

Helpdesk Research Report: Urbanisation and Growth

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Query: Provide a summary of research on the links between urban centres, urbanisation and economic growth. Focus particularly on key research gaps, questions unanswered or inconclusive evidence and include the effects of urban demographics.

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1. Overview

The proportion of a country's population living in urban areas is highly correlated with its level of income. The correlation between urbanisation and economic growth in developing countries can be explained largely by the fact that economic development involves the transformation of a country from an agricultural economy to an industrial-service economy. Production of manufacturing and services is more efficient when concentrated in cities (Henderson 2000).

In the past, authors such as Jacobs (1969) argued that cities were active agents in economic growth and that there was a causal link between economic growth and urbanisation. More recently this view has been generally disregarded by experts, as a large number of research studies have found no evidence of a causal link between urbanisation and the rate of economic growth (Bloom et al 2008, Henderson 2003, Bertinelli et al 2003, Polese 2005). Recent history illustrates that urbanisation can occur in the absence of economic growth. Although both Africa and Asia urbanised rapidly between 1960 and 2000, per capita income in Asia increased by 340 percent compared with only 50 percent in Africa (Bloom et al 2008).

There is some consensus in the literature that cities offer a range of '**agglomeration benefits**', which appear to be most beneficial to economic growth up to a certain level of economic development (USD 10,000 GDP per capita) (Bruhlhart & Sbergami 2009). There is a lack of understanding about the mechanisms through which urban areas generate agglomeration benefits and more work is required in this area (Puga 2010). A number of studies emphasise that benefits may vary between individual workers, households, firms, and sectors (Polese 2005, OECD 2009, Duranton 2012). While research into agglomeration benefits provide some reasons why economic growth may be associated with urbanisation, this research does not demonstrate causation (Polese 2005), and there are a number of methodological issues with this literature (Bloom et al 2008).

While urban areas may provide economic benefits, they can also generate **economic costs**. These costs may be particularly problematic during recent waves of very rapid rural-urban migration, for example in parts of Africa or China (OECD 2009, Henderson 2010).

While urbanisation *per se* is not causally related to economic growth, there is evidence that the form that urbanisation takes – the degree of **urban concentration** – has a strong causal effect on growth (Henderson 2000, Henderson 2003). Primacy, (the portion of the urban population living in the largest city), or urban concentration, (the proportion of urban dwellers living in large cities), have been found to have an important impact on economic growth. Very small and very large cities tend to have lower economic growth rates than average sized cities in the OECD (OECD 2009). A high degree of urban concentration is more important in the early stages of development, since this allows the economy to save on economic infrastructure and managerial resources, which may be in short supply (Henderson 2003).

A number of **research gaps** have been identified in research assessing the policy implications of research linking urbanisation and economic growth. Key areas for future research include understanding how much development should be focused on mega-cities, understanding the long-term effects of mass rural-urban migration and associated rises in inequality (especially in China), and understanding how best to mitigate these effects (Lall et al 2006, Henderson 2010).

2. Positive Links between Urbanisation and Economic Growth

Urban areas offer economies of scale and better market structures. Cities provide large and diversified labour pools and are closer to customers and suppliers (Bloom et al 2008, OECD 2009). They also provide greater opportunities for division of labour and make intra-industry specialisation more likely (Henderson 2000, Becker & Henderson 2000). Cities enjoy cheaper transports and this, combined with proximity to customers and suppliers, reduces the costs of trade (Henderson 2000, Bloom et al 2008, OECD 2009). Endogenous growth theory has argued that accumulation of knowledge is the key determinant of economic growth and that knowledge spillovers in the form of information exchange among firms create positive externalities that generate growth in all firms (Lucas 1988, Romer 1986). In developed countries, some of these advantages may gradually become less relevant, as improved transport networks enable skilled workers to move out of urban centres. Advances in information technology may have a similar effect (Irwin no date).

Bruhlhart and Sbergami (2009, p.1) find that 'agglomeration boosts GDP growth only up to a certain level of economic development. The critical level is estimated at some USD 10,000, corresponding roughly to the current per-capita income level of Brazil or Bulgaria. This implies that the trade off

between national growth and inter-regional equality may gradually lose its relevance'. They note that their results should be 'interpreted with a certain dose of caution', since there are a number of problems with the data, variable definitions and econometric identification techniques used (p.19).

As Polese (2005) has argued, causation remains the main issue in the literature. While cities are required for long-term economic growth, just as roads are, their presence *per se* is not a sufficient condition to generate long-term economic growth. Studies that have analysed the causal relationship between economic growth and urbanisation have used a range of methodological approaches and have highlighted a number of potential methodological issues (Bloom et al 2008). These include the difficulty of identifying all variables that may contribute to economic growth and understanding the time horizon for urbanisation to affect economic growth (Bloom et al 2008). Some studies suggest that the higher levels of individual income associated with urban areas may be a result of government bias towards urban areas in the developing world (Bloom et al 2008). 'Because of the political pressure exerted by urban dwellers, central governments have encouraged urbanization by keeping agricultural prices low, by direct investment in urban industries, and by a more generous provision of public services such as health and education' (Bloom et al 2008, no page number).

