Economics of Cities

Because cities are likely to play an even more predominant role in the global economy in the future than they do at present, it is important to understand how urban centers are created, grow, and function in the process of generating and distributing wealth. This integrated collection of essays exploring the new economic theories concerning cities assembles recent work by a number of the world's leading experts in North America, the United Kingdom and Europe, and Japan. Topics investigated include cities and agglomeration, urban systems, urbanization and growth, and cities and factor markets. The perspectives the editors and contributors offer have strong connections with several branches of modern economics, including industrial organization, public economics, international trade, and endogenous growth and economic development.

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THEORETICAL PERSPECTIVES

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Introduction

Jean-Marie Huriot and Jacques-François Thisse

Cities began to emerge in several parts of the world after the Neolithic revolution as a consequence of an increase in agricultural surplus. Their very existence may be viewed as a universal phenomenon whose importance was slowly, but regularly, increasing over the centuries before a sudden acceleration in urban growth during the nineteenth century in a small corner of Europe (Bairoch, 1985).

Although the sources of information are dispersed, not always trustworthy, and hardly comparable, the data clearly converge to show the existence of an *urban revolution*. In Europe, the proportion of the population living in cities increased from 10% in 1300 to 12% in 1800 (Bairoch, 1985). It rose to approximately 20% in 1850, 38% in 1900, and 52% in 1950, and it is now close to 75% (Bairoch, 1985; United Nations, 1994). In the United States, the degree of urbanization increased from 5% in 1800 to more than 60% in 1950 and is now near 77%. In Japan, the extent of urbanization was 14–15% in 1800 (Bairoch, 1985) and 50% in 1950, and it is now about 78% (United Nations, 1994). Worldwide, the urban population increased from 30% in 1950 to 45% in 1995 and will exceed 50% in 2005 (United Nations, 1994).

Thus, by the end of the twentieth century, about half of the world's population and three-quarters of Westerners will live in urban areas. The world's urban population currently increases each year by a number equivalent to the population of Spain. Furthermore, concentration in very large cities keeps rising. In 1950, only two cities had populations above 10 million: New York City and Greater London. In 1995, 15 cities belonged to this category. The largest one, Tokyo, with more than 26 million, exceeds the second one, New York, by 10 million. In 2025, 26 mega-cities will exceed 10 million (United Nations, 1994). But such data provide only a very partial description of the urbanization process, as they do not reveal the important changes that have occurred in the *nature* of cities from the time of the city-states of ancient Greece to the metropolises of our time.

Let us briefly examine the main historical changes. The history of cities in the Western world shows a succession of three major types of cities: pre-industrial, industrial, and post-industrial cities. Pre-industrial cities were dominated by the

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economic power of landowners and the activities of merchants and individual craftsmen. Industrial cities were places of specialized and integrated production in manufacturing, resulting from the Industrial Revolution and the separation between capital owners and workers. Post-industrial cities have resulted from the rise of the service economy and, more recently, from the information revolution. This implies significant changes in the economic nature and composition of cities. At present, economic power and city growth both depend on new tertiary activities such as financial and producer services, research and development, planning, and business administration and, in general, on activities specialized in decision-making and control that are concentrated in cities much more than are manufacturing activities. This necessitates primary roles for education, skilled workers, and information exchanges. From 1920 to 1991, the proportion of the total employment to be found in the sector of producer services increased from 2.8% to 14% in the United States, from 0.8% to 9.6% in Japan, and from 1.6% to 10% in France (Castells, 1996).

Another major dimension of historical change is related to the spatial form of the city and to its separation from the countryside. In medieval Europe, that separation was signaled in two ways: a physical boundary (the walled city) and a legal status (the democratized city). Besides its defensive purpose, the wall was also the symbol of the city's political power. Historians agree that specific legal status was a major criterion for identifying the city, at least until the end of the Middle Ages (Duby, 1980; Bairoch, 1985), if not later on. This clear-cut separation no longer exists. Cities' legal status has been homogenized, except for minor exceptions, in most nations. Urban activities have gradually extended beyond the physical boundaries of the city to create suburbs that are now very much part of the extended economic agglomeration. As a result, the modern city is more dispersed and has fuzzy boundaries. It may also take very different forms ignored in the past, such as the megalopolis, the conurbation, or the urban region.

In addition, beyond the city fringe lies what Mumford (1961) called the *invisible city*, that is, the influence the urban core exerts over consumption, culture, and lifestyles even in the smallest villages because of dramatic advances in transportation and telecommunications. As a result, large cities now dominate modern societies in all areas of culture and human undertaking, whereas traditional towns often served as the nuclei for surrounding tracts of rural activities.

