

A. Market Revolution

1. Natural Resources

a) Rise of manufacturing in the early 1900's

- (i) In the decades following the Civil War, the United States emerged as an industrial giant. Old industries expanded and many new ones, including petroleum refining, steel manufacturing, and electrical power, emerged. Railroads expanded significantly, bringing even remote parts of the country into a national market economy.
- (ii) Industrial growth transformed American society. It produced a new class of wealthy industrialists and a prosperous middle class. It also produced a vastly expanded blue collar working class.
- (iii) The labor force that made industrialization possible was made up of millions of newly arrived immigrants and even larger numbers of migrants from rural areas. American society became more diverse than ever before.
- (iv) Not everyone shared in the economic prosperity of this period.
- (v) Many workers were typically unemployed at least part of the year, and their wages were relatively low when they did work.
- (vi) This situation led many workers to support and join labor unions.
- (vii) Meanwhile, farmers also faced hard times as technology and increasing production led to more competition and falling prices for farm products. Hard times on farms led many young people to move to the city in search of better job opportunities.
- (viii) Americans who were born in the 1840s and 1850s would experience enormous changes in their lifetimes. Some of these changes resulted from a sweeping technological revolution.

- (ix) Their major source of light, for example, would change from candles, to kerosene lamps, and then to electric light bulbs. They would see their transportation evolve from walking and horse power to steam-powered locomotives, to electric trolley cars, to gasoline-powered automobiles.
- (x) Born into a society in which the vast majority of people were involved in agriculture, they experienced an industrial revolution that radically changed the ways millions of people worked and where they lived.
- (xi) They would experience the migration of millions of people from rural America to the nation's rapidly growing cities.

b) Francis Lowell textile factory

- (i) Said to have been the world's first textile mill in which were performed all operations converting raw cotton into finished cloth.
- (ii) While visiting the British Isles Lowell closely studied the textile industries of Lancashire and Scotland. On returning to the United States, he joined Patrick Tracy Jackson and Nathan Appleton in founding the Boston Manufacturing Company, Waltham, Mass. With the inventor Paul Moody, he devised an efficient power loom as well as spinning apparatus.
- (iii) The coarse, cheap cloth produced in the "Waltham-Lowell system" competed successfully with the British textile industry, led to high profits, and allowed the "Boston associates," which is what Lowell and his other merchant partners from Boston were informally called, to expand to other locations in Massachusetts.

- (iv) In the 1840s, the Lowell and Lawrence mills merged to buy the rights to the waters of the New Hampshire lakes that supplied the Merrimack River, allowing for the construction of dams to hold back water in order to ensure a steady supply of water to power the mills.
 - (v) Under the company's aegis, Lawrence was developed as a planned company town that included boarding houses, schools, churches, and other municipal services to support mill workers.
 - (vi) The Lowell and Lawrence mills relied on the labor of young women who lived in company boarding houses and who were paid in cash for their labor, a major advance for women in the textile industry, since the young women who worked in the Rhode Island textile mills were only paid only in company store credits.
- c) New England and Ohio River Valley
- (i) Lowell also played a large role in the development of railroads in New England, Boston's urban development, and New England's industrial competition with New York on a national level.
 - (ii) Dewitt Clinton successfully petitioned the New York state legislature to build a canal and bring the idea to link the Great Lakes to the Hudson River. "Clinton's ditch," his critics called it.
 - (iii) Construction began in 1817 and was completed in 1825. The canal spanned 350 miles between the Great Lakes and the Hudson River and was an immediate success.
 - (iv) Between its completion and its closure in 1882, it returned over \$121 million in revenues on an original cost of \$7 million. Its success led to the great Canal Age.

