

Harvard Studies in International Development

CHILE

POLITICAL ECONOMY OF URBAN DEVELOPMENT



Edited by
Edward L. Glaeser and John R. Meyer

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**Political Economy
of Urban Development**

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**John F. Kennedy School of Government
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The inspiration, and much of the funding, for this project came from Forestal Valparaíso, an international conglomerate with interests in urban development in Chile. The leaders of Forestal (and its parent banking group, Cruz Blanca or Cruzat Group) have had long-term concerns about how to eliminate distortions that cause over-development of certain geographic areas while other regions lay, perhaps inefficiently, underdeveloped. The basic question they sought to answer was: How does a society design an optimal policy for urban development?

Forestal's involvement was further fostered by a continuing interest in Chile and a desire to develop better economic policies wherever possible. For example, the Cruzat Group had earlier played an important role in researching Chile's widely acclaimed and copied pension reforms. Their interests also were fostered by the purely academic interests of its management. Juan Braun Llorca, the Forestal senior economist who was the direct liaison with the research project, received his Ph.D. at Harvard in 1993, writing on internal migration and economic growth. Juan Braun Llorca contributed a great deal of his own ideas and knowledge to the project. Much of the early focus came from conversations between Professor Glaeser and Braun Llorca at Harvard. Juan Braun, president of Forestal Valparaíso, had also been a doctoral student at Harvard. Manuel Cruzar (CEO of Cruz Blanca) has had a long-term interest in urban policy and economics and received doctorates from both Harvard and the University of Chicago. All three of these men contributed materially to the intellectual as well as to the financial well being of this project. The unusually academic focus of this privately funded project owes much to the unusually academic nature of these three businessmen.

The first stage of the project involved a report (written by Glaeser) on the basic microeconomics of urban development, an essay that touched on all of the topics that appear as separate chapters in this book. Chapter 2 is largely a

condensed version of that first report. Glaeser's goal in that first phase essay was to present in one place the microeconomics of designing more efficient urban policies.

To give more substance and tangibility to the concepts developed during the first phase; a second phase was launched to study the specifics of urban development in Chile. After much discussion, this second phase was organized around specific sectors of urban policy concern: the environment, transportation, housing, infrastructure, and social policies (mainly welfare and education). Specialists in each of these topics were recruited to report on the Chilean experience in each of these sectors. Also, as part of the second phase, all the principal researchers involved in the project made at least one trip to Chile. These were filled with interviews and explorations into the availability and content of data sources. The goals were to get an impressionistic sense of the economic institutions at work in Chile and to acquire needed data. Preparing these data involved not only the authors (and their research assistants) but also members of Forestal Valpaíso and the government of Chile. Specific assistance is acknowledged independently in each chapter, but the project owes an overall debt of gratitude to Anna Maria Sanchez at Forestal Valparaíso, who contributed a great deal of time and enthusiasm. She provided much of the coordination and intelligence needed to transmit data from Chilean sources to researchers' offices at American universities.

Phase two of the project was carried out under the auspices of the Harvard Institute for International Development (HIID). The director of HIID at that time was Professor Dwight Perkins. His help in organizing and initiating the project was indispensable and is gratefully acknowledged. Douglas Keare, then the director of urban studies at HIID, contributed both intellectually and organizationally to the effort.

Several people have contributed at a staff level. Among those helping with the research effort are Alberto Ades and Ana Maria Pavez.

Finally, there is always one staff person who makes sure all the pieces are brought together. In this case it was Paula Holmes Carr, who not only provided vital help but also remained cheerful throughout.

John R. Meyer
Edward L. Glaeser

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Urban Development: The Benefits and Costs of Agglomeration

JOHN R. MEYER AND EDWARD L. GLAESER¹

INTRODUCTION

Cities are important and becoming ever more so. The World Bank, in a policy paper on “Urban Policy and Economic Development: An Agenda for the 1990s” has stated the case as follows:²

Rapid demographic growth will add 600 million people to cities and towns in developing countries during the 1990s, about two-thirds of their expected total population increase. Of the world’s twenty-one megacities, which will expand to have more than ten million people, seventeen will be in developing countries. With urban economic activities making up an increasing share of GDP in all countries, the productivity of the urban economy will heavily influence economic growth.