Yet present-day cities may differ from one part of the world to another. Large cities in the Third World differ from large cities in developed countries. On the one hand, they grow at a much faster pace, which possibly may result in a complete reordering of the world's top cities over the next 20 years. On the other hand, they do not have the same production structure and the same economic power at the international level. For example, it is well known that the main centers of financial and business services are London, New York, and Tokyo (Sassen, 1991). It is tempting to add Hong Kong, Singapore, Paris, Frankfurt,

Zurich, Amsterdam, Milan, and Toronto to the list. None of the largest cities of
the developing countries appears in this list.

The foregoing suggests some provisional conclusions. First, population alone
does not determine the economic significance of a city, which depends much
more on the type and organization of economic activities that occur within it.
Second, in parallel with the increasing urbanization of human societies, one
sees a wide diversity of situations resulting in different urban configurations
and systems. It is our contention, however, that beneath this multiplicity lie a
few general principles that economic theory may help us to understand.

Cities were at the heart of early economic analyses. One of the first analy-
ses of the emergence and role of cities can be found in the work of Cantillon
(1755), who explained the organization of an abstract system of villages, market
towns, and cities dominated by a primatial city. According to him, the origin
of cities was to be found in the concentration of land ownership that allowed
landowners to live at a distance from their estates in places where they "en-
joy[ed] agreeable society," as well as in the agglomeration economy related to
the landowners' demand, which attracted craftsmen and merchants. That idea
is reminiscent of the *preference for variety* used in recent theories of economic
agglomeration. Twenty years later, Smith (1776) explained cities on the basis
of economic interactions, on the supply side featuring the organization of the
division of labor, and on the demand side featuring a market size effect. Here
also, that perspective concurs with modern analyses of city formation focusing
on the role of intermediate inputs. In these views, the city is both a fundamental
form of spatial organization and a key element of economic growth. However,
urban economics languished for over a century and became part of mainstream
economics only in the 1970s, as Catherine Baumont and Jean-Marie Huriot ex-
plain in their retrospective on urban economics in Chapter 2. See Mills (1972),
Henderson (1977), and, more recently, Fujita (1989) for the primary texts.

Recently, growing numbers of economists have become interested in studying
geographical issues. This increased interest has been fostered by the integration
of national economies into trading blocks, such as the European Union and the
North American Free Trade Agreement (NAFTA), and by their impact on the
development of their corresponding regions and cities. As market integration
dissolves economic barriers between nations, national boundaries no longer de-
lineate the most natural unit of analysis. The issue seems important because the
continuing growth of trade and especially the development of multinational pro-
duction systems cast doubt on the relevance of the concept of national economy
as the main framework of reference.

More fundamentally, perhaps, trade and exchange tend to develop more and
more between large cities, suggesting that interregional and international trade
might be replaced by inter-city trade. In this case, the city, more than the nation
or the region, is the relevant frame of analysis. Cities must be considered as

the main spatial devices allowing for interaction of the highly diversified and specialized economic agents who are at the source of technological and social innovations. In other words, *cities may be viewed as the engines of innovation and growth* in modern economies because they provide the quintessentially urban commodity: information (Jacobs, 1969).

At a very basic level, one may say that the main reason for the existence of cities lies in the presence of indivisibilities in economic and social activities. This was clearly stated as a necessary condition by Koopmans (1957, p. 154): "without recognizing indivisibilities in the human person, in residences, plants, equipment, and in transportation, urban location problems, down to those of the smallest village, cannot be understood."

Even the walled city exhibits increasing returns to scale, because it corresponds to a (local) public good whose supply is governed by size effects: The length of a circular wall is $2\pi r$, whereas the size of the enclosed area is πr^2. The ratio of the circumference to the area falls as r increases, so that a larger number of individuals can be defended at a lower average cost.

From a more general perspective, besides the innovations necessary to generate the agricultural surplus, a fundamental change in social structure was needed for the emergence of cities: *the division of labor into specialized activities*. And, indeed, there seems to be considerable agreement among economists, geographers, and historians to view increasing returns as the most critical factor in the emergence of cities. For example, according to Marshall (1989, p. 25), "apart from considerations related to defense, to royal whim, or to the supposed sacred importance of certain sites, the formation of towns made good economic sense in promoting a level of efficiency in commerce, manufacturing, and administration that would have been impossible to achieve with a completely dispersed population."

