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Urbanisation and Rural–Urban Migration: Theory and Policy

7

In this chapter, we focus on one of the most complex and nuanced dilemmas of the development process: the phenomenon of massive and historically unprecedented movements of people from the rural countryside to the burgeoning cities of Africa, Asia, and earlier in Latin America. The developing world is on its way to becoming as urban as today's developed world in the next few decades, bringing both new opportunities and new challenges.

In Chapter 6, we documented the extraordinary increase in world and especially developing-country populations over the past few decades. According to a 2019 UN estimate, by 2050 the world population is expected to reach 9.7 billion people. A substantial majority of that population growth will be concentrated in the cities of low- and middle-income countries—and in coming decades increasingly in the least-developed countries.

According to estimates by the UN Population Division, by 2009, for the first time in human history, the number of people globally living in urban areas surpassed the number living in rural areas. By some measures, even the developing countries became more-than-half urban on average by 2019. Rapid urban growth has wide consequences—from land use, housing, and roads, to food security, health facilities, and schools—that can lead to severe, if not intractable, problems if not addressed proactively. In many cases, the result has been urban growth without economic development.

After reviewing trends and prospects for overall urban population growth, we examine in this chapter the potential role of cities—both the modern sector and the urban informal sector—in fostering economic development. We find that many countries and individual cities have made extraordinary gains by leveraging their potential, facilitated by implementing supportive public policies while avoiding counterproductive ones. Yet in many other countries these opportunities have been largely missed. While many countries urbanise as a result of positive benefits of efficiency, in other cases, countries urbanise for different reasons, or prematurely.

While there is a continuum of developing country city characteristics, it is useful to consider two kinds of urbanisation. The first type is a productive, development-leading city, featuring rapid productivity gains and dynamic knowledge spillovers, that at the same time offers many amenities to its residents. The second type is a development-diverting city, which has been termed a "consumption city," though many of its inhabitants find the experience to be more of a survival city. One characteristic is that an unusually large part of their rapid expansion is natural—that is, much urban population growth comes

from continued relatively high numbers of births per woman among urban households.[1]

We then turn to a well-known model of rural–urban migration in the context of relatively high modern-sector wages and high urban unemployment and underemployment.

In the final section, we focus on two main policy challenges. First, to help moderate the flow of rural-to-urban migration when it becomes excessively heavy; and to ameliorate the serious unemployment and particularly underemployment problems that continue to plague many cities. We find that some of the most efficient solutions are to address problems in rural areas, in addition to altering policies in urban areas. Second, to better harness the potential dynamism and productivity of developing cities for rapid and inclusive economic development. We examine policy options that governments in developing countries may wish to pursue in their attempts to improve the benefits and contain the costs of urbanisation.

This chapter's case study looks at some patterns of migration in India and Botswana.

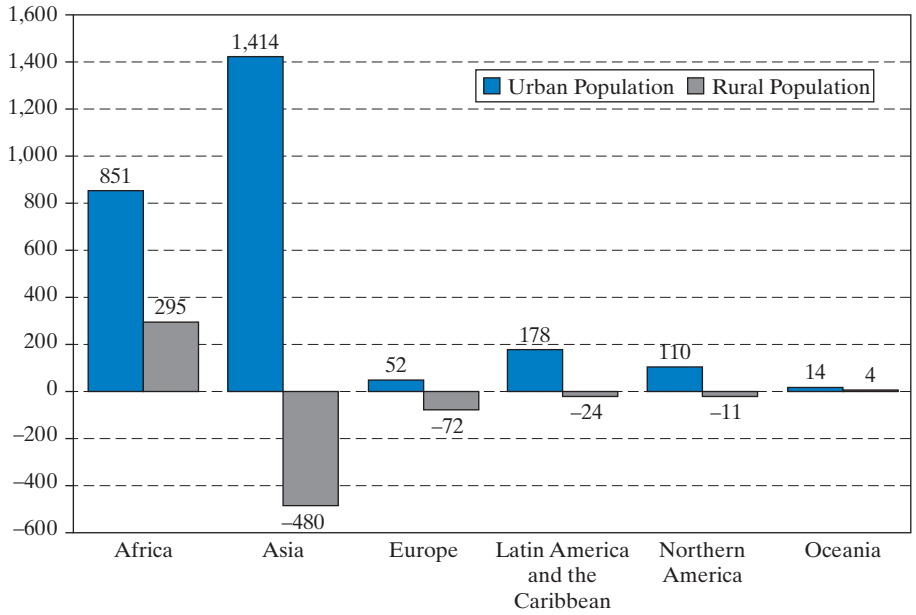
7.1 Urbanisation: Trends and Living Conditions

People are increasingly living in cities. UN Population Division data show that the world's urban population grew from 751 million in 1950 to 4.2 billion in 2018. Just under half of these live in cities of 500,000 people or fewer; but 1 in 8 live in 33 megacities with a population of 10 million people or more. The number of megacities is growing, and, by 2030 there will be 43 megacities, most located in developing countries, according to UN projections.

The urbanisation rate increases whenever urban population growth exceeds rural population growth. As of 2019, even outside the high-income OECD countries, a little over half of all people were living in urban areas. By 2050, the number of people living in cities is projected to increase further, to 7.7 billion people, approximately the same number as total global population in 2019. The increase is driven, in part, by general population growth (although fertility is usually typically less in cities than in rural areas), plus rural-to-urban migration. Rural-to-urban migration is occurring so rapidly in Asia that total rural population will fall by hundreds of millions of people by 2050, as seen in Figure 7.1.[2]

The positive association between urbanisation and per capita income is one of the most obvious and striking "stylised facts" of the development process. Urbanisation rates increase whenever urban population growth exceeds rural population growth. Generally, the more developed the country, measured by per capita income, the greater the share of population living in urban areas. The black linear fit line in Figure 7.2 shows urbanisation versus the log of 2010 GNI per capita; the highest-income countries, such as Japan, are also among the most urbanised, while the very poorest countries, such as Burundi, are among the least urbanised. Urbanisation is proceeding rapidly. According to UN projections, there will be almost 5 billion urban dwellers by 2030, nearly five-eighths of projected world population for that year. The projected 2030 urban population

FIGURE 7.1 Changes in Urban and Rural Population by Major Areas Between 2011 and 2050 (In Millions)



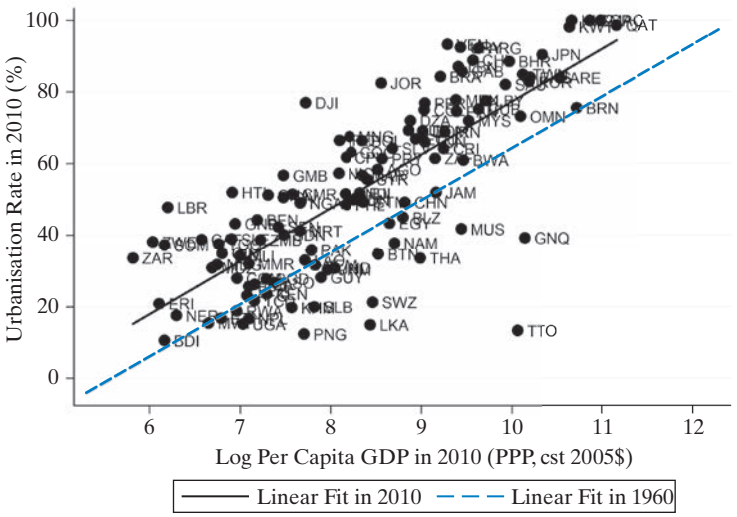
Source: United Nations (2011), 'Africa and Asia to lead urban population growth in the next four decades,' press release, http://esa.un.org/unup/pdf/WUP2011_Press-Release.pdf. Reproduced by permission of United Nations Publications.

of Africa of 748 million will be larger than the entire 685 million population of Europe.

At the same time, while individual countries become more urbanised as they develop, today's poorest countries are far more urbanised than today's developed countries were when they were at a comparable level of development, as measured by income per capita. Returning to Figure 7.2, the dashed blue linear fit line shows the relationship between income per capita and urbanisation that prevailed in 1960. A comparison of the two lines reveals that for any given income in 2010, a country that had the identical income in 1960 was significantly less urbanised (on average and in most cases).

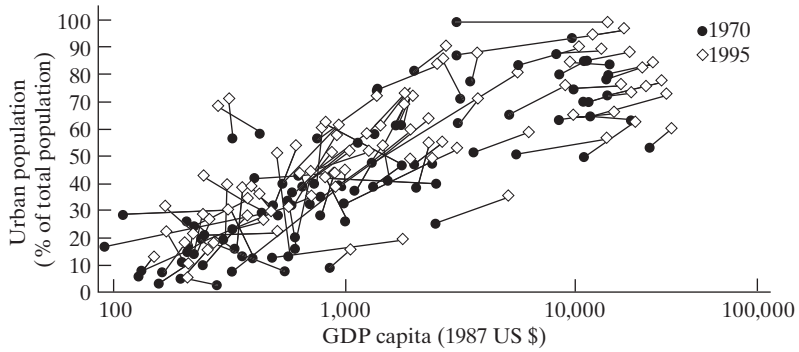
In recent decades urbanisation has continued in nearly all developing countries, even those that have experienced only minimal industrialisation. Figure 7.3 shows urbanisation over time and across income levels over the quarter century from 1970 to 1995. Each line segment represents the trajectory of one country, starting from the solid dots, which represent the 1970 income and urbanisation level for a given country and ending at the end of the line segments (marked by a diamond), which represent the corresponding 1995 income and urbanisation level for the same country. Although the World Bank caption to the figure stated that "urbanisation is closely associated with economic growth," the figure may also be interpreted as showing that urbanisation is occurring everywhere, at

FIGURE 7.2 Relationship Between Urbanisation and Per Capita GDP, 2010, with Comparison to Relationship in 1960



Sources: Christiaensen, Luc, Jedwab, Remi, Lanjouw, Peter and Seold, Harris (2014), 'Urbanisation and poverty reduction,' draft working paper (special thanks to Remi Jedwab). Data sources: Maddison (2008), United Nations (2011), and World Bank (2013).
Note: This figure shows the relationship between the urbanisation rate and the log per capita of GDP, in 2,005 PPP, for 119 developing countries in 2010. The solid line is a linear fit for the data in 2010. The dashed line is a linear fit for the data in 1960 (the scatter plot is not shown for 1960).

FIGURE 7.3 Proportion of Urban Population by Region, 1970–1995



Source: The United Nations is the author of the original material. *World Urbanisation Prospects: The 2009 Revision*. © 2009 United Nations. Reproduced with permission.

high and low levels of income and whether growth is positive or negative. Even when the lines point to the left, indicating shrinking incomes per capita over the period, they still generally point upward, indicating that urbanisation continued. In short, urbanisation is happening everywhere in the world, although at differing rates.

Thus, it becomes clear that urbanisation is not driven solely by income. In addition, some countries with approximately the same income level are significantly more or less urbanised, partly due to differing domestic policies. So we need to consider urbanisation carefully—is it only correlated with economic development, or is causation also at work?

Indeed, one of the most significant of all modern demographic phenomena is the rapid growth of cities in developing countries. In 1950, some 275 million people were living in cities in the developing world, 38% of the 724 million total urban population; by 2018, the world's urban population had surpassed 4.2 billion, with over three-quarters of all urban dwellers living in metropolitan areas of low- and middle-income countries. The United Nations forecasts that, by 2050, over two-thirds of the global population—close to 6.5 billion people—will live in urban areas. Most urban growth will take place in developing countries, challenging their abilities to adjust to rapid structural change.

Precise urban population sizes are uncertain. It is not straightforward to answer "how urban is the world" at any point in time. The UN uses urbanisation rates as reported by member governments, which leads to some inconsistencies. Few argue that urbanisation is substantially lower than the UN's 2018 global estimate of 55%, although somewhat lower estimates are suggested by household surveys in which half or more of the workforce in some areas that countries classify as urban report that they perform at least some agricultural labour. On the other hand, a controversial 2018 study using satellite imagery proposed much higher estimates for urbanisation rates in Asia and Africa than officially reported figures, though there are reasons to think that approach produces excessive estimates.[3]

The lines between rural and urban are fuzzy, particularly in Africa and Asia. What is all but certain is that the long-run development future is urban. With the UN projecting that an additional two billion people will migrate from rural to urban areas by 2050, and some studies predicting high natural population growth increases within cities in Africa, it makes sense to plan for continued historically rapid urban growth.

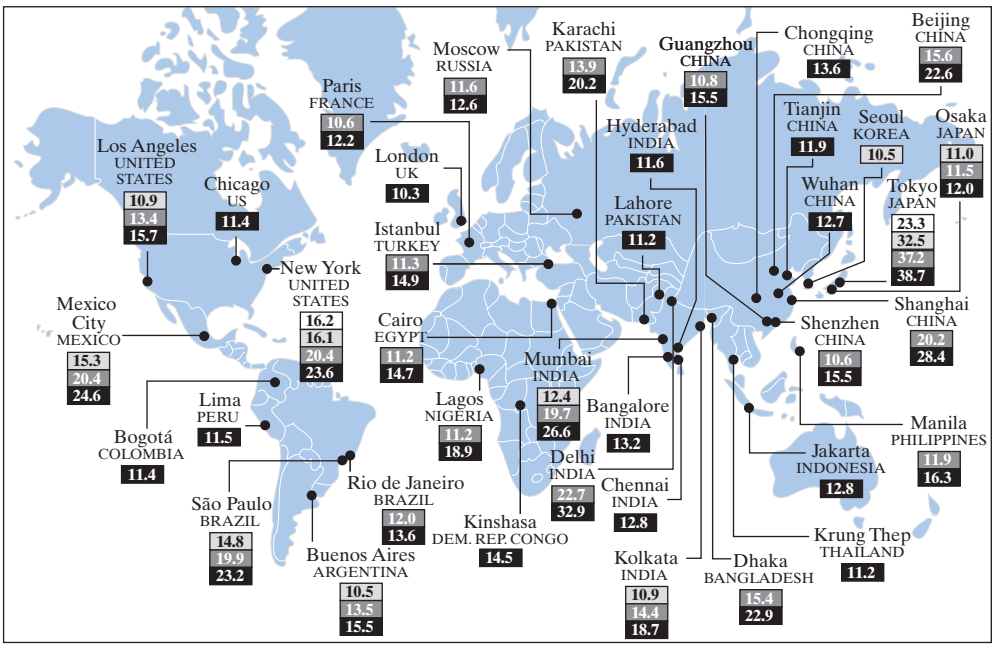
It should also be borne in mind that population is only one dimension of the size of a city that matters for efficiency and quality of life; other important metrics include the land area, floor area, total income, and value of output. Data are limited, but developing country cities clearly are sometimes large in population but comparatively smaller in other dimensions.

While in a significant number of cases the speed at which the share of urban population has increased in developing countries in the late twentieth and early twenty-first century is not much faster than in many of the developed countries when they were urbanising in the late nineteenth century, nonetheless shares of urban population are being reached, particularly in Africa, at lower levels of per capita income than at a comparable stage in developed countries (again, see Figure 7.2). Relatedly, urbanisation in Africa is not associated with

industrialisation, as it was in the now-developed countries. Moreover, in most regions of the developing world, because population is so much larger, the sheer numbers of people coming into the city is unprecedented. Also unprecedented are the very large sizes of individual cities at such low levels of income per capita. The largest cities in developed countries in the past were much smaller than the large cities of developing countries today.

Although a majority of developing-country urban growth will be found in cities of less than 5 million people, it is also the case that population growth in cities of over 5 million in population is more rapid than growth of smaller cities (under 500,000) in the developing world. In fact, according to the UN, by 2025 only about half the urban population will be in cities with less than half-a-million people, the lowest fraction ever. Moreover, the developing world is also coming to dominate the world's largest cities, including the megacities with over 10 million inhabitants. Figure 7.4 provides a map locating megacities, the largest urban agglomerations in the world containing a population of at least 10 million people. As the figure shows, in 1970 there were only 2 megacities, but

FIGURE 7.4 Megacities: Cities with 10 Million or More Inhabitants



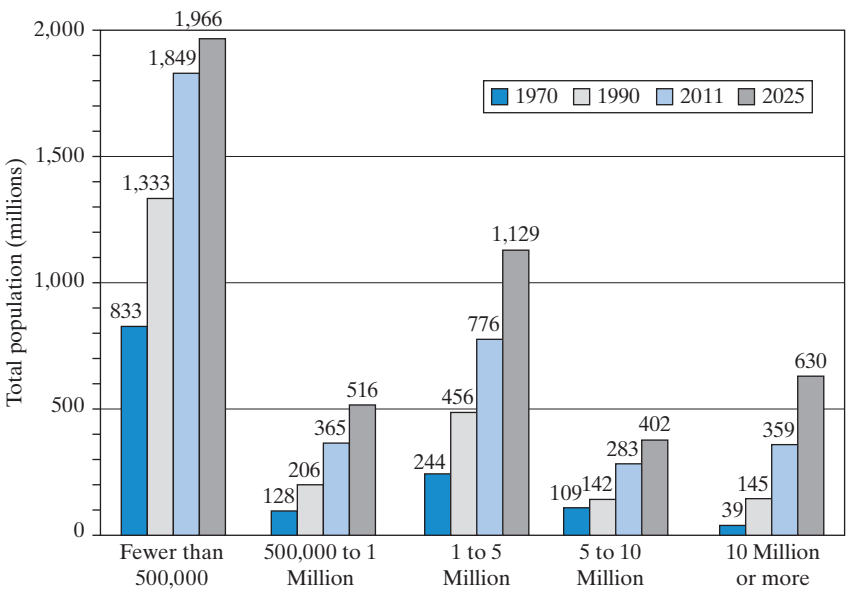
Source: Data drawn from United Nations Population Division, *World Urbanisation Prospects: The 2011 Revision* (New York: United Nations, 2011), at http://esa.un.org/unup/pdf/WUP2011_Highlights.pdf

by 1990 there were 10, by 2011 there were 23, and, by 2018 there were 33 such metropolises. The UN forecasts that "by 2030, the world is projected to have 43 megacities, most of them in developing regions." Jakarta will have overtaken Tokyo as the largest urban agglomeration. Karachi, Manila, and Cairo will round out the top five.[4]

Based on numbers of people, the small and medium cities in developing countries have added more residents than the megacities. But while the number living in cities of fewer than 500,000 will more than double (grow by 2.4 times) from 1970 to 2025, the number in megacities will increase by *16 times*, from 39 million to 630 million. Figure 7.5 presents total urban populations in millions by different city sizes for 1970, 1990, and 2011, with projections to 2025. In 2011, more people lived in megacities of over 10 million than in cities from 5 to 10 million people in size. In principle, a megacity could offer large agglomeration economies, although congestion costs may rise rapidly. Another potential downside is that megacities tend to be more capital intensive, which does not match with the comparative advantage of most developing countries. Megacities, particularly in low-income countries, may also have outsized social and health problems. The relative balance of these factors is likely to differ across countries depending on the forces that led these cities to reach their megascales.