- (v) By bringing the Great Lakes within reach of a metropolitan market, the Erie Canal opened up the unsettled northern regions of Ohio, Indiana and Illinois. It also fostered the development of many small industrial companies, whose products were used in the construction and operation of the canal.
- (vi) New York City became the principal gateway to the West and financial center for the nation. The Erie Canal was also in part responsible for the creation of strong bonds between the new western territories and the northern states.
- (vii) Soon the flat lands of the west would be converted into large-scale grain farming. The Canal enabled the farmers to send their goods to New England. Subsistence farmers in the north were now less necessary. Many farmers left for jobs in the factories. The Erie Canal transformed America.
- (viii) Pennsylvanians were shocked to find that the cheapest route to Pittsburgh was by way of New York City, up the Hudson River, across New York by the Erie Canal to the Great Lakes – with a short overland trip to Pittsburgh.
- (ix) When it became evident that little help for state improvements could be expected from the federal government, other states followed New York in constructing canals.
- (x) Ohio built a canal in 1834 to link the Great Lakes with the Mississippi Valley. As a result of Ohio's investment, Cleveland rose from a frontier village to a Great Lakes port by 1850. Cincinnati could now send food products down the Ohio and Mississippi by flatboat and steamboat and ship flour by canal boat to New York.
- (xi) The state of Pennsylvania then put through a great portage canal system to Pittsburgh. It used a series of inclined planes and stationary steam engines to transport canal boats up and over the Alleghenies on rails.

(xii) At its peak, Pennsylvania had almost a thousand miles of canals in operation. By the 1830s, the country had a complete water route from New York City to New Orleans. By 1840, over 3,000 miles of canals had been built. Yet, within twenty years a new mode of transportation, the railroad, would render most of them unprofitable.

d) Free Enterprise

(i) Free enterprise refers to the summary or conglomeration of all voluntary business activities in a given economic area.

(ii) Alternatively, free enterprise could refer to an ideological or legal system of organization, in which commercial activities are primarily regulated through private measures rather than by political means.

(iii) In principle and practice, free markets are defined by private property rights, voluntary contracts and competitive bidding for goods and services in the marketplace.

(iv) This is held in contrast to public ownership of property, coercive activity and fixed or controlled distribution of goods and services.

(v) In western politics, free enterprise is associated with laissez-faire capitalism and philosophical libertarianism.

(vi) However, free enterprise is distinct from capitalism. Capitalism refers to method by which scarce resources might be produced and distributed. Free enterprise refers to a set of legal rules regarding commercial interaction.

2. Technical Innovation and Transportation

a) Eli Whitney

(i) Creator of the Cotton Gin, was one of the first inventors in the era of technical innovation and the onset of the industrial revolution

b) Interchangeable parts

- (i) Interchangeable parts are identical components that can be substituted one for another, particularly important in the history of manufacturing.
- (ii) Mass production, which transformed the organization of work, came about by the development of the machine-tool industry by a series of 19th-century innovators.
- (iii) With precision equipment, large numbers of identical parts could be produced at low cost and with a small workforce.
- (iv) This was paramount for the start of the industrial revolution and was needed for the industrial sector to be successful.

c) Cotton Gin

- (i) The Cotton Gin was a machine for cleaning cotton of its seeds, invented in the United States by Eli Whitney in 1793.
- (ii) The cotton gin is an example of an invention directly called forth by an immediate demand; the mechanization of spinning in England had created a greatly expanded market for American cotton, whose production was inhibited by the slowness of manual removal of the seeds from the raw fiber.
- (iii) Whitney, a Massachusetts Yankee visiting a friend in the South, learned of the problem and quickly solved it with a device that pulled the cotton through a set of wire teeth mounted on a revolving cylinder, the fiber passing through narrow slots in an iron breastwork too small to permit passage of the seed.
- (iv) The simplicity of the invention—which could be powered by man, animal, or water—caused it to be widely copied despite Whitney’s patent; it is credited with fixing cotton cultivation, virtually to the exclusion of other crops, in the U.S. South and so institutionalizing slavery.

d) Steam Power

- (i) In 1698 Thomas Savery patented a pump with hand-operated valves to raise water from mines by suction produced by condensing steam.
 - (ii) In about 1712 another Englishman, Thomas Newcomen, developed a more efficient steam engine with a piston separating the condensing steam from the water.
 - (iii) In 1765 James Watt greatly improved the Newcomen engine by adding a separate condenser to avoid heating and cooling the cylinder with each stroke.
 - (iv) Watt then developed a new engine that rotated a shaft instead of providing the simple up-and-down motion of the pump, and he added many other improvements to produce a practical power plant.
 - (v) This primitive power plant acted as a catalyst for the industrial revolution as it gave power to new industries and factories as the first systemized mass production to follow.
- e) Roads, canals, and railroads
- (i) Roads, Canals, and Railroads were vastly important for interstate travel and trade during the early years of the American industrial revolution.
 - (ii) As the mass production of materials grew and industries grew and formed all over the country, ways to transport the materials needed and the finished products, was paramount.
 - (iii) A series of roads, canals, and rail lines were formed, fought over, cared for, and present throughout the newly industrializing nation.

