



**The Rouge.** Ford Motor Company's River Rouge Plant, Dearborn, Michigan, July 2010 (Elvin Wyly).

## **The Industrial City**

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### **Coketown Boys**

Debate persists on the origins and causal factors involved in the appearance of the world's first cities. Similarly, there are many ways to read the varied paths of urbanization in various parts of the world in more recent times: exciting new literatures are documenting the context and contingency of urban growth over the last thousand years in various parts of Africa, China, MesoAmerica, and the Middle East. But there is almost universal consensus on one key transformation in the history of cities: in the first half of the nineteenth century, crucial changes in technology and economic relations in England altered the process of urbanization, giving rise to the *industrial city*. While earlier cities owed their existence to a variety of functions -- military outposts, political centers, religious sites, trading centers, etc. -- the fundamental basis of the industrial city involved the assembly of raw materials and the production of manufactured goods. The entire *raison d'être* of the city had changed. Lewis Mumford narrates the transformation:

“Up to the nineteenth century, there had been a rough balance of activities within the city. Though work and trade were always important, religion and art and play claimed their full share of the townsman’s energies. But the tendency to concentrate on economic activities, and to regard as waste the time or effort spent on other functions, at least outside the home, had been growing steadily since the sixteenth century. If capitalism tended to expand the province of the marketplace and turn every part of the city into a negotiable commodity, the change from organized urban handicraft to large scale factory production transformed the industrial towns into dark hives, busily puffing, clanking, screeching, smoking for twelve and fourteen hours a day, sometimes going around the clock. The slavish routine of the mines, whose labor was an intentional punishment for criminals, became the normal environment of the new industrial worker. None of these towns heeded the old saw, ‘All work and no play makes Jack a dull boy.’ Coketown specialized in producing dull boys.”<sup>1</sup>

### **Cities and the ‘Industrial Revolution’**

Scores of innovations quite literally *took place* in the English Midlands between about 1750 and 1850. A small sample of these key innovations includes:

- the development of the steam engine by James Watt, an instrument maker in Glasgow, Scotland (1769);
- the creation of new techniques for removing impurities from molten iron, by Henry Cort, a naval agent working near Fareham, England (1783);
- the development of a “spinning frame” that used rollers to untangle cotton fibers (Richard Arkwright, a barber and wigmaker from Preston, England, in 1768); and
- the creation of a locomotive using Watt’s steam engine, devised by William Symington and William Murdoch (1774) and subsequently improved by William Hedley (1812) and George Stephenson, culminating in the first public railway, connecting Stockton and Darlington (1825).

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<sup>1</sup> Lewis Mumford (1961). *The City in History*. New York: Harcourt, Brace, & World, p. 446. Mumford’s chapter is titled, “Paleotechnic Paradise: Coketown.” Coketown was the city referred to in Charles Dickens’ *Hard Times*. Coke is the hard, gray residue, composed mostly of carbon, that is left after distilling coal by intense heat; it burns extremely hot with relatively little smoke, and became a key fuel in ironworking and subsequently, steel production.

*Between 1750 and 1850, the industrial revolution created a new kind of city - the **industrial city** -- first in England, then across continental Europe, North America, and around the world.*

Taken together, all of these changes are now recognized under the banner of the “industrial revolution.” The term is somewhat misleading, implying a certain sudden and singular character. Some historians argue, for example, that there is evidence of important industrial transformations in the sixteenth and seventeenth centuries. Other scholars identify multiple industrial revolutions -- the first in the English midlands in the late eighteenth century; a second in the late nineteenth century as dominance passed from England to Germany and the United States;

and a third near the end of the twentieth century with the accelerated rise of industrialization throughout Asia and parts of Latin America. “However, virtually all of these variant usages take as their point of reference the classical Industrial Revolution in Britain. Most writers attribute the term to Blanqui<sup>2</sup> in 1837: ‘Just as the French revolution witnessed great social experiences of earth-shaking proportions, England began to undergo the same process on the terrain of industry.’”<sup>3</sup>

What is undisputed is that the century between 1750 and 1850 wove the processes of industrialization and urbanization tightly together. “Urbanization increased in almost direct proportion to industrialization...”<sup>4</sup> In 1800, fewer than one in twenty people in the world lived in towns and cities; fifty years later, one in six people lived in towns and cities. By 1850, there were more than 900 cities in the world with at least 100,000 people. Industrialization propelled urbanization directly: sites near raw materials or sources of water power became more valuable, and new factories that centralized the previously dispersed, small-scale pattern of cottage industry brought new needs for more and more workers. But many indirect changes were involved as well. Industrialization brought new innovations that gradually mechanized agriculture, and led to dramatic increases in productivity. As a result, it became possible to produce more food to supply growing urban populations, and to do so with less labor; but reduced labor needs in agriculture subsequently forced rural workers off the land and into the cities in search of industrial work.

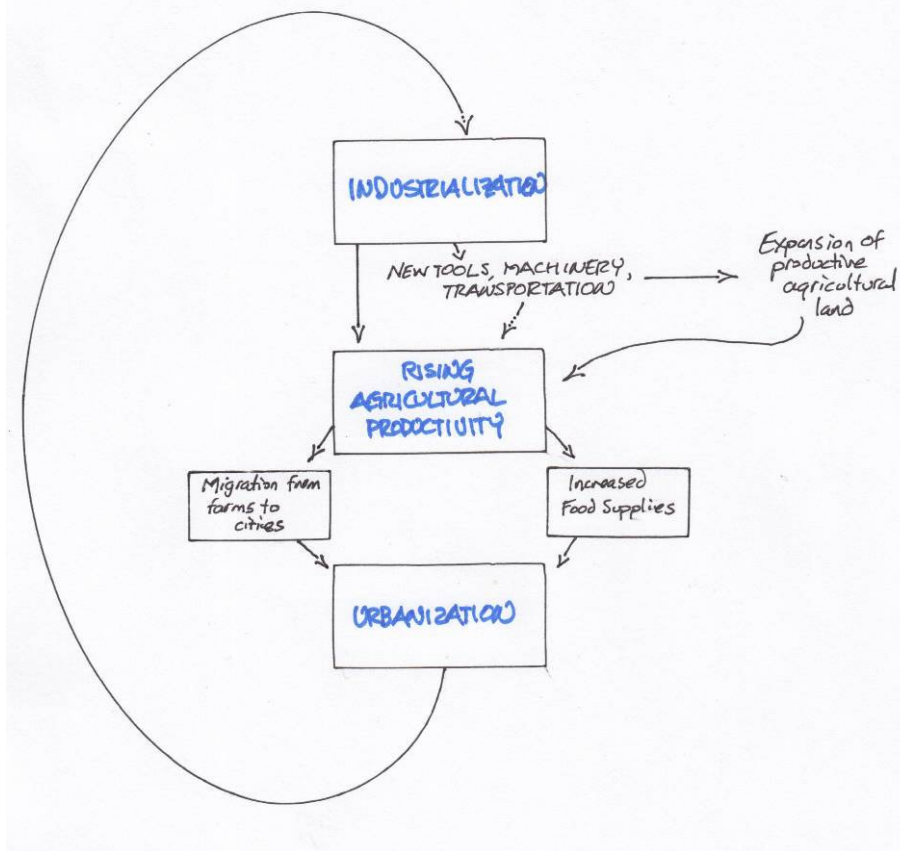
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<sup>2</sup> Louis Auguste Blanqui (1805-1851) was a French socialist involved in revolutionary movements in 1830, 1848, and 1871.

<sup>3</sup> Derek Gregory (1994), “Industrial Revolution.” In R. J. Johnston, Derek Gregory, and David M. Smith, eds., *The Dictionary of Human Geography*, Second Edition. Oxford: Blackwell, 281-285, quote from p. 281.

<sup>4</sup> Mumford, *City in History*, p. 448.





**The industrialization-urbanization link.**

Industrialization favored the concentration of people, capital, and economic activity in towns and cities, but it also transformed rural agriculture. It became possible to produce greater harvests with fewer workers, and thus more and more farm workers were forced to go to the cities -- and the expanding factories -- to find work. *Source:* Adapted and Modified from Paul Knox and Linda McCarthy (2005). *Urbanization*. Upper Saddle River, NJ: Prentice-Hall, p. 48.

**Consequences**

Through the nineteenth century, urbanization became more tightly intertwined with the process of industrialization. The consequences were profound and far-reaching. Four consequences were particularly important.

**First**, industrialization re-shaped the very basis of urban economic growth and wealth creation. Industrialization made urban growth synonymous with economic growth. The powerful changes

*Industrialization made urban growth synonymous with economic growth.*

of industrialization were magnified when concentrated in cities: “Industrial economies needed what cities had to offer: the physical infrastructure of factories, warehouses, stores, and offices; the transportation networks; the large labor pools; and the consumer markets.”<sup>5</sup> Industrialized urbanization also undermined old class relations, and replace them with new

alignments. Industrialization created the opportunity for unprecedented riches for new groups who had long been excluded from the wealth controlled by royal families, the maritime shipping empires with their large fleets, and the large landholders. The new bourgeoisie of capitalism -- the middle-class entrepreneurs who moved quickly to build factories in the expanding cities -- began to challenge the wealth and power of the old order. Some of the capitalists achieved astonishing success, and quickly achieved vast wealth; but the vast majority struggled, and their distinctive concerns traced out conflicts that last even today. Disagreements over the relative costs of renting land and buildings versus wages and profits, for instance, can be traced all the way back to the classical economist Adam Smith. For Smith, workers’ wages should be

<sup>5</sup> Paul Knox and Linda McCarthy (2005). *Urbanization*. Englewood Cliffs, NJ: Pearson/Prentice-Hall, p. 46.



understood as the compensation for the productive work of labor as a factor of production, while the payment of profit to factory owners was a fair compensation for the risks taken by capitalists, with wages and profits constantly coordinated by the “invisible hand” of supply and demand working themselves out through the market. But Smith had a much harder time justifying the payment of rent to land-owners. Smith attacked “the rent of land” as “naturally a monopoly price,” determined not according to “what the landlord may have laid out upon the improvement of the land, or to what he can afford to take; but to what the farmer can afford to give.”<sup>6</sup> As industrialization accelerated in the century after Smith wrote these words, the farmers were gradually replaced by the rising class of capitalist factory owners, who did not like having to pay high rents or to buy out the old landowners at constantly escalating prices.

