



**How reshaping our cities and regions
can drive our Covid Recovery**
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Unprecedented times are fast becoming the 'new normal' – at least for a little while.

As a nation, we have done extremely well to weather the health crisis, and we appear to have weathered the economic storm reasonably well with the Covid Recession second only to the Great Depression of the 1930s. Recent labour force data shows that the measured unemployment rate has decreased to 5.6% in March 2021, but it remains to be seen if the withdrawal of the Federal Government's employment support will reverse this trend.

As we move into the Recovery Phase, the Federal, State, and Territory governments have continued to reinforce the need to maintain strict physical distancing, and are encouraging people to work from home, where possible.

Despite the recent advent of the Covid Vaccine, there continues to be underlying concerns that density could be seen as an 'enemy' in this crisis. Evidence from Italian cities shows that Covid-19 is not more prevalent in denser cities in Italy, but it is more widespread in areas visited regularly. Highly dense global cities such as Taipei and Seoul, have also successfully managed to contain the spread of Covid-19.

The health and economic situation in Australia is (thankfully!) vastly different to Italy and the United States, and as we step into the Recovery Phase, our cities are an opportunity to come out of this crisis in better shape than before – not just to recover, but to thrive on the other side of the crisis.

Covid-19 is already changing the way we work, live, and play – many in the professional services sector continue working from home (which might be here to stay!), and some are looking to move to the suburbs and regions. Looking beyond the crisis, we need to consider an important question on density: when is a city too small and when does it get too big? Or – as an economist would put it – is there such a thing as an 'optimal' size for a city? The question of whether there is an 'optimal' city size can be traced back to Aristotle's Politics (back in the 4th century BC), where he argues that the land to population ratio determines the welfare of a city. Now that we have better data, it turns out there is an optimal size, but – typical economist answer: it depends.

With roughly 40% of modern-day Australia's population residing in Greater Sydney and Greater Melbourne, unsurprisingly nearly half of our nation's GDP is generated out of these two major cities – which is why our cities should be at the heart of the Covid Recovery. The concentration of population we see in Australia stands out globally – the two biggest cities in the UK (London and Birmingham) make up about 20% of the UK's population, and Tokyo and Yokohama make up about 10% of Japan's population. For a country that prides itself on its bush heritage, we really are a nation of city-slickers!

What determines 'optimal-size'?

There are a few different ways to consider the question of optimality when it comes to cities. Economists typically look at the two different forces that determine the location choices of businesses, which Nobel laureate Paul Krugman calls centripetal and centrifugal forces. For instance, the benefit of being close to your customers and suppliers is a centripetal force that drives co-location, while congestion and pollution are centrifugal forces that drive dispersion. The inter-play between these forces then determines what an optimal city would look like. So, for instance, a city with a congested road network or a poor public transport system will be losing out on achieving its full economic potential due to losing out on productive hours during the commute.

The natural evolution of Australian cities reveals the complexity of thinking and Krugman's and others depth of insight. In Sydney, for instance, dispersion from a once regional city like Parramatta led to the growth of Metro Sydney, while centripetal forces pulled activity towards a small number of key centres. Recognising this organic phenomenon, NSW Government has developed a vision seeking to transform Greater Sydney into a metropolis of [three cities](#): Western Parkland City, the Central River City and the Eastern Harbour City. But of course, within these three cities are smaller 'cities' or [Strategic Centres](#). For this reason, it is important to not just consider the overall size of metropolitan or regional cities (e.g. Greater Metro Melbourne), but instead analyse and evaluate the size of the employment centres within metro and regional areas (e.g. Chatswood within Greater Metro Sydney). ABS Statistical Area 3 (SA3) has been used in the analysis to represent significant and largely self-contained employment centres.

