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CHAPTER

Industrial America: Corporations and Conflicts

1877–1911

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AP® LEARNING FOCUS

What new opportunities and risks did industrialization bring, and how did it reshape American society?

For millions of his contemporaries, Andrew Carnegie exemplified American success. Arriving from Scotland as a poor twelve-year-old in 1848, Carnegie found work as an errand boy for the Pennsylvania Railroad and rapidly scaled the managerial ladder. In 1865, he struck out on his own as an iron manufacturer, selling to friends in the railroad business. Encouraged by Republican tariffs to enter the steel industry, he soon built a massive steel mill outside Pittsburgh where a state-of-the-art Bessemer converter made steel refining dramatically more efficient. With Carnegie leading the way, steel became a major U.S. industry, reaching annual production of 10 million metric tons by 1900—almost as much as the *combined* output of the world's other top producers, Germany (6.6 million tons) and Britain (4.8 million).

At first, skilled workers at Carnegie's mill in Homestead, Pennsylvania, earned good wages. They had a strong union, and Carnegie affirmed workers' right to organize. But Carnegie—confident that new machinery enabled him to replace many skilled laborers—eventually decided that collective bargaining was too expensive. In the summer of 1892, he withdrew to his estate in Scotland, leaving his partner Henry Clay Frick in command. A former coal magnate and veteran foe of labor, Frick was well qualified to do the dirty work. He announced that after July 1, members of the Amalgamated Association of Iron and Steel Workers would be locked out of the Homestead mill. If they wanted to return to work, they would have to abandon the union and sign new individual contracts. Frick fortified the mill and prepared to hire replacement workers. The battle was on.

At dawn on July 6, barges chugging up the Monongahela River brought dozens of private armed guards from the Pinkerton Detective Agency, hired by Carnegie to defend the plant. Locked-out workers opened fire, starting a gunfight that left seven workers and three Pinkertons dead. Frick appealed to Pennsylvania's governor, who sent the state militia to arrest labor leaders on charges of riot and murder. Most of the locked-out workers lost their jobs. The union was dead.

As the **Homestead lockout** showed, industrialization was a controversial and often bloody process. During the half century after the Civil War, more and more Americans worked not as independent farmers or artisans but as employees of large corporations. Conditions of work changed for people of all economic classes. Drawn by the dynamic economy, immigrants arrived from around the globe. These transformations provoked working people, including farmers as well as industrial workers, to organize and defend their interests.



Marianna Mine Disaster The bituminous mines of Marianna, Pennsylvania, and many other rich sites provided the coal that fueled American industrial growth. On November 28, 1908, an explosion in the mine killed 158 workers. Many were American-born; some were Irish, Welsh, Italian, and Polish immigrants. Here, a horse-drawn wagon carries bodies recovered from the mine. Such catastrophes laid bare the human cost of industrialization. Marianna was one among many: in the same decade, disasters at Scofield, Utah; Jacobs Creek, Pennsylvania; Monongah, West Virginia; and Cherry, Illinois, each killed over 200 men. Library of Congress.

CHAPTER CHRONOLOGY

As you read, ask yourself why this chapter begins and ends with these dates and identify the links among related events.

1863	▶ Cleveland, Ohio, becomes nation's petroleum refining center	1882	▶ John D. Rockefeller creates Standard Oil trust ▶ Congress passes Chinese Exclusion Act
1865	▶ Chicago's Union Stock Yards opens	1884	▶ Knights of Labor at peak of membership
1867	▶ National Grange of the Patrons of Husbandry founded	1885	▶ Rock Springs massacre of Chinese miners
1869	▶ Knights of Labor founded	1886	▶ Haymarket Square violence ▶ American Federation of Labor (AFL) founded
1873	▶ Panic followed by severe economic depression	1887	▶ Hatch Act ▶ Interstate Commerce Act
1875	▶ John Wanamaker opens nation's first department store in Philadelphia	1889	▶ New Jersey passes law enabling trusts to operate in the state
1876	▶ Alexander Graham Bell invents the telephone	1892	▶ Homestead lockout
1877	▶ San Francisco mob attacks Chinatown ▶ Great Railroad Strike ▶ First Farmers' Alliances form in South and West	1893	▶ Severe depression hits, causes mass unemployment and wave of corporate mergers
1878	▶ Greenback-Labor Party elects fifteen congressmen	1901	▶ J. P. Morgan creates U.S. Steel, America's first billion-dollar corporation
1879	▶ Henry George publishes <i>Progress and Poverty</i>	1908	▶ Walter Dill Scott publishes <i>The Psychology of Advertising</i> ▶ Marianna, Pennsylvania, mine disaster
1880s	▶ Violence in Russia and Eastern Europe prompts mass immigration of Jews to United States		

The Rise of Big Business

 Turn to the **Glossary of Academic & Historical Terms** in the back of the book for definitions of bolded terms.

 To see a longer excerpt of "The Gospel of Wealth," along with other primary sources from this period, see *Sources for America's History*.

In the late 1800s, industrialization in Europe and the United States revolutionized the world economy. It brought large-scale commercial agriculture to many parts of the globe and prompted millions of migrants—both skilled workers and displaced peasants—to cross continents and oceans in search of jobs. Industrialization also created a production glut. The immense scale of agriculture and manufacturing caused a long era of deflation, when prices dropped worldwide (Figure 16.1).

Falling prices normally signal low demand for goods and services, and thus stagnation. In England, a mature industrial power, the late nineteenth century did bring economic decline. But in the United States, production expanded. Between 1877 and 1900, Americans' average real per capita income increased from \$388 to \$573. In this sense, Andrew Carnegie was right when he argued that, even though industrialization increased the gap between rich and poor, everyone's standard of living rose. In his famous 1889 essay "Wealth"—later called the **Gospel of Wealth**—he observed that "the poor enjoy what the rich could not before afford. What were the luxuries have become the necessities of life."

Technological and business efficiencies allowed American firms to grow, invest in new equipment, and earn profits even as prices for their products fell. Growth depended, in turn, on America's large and growing population, expansion into the West, and an integrated national marketplace. In many fields, large corporations became the dominant form of business.

Innovators in Enterprise

As rail lines stretched westward between the 1850s and 1880s, operators faced a crisis. As one Erie Railroad executive noted, a superintendent on a 50-mile line could personally attend to every detail. But supervising a 500-mile line was impossible; trains ran late, communications failed, and trains crashed. Managers gradually invented systems to solve these problems. They distinguished top executives from those

responsible for day-to-day operations. They departmentalized operations by function — purchasing, machinery, freight traffic, passenger traffic — and established clear lines of communication. They perfected cost accounting, which allowed an industrialist like Carnegie to track expenses and revenues carefully and thus follow his Scottish mother's advice: "Take care of the pennies, and the pounds will take care of themselves." This **management revolution** created the internal structure adopted by many large, complex corporations.

During these same years, the United States became an industrial power by tapping North America's vast natural resources, particularly in the West. Industries that had once depended on water power began to use prodigious amounts of coal. Steam engines replaced human and animal labor, and kerosene replaced whale oil and wood. By 1900, America's factories and urban homes were converting to electric power. With new management structures and dependency on fossil fuels (oil, coal, natural gas), corporations transformed both the economy and the country's natural and built environments.

Production and Sales After Chicago's Union Stock Yards opened in 1865, middlemen shipped cows by rail from the Great Plains to Chicago and from there to eastern cities, where slaughter took place in local butchertowns. Such a system — a national livestock market with local processing — could have lasted, as it did in Europe. But Gustavus Swift, a shrewd Chicago cattle dealer, saw that local slaughterhouses lacked the scale to utilize waste by-products and cut labor costs. To improve productivity, Swift invented the assembly line, where each wageworker repeated the same slaughtering task over and over.

