

INTRODUCTION TO THE SERIES

The aim of the *Handbooks in Economics* series is to produce Handbooks for various branches of economics, each of which is a definitive source, reference, and teaching supplement for use by professional researchers and advanced graduate students. Each Handbook provides self-contained surveys of the current state of a branch of economics in the form of chapters prepared by leading specialists on various aspects of this branch of economics. These surveys summarize not only received results but also newer developments, from recent journal articles and discussion papers. Some original material is also included, but the main goal is to provide comprehensive and accessible surveys. The Handbooks are intended to provide not only useful reference volumes for professional collections but also possible supplementary readings for advanced courses for graduate students in economics.

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INTRODUCTION: APPLIED URBAN ECONOMICS

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This volume is a follow-up to the earlier *Urban Economics*, Vol. 2 of *Handbook of Regional and Urban Economics*, edited by Edwin Mills. The earlier volume, published in 1987, focused on urban economic theory. This new handbook, in contrast, focuses on applied urban research. The difference is of course in emphasis. The earlier volume was by no means entirely concerned with theoretical research and this one is by no means entirely concerned with applied research.

There have certainly been important theoretical developments during the last decade, and these are surveyed at appropriate places in this volume. But there has also been an outpouring of high quality applied research in urban economics, as in other specialities. The reasons for the rapid growth of applied research are not difficult to identify: better theoretical frameworks within which applied research is undertaken; better econometric techniques and software; more and better data; and, probably most important, ever cheaper and more widely distributed computing power within the research community that provides easier access to, and analysis of, data.

Anyone too young to have lived through the computer revolution in doing applied research should read Alfred Marshall and Simon Kuznets. Neither of course considered himself an urban specialist, but both had deep interests in the formation and functioning of urban complexes. Marshall had few hard facts to work with, but he was an extraordinarily perceptive observer of how the world worked. Kuznets was a compulsive statistical analyst, all done on desk calculators, and he squeezed incredible insights out of meagre data. It is almost daunting how well the urban and other insights of these two geniuses have withstood the test of time. They continue to provide a lesson for researchers about the very basics of good applied work: it derives from theoretical insight and a careful, even frugal, concern for data. Are these data appropriate for answering the questions that theory suggests are relevant? There is a danger as well as an advantage in more easily available datasets. The analysis undertaken is sometimes determined by the nature of the data available rather than vice versa.

Data and research output now move around the world at the speed of light, and thousands of scholars in dozens of countries can access the US census and many other data sources. Not only is more high quality applied research being done, but also it is now being done in many more institutions than it was a decade or two ago. The computer has reduced the inequality among academic institutions in their capability to do applied research.

Selection and classification of topics for inclusion in this Handbook has inevitably depended on the editors' perceptions of subjects on which important research has been undertaken. It also depended on the availability of authors who were able and willing to write critical surveys on large amounts of international

research. We have tried to include authors, and to have them survey research, from a variety of countries. But there is still a US bias in applied urban research, partly due to the availability of data and computers, but also because of the sheer size of the US research community.

We have divided the 15 essays in this Handbook into four parts.

Part I surveys basic spatial and spatially related research. Cheshire (Chapter 35) surveys research on urban systems and their changing characteristics. The distribution of city sizes has long intrigued researchers. Recent work suggests that there are significant technical and definitional issues and that the way these are resolved has an important influence on the conclusions reached by particular studies. Nevertheless, the regularity of the distribution has stood up to examination pretty well. Explanations fall into two groups: those that try to generate the precise distribution and those that simply explain why there are cities of varying size. Since most of the latter rely on agglomeration economies in some form, this leads on to a brief survey of work on this topic. There is also an important body of research dealing with the changing distribution of population and economic activity between the parts of urban systems: both at the city level—suburbanisation; and between cities of different sizes. This chapter concludes by reviewing trends in urban development since 1980.

White (Chapter 36) focuses on the increasingly important and well-studied subject of multicentric urban areas. Subcentres, usually some distance from central business districts (CBDs), are smaller versions of CBDs and typically have similar mixtures of business activities. They basically represent suburban clusters of service sectors, that have followed residents and manufacturing firms to the suburbs. They provide the advantages of proximity that are the prime function of CBDs, and enable workers living in the suburbs to commute shorter distances and avoid and mitigate the congestion of innercity streets.

