Andrew Mellon's first major investment came in 1890. Charles Hall, inventor of a process for refining aluminum, formed the Pittsburgh Reduction Company to manufacture the metal. Needing capital, Hall approached T. Mellon & Sons. Andrew opened a line of credit and purchased company stock; and, by 1894, the Mellons owned over 12 percent of the company. Patent rights and tariff walls created monopoly profits in aluminum, which the Mellons multiplied by investing in companies whose output were linked to aluminum production, such as mineral deposits, hydroelectric power from Niagara Falls, and rolling mills. By the mid-1920s, the Mellon family owned more that one-third of the company, renamed Alcoa (the Aluminum Company of America).

Other Pittsburgh-area entrepreneurs used Mellon's money and management. When Edward G. Acheson created the new abrasive Carborundum, the Mellons' bank provided funds for a manufacturing plant near the Niagara hydroelectricity source, in 1895. As a "bonus" for the loan, the Mellon's acquired company stock. James Mellon's son William (1868–1949) invested bank funds in a network of electric streetcar lines in Pittsburgh. The cars were designed by local inventor George Westinghouse and the electricity to run them came from coal-fired plants owned by the Mellon's. In 1900, Mellon money helped launch the careers of two local engineers, Charles D. Marshall and Howard D. McClintic. The McClintic-Marshall Construction Company, with the Mellons as majority stockholders, produced structural steel for projects ranging from the Golden Gate Bridge to the Panama Canal locks. McClintic-Marshall used raw steel produced by Mellons' Union Steel Company.

With his uncles' backing in the early 1890s, William developed oil wells, a refinery, and pipelines in southwestern Pennsylvania. He sold the company (at great profit) to Rockefeller's Standard Oil in 1895, but was back in the business in 1901 with the discovery of the Spindletop gusher in Texas. A Pittsburgh-area company, J. M. Guffey, owned the claim but lacked development capital. To avoid association with Standard Oil, Guffey sought funds from the Mellons. T. Mellon & Sons bought $2.5 million of the company's bonds, and Andrew and Richard purchased 13 percent of its stock. In 1902, the brothers sent William to Texas to oversee the firm; he soon expanded into new oil wells in Indian Territory (now Oklahoma), and reorganized the business as Gulf Oil in 1907.

The Mellon family's most important asset, Gulf Oil, grew to be one of the world's largest oil producers, opening wells in countries such as Mexico and Kuwait and tapping American offshore deposits through underwater drilling. Once again, the Mellons magnified their profits by investing in associated enterprises, including refineries, pipelines, tanker fleets, and gasoline service stations. (They opened the nation's first in service station Pittsburgh in 1913.)

World War I proved very profitable for the Mellons as the federal government contracted for railroad cars (produced by Standard Steel Car, for which the Mellons were chief financiers) and aluminum. The family was enriched by another new technology: the Koppers coal-to-coke ovens, which recovered by-products of coal distillation such as natural gas and toluol (used to produce TNT). The Mellons linked their one-third share in Koppers to ownership of coal fields and utilities networks designed to distribute the natural gas to homes for heating and lighting.

By 1920, their fortune exceeded $2 billion. Although the family was little known outside Pittsburgh, Andrew Mellon was named President Warren G. Harding's secretary of the treasury. He held this position in the Coolidge and Hoover administrations and achieved a number of objectives: reducing the national debt, restructuring foreign debt to the United States, and decreasing corporate and personal income tax rates, particularly for the wealthy. "The Mellon Plan" for taxes rested on a notion that, in the 1980s, came to be known as "supply side economics." Mellon considered high tax rates counterproductive: they reduced revenues by forcing the wealthy into tax-exempt assets such as municipal bonds that he deemed far less beneficial to the economy than direct investment in industry.

Some called Andrew Mellon the greatest secretary of the treasury since Alexander Hamilton, but others blamed his policies for unequal distribution of income in the 1920s and, ultimately, the stock market crash of 1929. His image was further tarnished by prosecution for underpayment of federal taxes, but now he is best known for funding the National Gallery of Art and Carnegie Mellon University.