**Second**, those cities at the leading edge of rapid urbanization saw massive crowding, terrible congestion and pollution, and pervasive dangers of fire and disease. All the new wealth of the capitalists, moreover, was based on profits that could only be sustained by keeping wages low -- and so the industrial city widened inequalities and etched them into the very structure of the city. Manchester, the first major industrial city, grew from a population of 15,000 in 1750 to 70,000 in 1801, and to half a million by 1861; Manchester is regarded as a prime example of a “shock city” -- a city that comes to be seen as the expression of all of the shocking and disturbing shifts in society, economy, and culture of the age. Perhaps the most widely-recognized account of the shock city comes from an idealistic 24-year old,

*Industrialization worsened crowding, pollution, and inequality -- creating “shock cities” -- cities that symbolized all the shocking and disturbing changes of an entire era.*

who was sent by his wealthy industrialist father to visit the factories of Manchester to learn the best practices of business management. “The unintended consequences of that particular paternal decision was *The Condition of the Working Class in England in 1844*,”<sup>7</sup> by Friedrich Engels. Engels described the conditions of life amidst the dramatic industrialization that was reshaping life across England, and he paid special attention to the urban consequences in a chapter titled, “The Great Towns.” Engels provided accounts from London -- a town so great and large that “a man may wander for hours together without reaching the beginning of the end”<sup>8</sup> -- as well as Dublin, Edinburgh, Liverpool, Glasgow, and many other cities. But he provided the most detailed account of Manchester, with simple, eloquent descriptions of the city his father had

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<sup>6</sup> Adam Smith (1776), *Wealth of Nations*, cited in A.W. Evans (1991). “On Monopoly Rent.” *Land Economics* 67(1), 1-14, cited on p. 2.

<sup>7</sup> Richard T. LeGates and Frederick Stout (2003), *The City Reader*, Third Edition. London and New York: Routledge, p. 58.

<sup>8</sup> Friedrich Engels (1845). *The Condition of the Working Class in England*. Translated and reprinted (1987), with an introduction by Victor Kiernan. London: Penguin, p. 68.

sent him to explore and learn. Engels describes the small towns surrounding Manchester, then takes us into the city -- which had a population of about 400 thousand at the time -- through the Old Town, around the vast proliferation of textile mills and warehouses along the canals and riverbanks, and then into the tightly-packed working-class districts. Engels describes dense concentrations -- “Everywhere heaps of debris, refuse, and offal; standing pools for gutters, and a stench which alone would make it impossible for a human being in any degree civilized to live in such a district”; places with “filth and horrors” hidden behind railway bridges, a “chaos of small one-storeyed, one-roomed hovels,” a “collection of cattle-sheds for human beings.”<sup>9</sup>



**The First Industrial City, the First Shock City.** Manchester, England, circa 1845. Rural landscape paintings often portrayed the new industrial cities from a distance, where the negative features of industrialization were not quite so visible. Public domain image.

About 115 years later, Lewis Mumford described the industrial city this way:

“As witness to the immense productivity of the machine the slag heaps and rubbish heaps reached mountainous proportions, while the human beings whose labor made these achievements possible were crippled and killed almost as fast as they would have been on a battlefield. The new industrial city had many lessons

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<sup>9</sup> Engels, *Condition*, p. 90.

to teach; but for the urbanist its chief lesson was in what to avoid. By reaction against industrialism's misdemeanors, the artists and reformers of the nineteenth century finally arrived at a better conception of human needs and urban possibilities. In the end the disease stimulated the antibodies needed to overcome it."<sup>10</sup>

*Shock city of the 1840s:  
Manchester, England.*

The vivid accounts of Engels and Mumford hint at a **third** major consequence of industrial urbanism. Although the 'industrial city' owed its existence to the new imperatives of manufacturing and technological innovation, the new patterns were superimposed on previous generations

of urbanism. As the industrial revolution diffused from England across Europe, many of the old military outposts, trading centers, and ecclesiastical centers of Medieval times were gradually transformed by industrialization. Each city, therefore, came to be the sediment of different epochs. Understanding the industrial city, therefore, required looking carefully to distinguish the industrial from the pre-industrial features of urban life. Cities had been crowded and sometimes dangerous places for centuries; was there anything distinctive about the urban ills of the industrial epoch? Engels observed Manchester carefully, and concluded that there was something fundamentally different about what the industrial era had done in and to cities. After an extended series of vivid descriptions of living conditions in the working-class districts, Engels offers this reflection:

"...on re-reading my description, I am forced to admit that instead of being exaggerated, it is far from black enough to convey a true impression of the filth, ruin, and uninhabitableness, the defiance of all considerations of cleanliness, ventilation, and health which characterize the construction of this single district, containing at least twenty to thirty thousand inhabitants. And such a district exists in the heart of the second city of England, the first manufacturing city of the world. If any one wishes to see in how little space a human being can move, how little air -- and such air! -- he can breathe, how little of civilization he may share and yet live, it is only necessary to travel hither. True, this is the *Old Town*, and the people of Manchester emphasize the fact whenever any one mentions to them the frightful condition of this Hell upon Earth; but what does that prove? Everything which here arouses horror and indignation is of recent origin, belongs to the *industrial* epoch. The couple of hundred houses, which belong to old Manchester, have been long since abandoned by their original inhabitants; the industrial epoch alone has crammed into them the swarms of workers whom they now shelter; the industrial epoch alone has built up every spot between these two old houses to win a covering for the masses whom it has conjured hither from the agricultural districts and from Ireland; the industrial epoch alone enables the owners of these cattlesheds to rent them for high prices to human beings, to plunder the poverty of the workers, to undermine the health of the thousands, in order that they *alone*, the owners, may grow rich. In the industrial epoch alone

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<sup>10</sup> Mumford, *City in History*, p. 446.



has it become possible that the worker scarcely freed from feudal servitude could be used as mere material, a mere chattel; that he must let himself be crowded into a dwelling too bad for every other, which he for his hard-earned wages buys the right to let go utterly to ruin. This manufacture has achieved, which without these workers, this poverty, this slavery could not have lived.”<sup>11</sup>

The uneven imprint of industrial urbanism helps to understand the particular character and anxieties of specific European cities, but also sheds light on a broad and enduring division in European attitudes toward cities. In the Continental European imagination, cities are seen as refuge from violence and Medieval deprivation; in England, by contrast, the earlier and quicker pace of industrialization meant that cities were viewed as dangerous byproducts of the industrial age – places polluted by factories, with workers packed tightly into nearby slums that were vulnerable to fire, plague, or rebellion.

**Fourth**, the diffusion of the industrial revolution across the European continent was intertwined with global shifts and realignments. For Lewis Mumford, the ancient city was the site of an “urban implosion,” concentrating and magnifying all of the societal forces of economy, culture, and cosmology; in the industrial age, this implosion brought together the far-flung anatomy of empire. While Engels’ account above presents a visceral shock of the *local* aspects of crowding and poverty, Manchester was also tightly integrated into *global* circuits. One of the city’s growing industries -- there were nearly one hundred cotton-spinning mills by 1830 -- made it the dominant consumer of the world’s raw cotton. In the mid-nineteenth century, four-fifths of the

*Industrialized urbanization was bound up with global shifts and realignments: some industrial cities came to dominate global trade relations, while European colonialism created a global network of cities tied into industrial networks.*

world’s cotton came from the slave plantations of the U.S. South. The U.S. Civil War interrupted these trade linkages. But in 1869 the Suez Canal opened and halved the travel time between Britain and India; it suddenly became feasible to ship raw cotton directly from India to Manchester, and to ship finished textiles from Manchester to markets around the world (including India, thereby decimating its small domestic textile industry). Shortly thereafter, British colonial plantations in Egypt and Uganda provided additional sources of raw cotton for Manchester’s mills.<sup>12</sup>

But the industrial city also exported itself, and came to play an important

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<sup>11</sup> Friedrich Engels (1845), “The Great Towns,” in *The Condition of the English Working-Class in 1844*, reprinted in LeGates and Stout, quote from p. 64.