Gyourko, Kahn and Tracy (Chapter 37) survey the voluminous literature on the quality of life and environmental quality in urban areas. Quality of life measurement has both popular and academic components. Popular measures are deficient in that they fail to distinguish between endogenous and exogenous influences or to take account of the equalising effects of migration. Academic measurement has become increasingly sophisticated, based on important theoretical work published a decade or so ago. But this work is highly data intensive and so far—at least in its theoretically most rigorous form—it has been entirely confined to US cities. The slightly pessimistic conclusion of this chapter is that the sheer data intensity of this work means that further development may be slow.

Finally, Eberts and McMillen (Chapter 38) analyse the important relationships between urban infrastructure and urban agglomeration economies. Agglomera-

tion economies are the benefits of urban concentrations that accrue externally to firms and possibly entire sectors. They result partly from profit-motivated clustering of firms and partly from government capital facilities, typically referred to as infrastructure—transportation and communication facilities, and some public utilities. The hallmark of research during recent years has been the careful measurement of returns to infrastructure capital.

Part II surveys literature on specific urban markets. Crampton (Chapter 39) looks at studies of urban labour markets. This is a vast field where the boundaries between urban labour market research, and labour market research in general, are not always clearly drawn. The obvious spatial aspects of labour markets form the first set of areas surveyed in this chapter, i.e., the interrelationship between residential and workplace location, mobility and search. The second set of issues surveyed relate to the various types of stratification of labour markets by skill, gender and family status and how these factors influence labour market outcomes and behaviour.

Whitehead (Chapter 40) reviews research on housing markets. This chapter concentrates on the literature that has analysed the role of those specific attributes of housing, including its locational specificity and durability, that render housing markets both distinctive and urban. It focuses on housing market research in the developed world. There has now been a substantial number of studies of housing demand of increasing sophistication. We cannot be sure, but it does seem that quite secure knowledge has been gained in this area—in both how to do such studies, and in terms of the magnitudes of the resulting estimates of key relationships such as price and income elasticities of demand. The durability of housing makes its supply distinctive with research distinguishing between the determinants of new housing supply and investment in the existing stock. After briefly surveying aggregate models of housing markets and the interaction between housing and labour markets, the chapter concludes with a review of housing policy research.

Hedonic analysis of housing markets is left to a separate chapter by Sheppard (Chapter 41). Although now associated with work on housing markets, this technique had its roots in the Boston vegetable market in the 1920s. Sheppard shows how the technique has developed into an invaluable and increasingly sophisticated analytical tool, not only for housing markets but also for markets in urban land, the analysis of environmental goods and local public finance. Again, this is an area in which research has developed and more recent research has demonstrably learned from the collective efforts of earlier researchers. Certain techniques and approaches have emerged as clearly to be favoured. Sheppard

concludes his survey by suggesting some areas in which development should have occurred but as yet has not decisively done so.

Like Sheppard, Evans (Chapter 42) finds origins much older than might have been expected. Looking at work on land use regulation, he demonstrates a striking continuity in both the goals and instruments of British land use planning over more than 400 years to contain the growth of London (and later, other cities) by prohibiting development beyond the existing limit of the urban area. The strikingness of this continuity is only exceeded by that of its failure—400 years of continuous failure. Evans surveys the still quite small but increasing volume of research on urban land markets and their regulation by governments. Land use zoning in its various guises is one of the most widespread of all urban policies, yet almost everywhere it has significant effects on relative prices and induces a variety of perverse incentives. In addition, Evans surveys the increasing literature on interventions intended to increase the supply of urban land.

