POLICY EVIDENCE SUMMARY June 2021

Harnessing 'agglomeration economies' to boost economic productivity in Australian cities

AHURI

Based on AHURI Final Report No. 357: Relationships between metropolitan, satellite and regional city size, spatial context and economic productivity

What this research is about

This report considers evidence about the existence and scale of agglomeration economies, including in Australian cities. It examines whether city size affects productivity, and whether economic productivity, city size and rising housing costs are interdependent.

The context of this research

The concept of agglomeration economies has become increasingly important to Australian public policy debate, particularly because of the apparent slowing down of economic growth and productivity in Australia's largest capital cities together with growing concern over levels of poverty and inequality. Australia's labour productivity is below the rate required to maintain Australia's historic per capita income growth rate of 2.5 per cent, and is driven by capital deepening—that is, more capital per worker.

Harnessing 'agglomeration economies' may provide the basis for policy solutions that boost economic productivity without seriously harming housing system outcomes.

Agglomeration economies

The term 'agglomeration economies' covers the impact of a range of internal and external economies, or advantages vs disadvantages, that accrue when firms and individuals congregate in urban areas. These include:

- economies of scale that arise when firms access larger markets
- internal advantages when firms can access higher quality labour supply
- cost advantages associated with accessing established supply chains.

Agglomeration may also include 'knowledge spillovers', which occur in two different ways. First, a great deal of knowledge is tacit rather than codified and disseminated, and is exchanged through personal interactions or face-to-face contacts in the course of work and business. These exchanges are often important in service provision and consumption, and in developing trust between 'traders' when contracts are incomplete or cannot be specified. They are important in innovation processes where cross-firm trust can be important.

Second, when individuals in informal social and leisure settings exchange information and build trust. The role of such 'non-traded-inputs' that raise productivity arises from infrastructures or services that can only be provided in cities that are of a certain, larger size.

Other reasons put forward for positive agglomeration economies are that denser areas offer reduced relative transport costs and very dense areas of economic activity offer opportunities for a higher degree of specialisation—particularly of labour. Workers also benefit from being close to large concentrations of employment, and can change jobs without moving homes, make moves to better jobs, plan career moves and move from failing to growing firms.

The key findings

Evidence of agglomeration — internationally

In the USA, a 1 per cent higher population implies approximately 0.076 per cent higher per capita income. This impact seems small, but it is cumulative. That is, a city of 1 million people would imply a wage that is 7.6 per cent higher than a comparable city of 500,000.

The European data did not indicate agglomeration economies or any pattern of strengthening or weakening of such effects. It may be that structural factors in Europe mean that agglomeration economies are less of a factor for predicting average city incomes. This could be due to a 'borrowed size' effect of having large cities in great proximity, industrial structure or migration patterns, but further research would be required to draw any conclusions.

Evidence of agglomeration — Australia

There is currently little or no evidence about agglomeration effects on productivity for Australian cities. The Australian data is not conclusive, with a 1 per cent higher population implying approximately 0.06 per cent higher per capita income, but this is not statistically significant. Given the lack of significance, it cannot be concluded that agglomeration economies are any weaker in Australia or that they are non-existent—the data simply do not provide enough information. Even so, a city of 1 million people would imply a wage that is 6.3 per cent higher than a comparable city of 500,000.

City scale and productivity

Most of the published evidence on the relationship between city scale and productivity is from North America where there is a broad consensus that doubling population density increases wages by between 4 per cent and 13 per cent. One study showed that an increase in population density results in: higher wages; higher rent; greater pollution concentration; higher patent activity; higher consumption; greater preservation of green spaces; higher construction costs; higher skill wage gaps; and greater mortality risk.

However, the increase in population density also leads to reduced average vehicle mileage; reduced car use; reduced average speed; reduced energy consumption; reduced crime; reduced costs of providing local public services; and increased self-reported wellbeing.

Are larger cities becoming less productive?

Larger cities that had led national productivity growth are now reverting to average national performance. For instance, there have been claims in Sydney and Melbourne that creative cultural clusters and other skilled households and firms are being diverted by high costs and congestion in major metropolitan cores to smaller, lower-cost locations. Published evidence in North America noted that lower-cost new locations do not always best serve long-term innovation and productivity growth for the nation. The New Zealand Government has been concerned that productivity in Auckland, which led the NZ economy through the 1990s, has now fallen to below the national average.

A number of recent reports on commuting patterns within metropolitan areas, migration patterns from metropolitan areas to smaller cities and towns, and on the productivity effects of metropolitan housing shortages have all suggested a worrying possibility that housing-system outcomes are driving sub-optimal productivity outcomes.

"A number of recent reports on commuting patterns within metropolitan areas, migration patterns from metropolitan areas to smaller cities and towns, and on the productivity effects of metropolitan housing shortages have all suggested a worrying possibility that housing-system outcomes are driving sub-optimal productivity outcomes."

Negative housing outcomes affecting productivity

Regardless of the scale—or the causes—it is clear that housing outcomes are reducing productivity.