<sup>12</sup> See Paul Knox and Sallie Marston (2001). *Places and Regions in Global Context*. Upper Saddle River, NJ: Prentice-Hall, p. 414.

role in the varied paths of urbanization associated with the expanding network of European colonialism. “Throughout the nineteenth century, European imperialism gave a significant impetus to urbanization in the world’s peripheral regions. New gateway cities were founded and, as Europeans raced to establish economic and political control over continental interiors, colonial cities were established as centers of administration, political control, and commerce.”<sup>13</sup> In some cases, colonialism brought entirely new cities “planted” in areas without any prior urban settlement; these “pure” colonial cities included Mumbai (Bombay), Kolkata (Calcutta), Ho Chi Minh City (Saigon), Hong Kong, Jakarta, Manila, and Nairobi. Elsewhere (in cities like Delhi, Mexico City, Shanghai, Tunis) colonial functions were imposed on existing urban settlements.<sup>14</sup>

## **The Industrial City in North America**

Industrialization shaped the development of cities around the world, and changed many aspects of the era of colonial expansion and competition that had been underway since the 1500s. We can see how some of the older, pre-industrial patterns changed if we take a closer look at the history of urban growth in the United States and Canada. Before the industrial revolution got to North America, European settlement and urban growth were shaped by two sets of factors: the different motives of the colonial powers (the goals of missionaries versus traders or colonizers/settlers), and the dominant principles of urban design used to lay out cities in the “New World” of the Americas.

### *Frontier Urbanization (pre-1790)*

European colonization in the Americas brought a variety of divergent influences. The Spanish arrived primarily as missionaries, but also as permanent settlers. Among the cities they founded were Saint Augustine (1565), Santa Fe (1610), San Diego (1769), San Francisco (1776), and Los Angeles (1781). Spanish settlement and town layout conformed to a series of “Laws of the Indies,” decreed by King Phillip II of Spain in the late 1500s. Consisting of nearly 150 detailed provisions governing everything from town site selection to street layout and administrative regulations, the Laws of the Indies shaped urban development for centuries:

“Most of the important cities of Latin America were founded between 1506 and 1570 (16 of the largest 20 were dedicated by 1580), according to a centralized system of royal planning that encouraged concentration of power, wealth, and resources. Rather than creating a system of cities, each principal city was administratively linked to, and thus dependent on, the government in Spain, and trade among them was not encouraged. We still see the fruits of this dependence in the trade and growth patterns of these cities.”<sup>15</sup>

And the historical legacy matters in other ways. James Vance puts it eloquently in a chapter section of *The Continuing City*, “The Roman Empire Reaches the Western Shore,” because, as it

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<sup>13</sup> Knox and Marston, *Places and Regions*, p. 412.

<sup>14</sup> Knox and Marston, *Places and Regions*, p. 412.

<sup>15</sup> Dora P. Crouch et al., *Spanish City Planning in North America*. Cambridge, MA: MIT Press, p. 27. Cited in Truman Hartshorne (1993), *Interpreting the City*. New York: Wiley, pp. 25-27.

turns out, Phillip II's Laws of the Indies come from an architectural treatise dating from the Roman Empire's expansion into present-day Spain, which

“...had brought the western peninsula into the Latin world through city founding. The Romans perfected a rather standardized town model to pacify and control a conquered area, whether won through peaceful acceptance of inevitable domination by the powerful Roman armies or by actual fierce warfare with the native peoples. The castra were foursquare, regular, laid out all of a piece, with a land-use pattern determined as much by the symbolic activities the Romans assigned to cities as by defensive concerns, and generally lightly walled and altered to the need for vigilance as the strongest protection. What we know about those Roman camp-towns comes from many sources, but the most detail is furnished by the *Ten Books of Architecture of Vitruvius*, rediscovered in the early fifteenth century. This work became the greatest literary guide to the Renaissance recreation of the Roman world. At the onset of the Spanish conquest of the New World, the great force sweeping Catholic Europe and motivating the elaborate construction by its princes was the wish to recreate concretely the grandeur of Rome. To that end, the rediscovery of Vitruvius in manuscripts surviving from the tenth century was rapidly influential on the Roman pope and the Holy Roman Emperor. Whether either had read Vitruvius is not important; we know that their architectural advisors had. The parallelism between the Vitruvian manuscript and the Laws of the Indies -- the proposals made in 1573 in the name of the King of Spain, the violent and cruel Philip II -- is sufficient to suggest a conscious emulation at work.”<sup>16</sup>

Not long after the Spanish founded Santa Fe, the Dutch entered the competition between the English, French, and even the Swedes, who were all struggling to dominate trade and colonization routes on the east coast. The Dutch ventured a calculated move in this rivalry by sending French-speaking Walloon speakers in 1624 in an effort to claim squatter's rights to the land called “Mana-hatta.” The Dutch pushed far north into the Hudson River Valley, naming the colony New Netherlands. Threats of Native American (First Nations) attacks in the first few years, however, led the first Director-General of the Dutch West India Company to evacuate most of the outlying settlements to New Amsterdam, on the southern tip of Manhattan Island. The English eventually seized New Amsterdam in 1664, however, and named it after James, the Duke of York. The surrender was negotiated to protect the interests of the wealthy Dutch merchants, who were assured that their interests in New York would be safe. But a second Anglo-Dutch war in 1665 led the British to ban all trade with the Dutch, beginning a period of Anglicization.

The French arrived primarily as traders, but in their explorations through the water routes of the Great Lakes and the Mississippi, they established trading posts that evolved into large cities: Quebec, Montreal, Detroit, St. Louis, and New Orleans.

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<sup>16</sup> James E. Vance, Jr. (1990). *The Continuing City: Urban Morphology in Western Civilization*. Baltimore: Johns Hopkins University Press, pp. 212-213.



Permanent colonization and settlement was much more important to the English, who established outposts in the estuaries along the East Coast, including Jamestown, Virginia (1607), Williamsburg (1663), Boston, Newport, Philadelphia, and New York (1664). Many of the later settlements are referred to as “English Renaissance” cities as a reflection of the planning influences; prime examples include Annapolis, Maryland, and Williamsburg, Virginia -- capitals in the Chesapeake Bay area -- and two ports on the southeast coast, Charleston, South Carolina, and Savannah, Georgia. Initial plans for Charleston date to 1672, but the early designs were never completed; nevertheless, “the wealthy Carolina planter class did develop a city in exemplary fashion with their elegant homes. They used the city as a refuge from the hot, humid interior plantations during the summer months. In this way they transferred the feudal hierarchical order from the plantation to the city.”<sup>17</sup> In Savannah, General James Oglethorpe undertook a plan in 1733 that was based in large part on the post-fire rebuilding of London, consisting of large blocks with a total of forty narrow house lots on two sides, with spaces reserved on the other two sides for churches and public buildings; the remaining blocks of Savannah built up under this plan now constitute the single largest contiguous historic district in the U.S., with more than 900 homes.<sup>18</sup>

### *Mercantile Urbanization (1790-1840)*

The early nineteenth century brought dramatic expansion of mercantile, trade relations, shaping Canadian and U.S. urban development in crucial ways. Maurice Yeats portrays Canada’s economy as evolving from a ‘frontier’ pattern to a mercantile system with larger, permanent trade settlements, to a ‘staples’ economy based on the extraction and export of valuable natural resources. In 1831, the largest cities in what would become the Confederation were the “gateway cities” of Quebec City, Montreal, St. John’s, Newfoundland, St. Johns, New Brunswick, and Halifax. In the United States, the political independence gained by the colonies after 1787 played a crucial role in guiding urbanization. Transatlantic trade networks were realigned, and colonial investment was replaced by domestic sources of finance. New administrative and political centers were established, in “a proliferation of government functions, from county courthouses and town halls to state capitals and, of course, the development of the District of Columbia, chosen in 1790 as a site for a permanent seat of federal government.”<sup>19</sup> The westward expansion of American settlement in the era of mercantile trading networks was tightly constrained by transport and accessibility considerations, favoring inland river ports such as New Orleans and St. Louis, even while powerful East Coast merchants sought more direct routes to the agricultural wealth of the expanding west by building the Erie Canal (linking Albany, New York to Buffalo, opening up trade with Cleveland, Detroit, Chicago, and Milwaukee) and upgrading the “National Road” across the mountains linking Baltimore and Philadelphia to Cincinnati and Louisville.

### *Expansion and Realignment (1840-1875)*

The innovations of the industrial revolution began to shape urban development in North America by the 1840s, as increased agricultural productivity supported larger settlements and fostered

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<sup>17</sup> Hartshorne, *Interpreting the City*, p. 28.

<sup>18</sup> Hartshorne, *Interpreting the City*, p. 29.

<sup>19</sup> Knox and McCarthy, *Urbanization*, p. 56.

increased trade even while new innovations were transforming city-based industries. New kinds of locations became more favorable for cities: power sites such as the “Fall line” cities on the East Coast, where short waterfalls mark the transition from the soft coastal plain to the harder piedmont; mining towns, such as the towns that proliferated throughout the Appalachian coalfields; transportation centers situated on new canal and rail corridors; and heavy manufacturing sites near the sources of major raw materials that fueled new industries. “The classic and most important cases involve steelmaking and the associated heavy engineering. Pittsburgh, which was to become the steeltown, was, of course, already an important river port and wholesaling center; it just happened to be near coalfields and deposits of iron ore.”<sup>20</sup> The U.S. Civil War interrupted urban development, nearly shutting off immigration and creating sudden dislocation in trade and transportation networks.