The importance of cities is not limited to the developing world. In developed or industrialized countries a higher percentage of people live in cities than in the developing world, roughly 75% versus 50%. Moreover, while cities in the industrialized world are not growing as rapidly as those in developing countries, they were no longer in decline in the last decade of the twentieth century as they were earlier in that century. As the *Economist* has observed:³

The populations of the west’s largest cities, in long-term decline for half a century, stopped falling in the 1980s and are now starting to rise again. The populations of London and Paris both dropped by nearly 20% in the 1970s. Yet in the

1. With considerable assistance from all the contributors to this volume, particularly Denise DiPasquale and Joan Cummings.

2. International Bank for Reconstruction and Development; Washington, D.C., 1991.

3. *Survey of Cities* (London: July 29, 1995).

1980s that of Paris leveled out, that of London recovered from 6.7 million in 1981 to around 7 million in 1991.

Even in the U.S., where suburban flight and urban deconcentration have been most marked, urban populations have at least stabilized, and in many instances grown.

All this suggests that the political economy of urban development is a matter of legitimate policy concern all over the world; better understanding of what makes cities grow or decline would be helpful. The ultimate goal, as the World Bank pointed out, would be a better understanding of how to improve the productivity of urban areas and their contribution to overall economic growth. While the study of one medium-sized urban area (Santiago) in one rapidly developing country (Chile) obviously cannot answer all of these questions, it can at least make a beginning. Furthermore, few, if any, major urban areas have received as much intensive attention and analysis as Santiago, or experienced more demographic growth and change.

In 1992, Chile had a population of 13,231,803, according to the Chilean census. Chile's population grew nearly 50% from 1970 to 1992, with most of the growth between 1970 and 1982. Average annual growth slowed from 2.3% during that period to 1.7% in the following decade. The 50% increase represented over 4 million new inhabitants; still, Chile's growth figures are slightly lower than figures for many other South American countries.⁴

Chile is divided administratively into thirteen regions. Metropolitana (R.M.), de Valparaíso (V), and del Bio-bio (VIII) are by far the largest regions (containing Chile's three main cities Santiago, Valparaíso, and Concepción, respectively). In 1992, together they accounted for over 62% of the country's population, with R.M. having 39%. The regional share of the country's population has remained relatively constant since 1970, during South America's significant population growth. While the R.M. grew at a rate slightly faster than average, it did not grow as fast as several other regions, particularly the smaller regions of Tarapacá (I) in the north, which nearly doubled in size, and Aisen (XI) in the south.

Employment growth in Chile has been more dramatic than population growth. While the country's population grew nearly 17% from 1982 to 1992, its employment grew over 42% from 1984 to 1992. Regions I, V, and the R.M. had the largest employment growth. The official unemployment rates reveal a remarkable improvement in the employment scenario countrywide. The offi-

4. For example, from 1965 to 1980, Peru's average annual population growth rate was 2.8%, Bolivia's was 2.5% and Brazil's was 2.4%. In the following period, 1980–1989, Peru's growth rate fell to 2.3%, Bolivia's went to 2.7%, and Brazil's was 2.2% (World Bank 1992, Table 26).

cial national unemployment rate dropped from 19.4% in 1982 to 5.3% by 1989.⁵ This dramatic improvement was realized across all regions.

Chile has quite a high level of urbanization, even in comparison to other developing countries. In 1990, 36% of the country's population lived in Santiago (World Bank 1992). By 1992, the World Bank listed Chile's urbanization level at 86%, sixth among the fifty-two nations in the survey (Singapore, Hong Kong, Israel, the U.K. and the Netherlands came in higher).⁶

An intellectual underpinning for studying the political economy of urban development can be supplied by the basic theorems of welfare economics. These imply, and strongly argue, that independent agents free to make market-driven decisions generally will arrive at an optimal *economic* outcome. Of course, this optimal economic outcome may or may not be construed as optimal in other dimensions, say social or political.

The bulk of this book is devoted to understanding (1) why the conditions of the real world sometimes deviate from the conditions needed to guarantee that free markets create first-best or optimal economic outcomes; and (2) how government involvement can help reduce, but also create, distortions in real-world urban development. Specifically, problems that are either inherent in a market economy or created by government policy are examined to determine what causes undesirable patterns of urban development and to ask what society can do to fix those problems. The focus is on the particular problems of urban and regional development, and especially on those forces causing a misallocation of resources across geographic space.

As discussed at length in Chapter 2, externalities (e.g., pollution or congestion) arising as an unintended by-product of economic activity are major forms of spatial distortions that would exist in a market economy (even without the presence of government). Externalities are a problem for free markets because they involve situations in which one agent's decisions influence another agent's satisfactions or productivity (e.g., an industry produces smog that makes it harder for all to breathe).

