

# AP US History

## Chapter 17 - Industrial Supremacy

Finn Frankis

### Key Concepts

What are this chapter's key concepts?

- **6.1.I.B** - Businesses utilized technology, resources, financial systems, marketing, and labor to produce more goods
- **6.1.I.D** - Business magnates sought to raise profits by combining corporations into larger trusts/holding companies → wealth further concentrated
- **6.1.II.A** - Several supported laissez-faire economic policies for long-term economic growth, opposing govt. intervention even during crises
- **6.1.II.B** - The industrial workforce expanded and diversified due to migration, but child labor also increased
- **6.1.II.C** - Labor forces fought w/ managers over wages, conditions → formations of local/national unions to rise against business leaders
- **6.3.I.A** - Social Darwinism further used to justify inevitability of success of certain
- **6.3.I.B** - Some business leaders used Gospel of Wealth argument to push wealthy to assist poor through philanthropy

### Sources of Industrial Growth

What spurred long-term industrial development in the U.S.?

Industrial development was spurred greatly by the rapidly growing steel industry, which was tightly connected to the trailblazing railroad industry; the creation of the automobile and aeroplane revolutionized transportation. Corporations began to jump on the technology boom, funding research in labs and universities; several turned to scientifically optimizing the manufacturing process for efficiency. The stock-based corporation developed in the 1840s, with corporations growing rapidly through horizontal and vertical integration, most notably seen in Rockefeller's Standard Oil; trusts and mergers allowed companies to come together. Though several criticized the dominance which these companies began to hold over American society, they inevitably stimulated economic growth.

How did technology encourage long-term industrial growth?

- Iron/steel production most important w/ rapid growth post-Civil War
  - Henry Bessemer (GB) and William Kelly (US) simultaneously found how to convert iron → steel, known as Bessemer process, complimented by Mushet's idea of adding to melted iron
  - 1868: Hewitt (US) introduced open-hearth process, soon replacing Bessemer process
  - Steel dev. allowed rapid production of large pieces for rail cars, rails, girders for buildings
  - Emerged in W. PA and E. OH due to natural iron ore, demand for anthracite fuel (common in PA) → Pittsburgh early center
  - Rapid growth of industry → new sources found in MI, MN, AL w/ Cleveland, Chicago, Detroit, Birmingham growing
  - Stone furnaces for steel production replaced w/ brick in 1870s → far larger amounts could be produced at once
- Transportation emerged to cater to steel industry
  - Freighters to Great Lakes allowed growth of industry there
  - Steam engines unloaded ore far more rapidly than humans
  - Railroads closely connected to steel industry w/ steel used for rails/cars and rail companies providing instant market
- Lubrication in steel production → oil grew in relevance (not as fuel until much later) w/ petroleum reserves in PA producing large amts.

**The production of steel from iron was arguably the most important technological advancement spurring industrial growth; starting in Pennsylvania and Ohio but rapidly expanding outward, it was critical for the construction of railroads and also relied on railroads to reach new markets. Additionally, the need for lubrication led to the growth of the petroleum industry.**

What characterized the development of the airplane and automobile industries?

- Automobile made possible by process of separating petrol from crude oil, German development of gas-powered engine (not initially portable)
  - Charles/Frank Duryea built first gasoline-driven vehicle in 1893
  - Henry Ford built vehicle in 1896
  - Industry grew extremely rapidly
- Potential for flight became viable only in late 19th c. w/ experiments using balloons, kites, gliders
  - Wilbur/Orville Wright began to work on glider powered by combustion engine; first test flight in 1903 at Kitty Hawk; could travel 23 miles by 1905
  - Most substantial airplane design in France due to govt. funding; U.S. created National Advisory Committee on Aeronautics in 1915, but commercial flight saw hope only after Lindbergh's first intercontinental flight

**The automobile industry was spurred by the process of retrieving usable fuel from crude oil as well as the development of the gas-powered engine; Henry Ford built his first vehicle in 1896. The flight industry first saw potential after by the Wright brothers had their first successful flight, but most early development came from France.**

How did research and development spur industrial growth?