### *Industrialization and the Creation of the Manufacturing Belt (1875-1920)*

The Aftermath of the U.S. Civil War left Southern industries and towns decimated. Damage was much less severe in the North, which in any event had much denser markets with integrated transportation networks and plentiful supplies of coal and other raw materials. As a consequence, many of the “Gateway” cities of the mercantile epoch emerged as important centers of production, while newer settlements owed their existence solely to the industrial era. The top-ranked cities in Canada in 1871 include a mixture of gateway settlements and manufacturing centers: Montreal (115,000), Quebec City (60,000), Toronto (59,000), St. John, New Brunswick (41,000), Halifax (30,000), Hamilton (27,000), Ottawa (24,000), St. John’s, Newfoundland (23,000), London (18,000), and Kingston (12,000).<sup>21</sup>

Particularly in areas with access to the Great Lakes, comparatively easy transport allowed industrial specialization that came to serve national rather than regional or local needs. Increased

*Between 1875 and 1920,  
powerful regional growth  
dynamics created a  
“manufacturing belt” in the  
U.S. and Canada, centered on  
the Great Lakes.*

regional linkages began to tie different parts of the region together in a web of mutual dependence. Urban industrial development began to follow a path of self-propelling growth, creating a region of cities interdependent with one another and with surrounding hinterlands of valuable raw materials and agricultural production; this region came to be known as the “manufacturing belt.” With the establishment of new production facilities came the need for raw materials, and various kinds of supplies and components that encouraged the proliferation of smaller

enterprises; these **backward linkages**, ties between a firm and its suppliers, became ever more important as manufacturing allowed the production of ever more complex commodities. At the same time, new production encourages **forward linkages**, as one firm buys the finished product

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<sup>20</sup> Knox and McCarthy, *Urbanization*, p. 63.

<sup>21</sup> Yeates, *North American City*, p. 61.

of another and uses it as an input to its own operations. Forward and backward linkages create powerful **multiplier effects**, with investments and expenditures in one firm percolating throughout the local economy to support other firms.

Taken together, all of these processes are often described as **circular and cumulative causation** -- a self-reinforcing, self-propelling cycle of growth that generates still more growth. The process is also often called a **virtuous circle** of growth that brings more growth. Circular and cumulative causation found its clearest expression in the North American manufacturing belt. The dramatic growth of the late nineteenth century was, to be sure, interrupted by periodic financial crises -- often

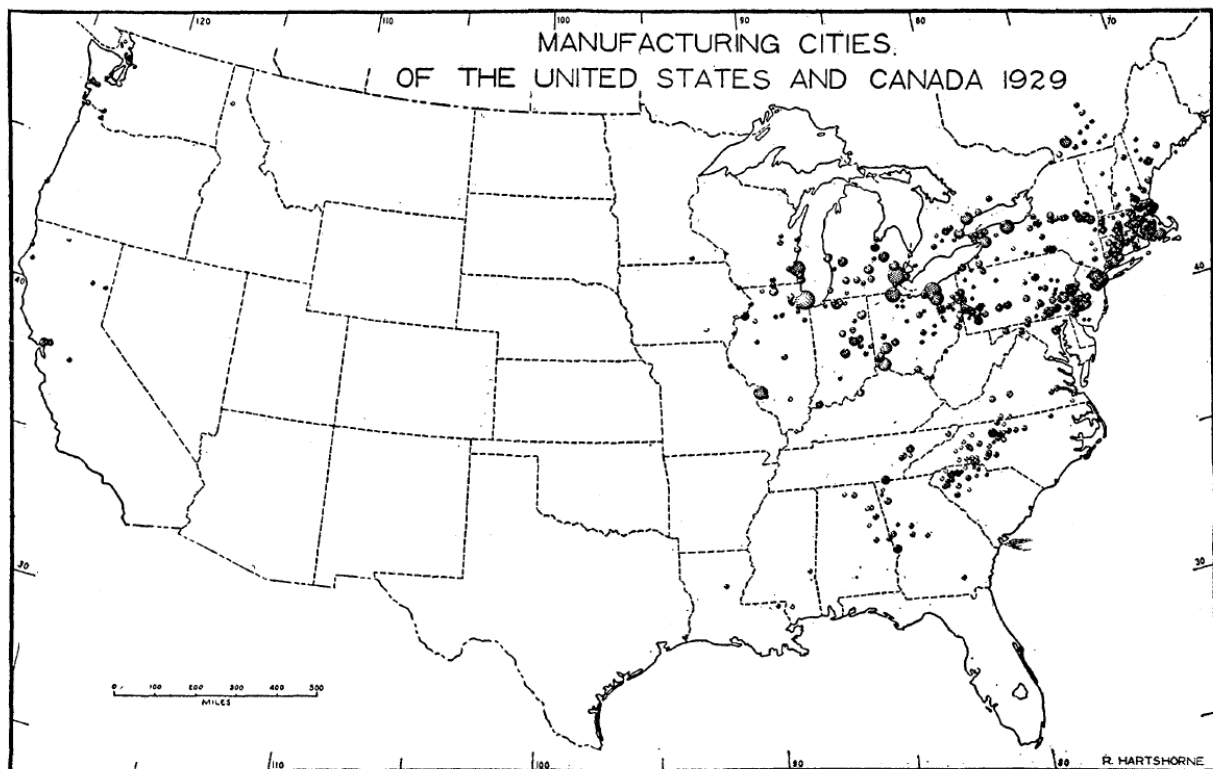


FIGURE 1.—Based on the number of workers in each city employed in manufacturing establishments, less ten percent of the city population. For cities smaller than 10,000 population estimates were made from the totals for the county. Places with less than 500 “surplus” workers are omitted. (Based on the U. S. Census, 1929.)

**The North American Manufacturing Belt.** When the regional geographer Richard Hartshorne analyzed census data on manufacturing employment to map the manufacturing belt, the general concept had already been “familiar to geographers” for many years. But Hartshorne’s careful analysis of local employment statistics allowed him to create a much more detailed “new map,” to evaluate the boundaries of the region, and to study urban and regional variations within the belt. Richard Hartshorne (1936). “A New Map of the Manufacturing Belt of North America.” *Economic Geography* 12(1), 45-53, Figure 1 from p. 47, quote from p. 45. Reproduced here under fair use / fair dealing provisions.

called “panics” -- that were typically painful but short-lived, followed by a decade or more of strong growth. But the prevailing conditions favored the manufacturing belt through all these years, and these advantages were further strengthened after Henry Ford developed a powerful

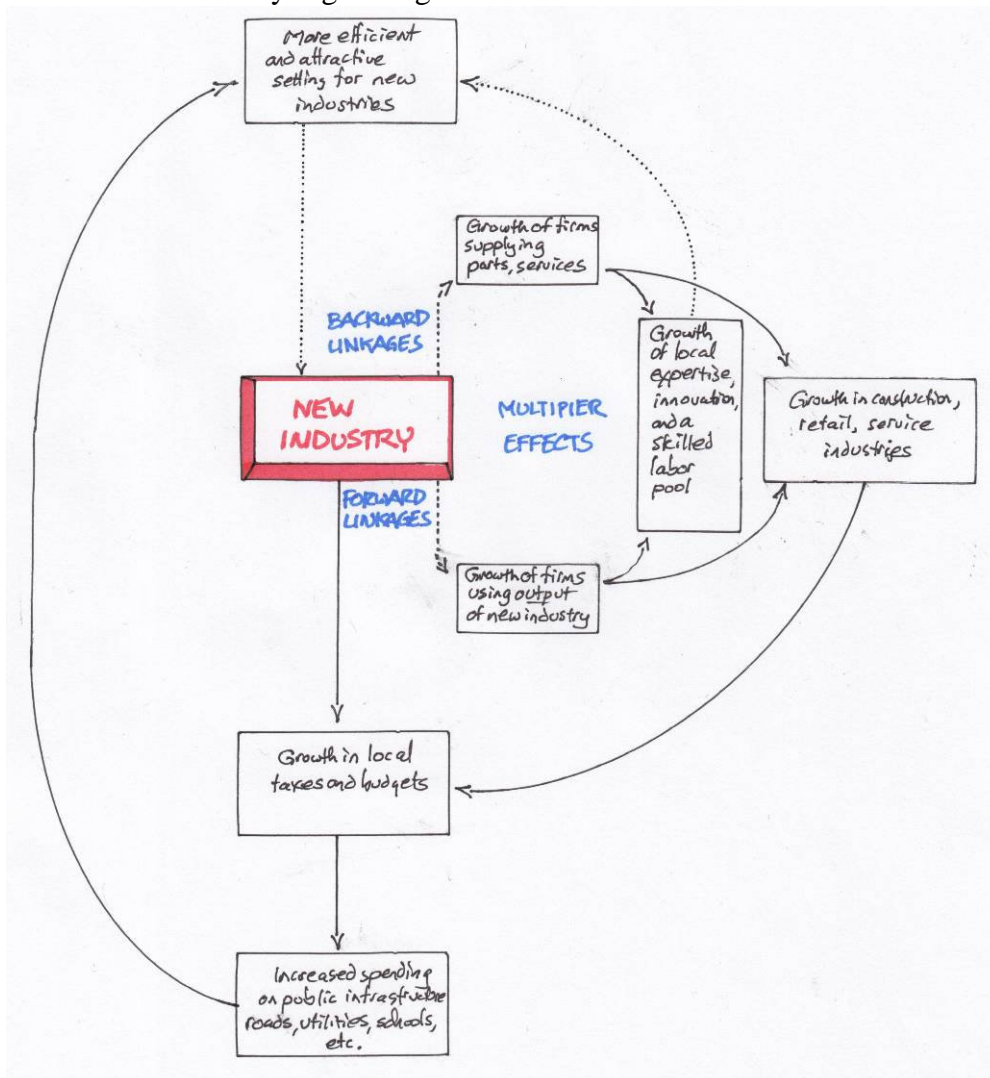


and revolutionary set of systems in his automobile factories. This system involved a moving assembly line, to accelerate production; the strict standardization of products, to achieve

*Circular and cumulative causation: a “virtuous circle” of economic growth generating even more growth.*

economies of scale; the application of **Frederick W. Taylor’s** scientific management practices (derived from studies of, for example, the most efficient ways to have workers move their hands from one component to another) to increase worker productivity; and, most remarkably, Ford’s decision to pay workers an unusually high wage. Ford introduced his \$5-a-day workday

in 1913 primarily to reduce the high rates of turnover on his assembly lines; *but the tactic proved effective in making sure that workers could actually afford to buy the cars produced by his factories.* In fact, the success of the \$5-a-day wage in generating demand for a company’s product was one factor that shaped the relations between other large companies and the labor unions that were busy organizing workers



The “**Virtuous Circle**” of circular and cumulative causation: urban industrial growth begets further urban industrial growth. *Source:* Adapted and Modified from Paul Knox and Linda McCarthy (2005). *Urbanization*. Upper Saddle River, NJ: Prentice-Hall, p. 48.

to demand better wages and a say in the conditions of their work. Ford's success proved that higher wages could be paid for through higher productivity, without destroying profitability; as a result, after many years of struggle, company owners began to accept union organizing and higher wages tied to productivity gains. But workers certainly earned the high wages:

**Taylorism** -- the use of those scientific time-and-motion studies to make assembly-line workers more efficient -- was often exhausting and dehumanizing, making workers feel like appendages to the ever larger and speedier machines used in production.