3. Political and Legal Systems

- a) Banking revolution

- (i) As early as 1781, Alexander Hamilton recognized that, “Most commercial nations have found it necessary to institute banks, and they have proved to be the happiest engines that ever were invented for advancing trade.”
- (ii) Since then, America has developed into the largest economy in the world with the some of the biggest financial markets in the world.
- (iii) But the path from then to now has been influenced by a variety of different factors and an ever-changing regulatory framework. The changing nature of that framework is best characterized by the swinging of a pendulum, oscillating between the two opposing poles of greater and lesser regulation.
- (iv) Forces, such as the desire for greater financial stability, more economic freedom, or fear of the concentration of too much power in too few hands, are what keep the pendulum swinging back and forth.

b) Early banks

- (i) From the establishment of the First Bank of the United States in 1791 to the National Banking Act of 1863 banking regulation in America was as an experimental mix of federal and state legislation.
- (ii) The regulation was motivated on the one hand by the need for increased centralized control to maintain stability in finance and, by extension, the overall economy.
- (iii) While on the other hand; it was motivated by the fear of too much control being concentrated in too few hands.

- (iv) Despite bringing a relative degree of financial and economic stability, the First Bank of the United States was opposed for being unconstitutional, with many fearing that it relegated undue powers to the federal government, and consequently its charter was not renewed in 1811.
- (v) With the government turning to state banks to finance the War of 1812 and the significant over-expansion of credit that followed, it became increasingly apparent that financial order needed to be reinstated.
- (vi) In 1816, the Second Bank of the United States would receive a charter, but it too would later succumb to political fears over the amount of control it gave the federal government and was dissolved in 1836.
- (vii) Not only at the federal level, but also at the level of state banking, obtaining an official legislative charter was highly political.
- (viii) Far from being granted on the basis of proven competence in financial matters, successful acquisition of a charter depended more on political affiliations, and bribing the legislature was commonplace.
- (ix) By the time of the dissolution of the Second Bank, there was a growing sense of a need to escape the politically corrupt nature of legislative chartering.
- (x) A new era of “free banking” emerged with a number of states passing laws in 1837 that abolished the requirement to obtain an officially legislated charter to operate a bank, and by 1860, a majority of states had issued such laws.
- (xi) In this environment of free banking, anyone could operate a bank on the condition, among others, that all notes issued were back by proper security.

- (xii) While this condition served to reinforce the credibility of note issuance it did not guarantee immediate redemption in specie (gold or silver), which would serve to be a crucial point.
 - (xiii) The era of free banking suffered from financial instability with several banking crises occurring, and it made for a disorderly currency characterized by thousands of different bank notes circulating at varying discount rates.
 - (xiv) It is this instability and disorder that would renew the call for more regulation and central oversight in the 1860s.
- c) Early Circulation of bank notes
- (i) Following the Revolution, banks were chartered by states independently. No single currency was the “legal tender” of the land
 - (ii) Instead, local banks issued “bank notes” (today we know them as bills)
 - (iii) Bank Notes were redeemable for gold at the bank’s headquarters and their value were not at face value, but were susceptible to the public’s perception of the bank’s health.
 - (iv) In the early 1800s there were more than 8,000 types of legitimate bank notes in circulation throughout the country.
 - (v) This lack of uniformity led to a large number of counterfeits throughout the new country.
 - (vi) Merchants would attempt to compare a new type of banknote to a reproduction in the “bank note reporter” to see pictures of legitimate banknotes and their value.
 - (vii) The lack of a strong centralized bank was due to the agrarian society and economy of the country at the time and the fact that since farmers were often in debt to banks, the banks should have extremely limited political and economic power.