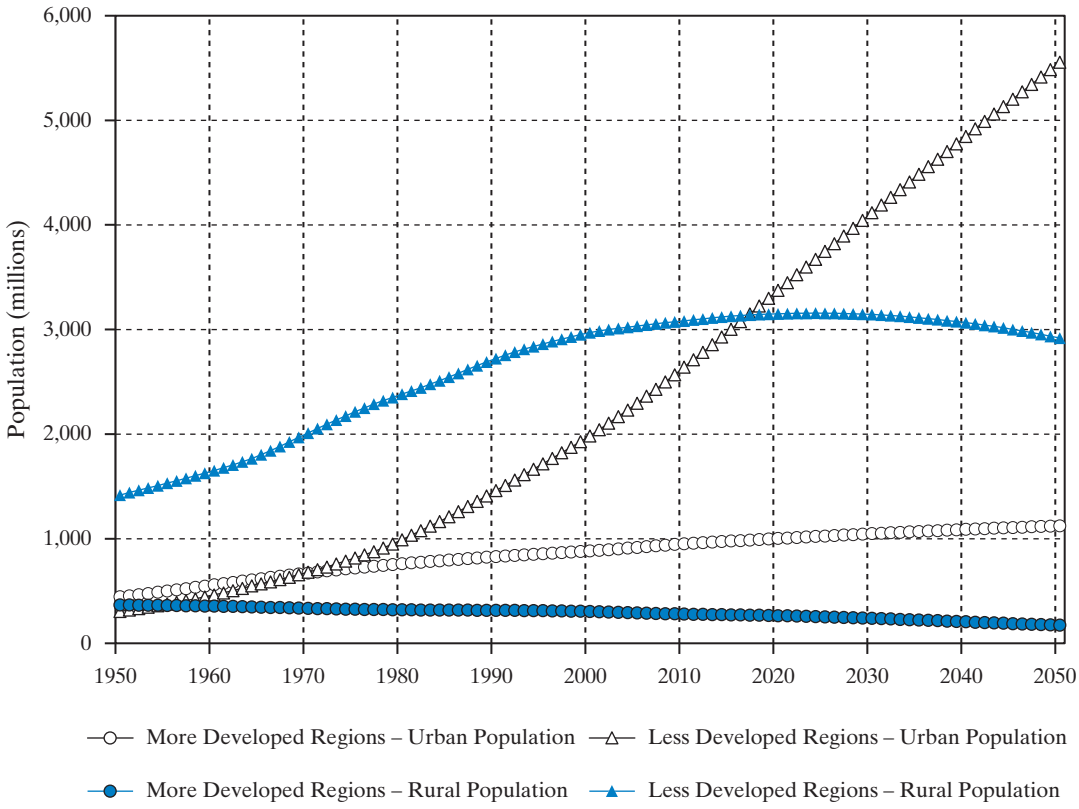
Moreover, as Figure 7.6 shows, going forward, almost all of the increments to the world's population will be accounted for by the growth of urban areas

FIGURE 7.5 Total Population in Millions by City Size Class, 1970, 1990, 2011, and 2025



Source: United Nations Population Division, *World Urbanisation Prospects: The 2011 Revision* (New York: United Nations, 2011), http://esa.un.org/unup/pdf/WUP2011_Highlights.pdf

FIGURE 7.6 Estimated and Projected Urban and Rural Population of the More- and Less-Developed Regions, 1950–2050



Source: United Nations, Department of Economic and Social Affairs, Population Division (2018). World Urbanisation.

as migrants continue moving into the cities from rural areas and as urbanisation rates in the developing world continue to approach those of the developed world.

A central question related to the unprecedented size of these urban agglomerations is how these cities will cope—economically, environmentally, and politically—with such high and rapidly rising concentrations of people. While it is true that cities offer the cost-reducing advantages of agglomeration economies and economies of scale and proximity, as well as numerous economic and social externalities (e.g., skilled workers, cheap transport, social and cultural amenities), for many analysts the social costs of increasingly overloaded housing and social services, not to mention increased crime, pollution, and congestion, can outweigh these historical urban advantages.[5]

Along with the rapid spread of urbanisation and the **urban bias** in development strategies has come a prolific growth of huge slums and shantytowns. From the *favelas* of Rio de Janeiro and the *pueblos jovenes* of Lima to the *bustees* of Kolkata and the *bidonvilles* of Dakar, such makeshift communities have been growing rapidly. Today, at least one billion people live in urban slum settlements,

Urban bias The notion that most governments in developing countries favour the urban sector in their development policies, thereby creating a widening gap between the urban and rural economies.

representing nearly 30% of the urban population in all developing countries. This average overlooks wide variation, with more than half the urban population of sub-Saharan Africa living in slums, but a much smaller fraction in China.[6]

The importance of addressing this problem has been enshrined in the Sustainable Development Goals. SDG Goal 11 is to "make cities and human settlements inclusive, safe, resilient and sustainable," with its Target 1—to be achieved by 2030—"to ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums."

Allowing that simple extrapolation of trends would tend to significantly overstate the problem, UN-Habitat has noted that such trends would point to a slum population of as large as 3 billion people in 2050.

Rural–urban migration
The movement of people from rural villages, towns, and farms to urban centres (cities) in search of jobs.

Although population growth and accelerated **rural–urban migration** are chiefly responsible for the explosion in urban shantytowns, part of the blame rests with governments. Their misguided urban-planning policies and outmoded building codes often mean that a majority of new urban housing is "illegal." For example, colonial-era building codes in Nairobi, Kenya, made it impossible to build an "official" house for less than $3,500. The law has also required every dwelling to be accessible by car. As a result, two-thirds of Nairobi's land has been occupied by 10% of the population, while many slum dwellings cannot legally be improved. Similarly, in Manila, Philippines, a large majority of the population has historically been too poor to be able to buy or rent an officially "legal" house.[7] In fact, a widely held belief in some developing countries is that governments have intentionally sought to make the lives of new migrants as miserable as possible, hoping this will be an effective deterrent to prospective migrants; but when people come to cities despite such restrictions, slums are the inevitable result. But often even government's best efforts to neglect, discriminate against, or even destroy slums are not enough to cancel out the many other distortions in disregarded, economically stagnant, or all too often socially oppressive rural areas. In the face of high risks, and sometimes traumatic outcomes, migrants remain, making strenuous efforts and, in many cases, improving their conditions over time.

Statistics show that rural migrants constitute anywhere from 35% to 60% of recorded urban population growth. About three-quarters of developing countries responding to UN surveys indicated that they had initiated policies to slow down or reverse their accelerating trends in rural–urban migration, and/or desire to do so.[8]

A critical issue that needs to be addressed is the extent to which national governments can formulate development policies that can have a definite impact on trends in and the character of urban growth. It is clear that the emphasis on industrial modernisation, technological sophistication, and metropolitan growth created a substantial geographic imbalance in economic opportunities and contributed significantly to the accelerating influx of rural migrants into urban areas faster than would have otherwise occurred. Is it possible or even desirable now to attempt to influence these trends by pursuing a different set of population and development policies? Rapid urban growth and accelerated rural–urban migration will undoubtedly continue to be one of the most important development and demographic issues of the coming decades. And in urban areas, the growth and development of the informal sector, as well as its role and limitations for labour absorption and economic progress, will assume increasing importance.

Before examining other problems and policy approaches in developing-country cities more closely, let us first consider the potential advantages offered by cities. Urban areas have played a highly constructive role in the economies of today's developed countries, and they offer huge and still significantly untapped potential to do the same for developing countries. A detailed look at the informal sector in developing cities will give an idea of its potential as an engine of growth. We also consider in more detail what has been different—and what has gone wrong—with urban development and the rapid pace of rural–urban migration in many developing countries. We conclude with a look at constructive policies to help cities foster successful urban development while at the same time giving more balanced treatment to development in rural areas.

7.2 The Role of Cities

What explains the strong association between urbanisation and development? To a large degree, cities are formed because they provide cost advantages to producers and consumers through what are called **agglomeration economies**. As noted by Walter Isard, these agglomeration economies come in two forms. **Urbanisation economies** are effects associated with the general growth of a concentrated geographic region. **Localisation economies** are effects captured by particular sectors of the economy, such as finance or automobiles, as they grow within an area. Localisation economies often take the form of backward and forward linkages of the type introduced in Chapter 4. When transportation costs are significant, users of the outputs of an industry may benefit from a nearby location to save on these costs. This benefit is a type of forward linkage. In addition, firms of the same or related industries may benefit from being located in the same city, so they can all draw on a large pool of workers with the specific skills used in that sector or from specialised infrastructure. This is a type of backward linkage. Workers with specialised skills appropriate to the industry prefer to be located there as well so that they can easily find a new job or be in a position to take advantage of better opportunities.

Agglomeration economies
Cost advantages to producers and consumers from location in cities and towns, which take the form of urbanisation economies and localisation economies.

Urbanisation economies
Agglomeration effects associated with the general growth of a concentrated geographic region.

Localisation economies
Agglomeration effects captured by particular sectors of the economy, such as finance or autos, as they grow within an area.

7.2.1 Industrial Districts

An economic definition of a city is "an area with relatively high population density that contains a set of closely related activities." Firms often also prefer to be located where they can learn from other firms doing similar work. Learning takes place in both formal relationships, such as joint ventures, and informal ones, such as from tips learned in evening social clubs or over lunch. These spillovers are also agglomeration economies, part of the benefits of what Alfred Marshall called "industrial districts," and they play a big role in Michael Porter's "clusters" theory of competitive advantage.[9] Firms located in such industrial districts also benefit from the opportunity to contract-out work easily when an unusually large order materialises. Thus, a firm of modest size does not have to turn down a big job due to lack of capacity—an arrangement that provides "flexible specialisation."[10] Further, firms may wish to operate in well-known districts for the marketing advantages of locating where company procurers and household consumers of their goods know to shop to get the best selection.

It may not matter as much where such industrial districts are located as that they somehow got an early start there, perhaps because of a historical accident. For example, in the United States, many innovative computer software and other technology firms located in Silicon Valley, California, simply because other such firms were already located there. Analogously, suppliers to shoe firms located in the Sinos Valley in southern Brazil and in Guadalajara in Mexico because so many shoe firms located in those regions. Some of the benefits are gained simply by the fact of location—Khalid Nadvi has termed this "passive collective efficiency"—but other benefits must be achieved through collective action, such as developing training facilities or lobbying government for needed infrastructure as an industry rather than as individual firms ("active collective efficiency").[11] Most dramatically, industrial districts have emerged and rapidly upgraded in China.

A growing body of evidence shows that industrial clusters are increasingly common in developing countries, at stages of industrial development ranging from cottage industry to advanced manufacturing techniques, and appear to be significant factors in emerging industrial competitiveness. Nevertheless, the dynamism of these clusters has varied widely. Some of the identified districts are traditional clusters of artisans that have shown little ability to innovate, export, or expand. But such groupings often remain one-family microenterprises with little division of labour or use of modern techniques. Producers in a village are better off sharing a common specialisation than producing a random assortment of goods, in part because intermediaries work with villages with a high concentration of producers in their sector. But such traditional producers sometimes benefit little from "internal" divisions of labour within the firm, producing a largely complete product within the household and remaining at very low productivity and incomes. For example, a small town in Kenya may have a dozen or more families fabricating wheelbarrows, each family starting with timber and a few simple purchased metal inputs and producing a final product for sale. Nevertheless, clustering can generate more specialised employment in the rural nonfarm sector, as in the rural hand-loom weaver clusters of Ethiopia, in which microentrepreneurs share a work space, take part in a finer division of labour, and benefit from trade credits for working capital.[12]

In some cases, traditional township specialisations have evolved into more developed clusters, with still modest size but somewhat larger firms using a more detailed division of labour, such as a group of wheelbarrow producers with some specialisation, each employing a few workers. Eventually, the cluster might expand in scope and become a low-tech metal-products industrial district selling products throughout the country as the town grows into a small city. These clusters are reminiscent of the industrial districts of developed countries but require that sufficient financing be gathered to invest in core firms using somewhat larger-scale capital goods. But note that clusters of some sophistication can emerge in an otherwise fairly rural but densely populated area. As manufacturing has progressed in China, there has been a dramatic emergence of specialised clusters, to the point where they have now become pervasive, as detailed in Box 7.1.

As Hermine Weijland found in her study of Java, Indonesia, "It needs only a few fortunate years of market expansion to create gains from externalities and joint action."[13] She cites as examples local clusters that have upgraded and now competitively produce such goods as roof tiles, rattan furniture, cast metal, and

BOX 7.1 Findings: The Emergence of Industrial Districts or Clusters in China

Prior to the 1980s, industry in China was state-owned, and factories were dispersed geographically for military defence. Beginning in 1980, Special Economic Zones such as Shenzhen were created to attract foreign firms in many industries; domestic firms sold inputs to them, but not as clusters. Township and village enterprises (TVEs) then emerged, initiated outside of local governments but "vaguely owned" by them. TVE managers usually tried a variety of activities, and early 1990s field research found little evidence that firms in the same or related industries were locating in close proximity to each other. But starting in the mid-1990s, TVEs rapidly privatised, and a combination of competition, responses to credit constraints, an abundance of entrepreneurial talent, and supportive local policies led to the emergence of localised industrial clusters. But like other Chinese institutions (see the case study in Chapter 4), some may ultimately prove "transitional."

The Zhili Township children's garment cluster studied by Fleisher and colleagues saw "a significant rise in specialisation and outsourcing among firms." Median investment to start a business more than doubled, but bank loans remained unnecessary as many entrepreneurs generated sufficient savings. Accordingly, many firms entered, and after 2000, wages rose and profitability fell. In response, firms selling directly to markets sought to "signal their commitment to product quality"—nearly half by establishing trademarks and nearly a fifth achieving International Organisation for Standardisation (ISO) certification. Meanwhile, quality of subcontractors was "monitored by their outsourcing partners." Social capital is critical, Fleisher and colleagues concluded: "Clustering within established communities where long-time relationships among family and neighbours prevail offers an institutional substitute for court enforcement of contractual relationships among borrowers and lenders and between outsourcing firms and their subcontractors." They also reported that "township government has imposed safety regulations in response to major industrial accidents" and helped "prevent a destructive 'race to the bottom' in terms of product quality and employee safety" where markets failed to do so.

From firm surveys in the Puyuan cashmere sweater district, Ruan and Zhang found that state-owned banks rarely gave loans to small and medium-size enterprises. But small firms borrowed from relatives and friends and gave and received credit from buyers and sellers, so clusters lowered "capital barriers to entry through the division of labour, enabling individuals to choose the appropriate type of specialisation according to their capital portfolio," while a deeper division of labour allowed "people with different talents and endowments to find their own positions." Similar conclusions followed from a study of the world's largest footwear cluster in Wenzhou.

With a detailed analysis of 1995 and 2004 firm census data, Long and Zhang confirmed that "China's rapid industrialisation is marked by increased clustering." Their research supported the conclusion that clustering of firms relaxed credit constraints through "two mechanisms: (1) within a cluster, finer division of labour lowers the capital barriers to entry, and (2) closer proximity makes the provision of trade credit among firms easier." They found that clusters use more "entrepreneurs and labour, and less . . . capital, compared to non-clustered large factories" and thus followed comparative advantage. They noted that clusters could be useful in countries facing a "scarcity of capital and an inefficient financial system." However, they cautioned, "clustering may be a second-best solution to the financing problem when the local conditions do not permit easy access to regular financing." Thus clustering, like TVEs, might be a transitional form until financial markets deepened, formal contract enforcement could be provided, and larger investments would be needed.

