

1. Coping with city growth, past and present

1.1 Looking backward from the present¹

The past quarter century witnessed unprecedented economic progress in the Third World as gauged by the standards of the First Industrial Revolution. Economic success of that magnitude has always created problems of dislocation and structural adjustment. City growth is one such problem, and given the unprecedented progress in the Third World, their city growth problems seem, at least to those who ignore history, unprecedented as well. By the end of this century, the United Nations forecasts urban population growth rates three times those of rural areas. Two billion people, exceeding 40 percent of the Third World population, will live in cities; some cities will have reached extremely large size – Mexico City at 31.6 million, São Paulo at 26 million, and Cairo, Jakarta, Seoul, and Karachi, each exceeding 15 million. Current rates of Third World city growth border on the spectacular, averaging between 4 and 5 percent per annum.

Analysts and policymakers are sharply divided on the city-growth problem. Pessimists stress the Third World's inability to cope with the social overhead requirements of rapid urban growth and high urban densities, citing ugly squatter settlements, pollution, environmental decay, and planning failure as evidence of their inability to cope. Third World city growth is viewed by the pessimists as another example of the "tragedy of the commons," a classic example of overuse of a collective resource. In contrast, optimists view city growth as a central force raising average living standards. They view urbanization as the natural outcome of economic development, and a requisite for the more rational use of economic resources. To the optimist, the tragedy of the commons is really nothing more than an example of poor economic planning and inappropriate prices. Debate over public options remains intense, the optimists favoring

¹ The first three paragraphs of this section draw on Kelley and Williamson (1984), pp. 3–4.

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an open-city approach and the pessimists searching for ways to close the cities down.

Economic success breeds problems of adjustment, and they certainly seem severe in Third World cities. Development economists have spent almost three decades debating urban unemployment, underemployment and the alleged failure to absorb the flood of rural emigrants into city labor markets; the persistent influx of newcomers makes it extremely difficult for municipal planners to improve the quality of social overhead; the migrants crowd into densely packed urban slums, jammed into primitive dwellings with little or no social services; and the rising density and size of the city augments pollution while lowering the quality of the city environment.

None of this would sound unfamiliar to Victorians coping with city growth in the middle third of the nineteenth century. They too were overwhelmed by the same “success.” They too took innumerable surveys, held countless parliamentary hearings, published one official document after another, searched for scapegoats, and struggled with reform. Thus, the debate between the Third World city-growth optimists and pessimists is hardly new, and can be found in the British *Parliamentary Papers* as early as the 1830s, in treatises by political economists, and in the British press.

1.2 Placing Britain’s city growth in perspective

During the Reform Debates of the 1830s and 1840s, the conventional wisdom had it that Britain was undergoing unusually rapid city growth. This characterization is embedded in the historiography even today. To offer one example, Michael Flinn (1965, p. 4) cites census data to show that some nineteenth-century towns grew at rates “that would bring cold sweat to the brows of twentieth-century housing committees.” Thus, Glasgow grew at 3.2 percent per annum in the 1830s, Manchester and Salford at 3.9 percent in the 1820s, Bradford at 5.9 percent in the 1830s, West Bromwich at 4.8 and 5.4 percent in the 1820s and 1830s, and Dukinfield nearly trebled in the 1820s. These were the fast-growing cities and towns in the industrializing North, of course, and, as it turns out, these were the decades of most rapid growth. On average, Britain’s cities grew somewhat slower than the previous examples suggest, about 2.5 percent per annum in the 1820s. Furthermore, these rates were almost half of those for the Third World in the 1960s (Table 1.1).

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Table 1.1. *A comparative assessment of city-growth performance*

Country	Date maximum city growth reached			Maximum rate of city growth (% per annum)
	Early 1800– 1850	Middle 1850– 1900	Late post-1900	
England & Wales	1821–1831			2.50
France	1830–1850			1.58
Germany	1830–1850			3.43
Austria		1800–1900		2.10
Belgium		1880–1900		1.95
Denmark		1880–1900		3.22
Finland		1880–1900		4.00
Italy		1880–1900		1.86
Norway		1850–1870		2.94
Sweden		1850–1900		2.91
Netherlands			1900–1910	1.93
Spain			1900–1910	1.82
Switzerland			1900–1910	3.22
Europe (excluding England & Wales)		1880–1900		2.58
Third World (excluding China)			1960–1970	4.21

Sources: All European estimates but England and Wales are derived by applying Bairoch and Goertz (1986, p. 288) urban shares to Mitchell's (1978, pp. 3–8) population figures. England and Wales are derived from Table 2.4 below. (It should be noted that Bairoch's implied city-growth rates are considerably higher.) The Third World estimate is from UN (1987, pp. 70 and 75).

