POLICY EVIDENCE SUMMARY

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Examining the productivity benefits of agglomeration in Australian cities

AHURI

Based on AHURI Final Report No. 366: Agglomeration effects and housing market dynamics

What this research is about

This research quantifies productivity-related agglomeration benefits arising from the concentration of employment in Australia before and after housing costs.

The context of this research

Australia's labour productivity is below the rate required to maintain historic per capita income-growth levels. A potential source of productivity growth is from the benefits of agglomeration economies that arise when businesses, workers and people locate in close proximity to each other, particularly in cities. Clustering of jobs can improve labour productivity by reducing the costs of exchanging goods and services, labour and ideas. A concentrated labour-market may allow for better matching of skills to jobs, which in turn may produce higher wages as firms compete for skilled labour.

Agglomeration benefits provide a policy rationale for densifying cities and concentrating employment. However, cities also typically have higher house prices, which reduce entry and ongoing affordability, and greater pollution and other wellbeing detriments such as crime and noise which may reduce productivity.

The key findings

In this report, productivity is measured as earnings per hour worked in main job. A key agglomeration measure is concentration of employment (or employment density). Agglomeration effects can also arise from employment in nearby locations, as well as agglomeration forces within specific economic sectors (localisation economies) and across economic sectors (urbanisation economies). The research considered agglomeration effects at postcode level using Statistical Areas Level 2 (SA2) and Statistical Areas Level 4 (SA4) agglomeration inputs.

Economic benefits of agglomeration

Employment density (or agglomeration) is significantly associated with higher hourly wages and thus productivity. The research estimates suggest that a doubling of employment density raises wages by 1 to 4 per cent. This is in line with international evidence, but somewhat lower than earlier Australian estimates. While agglomeration has a positive effect, individual and firm characteristics are the key determinants of spatial variation in wages.

If the increase in GDP is considered proportional to the increase in wages, then a 1 per cent increase in productivity would raise GDP by $19.9 billion per annum.

Additional agglomeration effects

Industry specialisation (localisation economies) and industry diversity (urbanisation economies) also generate agglomeration effects and will be critical to the evaluation of population and employment dispersal strategies and aims.

Areas with more spatially concentrated industries tend to experience additional wage benefits. Broadly a doubling of economic specialisation (i.e. a doubling of the ratio of employment in a particular sector relative to the employment in that sector across the respective states) is associated with areas having 4–10 per cent higher wages. However, the degree of economic specialisation differs substantially for different sectors of the economy, and further research is required to more robustly identify which sectors specifically benefit from concentration. Outside of mining industries, spatial concentration appears particularly relevant for 'Information Media and Telecommunication', 'Financial and Insurance Services' and 'Arts and Recreation Services'.

There is some indication of positive spillover effects between employment location when using SA2-level agglomeration inputs. This is particularly the case for higher wage earners. When using SA4-level inputs, the effect disappears. Spillovers between employment locations may result from knowledge and information flows between people working in different economic sectors or businesses (and are a benefit of agglomeration economies).

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Who gets the benefits?

Analysis of agglomeration benefits across the wage distribution reveals considerable variation, as lower-wage and middle-income earners benefit less from agglomeration than higher-wage earners.

Agglomeration benefits are substantively consumed by housing costs for workers on lower wages (particularly so for workers earning in the lowest 20 per cent of wage levels). However, the higher wage premium obtained for all workers from working in denser areas typically remains after adjusting for higher housing costs (mortgages and rents). The research does not control for other congestion costs, which may also be higher in denser agglomerations.

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Impacts of housing costs

Housing markets play a significant role in redistributing the gains from agglomeration to higher-wage earners and property owners—although the total effect is likely mitigated by transfer payments (e.g. pensions, family tax benefits etc.) and rent assistance.

The higher costs of housing in employment rich areas may also reflect non-wage benefits, such as access to urban amenities that increase the willingness of people to pay for housing in locations closer to employment agglomerations.

Housing market policies that reduce agglomeration gains being directed to property owners may have additional productivity-enhancing effects by incentivising investment in productive capital, new technology and infrastructure.