Swift also pioneered **vertical integration**, a model in which a company controlled all aspects of production from raw materials to finished goods. Once his engineers designed a cooling system, Swift invested in a fleet of refrigerator cars to keep beef fresh as he shipped it eastward, priced below what local butchers could afford. In cities that received his chilled meat, Swift built branch houses and fleets of delivery wagons. He also constructed factories to make fertilizer and chemicals from the by-products of slaughter, and he developed marketing strategies for those products as well. Other Chicago packers followed Swift's lead. By 1900, five firms, all vertically integrated, produced nearly 90 percent of the meat shipped in interstate commerce.

Big packers invented new sales tactics. For example, Swift & Company periodically slashed prices in certain markets to below production costs, driving independent distributors to the wall. With profits from its sales elsewhere, a large firm like Swift could survive temporary losses in one locality until competitors went under. Afterward, Swift could raise prices again. This technique, known as predatory pricing, helped give a few firms unprecedented market control.

Standard Oil and the Rise of the Trusts No one used ruthless business tactics more skillfully than the king of petroleum, John D. Rockefeller. After inventors in the 1850s figured out how to extract kerosene — a clean-burning fuel for domestic heating and lighting — from crude oil, enormous oil deposits were discovered at Titusville, Pennsylvania. Just then, the Civil War severely disrupted whaling, forcing whale-oil customers to look for alternative lighting sources. Overnight, a forest of oil wells sprang up around Titusville. Connected to these Pennsylvania oil fields by rail in 1863, Cleveland, Ohio, became a refining center. John D. Rockefeller was then an up-and-coming Cleveland grain dealer. (He, like Carnegie and most other budding tycoons, hired a substitute to fight for him in the Civil War.) Rockefeller had strong nerves, a sharp eye for able partners, and a genius for finance. He went into the kerosene business

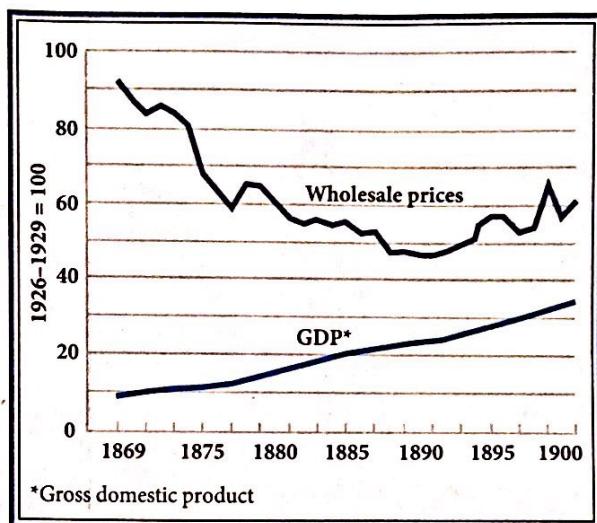
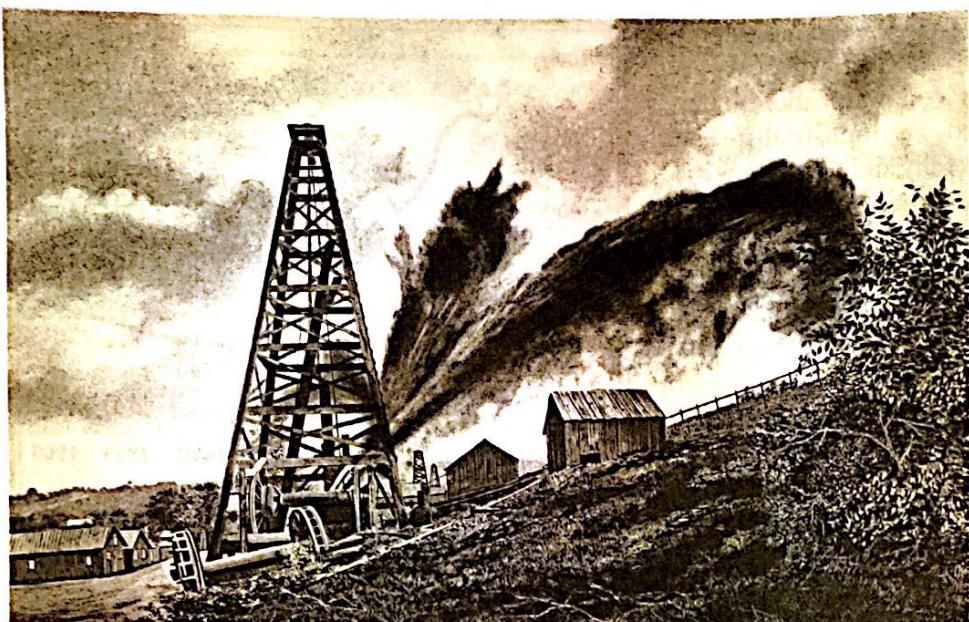


FIGURE 16.1 Business Activity and Wholesale Prices, 1869–1900

This graph shows the key feature of the performance of the late-nineteenth-century economy: while output was booming, wholesale prices were, on the whole, falling. Thus, while workers often struggled with falling wages — especially during decades of severe economic crisis — consumer products also became cheaper to buy.



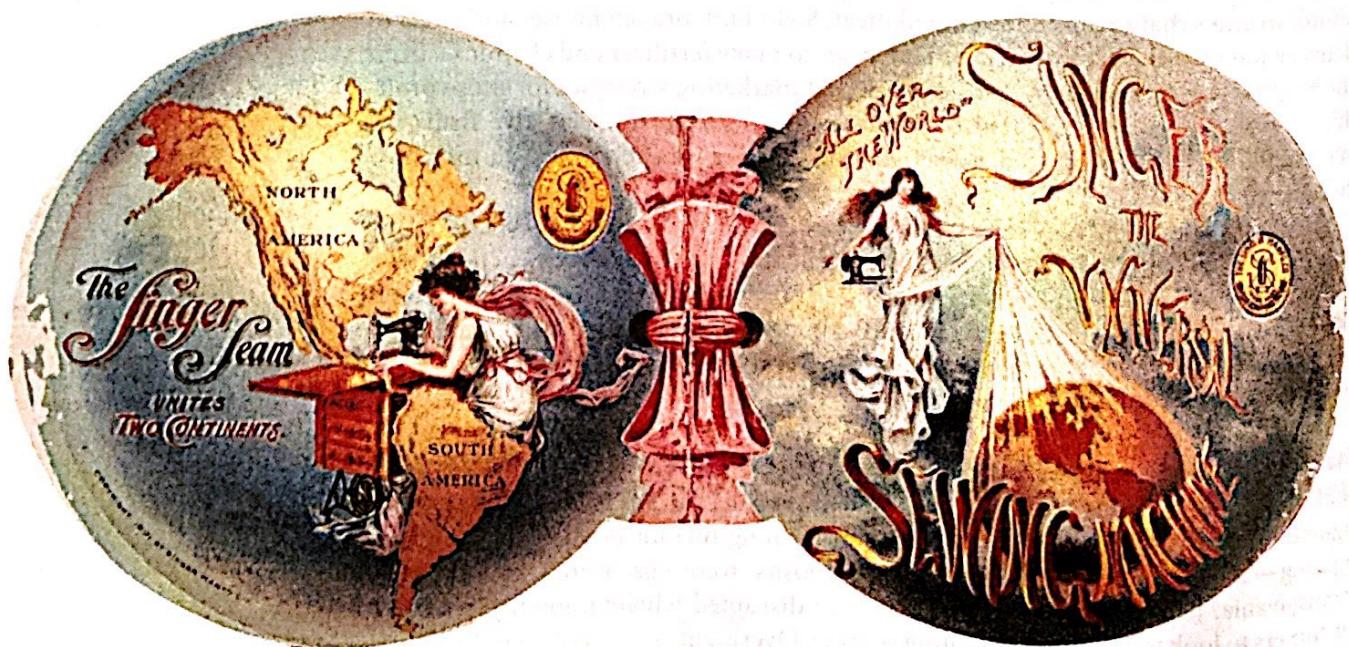
A "Gusher" in Pennsylvania Late nineteenth-century Americans tapped large petroleum fields in western Pennsylvania and later in Texas, developing an array of uses for kerosene and other fossil fuels. This 1880 sketch of an oil well shows what happened when drillers struck an underground petroleum pocket that was under pressure. Everett Collection.

