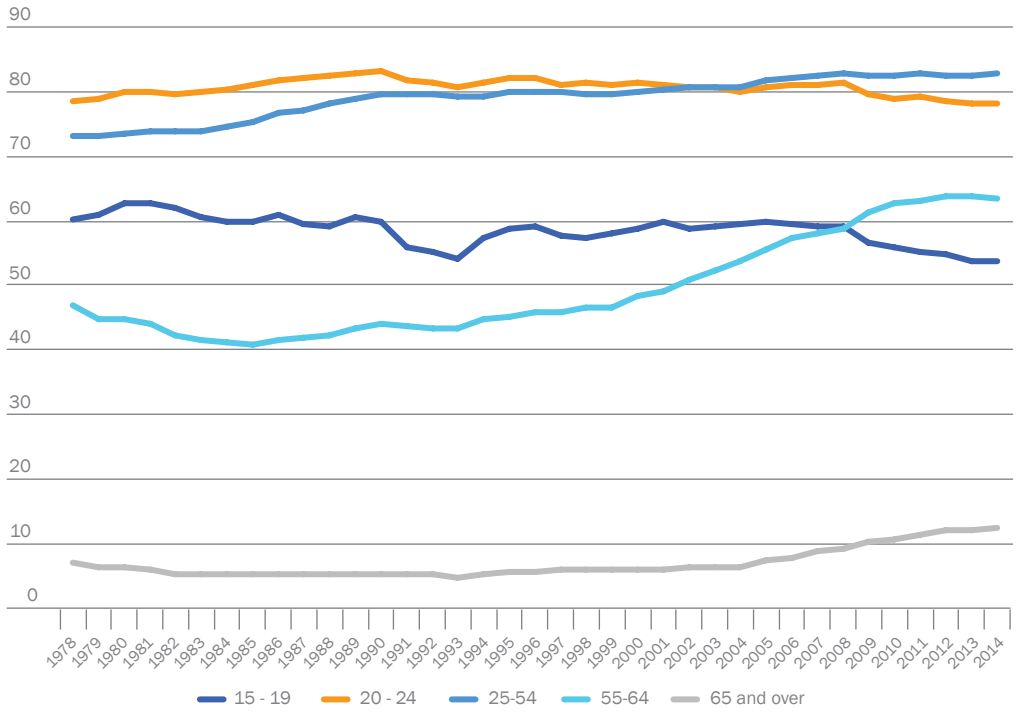
Figure 5.1 Selected comparisons of earning or learning, vocational or higher qualifications and labour force participation



Source: DIRD 2014.

Over recent decades, Australia's labour force participation has experienced strong growth, largely due to increased participation of females aged 24 to 54 years and increased participation for both males and females aged 45 years and above (Borland 2011, Gilfillan and Andrews 2010, ABS 2012b). There has been a particularly notable rise in the participation rate of people traditionally classed as nearing retirement, with many people aged 55 to 64 years now either staying in the workforce for longer or seeking employment. The participation rate of people over 65 has also shown an upward trend (Figure 5.2), rising from 6.5 per cent in 2001 to 11.8 per cent by 2013–14.

Figure 5.2 Labour force participation rate by selected age groups 1978 - 2014



Source: ABS 2014a.
Note: Each year is calculated as from January to December with the exception of 2014, which is calculated from January to August.

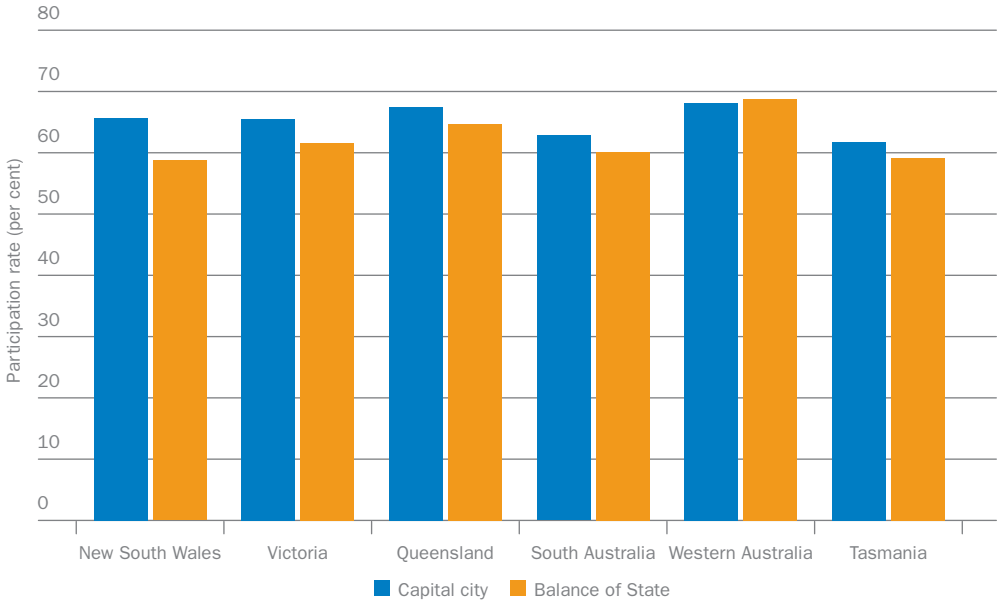
The 2015 Intergenerational report found that, in the absence of overseas migration, the ageing of Australia's population will lead to a fall in living standards as a consequence of the falling share of working age people in the total population (Australian Treasury 2015). There are two main ways to offset this. The first is to ensure an environment exists whereby the current workforce is able to be more productive. The second is to provide circumstances in which labour force participation rates increase. Given that Australia is highly urbanised and urban areas have significantly higher labour force participation rates, this has the potential to counteract to some extent, the impact on participation rates of Australia's ageing population. These options have been detailed in the recent Australian Government Intergenerational Reports (Australian Government 2007, 2010, 2015). The 2015 report projects that by 2054-55 the labour force participation rate for Australians aged 15 and over would have fallen from 64.6 per cent today to 62.4 percent. The report notes that female employment is anticipated to continue the strong growth seen over the past four decades, from 66 per cent of women aged 15 to 64 today to 70 per cent in 2054-55. Participation rates for people aged over 65 are also projected to increase strongly, from 12.9 per cent today to 17.3 per cent in 2054-55 (Australian Treasury, 2015).

People with higher education levels tend to have a much stronger connection to the labour force and are more likely to participate in the labour force for a larger proportion of their lives. Additionally, young people, particularly females, are more highly educated than the generation before and are much more likely to participate in the labour force than the generations preceding them.

Analysis of labour force participation is traditionally not spatially framed; it does not consider the impact of geography on outcomes. But data shows that cities are linked to higher participation and reveal different labour force participation outcomes between cities.

These findings show that infrastructure and land use have important influences on participation, as does the state of the local economy, with strong economic conditions generally enabling more people to join or stay in the labour force.

Figure 5.3 Labour force participation in selected capital cities



Source: ABS 2014a.

Large cities and capital cities tend to have higher workforce participation rates (see Figure 5.3). The majority of capital cities have a clearly higher rate of participation, while Western Australia's difference can be attributed to the regional mining industry in that State. It should be noted that in most instances 'balance of state' includes

regional major cities, where for example, participation rates in Newcastle – Lake Macquarie, Cairns and Wollongong (Illawarra) were 62.7, 62.6 and 56.9 percent respectively.