Nevertheless, for higher-wage earners (and many lower-wage earners), the wage premium obtained by living in job-denser areas remains after adjusting for housing costs. In other words, while higher wages translate into higher housing costs in the Melbourne and Sydney CBDs, the benefit from earning wages in these areas compared to less dense areas—such as regional alternatives—does not disappear because of higher housing costs, with the exemption of the lowest 20 per cent of earners. In terms of population deconcentration, this suggests that, all things being equal (such as individual preference for large and small towns, commuting patterns and other housing adjustments), individuals are better off in terms of wages in more concentrated labour markets.

The locations of lower-wage earners are more responsive to changes in commuting costs than higher-wage earners. Higher commuting costs are likely to affect the residential locations of lower-wage earners more than higher-wage earners, and lead to additional residential concentration of lower-wage earners close to employment concentrations.

In addition, there is a trade-off between the length of commuting and higher wages: a 10 per cent increase in commuting distance for lower income workers is associated with a 0.36 and 0.31 per cent increase in wages, whereas the same increase in commuting distance results in a 0.24 and 0.22 per cent increase for mid to high income workers.

Notably, this does not necessarily imply that these workers would be better off elsewhere, and non-wage benefits (urban amenities) may still provide an incentive for lower-wage earners to locate near employment concentrations. Nevertheless, differences between how lower and higher income earners benefit from agglomeration, and variations in the responsiveness of lower-income earners to commuting costs, does suggest agglomeration effects are distributed unequally via housing markets.

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The cost of housing policies

When property prices in capital cities increase as a result of productivity gains—and inelastic housing supply—the cost of policies to address housing affordability and expenditure at household level (such as Commonwealth Rent Assistance (CRA)) increases too. First, there is an increase in the rent levels (with implications for the level of CRA). Second, there is an increase in the number of households requiring CRA assistance. Over the last two decades CRA expenditure increased from $1.7bn to $4.7bn.

A related consideration is that public policies that reduce housing costs for some income groups potentially crowd out higher productivity workers from the same locations. However, the net cost or benefit of such a process requires a more detailed analysis than wage and housing cost considerations alone. On the one hand, such a policy can generate double costs—cost of policy, plus loss of productivity. On the other hand, enabling lower housing costs—for example, social, affordable or CRA-assisted housing—for low-income households also result in significant additional social returns.

Digital connectivity

Digital connectivity and automation may potentially reshape the effect of physical distance. This means that some agglomeration effects can still be harnessed without physical proximity. The development of digital marketplaces and spaces potentially provides market scale without physical proximity to customers. Digital connectivity and automation reshapes economic geography and, for some individuals and households, enables residential location decisions free from proximity to fixed places of employment. This will invariably generate some decentralisation, as well as some increase in demand for amenity-rich urban locations.

What this research means for policy makers

This report highlights the role that housing markets and affordability play in distributing gains from agglomeration. An overarching policy goal should be to ensure earners across the wage distribution benefit, while also ensuring that both lower-skilled and higher-skilled workers can live affordably and sustainably. Housing policy is key, and can include:

- increasing housing supply close to centres of employment needs to be complemented with planning and regulatory incentives that provide appropriate, affordable and sustainable housing options, and that protect public and private green spaces. This may counter effects that exacerbate inequality and, in the longer-term, counter rent-seeking behaviour related to land use and development. However, density of employment and population may also generate additional non-wage-related agglomeration benefits—such as amenities and lifestyle—that, in turn, generate demand for housing options close to agglomerations
- regional development (or population growth decentralisation) needs to be complemented with physical and digital infrastructure investment, economic diversity, economic specialisation, skills development and housing supply to enable productivity gains. It may also need to be complemented with 'lifestyle' and social-infrastructure investment to be self-sustaining
- access to education and training—and pathways for current and new generations of workers—is critical to long-term prosperity and increasing productivity, and as part of a post-COVID-19 economic recovery process. This may include providing incentives for regional students to access housing and training packages; the returns on education are significant for those with bachelor's degree or higher (18 per cent wage premium) or advanced diplomas (7 per cent).

Methodology

This research reviewed international and domestic literature on agglomeration theory, effects and urban impacts. An econometric analysis was conducted using HILDA Surveys and ABS Census data to identify whether agglomeration effects are associated with higher wages for specific geographical regions in Australia.

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