Lesson 2 - Economic Systems

Acknowledgement: Ed Sexton, Rick Hirschi and Kerry Webb were the primary authors of the material contained in this lesson.

Section 1 - Introduction to Economic Systems

The economic story of America is one of success. It is a story about the triumph of an idea that changed the world. Imagine you were the prophet Isaiah or Moses, and were shown by the Lord the vista of human future on this planet. What type of change would you see up to the time of the Constitutional Convention (1787) and the Restoration of the Gospel (1830)? It might surprise you to learn that you would see families in Europe and America in 1800 with a standard of living similar to what it was during the life of Christ. Stephen Ambrose points out that in 1805, when Lewis and Clark set out to explore the western part of the North American continent, nothing traveled faster than a horse—not even communication. [1] Almost nothing had been invented. For this reason, the vast majority of Americans worked long hours for nothing more than just enough calories to survive, one set of clothes barely sufficient for protection from the elements, and a small one-room dwelling with a dirt floor and no running water. The American life expectancy was about 36 years.

Imagine if the vision then jumped ahead, just 100 years, to New York City or London. What do you see? If you were actually living before the time of Christ and were having such a vision, you might think the vision had jumped to another planet. After centuries of almost no change in the income of the common man, the world dramatically changed sometime between 1820 and 1830. [2] Before Moses was translated, he prophesied to each of the tribes about their futures. Joseph was to be "separated from his brethren" and be blessed with the "precious things of the earth and the fullness thereof." They were to have the "chief things of the ancient mountains, and … the precious things of the lasting hills" (Deut. 33:13–17). This blessing has been realized in America with the fulfillment of another ancient prophesy, the establishment of this land as a land of liberty. [3] In this essay we will explore the moral foundation of a free market economy, the basics of how such an economy works, and then some of the actual facts illustrating the effects of the market economy on the American quality of life.

The Moral Foundation

When Edmund Burke tried to warn his colleagues in British government of the difficulty in meddling in the affairs of the American colonists, he emphasized the "free spirit" and enthusiasm for liberty possessed by the colonists. And this spirit of liberty had to be taken seriously because its source was their religion. He argued, "Religion, always a principle of energy, in this new people is no way worn out or impaired; and their mode of professing it is also one main cause of this free spirit. The people are Protestants, and of that kind which is the most adverse to all implicit submission of mind and opinion. This is a persuasion not only favorable to liberty, but built upon it ... The religion most prevalent in our northern colonies is a refinement on the principle of resistance; it is the dissidence of dissent, and the protestantism of the Protestant religion." [4] Ezra Taft Benson stated "that the principle of supremacy of the individual over government is rooted in religious precept. This is why the founders of our nation were so influenced by the writings of John Locke, who declared that man was naturally in a state of perfect freedom, that he had a right to preservation and property, and that the source of this was God." [5]

Three Questions an Economic System Must Answer for Society

Every society faces some key questions: What goods and services to produce? How to produce those goods and services? and for whom? How a society chooses to answer these questions will in a large part determine the prosperity of the society, its distribution of wealth, and the variety of products and services available. Societies answer these questions either through a decentralized system using markets, a command or central system using government planning, or some combination of the two. We will discuss the different approaches that each of the economic systems takes to answering the questions of:

1. What to produce?

2. How to produce?

3. For whom to produce?

The economic systems can be placed on a continuum with capitalism or the free market system on one end and centrally planned economies or a command system on the other. The next two sections will discuss a free market and socialistic economy and how they answer the three questions.

Section 2 - The Free Market Economy

The Importance of Property Rights

The idea at the heart of a free market economy was expressed valiantly in just one part of one sentence of the Declaration of Independence. "Men … are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty, and the Pursuit of Happiness." If men have from God the right to life, it follows that they then have the right to sustain life, and thus have the rights to the fruits of their labors, or in other words, the right to pursue happiness. This is what we mean by the **right to property**. Modern economists believe that the right to property is the key institution to the establishment of a free market economy. That is, a society establishes a market economy by enforcing property rights. As laws are enacted that infringe upon the right to property, a market economy is replaced by some other system. For this reason, the **free market economy** can be appropriately labeled the private property order.

