PARIS SCHOOL OF ECONOMICS
ÉCOLE D'ÉCONOMIE DE PARIS

#ECONOMICSFOREVERYBODY

Why and how cities grow?

Laurent Gobillon

Over the last two centuries, developed countries have experienced massive urbanisation and population concentration, especially of skilled workers, in large metropolitan areas. This urbanisation is not without its problems, as it usually goes along with internal disparities between rich and poor neighbourhoods, as well as problems of segregation and commuting.

Urbanisation is also a major issue in developing countries, where three are large migration flows from rural areas to cities. This rapid urban growth has led to the emergence of poor housing, and high levels of crime and pollution. Integrating these new inhabitants is a challenge for public authorities, who must rethink the supply of housing and property rights.

Governments can support urban growth with investments, whether in transport (such as roads, metros or airports) or consumer amenities (such as museums or stadiums). However, urban sprawl is often perceived as a threat to the environment and building constraints have been imposed in some countries to limit the physical growth of cities.

Urban economics is concerned with the attractiveness of cities for businesses and people, and the disadvantages that can limit their development. It also studies the effects of public policies that promote or limit urban development. In particular, it is interested in their consequences in terms of efficiency and equity.

Issue n°1: agglomeration economies

Since the 18th century, the main cities in developed countries have grown continuously, both in terms of population and land area. There are several reasons for this. Technological innovations in agriculture and the international grain trade have made it possible to feed larger cities. The development of new and more efficient transport modes has made it easier to travel within and between cities. Economies have also undergone structural changes with the rise of industry and then services.

Industrial and service activities are characterised by *agglomeration economies*. The greater concentration of people and businesses in one place leads to greater productivity, which in turn attracts economic agents. These agglomeration economies are one of the drivers of urban growth (Duranton and Puga, 2014), and economists are trying to determine more precisely their nature and quantify their effects.

Among agglomeration economies, it is possible to distinguish *urbanisation economies*, such as the productivity gains resulting from an overall and diversified concentration of different industries of activity at the city level. In particular, these

gains may follow from interactions between different industries, such as the exchange of ideas, which can increase innovation capacity. A greater concentration of workers and firms can also lead to better labour market matching, allowing jobs to be filled by the most suitable workers. Large cities may also lead to a greater specialisation of tasks carried out by workers, due to fairly high local demand. For example, it is possible to find lawyers in all legal areas in a large metropolitan area, whereas this is not the case in small towns where caseloads are too low.

There are also *localisation economies* arising from the concentration of a specific industry in one place, along with its suppliers. Indeed, this concentration helps minimise transport costs of intermediate goods, exchange specific ideas easily, and bring together the appropriate labour force for production in one place. At the same time, the presence of multiple producers can also lead to competition for a specific local labour force. These localisation economies may explain Silicon Valley's high-tech specialisation, while they also motivated the creation of Competitiveness Clusters in France in 2004.

It should be noted that the intensity of agglomeration economies varies according to workers' skills. Highly-educated individuals benefit most from local interactions in research and development, or from the specialisation of tasks requiring specific skills that exist in large cities. These people are therefore naturally more attracted to large metropolitan areas. There may, however, be some complementarity between skilled and unskilled workers. Even companies in high-tech industries, for example, need services such as cleaning or catering. This complementarity partly explains the presence of low-skilled workers in large cities.

Various empirical assessments have been conducted to quantify agglomeration economies. Studies in France have shown that a doubling of the population or job density in a local labour market increases productivity and wages by about 2% (Combes and Gobillon, 2015). This figure may seem low, but the density in some employment areas is more than 10 times that in rural areas, which corresponds to a difference in productivity of more than 7%. For a large city, such a gain is not negligible in terms of aggregate productivity and wage bills.

Issue n°2: urban costs and local amenities

A city may attract people because of high productivity and wages, especially given production amenities (such as a good transport network or the presence of specific technologies adopted locally) and agglomeration economies, but also because of consumption amenities. This attractiveness leads to migration from other cities or the countryside, and so increases the demand for housing, pushing up property prices. People stop migrating when urban costs become too high. These costs include not only housing, but also commuting costs and pollution. Economists study these various urban costs and try to quantify their importance and their impact on location choices. The trade-

off between costs and benefits is generally considered to determine the size of cities.

The location of individuals within cities also depends on these urban costs. The so-called monocentric model, widely used in urban economics, considers schematic view of cities. Firms are located in the city centre and individuals choose a location around the centre, knowing that they have to commute to the centre for work and pay rent for their accommodation. The location choice then depends on a trade-off between transport and housing costs (Brueckner, 2011; Duranton and Puga, 2015). If people are located further from the centre, they can rent larger dwellings but have to travel further. When cities have rich and poor individuals, the model results in a segregated city. The location of the two income groups depends on their respective preferences for larger dwellings and shorter commutes.