But beyond externalities, and present even in well-functioning market economies, are litanies of government-created problems that also can distort urban development patterns. These government-created spatial distortions can include everything from higher tax levels (without higher service levels) being associated with a particular region, to limited availability of govern-

5. The 19.4% unemployment rate is considered an understatement of actual unemployment because the government provided two large employment programs, PEM and POJH, from 1975 to 1988. For example, if workers under these programs are counted as unemployed in 1982, the unemployment rate was 26.4%.

6. World Bank, 1993.

ment services in regions that would happily pay for more such services, to mispricing of basic government-provided goods.

Chapter 2 also investigates some possible solutions to these problems. For example, the usual solutions suggested for externalities, taxing polluters and contracting between affected parties, are discussed at length. Also addressed are ways to solve the problems created by government-induced distortions. Chapter 2 thus provides a very general set of terms and ideas for use throughout the remaining chapters. By contrast, the remaining chapters mainly focus on *particular* aspects of urban development as experienced in one particular country, Chile. An attempt is made to survey the considerations that might condition urban development, ranging from pollution to infrastructure to various public services. The particular selection of topics, of course, reflects Santiago's particular configuration of problems and concerns.

Chapter 3, authored by Matthew Kahn (Tufts University) and Suzi Kerr (Motu Economic Research, New Zealand) is devoted to determining the actual monetary damages created by different pollution sources in Chile, with particular emphasis on air pollution. Kahn and Kerr produce projections of future pollution costs for Santiago that are higher than most predecessor estimates. Only part of the increase comes from projected increases in pollution levels (that occur in spite of toughened regulations). A large part is also a consequence of projected increases in Chilean income (thus causing, for example, higher costs from lost work days).

Santiago's air quality is particularly vulnerable because of its location in a mountain valley. Activities and policies that would cause fairly minor damage in some cities can be nearly catastrophic in Santiago. In addition, Chile as a whole, and Santiago in particular, may be entering an extended period of rapid economic growth. This poses dangers in terms of rapid changes in transport patterns, housing development, and industrial production that could be irreversible. Growth also provides an excellent opportunity to alter incentives to avoid polluting activities at a time when changes would be relatively painless and could have significant benefits in the future. For example, the health damages from a given level of air pollution reflect the amount of exposure suffered by people particularly sensitive or vulnerable to such pollution, e.g. asthmatics, the elderly, and others with breathing problems. If people do not know the nature and severity of the pollution problem, they cannot take proper actions to protect themselves. If people had better information (were fully aware of the level of risk they faced on different days in different areas) and were aware of the possible measures they could take to protect themselves, the overall damage from pollution could be reduced. Various policies are therefore proposed by Kahn and Kerr for better informing people about the damage of pollution.

Externalities also result in pollution costs that are higher in Santiago than is socially optimal. The externalities largely arise because people do not bear the full costs of their actions. Correctly pricing activities that cause pollution not only would be economically efficient but also would put the cost of controlling pollution on the people who cause pollution and have the power to remedy it.

In Chapter 4, Amrita G. Daniere (University of Toronto) and José A. Gomez-Ibanez (Harvard University) assess how the provision of water, sewage, solid waste disposal, and telecommunications services might influence urban development patterns in Chile. They conjecture that these services might distort the location decisions of Chilean households and businesses in two ways. First, *access* to these services may be restricted or limited in certain areas; for example, new water or telephone connections may not be available at any price to land developers at some locations because the water and telephone agencies lack the capacity or resources. Second, the *prices* charged for these services may not reflect the true costs of providing them at certain locations.

Analyses by Daniere and Gomez-Ibanez suggest that water and sewage provision in Chile are more likely to cause locational distortions than solid waste disposal or telecommunications. In particular, water and sewage services are probably underpriced by about US \$70 per household per year in the Santiago metropolitan area (because of the health problems caused by the failure to provide sewage treatment of water subsequently used to irrigate crops) and by US \$20 to US \$40 per household per year in cities of the extreme north and south (due to the failure to charge the full costs of supplying water). Although charges for solid waste disposal are typically far below social costs throughout Chile, the subsidy probably amounts to only about US \$12 to US \$14 per household per year in most Chilean cities. Local telephone charges are probably slightly above cost in larger urban areas and below costs in rural areas, but the degree of overcharge or subsidy is difficult to determine. The effect of the rural telephone subsidy also has been partially offset, at least until recently, by limited access to new lines in rural areas. Moreover, emerging technologies and intensifying competition are likely to further reduce any location distortions caused by telephone service.

