

# A Companion to Urban Economics

*Edited by*

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RICHARD J. ARNOTT

*Boston College, Massachusetts*

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A COMPANION TO URBAN ECONOMICS

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# Preface

By definition, urban economics is the economics of cities. But what does this mean? In the United States, almost 80 percent of the population lives in urban areas, and in Europe the proportion is almost as high; the urbanization rate is lower in the rest of the world, but is increasing at a rapid rate, so that while the world's urbanization rate was only 30 percent in 1950 it is projected to be 61 percent in 2025 (O'Sullivan 2003, p. 7). The proportion of economic activity that occurs in cities, as measured by value added to national product, is even higher. Furthermore, most kinds of economic activity occur in cities; agriculture and the natural resource industries are the major exceptions. Thus, the bulk of the economic activity that is studied in macroeconomics, labor economics, industrial organization, financial economics, and so on occurs in cities. How, then, does one draw the line between what is urban economics and what is not?

Some intellectual historians study the evolution of subjects, such as economics, fields, such as urban economics, and subfields, such as urban labor economics. An issue arises in the forum of public debate that is taken up by the academic community. If existing bodies of thought are ill suited to discussion and analysis of the issue, there is an incentive to develop a new line of thought. Depending on the importance of the issue and how long it remains in the public spotlight, as well as the quality and fecundity of the new line of thought that has been developed to address it, a new field or subfield may develop, which may subsequently blossom, wither away, or be absorbed by another field.

What is urban economics and what is not is the outcome of such an evolutionary intellectual process. Urban economics became an identifiable field in the 1960s in the USA, as the result of concatenation of three developments. The first was the importation from Western Europe of spatial economics/location theory into US economic thought. The migration of largely Jewish academics from Germany and Eastern Europe during the interwar period transformed many fields. Economics in the Anglo-Saxon tradition pays scant attention to space. (Almost all the major contributors to the history of spatial economic thought (Ponsard 1983) have been Continental economists, Johann von Thünen being the

best known and most influential. This development by itself gave rise to regional science. The second development was the transportation and land-use studies of the 1950s. Neither of us knows the exact impetus for these studies, but one must have been concern for the impacts on the location of economic activity of the massive urban highway-building programs of that decade, which spurred post-war suburbanization. In any event, these studies led to heightened awareness of, and interest in, the intra-metropolitan location of economic activity, and the relationship between transportation and land use (Hoover 1963). The third development was the social unrest of the 1960s: the Civil Rights Movement, the War on Poverty, the Great Society, and the urban riots, all of which focused attention on the problems of the inner city and particularly of the black ghetto. One immediate impact was an explosion of interest in urban studies on college campuses and a sharp increase in research funds to study the urban economy. Fortuitously, the intellectual foundations for urban economics had already been laid. Von Thünen's theory of agricultural land use had been adapted by Alonso (1964), Muth (1961, 1969), and Mills (1967) to develop a theory of urban land use. The 1960s was also the decade of the general equilibrium revolution in applied microeconomics. The hallmark of general equilibrium theory is its focus on the economy as a whole rather than on pieces of it. The outcome was a general equilibrium model of the urban economy – the *monocentric city model* – that permitted the simultaneous treatment of urban land use, transportation, housing, and government.

The period from the mid-1960s to the mid-1970s was the Golden Age of urban economics. Many of the best and the brightest economics professors and graduate students in the USA turned their attention to the urban economy. The result was the rapid development of a core body of urban economic theory that remains the cornerstone of the field to this day, and accounts for why the field endured when public and government interest in urban problems flagged in the subsequent decades.

Urban economics *per se* remains predominantly a North American field. Outside North America, each country has its particular intellectual history with respect to the study of the urban economy. After Americans, Japanese urban economists from a regional science background have contributed most to the development of the field, especially in the area of urban location theory. The United Kingdom has strong traditions in housing, transport, and land-use economics, but those fields never become integrated under the rubric of urban economics as they did in the USA. Scandinavia has a strong tradition in local public finance, and British, Belgian, and German economists have been dominant in game-theoretic location theory.