Part III is devoted to studies of urban development and problems in developing countries. Some of the material in Parts I and II is as relevant to both developing and high income countries, but the chapters in Part III focus specifically on developing countries. Much of the outpouring of research on urbanisation in developing countries has not only been made possible by data collection at the World Bank, but it has also been sponsored by this organisation. It is sad that the World Bank has not only abolished its small but highly productive urban research group, but also de-emphasised research on sectors that are critical to urban growth and to the well-being of urban residents. Becker and Morrison (Chapter 43) survey the trends in developing country urbanisation and in analysis of the causes, correlates and consequences of such urbanisation. It is not yet widely appreciated that both population and urban growth have decelerated markedly in most developing countries. Malpezzi (Chapter 44) surveys the superb work, mostly of World Bank origin, on urban housing in developing countries. The remarkable consensus that emerges from the World Bank analysis is that housing demand parameters are remarkably similar among most countries, even though purchasing power and housing costs differ greatly. Housing supply parameters differ greatly among countries, depending of course on technology and on materials availability, but mainly on the extent to which governments have permitted conversion of land from rural to urban uses, housing development, and housing financial institutions. These are the keys to understanding why housing quality varies more than can be accounted for by income variation and why house prices vary among countries from 3 to 15 times the annual incomes of urban residents. Pernia and Quibria (Chapter 45) provide a masterful survey of poverty and its study in developing countries. Poverty incidence has declined in almost all de-

veloping countries, and serious poverty has almost disappeared in high income countries of east and southeast Asia, such as South Korea, Taiwan, Singapore and Malaysia.

Part IV contains papers on specific urban problems and sectors. There is some arbitrariness in the assignment of papers between Parts II and IV, but all subjects surveyed in Part IV have a strong government and government policy component in most countries. Again, much of the content of the papers in Part IV is relevant to developing countries, but the papers have a high income country orientation. Small and Gómez-Ibáñez (Chapter 46) survey the sophisticated literature on urban transportation. In no sector have US governments caused as much resource misallocation as in urban transportation. The predominant wastes result from overinvestment in fixed rail transit systems, underpricing of road use and wasteful government ownership of bus systems. Yinger and Ross (Chapter 47) survey local public economics. They summarise what has been learned from the voluminous literature on the Tiebout hypothesis and from the provincial ways that local governments are financed in the US

What do we know now about urban economics as a result of applied research undertaken during the last decade or two? The answer surely is 'a great deal', although there is very obviously much more we would like to know. Even within their own fields, our authors could only survey the body of research that had been done. Evans, for example, reviews a great deal of work on the impact of land use regulation on housing. There has been substantial progress here and urban economists enjoy a significant degree of consensus on the economic impact of this activity. Yet, Evans provides no account of the impact of regulation on urban uses of land other than housing. These impacts are likely to be at least as significant as they are on housing since we know that land cannot be costlessly substituted out of either production or service activities. If we compare communities in the US and UK that are as comparable as possible except for the constraints their systems of land use regulation place on the supply of land, we observe that the price of retail land is up to 100,000 times higher in the most constrained community. Evans can provide no evidence on the economic impact of such a level of constraint, however, because no research has been done.

In areas where applied research has been done, in contrast, there has been much useful progress. On the basic spatial structure of urban areas, we have much better measurement of the extent of dispersion or suburbanisation from urban cores. We know that dispersion has been a worldwide phenomenon and, although governments can influence it, their many attempts to stop it have so far done much more harm than good. We have better estimates of the relative dispersion of various employment sectors and the reasons for employment dispersion. We

have important insights into the roles of subcentres in the dispersion process, although there is still much to be learned about subcentres. We know that not only radial highways but also radial fixed rail transit systems promote dispersion. Indeed, American opponents of what they refer to pejoratively as ‘sprawl’ ignore the fact that London was among the world’s most dispersed metropolitan areas long before auto commuting became important, and that an important reason for this is its century-old fixed rail commuter system that extends far from the core. Indeed, London if functionally defined, despite intensive regulatory efforts over 400 years, is more dispersed than Los Angeles, the favourite “whipping boy” of US critics of low density development. The degree of relative—and in several cases, absolute—recentralisation observed in many European cities during the 1980s did not reflect any new policies. The evidence suggests that it reflected economic and social changes which generated new patterns of incentive.