There are three broad theoretical models for understanding the existence of urban agglomeration economies. First, a larger market allows for a more efficient sharing of local infrastructure and facilities, input suppliers, or a pool of workers with similar skills. Second, a larger market also allows a better matching between employers and employees, buyers and suppliers, or business partners. Third, a larger market can also facilitate learning, for instance by promoting the development and widespread adoption of new technologies and business practices (Puga 2010).

Puga (2010, p.216) notes that while there is some agreement about the importance of agglomeration economies at the urban level, 'the literature has been far less successful at distinguishing between the possible sources'. He states that understanding this will require 'models that work out the microfoundations to help identify distinguishing features and empirical work that carefully exploits these for identification'. He notes that 'evidence of matching as a source of agglomeration is perhaps most needed. However, despite several notable existing contributions, there is room for much more work able to credibly claim identification of particular motives for agglomeration' (Puga 2010, p.216). Duranton (2012, p.12) states that while there is some evidence that innovative activity has strong agglomeration effects, there is 'no work which focuses on the effects of innovative activity in cities such as its effects on urban growth'.

Duranton (2012) also argues that cities in **developing countries** may be less likely to contribute to growth than cities in developed countries. They 'appear to be far less functionally specialised than cities in more advanced economies'. He notes that 'this may hamper the dynamism of the largest cities in developing countries', leading to urban crowding without adding to agglomeration benefits (Duranton 2012, p.19).

The significance of agglomeration economies varies strongly by **sector** and preferences for different sized cities are also likely to vary between **households**. There is therefore no 'optimum' size for cities, 'but for any given city, given its economic activities and the preferences of households living within it, there is likely to be a particular efficient size (OECD 2009). Duranton and Puga (2001 cited in Polese 2005, p.1432) show that **firms** will be drawn to different city sizes at different points in the product life-cycle. 'For firms in different industrial sectors, the trade-off between the gains and the costs of agglomeration (primarily congestion, land and labour costs) will in part determine the size of

the urban area they locate in, which in turn helps to explain why not all industry will concentrate in one single (huge) agglomeration’.

Duranton (2012, p.8) finds that not all **workers** benefit equally from urban scale. ‘[A]gglomeration effects appear stronger for more educated workers in the US...Observation and casual evidence suggest that this is also true in developing countries’. He suggests that ‘formal evidence would nonetheless be welcome since these sorting forces could be stronger in poorer parts of the world’ (p.8). Duranton (2012, p.8) also finds that ‘while not all workers benefit equally to agglomeration effects, it also appears that not all workers contribute equally to these effects either. There is a large literature on human capital externalities suggesting that workers enjoy higher wages when surrounded by more educated peers’.

Duranton (2012) notes that productive cities will not automatically remain productive. He argues that the creative destruction process (i.e. more firm entry and exit) is critical but notes that ‘empirical work on these issues is still in its early stage of development’ (p.1).

3. Negative Links between Urbanisation and Economic Growth

Developing countries are urbanising more rapidly than in the past. Rapid urbanisation is often traumatic, ‘requiring massive movement of population, replacement of traditional institutional and social structures with modern ones centred in a formal legal apparatus, and massive local and intercity infrastructure investments with the required financing mechanisms, all in a short time span’ (Henderson 2010, p.516). Rapid urbanisation may entail a range of economic costs, which can have a negative impact on growth. These costs have been outlined by Haider (2009) in an earlier GSDRC report and are supported by other studies reviewed for this report (see, for example Bloom et al 2008, OECD 2009):

- **Inefficient property markets:** uncertainty over land tenure and urban planning and management in many Asian countries has resulted in inefficient operation of land and property markets, excessive speculation and high levels of disputes and litigation.
- **Inadequate infrastructure and services:** insufficient supply to meet the growth in demand for urban infrastructure and services has limited private sector investment and development. In addition, existing infrastructure systems in Asia are poorly maintained, which results in high losses to the systems and higher cost of services.
- **Congestion:** the rapid expansion of cities and improper transport planning has produced significant traffic congestion in Asian cities. This has resulted in financial costs for urban residents due to lengthy travel times to work and time wasted; and higher transaction costs to businesses in moving goods and services.
- **Limited incentives:** urban workers who are self-employed or working in low paid informal jobs are often unable to earn more regardless of their efforts, which can undermine productivity.
- **Fragmented production chains:** high rent in urban centres has resulted in the location of suppliers away from producers. This can result in inefficient supply chain distribution structure and high local transaction costs in manufacturing industries.

- **Crime and violence** in urban areas has been associated with various economic costs. These include: costs related to medical treatment, foregone earnings, loss of productivity due to injuries, loss of competitiveness, losses through thefts and muggings, costs on private security, and costs to the judicial system.

While urban areas tend to have high concentration of wealth and employment, they also tend to concentrate labour market exclusion and poverty. Work by the OECD suggests that wealth creation is not always adequately translated into job creation (OECD 2009). Slums are an important negative consequence of rapid urbanisation. More than 1 billion people lived in slums in 2005 (Bloom et al 2008). Slums have been closely associated with social exclusion (Bloom et al 2008).