Sources: Fleisher, Belton, Hu, Dinghuan, McGuire, William and Zhang, Xiaobo (2010), 'The evolution of an industrial cluster in China,' *China Economic Review*, 21(3): 456–69; Huang, Zuhui, Xiaobo Zhang, and Yunwei Zhu. "The role of clustering in rural industrialisation: A case study of Wenzhou's footwear industry." *China Economic Review* 19 (2008): 409–420; Cheryl Long and Xiaobo Zhang, "Cluster-based industrialisation in China: Financing and performance," *Journal of International Economics*, Vol. 84, Issue 1, May 2011, pp. 112–23. Washington, D.C.: International Food Policy Research Institute, 2009; Ruan, Jianqing, and Xiaobo Zhang. "Credit constraints, organisational choice, and returns to capital: Evidence from a rural industrial cluster in China." IFPRI Discussion Paper No. 830. Washington, D.C.: International Food Policy Research Institute, 2008; Ruan, Jianqing, and Xiaobo Zhang. "Finance and cluster-based industrial development in China." *Economic Development and Cultural Change* 58 (2009): 143–164.

textiles. Similarly, Dorothy McCormick concluded from a study of six representative clusters in Africa that "groundwork clusters prepare the way; industrialising clusters begin the process of specialisation, differentiation, and technological development; and complex industrial clusters produce competitively for wider markets."[14] In some cases, the evidence suggests that coordination failures are not overcome, and so there may be a role for government policy in encouraging the upgrading of clusters. In other cases, it is the government itself that shares blame for cluster stagnation when it enforces irrational and stifling regulations, which are far more damaging than the usual policy of benign neglect toward nascent clusters in the informal sector. Examples of clusters in developing countries that are widely considered successful include surgical instruments in Sialkot, Pakistan, and software in the Bengaluru (Bangalore) area in India. Clusters of all kinds, however, and particularly those producing for the local market, face substantial challenges from globalisation and trade liberalisation.

Again, not all of the collective efficiency advantages of an industrial district are realised through passive location. Others are actively created by joint investments and promotional activities of the firms in the district. One factor determining the dynamism of a district is the ability of its firms to find a mechanism for such collective action. While the government can provide financial and other important services to facilitate cluster development, **social capital** is also critical, especially group trust and a shared history of successful collective action, which requires time to develop. The state (including local government) can help by bringing parties together and helping them gain experience in cooperating on more modest goals before tackling larger ones, but social capital normally grows organically in an economic community and cannot be created by fiat. Even with collective action to supplement passive benefits of agglomeration, traditional clusters may not survive in their current form into more advanced stages of industrialisation. Nonetheless, as Hubert Schmitz and Khalid Nadvi note, even if transitional, districts in the informal sector may still play a crucial role in mobilising underused human and financial resources. They argue that clustering enables entrepreneurs to focus on selected stages of the production process, while other producers focus on their own specialised stages. Thus, even though the overall capital needs of a cluster may be too large for individual investors, each small producer individually needs only raise rather modest quantities of investment and working capital.[15]

Social capital The productive value of a set of social institutions and norms, including group trust, expected cooperative behaviours with predictable punishments for deviations, and a shared history of successful collective action, that raises expectations for participation in future cooperative behaviour.

Statistical estimates show that benefits of agglomeration can be quite substantial in practice.[16]

7.2.2 Efficient Urban Scale

Localisation economies do not imply that it would be efficient for all of a country's industries to be located together in a single city. These economies extend across closely related industries, such as those with strong backward and forward linkages, but there are fewer productivity benefits for unrelated industries to locate together. One notable benefit is the potential spillover from technological progress in one industry to its adaptation for different uses in another industry. The density of cities can facilitate the transfer of knowledge more generally, human capital can "spill over" beyond a single cluster.[17]

But there are also some important **congestion** costs. The higher the urban density, the higher the costs of real estate. It is much more expensive to build vertically than horizontally, increasingly so as skyscraper scale is reached, so that when market forces work properly, tall buildings are built primarily when urban land costs become high. In large urban areas, workers may find themselves with longer and longer commutes and greater transportation costs and may demand higher wages to cover these costs; and they may need to live in cramped quarters or share a roof with many others because of high housing costs. In addition, the costs of infrastructure such as water and sewer systems are higher in concentrated urban areas. In theory, if costs of transportation of finished goods are high and consumers wish to be located in the largest city to avoid paying those transportation costs as much as possible, economic activity could become indefinitely concentrated within a city (called the "black hole" effect), but it is generally much less costly to improve the transportation system of a country than to pay the costs of maintaining a gargantuan urban complex. Under competitive forces, and other things being equal, if workers are mobile, a worker in a large city with higher wages but higher costs of living (such as higher housing prices) is no better off in real material terms than a worker with comparable education, experience, ability, and health in a small city who has lower wages and lower costs of living.[18]

Congestion An action taken by one agent that decreases the incentives for other agents to take similar actions. Compare to the opposite effect of a complementarity.

Thus, the concentrating, or "centripetal," forces of urban agglomeration economies are opposed by the dispersing, or "centrifugal," forces of diseconomies featuring increasing costs with greater concentration, because some of the factors of production, most obviously land, are not mobile. We can "create" more central city land by building skyscrapers, but only to a certain scale and only at substantial cost. Thus, it is normal for an economy to have a range of cities, with sizes dependent on the scale of the industries it sponsors and the extent of localisation economies found for that industry or cluster of industries.

Two well-known theories of city size are the urban hierarchy model (central place theory) and the differentiated plane model.[19] In the urban hierarchy model, originated by August Losch and Walter Christaller, plants in various industries have a characteristic market radius that results from the interplay of three factors: economies of scale in production, transportation costs, and the way the demand for land is spread over space. The larger the economies of scale in production and the lower the transportation costs, the larger the radius of territory that will be served by that industry to minimise costs. In contrast, if the price of real estate is bid up to high levels in the resulting cities, this will tend to create smaller radii. As a result, small cities contain activities with short market radii,

while large cities emerge to contain activities of both small and large radii. Generally speaking, activities of a national scope, such as government and finance, will be located in a single city (though not necessarily the same large city because of the effect of congestion costs). Clearly, the urban hierarchy approach applies better to nonexport industries than to export industries. When countries have different specialisations in the international market or are at different stages of economic development, the size distribution of cities may potentially differ. For example, a developing country that still overwhelmingly specialises in agriculture might reasonably have one or two large cities serving national industries such as finance and government and many smaller towns serving local agricultural areas. A country with a highly differentiated manufacturing and service base might have a large number of medium-size cities.

In the differentiated plane model, originated by Alfred Weber, Walter Isard, and Leon Moses, the limited number of transportation routes linking the industries within an economy plays a key role. The model predicts urban concentrations at the points where the scarce transportation routes cross, called "internal nodes." The hierarchy of urban sizes depends on the pattern of nodes and the industrial mix. Primary processing industries have few inputs and are usually located near the source of the primary resource. However, there will also be incentives for industries with strong backward or forward linkages to locate in the same city.

Of course, there is nothing inherently wrong with very large cities *per se*—even megacities have some special productive advantages in a global economy.[20] But the *distortions* that have led to the outsize cities prevalent in developing countries have been costly and problematic.

7.3 Understanding Urban Giants: Causes and Consequences

In the case of developing countries, the main transportation routes are often a legacy of colonialism. Theorists of the dependency school (see Chapter 3) have compared colonial transportation networks to drainage systems, emphasising ease of extraction of the country's natural resources. In many cases, the capital city will be located near the outlet of this system on the seacoast. This type of transportation system is also called a "hub-and-spoke system," which is especially visible when the major city is located in the interior of the country. Many nations inherited a hub-and-spoke system from colonial times, including many in Africa and Latin America, which also facilitated movement of troops from the capital to the outlying towns to suppress revolts.

The differentiated plane approach emphasises the lasting impact of historical accidents. In this case, it helps explain where the most oversized cities are found in the developing world and suggests where policies of urban decentralisation may be most helpful. Note that not all countries inherited such a hub-and-spoke system; Germany did not; the United States did not, in part because it is the result of the merger of 13 separate British colonies, which retained some measure of local autonomy, as did the federal states of Germany. The recent development of the United States makes the emergence of cities such as Atlanta from the crossing of transportation routes especially clear, but the same principle has applied

elsewhere over longer historical periods. Of course, as nations become wealthy, they generally build better transportation systems.

Sometimes one urban core becomes too large to keep the costs of the industries located there to a minimum. In developed countries, other cores are often developed within the broad metropolitan region, enabling the region as a whole to continue to receive benefits of agglomeration while lowering some of the costs; or new cities may develop in entirely different parts of the country. But this creation of new urban cores does not happen automatically if there are advantages to locating where other firms and residents are already present. This is another chicken-and-egg coordination problem of the type described in Chapter 4. Who will be the pioneer if it is less costly to stay where you are and wait for other pioneers to settle in the new city first? In economic terms, the agglomeration economies of cities are externalities, which must somehow be internalised or the market will fail. How can this be done?

In the United States, developers frequently internalise the externality by creating a new "satellite city" or "edge city" within a metropolitan area, financing and building a new centre where land is still relatively inexpensive, perhaps 10 to 50 kilometres from the original urban core. This takes place within a context of public oversight in the form of zoning regulations and inducements such as tax breaks. In developing countries, however, capital markets generally do not work well enough for this process of development to take place. In Europe, the public sector plays a much larger role in coordinating new towns and large developments.

In developing countries, however, governments are less involved in the dispersal of economic activity to more manageable sizes or, if they are involved, are often less effective. For example, government may seek to disperse industry without regard to the nature of agglomeration economies, giving incentives for dispersal but no attention to clustering relevant industries together—a problem seen in industrial parks in Pakistan. And, all too often, the incentives are for firms to concentrate in the capital city or other "urban giants." A key problem of countries such as Peru and Argentina is that their giant capitals, each with over one-third of the national population, suffer from enormous levels of congestion, but adequate midsize cities that might provide alternative locations for growth are lacking. A well-designed infrastructure development programme, including more efficient links between medium-size cities and better roads, utilities, and telecommunications within these cities, can help alleviate this problem.

7.3.1 First-City Bias

A form of urban bias that has often caused considerable distortions might be termed *first-city bias*. The country's largest or first ("first-place") city receives a disproportionately large share of public investment and incentives for private investment in relation to the country's second-largest city and other smaller cities. As a result, the first city receives a disproportionately—and inefficiently—large share of population and economic activity.

Most outsized first cities are found in low- and middle-income countries. France is the only developed OECD country with a ratio of its largest to second-largest city population greater than 3.5. But there are at least

37 developing countries with such ratios, including Afghanistan (with a ratio of 7.5:1), Angola (10:1), Argentina (9.7:1), Chile (6.9:1), Côte d'Ivoire (8.7:1), Congo (9.7:1), Ethiopia (8.9:1), Madagascar (7.9:1), Malaysia (7.6:1), Mali (7.1:1), Paraguay (10.3:1), Peru (11.5:1), Philippines (7.8:1), Senegal (8.3:1), and Thailand (7.4:1). Another indicator of an outsized city is the share of total urban population living in the single largest city. For several countries, this ratio exceeds 60%, including DR Congo, Mongolia, and Paraguay; for many others, the share exceeds 40%, such as Cambodia, Egypt, and Peru.[21]

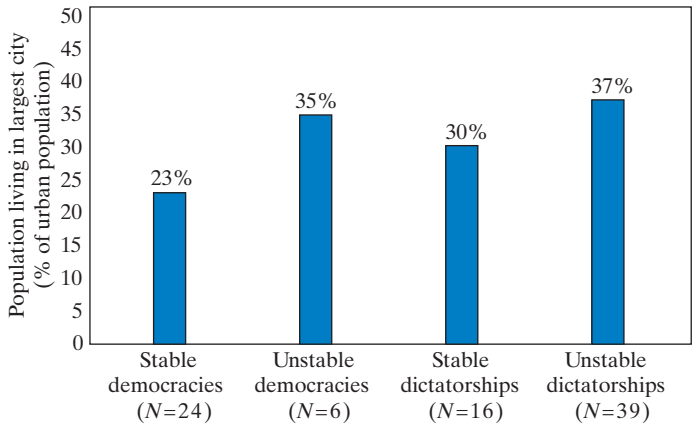
7.3.2 The Political Economy of Urban Giants

Why have first cities often swelled to such a large multiple of second cities in developing countries? Overall, urban giantism probably results from a combination of a hub-and-spoke transportation system and the location of the political capital in the largest city. This is further reinforced by a political culture of rent seeking and the capital market failures that make the creation of new urban centres a task that markets cannot complete. Other more detailed explanations also generally involve unfortunate consequences of political economy (see Chapter 11). One argument, featured in the work of Paul Krugman, stresses that under import substitution industrialisation (see Chapter 12), with a high level of protection, there is much less international trade, and population and economic activity have an incentive to concentrate in a single city, largely to avoid transportation costs. Thus, firms wish to set up operations in the city where the most consumers already live, which attracts more people to the region in search of jobs and perhaps lower prices (made possible because there are fewer transport costs to be passed on to consumers and perhaps by economies of larger store size and specialised sales districts); this concentration in turn attracts still more firms and consumers in a circle of causation. However, when trade barriers are reduced, the incentive to focus production on the home market is also reduced, and exporters and their suppliers have much less incentive to be located in the country's biggest population centre. This moves production toward ports and borders, or elsewhere in the country, to escape the excessive congestion costs of the largest city.[22]

Another explanation for urban giants focuses on the consequences of dictators' efforts to remain in power. As Figure 7.7 shows, on average, a much larger share of a country's urbanised population (37%) lives in the first city in unstable dictatorships than in stable democracies (23%). In interpreting this finding, Alberto Ades and Edward Glaeser argue that unstable dictatorships (fearing overthrow) must provide "bread and circuses" for the first city (usually the capital) to prevent unrest; this extreme urban bias in turn attracts more migrants to the favoured city and a still-larger need for bread and circuses. It should be noted that although the authors attempt to control for reverse causality, it may still be the case that unstable dictatorships also tend to emerge in countries with high first-city concentrations.[23]

In the developing world, until recently, relatively few countries were effective democracies. Until the democratisation waves began in the 1980s, most developing countries had authoritarian governments of one form or another. To remain in power and prevent popular uprisings and coups, which were generally

FIGURE 7.7 Politics and Urban Concentration



Source: Data from Alberto F. Ades and Edward L. Glaeser, "Trade and circuses: Explaining urban giants," *Quarterly Journal of Economics* 110 (1995): 196. Copyright © 1995 by the President and Fellows of Harvard College and the Massachusetts Institute of Technology.

Note: $N =$ number of countries in group.

thought to be most threatening when launched from the capital city, governments had an incentive to "buy off" the population of the largest city. This focus of national government spending on the capital city is the bread-and-circuses effect, recalling the phrasing of "rent-sharing" policies in ancient Rome in its period of expansion. The availability of better opportunities, whether the equivalent of the grain handouts in ancient Rome or jobs, wages, infrastructure, and other government services concentrated in the capital city of many of today's developing countries, attracts an ever-growing migrant population, in turn leading to larger precautionary government spending as the fear of political instability grows.

Another political economy factor contributes to capital city giantism: it becomes advantageous for firms to be located where they have easy access to government officials, to curry political favour from a regime that can be induced to give companies special favours for a price or that simply demands bribes to function at all. The resulting first-city giantism may be viewed as a form of underdevelopment trap, which may be escaped fully only with a return to democratic rule together with a better balance of incentives to compete for exports as well as home consumption. Democracy does not eliminate political benefits of location in the national capital, but while lobbyists still congregate in the political capital, there may be less incentive for production to become overconcentrated there. Moreover, a free press tends to expose corruption and generate public pressure to root it out, as recent experience in many democratising countries in Latin America and East Asia makes clear.

The explanations for urban giantism—production for the home market in the face of high protection and transport costs, few adequate smaller cities as

alternative locations for firms reflecting infrastructure patterns, location of the capital in the largest city, and the political logic of unstable dictatorships—are complementary and help explain some of the advantages of democracies with more balanced economic policies, including well-planned investments in infrastructure. Such countries are able to avoid some of the costs of urban giantism.

Finally, special factors may lead to high costs of doing business elsewhere in the country. There is an incentive to locate in the capital where personal security is highest in countries in or emerging from conflict, such as the Democratic Republic of Congo. And firms may be responding primarily to costs and risks resulting from extortion, greater corruption, or civil unrest in rural areas and small cities, as well as bad infrastructure. The swelling of the urban giant can therefore also be a symptom of binding constraints on development elsewhere in the country that growth diagnosticians can learn from (see Chapter 4). This may suggest priority policies to help overcome a nation's particular problems of high costs of operating outside the primate city. In recent years, Mexico City has been growing more slowly than the Mexican population as a whole, so that its share of the national population is also slowly becoming reduced.

With our better understanding of the causes of outsized primate cities, it becomes clear that this feature is not inevitable. Indeed, if trends toward greater democracy, reduced incidence of coups, increased outward-looking policies, and improved prospects of solving and preventing civil conflicts are maintained, the ratios of largest to second-largest cities where urban giantism has prevailed are likely to continue to decrease.

7.4 The Urban Informal Sector

As noted in Chapter 3, one focus of development theory has been on the dualistic nature of developing countries' national economies—the existence of a modern urban capitalist sector geared toward capital-intensive, large-scale production and a traditional rural subsistence sector geared toward labour-intensive, small-scale production. This dualistic analysis has also been applied specifically to the urban economy, which has been decomposed into a formal and an informal sector.[24]

Informal sector The part of the urban economy of developing countries characterised by small, competitive, individual or family firms, petty retail trade and services, labour-intensive methods, free entry, and market-determined factor and product prices.