- d) McCulloch V. Maryland
- (i) Congress chartered the Second Bank of the United States in 1816. In 1818, the state of Maryland passed legislation to impose taxes on the bank.
 - (ii) James W. McCulloch, the cashier of the Baltimore branch of the bank, refused to pay the tax.
 - (iii) In a unanimous decision, the Court held that Congress had the power to incorporate the bank and that Maryland could not tax instruments of the national government employed in the execution of constitutional powers.
 - (iv) Chief Justice Marshall noted that Congress possessed un-enumerated powers not explicitly outlined in the Constitution.
 - (v) Marshall also held that while the states retained the power of taxation, “the Constitution and the laws made in pursuance thereof are supreme...they control the Constitution and laws of the respective states, and cannot be controlled by them.”
- e) Dartmouth College V. Woodward
- (i) In 1816, the New Hampshire legislature attempted to change Dartmouth College (a privately funded institution) into a state university.
 - (ii) The legislature changed the school’s corporate charter by transferring the control of trustee appointments to the governor.
 - (iii) In an attempt to regain authority over the resources of Dartmouth College, the old trustees filed suit.

- (iv) The Court held that the College's corporate charter qualified as a contract between private parties, with which the legislature could not interfere. The fact that the government had commissioned the charter did not transform the school into a civil institution.
 - (v) Chief Justice Marshall's opinion emphasized that the term "contract" referred to transactions involving individual property rights, not to "the political relationship between the government and its citizens."
- f) Gibbons V. Ogden
- (i) A New York state law gave to individuals the exclusive right to operate steamboats on waters within state jurisdiction. Laws like this one were duplicated elsewhere which led to friction as some states would require foreign (Out-Of-State) boats to pay substantial fees for navigation privileges.
 - (ii) In this case, Thomas Gibbons, a steamboat owner who did business between New York and New Jersey under a federal coastal license - challenged the monopoly license granted by New York to Aaron Ogden.
 - (iii) New York Courts consistently upheld the state monopoly.
 - (iv) The unanimous Court found that New York's licensing requirement for out-of-state operators was inconsistent with a congressional act regulating the coasting trade.
 - (v) The New York law was invalid by virtue of the Supremacy Clause.
 - (vi) In his opinion, Chief Justice John Marshall developed a clear definition of the word commerce, which included navigation on interstate waterways.

- (vii) He also gave meaning to the phrase “among the several states” in the Commerce Clause. Marshall’s was one of the earliest and most influential opinions concerning the important clause.
- (viii) He concluded that regulation of navigation by steamboat operators and others for purposes of conducting interstate commerce was a power reserved to and exercised by the Congress.
- (ix) Justice Johnson argued a much stronger position when he stated that the national government had exclusive power over interstate commerce, negating state laws interfering the exercise of that power.

g) Regulations of Business and Commerce

- (i) The Commerce Clause refers to Article 1, Section 8, Clause 3 of the U.S. Constitution, which gives Congress the power “to regulate commerce with foreign nations, and among the several states, and with the Indian tribes.”
- (ii) The Tenth Amendment provides that any powers that are not delegated to Congress by the Constitution are reserved for the states.
- (iii) Congress has often used the Commerce Clause to justify exercising legislative power over the activities of states and their citizens, leading to significant and ongoing controversy regarding the balance of power between the federal government and the states.
- (iv) The Commerce Clause has historically been viewed as both a grant of congressional authority and as a restriction on the regulatory authority of the States.
- (v) The “dormant” Commerce Clause refers to the prohibition, implicit in the Commerce Clause, against states passing legislation that discriminates against or excessively burdens interstate commerce.

- (vi) Of particular importance here, is the prevention of protectionist state policies that favor state citizens or businesses at the expense of non-citizens conducting business within that state.
- (vii) The meaning of the word "commerce" is a source of much of the controversy. The Constitution does not explicitly define the word. Some argue that it refers simply to trade or exchange, while others claim that the founders intended to describe more broadly commercial and social intercourse between citizens of different states.
- (viii) Thus, the interpretation of "commerce" affects the appropriate dividing line between federal and state power. Moreover, what constitutes "interstate" commercial activity has also been subject to consistent debate.
- (ix) The Supreme Court provided one of the earliest and most foundational expositions on the Commerce Clause in *Gibbons v. Ogden* (1824). There, the Court found that intrastate activity could be regulated under the Commerce Clause where it was part of a larger interstate commercial scheme.
- (x) Later, in 1905, the Court used the Commerce Clause to halt price fixing in the Chicago meat industry, when it ruled that Congress had authority to regulate the local meat market under the *Sherman Anti-Trust Act*.
- (xi) In *Swift and Company v. United States*, it found that business done even at a purely local level could become part of a continuous "current" of commerce that involved the interstate movement of goods and services.