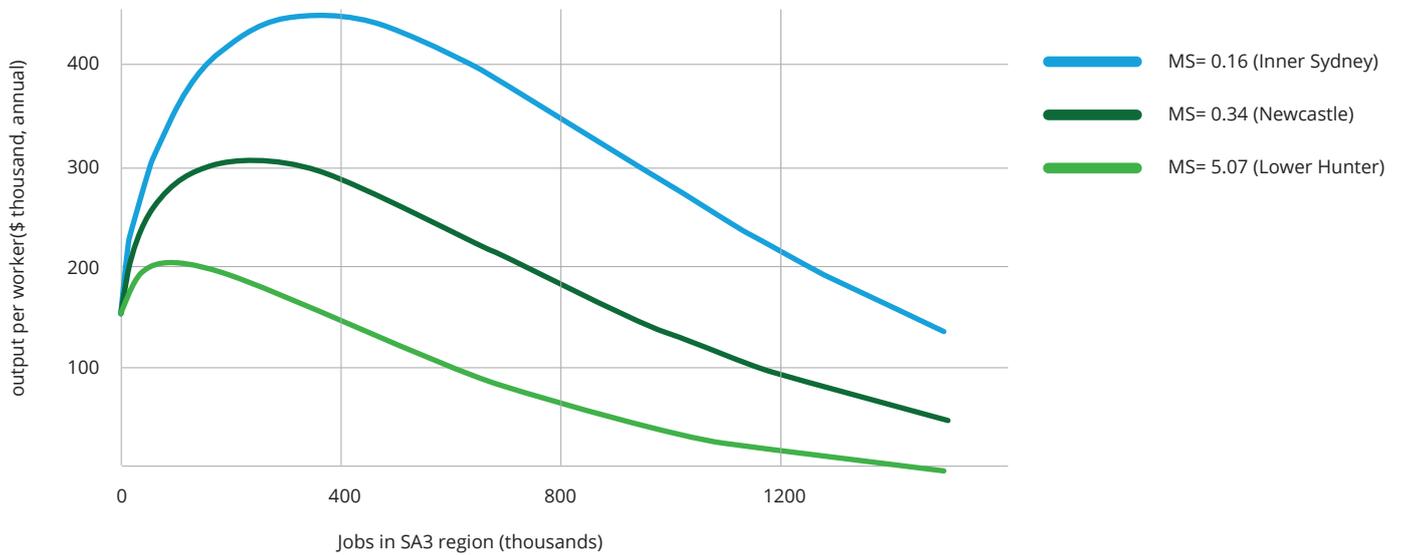
There is no 'one-size fits all'

It turns out that there is not one single optimal size for all cities, but multiple optimal sizes that depend on the specialisation of a given location (i.e. is it more industrial or services oriented). The interplay between positive forces like agglomeration economies, and negative forces like transport congestion lead to an inverted U-shape (Figure 1) relationship between city-size and productivity per worker (where the peak of the U is the optimal size that maximises productivity).

This inverted U-shape is estimated by incorporating data on centripetal and centrifugal forces for each location. These include data on the size of market accessible from each location, capital used in production activities, travel time from home to work, productivity during the commute, extent of manufacturing or services specialisation (urban hierarchy), agglomeration economies of scale, and the diversity of intermediate inputs to production.

In Figure 1, Lower Hunter has a much lower 'optimal size' of around 100,000 people working there because it is largely a manufacturing and mining specialised area. By contrast, Inner Sydney (which is centred around the CBD) has a much higher optimal size - closer to 400,000 - because congestion and pollution are less of a drag on productivity for a services-oriented location with good public transport access.

Figure 1. Inverted U-shape showing optimal sizes (in terms of jobs) for Inner Sydney, Newcastle, and Lower Hunter



Source: Author calculations, based on Jamaldeen (2015)¹

Notes: output per worker is calculated on the average in the dataset for illustration purposes. MS refers to the inverse of the Manufacturing to Services ratio (urban hierarchy) in each location

Comparing actual size with the estimated optimal size reveals that most Australian Statistical Area 3 (SA3)² cities are below optimal size and not achieving their productivity potential. That is, these locations are smaller than they need to be to be performing at their economic best. The inner urban regions in each of Australia’s four smaller capitals – Brisbane, Perth, Adelaide and Canberra - all locations that are largely specialised in the knowledge economy - are losing out. It is worth noting that even within the knowledge economy, which is dominated by the services sector, the returns from agglomeration (people coming together to exchange ideas, contacts, and even employees), are uneven. Sectors like finance and technology benefit substantially more than the public sector – these sectors are relatively larger in Sydney and Melbourne than in the smaller capitals.