*Fordism: the inter-related social, economic, and political changes that resulted from the efficiencies of assembly-line production, the emphasis on economic planning and mass production, and the growth of high-wage manufacturing employment.*

These kinds of innovations spread throughout American industry, and soon they came to be known around the world as **Fordism** -- a process that was nothing short of a revolutionary transformation of industrial society. Fordism does not refer solely to the Ford Motor Company; instead, the term refers to all the social, economic, and political changes that resulted from enhanced assembly-line productivity, the emphasis on economic planning and mass-production, and the growth of high-wage manufacturing employment. When the imprisoned Italian communist Antonio Gramsci was trying to understand the influence of American ideas on European class relations after the First World War, he devoted

an entire chapter to "Americanism and Fordism."<sup>22</sup> Fordism involved not only the rationalization of the production process itself -- all those efficient assembly lines -- but the rationalization of more and more aspects of the lives of the workers themselves. Fordism became a way of using scientific management and assembly-line thinking to organize society and culture, to make sure that the production assembly lines always kept running: "In America rationalisation has determined the need to elaborate a new type of man suited to the new type of work and productive process."<sup>23</sup> Fordism flourished during the economic boom of the 1920s, but of course it suffered -- along with every other form of industrial organization -- during the long, painful Great Depression that spread across the world in the 1930s. Economic recovery came only with the sustained demand for the industrial products required for violence and destruction -- the Second World War, between 1939 and 1945. Wartime production revived all the major economies around the world, and re-ignited the virtuous circle of Fordist production and urban growth across the North American manufacturing belt. With the wartime assembly lines retooled for civilian growth, and with labor unions successfully negotiating good wages that would generate even more demand for all the manufactured goods, the late 1940s ushered in an era of circular and cumulative causation like nothing the world had ever seen. Growth was further nurtured by the widespread acceptance of the economic theories of **John Maynard Keynes** (1883-1946), whose analysis of the Great Depression yielded a set of lessons for how nation-states should 'prime the pump' to restore demand in times of economic crisis. The period from

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<sup>22</sup> Quintin Hoare and Geoffrey Nowell Smith (1971). *Selections from the Prison Notebooks of Antonio Gramsci*. New York: International Publishers, pp. 279-318. The original notebooks were written between 1929 and 1935.

<sup>23</sup> Gramsci (1971), p. 286.

1945 to 1973 is often described, for all of North America and Western Europe, as the Fordist-Keynesian “golden age” of capitalism.

### **The Canadian City Through Industrial Time<sup>24</sup>**

In Canada, the relationship between urbanization and industrialization in the nineteenth century was shaped by the deep contrasts between English and French settlement legacies produced over the prior century or so. One historical geographer notes that “it is extremely relevant that early French-Canadian society was created in the French world of the Counter-Reformation and absolutism, and that British Canada was spawned during the neo-classical spirit of the Age of Enlightenment.”<sup>25</sup> Such contrasts were expressed through different priorities in the choice of town sites, and the importance given to cathedrals (for instance) compared with commercial activities, housing, and the like; “the original townscapes of Quebec and Montreal resembled medieval Norman towns,” with an inward, protective orientation and a clear religious mission under the “zealous, Counter-Reformation religion of Cardinal Richelieu.”<sup>26</sup>

For the English, expansion outside the old urban centers of England into rural areas of Ireland had initially followed “a Roman-like system with central control of the colony, and responsibility for introducing English settlers into the indigenous population.” But in Canada

“the English adopted something similar to the Greek system, in which, like cells dividing, groups of settlers from the metropolis simply set up shop in some new location. The population was thus essentially the same as that of the metropolis, and the indigenous population was pushed back beyond the boundaries of the colony or destroyed. ... The most northern American territory, Newfoundland, varied from this type, for English authorities refused to recognize it as a colony, even though it had claimed this status since John Cabot had entered St. John’s harbour in 1497. As a result of the power in parliament of English West Coast fishing interests, the island was regarded as only a convenience for migratory summer fishing fleets, and settlement was prohibited. The rude community which grew to be St. John’s existed, therefore, in spite of official policy.”<sup>27</sup>

The years between 1700 and 1763 brought intensified competition between British and French interests in North America. The French established fortified outposts like Louisburg, planned in 1713 and serving for forty years “as a commercial centre of the north Atlantic cod fishery and of the trade between Canada (Quebec) and the French West Indies,” but the British achieved naval dominance that provided protection for colonial outposts – making it unnecessary to invest in heavy fortifications on British town sites. Eventually, the British succeeded in taking Louisburg and other French bastions during the Seven Years’ War (1756-1763). “Quebec fell in 1759 after

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<sup>24</sup> The title is a play off the title of Jill Grant (2006). “Shaped by Planning: The Canadian City Through Time.” In Trudi Bunting and Pierre Filion, eds., *Canadian Cities in Transition: Local Through Global Perspectives*. Don Mills, ON: Oxford University Press, 320-337.

<sup>25</sup> Gilbert A. Stelter (1990). “The Changing Imperial Context of Early Canadian Urban Development.” In Gilbert A. Stelter, ed., *Cities and Urbanization: Canadian Historical Perspectives*. Toronto: Copp Clark Pittman Ltd., 16-38, quote from p. 23.

<sup>26</sup> Stelter, “Changing Imperial Context,” p. 28.

<sup>27</sup> Stelter, “Changing Imperial Context,” pp. 23-24.



a lengthy siege and bombardment which destroyed one of the finest cities on the continent. Montreal surrendered the following year. The future of these communities was to be played out under the flag of the old enemy. Ironically, Quebec would soon emerge as Britain's military bulwark against its former colonies to the south."<sup>28</sup>

In the nineteenth century, urban development was shaped by the expanded and integrated rail networks across the prairies,<sup>29</sup> which opened up vast new fields for wheat production that could be shipped east, and the extraction of copper, nickel, and other resources from the Canadian Shield in northern Quebec and northern Ontario. But policy also mattered. Beginning in 1879, a system of tariffs was imposed in a regime that came to be known as the National Policy. The system "was overtly protectionist. It was proposed that tariffs be used not only to produce government revenue, but also to encourage the development of a domestic manufacturing industry through the creation of a sheltered home market for those products which could be manufactured in Canada at reasonable cost. Accordingly, a complex tariff system was drawn up after the Conservative victory in the 1878 federal election."<sup>30</sup> Crucially, however, the National Policy imposed tariffs only on the import of manufactured goods, while favoring capital investment; as a consequence, the Canadian economy has developed in ways that resemble a 'branch-plant' system: firms are established to export raw materials (a continuation of the "staples economy" of the nineteenth century) or as subsidiaries of foreign firms that wish to access the Canadian market.

The last thirty years of the nineteenth century brought steady, if not dramatic, growth to manufacturing, and "the further localization or concentration of production in urban centres, particularly those in Central Canada. During this period Ontario and Quebec increased their per capita share of national production while that of the Maritime provinces declined. The concentration of manufacturing in urban centres was one of the principal reasons for the rapid growth of the urban population, which increased from 18.3 percent of the Canadian population in 1871 to 34.9 percent in 1901."<sup>31</sup> An even more powerful stimulus to urban industrial expansion came with World War I, and Canada's role in supporting the British war effort. For Jill Grant, industrial urbanism drove a broad array of related changes in the geography and politics of Canadian settlement and urban planning:

"As wealth concentrated in large corporations, cities became nodes of power and prosperity, with pockets of extreme poverty. Centralization of industry and wealth in the largest cities led to growth in some settlements at the expense of others. The Maritime economy, once the backbone of the Canadian economies, collapsed by the late nineteenth century as industries rode the rails westward. Montreal and Toronto became the economic hubs of the nation, centres of manufacturing and commerce. Cities across Canada sought strategies either to enhance their economic prospects or to maintain their influence. The urban reform movement reacted against the corruption and inefficiency of city

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<sup>28</sup> Stelter, "Changing Imperial Context," p. 28.

<sup>29</sup> The Canadian Pacific Railway was completed in 1885, linking Ontario to the Pacific coast.

<sup>30</sup> George A. Nader (1975), *Cities of Canada: Theoretical, Historical, and Planning Perspectives*. Toronto: MacMillan, p. 204.