However, contemporary observers living during the First Industrial Revolution had reason to view Britain's city growth as being unusually fast. After all, they had no previous industrialized country experience with which to gauge their own. They had only the evidence that city growth was faster in the early nineteenth century than it was in the previous one. Looking backward from the vantage point of the 1980s, we do not suffer the same limited vision of history. The Victorians were unable to make comparative assessments, but we can.

So, was Britain's city growth rapid by the standards of the "typical" European industrial revolution? As Table 1.1 shows, there was little that was unusual about Britain's city growth during the First Industrial Revo-

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Table 1.2. *A comparative assessment of urbanization levels*

Country	Date	Income per capita in 1970 \$	Level of urbanization (%)
Belgium	1850	584	31.8
Denmark	1870	563	20.2
Italy	1910	548	40.5
Norway	1890	548	20.5
Sweden	1900	616	19.3
France	1870	567	25.0
Germany	1870	579	24.4
Unweighted average of above seven countries	1850–1910	572	26.0
England & Wales	1840	567	48.3

Sources: Derived from Crafts (1985), Tables 3.2 and 3.3, pp. 54–5 and Bairoch and Goertz (1986), p. 288.

lution. The rest of Europe reached its peak rate of city growth much later in the nineteenth century, of course. Whereas the peak rate for England and Wales occurred in the 1820s, the peak rate for the rest of western and southern Europe was during the last two decades of the nineteenth century. Yet, the rate of city growth at their respective maxima were almost identical: 2.5 percent per annum for England in the 1820s versus a little less than 2.6 percent per annum for the rest of Europe between 1880 and 1900. The key message emerging from Table 1.1, therefore, is that Britain's city growth at her peak in the 1820s was no different from the rates achieved in the rest of Europe at its peak.

The level of urbanization is a different story. Table 1.2 relies on N. F. R. Crafts's book (1985, chp. 3) to assess Britain's urbanization levels relative to the rest of nineteenth-century Europe and the contemporary Third World. In 1970 dollars, Britain's per capita income was \$567 in 1840. Because urbanization is highly correlated with per capita income, we want to compare levels of urbanization between countries of comparable incomes. Table 1.2 offers that evidence for England and seven other European countries. At roughly the same per capita income, England in 1840 had a much higher urban share, 48.3 percent, than did the rest of Europe in the mid-to-late nineteenth century, 26 percent, or even the contemporary Third World, 26.4 percent. Yet, this comparison

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tells us far more about British comparative advantage and eighteenth-century preconditions than it does about its alleged “unusual” city growth in the early nineteenth century, and it is the latter that is at issue in this book.

1.3 The issues

Exploring how Britain coped with city growth during the First Industrial Revolution is useful for four reasons: first, because its urban transition was completed long ago, while it is ongoing in the Third World; second, because Britain underwent the first urban transition and thus had to search for novel ways to cope with what was a singular event at that time; third, because Britain’s urban transition can be well documented (it cannot for most of the countries listed in Table 1.1); and fourth, because Britain’s experience was fairly typical.

How, then, did Britain cope with city growth during the First Industrial Revolution?

We begin the search for answers in Chapter 2 with a demographic reconstruction of what I call the urban transition. Here, I offer decadal estimates of emigration from the lagging countryside, immigration into the booming cities, and city growth. We discover that immigration played a much bigger role than did natural increase compared with the contemporary Third World. This seems to be explained in large part by the far higher rates of natural increase in the countryside than in the city. In contrast, the Third World has never had to cope with Britain’s problem; namely, excess labor demands centered in cities where the rates of natural increase were lowest. We also discover that the rate of rural emigration was very rapid long before “rural depopulation” became a popular issue in the late nineteenth century, and that there is no evidence to support the view that potential rural emigrants were reluctant to leave. And the immigrants self-selected; the flows were dominated by young adults, and this had important implications for city pauperism, dependency burdens, accumulation, and the evolution of the excess labor demands, which immigration satisfied.

Chapter 3 pursues the migrant-selectivity theme and develops an estimate of the human capital transfer implied by the rural emigration. The numbers are very large, suggesting that human capital flows between countryside and city were far more important than financial flows. This

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event served to ease the pressure on city capital markets as they tried to cope with the investment requirements of rapid city growth.