As rising housing costs are imposed on workers due to metropolitan growth, households may not be able to move into an area that would offer them the potential to earn a higher wage. This then means that potential benefits from agglomeration accrue neither to firms nor their employees, but to those who own the scarce factors of production in the metropolitan economy—namely the owners of land and properties. Some firms are then unable to expand employment and output because workers' housing is simply too expensive. Both firms and households face the choice of relocating within or away from their present metropolitan home.

Rising house prices may change the composition and skill mix of the population within these metropolitan areas, which means the skills of the local workforce will change—which then alters the industrial composition of local firms. For example, key public-service workers are often not highly paid and become excluded from access to the core population and employment localities where they are most needed. At the level of the metropolitan area as a whole, these effects may raise quit rates from the most pressured metropolitan areas.

There is growing statistical evidence that such processes are already impacting cities such as Sydney, London, Toronto and Los Angeles where there have been increases in the rate of 25–40-year-old workers leaving the metropolitan areas for smaller cities and towns because of their frustrated demands for appropriate housing. Unaffordable housing limits local productivity growth by influencing labour supply, which cause losses in efficiency.

There are also risks that being affected by future pandemics in dense, large-scale cities will accelerate such shifts, reinforced by new possibilities for working from home. This will influence the mobility and diversity of labour markets, which are beneficial to labour productivity and city productivity.

"Unaffordable housing limits local productivity growth by influencing labour supply, which cause losses in efficiency."

Migration away from larger cities

Both internal and international movers have begun to disperse from metropolitan areas, as well as to migrate directly to new smaller areas, particularly in North America and Europe. New immigrants may settle directly in smaller micropolitan cities. A growing number of foreign-born households may also migrate from metropolises to smaller cities. Generally, international migrants tend to be particularly concentrated in global cities—which are usually the largest metropolitan areas—while internal migrants are starting to settle in smaller cities in advanced economies. The major metropolitan areas are losing the largest share of net domestic migrants. Within metropolitan areas, domestic migration also continues to accelerate to the suburbs of the major metropolitan areas.

Five of the Australian capital cities had negative growth rate of net internal migration in 2018–2019, apart from Melbourne, Hobart and Brisbane. The highest growth rate of net internal migration happened in some smaller areas. However, most of these big capital cities are still the most favourite places for international migration, enjoying the biggest growth rate of net international migration in 2018–2019.

Such reductions in migration to the largest metropolitan areas, and increases in exits from them, are consistent with the declining affordability and availability of housing. And they will have a direct effect in reducing and undiversifying the supply of labour.

Local-level housing and transport services are becoming impediments for global cities, such as Sydney, making it harder for them to attract mobile capital and labour—including international students, tourists and young skilled workers.

Boosting regional cities

There is an argument that population growth redirected to regions and satellite cities would have an economic productivity dividend. These are the diseconomies associated with cities having grown too large, and in which the negative consequences begin to approach the magnitude of the positives associated with city size.

Researchers caution that for policies designed to subsidise the movement of firms or people, the simple existence of agglomeration economies does not necessarily imply that policy intervention should facilitate this, nor what form those interventions should take. They also note that 'the existence of agglomeration economies does not imply that the winning area will win more than losing areas loses'.

What this research means for policy makers

Managing the metropolitan housing system requires a real grasp of policy impacts and interactions in achieving metropolitan goals. Rethinking the structures and settings for housing policies in major metropolitan areas means it will be essential to:

- manage the real housing system to facilitate faster supply responses
- better connect housing and other areas of policy activity
- deal with market failures
- avoid demand stimuli that needlessly raise prices or underutilise existing residential spaces.

A first step is to reconceive housing policies as being, in part, concerned with real economic infrastructure to facilitate economic development. A second step is to move away from a narrow focus on the poorest households and the homeless and to set their concerns within a broader housing-systems framework that has regard to all housing outcomes in the metropolitan area and in the nation.

Two important policy changes are required to deal with 'multi-order' issues: first, multi-order cooperation in housing policy needs to be incentivised. This may be a matter for federal/state/provincial governments developing performance-conditional housing deals with metropolitan governments.

Second, there is a strong case to refocus the leadership roles in housing policy strategy and delivery down from federal/state/provincial levels and up from municipal scales, as key housing policy decisions increasingly rest at metropolitan scales.

Given the vast scale of the housing shortages now prevailing in all the major growth localities of Australia, a serious attempt to reduce house price growth for the future and facilitate the development of significant-scale places might have to include compulsory purchase of land and requirements for inclusionary zoning.

To deliver real gains, planning must be well designed, informed and economically literate. Going beyond the 'well-functioning' market basis for policy requires a planning approach driven by intelligent, informed, economically literate approaches to developing metropolitan infrastructure plans, rather than state power and bureaucracy.

Methodology

This research reviewed Australian and international literature and evidence, including analysis of USA, Australian and European demographic and economic datasets.

"To deliver real gains, planning must be well designed, informed and economically literate."

To cite the AHURI research, please refer to:

Leishman, C., Bond-Smith, S., Liang, W., Long , J., Maclennan, D. and Rowley, S. (2021) *Relationships between metropolitan, satellite and regional city size, spatial context and economic productivity*, AHURI Final Report No. 357, Australian Housing and Urban Research Institute Limited, Melbourne.

Available from the AHURI website at ahuri.edu.au/research/final-reports/357