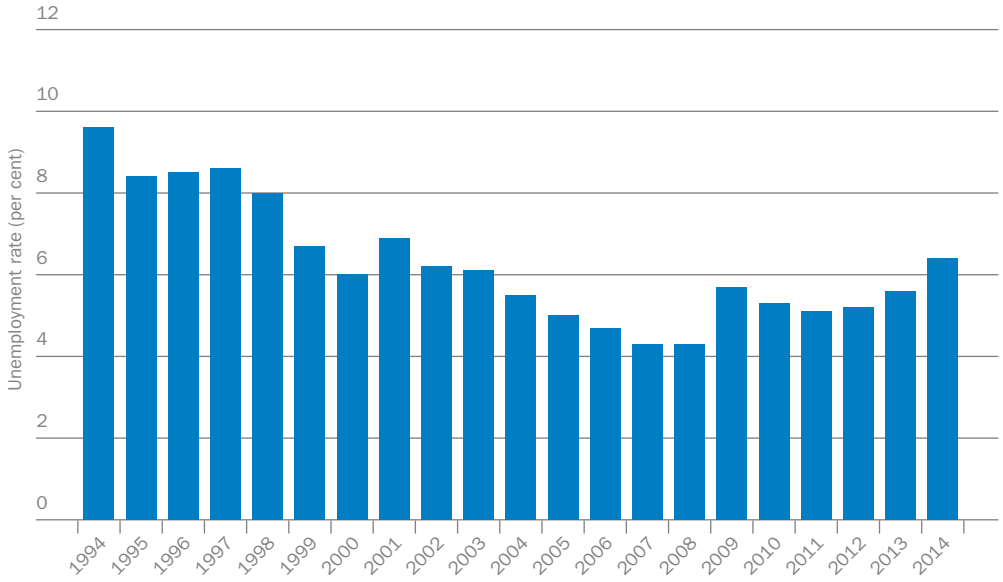
The higher participation rate is partially explained by workers with high human capital being drawn to cities, but also suggests that cities have an important effect on increasing or activating workers' human capital. In this way, cities can have a positive effect on national productivity. Being in a city also tends to encourage development of the human capital of their resident populations, and thereby lift the ability of workers to deploy their human capital productively. In fact, international evidence has recognised that individuals' productivity generally rises with the size of the city in which they work (Ahrend 2014).

There is a labour force participation rate gap between capital and non-capital major cities. For example, in December 2014, the labour force participation rate was 72 per cent in the Eastern Suburbs of Sydney and 57 per cent in the Illawarra (there is a distance of approximately 80 kilometres between the two) (Department of Employment 2014). Interestingly, the labour force participation rate in Cairns was 62.6 percent in 2014 yet it was one of only two cities that did not record an increase in labour force participation rates between 2001 and 2011. It experienced a decrease of approximately 2.4 percentage points, although it still had participation rates well above the national average in 2011. Since approximately 2.5 million Australians live in non-capital major cities, this could represent a large pool of underutilised human capital.

Labour force participation rates differ greatly not just between cities but also within cities. There are areas within major cities that have significantly lower labour force participation and this represents another pool of underutilised human capital.

Employment, underemployment and unemployment need to be considered along with labour force participation to get an accurate picture of labour supply and utilisation. Australia's seasonally adjusted annualised unemployment rate, shown in Figure 5.4, highlights that employment levels have not fully recovered to pre-Global Financial Crisis (GFC) levels.

Figure 5.4 Australia's unemployment rate (seasonally adjusted), 1994–2014



Source: ABS 2014a.
Note: Each year is calculated as from January to December with the exception of 2014, which is calculated from January to August.

However caution should be taken when assessing 'unemployment' at such an aggregate level, as there are different types of unemployment, and unemployment is not distributed evenly across the Australian population; there is substantial variation both spatially and between demographic groups.

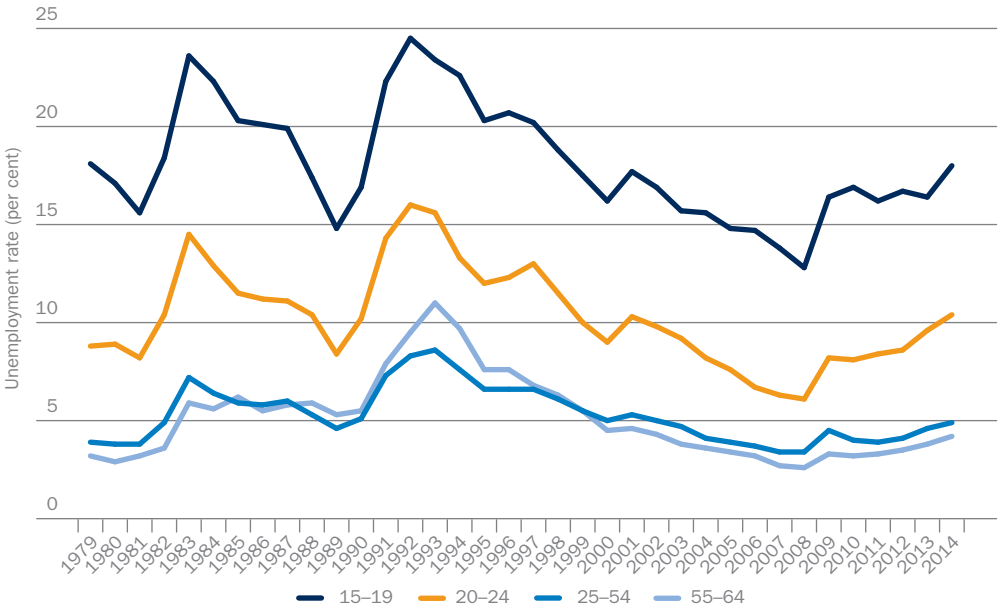
In addition, the impacts of unemployment are distributed across cities in an uneven manner. For example, the Progress in Australian Regions – Yearbook 2014 data records the average duration of unemployment in North Sydney and Hornsby in 2013 was 19 weeks, while the average for South-West Sydney was 55 weeks. While this was a decrease from 62 weeks in 2003 (DIRD 2014, table P 2.3.1), it remains well above the citywide average of 39 weeks.

Cities with lower unemployment are likely to attract more workers with high human capital. Cities with higher unemployment tend to have lower cost of housing and may attract less-skilled people.

Demographic changes can also have an impact on employment, particularly with respect to the issue of ageing (discussed in the **Population** chapter of this report).

> As indicated above, unemployment can be unevenly spread across the population, particulary in different age groups, as shown in Figure 5.5. Notably, younger jobseekers experience disproportionally higher rates of unemployment, particulary during economic downturns, such as the recessions in the early 1980s and 1990s and the Global Financial Crisis (GFC) (2008–09).

Figure 5.5 Australia's unemployment rate by age, 1979–2014



Source: ABS 2014a.
Note: Each year is calculated as from January to December with the exception of 2014, which is calculated from January to August.