<sup>31</sup> Nader, *Cities of Canada*, p. 207.

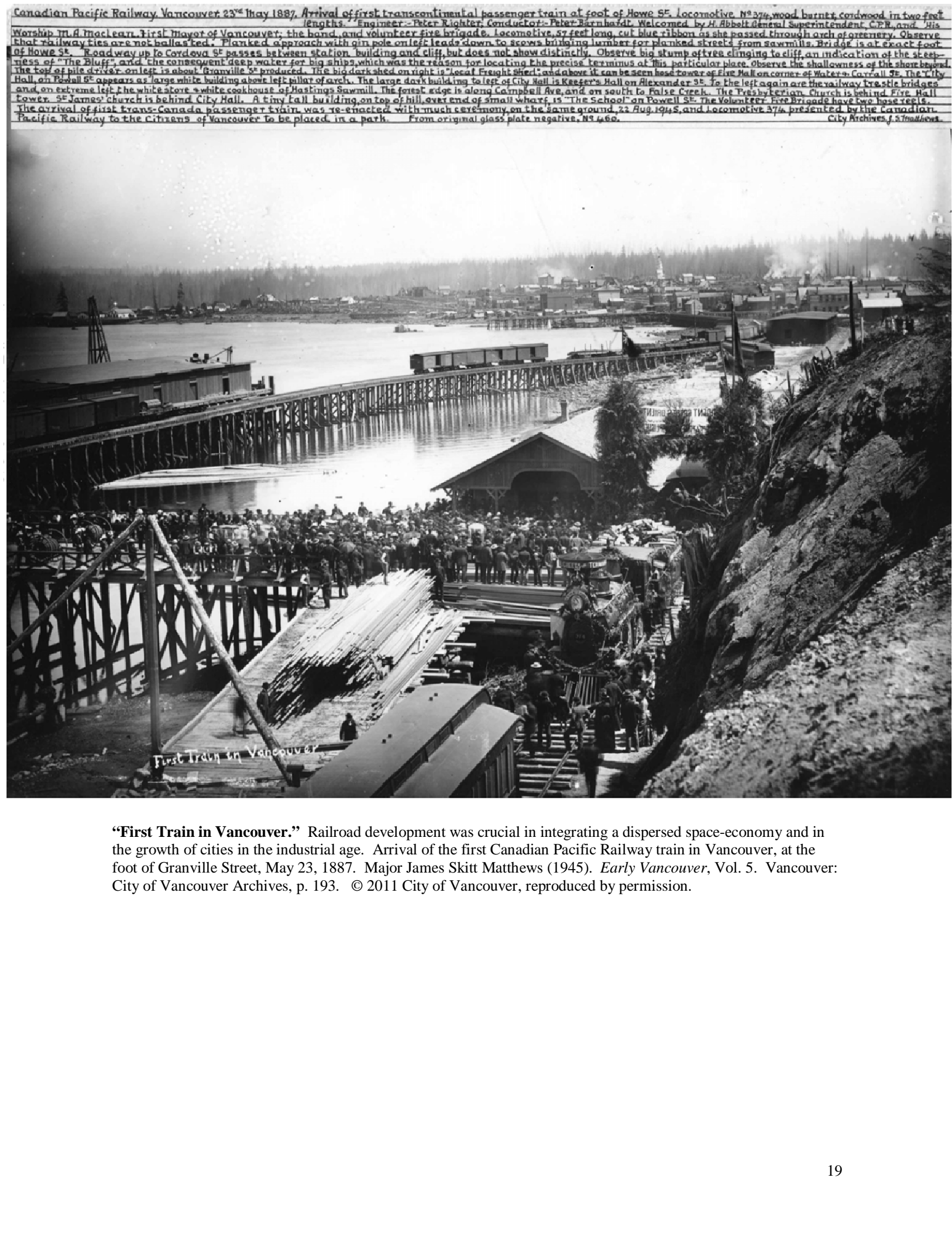
governments; in response, many municipalities change their administrative systems, bringing in a city manager structure and implementing a career public service model .... With new structures in place and experts on hand to advise council members on appropriate interventions, cities had the tools to build on their strengths to tackle the most pressing problems.”<sup>32</sup>



**Steel City.** Steel Plants in the waterfront industrial corridor of Hamilton, Ontario, April 2008 (Elvin Wyly). Through the late 1960s, the thick forest of steel mills and smokestacks along Hamilton Harbour represented wealth, productivity, and industrial power. Hamilton was described as “the Birmingham of Canada” and “the Pittsburgh of Canada.” By the 1970s, however, automation and technological advances in productivity had weakened the link between industrial production and employment opportunities -- and with the accumulated legacy of pollution, Hamilton had become “a symbol of what went wrong. It looked bad and smelled bad.” B. McAndrew (1995). “Hamilton’s Renewable Water Resource: The State of Hamilton Harbour.” *Toronto Star*, 1 October, D4. Quoted in Sarah Wakefield and Colin McMullan (2005). “Healing in Places of Decline: (Re)Imagining Everyday Landscapes in Hamilton, Ontario.” *Health & Place* 11, 299-312.

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<sup>32</sup> Grant, “Shaped by Planning,” p. 322.



**“First Train in Vancouver.”** Railroad development was crucial in integrating a dispersed space-economy and in the growth of cities in the industrial age. Arrival of the first Canadian Pacific Railway train in Vancouver, at the foot of Granville Street, May 23, 1887. Major James Skitt Matthews (1945). *Early Vancouver*, Vol. 5. Vancouver: City of Vancouver Archives, p. 193. © 2011 City of Vancouver, reproduced by permission.





**Opsal Steel plant**, Southeast False Creek, Vancouver (Elvin Wyly). Above, February 2007; next page, May 2011. Vancouver never had many of the large, heavy industries associated with the Fordist-era landscapes of Western Europe, the U.S. manufacturing belt, or the “Golden Horseshoe” in Southern Ontario. But the south shore of False Creek did have quite a few industrial firms. One was the Opsal Steel plant, established 1918 as a foundry to make the saws and other equipment for logging, mining, and fishing that were central to the expansion of British Columbia’s economy. Parts of the old structure are being preserved and integrated into a condominium tower, promoted as “Opsal: Above All Else.” “Opsal stands tall, towering 24 storeys over Southeast False Creek -- and reaching almost a century into the past. Industrial heritage preserved. A stone’s throw from the water’s edge. Neighbouring an Olympic legacy. Near the downtown hub, but well removed from the hubbub.” Bastion Development Corporation (2011). *Opsal: Above All Else*. Vancouver: Bastion Development Corporation.





## Deindustrialization

It couldn't last forever. For a variety of reasons, the “virtuous circle” of growth began to collapse in many of the world’s industrial economies in the early 1970s. For the U.S., Canada, and much of Western Europe, industrialization was soon replaced by **deindustrialization** -- the relative shrinkage of industrial employment, earnings, or both, and sometimes a painful, absolute decline in manufacturing jobs.

Four main factors were responsible for deindustrialization. First, broad changes in the world economy undermined the stability of the Fordist-Keynesian era. Demand for manufactured goods plummeted while oil prices skyrocketed in the aftermath of an embargo by Middle-East oil-producing countries in 1973. Only a year before, the United States had also abandoned the gold standard that had defined the value of the U.S. dollar since the exchange rate regime orchestrated at a 1944 conference in Bretton Woods, New Hampshire; after 1972, exchange rates

could and did fluctuate quite dramatically, introducing new uncertainties into the costs and returns of industrial production.

A second set of factors worsened the instability and uncertainty of industrial production in countries of the Global North. A series of policy changes in taxes, international trading and

*Reasons for  
deindustrialization:*

- 1. Increasing economic instability and unpredictable demand.*
- 2. Policy shifts in taxation, regulation, and international trade.*
- 3. Automation and the replacement of labor by capital.*
- 4. The increasingly global scale of the search for cheap labor.*

investment rules, and environmental regulations made it much less attractive to reinvest in aging factories, and made it far more lucrative for companies to write off industrial plants and invest in finance, real estate, or other non-industrial activities. While the urban industrial era provided truly revolutionary opportunities to build wealth, savvy industrialists soon understood that the smart money got out of the risky business of industrial production as soon as possible. The investment and commitment required to build a large factory put a firm at risk for all the changes that could take place over the economic life of the facility -- changing trade relations, transportation technologies, labor relations, and government regulations -- but money invested in the financial markets could be shifted around much more quickly and easily to take advantage of changing conditions. Between the early 1970s and the early 1980s, industrial companies and investors saw new opportunities to escape the risks of industrial production by investing in new, non-

industrial sectors of the economy that were being de-regulated. Banking and other financial activities grew rapidly with deregulation. Massive pools of industrial capital quickly moved into finance capital. Finance capital was inherently more mobile, and it quickly became clear that mobility meant power.