- Businesses began to sponsor research to face competition
  - GE made corporate laboratory in 1900; several other large companies had followed by 1913
  - $\uparrow$  corporate interest  $\Leftrightarrow$   $\downarrow$  govt. interest  $\rightarrow$  skilled scientists moved from govt. to corporations, research far more free-moving and decentralized
- Scientists/engineers became increasingly divided as engineers worked at forefront of tech. for corps. while many scientists insisted on studying less directly practical subjects (though far fewer than in Europe)
- U.S. universities funded by corps  $\rightarrow$  developed research institutes for industrial economy (not the case in Europe)

**Several large U.S. corporations sponsored research both at laboratories and universities to cater to a rapidly changing market. The increased corporatization of science created a significant rift between knowledge-driven scientists and market-driven engineers.**

How did several great thinkers turn to optimizing manufacturing?

- Led by Frederick Winslow Taylor, "Taylorists" stressed subdivision of tasks to limit dependence on single employee, reduce required training to optimize efficiency through "scientific management"
- Henry Ford introduced mass production through moving assembly line in automobile factories to rapidly cut production times

**The Taylorists stressed the concept of "scientific management", subdividing tasks to optimize overall efficiency. Henry Ford similarly revolutionized mass production with the moving assembly line to cut production times.**

How did the railroad remain the primary agent of industry?

- Railroads blazed way for new development, spurring commercial activity anywhere they expanded
  - Passing thru. forests → lumberers; West → buffalo hunters to kill buffalo, bring cattle
  - As railroad hub, Chicago became slaughterhouse of nation w/ most cattle going there
- Pre-1880s, time determined by sun position → even neighbouring towns had diff. times → railroad companies agreed in 1883 on four time zones each an hour apart for scheduling
- Railroads expanded rapidly due to fed./state/local subsidies, investors from abroad, railroad combinations → power restricted to hands of few
  - Tycoons like Cornelius Vanderbilt, James J. Hill, Collis P. Huntington represented nation w/ power in hands of few
  - Led to creation of modern corporation

**Commercial activity continued to follow railroads wherever they emerged, throughout the nation. Railroads also led to the creation of four standard time zones and were spurred by government subsidies, foreign investors, and railroad combinations.**

What was the structure of the U.S. corporation?

- Post-Civil War, railroad leaders/industrialists realized that no single person could dominate economy
- Incorporation laws of 1830s/1840s allowed businesses to earn money by selling stock to public with "limited liability" (investors could only lose amount invested, not having to cover company's debt)
  - Wealth from stocks → corporations could take on large projects
- First corporations were railroads, but quickly expanded outward
  - Modest immigrant Andrew Carnegie dominated steel industry, buying out competitors, negotiating railroad deals, buying/leasing coal mines w/ associate Henry Clay Frick
    - \* Financed projects w/ wealth from sale of stock
    - \* Sold to banker J. Pierpont Morgan in 1901 for \$450m, who created U.S. Steel Corporation, near-monopolizing enterprise
  - Gustavus Swift turned Chicago meatpacking company into national corporation by selling to mil. in Civil War
  - Isaac Singer patented sewing machine in 1851, creating manufacturing corporation
- Corporations began to formally approach management w/ systematic techniques creating hierarchy of control, concept of "middle manager" between owners and workers

**Incorporation laws in the 1830s allowed businesses to safely sell stock to the public, creating the modern corporation. Although corporations began with railroads, they soon expanded outward, with Andrew Carnegie dominating the steel industry. As corporations expanded, new managerial techniques emerged, most notably a formal hierarchy of control with "middle managers" between owners and workers.**

How did businesses consolidate power in corporate America?

- Businesses consolidated power through **horizontal integration** (merging similar firms in same enterprise) and **vertical integration** (taking over businesses on which the corporation relied)
- Rockefeller's Standard Oil, created in Cleveland post-Civil War, initially expanded horizontally w/ rapid purchase of competitors; soon expanded vertically w/ purchase of factory, freight cars, warehouses, pipelines to prevent reliance on other companies
- Consolidation accepted as method of preventing social instability from too much competition
- Railroads made pool arrangements betw. companies to stabilize rates, divide markets (known as cartels), but rarely viable due to requirement for cooperation from all companies

**Rockefeller's Standard Oil company is the greatest example of an expanding company, initially absorbing competitors in the same market (horizontal integration), and later taking over operations on which it depended (vertical integration). Consolidation was so popular because it was seen as a solution to the inevitable instability of an overcompetitive market.**

How did the ideas of the trust and the holding company emerge?