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MERCANTILISM. The term *mercantilism* refers to both economic doctrines and commercial policies that advocate governmental intervention in economic activity as necessary to the best interests of the nation-state. The term *mercantile system* appeared as early as the writings of

Count Mirabeau, a French physiocrat, but was institutionalized by Adam Smith, an ardent opponent of mercantilism. Mercantilism per se was brought into wide use by the German Historical School.

The Mercantilists and Their Doctrines. The mercantilists were a miscellaneous aggregation of European writers, officials, merchants, and policy makers, most of them active in England between 1600 and 1750. Among the British writers, Thomas Mun (1571–1641) and Sir Josiah Child (1630–1699) were merchants affiliated with the East India Company. Others included Charles Davenant, John Locke, Edward Misselden, Sir William Petty, John Pollexfen, and the Dutch physician Bernard de Mandeville. The best-known French mercantilist is Jean Baptiste Colbert (Louis XIV's finance minister, whose interventionist policy was termed Colbertism). Other important figures included the German cameralist Johann Joachim Becher and the Italian Antonio Serra.

A monistic interpretation of mercantilism is erroneous. Over time, mercantilist doctrine shifted; writers did not develop a unified position, yet common dogma, assumptions, and assertions run through all mercantilist writings. The main convictions on which mercantilist doctrine is based are the following: (1) People can improve upon nature through commerce and technology, and these are critical to the wealth and power of a state. In addition, secondary production and commerce are more important to the wealth of nations than the fruits of nature, that is, agriculture. (2) People pursue their own interests without concern for the effect on the nation-state. Individual welfare is not the same as the welfare of the national economy, and economic policy should foster the latter over the former. (3) There is no preestablished harmony in the world; Adam Smith's "invisible hand" does not exist. (4) Power and plenty are the essential elements of the welfare of a nation. Although plenty is an absolute concept, power is a concept relative to other nations: the increase of one country's power necessarily means the relative decrease of that of another.

These convictions led the mercantilists to perceive intervention as necessary and beneficial to the well-being of the nation-state, as developed in the three central themes of their writings: trade theory, monetary theory, and a general concept of society.

Trade theory. The balance of trade doctrine, which affirms that a given country's prosperity is best achieved by an increase in its stores of precious metal, is the main element of the mercantilist system. An inflow of precious metals in a country without access to gold and silver mines can be achieved only by a favorable balance of trade. A balance of trade surplus is achieved by enacting trade restriction policies that promote the export and restrict the import of goods. Some mercantilists were concerned with individual trade balances with specific countries, whereas others, Mun most famously, insisted that only aggregate balances were of importance.

Monetary theory. The monetary aspect of mercantilist doctrine focuses on the reasons why an increase in money is an important national objective. There was a diversity of opinions among the mercantilists regarding the effects of money on the economy. The simplest and most naive approach to understanding this desire for monetary accumulation was bullionism, a belief that conferred upon precious metals a "store of wealth" function by identifying wealth with money. Bullionism gradually disappeared, since most mercantilist literature made it clear that wealth consists of a given country's production of goods rather than its stock of precious metals. Mercantilists contended that an increase in precious metals is important because money, through its circulation function, has an effect on output and wealth through two main channels: (1) An increase in money reduces interest rates, in turn leading to an increase in output. (2) Money is a factor of production equivalent to capital; an increase in money will therefore stimulate production and employment.

The mercantilists' monetary doctrine is also related to noneconomic arguments: (1) An inflow of money may increase revenues to the monarch. In this sense, mercantilism has some connection with cameralism, which above all promotes increasing revenues to the prince. (2) Money is the sinews of war, as expressed by Colbert: "Trade is the source of public finance, and public finance is the vital nerve of war."

General concepts of society. Mercantilism also focused on general concepts of society shaped by the will to stimulate production and increase the competitive power of the nation, going beyond the strict theory of trade and money. Mercantilists commonly held that, first, development of manufactured goods is important. Mercantilists focused more on production than on consumption and favored interventionism that would promote the industrial sector. Rebutting the mercantilist focus on production, Smith wrote, "Consumption is the sole end and purpose of all production." After 1750, there was a clear evolution of ideas featuring a greater concern for the position of the consumer.