The rise in the 15–19 and 20–24 age groups' unemployment rates since approximately 2008, when considered alongside the fall in labour force participation rates observed for these groups (Figure 5.2), shows the significant post GFC impact on young people attempting to enter the workforce. There are significant differences in the change of unemployment rates in non-capital major cities, reflecting the different regional economies centred there. For example, the unemployment rate for Gold Coast-Tweed Heads dropped from 9.9per cent in 2001 to 7.5 per cent in 2011. Over the same period, in Launceston it dropped from 9.5 per cent to 6.6 per cent, in Sunshine Coast it dropped 4.3 percentage points to 7.1 per cent and in Toowoomba it dropped from 7.4 per cent to 5.1 per cent.

Underemployment generally refers to people in casual or part-time employment who would prefer to work a greater number of hours. It was estimated that in September 2014 over 1 million Australians were

underemployed (Roy Morgan Research 2014). Underemployment will often disproportionally impact on young people and, in a similar way to unemployment, can have detrimental impacts on both individuals and society in terms of financial and psychological well-being and the effective utilisation of skilled labour.

Labour mobility and labour market disadvantage

A person's human capital has implications for their labour mobility and influences how likely they are to experience labour market disadvantage. The more educated a person is, the more likely they are to participate in the labour force.

For the nation, a skilled workforce also supports ongoing economic development and improves overall living conditions. The *Progress in Australian Regions – Yearbook 2014* shows that the percentage of people with a Certificate III or above who are employed in a skilled occupation is rising across Australia, but the strongest growth is in major cities. For example, Greater Adelaide recorded an increase of 10.1 percentage points in the number of people with a Certificate III or above in the period 2001–2011, while the rest of South Australia recorded an increase of 6.4 percentage points. The Sunshine Coast saw an increase of 12.3 percentage points, while the rest of Queensland rose by 9.1 percentage points.

In Western Australia, Perth saw an increase of 9.5 percentage points, while the rest of Western Australia rose by 5.3 percentage points. In Victoria, Melbourne saw an increase of 10.5 percentage points while the rest of Victoria rose 8.5 percentage points.

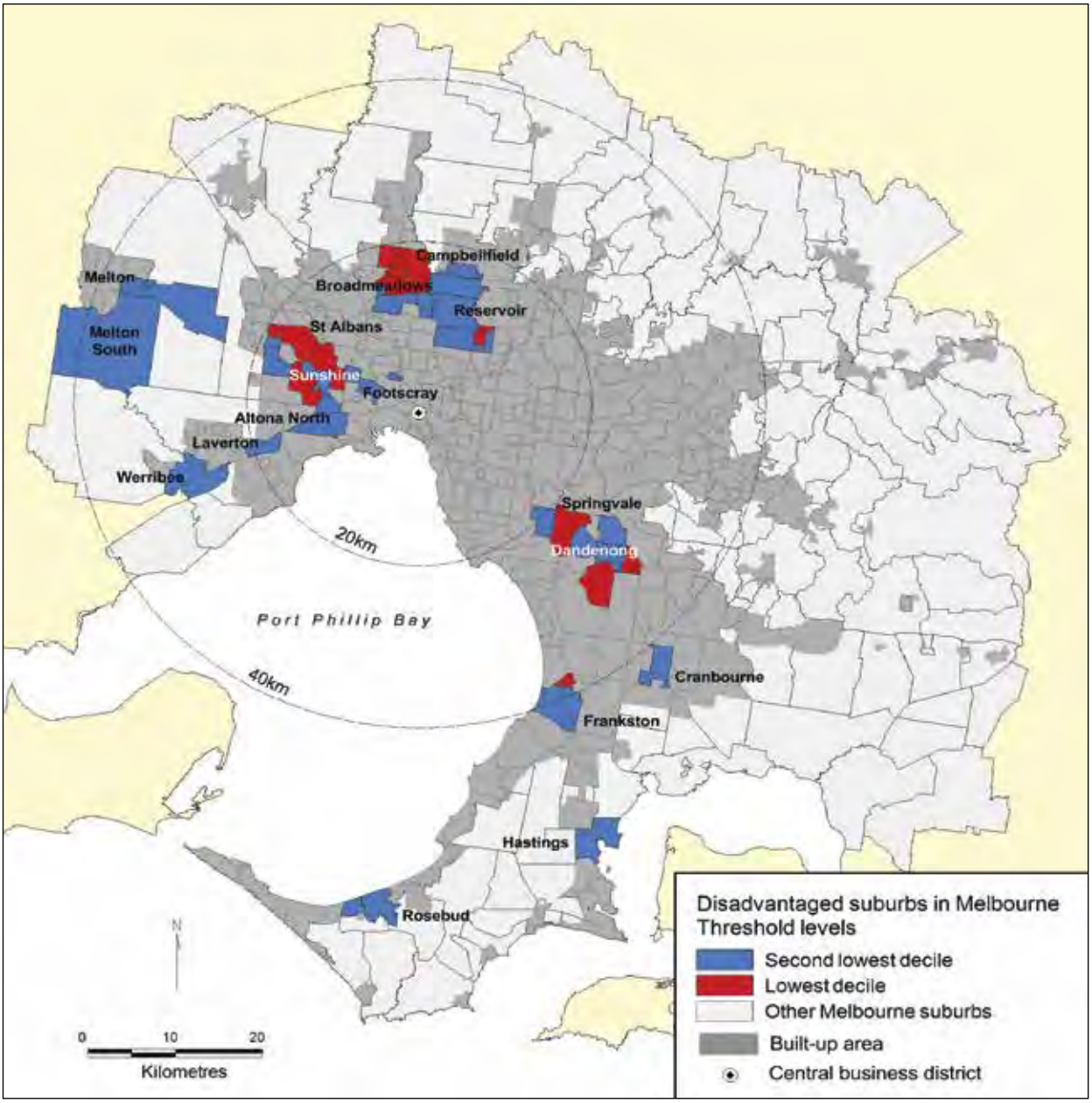
For the country as a whole, the *Progress in Australian Regions – Yearbook 2014* also records a nationwide trend in the growth in the number of people with a vocational or higher qualification (DIRD 2014, table P 2.1.1).

It has been found that individuals with high levels of human capital, education, experience or training, have the capacity not only to respond to work opportunities in a wide variety of locations but also to access the search networks and institutional support that enables them to relocate regionally, nationally and even internationally (2009).It is apparent that certain cities and parts of cities have much higher unemployment rates and higher estimated rates of underemployment. Those areas tend to be on city fringes, where access to jobs and institutional support is relatively poor.

Young people may be especially disadvantaged by poor transport connectivity. In areas with the weakest public transport connectivity, young people find it difficult to access labour markets. By virtue of their age or lack of work experience, skills and finances, their transport options may be limited to public transport, restricting the range of jobs available to them across a city.

