

# Urban Economics

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## 都市經濟學 (Urban Economics)

都市經濟學主要是以“個體經濟學”之理論基礎探討都市土地使用、都市結構、都市規模及都市系統層級等都市經濟議題。授課內容將從住宅區位選擇、廠商（或企業辦公室）廠址決定及公共設施位置之選擇等基本課題分析出發，而後再探討在各種經濟活動彼此互動之情況下，如何經由經濟活動產生都市及如何在都市或都會區內選擇及決定各個經濟體「均衡」及「最適」之區位，並因而形成各種「均衡」及「最適」之都市結構。進而討論在各個都市間彼此互動之情況下，如何產生各種「均衡」及「最適」之都市層級及都市系統。希望藉此經濟理論分析來詮釋現有世界上各種都市經濟活動之現象，亦可進一步藉由實証研究探討各種理論模型之解釋能力。修課學生僅需具備簡單之「個體經濟學」及「微積分」基礎應可瞭解。授課內容及大綱將視選修學生之背景訓練，由簡而精，由淺而深地讓修課同學充分獲得“都市經濟學”之基礎訓練，更希望藉此能協助有興趣於這些都市經濟議題之年輕學子在國際及國內學術期刊有所發揮。

## Urban Economics

Urban economics presents the basic theory of urban land use and city size in a unified framework. The residential location behavior of households, the location choice of firms and the location determination of government facilities are analyzed in a microeconomic framework, and the equilibrium and the optimal patterns of residential, business districts and public goods land use are examined. In addition, the corresponding equilibrium and optimal city sized and urban system are studied in a variety of contexts. Extensions of the theory to a general equilibrium framework (i.e., simultaneous determination of location of both households and firms) and to a dynamic examination will be considered in a dynamic framework.

Modern urban land use theory, which forms the core of urban economics, is essentially a revival of von Thünen's theory (1826) of agricultural land use. Despite its monumental contribution to scientific thought, von Thünen's theory languished for more than a century without attracting the widespread attention of economists. During that time, cities grew extensively and eventually outpaced the traditional concepts of urban design. The resulting rise in urban problems since the late 1950s has manifested an urgent need for a comprehensive theory of modern urban systems and, in particular, has helped to refocus the attention of location theorists and economists on the seminal work of von Thünen. Following the pioneering work of Isard (1956), Beckmann (1957), and Wingo (1961), Alonso (1964) succeeded in generalizing von Thünen's central concept of *bid rent curves* to an urban context. Since that time, urban economic theory has advanced rapidly, inspiring a great deal of theoretical and empirical work. Prominent among the efforts in this area are the works of Muth (1969), Mills (1972a), Henderson (1977), Kanemoto (1980), and Miyao (1981), to name a few. The central purpose of urban economics is to present in a unified manner the state of the art of the economic theory of urban land use and city size, including both positive and normative aspects of the theory.

In most Western societies, land is allocated among alternative uses mainly by means of private markets, with more or less public regulations. In such societies, the current spatial structure of a city is thus the outcome of billions of individual actions taken in the past. Hence, one might suspect that the outcome of such unregulated individual actions would be near chaos. However, the history of science suggests to the contrary that the larger the numbers of individual actors in a system, the stronger are the regularities it will exhibit. Indeed, many studies have revealed that strong regularities exist in the spatial structure of different urban areas. The task of *positive theory* is to provide explanations for these regularities and to suggest testable hypotheses for further investigation. We will not, however, be content with the mere confirmation of regularities. The existence of regularities does not necessarily imply

that the given spatial structure of a city is a desirable one. Hence, we shall also be interested in *normative theory* for identifying the efficient spatial structure and size of cities, and for suggesting means of achieving them. This viewpoint was eloquently expressed by Lösch (1954, p. 4): “No! The real duty of the economist is not to explain our sorry reality, but to improve it. The question of the best location is far more dignified than the determination of the actual one.”

The theory of urban land use, city size and city system is an especially appealing topic of study because much of traditional economic theory cannot be readily applied. Although traditional economic theory aptly describes competitive markets typical of most Western societies, it is essentially designed to deal with space less problems. Hence, many of the basic assumptions of this theory are no longer appropriate for spatial problems such as land use. First, one generally finds empirically that households, as well as many firms and government agencies, choose one and only one location. This implies, in the terminology of traditional economic theory, that there is a strong *non-convexity* in consumers’ preferences and production technologies. Second, since the essence of cities is the presence of many people and firms in close quarters, *externalities* are a common feature. Public services, noise, pollution, and traffic congestion all involve externalities. Moreover, the necessity of nonprice interactions such as information exchange through face-to-face communication. R&D spill over effect is one of the major reasons that people and firms locate in a city. Third, the existence of distance among cities implies that the producers of local goods (both public and private goods) can enjoy a monopolistic situation. The same is true for producers of neighborhood services within each city. Hence, *oligopolistic* or *monopolistic competition* is a common feature of urban markets. Finally, buildings and other urban infrastructures are among the most durable of all human products, and this limits the usefulness of classical static theory. Because many spatial phenomena such as urban sprawl and renewal can be treated in a satisfactory way only within a *dynamic* framework, we must eventually combine urban land use theory with capital theory. Clearly, the urban is fertile ground for economic study.