Increasing returns appear at the level of specific activities, either public or private, and in the aggregate when cities act as *economic multipliers*. The critical role played by increasing returns in city formation probably explains why this problem has been neglected for so long by mainstream economics, as well as why recent progress in economic theory has made it possible to analyze such problems in a much more relevant and vivid way (Krugman, 1995).

These multipliers can take different forms (see Fujita and Thisse, Chapter 1, this volume). For example, the presence of a large number of firms established within a given city implies a wide variety of locally available products (*varietas delectat*). This effect makes the city more attractive to consumers, so that more of them will choose to settle there. In turn, a larger pool of potential clients will attract more sellers, triggering a snowball effect that can give rise to an economic agglomeration. Similar forces are at work in the labor markets, where firms and workers interact by allowing a finer division of labor. More precisely, increasing returns to scale appear in the aggregate when firms can benefit from using a large

array of intermediate products. Finally, informational externalities are likely to be even more crucial, in that they stress the driving forces of circulation of information, accumulation of human capital, and creation of intellectual resources (Lucas, 1988).

All these external effects foster the process of concentration of human activities and, subsequently, specializations in various geographical areas. They also explain why economic agents are prepared to pay high rents in order to live close to the centers of large cities, where these effects are most intense. Contrariwise, external effects such as pollution and crime, as well as high land rents, tend to deter further urban growth and therefore favor dispersion of activities. Among these negative effects, congestion is of fundamental importance insofar as it is intrinsically related to space itself.

What we now see is the emergence of a new economic theory of cities, more closely related to mainstream economics. This book rests on this new theory and may be described as a collective attempt to provide a partial answer to the following fundamental question: *Why do social and economic activities tend to agglomerate in a small number of places?* This new body of theory also deals with some contemporary concrete issues expressed through related questions investigated in this book: What are the main agglomeration or dispersion forces? (See Fujita and Thisse, Chapter 1.) Why do we have cities, and why do they specialize in different activities? (See Abdel-Rahman, Chapter 3; Becker and Henderson, Chapter 4; Fujita and Krugman, Chapter 5; Duranton, Chapter 8.) Why does proximity matter in the era of globalization, and why do cities continue to grow despite the information revolution, which allows for inexpensive interactions over vast distances? (See Fujita and Thisse, Chapter 1.) Why do we observe strong connections between city sizes and their rankings in the urban hierarchy (See Dobkins and Ioannides, Chapter 6.) What are the main reasons explaining the growth of the urban system? (See Duranton, Chapter 8.) What are the dynamics of cities, given that land is not malleable? (See Brueckner, Chapter 7.) How can a monocentric city generate secondary employment centers? (See Zenou, Chapter 10.) What is the empirical relevance of the monocentric paradigm? (See Goffette-Nagot, Chapter 9.) What are the relationships between cities and the emergence of specialized and fragmented labor markets? (See Zenou, Chapter 10; Jayet, Chapter 11.) What will be the impact of globalization on the geography of financial centers? (See Gehrig, Chapter 12.)

In order to try to answer these questions and others, one must consider various explanations and models focusing on different facets of the urban world. Indeed, it would be futile to believe that our need for human interaction could be the sole explanation for the existence of economic spaces corresponding to different stages of development. Furthermore, the variables explaining spatial or regional imbalance within a small country are likely to differ from those

explaining economic imbalance between the North and the South. Yet, regardless of the problem under consideration, the creation of cities and economic agglomerations may be viewed as the outcome of a process involving two opposing types of forces, namely, *agglomeration forces* and *dispersion forces*. An economic agglomeration of specific activities is then considered as the result of a complicated balance of particular forces that push and pull consumers, workers, and producers.

The contributors to this book aim to identify some of the primary reasons why particular economic activities become established within cities. Two main approaches seem to emerge from the many recent contributions (see Becker and Henderson, Chapter 4). The first rests on the role of "big agents." In this case, the city is considered as the outcome of a social process involving guilds and city governments, or, nowadays, as the result of policies followed by local governments and land developers. The second approach stresses the role of "many small agents," typically entrepreneurs and workers/consumers, who benefit from the greater division of labor generated by their gathering within a limited area. Both approaches will be discussed in several chapters.

Unlike earlier theories concerning location, the new economic theory of cities developed in this book has strong connections with several branches of modern economics, including industrial organization and public economics, but also the new theories of international trade and of endogenous growth and economic development. This suggests that this field has great potential for further development and that cross-fertilization can be expected. It would be premature to claim that the new economic view of cities has gained complete primacy, but we believe that the recent contributions have been sufficiently rich as to invite economists and social scientists to reconsider the role of cities in economic life and to suggest that cities will be important actors on the economic stage of the future.

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