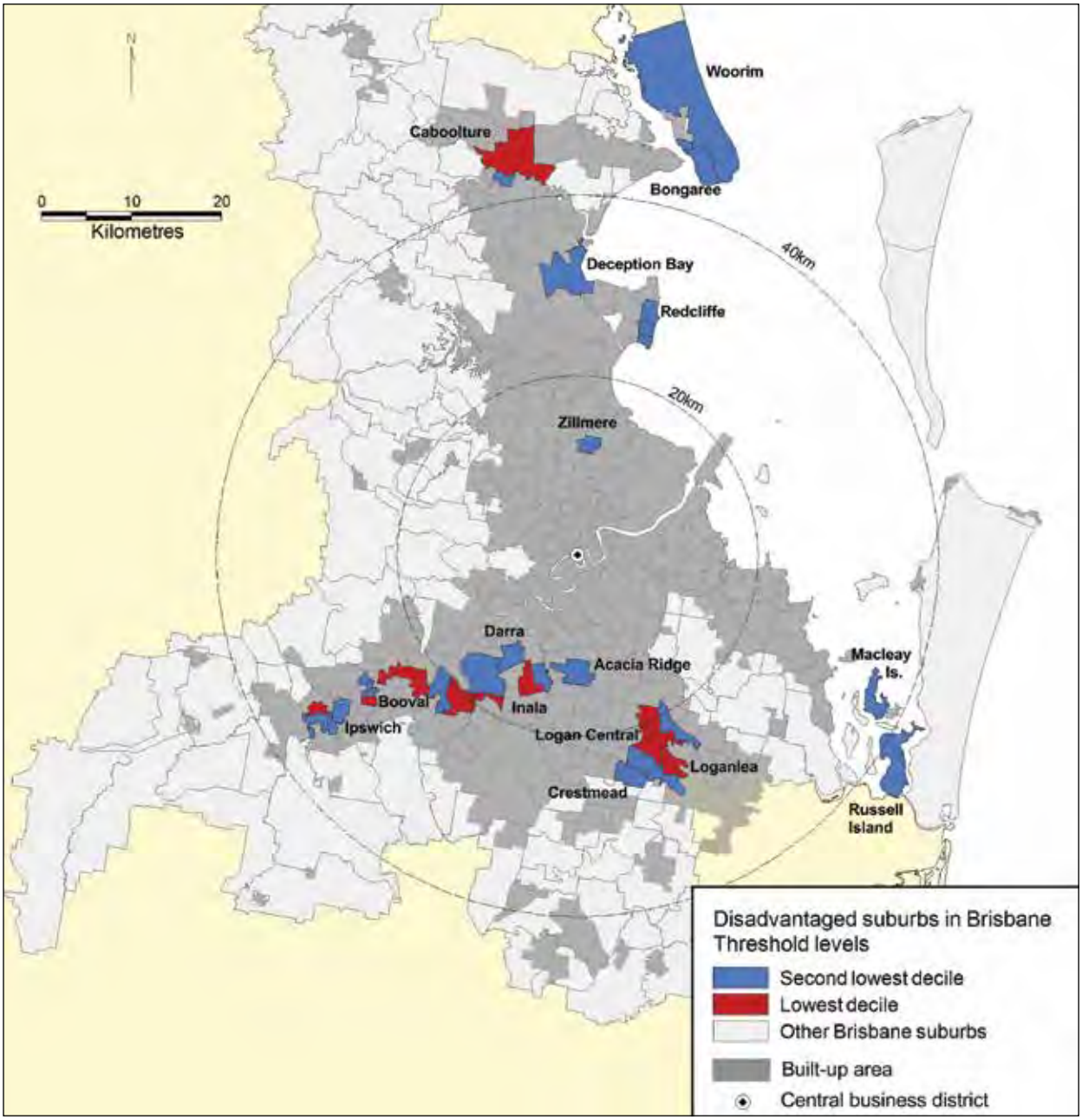
In 2011, Sydney, Melbourne and Brisbane, 177 suburbs, or 10 per cent of all suburbs, were classed as 'disadvantaged' with 1.7 million people living in the disadvantaged suburbs (16 per cent of the total population of the 3 cities) (AHURI 2014). Disadvantaged suburbs in these 3 largest cities formed distinct spatial clusters or corridors, predominantly in middle and outer suburbs and peri-urban areas.

Map 5.1 Disadvantaged suburbs in Melbourne: lowest and second-lowest decile threshold levels



Source: AHURI 2014.

Map 5.2 Disadvantaged suburbs in Brisbane: lowest and second-lowest decile threshold levels



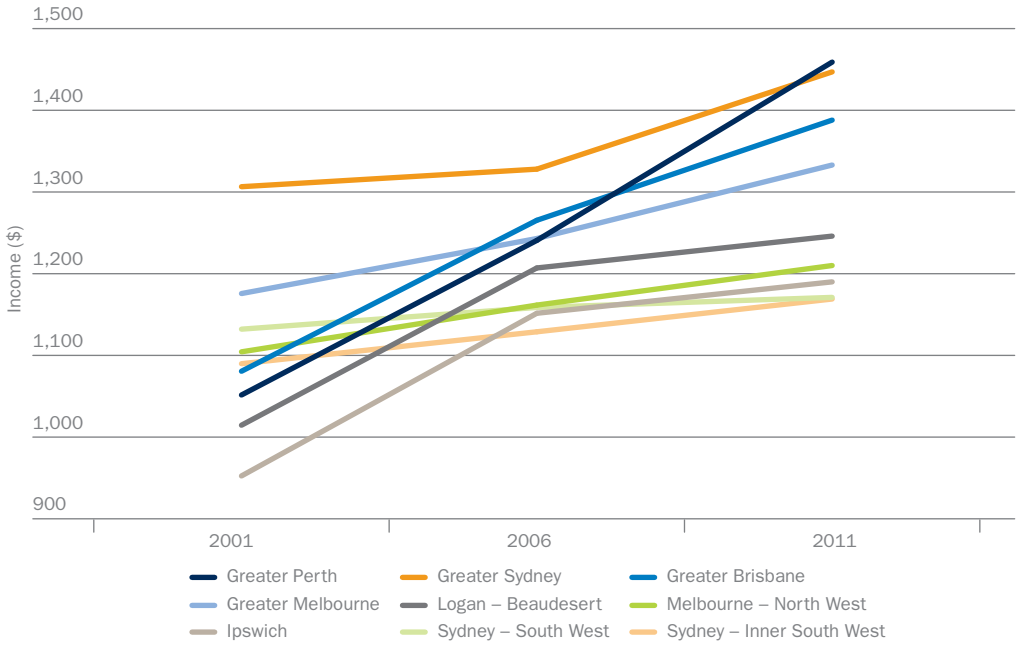
Source: AHURI 2014.

As shown in Maps 5.1 and 5.2, disadvantaged areas can be seen in 3 clear clusters in the west, north and south east of Melbourne, and in a corridor stretching inland along the Brisbane River and in the south of Brisbane's metropolitan area.

The *Progress in Australian Regions – Yearbook 2014* gives an indication of this spatial distribution when recording the trend in real median weekly household incomes in different parts of Australian cities. For example, progress is shared differently between and across cities, as shown in Figure 5.6.

For example, while for all of Greater Sydney real household weekly income grew from $1,300 in 2001 to approximately $1,450 in 2011, in South-West Sydney real weekly household income grew by less than $50 over the same period. In comparison the real median weekly household income for Mackay grew by $580, from $992 in 2001 to $1,572 in 2011.

Figure 5.6 Selected real median weekly household incomes, 2001–2011



Source: DIRD 2014.