Third, structural changes in capital and labor reduced industrial job opportunities even when industrial profits continued to grow. Ever since the days of Marx, it was understood that capitalist development nearly always involved the replacement of human labor with machines -- such that capital constantly replaced labor in the production process. This process accelerated in the middle decades of the twentieth century, with automation boosting productivity and profits while undermining employment growth -- and eventually leading to absolute declines in manufacturing employment. Consider the perspective of African American workers in Detroit during the postwar "golden age":

“One of the major concerns of the League of Revolutionary Black Workers as the deteriorating working conditions at the point of production. In 1946 some 550,000 auto workers had produced a little over three million vehicles, but in



1970 some 750,000 auto workers had produced over a little over eight million vehicles. Management credited this much higher productivity per worker to its improved managerial techniques and new machinery. Workers, on the other hand, claimed the higher productivity was primarily a result of their being forced to work harder and faster under increasingly unsafe and unhealthy conditions. The companies called their methods automation; black workers in Detroit called them niggermaton.<sup>33</sup>

At its peak, the Ford River Rouge plant just outside Detroit employed more than 100,000 workers; automation cut this figure by two thirds as early as 1960.<sup>34</sup>

Fourth, capitalists' search for cheap labor expanded in geographical scope, from the regional to the global scale. David Harvey summarizes the effects of the shift inside the United States:

“Tax breaks on investment effectively subsidized the movement of capital away from the unionized north-east and midwest and into the non-union and weakly regulated south and west. Finance capital increasingly looked abroad for higher rates of return. Deindustrialization at home and moves to take production abroad became much more common.”<sup>35</sup>

Free-trade policies and the growing global competition to attract investment dramatically accelerated large companies' search for the most inexpensive production locations. Labor is usually the single largest item in production costs that can be reduced through strategic locational competition, but environmental regulations are often crucial as well. In the 1970s and 1980s, large **transnational corporations (TNCs)** became more aggressive and sophisticated in reorganizing their activities, creating complex geographical divisions that came to be described as the “**global assembly line.**” Especially for complicated final products like automobiles or electronics, production would be scattered among facilities and subcontractors around the world, each devoted to producing specialized components or assembling parts produced elsewhere. In general, the result was an acceleration in relative and absolute job losses for industrial cities in Western Europe and North America, and corresponding increases along the Maquiladora corridor in Northern Mexico, the post-socialist cities of Eastern Europe and Russia, and vast networks of export-processing zones across East Asia. But the search for cheap labor is transnational and dynamic, and the geography of uneven development does not correspond perfectly with country boundaries. Not long ago, *The Korea Herald* in Seoul carried an editorial describing

“a newly opened Hyundai assembly plant in Alabama, asking what the secret was that enabled Hyundai to produce technologically cutting-edge automobiles in the United States. ‘The secret is simple; it is a lower cost, just as in the tens of thousands of Korean manufacturing facilities going to China and Southeast Asia.’ Enumerating the \$14 hourly nonunionized wages in Alabama, 1,744 acre site and

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<sup>33</sup> Dan Georgakas and Marvin Surkin (1975). *Detroit: I Do Mind Dying*. New York: St. Martin's Press, pp. 100-101.

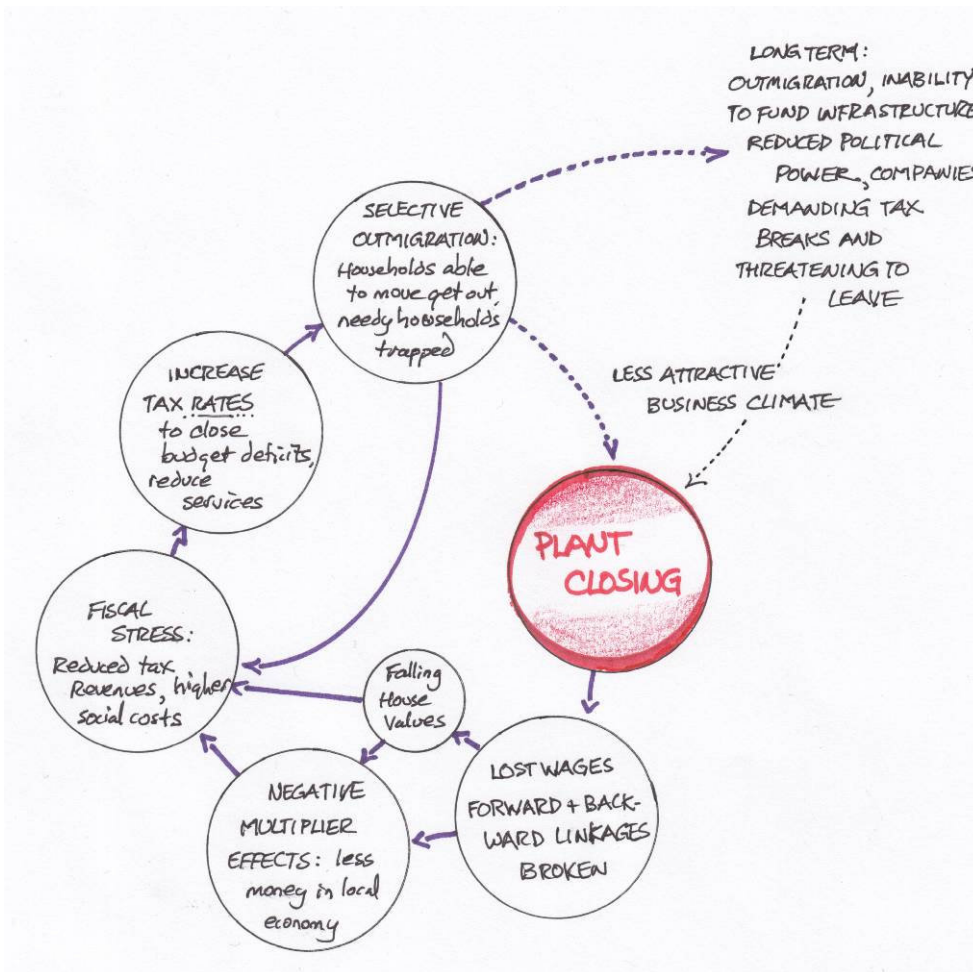
<sup>34</sup> Thomas J. Sugrue (2005). *Origins of the Urban Crisis*. Princeton: Princeton University Press, p. 117.

<sup>35</sup> David Harvey (2005). *A Brief History of Neoliberalism*. Oxford: Oxford University Press, p. 26.

\$250 million in tax breaks provided by Alabama, minimal healthcare costs, and no pension plan for nonunionized workers, the editorial argued that land, labor, healthcare, and pension costs are higher in South Korea -- 'a sad reminder of the detrimental effect on the economy by the treacherously high property prices here and our powerful unions.'"<sup>36</sup>

All four of these factors -- economic instability, regulatory changes, automation, and the global search for cheap labor -- took a toll on industrial cities in the historic core of world industrial production in Western Europe and North America. For cities heavily reliant on manufacturing, it became clear that the process of circular and cumulative causation could also work in reverse: the virtuous circle of growth gave way to a **vicious cycle** of decline that led to still more decline. Cities that had once represented the height of industrial productivity under the organized capitalist growth of Fordism were deeply vulnerable when the system began to collapse. Post-industrial, post-Fordist, deindustrialized cities struggled with the chaos of the collapse of the old systems of organization, and suffered from chronic decline, outmigration, poverty, crime,

unemployment, and social conflict. Across much of the manufacturing belt, the weakening and then collapse of Fordism brought widespread concern about a full-fledged "urban crisis." Some cities repositioned themselves to find new sources of economic growth. Others have struggled or failed.



The "Vicious Circle" of urban and fiscal decline. Source: Inspired by Robert W. Burchell and David Listokin, eds. (1981). *Cities Under Stress*. New Brunswick, NJ: Center for Urban Policy Research.

<sup>36</sup> *The Korea Herald*, cited in Eric Sheppard, Philip W. Porter, David R. Faust, and Richa Nagar (2009). *A World of Difference: Encountering and Contesting Development*. New York: Guildford Press, p. 510.