- Failure of pools → new consolidation methods relying on central control
- "Trust" began w/ Standard Oil, perfected by J.P. Morgan; allowed stockholders to form trust agreements, transferring stocks to small grp. of trustees in exchange for shares in trust
  - Owners relied on trustees to bring in profits
  - Several trustees exercised great power over major corporations
- 1889: NJ allowed companies to buy other ones → corporate mergers possible
  - Standard Oil relocated to NJ, created "holding company" to buy stock from trustees
- By turn of century, 1% of corporations controlled more than 33% of manufacturing, in hands of large bankers and industrial magnates; methods frequently criticized but indubitably spurred growth

**The "trust" allowed investors to transfer their stocks to trustees in exchange for shares in a trust, giving a small group of trustees great power. Corporate mergers were first made possible in New Jersey and overshadowed the trust, instead creating "holding companies" which controlled several others.**

What were the main supporting arguments for and opposing arguments to capitalism?

Capitalist supporters incorporated its tenets into ideals of individualism and Social Darwinism, stressing that the most successful had reached such prominence out of their own hard work, independence, and grit. Furthermore, the concentration of great wealth in the hands of the fittest, many argued, allowed them to redistribute it back into society through philanthropy and public works, allowing all to be successful. However, several Americans resented the laissez-faire policies of capitalism, the creation of a large impoverished class, ideas of competition, and large monopolies due to their high prices, restrictions on individualism, and evidencing of the gap between rich and poor.

How was capitalism tied into ideas of individualism?

- Capitalist defenders argued industry allowed every individual chance to succeed
  - Nearly all millionaires claimed to be "self-made men"; very few truly were (such as Carnegie, Rockefeller, Harriman)
  - Several rose to power thru. ruthlessness, arrogance, corruption (ex: Cornelius Vanderbilt publicly claimed disregard for law)
  - Greatest industrialists enjoyed heavy govt. support
- Most businesspeople ultimately failed due to absorption by another company, great competition
  - Many industries never monopolized, w/ smaller companies constantly fighting for dominance

Supporters of capitalism argued that it gave every individual a chance at success; truly, however, most had started with wealth, rose to power in ruthless or corrupt ways, and were consistently supported by the government. Most businesspeople were quickly put out of business in the competitive industrial climate.

How did some supporters of capitalism stress Social Darwinism?

- Most magnates stressed success was due to personal virtue, worthiness; Rockefeller felt all impoverished were that way by their own fault
- Social Darwinists stressed that only the fittest flourished in the industrial world
  - **Herbert Spencer**, most prominent Social Darwinist, argued society benefited by survival of the fittest; supported by several intellectuals (like Yale's William Graham Sumner)
  - Businessmen supported due to pairing of idea of freedom to struggle/succeed with their success; supported lower wages, reduced govt. influence
- Social Darwinism complimented by supply and demand of Adam Smith, idea of "invisible hand" pushing market forward
- Main theories far from realities of economy w/ constant work to protect from competition, going against natural laws of marketplace

**Social Darwinism was supported by several business magnates, who used it to justify their success out of virtue and natural worth; furthermore, classical economists pushed concepts of supply and demand and the idea of natural market forces encouraging competition. However, the active attempts by business magnates to limit competition fundamentally contradicted the ideas they so strongly supported.**

What was the Gospel of Wealth?

- Andrew Carnegie stressed in *Gospel of Wealth* importance for wealthy to use money for good, creating "trust funds" for good of community, philanthropy to help poor thru. schools and libraries
- Wealth eventually seen as a commodity accessible to all; **Russell H. Conwell**, Baptist minister, delivered "Acres of Diamonds" countless times, arguing that all people can access great wealth if done in the right way
- **Horatio Alger** promoted success story through novels about impoverished boys working hard to become prominent

**The Gospel of Wealth was the notion that all wealthy people should use their excess money to support the public good; the idea of public wealth paired closely with the concept that all could access wealth if done in the right way. Though rarely the case, several popularized the success story, giving hope to many.**



How did some argue against capitalism?