Human capital in cities

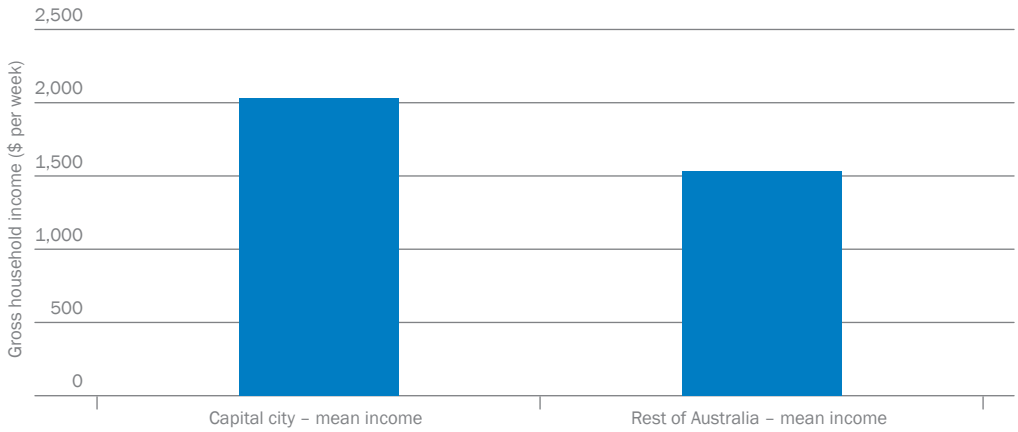
As discussed, cities attract human capital, but they do more than that. By co-locating educated and innovative people, they amplify the effect of human capital.

The clustering of jobs and people in cities increases the range of jobs on offer to a worker and gives them greater choice in employment. This improved choice allows them to best match their skills to a job, and in the process work in a number of different jobs and gain a range of experiences (which can be seen as on-the-job investment in their human capital).

Human capital is particularly important in post-industrial or 'knowledge-intensive' economies, which are increasingly located in the inner parts of Australian cities. Educated people in close proximity can spark new combinations of ideas and technologies that add value. Reflecting the rise of knowledge intensive industries, the price premium paid to more highly skilled labour throughout the developed world has increased dramatically since the 1970s.

Highly productive firms and workers with high human capital means higher productivity and wage premiums paid to workers. Earnings in Australia's largest cities tend to be higher than in the regional areas of their states, principally reflecting the higher value added (Figure 5.7).

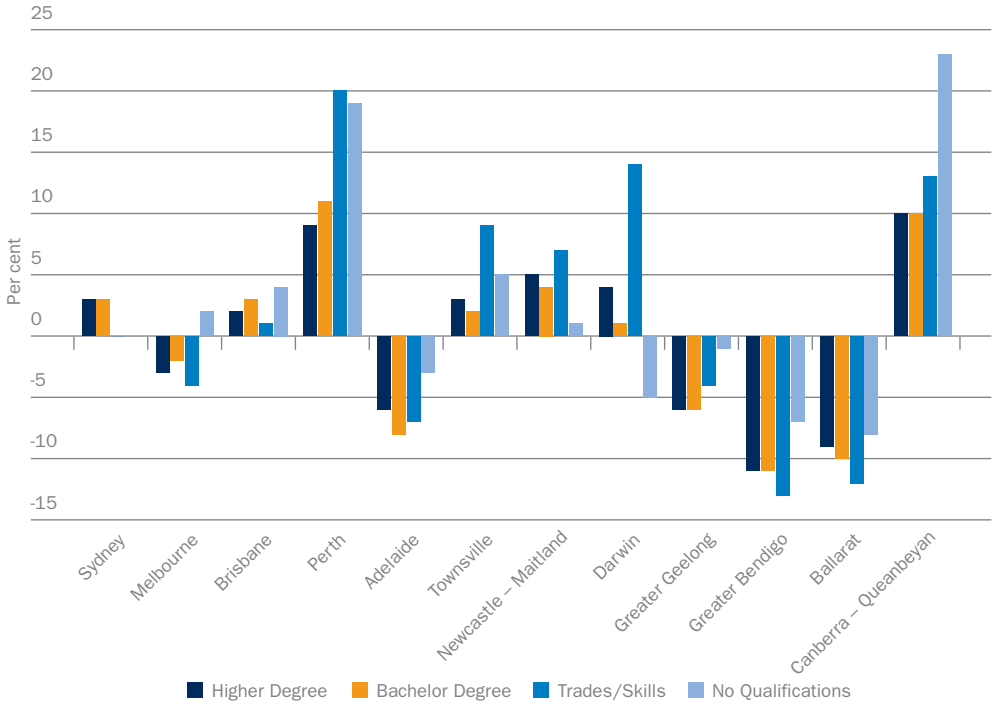
Figure 5.7 Average Australian personal income, 2011–12



Source: ABS 2012b.

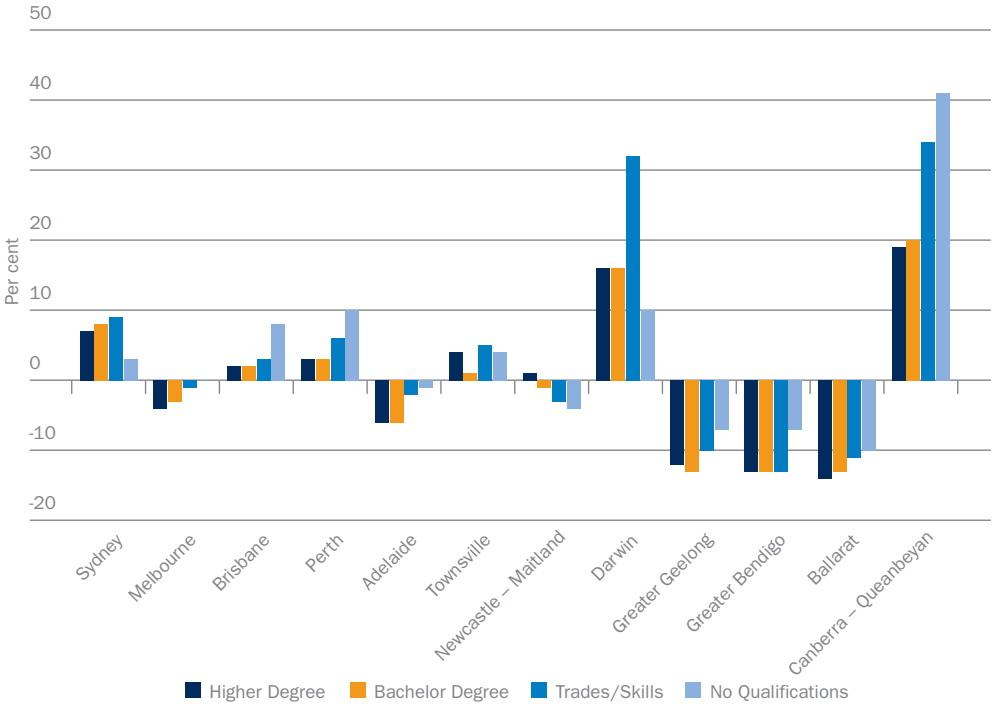
Figures 5.8 and 5.9 show the education-based price premiums by qualification of males and females in selected major cities against the Australian average for that level of qualification. Differences in lifetime earnings based on level of education (measured in terms of qualification) reflect the price premium that those with higher levels of education (human capital) can command in a labour market.