The existence of an unorganised, unregulated, and mostly legal but unregistered **informal sector** was recognised in the 1970s, following observations in several developing countries that massive additions to the urban labour force failed to show up in formal modern-sector unemployment statistics. The bulk of new entrants to the urban labour force seemed to create their own employment or to work for small-scale family-owned enterprises. The self-employed were engaged in a remarkable array of activities, ranging from hawking, street vending, letter writing, knife sharpening, and junk collecting to selling fireworks, prostitution, drug peddling, and snake charming. Others found jobs as mechanics, carpenters, small artisans, barbers, and personal servants. Still others were highly successful small-scale entrepreneurs with several employees (mostly relatives) and higher incomes. Some could even eventually graduate to the formal sector, where they became legally registered, licensed, and subject to government

labour regulations. With the unprecedented rate of growth of the urban population in developing countries expected to continue and with the increasing failure of the rural and urban formal sectors to absorb additions to the labour force, more attention is being devoted to the role of the informal sector in serving as a panacea for the growing unemployment problem.

The informal sector continues to play an important role in developing countries, despite decades of benign neglect and even outright hostility. In many developing countries, about half of the employed urban population works in the informal sector. For example, in India, the urban informal sector comprises 28.5% of employment in Kolkata, 46.5% in Ahmedabad, 49.5% in Mumbai, 53.8% in Chennai, 61.4% in Delhi, and 65.5% in Bangaluru.

The informal sector is characterised by a large number of small-scale production and service activities that are individually or family-owned and use simple, labour-intensive technology. They tend to operate like monopolistically competitive firms with ease of entry, excess capacity, and competition driving profits (incomes) down to the average supply price of labour of potential new entrants. The usually self-employed workers in this sector have less formal education, are generally unskilled, and lack access to financial capital. As a result, worker productivity and income tend to be lower in the informal sector than in the formal sector. Moreover, workers in the informal sector do not enjoy the measure of protection afforded by the formal modern sector in terms of job security, decent working conditions, and old-age pensions. Many workers entering this sector are recent migrants from rural areas, unable to find employment in the formal sector. Their motivation is often to obtain sufficient income for survival, relying on their own indigenous resources to create work. As many members of the household as possible are involved in income-generating activities, including women and children, and they often work very long hours. A large fraction inhabit shacks and small cinder-block houses that they themselves have built in slums and squatter settlements, which generally lack minimal public services such as electricity, water, drainage, transportation, and educational and health services. Many are vulnerable to cyclones (hurricanes), storm surges, mudslides, and other disasters caused by extreme weather—of the type predicted to substantially worsen with climate change (see Chapter 10). Others are even less fortunate—homeless and living on the pavements. They find sporadic temporary employment in the informal sector as day labourers and hawkers, but their incomes are insufficient to provide even the most rudimentary shelter.

7.4.1 Policies for the Urban Informal Sector

In terms of its relationship with other sectors, the informal sector is linked with the rural sector in that it allows excess labour to escape from extreme rural poverty and underemployment, although under living and working conditions and for incomes that are often not much better. It is closely connected with the formal urban sector: the formal sector depends on the informal sector for cheap inputs and wage goods for its workers, and the informal sector in turn depends on the growth of the formal sector for a good portion of its income and clientele.

Informal-sector incomes have remained persistently higher than those in the poorest rural regions, despite the continued flow of rural–urban migration. The Nobel laureate Sir Arthur Lewis in the 1950s viewed traditional-sector

workers—petty traders such as newspaper hawkers—as unproductive and essentially engaged in distractions from the main urban work of industrialisation. But if wages are persistently higher in very competitive activities such as urban informal work than in rural work, this likely reflects higher productivities as well. Consequently, a revisionist view espousing the constructive role of cities (which includes their informal sectors) in economic development has taken hold. This approach has been championed by the Dar es Salaam–based UN-Habitat, in its "State of the World's Cities" reports.[25] The 2001 report systematically criticised what it termed the "anti-urban bias of the development agencies." Acting on the strong development tradition, beginning with the Lewis scepticism of the urban informal sector, developed with the Todaro migration model (examined later in this chapter), which emphasised the negative consequences of urban bias for both efficiency and equity, continuing with the influential work of the integrated rural development school of the 1970s, and recast and reemphasised under the Wolfensohn and subsequent presidencies at the World Bank, development agencies have indeed stressed rural development rhetorically. Many scholars have concluded, however, that this rhetoric often goes untranslated into real resources for the rural areas, so that any pro-rural bias of development agencies is typically little more than a partial correction to the overriding forces for urban bias. However, the renewed focus on the development role of cities is an important trend. Besides UN-Habitat, the World Bank and other agencies have placed increasing emphasis on improved urban development.[26] The new focus is on how to make cities in developing countries more dynamic engines of growth and more livable environments, and it promises to be one of the more important streams of emerging research and policy analysis in economic development in coming years. In any case, while medium-size cities undoubtedly deserve greater attention for the constructive role they play in the development process, this does not obviate the problem of overconcentration of activities in first-city urban giantism.

The important role that the informal sector plays in providing income opportunities for the poor is clear. There is some question, however, as to whether the informal sector is merely a holding ground for people awaiting entry into the formal sector and as such is a transitional phase that must be made as comfortable as possible without perpetuating its existence until it is itself absorbed by the formal sector, or whether it is here to stay and should in fact be promoted as a major source of employment and income for the urban labour force, or some combination. The answer is likely to differ by country. A 2012 study by Isabel Günther and Andrey Launov found that for the case of Cote d'Ivoire, about half of those working in the informal sector fell into each category of "opportunity" or "last resort."[27]

In support of the latter view, the formal sector in developing countries often has a small base in terms of output and employment. To absorb future additions to the urban labour force, the formal sector must be able to generate employment at a very high rate. This means that output must grow at an even faster rate, since employment in this sector increases less than proportionately in relation to output. This sort of growth seems highly unlikely in view of current trends. Thus, the burden on the informal sector to absorb more labour will continue to grow unless other solutions to the urban unemployment problem are provided.

The informal sector has demonstrated its ability to generate employment and income for the urban labour force. As pointed out earlier, it is already absorbing an average of 50% of the urban labour force. Some studies have shown the informal sector generating almost one-third of urban income.

Several other arguments can be made in favour of promoting the informal sector. First, scattered evidence indicates that the informal sector generates surpluses even in a hostile policy environment that denies it access to the advantages offered to the formal sector, such as credit, foreign exchange, and tax concessions. Thus, the informal sector's surplus could provide an impetus to growth in the urban economy. Second, as a result of its low capital intensity, only a fraction of the capital needed in the formal sector is required to employ a worker in the informal sector, offering considerable savings to developing countries so often plagued with capital shortages. Third, by providing access to training and apprenticeships at substantially lower costs than provided by formal institutions and the formal sector, the informal sector can play an important role in the formation of human capital. Fourth, the informal sector generates demand for semiskilled and unskilled labour, whose supply is increasing in both relative and absolute terms and is unlikely to be absorbed by the formal sector with its increasing demands for a skilled labour force. Fifth, the informal sector is more likely to adopt appropriate technologies and make use of local resources, allowing for a more efficient allocation of resources. Sixth, the informal sector plays an important role in recycling waste materials, engaging in the collection of goods ranging from scrap metals to cigarette butts, many of which find their way to the industrial sector or provide basic commodities for the poor. Finally, promotion of the informal sector would ensure an increased distribution of the benefits of development to the poor, many of whom are concentrated in the informal sector.

Promotion of the informal sector is not, however, without its disadvantages. One of the major disadvantages in promoting the informal sector lies in the strong relationship between rural–urban migration and labour absorption in the informal sector. Migrants from the rural sector have both a lower unemployment rate and a shorter waiting period before obtaining a job in the informal sector. Promoting income and employment opportunities in the informal sector could therefore aggravate the urban unemployment problem by attracting more labour than either the desirable parts of the informal or the formal sector could absorb. Furthermore, there is concern over the environmental consequences of a highly concentrated informal sector in the urban areas. Many informal-sector activities cause pollution and congestion (e.g., pedicabs) or inconvenience to pedestrians (e.g., hawkers and vendors). Moreover, increased densities in slums and low-income neighbourhoods, coupled with poor urban services, could cause enormous problems for urban areas. Any policy measures designed to promote the informal sector must be able to cope with these various problems. Finally, it is an almost universal observation that when regular formal-sector employment becomes available, many informal-sector microentrepreneurs switch sectors to take these jobs—clear evidence of "revealed preference."

Because access to skills plays an important role in determining the structure of the informal sector, governments should facilitate training in the areas that are most beneficial to the urban economy. In this way, the government can play

a role in shaping the informal sector so that it contains production and service activities that provide the most value to society. Specifically, such measures might promote legal activities and discourage illegal ones by providing proper skills and other incentives. They could also generate taxes currently now go unpaid.

The lack of capital is a major constraint on activities in the informal sector. The provision of credit would therefore permit these enterprises to expand, produce more profit, and hence generate more income and employment. Microfinance institutions have been leading the way in providing enhanced credit access (see Chapter 15). Access to improved technology would have similar effects. Providing infrastructure and suitable locations for work (e.g., designating specific areas for stalls) could help alleviate some of the environmental and congestion consequences of an expanded informal sector. Finally, better living conditions must be provided—if not directly, then by promoting growth of the sector on the fringes of urban areas or in smaller towns where the population will settle close to its new area of work, away from the urban density. Promotion of the informal sector outside the urban areas may also help redirect the flow of rural–urban migration, especially if carried out in conjunction with the policies discussed later in this chapter.

7.4.2 Women in the Informal Sector

In some regions of the world, women predominate among rural–urban migrants and may even comprise the majority of the urban population. Though historically many of these women are simply accompanying their spouses, a growing number of women in Latin America, Asia, and Africa migrate to seek economic opportunity. With the exception of the export enclaves of East Asia and a few other cities, where everything from computers to clothing and running shoes are manufactured, only a small minority of these migrants is able to find employment in the formal sector, which is generally dominated by men. As a consequence, women often represent the bulk of the informal-sector labour supply, working for low wages in unstable jobs with no employee or social security benefits. The increase in the number of single female migrants has also contributed to the rising proportion of urban households headed by women, which tend to be poorer, experience tighter resource constraints, and retain relatively high fertility rates. The changing composition of migration flows has important economic and demographic implications for many urban areas of the developing world.

As UN-Habitat noted for its *State of Women in Cities 2012/2013*:

> Urban women supposedly enjoy greater social, economic, political opportunities and freedoms than their rural counterparts. However, the notable gender gaps in labour and employment, decent work, pay, tenure rights, access to and accumulation of assets, personal security and safety and representation in formal structures of urban governance, show that women are often the last to benefit from the prosperity of cities.[28]

Because members of female-headed households are generally restricted to low-productivity, informal-sector employment and experience higher dependency burdens, they are more likely to be poor and malnourished and less likely to obtain formal education, health care, or clean water and sanitation, often remaining effectively excluded from government services. Dropout rates from school

among children from households headed by women are much higher because the children are more likely to be working to contribute to household income.

Many women run small business ventures or microenterprises that require little or no start-up capital and often involve the marketing of homemade foodstuffs and handicrafts. Though women's restricted access to capital leads to high rates of return on their tiny investments, the extremely low capital–labour ratios confine women to low-productivity undertakings. Studies in Latin America and Asia have found that where credit is available to women with informal-sector microenterprises, repayment rates have equalled or exceeded those for men (see Chapter 15). And because women are able to make more productive use of capital and start from a much lower investment base, their rates of return on investments often surpass those for men.

Despite the impressive record of these credit programmes, they remain limited. The majority of institutional credit is still channelled through formal-sector agencies and, as a result, women generally find themselves ineligible for even small loans. Government programmes to enhance income in poor households will inevitably neglect the neediest households so long as governments continue to focus on formal-sector employment of men and allocation of resources through formal-sector institutions. To solve the plight of poor urban women and their children, it is imperative that efforts be made to integrate women into the economic mainstream. Ensuring that women benefit from development programmes will require that women's special circumstances be considered in policy design.

The legalisation and economic promotion of informal-sector activities, where the majority of the urban female labour force is employed, could greatly improve women's financial flexibility and the productivity of their ventures. However, to enable women to reap these benefits, governments must repeal laws that restrict women's rights to own property and conduct financial transactions. Likewise, barriers to women's direct involvement in technical training programmes and extension services must be eradicated. Finally, the provision of affordable child care and family-planning services would lighten the burden of women's reproductive roles and permit them a greater degree of economic participation.

7.5 Migration and Development

As noted earlier in the chapter, rural–urban migration has been dramatic, and urban development plays an important role in economic development. Rates of rural–urban migration in developing countries have exceeded rates of urban job creation and thus have surpassed greatly the absorption capacity of both industry and urban social services.

Migration worsens rural–urban structural imbalances in two direct ways. First, on the supply side, internal migration disproportionately increases the growth rate of urban job seekers relative to urban population growth, which itself is at historically unprecedented levels because of the high proportion of well-educated young people in the migrant system. Their presence tends to swell the urban labour supply while depleting the rural countryside of valuable human capital. Second, on the demand side, urban job creation is generally more difficult and costly to accomplish than rural job creation because of the need for substantial complementary resource inputs for most jobs in the industrial sector. Moreover, the pressures of rising urban wages and compulsory

employee fringe benefits in combination with the unavailability of appropriate, more labour-intensive production technologies means that a rising share of modern-sector output growth is accounted for by increases in labour productivity. Together, this rapid supply increase and lagging demand growth tend to convert a short-run problem of resource imbalances into a long-run situation of chronic urban surplus labour.

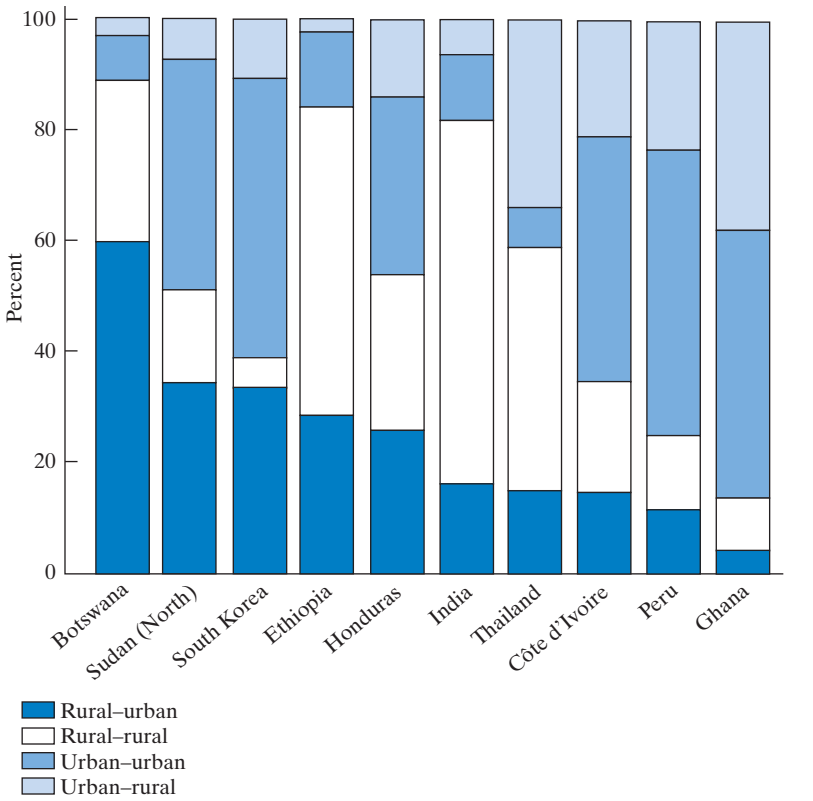
But the impact of migration on the development process is much more pervasive than its exacerbation of urban unemployment and underemployment. In fact, the significance of the migration phenomenon in most developing countries is not necessarily in the process itself or even in its impact on the sectoral allocation of human resources. Rather, its significance lies in its implications for economic growth in general and for the character of that growth—particularly its distributional manifestations.

We must therefore recognise that migration in excess of job opportunities is both a symptom of and a contributor to underdevelopment. Understanding the causes, determinants, and consequences of internal rural–urban labour migration is thus central to understanding the nature and character of the development process and to formulating policies to influence this process in socially desirable ways. A simple yet crucial step in underlining the centrality of the migration phenomenon is to recognise that any economic and social policy that affects rural and urban real incomes will directly or indirectly influence the migration process. This process will in turn tend to alter the pattern of sectoral and geographic economic activity, income distribution, and even population growth. Because all economic policies have direct and indirect effects on the level and growth of urban or rural incomes, or both, they all will have a tendency to influence the nature and magnitude of the migration stream. Some policies may have a more direct and immediate impact, such as wages and income policies and employment promotion programmes. There are other policies that, though less obvious, may in the long run be no less important. Included among these policies, for example, would be: land tenure arrangements; commodity pricing policies; credit allocation; taxation; export promotion; import substitution; commercial policies; the geographic distribution of social services; the nature of public investment programmes; attitudes toward private foreign investors; the organisation of population and family-planning programmes; the structure, content, and orientation of the educational system; the functioning of labour markets; and the nature of public policies toward international technology transfer and the location of new industries. There is thus a clear need to recognise the central importance of internal and, for many countries, even international migration and to integrate the two-way relationship between migration and population distribution on the one hand and economic variables on the other into a more comprehensive framework designed to improve development policy formulation.