- **Lester Frank Ward** was a Darwinist, but not in social context: felt society molded not by natural processes, but instead by active human (govt.) intervention and intelligence
- Radical **Socialist Labor Party** by Daniel De Leon never became significant political force; eventually, dissidents broke off, creating long-lasting **American Socialist Party**
- **Henry George** of CA wrote *Progress and Poverty*, argued that society could not progress with the presence of a growing impoverished class
  - Felt those who grew wealthy from rising land values benefitted from growth of surrounding society → undeserved wealth should be distributed to society with "single tax" equalizer
- **Edward Bellamy** wrote utopian *Looking Backward*, telling story of Bostonian travelling to 2000, seeing all corporations having formed into single, peaceful trust controlled by govt., equally distributing industrial benefits among all w/o class divisions

**Ward felt society required more direct and active governmental intervention; George felt that the impoverished class prevented any true progress and a single equalizer tax should be implemented on all to prevent a small group from dominating; Bellamy sought a peaceful society without class divisions and led by a single, government-led corporation looking out for the good of the people.**

How did several Americans begin to oppose the growing monopoly?

- Lower classes blamed monopoly for creating unstable (production > demand) economy due to freedom of monopolist companies to set artificial prices (most notably in railroad industry)
  - Supported by several recessions between 1873 and 1893, with the economy seeming close to collapse
- Others feared monopoly for restriction of individualism: corporate dominance of an industry prevented simply anyone from rising up against them
- Resentment for wealthy emerged due to many having famously ornate and ostentatious lifestyles (like Vanderbilts w/ large mansions)
  - Impoverished saw visible indication of growing gap betw. rich and poor

**The American lower classes blamed the monopoly for economic instability with artificial, unfair prices, for the restriction of individualism with limited opportunities for small businesses to face magnates, and for the creation of a small yet ostentatious wealthy classes frequently parading their wealth.**

## Industrial Workers in the New Economy

How did the working class fit into the new industrial economy?

The working class was characterized by a diverse group shifting away from Northern Europe over time; this led to many ethnic conflicts. Workers struggled with the mundane activities of factory work and low wages; women and children were frequently forced to work for extremely low wages to support their family, and the laws passed were ineffective at regulating such exploitative treatment. Several oppressed workers attempted to form large unions, including the accepting Knights of Labor and the strict, skill-based AFL; they were rarely able to exercise significant power with most of their strikes being shut down by the government, who generally supported corporations. As time went on, unions became increasingly powerless with the wealthy continuing to dominate the poor.

What characterized the immigrant workforce?

- Rural immigrants, Canadians, Mexicans, Asians, Europeans flowed to factory towns in unprecedented amounts
  - Bulk of immigrants in 1870s/80s from traditional sources of England, Ireland (N. Europe); soon shifted to E./S. Europe in the East and Asia/Mexico in the West
- Immigrants motivated by desire to escape poverty but also falsely promised new hopes by overseas railroad advertisements
- Contract Labor Law allowed companies to hire overseas laborers, pay for voyage but later deduct from wages
  - Even after repealed, constant focus remained on hiring unskilled laborers from foreign nations
- Ethnic tensions emerged as lower-paid Poles/Greeks/Fr. Canadians displaced higher-paid Br./Irish textile workers in textile industry; Chinese/Mexican-Americans displaced Anglo/Afr.-Americans in western farming

**Immigrants constituted a large portion of the lower class labor force; though initially primarily from northern Europe, immigrants from throughout the eastern and southern parts of Europe flowed in more rapidly by the turn of the century. Often, immigrants were made false promises of the American Dream by employers and railroad companies. The displacement of longer-standing Irish/English immigrants by lower-paid Southern/Western Europeans sparked ethnic tensions.**

How poor were working conditions for American workers?