Figure 5.8 Education price premium paid in selected major cities compared with the Australian male average lifetime earnings per qualification, 2011



Source: ABS 2012a, SGS Economics & Planning 2014.

Figure 5.9 Education price premium paid in selected major cities compared with the Australian female average lifetime earnings per qualification, 2011



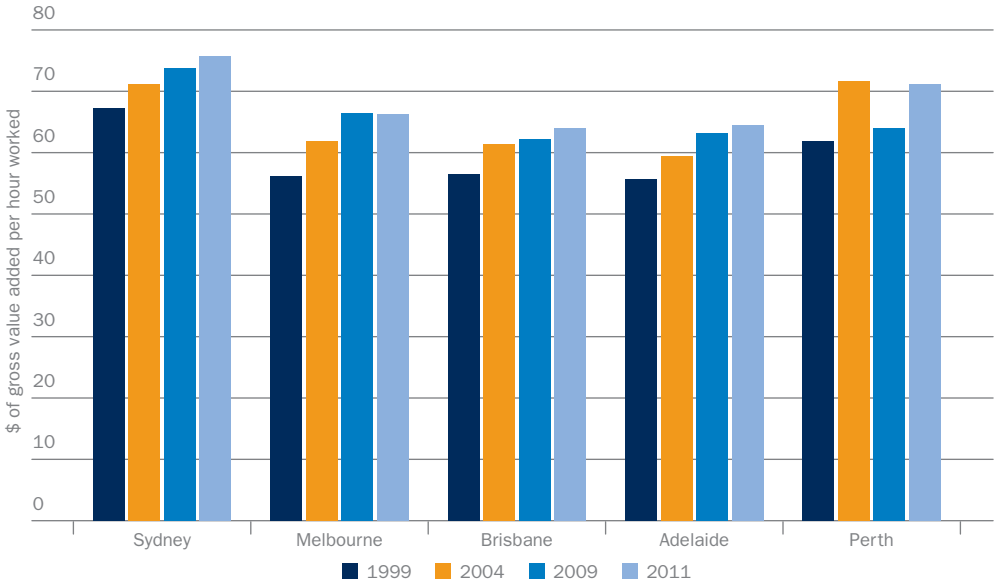
Source: ABS 2012a, SGS Economics & Planning 2014.

Lifetime earnings by qualification level vary considerably from city to city in Australia, reflecting the different economic and industry structure of Australia's cities and other localised factors.

The premium for educated workers offered in Melbourne and Adelaide is below the national average and the premiums offered in other large cities. Canberra–Queanbeyan offers considerably higher wages than the Australian average for all qualification levels, particularly for trade qualifications or no qualifications. Perth, Townsville, Newcastle–Maitland and Darwin offer price premiums for trade qualified individuals, particularly males. This is likely to reflect the mining-based economies of these cities. Greater Geelong, Greater Bendigo and Ballarat offer considerably lower lifetime wages when compared with the Australian average.

Labour supply in a city is also influenced by factors such as the livability or the cost of living, safety, climate and amenity. As a result, some labour markets may pay a price premium because attracting certain types of labour is challenging. Canberra–Queanbeyan, for instance, has a large number of workers with higher degrees and bachelor degrees, whereas workers with trade qualifications and no qualifications are less prevalent.

Figure 5.10 Labour productivity by selected capital cities, 1999–2011



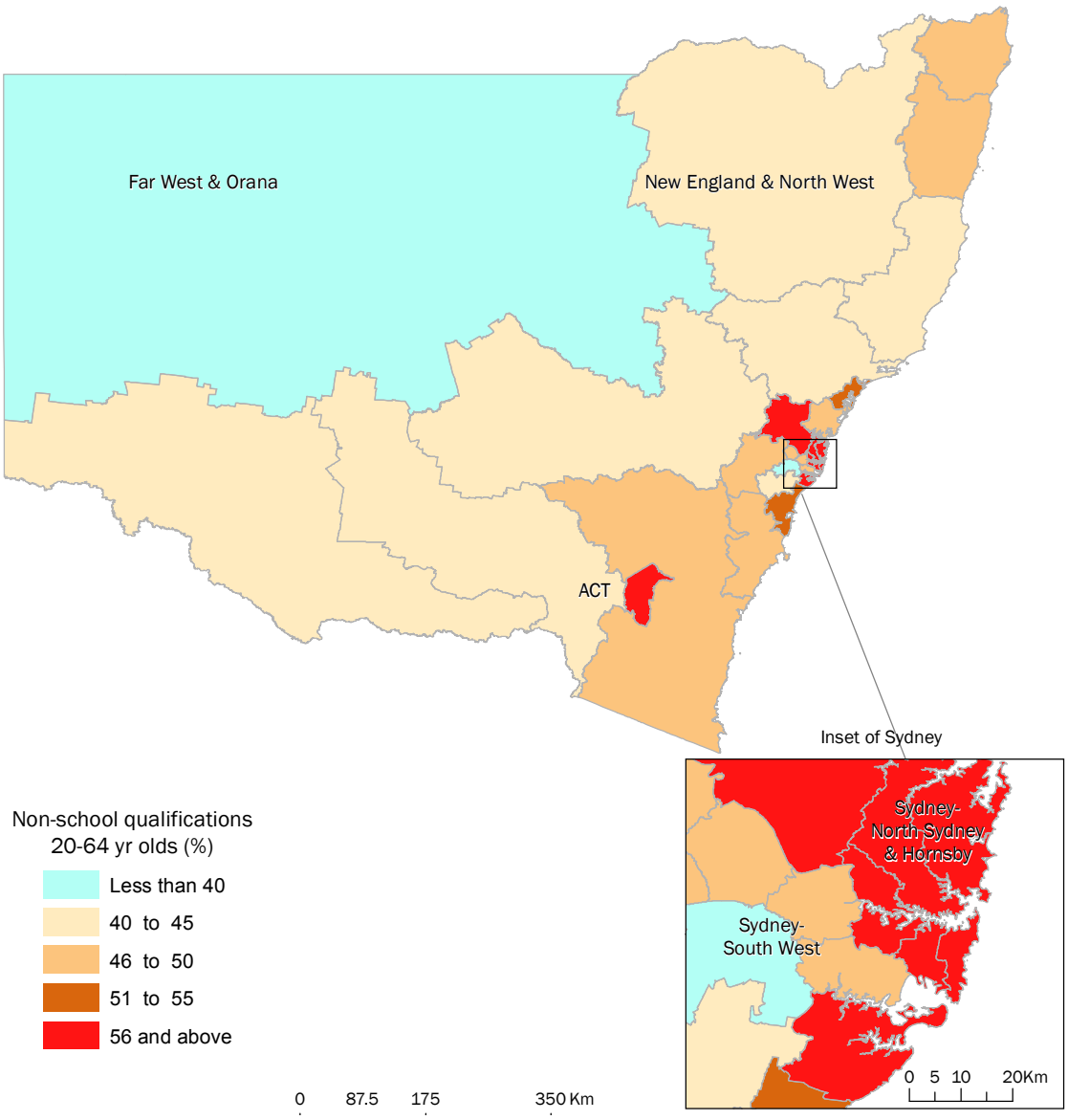
Source: COAG Reform Council 2012.