and borrowed heavily to expand. Within a few years, his firm—Standard Oil of Ohio—was Cleveland's leading refiner.

Like Carnegie and Swift, Rockefeller succeeded through vertical integration: to control production and sales all the way from the oil well to the kerosene lamp, he took a big stake in the oil fields, added pipelines, and developed a vast distribution network. Rockefeller allied with railroad executives, who, like him, hated the oil market's boom-and-bust cycles. What they wanted was predictable, high-volume traffic, and they offered Rockefeller secret rebates that gave him a leg up on competitors.

Rockefeller also pioneered a strategy called horizontal integration. After driving competitors to the brink of failure through predatory pricing, he invited them to merge their local companies into his conglomerate. Most

agreed, often because they had no choice. Through such mergers, Standard Oil wrested control of 95 percent of the nation's oil refining capacity by the 1880s. In 1882, Rockefeller's lawyers created a new legal form, the trust. It organized a small group of associates—the board of trustees—to hold stock from a group of combined firms, managing them as a single entity. Rockefeller soon invested in Mexican oil fields and competed in world markets against Russian and Middle Eastern producers.



The Singer Sewing Machine The sewing machine was an American invention that swiftly found markets abroad. The Singer Manufacturing Company, the dominant firm by the time the Civil War began, exported sewing machines to markets as far-flung as Ireland, Russia, China, and India. The company also moved some manufacturing operations abroad, producing 200,000 machines annually at a Scottish plant that employed 6,000 workers. Singer's advertising rightly boasted of the international appeal of a product that the company dubbed "The Universal Sewing Machine."

© Collection of the New-York Historical Society, USA/Bridgeman Images.

Other companies followed Rockefeller's lead, creating trusts to produce such products as linseed oil, sugar, and salt. Many expanded sales and production overseas. As early as 1868, Singer Manufacturing Company established a factory in Scotland to produce sewing machines. By World War I, such brands as Ford and General Electric had become familiar around the world.

Distressed by the development of near monopolies, reformers began to denounce "the trusts," a term that in popular usage referred to any large corporation that seemed to wield excessive power. Some states outlawed trusts as a legal form. But in an effort to attract corporate headquarters to its state, New Jersey broke ranks in 1889, passing a law that permitted the creation of holding companies and other combinations. Delaware soon followed, providing another legal haven for consolidated corporations. A wave of mergers further concentrated corporate power during the depression of the 1890s, as weaker firms succumbed to powerful rivals. By 1900, America's largest one hundred companies controlled a third of the nation's productive capacity. Purchasing several steel companies in 1901, including Carnegie Steel, J. P. Morgan created U.S. Steel, the nation's first billion-dollar corporation. Such familiar firms as DuPont and Eastman Kodak assumed dominant places in their respective industries (AP® Interpreting the Past).

AP EXAM TIP

The consolidation of corporations into trusts and the resulting concentration of wealth is a "must know" on the AP® exam.

Assessing the Industrialists The work of men like Swift, Rockefeller, and Carnegie was controversial in their lifetimes and has been ever since. Carnegie, in his "Wealth" essay, argued that corporate titans attained their wealth through talent, proving they deserved their success. He also declared, however, that wealth was a "public trust" and that every elite man, after providing for his family, had a patriotic obligation to give away his millions to benefit education and other worthy causes. Carnegie advocated a near 100 percent inheritance tax on privately held wealth: inheriting large sums, he believed, discouraged young people's initiative, just as "handouts" of food or shelter to the poor discouraged them from working. Carnegie rejected both, viewing Social Darwinism, or "survival of the fittest," as the key principle of the new order (see Chapter 17).

Historians' opinions of the first industrial titans have tended to be harsh in eras of economic crisis, when the shortcomings of corporate America appear in stark relief. During the Great Depression of the 1930s, a historian coined the term *robber barons*, which is still used today. In periods of prosperity, both scholars and the public have tended to view early industrialists more favorably, calling them *industrial statesmen*.

Some scholars have argued that industrialists benefitted the economy by replacing the chaos of market competition with a "visible hand" of planning and expert management. But one recent study of railroads asserts that the main skills of early tycoons (as well as those of today) were cultivating political "friends," defaulting on loans, and lying to the public. Whether we consider the industrialists heroes, villains, or something in between, it is clear that the corporate economy was not the creation of just a few individuals, however famous or influential. It was a systemic transformation of the economy.

A National Consumer Culture As they integrated vertically and horizontally, corporations innovated in other ways. Companies such as Bell Telephone and Westinghouse set up research laboratories. Steelmakers invested in chemistry and materials science to make their products cheaper, better, and stronger. Mass markets brought an appealing array of goods to consumers who could afford them. Railroads whisked Florida oranges and other fresh produce to the shelves of grocery stores. Retailers such as F. W. Woolworth and the Great Atlantic and Pacific Tea Company (A&P) opened chains of stores that soon stretched nationwide.

The department store was pioneered in 1875 by John Wanamaker in Philadelphia. These megastores displaced small retail shops, tempting customers with large show windows and Christmas displays. Like industrialists, department store magnates developed economies of scale that enabled them to slash prices. An 1898 newspaper advertisement for Macy's Department Store urged shoppers to "read our books, cook in our

AP EXAM TIP

Recognizing the changes in consumer culture that led to dramatic increase in production of goods is critical for the AP® exam.



How Modern Were Late-Nineteenth-Century Corporations?

The modern corporation emerged in the late nineteenth century as both a cause and consequence of industrialization and the expansion of the capitalist system. Unlike the smaller manufacturing and mercantile businesses of the early nineteenth century, which were often owned and operated by a single person or family, these sprawling and complex organizations developed elaborate administrative structures and employed a bureaucracy of managers to run daily operations. But were these professionals any good?

Historians Alfred D. Chandler Jr. and Richard White examine the railroad as the key industry pioneering the development of the modern corporation. In both accounts, the managerial class was central to this process because, unlike owners, who were often uninvolved stockholders, the managers oversaw the day-to-day running of these multifaceted organizations. Chandler and White, however, interpret the success of these managers and their corporations in different ways.

ALFRED D. CHANDLER JR.

SOURCE: Alfred D. Chandler Jr., *The Visible Hand: The Managerial Revolution in American Business* (Cambridge: The Belknap Press of Harvard University Press, 1977), 12, 87.