That God has given man the right to property is established throughout the scriptures. The Eighth Commandment given through Moses, "Thou shalt not steal," presupposes the existence of private property. In this dispensation the doctrine of the Church reaffirmed the paramount importance of the right to property: "We believe that no government can exist in peace, except such laws are framed and held inviolate as will secure to each individual the free exercise of conscience, the right and control of property, and the protection of life." [6]

The right to pursue happiness or the right for man to use the fruits of his labors as he sees fit is essential for man to have agency and thus act as a steward over his own property. Elder Marion G. Romney taught that through the right of private property man's agency is preserved. For this reason, when the city of Zion is built up and we live the law of consecration by entering into the United Order, "the United Order [will be] operated upon the principle of private ownership and individual management." [7]

Speaking on the moral foundation of a free market economy Ezra Taft Benson taught, "Our governmental system, like the systems of ancient Israel and biblical Christianity, recognizes man as a special creation of God. He is not, as some theorists reason, a product of chance or merely an educated animal. His paternal origin is from God. Thus, man inherently possesses God implanted attributes and potential: reason, free agency, judgment, compassion, initiative, and personal striving for perfection." [8] Man can only flourish in an environment of freedom where he can act as an agent unto himself in the development of these divine attributes. It is under a governmental system based on "just and holy principles" such as ours, that the "moral agency" of man is protected, so that he may "be accountable for his own sins at the day of judgment." [9] In an atmosphere of liberty we can be held accountable for the development of these divine gifts.

Characteristics of the Free Market Economy

Capitalism is a market system that relies on private property and the use of markets to answer the societal questions of what to produce, how to produce it, and for whom. A key feature of capitalism is that individuals act in their own **self-interest** as they seek to improve their well-being. Households willingly supply their resources so that they can purchase goods and services which they value more. Since consumers are able to purchase the goods and services they want, they vote with their dollars and signal to the market what is of value to them. If a business is not producing what is in demand, they will find that they are better off to use their resources producing something else that consumers want. Thus in a market economy, the consumers are the ones that ultimately determine what will be produced.

Under capitalism, individuals are rewarded for their contribution based on how society values that contribution. This is one reason why the Church strongly encourages each member to get a good education. While **pure capitalism** rewards individuals for their contribution, individuals are also exposed to the risks of the market if they are not producing what consumers want. This provides an incentive to work towards meeting the needs and wants of consumers, but it also can lead to a wide variation in the distribution of income.

As Adam Smith outlined, each person seeking their own self interest in turn promotes the best interest of society by producing those goods and services most desired, all as if by an **invisible hand**. According to him, each individual, seeking only his own gain, "is led by an invisible hand to promote an end which was no part of his intention"--that end being the public interest.

Laissez-faire

The view of capitalism is that a Laissez-faire market can function without government intervention. The term **Laissez-faire** is French, and essentially means "leave it alone." Under capitalism, businesses have an incentive to always produce where they incur the lowest costs. If they are not producing in the least-cost manner, another business would be able to produce the product at a lower cost, undercut the competition, and take away sales. As new technologies are developed, firms have an incentive to adopt the technologies if doing so will allow them to produce at a lower cost. With the use of the markets, goods and services will be distributed to those who are willing and able to pay the market price; thus, the **market price** serves as the **rationing mechanism**, determining who gets the product. A common misconception is that Laissez-faire markets do not take care of the poor and needy. However, when an individual acts in their self-interest they pursue activities that bring the greatest joy or satisfaction, which may actually include service or philanthropic acts. While these do not increase the financial status of an individual, they may bring the individual great satisfaction.

Summary

Capitalism: An economic system based on private property and market forces from which individuals answer the questions of what, how, and for whom to produce. This system, largely described by Adam Smith in 1776, has several main tenants, including:

a. **Private property rights** for the entire population. This means that people can own: i) their own labor; ii) the means of production; and iii) the output of production. Ownership of private property provides incentives, influences the distribution of wealth, and facilitates exchange.

b. **Self-Interest** is the second tenant of capitalism, meaning that individuals seek out opportunities to improve their economic well-being. Adam Smith noted that people were led to do this by an "invisible hand" and that society as a whole also would be made better off by all individuals seeking their own interests.

c. **Laissez-faire** is a French term meaning "to leave alone", and refers to the idea that individuals can and should be left free to make their own economic decisions without significant amounts of government interference.

d. **Perfect competition** is said to exist when no person or entity is influential enough to affect the market price of any particular good. Other factors necessary for perfect competition include a large number of buyers and sellers; markets where entry and/or exit is relatively free; open and free knowledge; and many products that are indistinguishable from each other.