Despite recent high quality research, there is as yet no consensus about measures of the quality of life in metropolitan areas. Indeed, the entire concept may be a “will-of-the-wisp”, and rankings of metropolitan areas may depend on details of people’s utility functions. Although most explanations of the remarkable stability of the size distribution of metropolitan areas in many countries have been in terms of production cost, it is certainly consistent with the possibility that preference functions for the disaggregated factors which contribute to peoples’ perceptions of the quality of life, at least in relation to the sizes of metropolitan areas, differ among people and that preferences change only very slowly, at least in a gross sense.

The precise nature of agglomeration economies is still something of a mystery. Proximity of diverse activities and the densities permitted by the ability to substitute capital for expensive land certainly economise on transportation, including commuting, costs. Here, as with land use regulation, the research we do not have could provide the key. For data reasons all quantitative studies have been confined to production activities. Yet, some of the most pronounced agglomeration economies (and 80% or more of economic activity in large cities) are—if the actual location concentrations are a guide—in service sectors. Wholly new “industrial districts” have emerged in the past 15 years in some cities—the media district in London’s Soho area is an example. But these new urban concentrations have been in nonmanufacturing activities—the up to 80% of economic activity that had to be excluded from the analysis of agglomeration economies.

Exactly how proximity economises on communication costs, especially in the computer age, is still an open question, although it may be related to value added at intermediate stages of production (with resulting “inventory” costs of transport) and on the form of the communication. Bespoke information, particularly

where a degree of uncertainty and trust is involved, still requires face-to-face communication, whereas the transmission of bulk information internally within an organisation, is virtually costless.

A metropolitan area without government-provided infrastructure—especially that related to transportation and some utilities—is inconceivable. But social returns to recent government infrastructure investments have been mixed, at least in the US. Fixed rail commuter systems—certainly in the low density context of US cities—have provided little or no social returns. There seem few reasons why the recent “darlings” of local governments, such as convention centres or sports stadiums, should not be left to the private sector.

Labour markets are an area of applied economics where there has been intense activity and considerable progress in the past 25 years. Much has been learned in the context of urban labour markets; for example, with respect to “spatial mismatch”, the interaction of housing and labour markets; or how labour market adjustment mechanisms rapidly diffuse the impact of localised events. There is still much work that needs to be done, however, particularly on some of the most characteristically urban aspects of labour markets. Labour market search processes are still imperfectly understood, especially as they relate to both spatial scale and skill and employment status. There is still much to be done in terms of understanding workplace and residential choice and how those interact in terms of commuting patterns. New work here would be likely to provide fresh insights into the interaction of labour and housing markets.

An analogous situation exists with respect to housing markets. Enormous progress has been made on issues which respond to the application of advances in general economic theory and econometric technique. Less progress has been made on other issues which relate peculiarly to housing: its durability, spatial specificity and the institutional regime within which national housing markets operate. With respect to the spatial specificity of housing, it is strange, as Shepard remarks, that while a central principle of urban economic theory is that the price of land will vary with respect to location, and housing, as well as having a specific location, occupies land, with very few exceptions studies of housing markets have ignored both land and location. Research is, however, starting to address this issue with some success.

History and institutional differentiation are important in housing markets but even more so perhaps in the context of land use regulation. Many aspects of late twentieth century urbanisation are still explained by the logic of pre-industrial warfare. The cities of Britain ceased to be threatened by siege in Tudor times so the incentive to enlarge the space enclosed by the walled city disappeared. The response was suburbanisation—villas in the heights of Islington and Hampstead,

and ghettos to the low-lying downwind, east of London. The reaction to these developments was strict but ineffective regulation to try to impose containment. The desire for containment was probably motivated as much by distributional concerns—to protect the villa owners from the encroachment of the city—as with anything else. In Paris, still threatened with siege, the walls expanded and the rich retained their urban presence and developed a strong urban culture supported by urban amenities. The incentive for the influential to develop policies for containment did not arise, and in the late twentieth century the rich of Paris are still overwhelmingly concentrated in the urban core; and Paris, though still high density, has grown by continuous expansion of its built-up area rather than by the leap-frogging process that has ensured that functional London now covers most of southeast England. The Netherlands came into existence through the public provision of land via drainage. Local governments were obligated to provide land for development and this is still reflected in the country's system of land use regulation. Despite a density of population that is twice that of the UK, land for housing remains, as a result, very much cheaper. US cities achieve their leap-frogging and low densities by allowing new communities to incorporate (and so retaining a near perfectly elastic supply of urban land) but then providing a substantial incentive via the fiscal system to develop at the lowest density.