Second, mercantilists sttressed that an increase in population is beneficial to the economy, because where land is ample and inhabitants are few, there is poverty. The reasons for this effect are diverse. Focusing on the production side, an increase in population can lead, through an excess demand for goods, to invention and industrialization. Focusing on the labor market, population increase can lead to lower wages, which some mercantilists thought would improve trade, whereas others believed that lower wages would be an impetus for workers to work more. However, views regarding the benefits of low wages were not unanimous. Mercantilists were aware that in comparing England to the Netherlands, the country with higher wages was nonetheless the richest. Some of the mercantilists also noted that higher wages can lead to a higher standard of living and higher worker efficiency. An increase in population was also noted for its noneconomic effects, chief among them an increase in the nation's overall power, as the mercantilists believed that there was a certain relationship between a nation's population and its power.

Third, mercantilists maintained that savings and thrift should be promoted among the elite. Although some mercantilist writers deemed spending on luxuries by the rich as beneficial, most opposed the consumption of luxuries.

Fourth, according to mercantilists, frugality should be encouraged among the poor, and idleness discouraged. The mercantilists favored child labor as a means to decrease idleness, as well as reducing poverty, by increasing family income. Some mercantilists also opposed attempts to train workers for more qualified work as a means to keeping wages low, the social effect of which would likewise be less idleness.

Finally, mercantilists viewed colonialism as an efficient policy, because colonies serve as a protected market for export and a supplier of raw materials.

Historiography of Mercantilism. Depending on the inclination for or against protectionism, one either ridicules the mercantilists' lack of a perfect system (and their sometimes erroneous logic) or lauds the modernity of their arguments. The two principal groups that discussed the mercantilist doctrine were the classical economists and the German Historical School. For the classical economists in particular, and all liberals in general, mercantilism is portrayed in a negative light.

One line of criticism claimed that mercantilist views were incoherent and mired in confusion, and that mercantilism was little better than nonsense, because mercantilist theory was based on the premise that national wealth can be measured by the quantity of precious metals in a given nation's possession. As noted above, although bullionism was mentioned by the early mercantilist writers, it was not the foundation of most of the mercantilists' commercial policy, and indeed it disappeared in later writings.

Adam Smith's criticism of mercantilism stemmed from his dedication to the consumption side of the economy, which led him to the conclusion that trade could benefit all. In contrast, mercantilism viewed trade as a zero-sum game, where one country necessarily profits at the expense of another, since mercantilism's focus went beyond consumption. Smith's second criticism of mercantilism was that mercantilist policies did not emerge from a national goal, but rather from the interest of merchants and manufacturers in retaining their monopolies—in other words, Smith viewed mercantilism as a rent-seeking doctrine.

From a theoretical point of view, the weak link in mercantilist doctrine is that the mercantilists were unaware of the price-specie-flow mechanism later developed by David Hume. The price-specie-flow mechanism contended that an increase in money in the long run leads to higher prices, leading in turn to less competitiveness, resulting in a decrease in net exports, finally causing money to flow back out.

In contrast to this liberal, antimercantilist view, the German Historical School, which did not view the economy as separate from politics, regarded mercantilism as a coherent system centered on the nation-state conducting economic policies for the purpose of achieving power and national unity.

Gustav Schmoller emphasized that the aim of mercantilist policies was to secure national unity and develop a powerful centralist state, or what he termed "state making." Reaching these goals demanded the development of the economic interests of the nation. In other words, the mercantile system was necessary for replacing local policy with that of the nation-state.

William Cunningham, a Scottish clergyman who criticized the liberal political economy of England, asserted that mercantilism was primarily a system that unduly mobilized economic policy into the service of power. The paradigm that links power to trade policy was the need for accumulation of bullion, because a stock of bullion with which to purchase ammunition and hire mercenaries at short notice was necessary for waging war. In this context, because attaining power was clearly a relative matter vis-à-vis other countries, the mercantilists perceived trade as a zero-sum game.