4. Social Consequences

- a) Impact of the Industrial Revolution on living and working conditions
 - (i) The working class had little or no bargaining power with their new employers.

- (ii) Since population was increasing rapidly, people from the countryside flocked to the towns and the new factories to get work.
- (iii) This resulted in a very high unemployment rate for workers in the first phases of the Industrial Revolution as there was so much competition for work.
- (iv) As a result, the new factory owners could set the terms of work because there were far more unskilled laborers, who had few skills and would take any job, than there were jobs for them.
- (v) And since some of these industries were so new, there were initially no laws to regulate them.
- (vi) Desperate for work, the migrants to the new industrial towns had no bargaining power to demand higher wages, fairer work hours, or better working conditions.
- (vii) Most laborers worked 10 to 14 hours a day, six days a week, with no medical, paid vacation, or holidays. Conditions were poor if not completely dangerous. Under such dangerous conditions, accidents on the job occurred regularly.
- (viii) Injured workers would typically lose their jobs and also, families would receive no financial compensation for their injury or death to pay for much needed health care.
- (ix) Working in new industrial cities had an effect on people's lives outside of the factories as well. As workers migrated from the country to the city, their lives and the lives of their families were utterly and permanently transformed.
- (x) While American cities allowed many middle- and upper-class Americans to live a glamorous lifestyle, this was simply a fantasy to many poorer urban dwellers.

- (xi) Slums, crime, overcrowding, pollution, disease. These words more accurately described daily realities for millions of urban Americans.
- (xii) Much of the urban poor, including a majority of incoming immigrants, lived in tenement housing. In 1878, a publication offered \$500 to the architect who could provide the best design for mass-housing. James e. Ware won the contest with his plan for a dumbbell tenement.
- (xiii) This structure was thinner in the center than on its extremes to allow light to enter the building, no matter how tightly packed the tenements may be. Unfortunately, these "vents" were often filled with garbage. The air that managed to penetrate also allowed a fire to spread from one tenement to the next more easily.
- (xiv) Because of the massive overcrowding, disease was widespread. Cholera and yellow-fever epidemics swept through the slums on a regular basis. Tuberculosis was a huge killer. Infants suffered the most. Almost 25% of babies born in late-19th century cities died before reaching the age of one.
- (xv) The cities stunk. The air stunk, the rivers stunk, the people stunk. Although public sewers were improving, disposing of human waste was increasingly a problem. People used private cesspools, which overflowed with a long, hard rain. Old sewage pipes dumped the waste directly into the rivers or bays. These rivers were often the very same used as water sources.
- (xvi) Trash collection had not yet been systemized. Trash was dumped in the streets or in the waterways. Better sewers, water purification, and trash removal were some of the most pressing problems for city leadership. As the 20th century dawned, many improvements were made, but the cities were far from sanitary.

- (xvii) In addition, poverty often breeds crime. Desperate people will often resort to theft or violence to put food on the family table when the factory wages would not suffice.
- (xviii) Youths who dreaded a life of monotonous factory work and pauperism sometimes roamed the streets in gangs.
- (xix) Vices such as gambling, prostitution, and alcoholism were widespread. Gambling rendered the hope of getting rich quick. Prostitution provided additional income. Alcoholism furnished a false means of escape. City police forces were often understaffed and underpaid, so those with wealth could buy a better slice of justice.
- (xx) As the 20th century began, the plight of the urban poor was heard by more and more reformers, and meaningful change finally arrived.
- (xxi) Poor nutrition, disease, lack of sanitation, and harmful medical care in these urban areas had a devastating effect on the average life expectancy of people.