This model is of course schematic, and other factors come into play, such as consumer amenities (historic sites, museums, theatres and cinemas). The latter may attract wealthier households to the city centre, even if they live in smaller dwellings. They explain in particular the presence of wealthy people in the centre of Paris or other large European capitals. People with lower income are then unable to pay rents that become too high, because of the demand for housing, and they are relegated to urban peripheries.
Group preferences may also reinforce location choices: wealthy people may want to live together because of their common tastes (in culture and clothing, etc.) or to avoid crime. This phenomenon can be particularly pronounced, as in the United States, where the NIMBY (Not in My Back Yard) effect is used to describe wealthy neighbourhoods in which residents wish to avoid the presence of disadvantaged people.

An empirical assessment of urban costs carried out in France shows that doubling the population increases urban costs by about 2% for cities with 100,000 inhabitants and by almost 6% for a city the size of Paris (Combes, Duranton and Gobillon, 2019). Again, these percentages may seem small. But even a small increase in a city the size of Paris leads to a change in the aggregate cost for its entire population which is far from being negligible. Empirical results confirm that large cities are usually characterised by a segregated structure. For example, Paris urban area concentrates disadvantaged people in its northeast, in the department of Seine-Saint-Denis (unemployment rate of 10.1% at the end of 2022 according to INSEE), whereas wealthy people are located in Paris intra-muros (5.6%) and in the West, in the departments of Hauts-de-Seine (5.8%) and Yvelines (6.4%).

Issue n°3: spatialised public policies

Public authorities often justify local measures, such as subsidies to deprived neighbourhoods, with a spatial equity argument. Economists are generally quite dubious about this argument. Indeed, it seems to be more effective to support low-income people directly, for example through lower taxes or higher housing subsidies. That said, spatialised policies may help correct market imperfections (Kline and Moretti, 2014).

There are several types of market imperfections. Firstly, some goods may be supplied by the private sector in insufficient quantities because they are not profitable, notably in the following sectors: health (hospitals), security (police), and infrastructures (roads). It is thenbeneficial for the population if the government finances these goods, as long as costs remain reasonable.

Furthermore, economic agents do not necessarily internalise their effects on agglomeration econonomies nor urban costs when choosing their location. Public authorities can internalise these externalities and influence location choices accordingly, for example by offering tax incentives to companies or by developing transport networks in certain areas. The aim of government intervention here is to achieve a higher level of welfare for the population.

However, the assessment of the impacts of a local policy should not be limited to the areas benefiting from the policy. Indeed, such interventions by central governments or local authorities may also have indirect effects on other areas. For example, the improvement of the transport network in Paris peripheral areas as part of the *Grand Paris Express* transit project is likely to attract businesses and create employment opportunities in the outlying areas of the capital. Workers will likely migrate to take advantage of these opportunities, thus increasing the agglomeration economies in Paris urban area. At the same time, the departure of these workers will reduce agglomeration economies in smaller cities, so that the outcome of the public policy depends on the intensity of agglomeration economies according to city size.

There are other examples of market imperfections that public authorities can address. Some areas are characterised by a lack of jobs, notably because the hiring costs are too high for some jobs to be profitable for companies. A hiring subsidy can then be an effective solution for generating employment. In addition, individuals may find it difficult to adjust their available resources over time through borrowing, due to borrowing constraints imposed by banks. These rigidities may be a problem for low-skilled labour that may face liquidity problems. Mobility subsidies, such as reduced-price or free transport tickets, can be an effective aid to job search. Finally, uncertainties in the labour or housing markets may deter households from migrating to attractive locations. A public policy in this case could consist in insuring households against local risks. However, such insurance may be hard to implement as these risks are often difficult to measure.

Another argument in favour of local public policies is to correct imperfections created by other policies, even if these are not explicitly spatialised. These include, for example, minimum wages, industry agreements and progressive taxation. In particular, productive locations – such as Paris – are characterised by higher wages but also by high property prices. If the tax system is progressive, Parisian workers will be taxed more, even though they have to bear significant housing costs. This suggests that the level of taxation should be indexed to the local level of wages. Yet this would be difficult to implement. An alternative solution would be to subsidise individuals in productive and expensive locations, which at first glance is rather counter-intuitive.

The evaluation of public policies in urban economics can be conducted by examining the effects of measures on different margins. For example, it may be necessary to quantify the effect of enterprise zones not only on job creation but also on the propensity of unemployed workers to find a job. Their evaluation can also involve an overall assessment of their impact on people *welfare*, which is usually broken down into an analysis of costs on the one hand and benefits on the other hand. Such an assessment should not take into account only direct effects, such as the impact of the measures on wages. It should also consider indirect effects, for example the increase in property prices in areas that have become more attractive, which could cause financial difficulties for disadvantaged individuals.

It is also important to avoid thinking about a policy in isolation. Indeed, even if a public policy has a positive track record, an alternative policy could still lead to better results. For example, building social housing is a measure that can help disadvantaged people. But the money spent could be used alternatively in financing additional housing subsidies to rents in the private rental sector. In the United States, social housing is considered too expensive and housing subsidies are preferred.

Overall, studies have shown that spatialised policies do not have large effects, except when massive amounts of money are invested. However, even small effects may be welcomed, especially in bad times. In this case, public policies can partly safeguard disadvantaged people who would be in even worse situations without them.

.

****