In China, inequality has accompanied rapid urbanisation due to a system of hereditary residency rights, called the *hukou*. 'The *hukou* system has created two classes: on the one hand, an urban class whose members have basic social welfare and full citizenship; on the other, an underclass of peasants with neither of these privileges' (Chan 2011, no page number). While many peasants have come to cities to work in low-paid factory and service jobs, they are not allowed to change their *hukou* from rural to urban and therefore remain socially and economically excluded. This group currently numbers around 160 million and are predicted to rise to 300-400 million in a decade (Chan 2011).

4. Primacy and Urban Concentration

While urbanisation *per se* is not causally related to economic growth, there is evidence that the form that urbanisation takes – the degree of urban concentration – has a strong causal effect on growth (Henderson 2000, Henderson 2003). Henderson (2000) argues that resources can either be spread too thinly across cities with insufficient concentration to exploit economies of scale or over-concentrated in one or two very large cities, raising commuting, congestion and living costs to excessive levels. This suggests that there is an optimal level of urban concentration (Henderson 2000). Henderson finds that the optimal degree of concentration varies with the level of development and country size. He also finds that the degree of urban concentration strongly affects productivity growth (Henderson 2003).

Primacy, (the portion of the urban population living in the largest city), or urban concentration, (the proportion of urban dwellers living in large cities), have been found to have an important impact on economic growth. Very small and very large cities tend to have lower economic growth rates than average sized cities in the OECD (OECD 2009). A study by OECD (2009) finds that there is no single-optimum city size, but rather an 'efficient city size which depends on local specialisations' (OECD 2009, p.42). Henderson (2000, p.1) finds that there is a best degree of national urban primacy, which 'increases sharply up to a per capita income of about \$5000 (PPP 1987 income), before declining modestly'. He finds that 'growth losses from significantly non-optimal concentration are large and rise with income' (p.1). A high degree of urban concentration is more important in the early stages of development, since this allows the economy to save on economic infrastructure and managerial resources, which may be in short supply (Henderson 2003). As the economy develops, deconcentration becomes efficient because the economy can afford to spread economic infrastructure to peripheral regions and existing cities may become more congested (Henderson 2003).

Quantifying an econometric relationship between urban concentration and economic growth is difficult (Henderson 2003). One problem relates to the use of different definitions for 'urban' across regions (Henderson 2003). Polese (2005) highlights another significant problem – the difficulty of

distinguishing factors that allow cities to capture a greater share of national economic growth from those that allow cities to add to national economic growth.

5. Policy Literature

Assessments of the policy implications of research linking urbanisation and economic growth have identified a number of research gaps. Henderson (2010, p.515) suggests that under-researched themes include the question of how much development should be focused in mega-cities, or huge urban clusters, as opposed to being more spatially dispersed: 'a critical question facing China and India today'? Another question highlighted is '[h]ow do we conceptualize and measure both the benefits and costs of increased urban concentration; and how are they linked to a country's evolving national industrial composition?' (p.515)

Henderson (2010, p.515) also highlights the importance of looking at the evolution of spatial income inequality that accompanies large-scale contemporary examples of urban-rural migration. 'Is inequality heightened today relative to the past by national government policies which "favour" certain cities and regions and by local government policies in those cities that may try to deflect migrants by offering them poor living conditions?' (p.515)

Henderson's recent research (2010) focuses particularly on China, which serves as an extreme example of local policies in favoured regions which try to counteract the negative aspects of national favouritism. In China this is done by inhibiting the flow of people into a favoured area by making living conditions for migrants into favoured cities very unpleasant. He notes several consequences of such policies:

- China is under-urbanised (a rate of 45 percent versus an expected rate of 55 percent for its income level).
- Many Chinese cities are undersized.
- There are huge urban-rural income gaps.

Such migrants are generally unable to obtain housing in the formal sector, their children have limited or no access to state education, and they are generally excluded from other welfare systems. Henderson (2010, p.536) notes that we know little about the long-term consequences of these effects. 'Will urban villages morph fully into favela-style communities not under city governance, which become havens for illegal activities and social unrest?...How much does this double-divide contribute to national income inequality and what are the consequences for economic growth?' (p.537).

A number of studies have demonstrated the negative consequences of restrictions on migration to reduce urbanisation (Lall et al 2006). Au and Henderson (2006), for example, suggest that migration restrictions in China have maintained surplus labour in rural areas and led to insufficient agglomeration of economic activity in cities, resulting in GDP losses. Lall et al (2006) highlight a number of issues for future research in this area:

- Which individual, contextual, or even institutional factors can make migration succeed or fail? Education may be a particularly important factor to investigate.
- The minimum level of urban public services which should be provided to migrants.
- Which types of labour-market mediation would be more efficient in matching the rural supply and the urban demand for labour?

- The economic and social consequences of the gender imbalance in migration flows.

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7. Additional Information

Experts Consulted:

Prof. Gilles Duranton, University of Toronto

Prof. Mario Polèse, INRS

Prof. Vernon Henderson, Brown University

Prof. Elena Irwin, Ohio State University

Key websites:

East Asia Forum, GSDRC, NBER, OECD, World Bank

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