Under capitalism, individuals follow their self-interest, and the market forces of supply and demand coordinate individual actions. In such systems, government typically plays a minimal role and includes the establishment of: a) national defense; b) a legal structure to protect inalienable, civil and property rights; and c) fair competition among economic actors.

Welfare capitalism

Welfare capitalism is the economic system that has evolved in most developed countries, including the U.S. Under welfare capitalism, the market system still operates, but the government plays an increasing role in the regulation of markets in order to better provide for the basic welfare of all its citizens. Much of the economics associated with welfare capitalism is based on the theories of John Maynard Keynes, and is largely developed around a normative enthusiasm for greater equality and equity.

Section 3 - Centrally Planned Economy: An Alternative

Centrally Planned Economy

Deviation from a market economy takes place through the violation of private property rights. An alternative economic system is **centrally planned economy**, in which the government seeks to use the nation's resources for all of its citizens, instead of letting the citizens use the resources in the manner they best see fit.

There are two basic forms of a centrally planned economy. The first is **socialism**, which is an economic system based on government provision of basic goods and services. There are different degrees of socialism. Most people have difficulty determining where welfare capitalism ends and socialism begins. Under **pure socialism**, individual ownership and management of property is replaced by state ownership and state or democratic management of property. The agency of man is thus restricted and the opportunity for development along with it. For instance, "Charity, the greatest of godly virtues, would never be possible without property rights, for one cannot give what one does not own." [10]

The second form is **communism**, which is an economic system based on the collective state as envisioned by Karl Marx; generally private property is abolished, especially in the main industries of the country—i.e., manufacturing, transportation, communications, finance, energy development, etc. Property is collectively owned and society (typically through central planning committees) decides what, how and for whom to produce, theoretically with the best interests of all its members in mind. Under communism, there is one pie that is divided among all of the citizens. Unfortunately, central planners with the best intentions may not be able to represent each individuals preferences in their decisions. Because of scarcity, central planners must decide not only what to produce, but also how to ration the produced goods and services among the various consumers (recall there will always be unlimited wants and limited resources). The difficulty of determining who gets a product is often lost on the casual observer of centrally planned economies – but this is one of the most difficult decisions that has to be made – who will go without.

Mixed Economies

Most countries in the world, including the United States, use a mix of private and government enterprises to allocate the nation's resources in providing goods and services. These **mixed economies** rely on the private market to produce and allocate certain goods and services while the government controls the provision of other goods, such as welfare and Medicaid in the United States.

"Someone once said: It isn't that Christianity has been tried and found wanting; it has been tried and found difficult—

and abandoned. Perhaps the same thing might be said about freedom." [11] In countries like the United States that have a relatively free market economy, we often observe behavior among its most successful participants that we find to be deplorable. Take for instance the actions of executives of Enron that were jailed for dishonest business practices. Disparities in wealth, economic depressions, and dishonest business practices often cause people to call into question whether a market economy is truly based on a foundation of "just and holy principles." However, acts of fraud and theft violate the right to property and must be prosecuted in order for a free market economy to be truly free and to function well. Further, freedom requires responsibility. In order to maintain the blessings of liberty, we must remain moral. [12] Ultimate freedom for individuals and nations come through living the gospel of Jesus Christ. [13]