Although urban economics started out as a body of applied microeconomic theory, even in its early days it had a strong empirical orientation, and since then the field has become increasingly empirical. Many other bodies of theory have been captured by mathematical economists and have become increasingly abstract, abstruse, and axiomatic. But this has not happened in urban economics. A proximate reason is that the leading theorists have aimed in their modeling to explain what they observe on a day-to-day basis in the cities in which they live and

work; perhaps the familiarity of the subject matter has attracted theorists with an empirical bent. Urban economics has become increasingly empirical in another sense of the word; more and more of the work that is done in the field estimates and tests econometric models using large microdatabases. This emphasis on empiricism has occurred in many fields in economics. The root cause is the tremendous increase in computing power that has occurred during the past 30 years, which has made routine the econometric analysis of large microdatabases. This in turn has led to the collection of more and more microdata, to the rapid development of econometric theory, and to the widespread diffusion of econometric competence. American and, to a lesser extent, British economists have been in the vanguard of this major reorientation of economics. In urban economics, the American preeminence has been compounded by more and better data being available on almost every subject than in other countries.

Thus, urban economics has been more successful than most other microeconomic fields in achieving a healthy balance between theory and empirical work and a good interaction between them in the spirit of the scientific method.

American parochialism is infamous, and unfortunately extends to urban economics. Because the urban economic textbook market is largest in the USA, all the leading textbooks are written with the American student in mind and pay scant attention to the urban experience and policies of other countries. The leading international academic journals publish articles that are methodologically innovative; a study of a particular urban problem that follows the method of a US study done a decade earlier is rarely deemed worthy of publication. Because American urban economists have so much better data and are generally so much better trained in empirical work than urban economists elsewhere, the bulk of empirical studies published in academic urban economic journals deal with the US experience. This is unfortunate because it conveys the impression that the US experience is universal. In some ways it probably is, and in other ways it probably isn't, but without cross-country comparisons, which are made difficult by inconsistent data definitions, it is not possible to tell. This parochialism is particularly evident and particularly unfortunate in policy analysis. US policymakers could learn much from the policy experience of other countries, but do not because existing studies are rarely sufficiently innovative or of sufficiently high quality to merit publication in the international journals. American parochialism is not as much of a problem in urban economic theory. Mainstream microeconomic theory is the same across the world, and all that is required to do theory is paper, pencil, and a brain. There is nonetheless a US bias. The empirical regularities that urban economists build their theories around are usually empirical regularities for the US urban economy. Americans also tend to be the agenda setters, though this is less of a problem in urban economic theory than in many other areas of theory.

An unfortunate result of US dominance of the field and US parochialism is that the academic establishment in many countries resists urban economics. This is particularly evident in the UK, where urban transport, housing, environmental, and land-use economics evolve largely independently, without the benefit of the conceptual integration that urban economics offers.



By 1990, urban economics was in danger of becoming an intellectual backwater. Practically useful work was being done and understanding of the urban economy was steadily improving, but little innovative theory was being formulated and most of the empirical work was derivative from other fields, especially labor economics. As a result, there was little interest outside urban economics in the work being done in the field. That has changed due to another concatenation of developments, principally the reformulation of international trade theory and public policy issues that have arisen out of European Union. International trade theory was the first field in applied microeconomic theory to “go g.e.” – to apply the model of competitive general equilibrium *à la* Arrow–Debreu. An impressive intellectual edifice was constructed explaining patterns of trade based on comparative advantage due to difference in factor endowments. Courses in international trade focused on theory, to the virtual exclusion of empirical work. Predictably, the theory provided little insight into contemporary trends, such as the development of multinational corporations and the increasingly large proportion of international trade that was *intra*-industry, and little guidance for policy. That changed with several complementary theoretical developments in the late 1970s and the 1980s – models of international trade combining different combinations of ingredients, including product differentiation/monopolistic competition, oligopoly, increasing returns to scale, and transport costs, in addition to the traditional differential factor endowments. At the same time, many theoretical physicists laid off in the post Cold War disarmament were looking for other problems to which to apply their skills. One skill that many theoretical physicists have that most economic theorists lack is expertise in nonlinear, dynamical systems. Using what he learned from theoretical physicists concerning self-organizing systems, Paul Krugman developed a dynamic international trade model with monopolistic competition (that entails a form of increasing returns) and transport costs. This model has subsequently been adapted in many ways, and has given rise to a new field, the “new economic geography.” Development of the model was stimulated by interest within Europe concerning the implications for regional development of the lowering of trade barriers that has accompanied European integration. Would all footloose economic activity be attracted to some center of economic gravity, with residents of peripheral regions becoming hewers of wood and drawers of water? Or would an altered pattern of regional specialization emerge? Much as in urban economics a generation earlier, the excitement of developing a new body of theory and applying it to issues at the top of the policy agenda has attracted many of the best and the brightest young economists in Europe to the field.