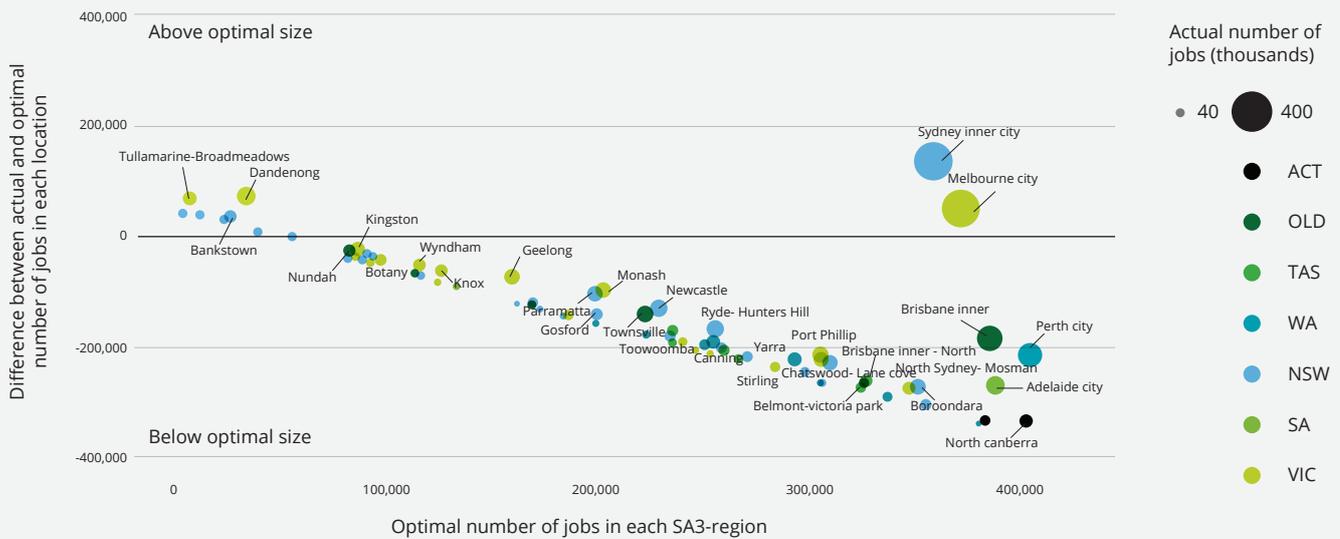
By contrast, the major SA3-cities in Melbourne and Sydney (in and around the CBDs) are slightly above their optimal sizes (above the horizontal line in Figure 2). With growing populations and increasing density in key centres, the situation is likely to get worse. Improving housing affordability and better transport access into the CBD by connecting homes to workplaces more efficiently could greatly assist in reducing this loss of productivity. A few of the more industrial SA3-cities (Dandenong, Tullamarine, East Port Adelaide) are also above the estimated optimal-size. Congestion in these locations is worsening, and it is unsurprising that commute times are longer with wellbeing compromised.

1. Jamaldeen, M. (2015), Agglomeration economies, diseconomies, and city size: the case of Australian cities, Department of Economics Macquarie University.

2. ABS SA3 were chosen because they represent functional economic regions where commuters are largely self-contained. These are considered ‘natural cities’ not bound by administrative boundaries.