- Std. of living ↑ post-Civil War, but wages, job security remained ↓ w/ boom-and-bust cycle → frequent turnover
- First-generation workers struggled to adjust from complex agrarian patterns to humdrum of industry; artisans suffered psychological effects of losing way of life to impersonal machines
- Factory workers worked long conditions in unhealthy/unsafe factories w/ frequent accidents, limited compensation
- Many workers felt loss of control over labor w/ all authority vested in manager/corporation (part of scientific management) → felt powerless

**American workers suffered from low wages, poor job security, poor working conditions, loss of control over labor, and the psychological suffering from adjusting to the repetitive, mundane patterns of factory life and often losing specialized knowledge to machines.**

What were the working conditions for women and children?

- More unskilled labor required → women/children frequently hired for low wages to support family
- Young white women often exploited in workplace, risked great injury → several communities opposed hiring women
  - Generally took on unskilled/semiskilled machine labor like textile industry (rarely heavy manual labor), but domestic service was most common
  - Earned far less than male counterparts doing same job → futile push for female minimum wage law
- Child labor extremely common due to need for extra wealth, aversion to sending women to work
  - Reformers encouraged states to pass laws against, but ineffective: most worked in agriculture (not included in law), and 12-year minimum age/10-hour maximum workday generally ignored
  - Several children forced to work through night, often prone to industrial injury
- Men suffered from equally unsafe working conditions

**Women worked for extremely low wages and were generally young, white textile workers. Children, too, were frequently sent to factories to earn additional money for their families; although several laws were passed against child labor, few were effective.**

What characterized attempts by workers at unionization?

- Small craft unions of skilled workers had long existed; larger groups required to exercise measurable power
  - **National Labor Union** founded by William H. Sylvis in 1866, supposedly combining several groups for 640k members; collapsed after Panic of 1873
  - Most unions excluded female workers: women still seen as companion to men; many women felt men should earn the most money, but also fought for equal conditions
- Recession yrs. of 1870s: widespread unemployment, middle-class hostility against unions w/ public blaming unions for violent worker-employer conflicts
  - Molly Maguires, formed out of Irish fraternal society, terrorized coal operators w/ murder (violence often falsely attributed them to debase unions)

**In the early years of unionization, several attempts were made unify smaller unions into larger, more powerful groups; most failed. Unions were weakened greatly with the recessions of the 1870s causing unemployment and many unions taking the blame for worker-employer conflicts.**

What were the effects of the railroad strike of 1877?

**The railroad strike of the 1877 neared a class war: after railroad companies announced a 10% wage cuts, workers disrupted service and rioted. Riots became so violent that federal militia were sent to West Virginia to suppress them and state militia opened fire in Pennsylvania, killing 20. It proved that worker discontent with employers and the government had reached a national level; the strike's failure weakened unions further.**

Who were the Knights of Labor?

- Knights of Labor, founded in 1869, first national labor organization open to nearly all workers (including women, both factory workers and domestic servants, under Leonora Barry's Woman's Bureau of the Knights)
- Loosely organized w/ local assemblies somewhat connected to national "general assembly"
- Short-term goals generally eight-hour workday, abolition of child labor; in long-term, sought to give workers more direct control over econ. w/ "cooperative system"
- Initially secret organization; entered expansion in late 1870s w/ over 700k members by 1886
  - Large size → leadership unable to control; many failed strikes → organization discredited in long-term w/ organization slowly disappearing after unsuccessful strikes in 1885/1886

**The first national labor organization, the Knights of Labor welcomed nearly all workers and was known for loose organization with the vague long-term goal of giving workers control over the economy. For many years, the Knights were a secretive group; although their move into the open brought hundreds of thousands of new members, the failed strikes of a few discredited the organization and caused it to collapse soon after.**

- American Federation of Labor (AFL) brought together smaller craft unions of mostly skilled workers, preserving autonomy of smaller unions but providing association
- Policy seemingly contradictory toward acceptance of women
  - Male leaders hostile to entering the workforce because weakness → lower pay than men → wages reduced for everyone in the long-term, women belonged in household because factory work would undermine men
    - \* Supported by **Samuel Gompers**, leader of AFL
  - AFL sought equal pay for women already in the workforce, with some female organizers to ensure
  - Policy not in fact contradictory: equal pay → women less attractive employees → driven out
- Gompers supported capitalism, w/ goal to give workers as much as possible
  - Opposed creation of workers' political party: felt govt. could easily take away what they had given/promised
  - Sought to forge strong relationship between workers/management to raise wages, working conditions
  - Called for eight-hour day, strike if not attained by May 1886; demonstrations took place staged by AFL
- Strike in Haymarket Square in Chicago where someone threw bomb, police fired in retaliation → eight scapegoats arrested, 7 sentenced to death
- Haymarket, other strikes → "anarchism" seen as terrorism despite most simply seeking social reform → AFL, particularly Knights of Labor faced great obstacles