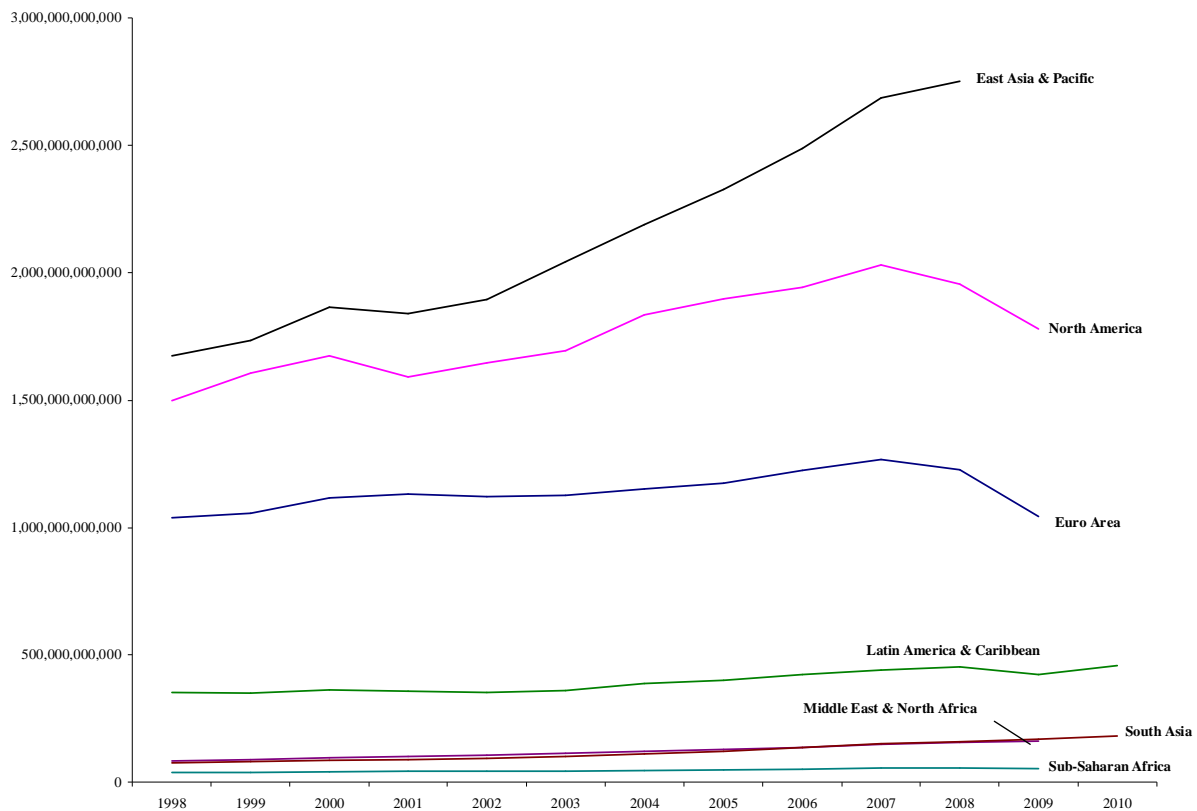
**Dismantling the Industrial City:** Bethlehem Steel Complex, Bethlehem, Pennsylvania, August 2001 (Elvin Wyly). One day in August, 2001, I hopped into my car to drive to the Allentown-Bethlehem region of Pennsylvania, a regional network of industrial cities that flourished around the turn of the twentieth century. For the entire time I've been alive, the names "Allentown" and "Bethlehem" have always been spoken in terms of deindustrialization and decline. I wanted to photograph as much of this kind of industrial city as I could, before it all disappeared completely. Bethlehem had once been one of the most important steel production sites in North America. Bethlehem Steel began as a small company in 1857, and was subsequently reorganized into a more formal corporate structure by Charles Schwab in 1904. The town and the company flourished with the new processes developed by Sir Henry Bessemer (1813-1898). In the 1850s, Bessemer devised a process to convert iron into steel by forcing air through the molten metal in a "blast furnace"; the impurities in the molten iron escape as a gas and form a waste "slag," and the process reduces the carbon content and strengthens the final result. Bethlehem Steel made steel for the Golden Gate Bridge in San Francisco, the George Washington Bridge in New York, Rockefeller Plaza, the Waldorf Astoria, the Chicago Merchandise Mart, the U.S. Supreme Court, and Madison Square Garden. At its peak in 1943, the Bethlehem plant employed 31,000 people, and the entire Bethlehem Steel company's workforce in all of its plants was 300,000. International competition forced a long slow hemorrhage in the 1970s, punctuated by a halving of the company's workforce between 1982 and 1986. The complex shown above closed in the 1990s. Bethlehem Steel filed for bankruptcy protection in October, 2001, largely due to the combined effects of international competition and the "legacy costs" of a large number of retired union workers drawing pensions and health care benefits. In the U.S., bankruptcy reorganization usually allows companies to escape these pension and health care obligations, which are then taken on (often with reduced benefits) by a government agency. Bankruptcy does not always destroy a company's operations; two years after filing for bankruptcy, Bethlehem posted revenues of \$4.2 billion, and still employed about 13,000 workers -- just not in Bethlehem. *Sources:* Annual corporate reports, and Bethlehem Steel Corporation (2001). *Bethlehem Steel Estate*. [Disclosure Statement, Plan of Liquidation, and Final Court Order Approving Disclosure Statement.] <http://www.bethsteel.com>, last accessed September 27, 2004.





**Be Still My Beating Heart, Industrial Metropolis.** Packard Plant, Detroit, Michigan, July 2010 (Elvin Wyly). In the 1940s, the “heartbeat of the industrial metropolis” was this part of Detroit, which had “one of the most remarkable concentrations of industry in the United States.” Near this area was a Dodge factory employing more than 35 thousand workers, and another plant where Studebaker produce its distinctive luxury cars. And here, “Packard Motors produced cars in a sprawling ninety-five-building complex that extended for nearly a mile ... At shift change time ... cars, buses, and pedestrians clogged the streets.” Thomas J. Sugrue (2005). *The Origins of the Urban Crisis: Race and Inequality in Postwar Detroit*. Princeton: Princeton University Press, p. 125. Now the place is eerie and quiet. Packard went bankrupt in the 1950s, in part because the company was too slow to transition away from the war-time military equipment contracts that had been so important to all large manufacturers during the Second World War and the Korean War. All that wartime production had made Detroit famous as “the arsenal of democracy,” but the end of the wars required companies to transition quickly, and Packard wasn’t quite quick enough. “The irony,” then, was that the company “disappeared in the greatest car-buying spree America had ever seen.” James A. Ward (1995). *The Fall of the Packard Motor Company*. Stanford: Stanford University Press, p. 2. Packard, however, was not unique. Even in the best years of American industrial growth, between 1947 and 1963, Detroit lost 134 thousand manufacturing jobs (Sugrue, *Origins*, p. 126), and the losses only got worse in later years. Detroit has lost half its population since the 1950s. Once a symbol of the industrial city, Detroit is now often approached as the quintessential postindustrial landscape -- a site of history that resembles, in a strange way, the ruins of ancient Greek cities. The photographer Camilo Jose Vergara wonders if this might not be the “American Acropolis.” See Camilo Jose Vergara (1995). *The New American Ghetto*. New Brunswick, NJ: Rutgers University Press, p. 215.

Ultimately, deindustrialization must be understood as a geographically specific consequence of global uneven development. Deindustrialization is vivid and painful for any city whose boom in manufacturing employment took place in the twentieth century -- cities across the North American manufacturing belt, but also aging industrial corridors in Germany, parts of Russia, Japan, and South Korea. But localized urban deindustrialization coexists with continued industrialization of the globe. Worldwide, manufacturing accounts for three-quarters of the total volume of \$14 trillion in merchandise exports.<sup>37</sup> Dozens, perhaps hundreds, of industrial cities are growing across the world, with particularly rapid urban industrialization in mainland China. But new industrial cities also means new shock cities.



**Value Added in Manufacturing**, in constant 2000 dollars, by selected world region, 1998-2010. Data Source: World Bank (2011). *World Development Indicators*. Washington, DC: World Bank.

<sup>37</sup> World Bank (2009). *Reshaping Economic Geography: World Development Report 2009*. Washington, DC: World Bank, p. 359.





**New Shock City.** Shenzhen, China, March 2010 (Elvin Wyly). Shenzhen had a population of about 30,000 in 1979; thirty years later, that figure exceeded 8.6 million, only 2.1 million of whom had an official *hukou* (local registration). The city's growth, after its designation as a special economic zone, eventually culminated in the highest per capita income, the most active export route, and the highest share of Ph.D.s among all of China's cities. "...it was Shenzhen that set the tone and stage as it became the experimental ground for FDI, joint ventures, land tendering, contractual employment, and the blurring of urban and rural distinctions through migration. When these successful experiments became transplantable and replicable in other areas, Shenzhen began to lose its special status. ... Shenzhen has grown out of its instant-city stage to become a huge industrial city confronting new challenges that threaten its continued prosperity." Xiangming Chen and Tomas de' Medici (2010). "The 'Instant City' Coming of Age: Production of Spaces in China's Shenzhen Special Economic Zone." *Urban Geography* 31(8), 1141-1147, quote from p. 1145, 1146. New industrial cities are governed by a close surveillance of worldwide economic conditions, placing the risks of a sudden collapse in demand upon workers: even before the worst months of the global financial crisis in 2008, more than 67,000 factories across China had closed in fear of collapsing export orders, giving rise to labor protests over unpaid back wages and large-scale return migration to China's rural areas. E. Wong (2008). "Workers Drifting Away as Plants Close in China." *International Herald Tribune*, 15 November, p. 1.

## Conclusions

The industrial city, appearing first in Britain in the middle decades of the nineteenth century, was laid atop the deeply entrenched patterns of medieval urbanization in Europe. But in North America the industrial city found its clearest expression, with many settlements founded solely for the purpose of production and profit. Historical epochs of frontier and mercantile urbanization, followed by a period of expansion and realignment, culminated in the rise of an



integrated urban-industrial complex anchored by the Great Lakes in the early years of the twentieth century. The rise of industrial capitalism and other economic transformations over the last century have certainly altered the urban network of the manufacturing belt. But older patterns are never entirely swept away. As population shifted to larger urban places in Canada in the twentieth century, for example, the shift from staples and manufacturing to service industries created new centers of urban entrepreneurialism in the West; but the nation's advanced services remain concentrated too in the old-line cities of Montreal and Toronto. Ultimately, as Larry Bourne puts it, "The scale and rapidity of the urban transformation of Canadian society and economy has been dramatic. ... The twentieth century, we might conclude, was indeed the 'urban' century, during which urbanization was the fundamental process of economic, social, and territorial transformation. Canada became an urban nation, at least in numerical terms, around 1920."<sup>38</sup> But in the ensuing decades the rapid pace of urbanization, and the expansion of the largest centers, meant that by the 1990s the average Canadian "now lives and works in a large metropolitan environment" -- one of the twenty-five 'Census Metropolitan Areas' (CMAs) with populations over 100,000 -- and "...traditional contrasts drawn between rural and urban areas, and the living experiences of their residents, may now have lost much of their meaning. In the twenty-first century, almost everywhere and everyone may be considered 'urban.'"<sup>39</sup>

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<sup>38</sup> Larry Bourne (2000). "Urban Canada in Transition to the Twenty-First Century." In Trudi Bunting and Pierre Filion, eds., *Canadian Cities in Transition*. Don Mills, ON: Oxford University Press, pp. 28-29.

<sup>39</sup> Bourne, "Urban Canada," p. 29.