Chapter 4 turns from the supply of city labor to the demand for city labor and its absorption. In contrast with the “overurbanization” thesis so popular in the Third World literature, urbanization did not outpace industrialization during the First Industrial Revolution. Furthermore, it appears that the demand for labor in the cities was fairly elastic and shifted to the right at very buoyant rates during the four critical decades, 1821–61, when city growth problems were said to have reached their peak.

Chapter 5 turns from a macro assessment of city labor absorption to micro issues. One of the most popular paradigms of city labor markets in the Third World literature is the so-called Todaro model. It implies “failure” in labor markets, “irrational” immigrants, and that immigrants do badly relative to the native-born. It turns out that the evidence from 1851 fails to support this view. Instead, immigrants responded to current job prospects, achieved economic success on par with the native-born, and were absorbed by the city labor market quite easily.

Chapter 6 looks at the experience of one important group of immigrants that has gotten so much attention since the 1820s – the Irish. It offers answers to three questions: Was the standard of living of British labor significantly depressed by the Irish influx? Were potential emigrants from Britain’s countryside crowded out? Did “elastic” Irish labor supplies foster industrialization? The answers are surprising and revisionist.

Although the preceding chapters appear to take a benign neoclassical view of the operation of British labor markets during the First Industrial Revolution, Chapter 7 points out that there were large and rising wage gaps between city and countryside. These gaps are common during industrial revolutions, but they seem to have been especially large in Britain in the early 1830s. This was partly due to cost-of-living differentials, quality-of-life differentials, and rural poor relief. It was also due to labor-market failure. This chapter assesses the impact of the labor-market failure, explores who gained and who lost from the failure, and then traces out the accumulation implications.

Chapter 7 argues that Britain’s cities were starved for labor and capital, and thus that city growth was too slow. The Third World literature on city growth takes quite a different position, and the British evidence seems to be inconsistent with it. Chapter 8 shows that Britain did not overurbanize, that there was an antiurban bias (rather than a prourban bias, as argued for the Third World), but that wage gaps overstate the benefits to addi-

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tional immigration. The latter had its source in high city death and sickness rates associated with crowding and disease. That is, the marginal social costs of city growth were likely to have exceeded the marginal private costs.

Chapter 9 explores this theme in greater detail. It describes the perils of early nineteenth-century city life, and relates them to crowding and the high cost of urban housing. Inelastic supplies of housing and city space played a key role in creating the high mortality, which led Engels to call immigration to Victorian cities “social murder.” Yet, wages reflected the perils of city life, clean and less crowded cities paying lower wages than dirty and crowded ones. The chapter offers an estimate of the value workers placed on the better quality of life they gave up when they migrated from the countryside to the city, and it turns out that the deterioration in the quality of life facing the average laborer – more of whom were in the dirty cities – did little to erase the income gains associated with industrialization and urbanization up to the 1850s.

The key question, however, is whether Britain could have done better for her working classes in the cities. It appears that it could. In fact, Britain underinvested in her cities. Although much has been made of the “modest investment requirements” associated with the British industrial revolution, that fact does not offer support for the smug conclusion that Britain pursued some optimal labor-intensive policy. On the contrary, what it reflects is that Britain underinvested in her city infrastructure. Chapter 10 attempts to estimate the magnitude of that underinvestment by exploring the costs of two counterfactual policies: a city decrowding policy introduced after the French War, when new war debt was no longer a crushing financial burden; and a regime in which sanitary reform was introduced faster and sooner. It turns out that understanding why Britain underinvested in city social overhead is crucial to making sense out of the sharp difference with the Third World, where it is argued that there is overinvestment in cities.

These, then, are the main questions raised in this book. Now I must show how I got my answers.

2. The urban demographic transition: Births, deaths, and immigration

2.1 Why do we care about the urban demographic transition?

A reconstruction of the demographic dimensions of the urban transition should help improve our understanding of the First Industrial Revolution.

Certainly it is essential in searching for answers to any of the following questions: Did English cities grow more by natural increase than by migration? Did city immigration rates rise as industrialization accelerated? Did rural emigration rates respond vigorously to the employment demands of rapid city growth, or were rural Englishmen more attached to the land than has been true of other industrial revolutions? Was migration selective? If so, what was the impact of the selectivity on the city economy? What role did push and pull forces play in rural and urban labor markets? These questions have always been at center stage in debates about the First Industrial Revolution. The answers will hinge on an assessment of those forces creating and displacing jobs in the two labor markets, as well as on the migration behavior thought to link them, assessments which cannot be made without the prior demographic reconstruction performed in this chapter.