In Chapter 5, John F. Kain (Harvard University and the University of Texas, Dallas) and Zhi Liu (World Bank) begin by observing that pre-1970 regulations of intercity and urban transportation reduced Chilean incomes and growth rates. They found it much more difficult to be certain about the impacts of these policies on the location of economic activity within Chile, but offer the guarded opinion that these regulations disadvantaged outlying regions more than the nation's urban centers, particularly Santiago.

Kain's and Liu's analyses also suggest that the Chilean Government has under-invested in roads, both intercity and urban. The net effect of this under-investment may have been to encourage more growth in the country's large metropolitan areas, and especially its largest, Santiago, than would otherwise have occurred. The effects on national income and growth, moreover, are quite clear-cut: under-investment in roads almost certainly has acted as a drag on the nation's competitiveness and its internal development. The analysis also suggests that between 1970 and 1980 the government spent too much to subsidize state-owned railways and the government-owned intercity bus company. The nation's welfare would have been improved if these funds had been used for other public purposes with a higher rate of return (including the improvement of the nation's highway system).

The government's investment in Santiago's metro also has some fairly unambiguous implications for Chile's regional development pattern. Because the entire capital costs for the first metro lines were paid by the central government, the net impact on regional economic activity of building the metro was almost certainly to encourage the growth of employment, income, and population in Santiago and to slow growth in other regions.

The impact of the metro on the spatial arrangement of activity within Greater Santiago was to create higher residential dispersal and lower residential densities. In addition, the metro may have encouraged many office activities (that might have otherwise remained in the central area) to relocate at a series of office sub-centers located along the first metro line. The metro facilitated a dispersal of central area functions by providing fast and reliable connections to government offices and private firms in the old center.

Kain's and Liu's analyses also confirm the results of other studies concerning the strong link between per capita or household income and private vehicle ownership and use. Assuming that Chilean incomes continue to grow, rapid increases in car ownership and use are almost certain. Kain and Liu find, like Kahn and Kerr, that without fees for road and street use that reflect the long-run social costs of providing additional capacity, this increased car ownership and use will cause serious problems, including congestion and pollution. Rising congestion, in turn, will increase average trip times and the per trip cost of providing road-based public transport services.

There are essentially two approaches to trying to prevent congestion from degrading public transport speeds and reliability. The first, which is practiced in varying degrees in cities throughout the world, uses a variety of physical restrictions on private car use to protect public transport from growing automobile-induced congestion. At best, these various administrative and physical restraints are usually less than fully efficient; that is, second best in an economic sense.

Congestion pricing is (at least in concept) a far preferable and potentially “first best” or fully efficient approach. At least two congestion-pricing schemes deserve close attention. The first is a simple cordon-pricing scheme, where a cordon around the central business district is demarcated, and a special fee is charged for entry. A scheme such as this has been operating in Singapore since the 1970s. The second would be a sophisticated electronic road pricing system that would allow pricing to be applied over a much wider area and would allow prices to be varied by facility, location, and time of day.

Experience in many parts of the world suggests that serious congestion in the core of large cities tends to accentuate population and employment decentralization. Thus, a failure to deal effectively with congestion could result in a more extended and lower density metropolitan region than would occur if congestion pricing were introduced to achieve more optimal use of urban streets and roads. In general, congestion is a hugely inefficient way of allocating street space. Implementation of congestion pricing could reduce the cost of trip making for most highway users and make an urban region more attractive to households and businesses.

In Chapter 6, Jean Cummings and Denise DiPasquale⁷ explore the spatial implications of housing policy in Chile. The Chilean Government intervenes extensively in the housing market. While virtually all residential construction is carried out by the private sector, about 42% of residential construction in the 1980s and 1990s had direct public subsidy. If mortgage subsidies and other indirect subsidies are considered, the government is involved in an even larger portion of the housing market. All government programs focus exclusively on homeownership, which has resulted in Chilean cities typically having a home ownership level of over 80%, one of the highest in the world.

Cummings and DiPasquale evaluate two types of distortions: interregional and intraregional. For the interregional, they examine the extent to which government policy influences the location decisions of households among the thirteen official regions of the country. For the distribution of publicly subsidized units and expenditures on these units, the interregional spatial distortions seem to be quite small. To the extent that there are distortions, more resources tend to be allocated to remote areas of the country, at the extreme north and south, than to urban areas. In fact, this might be quite intentional, motivated by political and national security considerations. Regional disparities are more apparent in the distribution of housing vouchers; specifically, the Santiago region received a notably higher share of both vouchers and voucher expenditures than would be expected from its share of

7. The authors conducted this research at Harvard University and are now at City Research, a Boston consulting group.

the country's population or from governmental estimates of regional housing deficits.