Mercantilism (1931/1955), Eli Heckscher's classic historical study, paints mercantilism as an economic policy necessary for the adaptation of the medieval institutions of European society to new economic and social conditions. He emphasized that the centerpiece of mercantilist doctrine was the employment of economic forces in increasing the power and the unification of the state. However, Heckscher maintained that mercantilism's ultimate end was the pursuit of power only, and that unification was merely an interim goal.

Jacob Viner (1937) objected to Heckscher's view, maintaining that wealth and power were twin aims of mercantilism. For Viner, plenty and power were equal in their importance as means to national security.

John Maynard Keynes also examined the mercantile system and criticized Smith for ridiculing it. Keynes argued that mercantilist doctrine should be understood in the light of its goals of increasing employment and stimulating economic activity.

Mercantilist Practices and Their Effects on the Economy. Mercantilist policies in Europe were mainly adopted during the sixteenth to the eighteenth centuries by French and English policy makers, but were also implemented in Spain, Sweden, and Denmark. Not all interventionist and protectionist policies are mercantilist in their essence. To be considered mercantilist, policies must have the nation at their center, and either promote the hoarding of precious metal by promoting export and hampering imports or promote intervention to encourage the manufacture of goods. Legislation intended to prevent the export of machines and tools, as well as the emigration of skilled workers, was also mercantilist in spirit.

Protectionist policies predated the mercantilist era, but these typically created the opposite effect; that is, they created obstacles to exports and facilitated imports in order to retain goods in the country. However, as early as the fifteenth century, some policies were mercantilist, such as the Corn Laws, which date back to 1436.

In Britain, the important mercantilist measures were the Cloth Act of 1552, which regulated the types of cloth manufactured; the Statute of Artificers in 1563, which decreased the power of guilds and regulated wages; the Navigation Acts of 1651, enacted by Oliver Cromwell, which allowed trade with the colonies to be carried out only on British ships with the aim of developing the shipping industry; the Calico Act of 1721, which prohibited imports of calico from India; and the prohibition on exporting machines of 1774. In France, Colbert implemented some protectionist measures in the form of the tariffs of 1668, but mostly enforced regulations and intervention in the manufacture of goods.

Did mercantilist policies work? The English Navigation Acts are usually regarded as a successful strategic move that contributed to the development of the shipping industry, but there is less of a consensus concerning most mercantilist trade policy. Liberals traditionally have believed that mercantilism was superfluous to the development of England and France, and more specifically, that the development of the cotton industry—which played a central role in the Industrial Revolution—owed nothing to legislative protection and therefore to mercantilism. A contrary assessment was made by Paul Bairoch (1993, 2000), who stressed the important role of mercantilism in early modern industrialization and economic development and asserted that mercantilism was a catalyst of the Industrial Revolution.

Mercantilism, vilified by some and revered by others, has at the essence of its commercial and regulative policies the political goal of national sovereignty and the welfare of the nation-state. Although free trade is cosmopolitan in its focus, mercantilism is nation-based. It is a doctrine that views not only the welfare of the individual but also the power of the nation-state relative to other nations. The debate between mercantilism and free trade centered on the place of the nation-state and *raison d'état* relative to the place of the individual. This debate has evolved—because the concept of the nation-state is currently considered passé—making way for an economic debate on managed trade versus free trade.

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MERCED. During the medieval reconquest, Christian warriors fought to receive *merced* from their victorious kings. When King Alfonso VI (1065–1109) banished the Cid from Castile, the Cid sought to regain the king's favor by giving him Muslim booty, including one hundred harnessed horses. Through these gifts captured in marauding raids against Muslim cities, the Cid attained Alfonso's *merced* of reinstatement as his vassal. In these examples, *merced* resembled Cicero's definitions of *merces* as favor, reward, and bribe.

Medieval Spanish kings believed that, by granting *mercedes*, they fulfilled their obligations as the fount of justice. In his most famous law code, *Las siete partidas*, King Alfonso X (1221–1284) claimed that kings tempered the severity of the law through royal *mercedes* of right of appeal, confirmation of wills, dispensations from compulsory military service, and tax exemptions. In his law code for cities, the *Fuero real*, Alfonso additionally listed pardons and legitimations as *mercedes*. In practice, *merced*