Relative to its status 20 years ago, urban research has perhaps made more progress in understanding developing rather than high income countries. We now have a much better understanding of the factors that generate rural-urban migration. Migration studies have shown that people move from rural to urban areas in developing countries for much the same reasons that they do in high income countries, i.e., to obtain better education and because more and better jobs can be found in urban than in rural areas. Migration is on a much larger scale in developing than in developed countries. We have also learned that migration and urban growth have slowed as population growth has slowed and low productivity agriculture has shrunk. The urban shares of total population in newly emerging countries such as Brazil or Korea have recently approached those in high income countries. Urban growth in such countries is hardly faster than in high income countries.

A remarkable amount has been learned about urban housing in developing countries. Urban housing prices and rents are typically much higher relative to incomes in developing than in high income countries. The reasons are counterproductive government housing policies. Some, such as controls on conversion of land from rural to urban uses are shared with developed countries. Others, such as a lack of legal infrastructure that permits binding contracts between landlords and tenants, the refusal to permit private financial markets to develop

enforceable modern mortgages, land use controls that prohibit the only housing that low income residents can afford, and restrictions on development of private housing development companies, are more specific to developing countries. Governments, as they traditionally do, blame high rents and prices on greedy landlords and speculators.

Urban poverty has declined even more than would be inferred from overall measures of economic growth in many developing countries. Improved nutrition and water quality and improved education and health care appear to be the reasons. Poverty rates have stagnated or increased mainly in countries in which violence and political breakdown have occurred—much of the former Soviet Union, parts of tropical Africa and the southeast Asian peninsula. By far the most important contribution to falling poverty rates is rapid economic growth. The extent to which the poor share in the early stage of economic growth varies among countries, but there is no record of economic growth causing a decrease in the living standards of the poorest 10 or 20% of the population in any developing country.

Urban transportation issues are also better understood than they were 10 or 20 years ago. On this subject, virtually all the progress since the early 1970s has been applied, and there has been a great deal of it. Many careful studies have estimated the extent and cost of road congestion. Congestion means the excess of marginal over average social cost of additional road users and indicates a need for additional investment and/or congestion pricing. All careful studies conclude that additional fixed rail commuter systems are unjustified in the low densities of US metropolitan areas, but there is disagreement as to what are optimum investments: certainly much better traffic control systems and much better—preferably privatised—bus systems. The extent to which new and expanded roads are justified is controversial. Undoubtedly, the best strategy is careful benefit-cost studies of each major proposal. Such studies are rare, in part because of the ideological nature of the debate.

Poverty rates have also decreased in most developed countries during the last decade or two—the US and UK being the most important exceptions. Much more is now known about the socioeconomic characteristics of the poor in many countries, certainly including the US. More is probably known in the US than in any other country about the spatial and racial characteristics of the poor. Much of the US research has focussed on the plight of the poor people, especially poor minorities resident in central cities.

US studies have shown that the best nursery for future poverty is to have poor and poorly educated parents, and especially to be raised in a single-parent household. It is also now known that, other things being equal, the probability

that children will be poor, be school dropouts, acquire criminal records, and have teenage pregnancies is greater if they are raised in poor neighbourhoods. Aside from improving educational programmes that poor children can access, not much is yet known about government programmes that can alleviate poverty. There is no academic consensus as to whether existing or modified government transfer programmes increase or decrease poverty. Again, the ideological intensity of the debate places objective analysis beyond mere mortals.

Yinger and Ross show that we now know almost all there is to know about conceptual aspects of the Tiebout hypotheses. Applied work has been considerable; we know that typical suburban communities have Tiebout-like characteristics, but we still do not know how Tiebout-like they are and what causes some to be more Tiebout-like than others. An important outstanding issue is whether, or not, suburban Tiebout-like characteristics depend on police-power land use controls in relatively high income communities.