This new line of research has revitalized urban economics. Why? One reason is that urban economics has traditionally been taught in tandem with regional economics. For many years, regional economics was in a sorry state, being a combination of macroeconomics writ small, as in regional econometric models, or urban economics writ large, as in the study of systems of cities, with only a small and crude body of theory to call its own. It was very much the poor cousin that urban economics brought along. That has changed, and now the regional component of urban and regional economics courses is attracting as much interest

as the urban component. But the more important reason is that the new economic geography provided a new kitbag of tools that could be applied to a central problem in urban economics that had hitherto been neglected: *agglomeration*. Agglomeration, the spatial concentration of economic activity, is the very essence of urbanization. Urban economists have always recognized its central importance and paid lip service to it, but did not know how to model and analyze it. In the monocentric city model, they simply *assumed* that all nonresidential economic activity occurs at the city center. Traditional general equilibrium theory, on which modern urban economics is built, assumes *convexity*. Convexity in production implies constant or decreasing returns to scale, but with transport costs, constant and decreasing returns to scale in production, and a spatially uniform endowment of resources, economic activity would be uniformly distributed over space in backyard economies. Thus, nonconvexities in production are central to agglomeration. The new economic geography provided the tools to tackle these nonconvexities.

The new economic geography, which was originally developed as part of trade theory, and then adapted to treat regional economic development, has been adapted again to develop the broad structure of models of urban agglomeration. *The Spatial Economy* (Fujita et al. 2001) provides an integrated introduction to these literatures. These models are being applied to study the dynamics of urbanization, and the evolution of systems of cities, including their patterns of industrial specialization. Another major line of research is the microfoundations of agglomeration. Workers are more productive in larger cities. Why? Yet another major line of research has been polycentric cities. On most fronts, empirical work has lagged behind theoretical developments but is quickly catching up.

We have still not provided a direct answer to the question posed at the beginning of the introduction: What is urban economics and what is not? But in a somewhat roundabout way, we have provided an indirect answer. Urban economics is what urban economists do, and what urban economists do reflects the field's intellectual evolution. The core subfields used to be urban land use/spatial structure, urban transportation, urban housing, and urban public finance. Urban spatial structure has continued at center stage, but its character has changed. Urban transportation continues to play an important role, but is not as prominent as it used to be. With the retreat of governments everywhere from the housing sector, much of housing economics has been absorbed into real estate economics and taught in business schools. Urban public finance is less studied than it used to be, since fiscal federalism is now focusing on issues of European integration. New characters have joined the cast. Urban pollution, urban labor markets, urban crime, urban macroeconomics, which had only bit parts three decades ago, are now featured in more episodes. And urban agglomeration and urbanization, which were merely talked about at the beginning of the series, are the new hero and heroine.

The thumbnail history of urban economics over the past four decades outlined above is reflected in the North-Holland Handbook Series on Regional and Urban Economics. Volume 2, the first to be dedicated to urban economics and published in 1986, focused primarily on the theoretical developments of the 1960s and

1970s; volume 3, entitled *Applied Urban Economics* and published in 1999, covers primarily empirical contributions; and volume 4, entitled *Cities and Geography*, and hot off the press, provides 1,000 pages of essays surveying the rapid progress of the new economic geography.