In addition, we need to understand better not only why people move and what factors are most important in their decision-making process but also what the consequences of migration are for rural and urban economic and social development. If all development policies affect migration and are affected by it, which are the most significant, and why? What are the policy options and trade-offs among different and sometimes competing objectives (e.g., curtailing internal migration and expanding educational opportunities in rural areas)? Part of our task in the following sections will be to seek answers to these and other questions relating to migration, unemployment, and development.

Migration patterns are complex. The most important type of migration from the standpoint of long-run development is rural–urban migration, but a great deal of rural–rural, urban–urban, and even urban–rural migration also takes place. Rural–urban migration is most important because the population share of cities is growing, despite the fact that fertility is much lower in urban areas, and the difference is accounted for by rural–urban migration. It is also important because of the potential development benefits of economic activity of cities, due to agglomeration economies and other factors. However, urban–rural migration is important to understand because it usually occurs when hard times in cities coincide with increases in output prices from the country's cash crops, as occurred in Ghana not long ago. Thus, the overall picture is one of a remarkable amount of "churning," or continuous movements of people within developing countries, especially over short distances. These movements contradict the popular image of stasis in traditional societies. The composition of internal migration for several countries is shown in Figure 7.8.

FIGURE 7.8 Components of Migration in Selected Countries



Source: Lucas, Robert E.B. (1999), 'Internal migration and urbanisation: Recent contributions and new evidence,' in *World Development Report, 1999–2000*. Copyright 1999 by the World Bank.

In addition to wage differentials, age, and education, migration is also explained partly by relocation upon remarrying, prior emigration of family members, distance and costs of relocation, occurrence of famine, disease, violence, and other disasters, and relative standing in the origin community, with those lower on the social order more likely to migrate. Migration can also be a form of portfolio diversification for families who seek to settle some members in areas where they may not be affected by economic shocks in the same way as if they had stayed at home.[29]

7.6 Toward an Economic Theory of Rural–Urban Migration

The economic development of western Europe and the United States was closely associated with the movement of labour from rural to urban areas. For the most part, with a rural sector dominated by agricultural activities and an urban sector focusing on industrialisation, overall economic development in these countries was characterised by the gradual reallocation of labour out of agriculture and into industry through rural–urban migration, both internal and international. Urbanisation and industrialisation were in essence synonymous. This historical model served as a blueprint for structural change in developing countries, as evidenced, for example, by the original Lewis theory of labour transfer (see Chapter 3).

But the overwhelming evidence of the past several decades, when developing nations witnessed a massive migration of their rural populations into urban areas despite rising levels of urban unemployment and underemployment, lessens the validity of the Lewis two-sector model of development.[30] An explanation of the phenomenon, as well as policies to address the resulting problems, must be sought elsewhere. One theory to explain the apparently paradoxical relationship of accelerated rural–urban migration in the context of rising urban unemployment has come to be known as the **Todaro migration model** and, in its equilibrium form, as the **Harris-Todaro model**.[31]

Todaro migration model A theory that explains rural–urban migration as an economically rational process despite high urban unemployment. Migrants calculate (present value of) urban expected income (or its equivalent) and move if this exceeds average rural income.

Harris-Todaro model An equilibrium version of the Todaro migration model that predicts that expected incomes will be equated across rural and urban sectors when taking into account informal-sector activities and outright unemployment.

7.6.1 A Verbal Description of the Todaro Model

Starting from the assumption that migration is primarily an economic phenomenon, which for the individual migrant can be a quite rational decision despite the existence of urban unemployment, the Todaro model postulates that migration proceeds in response to urban–rural differences in expected income rather than actual earnings. The fundamental premise is that migrants consider the various labour market opportunities available to them in the rural and urban sectors and choose the one that maximises their expected gains from migration.

In essence, the theory assumes that members of the labour force, both actual and potential, compare their expected incomes for a given time horizon in the urban sector (the difference between returns and costs of migration) with prevailing average rural incomes and migrate if the former exceeds the latter. (See Appendix 7.1 for a mathematical formulation.)

Consider the following illustration. Suppose that the average unskilled or semiskilled rural worker has a choice between being a farm labourer (or

working his own land) for an annual average real income of, say, 50 units or migrating to the city, where a worker with his skill or educational background can obtain wage employment yielding an annual real income of 100 units. The more commonly used economic models of migration, which place exclusive emphasis on the income differential factor as the determinant of the decision to migrate, would indicate a clear choice in this situation. The worker should seek the higher-paying urban job. It is important to recognise, however, that these migration models were developed largely in the context of advanced industrial economies and hence implicitly assume the existence of full or near-full employment. In a full-employment environment, the decision to migrate can be based solely on the desire to secure the highest-paid job wherever it becomes available. Simple economic theory would then indicate that such migration should lead to a reduction in wage differentials through the interaction of the forces of supply and demand, in areas of both emigration and immigration.

Unfortunately, such an analysis is not realistic in the context of the institutional and economic framework of most developing nations. First, these countries are beset by a chronic unemployment problem, which means that a typical migrant cannot expect to secure a high-paying urban job immediately. In fact, it is far more likely that on entering the urban labour market, many uneducated, unskilled migrants will either become totally unemployed or will seek casual and part-time employment as vendors, hawkers, repairmen, and itinerant day labourers in the urban traditional or informal sector, where ease of entry, small scale of operation, and relatively competitive price and wage determination prevail. In the case of migrants with considerable human capital in the form of a secondary or university certificate, opportunities are much better, and many will find formal-sector jobs relatively quickly. But they constitute only a small proportion of the total migration stream. Consequently, in deciding to migrate, the individual must balance the probabilities and risks of being unemployed or underemployed for a considerable period of time against the positive urban–rural real income differential. The fact that a typical migrant who gains a modern-sector job can expect to earn twice the annual real income in an urban area than in a rural environment may be of little consequence if the actual probability of his securing the higher-paying job within, say, a one-year period is one chance in five. Thus, the actual probability of his being successful in securing the higher-paying urban job is 20%, and therefore his expected urban income for the one-year period is in fact 20 units and not the 100 units that an urban worker in a full-employment environment would expect to receive. So with a one-period time horizon and a probability of success of 20%, it would be irrational for this migrant to seek an urban job, even though the differential between urban and rural earnings capacity is 100%. However, if the probability of success were 60% and the expected urban income therefore 60 units, it would be entirely rational for our migrant with his one-period time horizon to try his luck in the urban area, even though urban unemployment may be extremely high.

If we now approach the situation by assuming a considerably longer time horizon—a more realistic assumption, especially in view of the fact that the vast majority of migrants are between the ages of 15 and 24—the decision to migrate should be represented on the basis of a longer-term, more permanent income calculation. If the migrant anticipates a relatively low probability of finding regular wage employment in the initial period but expects this probability to increase

Present value The discounted value at the present time of a sum of money to be received in the future.

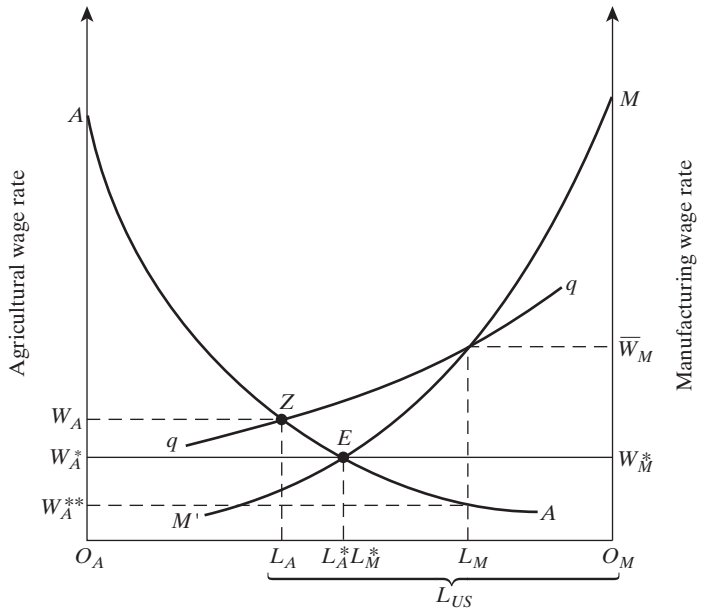
over time as he is able to broaden his urban contacts, it would still be rational for him to migrate, even though expected urban income during the initial period or periods might be lower than expected rural income. As long as the **present value** of the net stream of expected urban income over the migrant's planning horizon exceeds that of the expected rural income, the decision to migrate is justifiable.

Rather than equalising urban and rural wage rates, as would be the case in a standard neoclassical competitive model, we see that rural–urban migration in this model equates rural and urban expected incomes. For example, if average rural income were 60 and urban income were 120, a 50% urban unemployment rate would be necessary before further migration would no longer be profitable. Because expected incomes are defined in terms of both wages and employment probabilities, it is possible to have continued migration despite the existence of sizable rates of urban unemployment. In our example, migration would continue even if the urban unemployment rate were 30% to 40%.

7.6.2 A Diagrammatic Presentation

This process of achieving an unemployment equilibrium between urban expected wages and average rural income rather than an equalised rural–urban wage, as in the traditional neoclassical free-market model, can also be explained by a diagrammatic portrayal of the basic Harris-Todaro model. This is done in Figure 7.9.[32] Assume only two sectors, rural agriculture and urban manufacturing. The demand for labour (the marginal product of labour curve) in agriculture is given by the negatively sloped line AA. Labour demand in manufacturing is given by MM' (reading from right to left). The total labour force is given by

FIGURE 7.9 The Harris-Todaro Migration Model



line O_AO_M. In a neoclassical, flexible-wage, full-employment market economy, the equilibrium wage would be established at $W_A^*W_M^*$, with $O_AL_A^*$ workers in agriculture and $O_ML_M^*$ workers employed in urban manufacturing. All available workers are therefore employed.

But what if urban wages are institutionally determined (inflexible downward) as assumed by Todaro at a level $\overline{W}_M$, which is at a considerable distance above W_A^*? If for the moment we continue to assume that there is no unemployment, O_ML_M workers would get urban jobs, and the rest, O_AL_M, would have to settle for rural employment at $O_AW_A^{**}$ wages (below the free-market level of $O_AW_A^*$). So now we have an urban–rural real wage gap of $\overline{W}_M - W_A^{**}$,with $\overline{W}_M$ institutionally fixed. If rural workers were free to migrate (as they are almost everywhere except China), then despite the availability of only O_ML_M jobs, they are willing to take their chances in the urban job lottery. If their chance (probability) of securing one of these favoured jobs is expressed by the ratio of employment in manufacturing, L_M, to the total urban labour pool, L_{US}, then the expression

$$W_A = \frac{L_M}{L_{US}}(\overline{W}_M) \tag{7.1}$$

shows the probability of urban job success necessary to equate agricultural income W_A with urban expected income $(L_M/L_{US})\,(\overline{W}_M)$, thus causing a potential migrant to be indifferent between job locations. The locus of such points of indifference is given by the qq' curve in Figure 7.9.[33] The new unemployment equilibrium now occurs at point Z, where the urban–rural actual wage gap is $\overline{W}_M - W_A$, O_AL_A workers are still in the agricultural sector, and O_ML_M of these workers have modern (formal)-sector jobs paying $\overline{W}_M$ wages. The rest, $O_ML_A - O_ML_M$, are either unemployed or engaged in low-income informal-sector activities. This explains the existence of urban unemployment and the private economic rationality of continued rural-to-urban migration, despite this high unemployment. However, although it may be privately rational from a cost-benefit perspective for an individual to migrate to the city despite high unemployment, it can, as will soon become clear, be socially very costly.

There are many ways to extend the model; here we mention four. First, Equation 7.1 simplifies by assuming that those who migrate and do not get a modern job receive no income; but if they instead receive urban informal-sector income, we modify expected income accordingly.[34] Second, note that if instead of assuming that all urban migrants are the same, we incorporate the reality of different levels of human capital (education), we can understand why a higher proportion of the rural educated migrate than the uneducated—because they have a better chance (a higher probability) of earning even higher urban wages than unskilled migrants.

Third, we often observe that migrants from the same rural region tend to settle in common cities, even the same neighbourhoods of cities, that are relatively distant from the migrants' place of origin. In a model proposed by William Carrington, Enrica Detragiache, and Tara Vishwanath, earlier migrants create a positive externality for later potential migrants from their home region by lowering their costs of moving by helping with resettlement and lowering their probability of unemployment by providing them with jobs or information about available jobs. Thus, the search for employment, selection into the migration decision, and forward-looking behaviour may all be incorporated into an equilibrium migration model.[35]

Fourth, the Todaro and Harris-Todaro models are relevant to developing countries even if the wage is not fixed by institutional forces, such as a minimum wage. Recent theoretical research on rural–urban migration has confirmed that the emergence of a high modern-sector wage alongside unemployment or an urban traditional sector, as seen in these models, can also result from market responses to imperfect information, cost of **labour turnover**, **efficiency wage** payments, and other common features of labour markets.[36]

Labour turnover Worker separations from employers, a concept used in theory that the urban–rural wage gap is partly explained by the fact that urban modern-sector employers pay higher wages to reduce labour turnover rates and retain trained and skilled workers.

Efficiency wage The notion that modern-sector urban employers pay a higher wage than the equilibrium wage rate in order to attract and retain a higher-quality workforce or to obtain higher productivity on the job.

To sum up, the Todaro migration model has four basic characteristics:

1. Migration is stimulated primarily by rational economic considerations of relative benefits and costs—mostly financial but also psychological.
2. The decision to migrate depends on expected rather than actual urban–rural real-wage differentials, where the expected differential is determined by the interaction of two variables—the actual urban–rural wage differential and the probability of successfully obtaining employment in the urban sector.
3. The probability of obtaining an urban job is directly related to the urban employment rate and thus inversely related to the urban unemployment rate. Underemployment is not just a short-term adjustment problem, because wages remain above (neoclassical) market clearing levels, for institutional reasons or as the result of other market imperfections including imperfect information (or both).
4. Migration rates in excess of urban job opportunity growth rates are not only possible but also rational and even likely in the face of wide urban–rural expected income differentials. High rates of urban unemployment are therefore inevitable outcomes of the serious imbalance of economic opportunities between urban and rural areas in most underdeveloped countries.

7.6.3 Policy Implications

If migration is, indeed, a rational decision, albeit a risky one, then in identifying appropriate policies we must consider the types of market failures and government failures that may be influencing these decisions. For cities, rapid population increases create negative externalities, including above-capacity use of roads, sewerage, schools, and other infrastructure facilities. Additional negative externalities arising from unplanned, highly crowded conditions include the spread of disease. For rural areas, outmigration also entails costs, such as the loss of relatively better-skilled workers, entrepreneurship, and otherwise productive investments. As we also saw, problems of inefficiently rapid migration and overly large city scales are all too often exacerbated by the "pull" of inefficient government policy. Effective responses to these market and government failures include reducing urban bias that directs too large a share of investment to the urban modern sector while, within the urban informal sector, improving sanitary infrastructure, facilitating improved opportunities for income generation, and encouraging social infrastructure for better community life for those living there. Of perhaps equal importance, investment in programmes of integrated rural development and making rural institutions less extractive and broadly more inclusive will reduce unnecessary "push" of people toward cities.

Although the Todaro theory might at first seem to devalue the critical importance of rural–urban migration by portraying it as an adjustment mechanism by which workers allocate themselves between rural and urban labour markets, it does have important policy implications for development strategy with regard to wages and incomes, rural development, and industrialisation.

First, imbalances in urban–rural employment opportunities caused by the urban bias, particularly first-city bias, of development strategies must be reduced. Because migrants are assumed to respond to differentials in expected incomes, it is vitally important that imbalances between economic opportunities in rural and urban sectors be minimised. When urban wage rates rise faster than average rural incomes, they stimulate further rural–urban migration in spite of rising levels of urban unemployment. This heavy influx of people into urban areas not only gives rise to socioeconomic problems in the cities but may also eventually create problems of labour shortages and lack of entrepreneurship in rural areas. Thus, policy distortions that induce more rapid rural-to-urban migration than would otherwise occur generally reduce overall social welfare.

Second, urban job creation is an insufficient solution for the urban unemployment problem. The traditional (Keynesian) economic solution to urban unemployment (the creation of more urban modern-sector jobs without simultaneous attempts to improve rural incomes and employment opportunities) can result in the paradoxical situation in which more urban employment leads to higher levels of urban unemployment! Once again, the imbalance in expected income-earning opportunities is the crucial concept. Because migration rates are assumed to respond positively to *both* higher urban wages *and* higher urban employment opportunities (or probabilities), it follows that for any given positive urban–rural wage differential (in most developing countries, urban wages are typically three to four times as large as rural wages), higher urban employment rates will widen the expected differential and induce even higher rates of rural–urban migration. For every new job created, two or three migrants who were productively occupied in rural areas may come to the city. Thus, if 100 new jobs are created, there may be as many as 300 new migrants and therefore 200 more urban unemployed. Hence, a policy designed to reduce urban unemployment may lead not only to higher levels of urban unemployment but also to lower levels of agricultural output due to **induced migration**.

Induced migration Process in which the creation of urban jobs raises expected incomes and induces more people to migrate from rural areas.