The visible hand of management replaced the invisible hand of market forces. . . . [S]afe, regular, reliable movement of goods and passengers, as well as the continuing maintenance and repair of locomotives, rolling stock, and track, roadbed, stations, roundhouses, and other equipment, required . . . special skills and training which could only be commanded by a full-time salaried manager. . . . This career orientation and the specialized nature of tasks gave the railroad managers an increasingly professional outlook on their work.

RICHARD WHITE

SOURCE: Richard White, *Railroaded: The Transcontinentals and the Making of Modern America* (New York: W. W. Norton & Company, 2011), xxix–xxxii.

[Railroads] were not the harbingers of order, rationality, and effective large-scale organization. . . . Managers blamed their failures on accidents and contingent events, but they also used them to cover their mistakes and claim quite fortuitous results as the fruits of their planning. . . . [The railroad corporations] not only failed to institute the order they desired; they also just plain failed and repeatedly needed rescuing by the state and the courts. . . . The transcontinental railroads are sometimes fetishized as the ultimate manifestation of modern rationality, but, when seen from within, these astonishingly mismanaged railroads are the anteroom to mystery.

AP SHORT ANSWER PRACTICE

1. Name two ways that each of these two historians evaluates the success of late-nineteenth-century corporations.
2. What are the key differences between Chandler's assessment of corporate planning and White's?
3. Besides railroads, what other examples from this chapter demonstrate the growth of the modern corporation described by either Chandler or White?

saucepans, dine off our china, wear our silks, get under our blankets, smoke our cigars, drink our wines—Shop at Macy's—and Life will Cost You Less and Yield You More Than You Dreamed Possible."

While department stores became urban fixtures, Montgomery Ward and Sears built mail-order empires. Rural families from Vermont to California pored over the companies' annual catalogs, making wish lists of tools, clothes, furniture, and toys. Mail-order companies used money-back guarantees to coax wary customers to buy products they could not see or touch. "Don't be afraid to make a mistake," the Sears catalog counseled. "Tell us what you want, in your own way." By 1900, America counted more than twelve hundred mail-order companies.

The active shaping of consumer demand became, in itself, a new enterprise. Outdoors, advertisements appeared everywhere: in New York's Madison Square, the Heinz Company installed a 45-foot pickle made of green electric lights. Tourists had difficulty admiring Niagara Falls because billboards obscured the view. By 1900, companies were spending more than \$90 million a year (\$2.3 billion today) on print

advertising, as the press itself became a mass-market industry. Rather than charging subscribers the cost of production, magazines began to cover their costs by selling ads. Cheap subscriptions built a mass readership, which in turn attracted more advertisers. In 1903, the *Ladies' Home Journal* became the first magazine with a million subscribers.

The Corporate Workplace

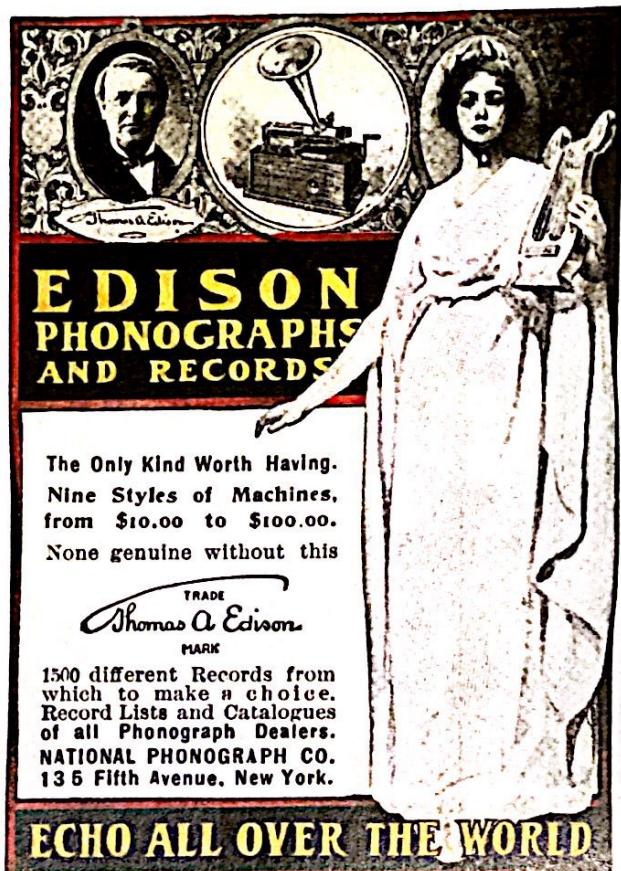
Before the Civil War, most American boys had hoped to become farmers, small-business owners, or independent artisans. Afterward, more and more Americans—both male and female—began working for someone else. Because they wore white shirts with starched collars, those who held professional positions in corporations became known as white-collar workers, a term differentiating them from blue-collar employees, who labored with their hands. For a range of employees—managers and laborers, clerks and salespeople—the rise of corporate work had wide-ranging consequences.

Managers and Salesmen As the managerial revolution unfolded, the headquarters of major corporations began to house departments handling specific activities such as purchasing and accounting. These departments were supervised by middle managers, something not seen before in American industry. Middle managers took on entirely new tasks, directing the flow of goods, labor, and information throughout the enterprise. They were key innovators, counterparts to the engineers in research laboratories who, in the same decades, worked to reduce costs and improve efficiency.

Corporations also needed a new kind of sales force. In post-Civil War America, the drummer, or traveling salesman, became a familiar sight on city streets and in remote country stores. Riding rail networks from town to town, drummers introduced merchants to new products, offered incentives, and suggested sales displays. They built nationwide distribution networks for such popular consumer products as cigarettes and Coca-Cola. By the late 1880s, the leading manufacturer of cash registers produced a sales script for its employees' conversations with local merchants. "Take for granted that he will buy," the script directed. "Say to him, 'Now, Mr. Blank, what color shall I make it?' . . . Handing him your pen say, 'Just sign here where I have made the cross.'"

With such companies in the vanguard, sales became systematized. Managers set individual sales quotas and awarded prizes to top salesmen, while those who sold too little were singled out for remedial training or dismissal. Executives embraced the ideas of business psychologist Walter Dill Scott, who published *The Psychology of Advertising* in 1908. Scott's principles—which included selling to customers based on their presumed "instinct of escape" and "instinct of combat"—were soon taught at Harvard Business School. Others also promised that a "scientific attitude" would "attract attention" and "create desire."

Women in the Corporate Office Beneath the ranks of managers emerged a new class of female office workers. Before the Civil War, most clerks at small firms had been young men who expected to rise through the ranks. In a large corporation, secretarial work became a dead-end job, and employers began assigning it to women. By the turn of the twentieth century, 77 percent of all stenographers and typists were female; by 1920, women held half of all low-level office jobs.



Thomas Edison Promotes the Phonograph The wondrous inventions that emerged from Edison's laboratory in Menlo Park, New Jersey, ranged from the phonograph to electric light bulbs, moving pictures, and Portland cement. Edison (1847–1931), whose face appears in the upper left, became a national hero—and the holder of over one thousand patents. He was also a shrewd entrepreneur. To demonstrate his electric lights, he illuminated the *New York Times* headquarters and the nearby offices of powerful financier J. P. Morgan. Note the price range for his phonograph, beginning at \$10 (the equivalent of approximately \$1,000 today). What does this tell you about Edison's target audience? Why do you think the elegant lady on the right appears in the advertisement? © North Wind Picture Archives/The Image Works.