Housing is more than half of all urban real estate and endless research is justified. More estimates of demand for aggregated housing, however, ought to be assigned low priority in many countries. More important is what governments should do, or stop doing, to improve the functioning of housing markets. Many scholars worry about the availability of housing that relatively low income residents can afford. At upwards of 15%, housing constitutes the largest single item of consumer expenditure in most countries. But while research into regulation of utilities, energy and transport operation is voluminous, there have been far fewer studies of how governments cause housing costs to be excessive: greenbelts, growth controls, other land use controls, rent controls, controls on conversion of land from rural to urban uses, excessive restrictions on private housing finance organisations, failure to develop legal infrastructure for housing property rights and contract enforcement, and so on.

In the US, securitisation has moved owner-occupied debt and rental debt and equity financing from neighbourhood financial institutions to national and international bond and stock markets. The benefits have been enormous. Benefits presumably would be even greater in other countries, especially in relatively small newly industrialising countries in east and southeast Asia. What is not understood is why this innovation has been so slow to spread.

Every urban issue is better understood in high income rather than developing countries. As noted, we can now be confident that most people, both the poor and the nonpoor, migrate from rural to urban areas for a similar mix of reasons in developing and high income countries. Most developing country governments adopt many policies to slow rural-urban migration, especially of the poor. The worst policies are those that try to increase labour productivity in agriculture. The

result is sometimes to lower food prices, which is desirable, but often, because they are accompanied by protection, such policies increase food prices. They always reduce farm employment, as rapid agricultural productivity growth has done in high income countries. High productivity agriculture is of course important, but it is not an appropriate policy to slow rural-urban migration. The second worst policies are those that promote rural industrialisation. Internal transportation is poor in most developing countries and most industries must be located in large, preferably port cities to survive. A third set of misguided policies is to limit the construction of the only housing that the urban poor can afford. Both governments and scholars should direct their attention to policies that can improve the housing, health, education and productivity of the urban poor. Reduced controls on private urban business development should be an important component of any justifiable set of government actions.

As Pernia and Quibria show, we now know much more about poverty levels and incidence in developing countries than we did a decade or two ago. Economic growth is, of course, the best long run antipoverty policy. But the incidence of poverty correlates only moderately with levels of development or income, however measured. It should now be possible to undertake careful comparative studies among developing countries to deepen insights as to the determinants of poverty. The fact that high literacy rates and high levels of educational attainment are important strategies for poverty reduction even in quite low income countries is strongly suggested by historical data in Korea and Taiwan. Opening up educational and employment opportunities to girls and women are important in raising income levels, reducing birth rates, reducing infant mortality and generally promoting family well-being.

Even among high income countries, poverty rates do not correlate strongly with measures of real income levels or growth rates. Again, comparative studies are needed. The US has been a puzzle for two decades. It has experienced almost no decrease in poverty rates despite economic growth rates that are typical of most other OECD countries, and very high income levels. Although the US probably spends as large a fraction of its GDP on transfers as most OECD countries, the US safety net may leak more than those of some other countries. Although studies by those who believe the US transfers promote dependence and poverty have been justifiably criticised by economists, it seems premature to conclude that transfer programmes do not have adverse incentive effects, either in the US or other OECD countries. Presumably, careful cross-sectional studies could shed light on the issue.

Could cross-national studies also shed light on the public economics of local governments? US scholars undertake cross-sectional studies within the US, made

feasible because the sovereignty of states permits considerable variation in the sizes and functions of local governments among states. But the US, Switzerland, Germany, Canada and Australia are the only federal systems among OECD countries. Are local services and infrastructure provided more efficiently in the nonfederal OECD countries than in the federal countries? Are there efficiency differences between all, or northern European countries and others, independent of their constitutional structure?

Finally, we should say that any enterprise such as this depends absolutely on the devotion and expertise of the authors. To those authors who met our frequent requests and deadlines we offer our sincere thanks. Despite their best efforts the book still took far longer to complete than originally intended. To those same authors and to our tolerant editor we offer our thanks for their forbearance.