Third, indiscriminate educational expansion will lead to further migration and unemployment. The Todaro model also has important policy implications for curtailing public investment in higher education. The heavy influx of rural migrants into urban areas at rates much in excess of new employment opportunities necessitates rationing in the selection of new employees. Although within each educational group such selection may be largely random, many observers have noted that employers tend to use educational attainment or number of years of completed schooling as the typical rationing device. For the same wage, they will hire people with more education in preference to those with less, even though extra education may not contribute to better job performance. Jobs that could formerly be filled by those with a primary education (sweepers, messengers, filing clerks, etc.) now require secondary training; those formerly requiring a secondary certificate (clerks, typists, bookkeepers, etc.) must now have a university degree. It follows that for any given urban wage, if the probability of success in securing a modern-sector job is higher for people with more education,

their expected income differential will also be higher, and they will be more likely to migrate to the cities. The basic Todaro model therefore provides an economic explanation for the observed fact in most developing countries that rural inhabitants with more education are more likely to migrate than those with less.

Fourth, wage subsidies and traditional scarcity factor pricing can be counterproductive. As noted in Chapter 5 and Appendix 5.1, a standard economic policy prescription for generating urban employment opportunities is to eliminate factor price distortions by using "correct" prices, perhaps implemented by wage subsidies (fixed government subsidies to employers for each worker employed) or direct government hiring. Because actual urban wages generally exceed the market or "correct" wage as a result of a variety of institutional factors, it is often argued that the elimination of wage distortions through price adjustments or a subsidy system will encourage more labour-intensive modes of production. Although such policies can generate more labour-intensive modes of production, they can also lead to higher levels of unemployment in accordance with our argument about induced migration. The overall welfare impact of a **wage subsidy** policy when both the rural and urban sectors are taken into account is not immediately clear. Much will depend on the level of urban unemployment, the size of the urban–rural expected-income differential, and the magnitude of induced migration as more urban jobs are created.

Wage subsidy A government financial incentive to private employers to hire more workers, such as through tax deductions for new job creation.

Research findings on the effects of minimum wages have been varied. Developing-country studies on minimum wages have concluded that formal sector wages rise as a result; and, thus, they do have impact despite enforcement difficulties. Evidence from Costa Rica and Brazil suggests that the informal sector experiences a "lighthouse effect," meaning that the minimum wage is responded to as a benchmark wage for all unskilled labour. Studies on the effect of minimum wages on employment have been more mixed, indicating either: a negative effect, including Colombia, Trinidad and Tobago, and Costa Rica; or no effect, as in Mexico and, in a different study, Brazil. Reduction in female employment was found for Mexico and Colombia, though a shift in employment toward women was found for Chile.[37]

Finally, programmes of integrated rural development should be encouraged. Policies that operate only on the demand side of the urban employment picture, such as wage subsidies, direct government hiring, elimination of factor price distortions, and employer tax incentives, are probably far less effective in the long run in alleviating the unemployment problem than policies designed directly to regulate the supply of labour to urban areas. Clearly, however, some combination of both kinds of policies is most desirable.

Conceptually, it may be useful to think of cities and their surrounding rural areas as integrated systems. There are significant complementarities between town and country (see Chapter 9). Agricultural and raw materials grown and extracted in rural areas are inputs for urban industry. Although there is some urban agriculture, most food consumed in urban areas is grown in agricultural regions. Towns are needed to allow sufficient agglomeration economies, as well as economies of scale, to produce and exchange many goods and services that are needed in rural areas. In turn, when rural incomes grow, markets for urban manufacturers expand. People come from their rural residences to work in the city by the day or the week. City residents temporarily migrate to nearby agricultural regions during peak planting and harvesting seasons. Thus, rural–urban linkages are extensive. And while investment in urban areas can accelerate migration to cities, investment in

agriculture can raise productivity and incomes, making labour redundant, and also accelerate migration. As a result, for policy purposes, it may make a great deal of sense to take account of rural impacts when devising urban policies, and vice versa.

At the same time, as globalisation proceeds (see Chapter 12), cities tend to trade more with other cities, often in distant parts of the world, and less with nearby rural areas. Moreover, cities generally get the upper hand when urban and rural areas are treated as a bloc, reinforcing urban bias. And rural hinterlands, far from significant cities and from the attention of distant governments, whether national or regional, often suffer from benign neglect at best and systematic exploitation at worst, such as forced sale of food at low prices. Thus, rural areas need to retain their own autonomy, and poverty programmes need to be tailored to the needs of rural citizens.

Every effort must be made to broaden the economic base of the rural economy. The present unnecessary economic incentives for rural–urban migration can be minimised through creative and well-designed programmes of integrated rural development. These should focus on both farm and nonfarm income generation, employment growth, health care delivery, educational improvement, infrastructure development (electricity, water, roads, etc.), and the provision of other rural amenities. Successful rural development programmes adapted to the socioeconomic and environmental needs of particular countries and regions seem to offer the only viable long-term solution to the problem of excessive rural–urban migration.

To assert, however, that there is an urgent need for policies designed to curb the excessive influx of rural migrants is not to imply an attempt to reverse what some observers have called inevitable historical trends. Rather, the implication of the Todaro migration model is that there is a growing need for a policy package that does not exacerbate these historical trends toward urbanisation by artificially creating serious imbalances in economic opportunities between urban and rural areas.

7.7 Conclusion: A Comprehensive Urbanisation, Migration, and Employment Strategy

Developing-country cities are projected to grow by more than 2 billion people over the next three decades. This presents enormous challenges for the developing world, but at the same time important economic development opportunities. The pattern of urban settlements tends to be very persistent, so the quality of planning now for this enormous transformation will have ramifications for decades to come.

Based on long-term trends, comparisons with developed countries, and still-strong individual incentives, continued urbanisation and rural–urban migration are probably inevitable. Urban bias spurs migration, but focused investment in agriculture raises rural productivity sufficiently to require less labour; a majority of alternative types of employment expansion tend to be concentrated in urban areas because of agglomeration effects. Moreover, as education increases in rural areas, workers gain the skills they need, and perhaps the rising aspirations, to seek employment in the city. But the pace of rural–urban

migration is still often excessive from the social viewpoint. At various points throughout this chapter, we have looked at possible policy approaches designed to improve the very serious migration and employment situation in developing countries. We conclude with a summary of what appears to be the growing consensus of most economists on the shape of a comprehensive migration and employment strategy.[38] These elements reflect the complex and nuanced nature of the topic, with potentially excessive migration relative to urban opportunities partly due to low productivity, poor rural institutions, and harsh social conditions; and the great and still not fully tapped opportunities for urban dynamism as an engine of economic development. We consider 10 key elements:

1. *Creating an appropriate rural–urban economic balance.* A more appropriate balance between rural and urban economic opportunities appears to be indispensable to ameliorating both urban and rural unemployment problems and to slowing the pace of excessive rural–urban migration. The main thrust of this activity should be in the integrated development of the rural sector, the spread of rural nonfarm employment opportunities, improved credit access, better agricultural training, the reorientation of social investments toward rural areas, improving rural infrastructure, and addressing shortcomings of rural institutions (including corruption, discrimination, and stratification), the presence of which has the effect of raising the cost of delaying out-migration.
2. *Expansion of small-scale, labour-intensive industries.* The composition or "product mix" of output has obvious effects on the magnitude (and in many cases the location) of employment opportunities, because some products (often basic consumer goods) require more labour per unit of output and per unit of capital than others. Expansion of these mostly small-scale and labour-intensive industries in both urban and rural areas can be accomplished in two ways: directly, through government investment and incentives and improved access to credit, particularly for activities in the urban informal sector; and indirectly, through income redistribution (either directly or from future growth) to the rural poor, whose structure of consumer demand is both less import-intensive and more labour-intensive than that of the rich. Under the right conditions, such enterprises can agglomerate as industrial districts in ways that can generate exports, as pointed to by the findings on China in Box 7.1. Policies that effectively discourage clustering of specialised activities are likely to be harmful.
3. *Eliminating factor price distortions.* There is evidence to demonstrate that correcting factor price distortions—primarily by eliminating various capital subsidies and curtailing the growth of urban wages through market-based pricing—would increase employment opportunities and make better use of scarce capital resources. But by how much or how quickly these policies would work is not clear. Moreover, their migration implications would have to be ascertained. Correct pricing policies by themselves are insufficient to fundamentally alter the employment situation.[39]
4. *Choosing appropriate labour-intensive technologies of production.* One of the principal factors inhibiting the success of any long-run programme of

employment creation in both urban industry and rural agriculture is the almost complete technological dependence on (typically labour-saving) machinery and equipment from the developed countries. Domestic and international efforts can help reduce this dependence by developing technological research and adaptation capacities in developing countries. Such efforts might first be linked to the development of small-scale, labour-intensive rural and urban enterprises. They could focus on developing low-cost, labour-intensive methods of meeting rural infrastructure needs, including roads, irrigation and drainage systems, and essential health and educational services. This is an area where scientific and technological assistance from the developed countries could prove extremely helpful.

5. *Modifying the linkage between education and employment.* The emergence of the phenomenon of the educated unemployed is calling into question the appropriateness of the massive quantitative expansion of educational systems, especially at the higher levels. Formal education has become the rationing tunnel through which all prospective jobholders must pass. Although a full discussion of educational problems and policies must await the next chapter, one way to moderate the excessive demand for additional years of schooling (which in reality is a demand for modern-sector jobs) would be for governments, often the largest employers, to base their hiring practices and their wage structures on other criteria. Moreover, the creation of attractive economic opportunities in rural areas would make it easier to redirect educational systems toward the needs of rural development. At present, many of the skills needed for development remain largely neglected.

6. *Reducing population growth.* This is most efficiently accomplished through reductions in absolute poverty and inequality, particularly for women, along with the expanded provision of family-planning and rural health services. The labour force size for the next two decades is already determined by today's birth rates, and hidden momentum of population growth applies as well to labour force growth. Together with the demand policies identified in points 1 to 5, the population and labour supply reduction policies described in this chapter provide an essential ingredient in any strategy to combat the severe employment problems that developing countries face now and in future years.

7. *Decentralising authority to cities and neighbourhoods.* Experience shows that decentralisation of authority to municipalities is an essential step in the improvement of urban policies and the quality of public services. Local conditions vary greatly among small and large cities, as well as across different national regions, and policies need to be designed to reflect these differences. Local officials have greater information about evolving local conditions; and when officials are held accountable for local fiscal performance and know they must answer to recipients of the services they provide, they also have greater incentives to carry out their responsibilities effectively. Decentralisation, with increased authority of cities and regions, has been a major international trend in the organisation of government (see Chapter 11).

8. *Leveraging untapped opportunities for urban dynamism.* With strong, pro-poor rural development policies in place, many developing countries in Africa, Asia, and Latin America can still make gains in harnessing the growth potential of developing-country cities, with ongoing attention to preparing for its possible migration implications.

9. *Addressing the desperate poverty needs of the poor now living in urban slum conditions.* As poor rural residents continue to migrate to urban areas, there is a growing phenomenon of the "urbanisation of global poverty," even if more than half of the poor will be found in rural areas for the next decades. As Martin Ravallion, Shaohua Chen, and Prem Sangraula concluded, "By fostering economic growth, urbanisation helped reduce absolute poverty in the aggregate but did little for urban poverty."[40] For poor residents in slum communities, basic protection is needed. These residents face disease and death from unsanitary conditions and increasing vulnerability to severe weather events and other disasters. These citizens urgently need a basic safety net, let alone an improvement in the actively hostile policies that have prevailed in many developing nations and regions by denying property rights (which has allowed the seizing of land and the demolishing of housing) and other forms of discrimination. A change in basic policies can lead to large improvements in living conditions in slums. Fortunately, progress is being made. Since 2005, a growing number of countries have seen significant reductions in the percentage of the urban population living in slums, including Angola, Bangladesh, Laos, Rwanda, Nigeria, and Tanzania. However, some countries have actually seen a growing proportion living in slums in recent years, including Burkina Faso, Ecuador, Haiti, and Mozambique.

10. *Anticipating and assisting the new "climate migrants."* In a related point, one major response to climate change is rural-to-urban migration (see Chapter 10, Section 10.3). This needs to be anticipated and planned for. A critical part of the solution is more effective rural development, from better access to sustainable irrigation to improved rural institutions. But "climate migrants" are already arriving in developing-country cities, and many of them end up on land that is highly vulnerable to disasters brought about by extreme weather, such as mudslides following heavy rains:

    > Climate migrants may need more assistance developing job skills and entrepreneurial opportunities, and help with moving to less vulnerable neighbourhoods.[41]

We return to the topic of rural development in Chapter 9 and environment and development in Chapter 10.

We conclude by noting that while a much higher urban share of population is inevitable, the tempo and pattern of urbanisation will be key determinants of whether the deeper objectives of economic development are achieved. China and India, which together account for over one-third of the world's population, are in the midst of their most rapid migration and urbanisation period. Several African and other Asian countries are entering this stage. Because of fixed costs, including infrastructure and land use patterns, the quality of policies toward urbanisation and migration that are implemented now are thus of momentous importance for the character of economic development for many decades to come.

Case Study 7

Rural–Urban Migration and Urbanisation in Developing Countries: India and Botswana

About half of the world's population lives in cities; by 2025, nearly two-thirds will live in urban areas. Most of the urban growth is taking place in the developing world. The patterns of this growth and its implications are complex. Urban population growth in the developing world is far more rapid than population growth generally; about half the urban growth is accounted for by migrants from rural areas. Unchecked urbanisation of the developing world is placing a strain on infrastructure and public health and threatens social stability. Shantytowns and similar makeshift settlements represent over one-third of developing-country urban residences. About half of the urban labour force works in the informal sector of low-skilled, low-productivity, often self-employed jobs in petty sales and services. Still, this sector may generate up to a third of urban income and features a low capital intensity, low-cost training, waste recycling, and employment creation. What drives migration? The cases of India and Botswana are instructive in showing the value of the probabilistic theory of migration and suggesting ways of extending it.

The scale of urbanisation in these countries is dramatic. The UN Population Division projected in 2013 that India will surpass China as the world's largest nation in 2028, when India reaches a population of 1.45 billion; due largely to migration, the growth of the urban population will be much faster than that of the rural population. Botswana is a small country but represents one of Africa's relatively few long-term success stories and, as of 2012, its urbanisation rate had already reached well over 60%, compared with an average of under one-third in sub-Saharan Africa as a whole.

Any economic or social policy that affects rural and urban incomes will influence migration; this, in turn, will affect sectoral and geographic economic activity, income distribution, and even population growth. Before the Todaro and Harris-Todaro migration models were introduced, migration was widely viewed as irrational or driven by noneconomic motivations, sometimes attributed to the lure of the "bright city lights." Noneconomic factors do influence migration decisions, but economic factors are now understood to be primary. In the economic version of the bright-city-lights theory, people rationally migrated on the basis of costs and benefits. In this approach, it was assumed that if migrants appeared to be worse off, this was because other benefits were being overlooked, with the effect of making the migrants feel better off (or raising their overall utility).

The Todaro migration models postulate that observed migration is individually rational but that migrants respond to urban–rural differences in expected rather than actual earnings. Urban modern-sector earnings are much higher than rural earnings, which may in turn be even higher than urban traditional-sector earnings. Migration occurs until average or expected rather than actual incomes are equal across regions, generating equilibrium unemployment or underemployment in the urban traditional sector. The extension of the model to consider equilibrium and effects of actions such as increases in wages and probability of employment in the urban areas, undertaken by Harris and Todaro, shows that under some conditions, notably elastic supply of labour, creation of employment opportunities in cities can actually lead to an *increase* in unemployment by attracting more migrants than there are new jobs. Despite being individually rational, extensive rural–urban migration generates social costs for crowded cities, while excessive migration also imposes external costs on the rural areas emptied of better-educated, more venturesome young people, as well as external costs on urban infrastructure and lost output.

One set of relevant migration and employment policies emphasises rural development, rural basic-needs strategies, elimination of factor price distortions, appropriate technology choice, and appropriate education. Each is intended to increase the incentives for rural residents to remain in rural areas rather than migrate to cities. But even if rural development is successful, fewer rural labourers will ultimately be needed, and demand for products of the cities will grow, which will fuel migration anyway. So other policies seek to influence the pace and pattern of urban development to gain the most benefits for the fewest costs from migration that is probably inevitable.

India provides an interesting setting for a case study because future urban migration is potentially so vast and because a number of interesting studies have been undertaken there. Botswana offers a good counterpoint because it has been the subject of some of the most interesting empirical research and represents one of the most rapidly urbanising African countries, as well as one of its most important success stories.

India

The growth of Delhi has been extraordinary. In 1950, Delhi was not even among the world's 30 largest cities, but by 2013 its population had soared to become second in size only to Tokyo.

One of the most detailed studies of rural–urban migration, providing some tests of the Todaro migration model and depicting the characteristics of migrants and the migration process, is Biswajit Banerjee's *Rural to Urban Migration and the Urban Labour Market: A Case Study of Delhi*.

Everyone who has been to a major city in a developing country has noticed the sharp inequality between residents with modern-sector jobs and those working in the informal sector. But can the informal sector be seen as a temporary way station on the road to the formal sector, or can the barriers between these sectors be explained by education and skill requirements that informal-sector workers cannot hope to meet? Banerjee found that the idea of segmented formal–informal rural labour markets could be substantiated statistically. After carefully controlling for human capital variables, Banerjee was still left with earnings in the formal sector 9% higher than in the informal sector that were not explained by any standard economic factor. Even so, the earnings differences found in India were not nearly so dramatic as implied in some of the migration literature.