Consider, for example, the Third World overurbanization debate which was initiated by Bert Hoselitz in the 1950s. His thesis was that urbanization was outpacing industrialization in the sense that urban populations were large relative to industrial jobs, at least when compared with late nineteenth-century experience (Hoselitz 1955, 1957). The implication was that urban labor was moving into low-wage, residual service underemployment by default. Hoselitz's thesis reinforced the belief that industrial employment growth in Third World cities was disappointing, that the cities were being swamped by workers pushed off the land, and that city immigrants were accepting unemployment or marginal service sector underemployment while waiting for the good industrial jobs (Todaro 1969). This debate has important implications for understanding how urban

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labor markets worked in Britain (Chapter 5) as well as how the cities coped with social overhead requirements (Chapter 10).

Resolution of the British push versus pull debate also hinges on an evaluation of the role of the Poor Laws, the enclosures, and the demise of rural cottage industry in the face of cheaper urban factory production. In addition, the answers hinge on an assessment of cost-of-living in the two locations, house rents and crowding-related disamenities playing a critical role (Chapter 9). And if the Irish immigrant was a serious competitor with the potential English rural emigrant, then we need better estimates of the rural-urban migration flows to explore the crowding-out phenomenon properly (Chapter 6). More generally, any assessment of the efficient operation of labor markets in Britain during the industrial revolution (Chapter 7) will hinge at least in part on the size of the rural-urban migrations that helped to satisfy excess labor demands in the cities.

2.2 Reconstructing rural emigration, city immigration, and the urban transition

The 1841 census added birth-place to birth and death-rate information by registration districts. Although these data are certainly useful for understanding the composition of England's cities at that date, the census takers never asked when the respondent moved to the city. Thus, the 1841 Census does not document migrant flows. Fortunately, however, subsequent censuses also reported birth and death rates by registration districts, so it is a simple (but time-consuming) matter to reconstruct migration flows by comparing actual population totals by location with those predicted from the location-specific birth and death rates. While H. A. Shannon and E. Grebenik (1943) pioneered this methodology with an application to Bristol, Alec Cairncross (1949, 1953, chp. 4) expanded the application to England as a whole for the postcensus period. Dov Friedlander (1969) extended Cairncross's efforts back even further in time to 1800.

Friedlander's method of reconstructing the precensus decades is simple enough (which, for the moment, we make simpler by ignoring external migration and taking the system to be closed):

$$C(t) - C(t-1) = CCBR(t-1)C(t-1) - CC DR(t-1)C(t-1) + M(t-1) \quad (2.1)$$

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$$R(t) - R(t-1) = RCBR(t-1)R(t-1) - RCDR(t-1)R(t-1) - M(t-1) \quad (2.2)$$

where urban (C) and rural (R) populations are known. Four parameters must be estimated – crude birth rates (CBR) and crude death rates (CDR) in city and countryside. With this information in hand, migration, $M(t-1)$, can be derived from either equation. In addition, of course, the migration estimates in (2.1) and (2.2) must be consistent, so we must search for values of those parameters on the right-hand side (the two death rates and the two birth rates) that preserve the equality. Because there are many demographic parameters that would satisfy that equality, we need more information. Given estimates of crude birth rates and crude death rates for England as a whole, and given estimates of the share of the urban population, then the only additional information we require are the relative urban and rural rates. Friedlander solved the problem by assuming that British urban-rural death-rate differentials followed Swedish experience, thus yielding a unique estimate of rural-urban migration and the two birth rates.¹

Friedlander's estimates for 1801–41 filled a gap in our knowledge about the English urban transition and his estimates for the post-1841 period appear at first sight to be superior to those offered by Cairncross, because, for example, Friedlander's city immigration rates for the 1840s are much more like those found in the contemporary Third World (Kelley and Williamson, 1984, chp. 3) than Cairncross's far lower estimates. But Friedlander's estimates of rural-urban migration can be greatly improved and extended. First, we now have the superior Wrigley and Schofield (1981) aggregate quinquennial population estimates that were unavailable to Friedlander. Second, we have the superior quinquennial nationwide crude birth rates and crude death rates also available in Wrigley and Schofield, rates quite different from those utilized by Friedlander. Third, while Friedlander relied on Adna Weber's (1899) urbanization estimates for 1841–91 and his own guesses for 1801–41, we now have available the far superior estimates of C. M. Law (1967, 1972) from 1750 onward. Fourth, there is absolutely no reason why the English urban transition cannot be disaggregated by region. Because it has been argued that the North and the South of England were likely to have been driven by quite different demographic and economic forces during the industrial revolu-

¹ Given birth rates for England as a whole, one of these birth rates in equations (2.1) and (2.2) implies the other.