AP PRACTICES & SKILLS

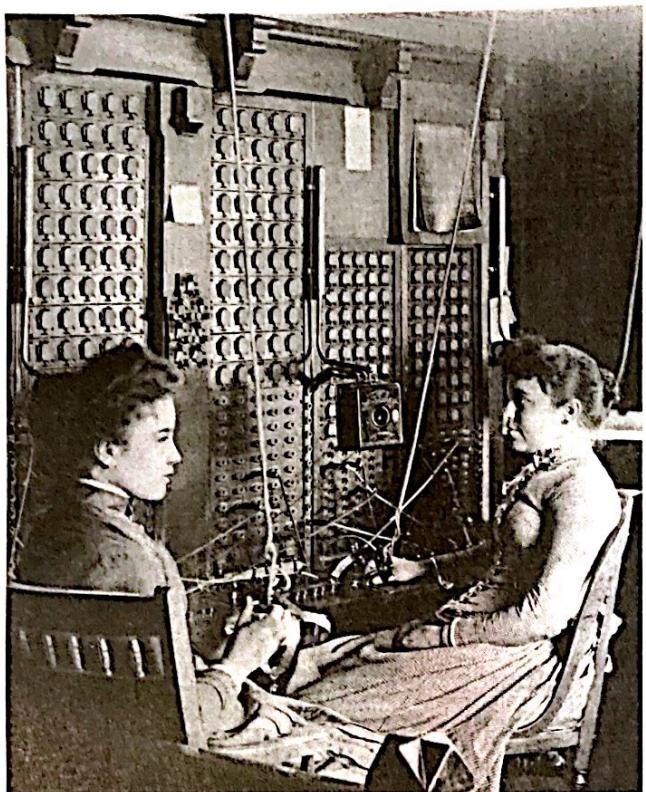
CAUSATION

Why did large corporations arise in the late nineteenth century, and how did leading industrialists consolidate their power?

AP PRACTICES & SKILLS

CAUSATION

What opportunities did the rise of corporations offer to different types of "middle workers"—those who were neither top executives nor blue-collar laborers?



Telephone Operators, 1888 Like other women office workers, these switchboard operators enjoyed relatively high pay and comfortable working conditions—especially in the early years of the telephone industry, before operators' work routines speeded up. These young women worked for the Central Union Telephone Company in Canton, Ohio. Courtesy of the Ohio History Connection, AL00129.

AP EXAM TIP

Explain the impact of economic change in the late nineteenth century on the roles of women in the U.S.

For white working-class women, clerking and office work represented new opportunities. In an era before most families had access to day care, mothers most often earned money at home, where they could tend children while also taking in laundry, caring for boarders, or doing piecework (sewing or other assembly projects, paid on a per-item basis). Unmarried daughters could enter domestic service or factory work, but clerking and secretarial work were cleaner and better paid.

New technologies provided additional opportunities for women. The rise of the telephone, introduced by inventor Alexander Graham Bell in 1876, was a notable example. Originally intended for business use on local exchanges, telephones were eagerly adopted by residential customers. Thousands of young women found work as telephone operators. By 1900, more than 4 million women worked for wages. About a third worked in domestic service; another third in industry; the rest in office work, teaching, nursing, or sales. As new occupations arose, the percentage of wage-earning women in domestic service dropped dramatically, a trend that continued in the twentieth century.

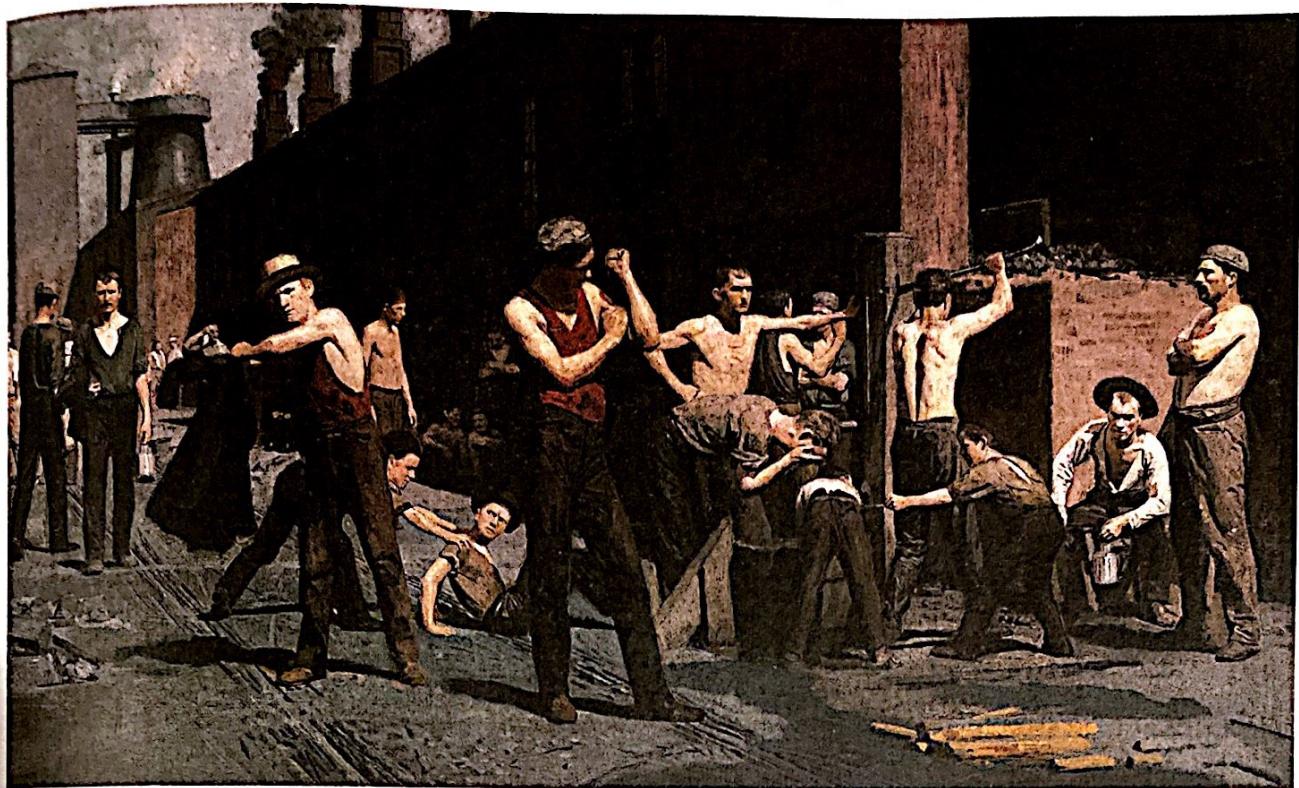
On the Shop Floor

Despite the managerial revolution at the top, skilled craft workers—almost all of them men—retained considerable autonomy in many industries. A coal miner, for example, was not an hourly wageworker but essentially an independent contractor, paid by the amount of coal he produced. He provided his own tools, worked at his own pace, and knocked off early when he chose. The same was true for puddlers and rollers in ironworks; molders in

stove making; and machinists, glass blowers, and skilled workers in many other industries. Such workers abided by the stint, a self-imposed limit on how much they would produce each day. This informal system of restricting output infuriated efficiency-minded engineers, but to the workers it signified personal dignity, manly pride, and brotherhood with fellow employees. One shop in Lowell, Massachusetts, posted regulations requiring all employees to be at their posts by the time of the opening bell and to remain, with the shop door locked, until the closing bell. A machinist promptly packed his tools, declaring that he had not “been brought up under such a system of slavery.”