**The AFL brought together skilled craft unions without truly merging them; they fought for a common goal while preserving the autonomy of each union. They sought to drive women out of the workplace and into the home, doing so by fighting for equal pay to make them less appealing workers. They sought to give workers as much of capitalism as possible by improving conditions and raising wages; however, a violent strike in Chicago's Haymarket Square created great opposition to the concept of anarchism, despite generally being peaceful, posing great obstacles to large unions like the AFL.**

How did the work of the AFL contrast with that of the Knights?

What characterized the Homestead strike?

- Amalgamated Association of Iron and Steel Workers (part of AFL): most powerful trade union in U.S., known for skilled workers → great power in workplace; employers resented 56-page rulebook to limit control
- Though mid-1880s steel industry saw lessening dependence on skilled labor, Carnegie's Homestead Plant remained dominated by union → continually negotiated wage cuts after 1890
  - Amalgamated initially involved in decisions but eventually cut off from negotiations → finally called for strike in 1892
  - Plant shut down immediately, 300 guards called from infamous Pinkerton Detective Agency; strikers prepared, sending away until PA portion of National Guard sent to plant to protect nonunion workers from harm at hands of strikers; soon surrendered, unable to resist

**The Homestead strike marked a conflict between the powerful Amalgamated union of skilled steel workers and Carnegie's steel company. As the company attempted to reduce union power by cutting wages, the union grew increasingly discontent and finally staged a strike; however, it was ultimately put down and Amalgamated was weakened for the long-term, marking the slow decline of skilled labor.**



What characterized the Pullman strike?

- Pullman Palace Car Company created sleeper/parlor cars; created Pullman town near Chicago, renting houses to employees
- Cut wages by 25% in winter 1893-1894 due to recession in 1893 but refused to lower rent → worker strike supported by American Railway Union led by Eugene V. Debs
  - Opposed by General Managers' Association, group of 24 Chicago railroads; convinced member companies to send switchmen who would not use Pullman cars → Debs convinced member workers to walk off jobs each time this occurred → widespread strike
- IL governor, Altgeld, sympathized w/ workers → no troops; railroad operators bypassed state govt., convincing fed. govt. to ban strike, imprisoning Debs/associates after defying

**The Pullman Strike occurred after significant wage cuts unfolded at the Pullman Palace Car Company; conflicts emerged between the General Managers' Association, representing a group of companies, and the American Railway Union, representing a group of workers. The Illinois governor refused to intervene; the strike was only suppressed after the federal government intervened.**

What were the main reasons for why the labor opposition weakened in power?

- Final decades of 1800s saw few labor advancements: few victories in abolition of Contract Labor Law, eight-hour day on public works projects and later for govt. workers, some compensation for injured workers; laws rarely enforced
- Labor organizations represented small % of workers → very few represented
  - AFL excluded unskilled workers, most women, blacks, immigrants
  - Women retaliated w/ Women's Trade Union League (WTUL), but turned more to female-specific issues than general labor support
  - Ethnic divisions continued within union
- Immigrants began to see no long-term future in U.S. (often false) → rarely organized formally w/ frequent internal migration, job turnover
- Some social mobility w/ unskilled → semiskilled → skilled, children potentially managers; often led to significant hope
- Strength of govt.-supported corporations seeking to crush opposition to profits; labor unions frequently formed but rarely able to make significant change

**The labor opposition became progressively less effective: despite some legal advancements, laws were rarely enforced. Because a small percentage of the population was represented in unions with few immigrants joining due to a perceived lack of permanence, most women and blacks were excluded, unions were ultimately an ineffective force against the powerful corporation.**