In much of the literature on urbanisation, the typical labourer is characterised as self-employed or working on some type of piecework basis. But Banerjee found that only 14% of his informal-sector sample worked in nonwage employment. Interestingly, average monthly incomes of nonwage workers were 47% higher than those of formal-sector workers.

Banerjee argued that entry into nonwage employment was not easy in Delhi. Some activities required significant skills or capital. Those that did not were often controlled by cohesive "networks" of operators that controlled activities in various enterprises. Entry barriers to self-employment in petty services were probably lower in other developing-country cities.

Consistent with these findings, Banerjee found that mobility from the informal to the formal sector was low: there was little evidence that more than a very small minority of informal-sector workers were actively seeking jobs in the formal sectors, and only 5% to 15% of rural migrants in the informal sector had moved over to the formal sector in a year's time.

Moreover, the rate of entrance into the formal sector from the informal sector was just one-sixth to one-third that of the rate of direct entry into the urban formal sector from outside the area.

Informal-sector workers tended to work in the same job almost as long as those in the formal sector; the average informal-sector worker had worked 1.67 jobs over a period of 61 months in the city, while formal-sector workers averaged 1.24 jobs over an urban career of 67 months.

Banerjee's survey data suggested that a large number of informal-sector workers who had migrated to the city were attracted to the informal rather than the formal sector, coming to work as domestic servants, informal construction labourers, and salespeople. Of those who began nonwage employment upon their arrival, 71% had expected to do so. The fact that only a minority of informal-sector workers continued to search for formal-sector work was taken as further evidence that migrants had come to Delhi expressly to take up informal-sector work.

Workers who appear underemployed may not consider themselves as such, may perceive no possibility of moving into the modern sector, may be unable to effectively search for modern-sector work while employed in the informal sector, and hence do not create as much downward pressure on modern-sector wages as it may at first appear. This may be one factor keeping modern-sector

wages well above informal-sector wages for indefinite periods of time, despite high-measured urban underemployment.

One reason for this focus on the informal sector was concluded to be the lack of contacts of informal-sector workers with the formal sector. About two-thirds of direct entrants into the formal sector and nearly as many of those switching from the informal to the formal sector found their jobs through personal contacts. This overwhelming importance of contacts explained why some 43% of Banerjee's sample migrated after receiving a suggestion from a contact, which suggests that job market information can become available to potential migrants without their being physically present in the city. An additional 10% of the sample had a prearranged job in the city prior to migration.

Finally, the duration of unemployment following migration is usually very short. Within one week, 64% of new arrivals had found employment, and although a few were unemployed for a long period, the average waiting time to obtain a first job was just 17 days.

Banerjee also found that migrants kept close ties to their rural roots. Some three-quarters of the migrants visited their villages of origin and about two-thirds were remitting part of their urban incomes—a substantial 23% of income on average. This indicates that concern for the whole family appeared to be a guiding force in migration. It also suggests a source of the rapid flow of job market information from urban to rural areas.

In a separate study, A. S. Oberai, Pradhan Prasad, and M. G. Sardana examined the determinants of migration in three states in India—Bihar, Kerala, and Uttar Pradesh. Their findings were consistent with the ideas that migrants often have a history of chronic underemployment before they migrate, migrate only as a measure of desperation, and have the expectation of participating in the informal urban sector even in the long run. Remittances were found to be substantial, and considerable levels of return migration were also documented, among other evidence of continued close ties of migrants to their home villages.

But Banerjee's fascinating findings do not necessarily represent a challenge to the applicability of Harris-Todaro or other "probabilistic migration models." Instead, they suggest that they need to be extended to accommodate the apparently common pattern of migrating with the ultimate aim of urban informal-sector employment. As Ira Gang and Shubhashis Gangopadhyay have noted, one can modify the model to include in the urban area not only a formal sector but also a highly paid informal sector, as well as a low-paid (or unemployed) sector. In this case, people will migrate looking for either a formal-sector job or a high-paying informal-sector job. This seems to be consistent with Banerjee's evidence. The assumption that keeps the essence of the probabilistic models intact is that the wage of the formal urban sector exceeds the high-paying informal wage, which in turn exceeds the agricultural wage, which in turn exceeds the low-paying informal (or unemployed) wage. In fact, if rural wages remain below all urban opportunities, this suggests that we are well out of equilibrium, and much additional migration must occur before expected incomes can be equalised across sectors. The particular formulations of the Todaro models are really no more than examples of a general principle: that migrants go where they expect in advance to do better, not where they do better after the fact. The basic ideas of the Todaro models do not depend on a particular notion of an informal or a formal sector.

Oded Stark's ideas on a family's use of migration can be a useful supplement to the Todaro models and may apply to some of Banerjee's findings. In his view, a family will send members to different areas as a "portfolio diversification" strategy, to reduce the risk that the family will have no income. This approach is useful to explain any observed migration from higher- to lower-wage areas and into higher-wage areas but not necessarily the area with the highest expected wage. The basic idea of the Todaro models still applies, but this approach looks at families rather than individuals and stresses risk aversion.

Other studies have shown that the Todaro migration models have held up well without modification in other parts of the world. A survey by Deepak Mazumdar confirmed that the evidence is overwhelming that migration decisions are made according to rational economic motivations.

Botswana

A study of migration behaviour conducted by Robert E. B. Lucas in Botswana addressed such problems in one of the most careful empirical studies of migration in a developing country. His econometric model consisted of four groups of equations—for employment, earnings, internal migration, and migration to South Africa. Each group was estimated from microeconomic data on individual migrants and nonmigrants. Very detailed demographic information was used in the survey.

Rural migrants in Botswana moved to five urban centres (they would be called towns rather than cities in many parts of the world) as well as to neighbouring South Africa. Lucas found that unadjusted urban earnings were much higher than rural earnings—68% higher for males—but these differences became much smaller when schooling and experience were accounted for.

Lucas's results confirm that the higher a person's expected earnings and the higher the estimated probability of employment after a move to an urban centre, the greater the chances that the person will migrate. And the higher the estimated wage and probability of employment for a person in his or her home village, the lower the chances that the person will migrate. This result was very "robust"—not sensitive to which subgroups were examined or the way various factors were controlled for—and statistically significant. It represents clear evidence in support of Todaro's original hypothesis.

Moreover, Lucas estimated that at current pay differentials, the creation of one job in an urban centre would draw more than one new migrant from the rural areas, thus confirming the Harris-Todaro effect. Earnings were also found to rise significantly the longer a migrant had been in an urban centre, holding education and age constant. But the reason was because of increases in the rate of pay rather than in the probability of modern-sector employment.

Taken together, the best-conducted studies of urbanisation confirm the value of probabilistic migration models as the appropriate place to start seeking explanations of rural-to-urban migration in developing countries. But these studies underscore the need to expand these explanations of migration, considering that many people today migrate to participate in the informal rather than the formal urban sector and that workers may face a variety of risks in different settings.

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Concepts for Review

Agglomeration economies
Congestion
Efficiency wage
Harris-Todaro model
Induced migration
Informal sector
Labour turnover
Localisation economies
Present value
Rural-urban migration
Social capital
Todaro migration model
Urban bias
Urbanisation economies
Wage subsidy

Questions for Discussion

1. Why might the problem of rapid urbanisation be a more significant population policy issue than curtailing population growth rates over the next two decades for most developing countries? Explain your answer.
2. Describe briefly the essential assumptions and major features of the Todaro model of rural–urban migration. One of the most significant implications of this model is the paradoxical conclusion that government policies designed to create more urban employment may in fact lead to more urban unemployment. Explain the reasons for such a paradoxical result.
3. "The key to solving the serious problem of excessive rural–urban migration and rising urban unemployment and underemployment in developing countries is to restore a proper balance between urban and rural economic and social opportunities." Discuss the reasoning behind this statement, and give a few specific examples of government policies that would promote a better balance between urban and rural economic and social opportunities.
4. For many years, the conventional wisdom of development economics assumed an inherent conflict between the objectives of maximising output growth and promoting rapid industrial employment growth. Might these two objectives be mutually supportive rather than conflicting? Explain your answer.
5. What is meant by the expression "getting prices right"? Under what conditions will eliminating factor price distortions generate substantial new employment opportunities? (Be sure to define *factor price distortions*.)
6. The informal sector has become a very large part of the urban economy. Distinguish between the urban formal and informal sectors, and discuss both the positive and the negative aspects of the informal urban labour market.
7. Why are primary cities—generally the capital—often disproportionately large in many developing countries? Which factors can be addressed with better policies?
8. What is an industrial district? How might governments of developing countries help them succeed?
9. Suppose that potential migrants make decisions based only on comparisons of their expected incomes. Now suppose the rural wage is \$1 per day. Urban modern-sector employment can be obtained with 0.25 probability and pays \$3 per day. The urban traditional sector pays \$0.40 per day. Using this information, and making assumptions as needed, can you make a prediction about whether there will be any rural-to-urban or urban-to-rural migration? Explain your reasoning, stating explicitly any simplifying assumptions, and show all work. Consider an approach that calculates an expected income in the urban sector of $0.25(3) + (0.75)(0.40) = 1.05$; and note that this exceeds the rural wage of 1—would you predict that there will be rural-to-urban migration? What simplifying assumptions are needed to make this a valid conclusion? Now, what would the urban traditional sector daily income have to be to induce no net rural–urban migration? If wages in all sectors are inflexible, what else adjusts in this model to lead to equilibrium (how much does it adjust and what is the intuition)?
10. Explain the concept of urban bias. What policies are associated with it, and what are their likely effects on urban and rural areas?
11. Now explain the economic benefits of concentration of economic activity in cities. How are various costs of doing business likely to be affected? Why are some of the potential benefits of urbanisation lost when congestion becomes substantial? What policies are likely to strengthen or weaken the opportunities to take advantage of the economic benefits of cities?

Appendix 7.1

A Mathematical Formulation of the Todaro Migration Model

Consider the following mathematical formulation of the basic Todaro model discussed in this chapter. Individuals are assumed to base their decision to migrate on considerations of income maximisation and what they perceive to be their expected income streams in urban and rural areas. It is further assumed that the individual who chooses to migrate is attempting to achieve the prevailing average income for his or her level of education or skill attainment in the urban centre of his or her choice. Nevertheless, the migrant is assumed to be aware of the limited chances of immediately securing wage employment and the likelihood that he or she will be unemployed or underemployed for a certain period of time. It follows that the migrant's expected income stream is determined by both the prevailing income in the modern sector and the probability of being employed there, rather than being underemployed in the urban informal sector or totally unemployed.

If we let $V(0)$ be the discounted present value of the expected "net" urban–rural income stream over the migrant's time horizon; $Y_u(t)$ and $Y_r(t)$ the average real incomes of individuals employed in the urban and the rural economy, respectively; n the number of time periods in the migrant's planning horizon; and r the discount rate reflecting the migrant's degree of time preference, then the decision to migrate or not will depend on whether

$$V(0) = \int_{t=0}^{n} [\,p(t)Y_u(t) - Y_r(t)\,]e^{-rt}dt - C(0) \qquad \text{(A7.1.1)}$$

is positive or negative, where $C(0)$ represents the cost of migration and $p(t)$ is the probability that a migrant will have secured an urban job at the average income level in period t.

In any one time period, the probability of being employed in the modern sector, $p(t)$, will be directly related to the probability π of having been selected in that or any previous period from a given stock of unemployed or underemployed job seekers. If we assume that for most migrants the selection procedure is random, then the probability of having a job in the modern sector within x periods after migration, $p(x)$, is $p(1) = \pi(1)$ and $p(2) = \pi(1) + [\,1 - \pi(1)\,]\,\pi(2)$ so that

$$p(x) = p(x-1) + [\,1 - p(x-1)\,]\pi(x) \qquad \text{(A7.1.2)}$$

or

$$p(x) = \pi(1) + \sum_{t=2}^{x}\pi(t)\prod_{s=1}^{t-1}[\,1 - \pi(s)\,] \qquad \text{(A7.1.3)}$$

where $\pi(t)$ equals the ratio of new job openings relative to the number of accumulated job aspirants in period t.

It follows from this probability formulation that for any given level of $Y_u(t)$ and $Y_i(t)$, the longer the migrant has been in the city, the higher his or her probability p of having a job and the higher, therefore, his or her expected income in that period.

Formulating the probability variable in this way has two advantages:

1. It avoids the "all or nothing" problem of having to assume that the migrant either earns the average income or earns nothing in the periods immediately following migration. Consequently, it reflects the fact that many underemployed migrants will be able to generate some income in the urban informal or traditional sector while searching for a regular job.
2. It modifies somewhat the assumption of random selection, since the probability of a migrant's having been selected varies directly with the time the migrant has been in the city. This permits adjustments for the fact that longer-term migrants usually have more contacts and better information systems so that their expected incomes should be higher than those of newly arrived migrants with similar skills.

Suppose that we now incorporate this behaviouristic theory of migration into a simple aggregate dynamic equilibrium model of urban labour demand and supply in the following manner. We once again define the probability π of obtaining a job in the urban sector in any one time period as being directly related to the rate of new employment creation and inversely related to the ratio of unemployed job seekers to the number of existing job opportunities, that is:

$$\pi = \frac{\lambda N}{S - N} \tag{A7.1.4}$$

where λ is the net rate of urban new job creation, N is the level of urban employment, and S is the total urban labour force. If w is the urban real wage rate and r represents average rural real income, then the expected urban–rural real-income differential d is

$$d = w\pi - r \tag{A7.1.5}$$

or, substituting Equation A7.1.4 into Equation A7.1.5,

$$d = w\frac{\lambda N}{S - N} - r \tag{A7.1.6}$$

The basic assumption of our model once again is that the supply of labour to the urban sector is a function of the urban–rural *expected* real-income differential, that is,

$$S = f_s(d) \tag{A7.1.7}$$

If the rate of urban job creation is a function of the urban wage w and a policy parameter a, such as a concentrated governmental effort to increase employment through a programme of import substitution, both of which operate on labour demand, we have

$$\lambda = f_d(w; a) \tag{A7.1.8}$$

where it is assumed that $\partial\lambda/\partial a > 0$. If the growth in the urban labour demand is increased as a result of the governmental policy shift, the increase in the urban labour supply is

$$\frac{\partial S}{\partial a} = \frac{\partial S}{\partial d}\frac{\partial d}{\partial \lambda}\frac{\partial \lambda}{\partial a} \tag{A7.1.9}$$

Differentiating Equation A7.1.6 and substituting into Equation A7.1.9, we obtain

$$\frac{\partial S}{\partial a} = \frac{\partial S}{\partial d} w \frac{N}{S - N} \cdot \frac{\partial \lambda}{\partial a} \tag{A7.1.10}$$

The absolute number of urban employed will increase if the increase in labour supply exceeds the increase in the number of new jobs created; that is, if

$$\frac{\partial S}{\partial a} > \frac{\partial(\lambda N)}{\partial a} = \frac{N\partial \lambda}{\partial a} \tag{A7.1.11}$$

Combining Equations A7.1.10 and A7.1.11, we get

$$\frac{\partial S}{\partial d} w \frac{N}{S - N} \cdot \frac{\partial \lambda}{\partial a} > \frac{N\partial \lambda}{\partial a} \tag{A7.1.12}$$

or

$$\frac{\partial S/S}{\partial d/d} > \frac{d}{w} \cdot \frac{S - N}{S} \tag{A7.1.13}$$

or, finally, substituting for d:

$$\frac{\partial S/S}{\partial d/d} > \frac{w\pi - r}{w} \cdot \frac{S - N}{S} \tag{A7.1.14}$$

Equation A7.1.14 reveals that the absolute level of unemployment will rise if the elasticity of urban labour supply with respect to the expected urban–rural income differential $(\partial S/S)/(\partial d/d)$—what has been called elsewhere the "migration response function"—exceeds the urban–rural differential as a proportion of the urban wage times the unemployment rate, $(S - N)/S$. Alternatively, Equation A7.1.14 shows that the higher the unemployment rate, the higher must be the elasticity to increase the level of unemployment for any expected real-income differential. But note that in most developing nations, the inequality in Equation A7.1.14 will be satisfied by a very low elasticity of supply when realistic figures are used. For example, if the urban real wage is 60, average rural real income is 20, the probability of getting a job is 0.50, and the unemployment rate is 20%, then the level of unemployment will increase if the elasticity of urban labour supply is greater than 0.033; that is, substituting into Equation A7.1.14, we get

$$\frac{\partial S/S}{\partial d/d} = \frac{(0.5 \times 60) - 20}{60}(0.20) = \frac{2}{60} = 0.033 \tag{A7.1.15}$$

Note that before one can realistically predict what the impact of a policy to generate more urban *employment* will be on the overall level of urban *unemployment*, one needs solid estimates of the empirical value of this elasticity coefficient prevailing in particular developing nations.