Skilled workers—craftsmen, inside contractors, and foremen—enjoyed a high degree of autonomy. But those who paid helpers from their own pocket could also exploit them. Subcontracting arose, in part, to enable manufacturers to distance themselves from the consequences of shady labor practices. In Pittsburgh steel mills, foremen were known as “pushers,” notorious for driving their gangs mercilessly. On the other hand, industrial labor operated on a human scale, through personal relationships that could be close and enduring. Striking craft workers would commonly receive the support of helpers and laborers, and labor gangs would sometimes walk out on behalf of a popular foreman.

As industrialization advanced, however, workers increasingly lost the independence characteristic of craft work. The most important cause of this was the deskilling of labor under a new system of mechanized manufacturing that men like meatpacker Gustavus Swift had pioneered and that automobile maker Henry Ford would soon call mass production. Everything from typewriters to automobiles came to be assembled from standardized parts, using machines that increasingly operated with little human oversight. A machinist protested in 1883 that the sewing machine industry was so “subdivided” that “one man may make just a particular part of a machine and may not know anything whatever about another part of the same machine.” Such a worker, noted an observer, “cannot be master of a craft, but only master of a fragment.” Employers, who originally favored automatic machinery because it increased output, quickly found that



Ironworkers—Noontime, 1880 The ideal qualities of the nineteenth-century craft worker—dignity, brotherhood, manliness—shine through in this painting by Thomas P. Anschutz. *Ironworkers—Noontime* became a popular painting after it was reproduced as an engraving in *Harper's Weekly* in 1884. Artepics/Alamy Stock Photo.

it also helped them control workers and cut labor costs. They could pay unskilled workers less and replace them easily.

By the early twentieth century, managers sought to further reduce costs through a program of industrial efficiency called **scientific management**. Its inventor, a metal-cutting expert named Frederick W. Taylor, recommended that employers eliminate all brain work from manual labor, hiring experts to develop rules for the shop floor. Workers must be required to “do what they are told promptly and without asking questions or making suggestions.” In its most extreme form, scientific management called for engineers to time each task with a stopwatch; companies would pay workers more if they met the stopwatch standard. Taylor assumed that workers would respond automatically to the lure of higher earnings. But scientific management was not, in practice, a great success. Implementing it proved to be expensive, and workers stubbornly resisted. Corporate managers, however, adopted bits and pieces of Taylor’s system, and they enthusiastically agreed that decisions should lie with “management alone.” Over time, in comparison with businesses in other countries, American corporations created a particularly wide gap between the roles of managers and those of the blue-collar workforce.

Blue-collar workers had little freedom to negotiate, and their working conditions deteriorated markedly as deskilling and mass production took hold. At the same time, industrialization brought cheaper products that enabled many Americans to enjoy new consumer products—if they could avoid starvation. From executives down to unskilled workers, the hierarchy of corporate employment contributed to sharper distinctions among three economic classes: the wealthy elite; an emerging, self-defined “middle class”; and a struggling class of workers, who bore the brunt of the economy’s new risks and included many Americans living in dire poverty. As it wrought these changes, industrialization prompted intense debate over inequality (AP® Thinking Like a Historian).

AP EXAM TIP

Consider the impact of scientific management on the workplace environment of the working class.

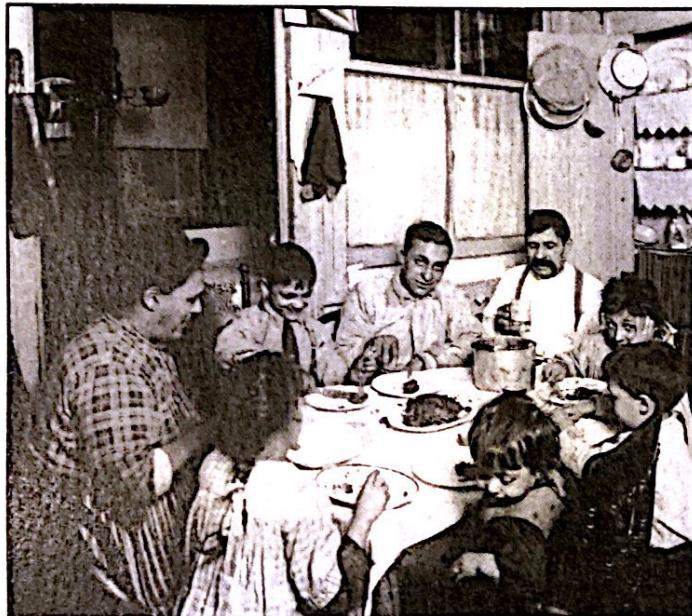
Health Hazards and Pollution Industrialized labor also damaged workers’ health. In 1884, a study of the Illinois Central Railroad showed that, over the previous decade, one in twenty of its workers had been killed or permanently disabled by an accident on

Poverty and Food

Amid rising industrial poverty, food emerged as a reference point. How much was too little, or too much? If some Americans were going hungry, how should others respond? The documents below show some contributions to these debates.

1. Lewis W. Hine, "Mealtime, New York Tenement," 1910.

Hine was an influential photographer and reformer. He took a famous series of photographs at Ellis Island, remarking that he hoped Americans would view new immigrants in the same way they thought of the Pilgrims. What does the photographer emphasize in the living conditions of this Italian immigrant family and their relationships with one another? Why do you think Hine photographed them at the table?



SOURCE: Pictorial Press Ltd./Alamy Stock Photo.

2. Louisa May Alcott, *Little Women*, 1869. Alcott's novel, popular for decades, exemplified the ideal of Christian charity. At the start of this scene, Mrs. March returns from a Christmas morning expedition.

Merry Christmas, little daughters! . . . I want to say one word before we sit down [to breakfast]. Not far away from here lies a poor woman with a little newborn baby. Six children are huddled into one bed to keep from freezing, for they have no fire. There is nothing to eat. . . . My girls, will you give them your breakfasts as a Christmas present?

... For a minute no one spoke, only a minute, for Jo exclaimed impetuously, I'm so glad you came before we began!

May I go and help . . . ? asked Beth eagerly. I shall take the cream and the muffins, added Amy. . . . Meg was already covering the buckwheats and piling the bread into one big plate.

I thought you'd do it, said Mrs. March, smiling.

... A poor, bare, miserable room it was, with broken windows, no fire, ragged bedclothes, a sick mother, wailing baby, and a group of pale, hungry children. . . . Mrs. March gave the mother tea and gruel [while] the girls meantime spread the table [and] set the children round the fire. . . .

That was a very happy breakfast, though they didn't get any of it. And when they went away, leaving comfort behind, I think there were not in all the city four merrier people than the hungry little girls who gave away their breakfasts and contented themselves with bread and milk on Christmas morning.

3. Mary Hinman Abel, *Promoting Nutrition*, 1890. This excerpt is from a cookbook that won a prize from the American Public Health Association. The author had studied community cooking projects in Europe and worked to meet the needs of Boston's poor. How does she propose to feed people on 13 cents a day—her most basic menu? What assumptions does she make about her audience? In what ways was her cookbook, itself, a product of industrialization?

For family of six, average price 78 cents per day, or 13 cents per person.

. . . I am going to consider myself as talking to the mother of a family who has six mouths to feed, and no more money than this to do it with. Perhaps this woman has never kept accurate accounts. . . . I have in mind the wife [who has] time to attend to the housework and children. If a woman helps earn, as in a factory, doing most of her housework after she comes home at night, she must certainly have more money than in the first case in order to accomplish the same result.

the job. For brakemen—one of the most dangerous jobs—the rate was one in seven. Due to lack of regulatory laws and inspections, mining was 50 percent more dangerous in the United States than in Germany; between 1876 and 1925, an average of over two thousand U.S. coal miners died each year from cave-ins and explosions. Silver, gold, and copper mines were also not immune from such tragedies, but mining companies resisted demands for safety regulation.