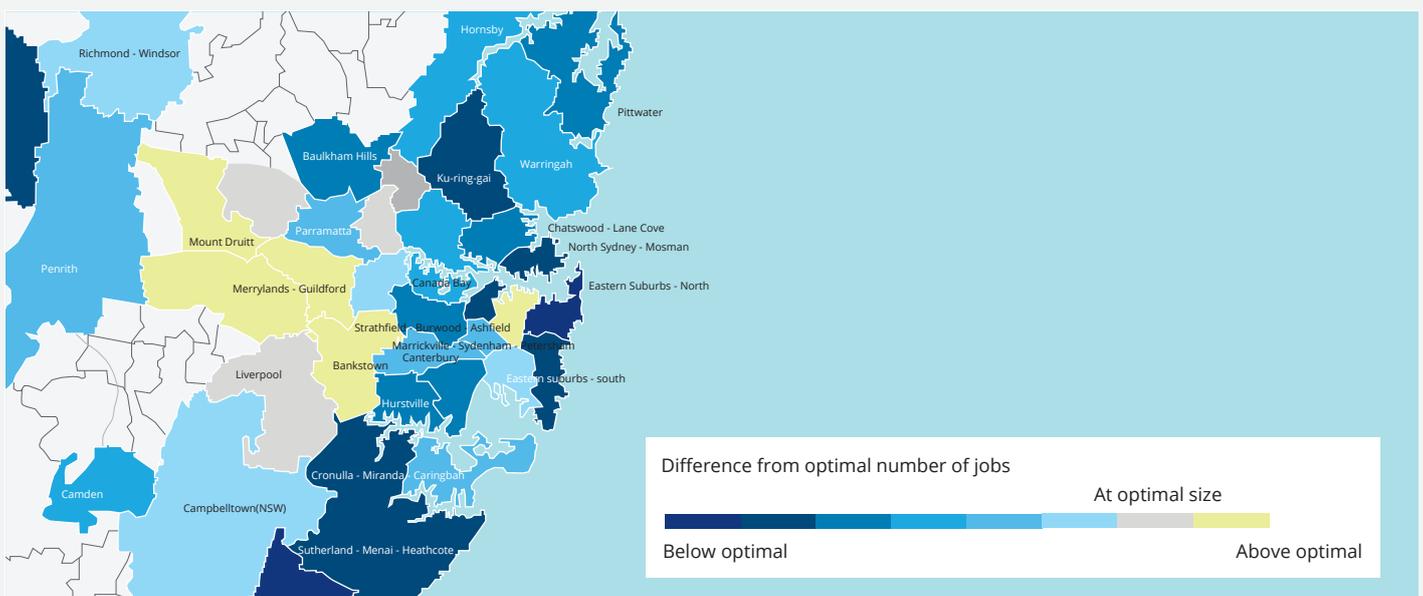
Being below or above optimal size (horizontal line in Figures 2 and 3) has real and tangible impacts on people’s lives. As shown in Figure 3, SA3-cities along Sydney’s Global Economic Corridor (covering locations such as Sydney CBD, Macquarie Park, North Sydney, Parramatta), except for Sydney CBD, are at or below estimated optimal size. People spend more time commuting, getting around is much harder both at work and at home, interacting with each other to innovate and come up with new ideas is much harder, and the economy is not maximising its productivity potential.

Figure 2. Comparing optimal number of jobs with actual number of jobs in Australia’s SA3-region



Source: Author estimates, based on Jamaldeen (2015)³
 Notes: actual size is based on Census (2016) data of persons working in each SA3. For clarity, only SA3s with more than 40,000 jobs are shown.

Figure 3: NSW SA3-cities – are they above (green) or below (dark blue) their potential optimal sizes?



Source: Author estimates, based on Jamaldeen (2015)
 Notes: For clarity, only SA3s with more than 15,000 jobs are shown.

3. Jamaldeen, M. (2015), Agglomeration economies, diseconomies, and city size: the case of Australian cities, Department of Economics Macquarie University.

With Covid-19 impacting both lives and livelihoods, it's a challenging situation in many parts of Australia. The way forward should include an effective multifaceted national cities policy.

Can cities help overcome our productivity challenge?

As we grow out of the pandemic, we need to start thinking not just about how we build new buildings, houses, and infrastructure, but how we understand how our cities work as dynamic systems. And because cities are dynamic, we should not just respond to how the world looks today, but make city shaping decisions about how cities might look into the future.

The Commonwealth Treasury often argues that Australia's long-term prosperity (at least in terms of economic growth) is determined by the 3Ps: Population, Participation, and Productivity. Though often considered a subset within the 'Productivity' pillar, given its importance, I would argue that 'Place' should be considered on its own, making it the 4Ps.

Over the last five years, Australia's productivity (and wages) growth has effectively stalled. An often-overlooked remedy to this challenge is the role our cities play in driving economic growth. Here are three ways our cities can help rise to that task.

Action	Effect
Improving and investing in public transport connections between where people live and where they work	<ul style="list-style-type: none"> • Reduce lost productivity and improve quality of life. • Opportunity to increase employment in other strategic and regional centres (such as the Illawarra Region or the Central Coast in NSW) that are below their productivity potential. • Maintain quality interpersonal interactions within our major CBDs and centres, and to improve the connectivity between strategic and regional centres and our major CBDs.
Improve housing affordability such that workers get to live closer to their places of employment – by fixing the interaction between negative gearing and capital gains tax settings, and increasing provision of social and affordable housing near city centres	<ul style="list-style-type: none"> • Improve productivity by reducing the diseconomies of scale that arise from cities being above their peak size by cutting commutes and improving access to jobs • Improve equity and housing access for lower income groups
Implementing a broad-based land tax replacing stamp duty	<ul style="list-style-type: none"> • Dual benefit of being both efficient and equitable as a means of optimising the use of infrastructure to maximise each city's productivity potential. • Providing this signal to the market is important for optimising the spatial layout of our future cities