Australia's cities offer differing environments for workers. Sydney has the highest worker gross value added per hour and also contains the region with the highest intensity of further education, suggesting human capital

is highly concentrated there. Perth has the highest labour force participation rate, reflecting the strong economic growth that has created many jobs and attracted workers from across Australia and the world.

Lifetime earnings by qualification level also vary considerably from city to city in Australia, reflecting the different economic and industry structure of Australia's cities and other localised factors. Workers with more education gather in cities, and residents of cities tend to become more educated.

Map 5.3 Population with non-school qualifications aged 20–64 years, New South Wales, 2011



Source: ABS 2012a.

Map 5.3 illustrates that high human capital tends to cluster in and around cities – it can be seen how non-school education rates, that is, post secondary school education, tend to be higher in cities compared with rural and regional centres. The effect is driven by both migration of highly qualified people and higher likelihood of existing residents pursuing non-school qualifications. Higher education rates are not perfectly analogous to higher human capital, but alongside data on earnings and labour force participation they provide evidence that cities are human capital hotspots.

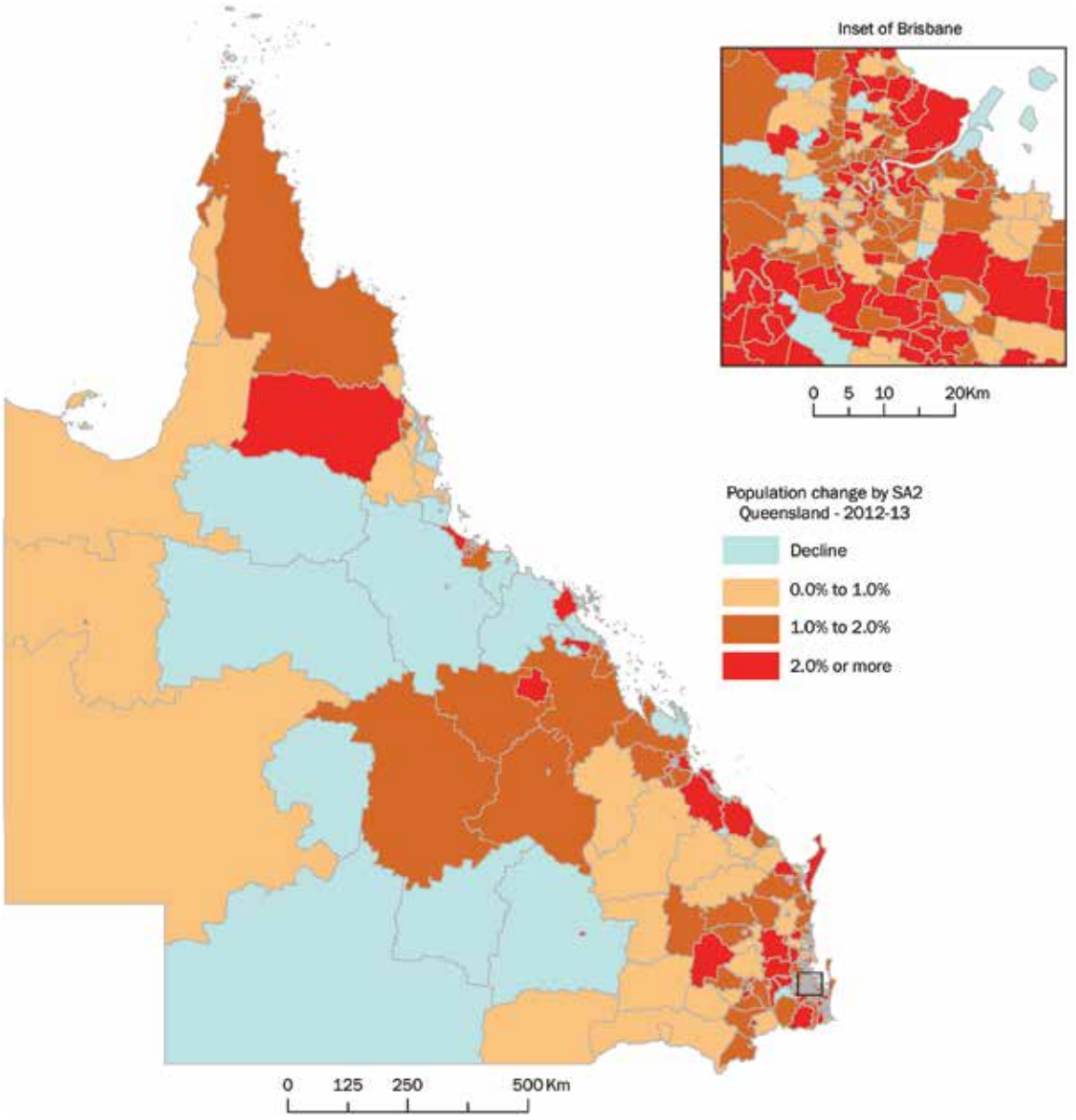
Certain parts of Australia's cities tend to be more productive than others; there are particularly dense centres where high value jobs are clustering and high levels of human capital accumulate (PwC 2014).

The spatial dynamic of human capital, whereby both high-quality jobs and individuals with higher human capital concentrate in inner cities, presents substantial issues for equity of access to opportunities. As discussed in the **Population** and **Settlement** chapters of this report, this creates long commutes for some workers, as the majority of new housing is located on the urban fringe. Workers with poorer transport options may find accessing the high-skill, high-paid jobs in the city centre too difficult and be locked out of that employment market, reinforcing the spatial divide.

One of the biggest advantages of cities in developed countries is their ability to develop and attract talented people – those with high human capital. Map 5.4 shows that in Queensland in 2013, city populations tended to grow faster than other areas.

The pattern is essentially consistent across Australia – international migrants move to cities, and there is a steady flow of young productive people from rural and regional areas to metropolitan areas.

Map 5.4 Population change by Statistical Area Level 2, Queensland, 2012–13



Source: ABS 2014b.

Businesses compete to attract highly educated and skilled workers. Many select locations for growth on the basis of the potential to attract talent there. Talented individuals are usually highly mobile; they want to live in places with the best career opportunities and the best quality of life. Individuals with high human capital have the ability to relocate to these places (Economist Intelligence Unit 2012). Urban environments that stimulate urban culture and creativity with mixed use, higher densities and a myriad of small businesses are the types of environments in which these individuals prefer to live and work (Montgomery 2007).

In that regard, all the other aspects of cities beyond 'the economy', such as built heritage, good architecture and urban design, quality public open space, social equality and feelings of fairness and security, all impact on a city's ability to attract and retain skilled people. They may influence a firm's long-term economic decisions and performance.

Many non-capital major cities experienced increases in the proportion of their populations with a vocational or higher education qualification. For example, in Newcastle it rose by 11.5 percentage points from 52.5 per cent in 2001 to 64.0 per cent in 2011. In Launceston over this period it increased by a similar number of percentage points to reach 58.8 per cent.