... The Proteid column is the one that you must look to most carefully because it is furnished at the most expense, and it is very important that it should not fall below the figures I have given [or] your family would be undernourished.

[Sample spring menu]

Breakfast. Milk Toast. Coffee.

Dinner. Stuffed Beef's Heart. Potatoes stewed with Milk. Dried Apple Pie. Bread and Cheese. Corn Coffee.

Supper. Noodle Soup (from Saturday). Boiled Herring. Bread. Tea.

Proteids. (oz.)	21.20
Fats. (oz.)	14.39
Carbohydrates. (oz.)	77.08
Cost in Cents.	76

4. Werner Sombart, *Why Is There No Socialism in the United States?*, 1906. Sombart, a German sociologist, compared living conditions in Germany and the United States in order to answer the question above. What conclusion did he reach?

The American worker eats almost three times as much meat, three times as much flour and four times as much sugar as his German counterpart. . . . The American worker is much closer to the better sections of the German middle class than to the German wage-labouring class. He does not merely eat, but dines. . . .

It is no wonder if, in such a situation, any dissatisfaction with the "existing social order" finds difficulty in establishing itself in the mind of the worker. . . . All Socialist utopias came to nothing on roast beef and apple pie.

5. Helen Campbell, *Prisoners of Poverty*, 1887. A journalist, Campbell investigated the conditions of low-paid seamstresses in New York City who did piecework in their apartments. Like Abel (source 3), she tried to teach what she called "survival economics." Here, a woman responds to Campbell's suggestion that she cook beans for better nutrition.

"Beans!" said one indignant soul. "What time have I to think of beans, or what money to buy coal to cook 'em? What you'd want if you sat over a machine fourteen hours a day would be tea like lye to put a back-bone in you. That's why we have tea always in the pot, and it don't make much odds what's with it. A slice of bread is about all. . . . Wed our tea an' bread an' a good bit of fried beef or pork, maybe, when my husband was alive an' at work. . . . It's the tea that keeps you up."

6. Julian Street, *Show and Extravagance*, 1910. Street, a journalist, was invited to an elite home in Buffalo, New York, for a dinner that included cocktails, fine wines, caviar, a roast, Turkish coffee, and cigars.

Before we left New York there was newspaper talk about some rich women who had organized a movement of protest against the ever-increasing American tendency toward show and extravagance. . . . Our hostess [in Buffalo] was the first to mention it, but several other ladies added details. . . .

"We don't intend to go to any foolish extremes," said one. . . . "We are only going to scale things down and eliminate waste. There is a lot of useless show in this country which only makes it hard for people who can't afford things. And even for those who can, it is wrong. . . . Take this little dinner we had tonight. . . . In future we are all going to give plain little dinners like this."

"Plain?" I gasped. . . . "But I didn't think it had begun yet! I thought this dinner was a kind of farewell feast — that it was —"

Our hostess looked grieved. The other ladies of the league gazed at me reproachfully. . . . "Didn't you notice?" asked my hostess. . . .

"Notice what?"

"That we didn't have champagne!"

SOURCES: (2) Louisa May Alcott, *Little Women*, Part 2, Chapter 2 at xroads.virginia.edu/~HYPER/ALCOTT/ch2.html; (3) Mary Hinman Abel, *Practical, Sanitary, and Economic Cooking Adapted to Persons of Moderate and Small Means* (American Public Health Association, 1890), 143–154; (4) Werner Sombart, *Why Is There No Socialism in the United States?*, trans. Patricia M. Hocking and C. T. Husbands (White Plains, NY: International Arts and Sciences Press, 1976), 97, 105–106; (5) Helen Campbell, *Prisoners of Poverty* (Cambridge, MA: University Press, 1887), 123–124; (6) Julian Street, *Abroad at Home* (New York: The Century Co., 1915), 37–39.

ANALYZING THE EVIDENCE

- These documents were created by journalists and reformers. What audiences did they seek to reach? Why do you think they all focused on food?
- Imagine a conversation among these authors. How might we account for the differences in Sombart's and Campbell's findings? How might Hine, Abel, and Campbell respond to Alcott's vision of charitable Christian acts?

AP DBQ PRACTICE

Using the documents above and your knowledge from this chapter, write a short essay explaining some challenges and opportunities faced by different Americans in the industrializing era—including those of the wealthy elite, emerging middle class, skilled blue-collar men, and very poorest unskilled laborers. How did labor leaders and reformers seek to persuade prosperous Americans to concern themselves with workers' problems? To what dominant values did they appeal?

Extractive industries and factories also damaged nearby environments and the people who lived there. In big cities, poor residents suffered from polluted air and the dumping of noxious by-products into the water supply. Mines like those in Leadville, Colorado, contaminated the land and water with mercury and lead. Alabama convicts, forced to work in coal mines, faced brutal working conditions and fatal illnesses caused by the mines' contamination of local water. At the time, people were well aware of many

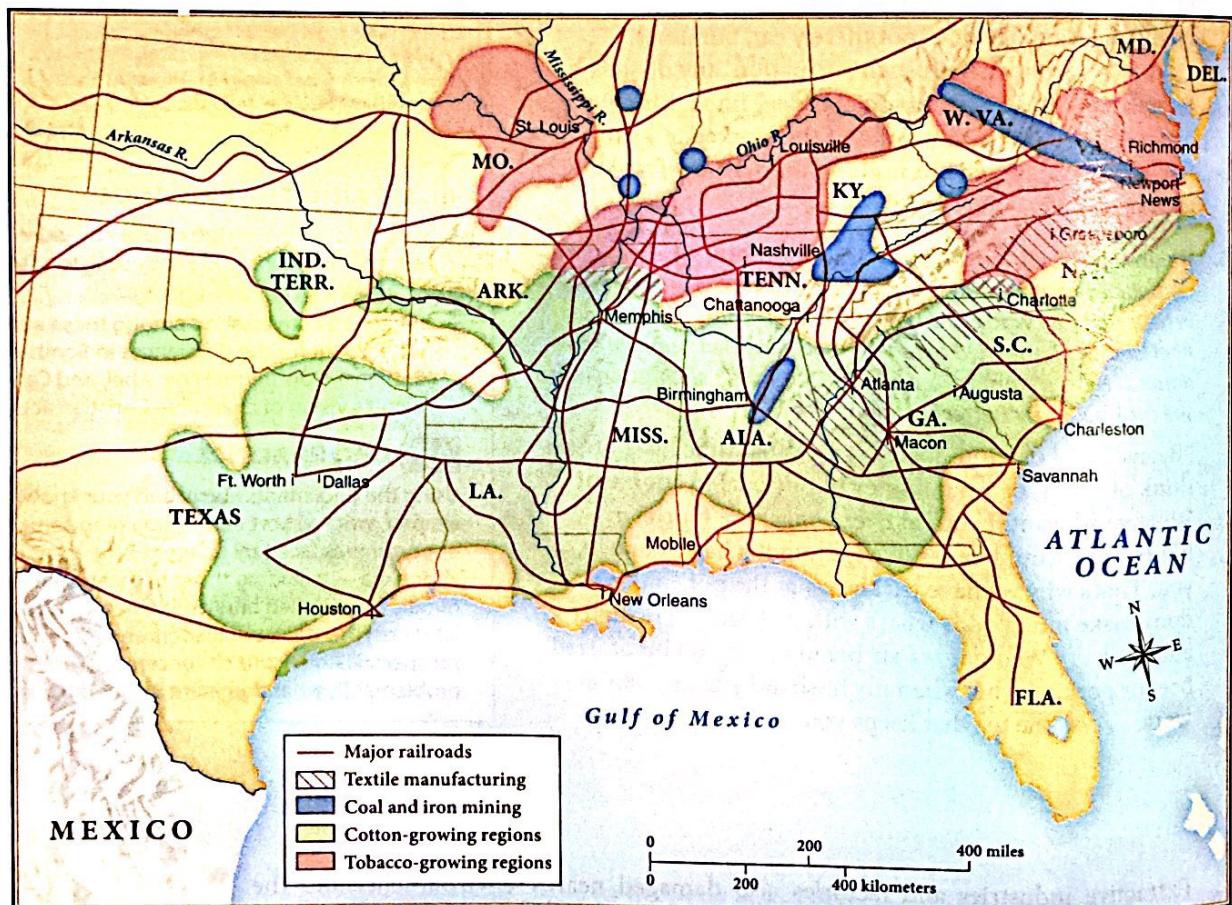
of these dangers, but workers had an even more urgent priority: work. Pittsburgh's belching smokestacks meant coughing and lung damage, but they also meant running mills and paying jobs.