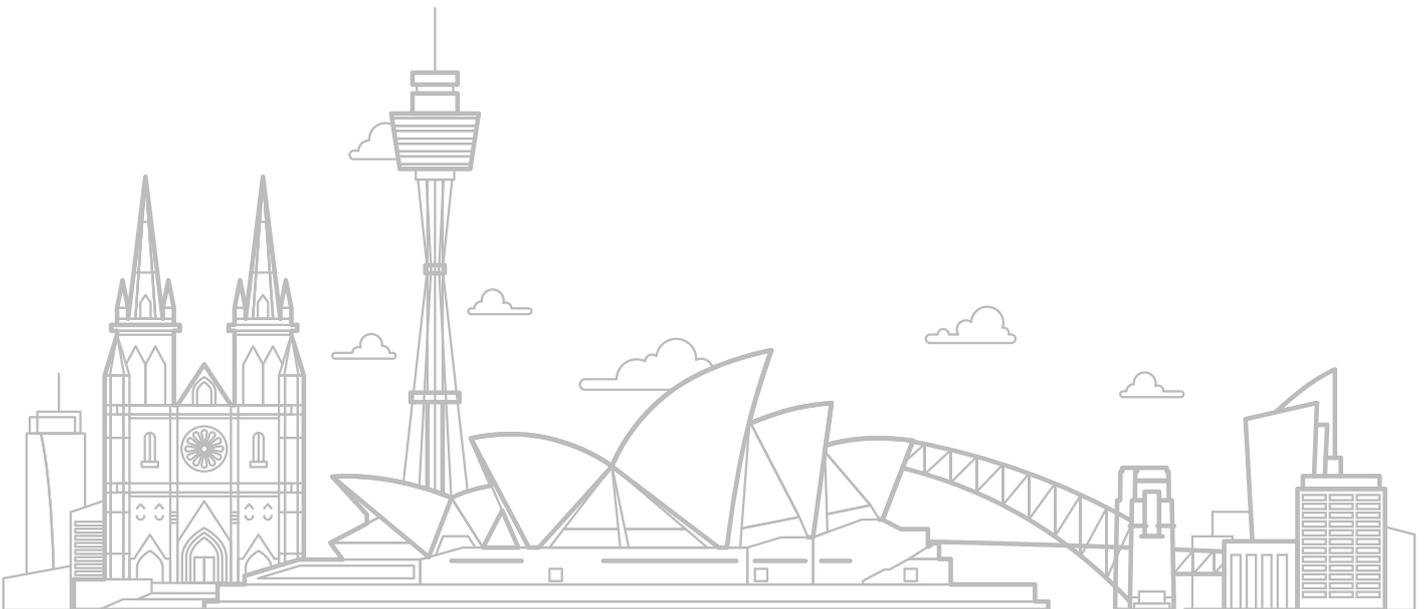
The interplay between the ‘good’ and ‘bad’ of growing cities, and the concept of productivity-maximising optimal city size are important frames of economic thinking around which we should organise our cities policies. A singular focus on either housing, transport, or employment lands alone may still result in sub-optimal decision-making, which is ever more important during the Recovery Phase of this crisis. Social and environmental factors, such as social inclusion and ecological constraints, should also be considered alongside economic factors in developing our cities policies.

As Australia’s population continues to grow strongly, and threats such as climate change and pandemics create unprecedented levels of risks to our wellbeing, it is more important than ever that our cities, which are Australia’s engines of economic growth, are resilient and fine-tuned to maximise our prosperity. This means we need to be smart about how we address housing affordability issues, build more inclusive and resilient infrastructure, make better choices about how we connect people to places with smarter public transport options, and align the multiple layers of government (Local, State, and Federal) to adopt a cohesive system-wide lens to manage our cities.

As we come out of the current crisis, we need to think carefully about how we can make our cities and regions thrive – this will be crucial for the Recovery Phase. Think of the buzz and vibrancy of well-functioning and dynamic precincts within global cities such as Tokyo, Singapore, San Francisco, Taipei, or London. Imagine a city with well-functioning transport networks connecting people to places, wrapping around vibrant and dynamic retail centres and neighbourhoods, intertwined with inclusive public spaces such as parks, playgrounds, streets, and cultural institutions likely libraries and museums – this is most certainly the sort of Covid-19 recovery Australia’s cities and regions deserve.

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