Notes

1. See Douglas Gollin, Remi Jedwab, and Dietrich Vollrath, 2016, "Urbanisation with and without Industrialisation," *Journal of Economic Growth*, 21(1), 35–70; and Remi Jedwab, Luc Christiaensen, and Marina Gindelsky, 2017, "Demography, Urbanisation and Development: Rural push, urban pull and . . . urban push?" *Journal of Urban Economics*, 98(C), pp. 6–16; see also Remi Jedwab and Dietrich Vollrath, 2019, "The Urban Mortality Transition and Poor-Country Urbanisation," *American Economic Journal: Macroeconomics*, 11(1), pp. 223–75.
2. See *United Nations World Urbanisation Prospects: The 2017 Revision, 2018 Update*
3. EU researchers argued that the true global figure could be as high as 84%—with Africa 80% urban rather than 40%, and Asia 90% urban rather than 50% (see Lewis Dijkstra, Aneta Florczyk, Sergio Freire, Thomas Kemper and Martino Pesaresi, "Applying The Degree of Urbanisation to The Globe: A New Harmonised Definition Reveals a Different Picture of Global Urbanisation," Paper for the 16th IAOS Conference, Paris, 2018. Available at: http://www.oecd.org/iaos2018/programme/IAOS-OECD2018_Lewis-et-al.pdf). There are several critiques of such estimates. First, defining urban areas based on moderate population density (as in that study) can lead to classifying substantial cropland regions as urban, including in Indonesia and Bangladesh. Moreover, other simple estimation methods lead to conclusions closer to official government statistics used by the UN For example, with the estimated 37% of the global labour force still working in agriculture, plus greater rural household size, a 2018 study estimated that 56% of global population lived in cities in 2015. Moreover, as countries such as the United States are approximately 85% urban, if 84% of the world's people already live in cities, it is hard to interpret the historic scale of rural to urban migration taking place in developing countries such as India and Kenya. Another estimation approach extrapolated data using Zipf's Law for city population size distributions (somewhat controversial, examined in this chapter); this led to the conclusion that only 52% of global population likely lived in cities or towns with at least 5,000 people. For details, see Shlomo Angel, Patrick Lamson-Hall, Bibiana Guerra, Yang Liu, Nicolás Galarza, and Alejandro M. Blei, 2018, "Our Not-So-Urban World," Working Paper 42, Marron Institute of Urban Management, New York University.
4. Tokyo is now actually shrinking in size. See United Nations, *World Urbanisation Prospects, The 2018 Revision*; and Daniel Hoornweg and Kevin Pope, "Population predictions for the world's largest cities in the 21st century," *Environment and Urbanisation*, Vol. 29, issue 1, pp. 195–216, 2017. For differences between historic urbanisation and contemporary developing country urban growth, see also Edward L. Glaeser, *A World of Cities: The Causes and Consequences of Urbanisation in Poorer Countries*, Harvard University. Available at: https://scholar.harvard.edu/files/glaeser/files/worldofcities-causesconseqofurbanizinpoorercountries_nberwp.pdf.
5. It has been extremely difficult to estimate with any precision either agglomeration efficiencies or congestion costs (diseconomies) of city size. Note also that increasing returns to scale associated with agglomeration economies suggest that city size is subject to multiple equilibria (see Chapter 4).
6. SDR Report 2018.
7. United Nations Population Fund, *Population, Resources, and the Environment* (New York: United Nations, 1991), p. 61.
8. United Nations Population Division, *World Population Monitoring, 1987* (New York: United Nations,

1988). Those results were reiterated in the Program of Action of the 1994 International Conference on Population and Development, para. 9.1. More recently, the United Nations reported in 2006 that nearly three-quarters of developing-country officials indicated a strong desire to implement policies that would reduce rural-to-urban migration, or to take actions to reverse rural–urban migration trends. See United Nations Population Division, *World Urbanisation Prospects: The 2005 Revision*.

9. Marshall introduced the industrial districts concept in his 1890 *Principles of Economics*. See Michael Porter, *The Competitive Advantage of Nations* (New York: Free Press, 1990); his theory is reviewed further in Chapter 12. For implications of Porter's framework for development, see S.C. Smith, *Journal of Development Economics*, 36, 399 404 (1993).
10. See Michael Piore and Charles Sabel, *The Second Industrial Divide* (New York: Basic Books, 1984).
11. See Khalid Nadvi, "Collective efficiency and collective failure: The response of the Sialkot Surgical Instrument Cluster to global quality pressures," *World Development* 27 (1999): 1605–1626.
12. Gezahegn Ayele, Lisa Moorman, Kassu Wamisho, and Xiaobo Zhang, "Infrastructure and cluster development," International Food Policy Research Institute Discussion Paper No. 980, 2009.
13. The significance of industrial districts in developing countries is difficult to pin down, in part because such clusters overlap traditional political jurisdictions for which data are collected. An excellent source on this topic is Hubert Schmitz and Khalid Nadvi, eds., "Introduction: Clustering and industrialisation," *World Development* 27 (1999): 1503–1514. See also Khalid Nadvi, "Collective efficiency and collective failure: The response of the Sialkot Surgical Instrument Cluster to global quality pressures," *World Development* 27 (1999): 1605–1626. Hermine Weijland, "Microenterprise clusters in rural Indonesia: Industrial seedbed and policy target," in ibid., p. 1519.
14. Dorothy McCormick, "African enterprise and industrialisation: Theory and reality," in ibid., pp. 1531–1551.
15. Schmitz and Nadvi, "Introduction" ibid., pp. 1505–1506,
16. For example, studies have demonstrated that "if a plant moves from a location shared by 1,000 workers employed by firms in the same industry to one with 10,000 such workers, output will increase an average of 15%, largely because the pool of specialised workers and inputs deepens." Moreover, "productivity rises with city size, so much so that a typical firm will see its productivity climb 5% to 10% if city size and the scale of local industry double." World Bank, *World Development Report, 1999–2000* (New York: Oxford University Press, 2000), ch. 6.
17. Edward Glaeser, ibid., Remi Jedwab, et al., ibid., Edward L. Glaeser.
18. *World Development Report 1999-2000*, ibid.
19. For an introductory overview of urban economics, see, for example, Arthur M. O'Sullivan, *Urban Economics*, 5th ed. (New York: McGraw-Hill/Irwin, 2002). Formal models of some of these ideas can be found in Masahisa Fujita, Paul Krugman, and Anthony J. Venables, *The Spatial Economy: Cities, Regions, and International Trade* (Cambridge, Mass.: MIT Press, 1999). We would like to thank Anthony Yezer for his very helpful suggestions on these sections.
20. For a thought-provoking assessment of the benefits of cities for development, see Edward Glaeser, *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*, NY: Penguin, 2011.
21. Source for first-to-second city ratio: UN Population Division urban statistics of all cities with at least 300,000 in population. (The figure "at least 37" refers to the limits of that dataset, so countries such as Uganda, with a ratio close to 10:1, are not on the list because Kampala is the only city reported, while other sources indicate the second city has a population size below the 300,000 threshold; Uruguay is another such case.) Often, a moderate relative size of the largest city is found in nearly continent-sized countries, and those in which the political capital is not in the principal commercial city—or both, as in Australia, Brazil, Canada, and the United States. But the picture changes somewhat even in very large countries if one considers what the United Nations has termed megaregions, which include Hong Kong–Shenzhen–Guangzhou in China and Rio de Janeiro–São Paulo in Brazil. With the exception of France and Britain, most ratios in Europe are quite small, where the largest city is typically

about twice as large (or smaller) as the second city. Examples—Italy: Rome, 4.2 million; Milan, 3.1 million. Germany: Berlin, 3.6 million; Hamburg, 1.8 million. Netherlands: Rotterdam and Amsterdam, 1.1 million each. Portugal: Lisbon, 2.9 million; Porto, 1.3 million. Spain: Madrid, 6.5 million; Barcelona, 5.5 million.

22. For example, while Mexico City continues to expand, it has a smaller share of industry than in decades past. A major reason is the growing concentration of export industries in northern Mexico along the US border, especially following implementation of NAFTA and, even more recently, the move of some low-skill industries to southern Mexico.
23. Alberto F. Ades and Edward L. Glaeser, "Trade and circuses: Explaining urban giants," *Quarterly Journal of Economics* 110 (1995): 195–227. Urban concentration is defined as the average share of urbanised population living in the main city from 1970 to 1985. Stable countries are defined as those whose average number of revolutions and coups is below the worldwide median. Dictatorships are countries whose average Gastil democracy and freedoms index for the period is higher than 3. See also Rasha Gustavsson, "Explaining the phenomenon of Third World urban giants: The effects of trade costs," *Journal of Economic Integration* 14 (1999): 625–650.
24. Marvin Goodfriend and John McDermott argued that "the continuing widespread use of primitive production processes alongside relatively modern techniques is the most striking feature of less-developed countries." See Marvin Goodfriend and John McDermott, "Early development," *American Economic Review* 85 (1995): 116–133. The quote is from p. 129.
25. UN-Habitat's annual "State of the World's Cities" reports are available at http://www.unhabitat.org.
26. See World Bank, *World Development Report, 2008–2009* (New York: Oxford University Press, 2008), on the often unrealised role of agriculture in development (discussed in Chapter 9); UN-Habitat on new developing-country perspectives on urbanisation at http://www.unhabitat.org; and the World Bank on realising more of the potential benefits of cities at http://www.worldbank.org/urban. See also World Bank, *World Development Report 2009: Reshaping Economic Geography* (New York: Oxford University Press, 2009).
27. For the 2012 CIV study, see Isabel Günther and Andrey Launov, "Informal employment in developing countries: Opportunity or last resort?" *Journal of Development Economics* 97, No. 1 (2012): 88–98; the authors use a parametric identification strategy. For a concise review of the overall debate, see Cathy A. Rakowski, "Convergence and divergence in the informal sector debate: A focus on Latin America, 1984–92," *World Development* 22 (1994): 501–516. See also Donald C. Mead and Christian Morrisson, "The informal sector elephant," *World Development* 24 (1996): 1611–1619, and Edward Funkhauser, "The urban informal sector in Central America: Household survey evidence," *World Development* 24 (1996): 1737–1751.
28. UN-Habitat noted this for its *State of Women in Cities 2012/2013*, http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3457.
29. See Robert E. B. Lucas, "Internal migration and urbanisation: Recent contributions and new evidence," background paper for World Bank, *World Development Report, 1999–2000*.
30. Although the *rate* of rural–urban migration slowed during the 1980s, especially in Latin America and sub-Saharan Africa, as a result of declining urban real wages and fewer formal-sector employment opportunities, the actual number of migrants continued to increase.
31. See Appendix 7.1 and Michael P. Todaro, "A model of labour migration and urban unemployment in less developed countries," *American Economic Review* 59 (1969): 138–148, and John R. Harris and Michael P. Todaro, "Migration, unemployment, and development: A two-sector analysis," *American Economic Review* 60 (1970): 126–142.
32. This graph was first introduced in W. Max Corden and Ronald Findlay, "Urban unemployment, intersectoral capital mobility, and development policy," *Economica* 42 (1975): 59–78. It reflects Harris and Todaro," Migration, unemployment, and development."
33. Note that qq' is a rectangular hyperbola, a unitary-elasticity curve showing a constant urban wage bill; that is, $L_M \times W_M$ is fixed.
34. That is, if informal-sector income is greater than zero, we add to expected urban income (on the

right side of Equation 7.1) the informal-sector wage W_{UI} times the probability of receiving it: $W_{UI}(1 - L_M/L_{US})$, where $(1 - L_M/L_{US})$ is the probability of not receiving the preferred urban formal wage. We can further distinguish wages and probabilities of receiving them in this period, or in a more general model in future periods. In summary, there are at least six major ways to generalise the Harris-Todaro Model: first, incorporating that the traditional sector wage W_T is greater than zero; and that there may be intermediate, semi-skilled wages in addition to very low unskilled wages of the traditional sector. Second, the probability of employment may be a function that, among other things, increases the longer the time a migrant spent in the city. Third, potential migrants look at the present discounted value (PDV) of lifetime income or utility. Fourth, migrants may not be risk-neutral and so are likely to consider expected utility, not just average income. Fifth, risks to some workers in rural areas may be as high or higher than in urban areas. Sixth, moving costs of migration may be significant. For an extended model of the migration decision, see Appendix 7.1.

35. William J. Carrington, Enrica Detragiache, and Tara Vishwanath, "Migration with endogenous moving costs," *American Economic Review* 86 (1996): 909–930.

36. Whereas the Todaro model focuses on the institutional determinants of urban wage rates above the equilibrium wage, several later analysts have sought to explain this phenomenon by focusing on the high costs of labour turnover (the so-called labour turnover model) in urban areas and the notion of an efficiency wage; an above-equilibrium urban wage enables employers to secure a higher-quality workforce and greater productivity on the job. For a review of these various models, see Joseph E. Stiglitz, "Alternative theories of wage determination and unemployment in LDCs: The labour turnover model," *Quarterly Journal of Economics* 88 (1974): 194–227, and Janet L. Yellen, "Efficiency wage models of unemployment," *American Economic Review* 74 (1984): 200–205. For evidence of the existence and importance of an institutionally determined urban–rural wage gap, see Francis Teal, "The size and sources of economic rents in a developing country manufacturing labour market," *Economic Journal* 106 (1996): 963–976. In an influential study, Valerie Bencivenga and Bruce Smith make the alternative assumption that urban modern firms do not know the productivity of migrants but that some potential migrants from rural areas are highly productive and others are unproductive within formal-sector (say, industrial) firms. In this scenario, firms will be motivated through competitive forces to (in effect) offer migrants a package of a wage and a probability of employment. Modern-sector firms hire labour until their marginal products are equal to the resulting high wage rate, and unemployment ensues. Moreover, if modern-sector labour demand increases, both modern- and traditional-sector workforces expand proportionately, inducing additional migration. See Valerie R. Bencivenga and Bruce D. Smith, "Unemployment, migration, and growth," *Journal of Political Economy* 105 (1997): 582–608. An alternative perspective in the economics-of-information framework, based on moral hazard problems, is offered by Hadi S. Esfahani and Djavad Salehi-Ifsahani, "Effort observability and worker productivity: Toward an explanation of economic dualism," *Economic Journal* 99 (1989): 818–836.

37. For the evidence on Costa Rica, see Gindling, T.H., and Terrell, K. (1995) "The nature of minimum wages and their effectiveness as a wage floor in Costa Rica, 1976–1991," *World Development*, 23(8), 1439–58; and Gindling, T.H., and Terrell, K. (2007) "The effects of multiple minimum wages throughout the labour market: the case of Costa Rica,." *Labour Economics*, 14(3), 485–511 (1995, 2004); for Brazil, see Fajnzylber, P. (2001) *Minimum wage effects throughout the wage distribution: Evidence from Brazil's formal and informal sectors*; Lemos, S. (2007) "Minimum wage effects across the private and public sectors in Brazil," *The Journal of Development Studies*, 43(4), 700–20. For additional evidence on minimum wages, see Strobl, E., and Walsh, F. (2003) "Minimum wages and compliance: The case of Trinidad and Tobago," *Economic Development and Cultural Change*, 51(2), 427–50; Alatas, V., and Cameron, L. A. (2003) "The impact of minimum wages on employment in a low income country: an evaluation using the difference-in-differences approach"; Bell, L.A. (1997) "The impact of minimum wages in

Mexico and Colombia," *Journal of Labour Economics*, 15(S3), S102–S135; Del Carpio, X.V., Nguyen, H.M., Nguyen, H., and Wang, L.C. (2012) "Does the minimum wage affect employment? Evidence from the manufacturing sector in Indonesia"; Feliciano, Z.M. (1998) "Does the minimum wage affect employment in Mexico?" *Eastern Economic Journal*, 24(2), 165–80; and Neumark, D., Cunningham, W., and Siga, L. (2006) "The effects of the minimum wage in Brazil on the distribution of family incomes: 1996–2001," *Journal of Development Economics*, 80(1), 136.

38. On problems of job creation, see World Bank, *World Development Report 2012*. For other perspectives on migration and urbanisation policy, see, for example, Gary S. Fields, "Public policy and the labour market in less developed countries," in *The Theory of Taxation for Developing Countries*, eds. David P. Newbery and Nicholas Stern (New York: Oxford University Press, 1987); Charles M. Becker, Andrew M. Hammer, and Andrew R. Morrison, *Beyond Urban Bias in Africa: Urbanisation in an Era of Structural Adjustment* (Portsmouth, N.H.: Heinemann, 1994), chs. 4–7; David Turnham, *Employment and Development: A New Review of Evidence* (Paris: Organisation for Economic Coordination and Development, 1993), pp. 245–253; Paul P. Streeten, *Strategies for Human Development: Global Poverty and Unemployment* (Copenhagen: Handelshøjskolens Forlag, 1994), pp. 50–64; and Cedric Pugh, "Poverty and progress: Reflections on housing and urban policies in developing countries, 1976–96," *Urban Studies* 34 (1997): 1547–1595.

39. Again, although modern-sector employment growth is likely to be reduced by minimum wages, their effects are otherwise complex and apparently somewhat context-specific. The literature has also examined strategies to eliminate excessive migration through wage subsidies; these would prove expensive and difficult to administer, but their analysis has yielded interesting insights into the nature of the Harris-Todaro migration model. See, for example, Ira Gang and Shubhashis Gangopadhyay, "Optimal policies in a dual economy with open unemployment and surplus labour," *Oxford Economic Papers* 39 (1987): 378–387, which also contains references to important earlier work.

40. Martin Ravallion, Shaohua Chen, and Prem Sangraula, "New evidence on the urbanisation of global poverty," World Bank Research Working Paper 4199, 2008.

41. *World Bank World Development Report*, 2010, p. 110.