Unskilled Labor and Discrimination As managers deskilled production, the ranks of factory workers came to include more and more women and children, who were almost always unskilled and low paid. Men often resented women's presence in factories, and male labor unions often worked to exclude women—especially wives, who they argued should remain in the home. Women vigorously defended their right to work. On hearing accusations that married women worked only to buy frivolous luxuries, one female worker in a Massachusetts shoe factory wrote a heated response to the local newspaper: "When the husband and father cannot provide for his wife and children, it is perfectly natural that the wife and mother should desire to work. . . . Don't blame married women if the land of the free has become a land of slavery and oppression."

In 1900, one of every five children under the age of sixteen worked outside the home. Child labor was most widespread in the ex-Confederacy. Here, a low-wage industrial sector emerged after Reconstruction, leading commentators to hail the region as a more economically diversified **New South** (Map 16.1). Textile mills sprouted in the Carolinas and Georgia, recruiting workers from surrounding farms; whole families often worked in the mills. Many children also worked in Pennsylvania coal fields, where death and injury rates were high. State law permitted children as

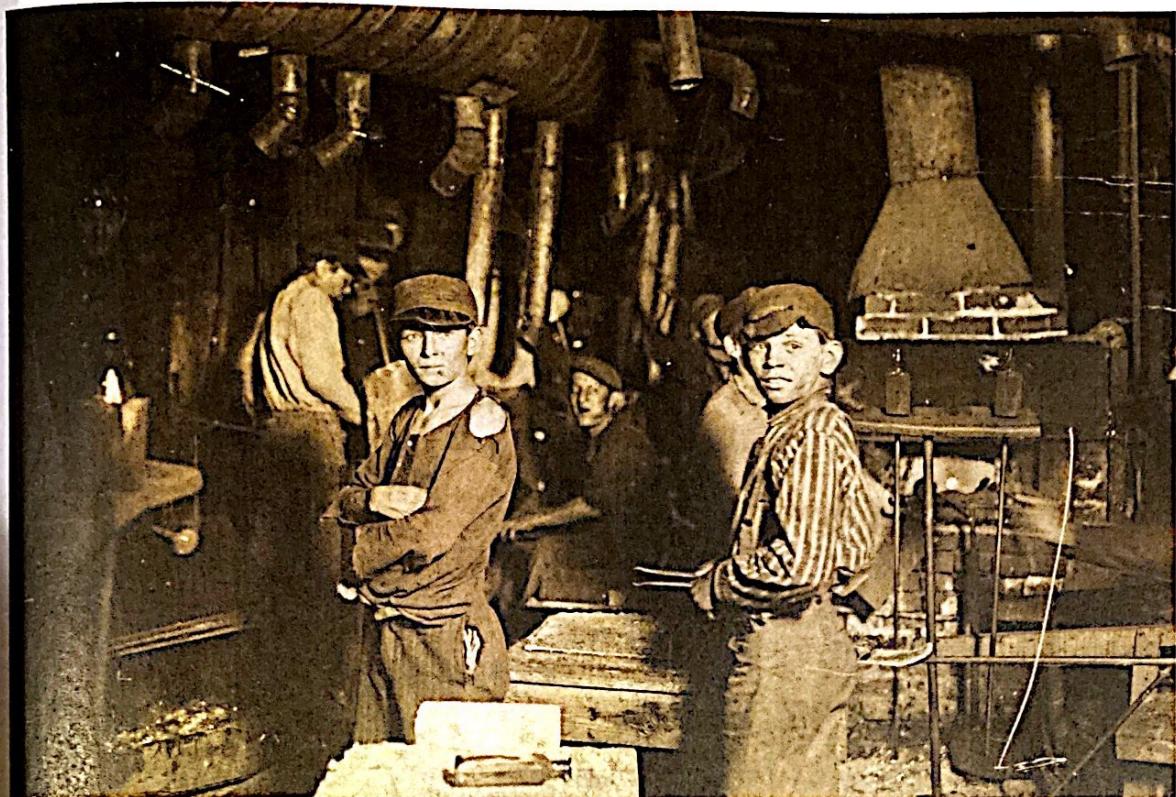
AP EXAM TIP

Explain why child labor was more widespread in the "New South."



MAP 16.1 The New South, 1900

The economy of the Old South focused on raising staple crops, especially cotton and tobacco. In the New South, staple agriculture continued to dominate, but industrial regions also evolved, producing textiles, coal, and iron. By 1900, the South's industrial pattern was well defined, though the region still served—like the West—as a major producer of raw materials for the industrial region that stretched from New England to Chicago.



Child Labor For many working-class families, children's wages — even though they were low — made up an essential part of the household income. These boys worked the night shift in a glass factory in Indiana. Lewis Hine, an investigative photographer for the National Child Labor Committee, took their picture at midnight, as part of a campaign to educate more prosperous Americans about the widespread employment of child labor and the harsh conditions in which many children worked. Library of Congress.

young as twelve to labor with a family member, but turn-of-the-century investigators estimated that about 10,000 additional boys, at even younger ages, were illegally employed in the mines.

Also at the bottom of the pay scale were most African Americans. Corporations and industrial manufacturers widely discriminated against them on the basis of race, and such prejudice was hardly limited to the South. After the Civil War, African American women who moved to northern cities were largely barred from office work and other new employment options; instead, they remained heavily concentrated in domestic service, with more than half employed as cooks or servants. African American men confronted similar exclusion. America's booming vertically integrated corporations turned black men away from all but the most menial jobs. In 1890, almost a third of black men worked in personal service. Employers in the North and West recruited, instead, a different kind of low-wage labor: newly arrived immigrants.

AP PRACTICES & SKILLS

CHANGE OVER TIME

How did conditions change for industrial workers in the late nineteenth century, and why?

IN YOUR OWN WORDS What new business practices arose in the late-nineteenth-century United States, and what impact did they have on employees, consumers, and the environment?

Immigrants, East and West

Across the globe, industrialization set people in motion with the lure of jobs. Between the Civil War and World War I, over 25 million immigrants entered the United States. The American working class became truly global, including not only people of