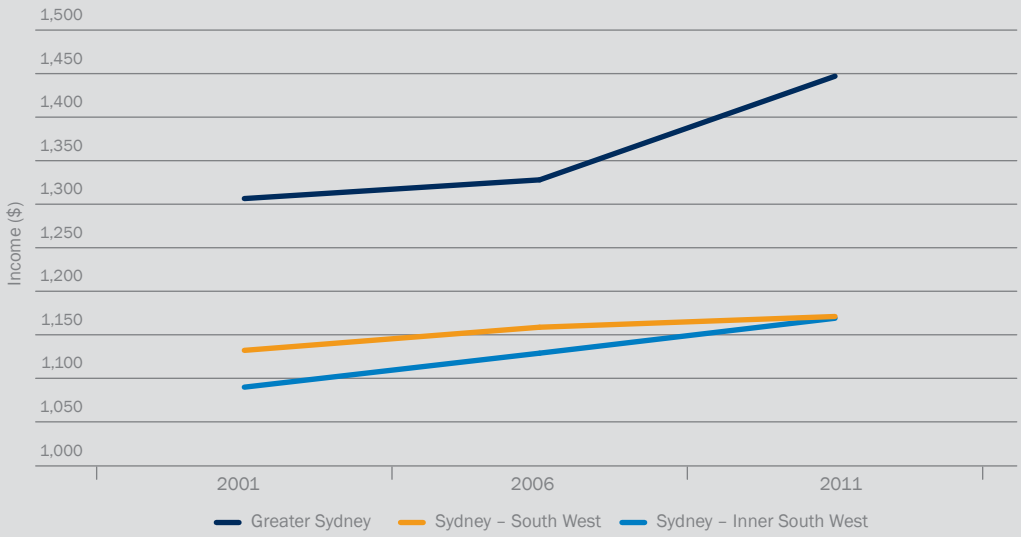
Case study: Progress in cities

The data contained in the *Progress in Australian Regions – Yearbook 2014* gives us an opportunity to record socio-economic progress within cities.

As shown in this report, some parts of cities have progressed at different rates and it is illustrative to directly compare some of those parts of cities progressing more slowly against the city average. This report does not seek to address the causes of these differences, but notes that the measurement of progress in Australian cities should consider all aspects of progress including lower baselines.

As shown at Figure 5.11, progress within cities on measures such as real weekly household income varies and is related to where you live. While the Inner South West started lower than South-West Sydney, it has progressed, as has the rest of the city, whereas the South West has not shown the same rate of progress.

Figure 5.11 Selected real median weekly household incomes, Sydney

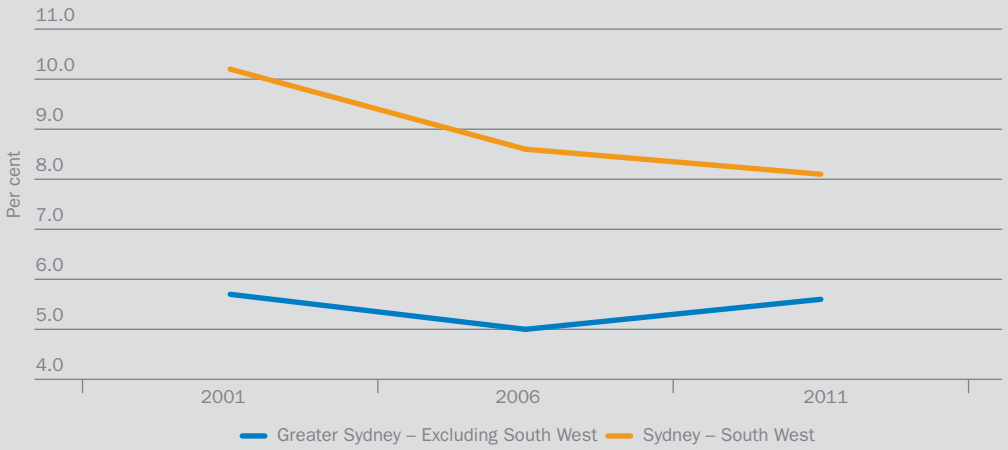


Source: DIRD 2014

Below is a series of direct comparisons of the progress for South-West Sydney against selected Progress in Australian Regions – Yearbook 2014 progress indicators when compared with the balance of Greater Sydney. The region, 'Greater Sydney' is based on the Greater Capital City Statistical Area (covering people who regularly socialise, shop or work within the city, including those that live in small towns and rural areas surrounding the city) while 'South-West Sydney' is based on the Statistical Area Level 4 (SA4s).

As shown in Figure 5.12, the unemployment rate for South-West Sydney is higher than that of Greater Sydney. Over the ten year period 2001 to 2011 the unemployment rate in South-West Sydney actually fell by over 2 percentage points, the largest decrease in all Sydney regions, but remains significantly higher than Greater Sydney.

Figure 5.12 Unemployment rate for South-West Sydney and Greater Sydney (excluding South-West Sydney), 2001–2011



Source: DIRD 2014

This would at first seem to demonstrate a very positive outcome and significant progress for South-West Sydney. However, unemployment statistics measure those people who are looking for work but cannot find it.

It is important to therefore consider the rate of workforce participation alongside unemployment statistics, as a drop in unemployment rates may include components of people who have stopped actively seeking employment. The labour force participation rate in South-West Sydney started at a much lower level than the city as a whole and shows a steady downturn. Over the decade shown in Figure 5.13, the labour force participation rate in South-West Sydney fell 2.4 percentage points to 54.8 per cent, the lowest in Sydney and well below that of Greater Sydney with 62.3 per cent. So, while unemployment rates have fallen, it appears that this has been almost entirely due to people ceasing participation, rather than increases in the proportion of people actually in work.

Figure 5.13 Labour force participation rates South-West Sydney and Greater Sydney (excluding South-West Sydney), 2001–2011

Source: DIRD 2014

As discussed in this Chapter, a measure of progress in cities is the Human Capital of its workers. Education of the population is a driver of productivity and measurement of qualified people or those with a vocational or higher education qualification shows South-West Sydney is again falling behind Greater Sydney (Figure 5.14).

Figure 5.14 Proportion with a vocational or higher education qualification for South-West Sydney and Greater Sydney (excluding South-West Sydney), 2001–2011

Source: DIRD 2014

The percentage of people in the South West with a vocational or higher education qualification grew by over 8 percentage points to 51 per cent between 2001 and 2011, but remains the lowest in Sydney and well behind Greater Sydney's 69.8 per cent.

Against some progress indicators, South-West Sydney is progressing. However, these direct comparisons give an example of where, despite recording progress, people living in some parts of our cities remain at a disadvantage.

Conclusion

Labour mobility and voluntary migration for economic gain are part of agglomeration. Educated workers gain from being in close proximity to others, so human capital flows to where it is abundant, not where it is scarce. People who invest in education and skills are more likely to migrate to economically leading places, where they can find high-value jobs in order to maximise the return on their investment. This process also works to boost the productivity of cities, as skilled people are more economically productive when they work alongside other skilled people, fostering economic innovation (Ross-Larson (ed.) 2009).

As more knowledgeable and skillful workers join the workforce, the overall productive capacity of labour is enhanced. A highly skilled, creative and motivated workforce will drive up labour force participation rates, address skills shortages in an economy and boost productivity (Department of Industry 2013).

Human capital can be expanded through investments (by either individuals, their employers or governments), such as formal education or on-the-job training and experience. These investments improve worker skill and subsequently increase their productive capacity and through cities, the productive capacity of the nation.

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