Serious intraregional spatial distortions are generated, however, mainly by government housing policies within Greater Santiago. As in many countries, subsidized housing in Santiago is often located on the fringes of the city where land is cheapest. Generally, housing policymakers consider only the construction and land costs when siting subsidized housing. But these are not the total costs of locating the poor at fringe locations. Other costs can be quite significant, including those for commuting, infrastructure, congestion, and pollution.

Cummings and DiPasquale attempt to quantify some of these other costs. Specifically, they present rough estimates of what the magnitude of these other costs must be in order to justify the higher land costs associated with more central locations for subsidized units. They find that in many cases recognition of these other costs would make more central locations viable. This suggests, in turn, that the selection criteria for siting subsidized housing should consider total costs rather than just land and construction costs. Furthermore, government should consider moving away from very large projects at the periphery to smaller, scattered, and more centrally located sites for publicly subsidized construction.

Cummings and DiPasquale also suggest that the exclusive focus of government programs on homeownership should be reconsidered. This focus results in relatively large subsidies being provided to some households with others receiving none. In addition, the emphasis on homeownership may limit household mobility, since moving costs are usually considered to be higher for owners than for renters.

In Chapter 7, Edward Glaeser (Harvard University) examines the spatial distortions created by social welfare programs and how to structure political institutions to eliminate these distortions. Specifically, he addresses those externalities that are created by the government providing at varied locations (1) different levels of social welfare programs and (2) inappropriate levels of government services. The role of social welfare programs in creating spatial distortions is obvious both in the United States and across the less developed world. In the United States, for example, spatial distortions can arise when central cities vote redistributive programs that then induce the wealthy to migrate to politically independent suburbs. In the less developed world, countries (such as Chile in the 1960s) often provide increased social welfare programs (such as health or education) in the capital city. As a result, the poor of the country migrate to the capital. These spatial distortions can have strongly adverse repercussions.

The major empirical findings in Chapter 7 are that while social welfare

programs may have created large spatial distortions in Chile in the past, they do not seem to do so today. Primary schooling, secondary schooling, and health expenditures all seem essentially space neutral in Chile. There is some evidence that university-level education creates a spatial distortion favoring Santiago, but if the universities in the capital are truly centers of excellence, and therefore more productive than universities elsewhere in Chile, this allocation may be efficient. In short, while government transfers may have fueled Santiago's rise in the 1960s or earlier, subsequent reforms have eliminated most of the spatial distortions that once existed in those programs.

Chile, nevertheless, has shown a remarkably slow development of small cities for a country with its rate of economic development. A simple comparison with similar economies elsewhere reveals that Chile seems to have a major problem creating new smaller cities. This failure of urban entrepreneurship may be the result of the centralization of authority within Santiago. New locations do not have the latitude to provide the services needed and therefore do not encourage growth. This lack of liberty or free opportunity at the local level seems to be one of the primary spatial distortions now operating in Chile.

In order to look at this phenomenon more rigorously, a comparison was made of the formation of new cities in Chile and California. The state of California has had less economic growth (starting from a higher base) than Chile over the past twenty years. Its population has grown slightly more in percentage terms. However, in many respects the two areas are at least geographically comparable. They also represent extremes in local government. California is a highly decentralized environment where small cities have an easy time incorporating themselves and funding future growth.

Tables 1-1 and 1-2 show the growth of new cities in California and Chile between 1970 and 1990. The cutoff point for cities in each area was 100,000 inhabitants. *Comuna* was used as the definition of city for Chile, except for Santiago, which was counted as a single city. In 1990 Chile had twelve cities with more than 100,000 inhabitants. California had twenty such cities. Between 1970 and 1990 Chile acquired eight more cities with more than 100,000 inhabitants. This number might seem large, except that over the same period California acquired more than twenty more cities with over 100,000 inhabitants. California had a spectacular rise in the production of new communities; Chile was stagnant. While this evidence does not illustrate any direct social costs of the Chilean system, it does show that the way local government is treated, and the amount of freedom it is allowed may make a great deal of difference to the development of new cities.

In sum, a *prima facie* case can be made that areas of Chile remain undeveloped because of difficulties in organizing new communities. Customarily,