When Blackwell approached us about editing *A Companion to Urban Economics*, our immediate reaction was "Not another set of review articles." We were reviewed out and expected that our colleagues were too, and saw little to be gained from putting together a pale imitation of the admirable North-Holland series. Then we thought about our experiences teaching urban economics. Commercial publishers are understandably, though rather distastefully, concerned with the bottom line. Their concern with maximizing market share results in the "dumbing down" of most undergraduate textbooks. Standard urban textbooks are generally interesting, stimulating, and very well written, providing very good coverage of the field, and are systematically updated to reflect recent developments. But, they are written for second-year students who have only studied principles of economics, not intermediate micro theory and not econometrics, and who on average are less intellectually sophisticated than upper-level undergraduate, master's, and professional students. Additionally, standard undergraduate textbooks are also used in urban economics courses in other countries, where students typically specialize earlier and are better trained technically. There are no graduate textbooks in urban economics. There are a number of excellent, specialist books on which very sound PhD courses can be constructed, when supplemented by journal articles, but these books assume knowledge of economics and of mathematics at the PhD level.

We therefore started thinking that a Blackwell *Companion to Urban Economics* could somehow fill this large gap between urban economics at the sophomore level and at the PhD level. But what about the format? Review articles are very useful for the specialist, but by their nature are often rather superficial, touching on a large breadth of material, and quite often dull. They typically cover too much material for a single lecture, and are not designed to train a student to "think like an economist" or to expose her to how urban economists do urban economics or to develop technical skills. Also, most of the essays in the North-Holland Handbook Series provide excellent reviews; some, but not all, are too advanced for use in pre-PhD courses. We therefore chose as our format a collection of essays, each of which could form the basis for a stimulating and challenging lecture to a class of intellectually lively upper-level undergraduates. In the USA, students at this level have typically had an introductory econometrics course and have studied basic calculus, but by the standards of economics majors in other countries are not technically well trained. Their relatively weak technical training is, however, offset by development of those traits that make for the successful academic economist: curiosity in how the world works, skills in conceptualizing how it works, a well-developed critical sense, and a strong skepticism of received wisdom. We envisioned a representative essay as covering relatively few topics but covering those well. An essay might discuss a particular issue in urban public policy at a high level of conceptual sophistication, indicating what models might be applied in thinking about the policy, what the empirical

literature has to say about the magnitude of the policy's various effects and its degree of confidence in these magnitudes, what groups are hurt and helped by the policy and are likely to favor or oppose it, and what notion of social justice is appropriate in evaluating the policy. A theoretical essay might instead discuss how an urban economic theorist goes about constructing a model to address a particular phenomenon, how he chooses, in light of his knowledge of the empirical literature, what essentials to focus on and what inessentials to assume away in order to make a complex reality conceptually tractable, and how he then goes about putting the model through its paces. An empirical essay might lead a student through the process of estimating a crucial parameter, explaining how to deal with data deficiencies, how to specify the estimating equation, and how to avoid the common econometric pitfalls.

In choosing subject areas to be covered, we attempted to achieve balance, to have the essays reflect the distribution of current interests within the field, but made no attempt to be comprehensive. We suggested general subject areas to authors and conveyed our vision for the essays, but made little attempt to influence their choice of topic or their treatment of it. The result is a rather eclectic collection of essays, in terms of both approach and technical level. This is entirely appropriate, since instructors will have an opportunity to pick and choose in accordance with their tastes and teaching methods.

In deciding whom to invite to write the essays, we had three considerations in mind. We wanted the essays to be lively, stimulating, and well written. We also leaned toward up-and-coming stars rather than senior leaders in the field, who are chronically overcommitted and who right now are suffering from exposition fatigue. Finally, to make the book more appealing to non-US readers and also to combat the American parochialism of the field, we leaned toward experts from outside North America.

Our organization of the essays into subfields is quite standard: urbanization, urban land use/spatial structure, housing/real estate, urban transportation, urban public economics, urban labor markets and macroeconomics, and urban quality of life. At the beginning of subfield's set of essays, we provide a brief introduction that aims only to place the essays in the context of the corresponding literature.

Perhaps more than any other field of economics, urban economics studies the quotidian – what we encounter every day in our journeys to work, in the errands we run, and in the neighborhoods in which we live. Attempting to explain what we all observe and experience accounts for the field's strong empirical bent. At the same time, the subject matter is The City, a physical manifestation of civilization in all its glory and disgrace. We hope that the essays in the *Companion*, taken as a whole, convey not only the technical accomplishments of the field, but also its fascination.

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