Section 4 - Free Market vs. Centrally Planned Economies

How a Market Economy Works Compared to Centrally Planned Economies

The most famous of the first European settlers, the Pilgrims, implemented 100 percent pure, unadulterated communism upon their arrival to America. They did this for their first two and half years due to the demands of the settlement's investors. They were, in effect, forced to put into practice the ideals that Karl Marx would articulate two and a half centuries later—from each according to his ability, to each according to his need. All land and profits were held in common. After the first year, only 53 of the original 102 Pilgrim settlers were still alive to celebrate the first Thanksgiving. According to William Bradford, the Governor of the colony, the common ownership "was found to breed much confusion and discontent and retard much employment that would have been to their benefit and comfort." During conditions of starvation, each person was deprived of the right to sustain his or her own life as the fruits of labor were taken and distributed to all. The system bred resentment among the settlers who saw the forced redistribution as "injustice." "And for men's wives to be commanded to do service for other men, as dressing their meat, washing their clothes, etc., they deemed it a kind of slavery, neither could many husbands well brook it." [14]

After nearly two and half years of starvation, according to Bradford, "God in His wisdom saw another course fitter for them." They came up with a new idea that resulted in such abundance that Bradford wrote decades later that "any general want or famine hath not been amongst them since to this day." In the spring of 1623, "they began to think how they might raise as much corn as they could, and obtain a better crop than they had done, that they might not still thus languish in misery." Consistent with their new idea, Bradford "assigned to every family a parcel of land." Each man was to "trust for themselves." Doing away with communism by giving to each individual his own property and allowing the farmers to keep the fruits of his labors resulted in abundance. Bradford tells us "This had very good success, for it made all hands very industrious, so as much more corn was planted than otherwise would have been by any means the Governor or any other could use, and saved him a great deal of trouble, and gave for better content. The women now went willingly into the field, and took their little ones with them to set corn; which before would allege weakness and inability; whom to have compelled would have been thought great tyranny and oppression." [15]

Socialistic systems like the one tried by the Pilgrims for their first couple of years in Massachusetts are sometimes advocated as a "planned economy." The system of every man owning his own property and thus planning his own affairs is said to be, by the advocates of state planning, too chaotic. Rather than competing with each other, wouldn't it be better to have the whole community cooperate with each other in some sort of communal relationship where a wise planner orchestrates everyone's efforts? Bradford made it clear, that by simply giving each man his own property rather than personally directing the economic activities of the settlement, everyone was made "more industrious" and the settlers actually did a better job of tending to each other's needs. Somehow when each man was able to plan and "trust for themselves," the results were more affluence, less "discontent," and even less "confusion."

How could this be? How could a system where each man is left to plan for himself be more organized and produce more prosperity than a system where a benevolent and wise mastermind plans the whole system for everyone? The answer lies in Adam Smith's insight into how the price mechanism of a free market economy works. He characterized the market forces of the price system as the **invisible hand**. In a free market economy, the invisible hand guides each self-interested market participant to act in the interests of others. In order for us to accomplish our goals we must become a business person, professional, or laborer and help others accomplish their goals by providing them with goods and services they want in exchange for money. With the money, we are able to purchase from others the goods and services we need or want.

Like the Pilgrims, each of us is faced with scarcity. Our wants generally outstrip our time and resources. For this reason, we face trade offs and must make choices. If a Pilgrim went hunting for deer, he could not at the same time plant corn. If he caught a fish, he could eat the fish or he could use it to fertilize the corn, but he could not do both. Even though we are so much more prosperous today than the pilgrims were in the 1620s, we still face trade offs and must make choices. The very act of reading this article has required you to forgo some other activity.

Because we face trade offs, every choice we make involves an opportunity cost, which is the value of the best forgone alternative. The Pilgrim that chooses to work hard in the corn field must give up deer hunting. Thus, the opportunity cost of planting corn is the deer he would have shot. For you, the opportunity cost of reading this article is the value of the activity that you gave up to read this article. Perhaps you could be at work right, now earning $20 in the course of time that you spend reading this. If this is the case, the opportunity cost of reading this would be $20.

Society as a whole also faces trade offs. The choice of Pilgrims to hunt deer rather than plant corn meant that the Pilgrims would have more deer meat and less corn. Today, since we too are faced with scarcity, if we build more missile factories, less labor and natural resources are available to produce other items, like automobiles or schools. So, without more resources or better technology, any time one industry expands, some other industry must give way.

An Example - Inflatable Floating Trampoline

To help illustrate the concept of the invisible hand and relate it to the concept of opportunity cost, consider the story of a young entrepreneur who sets out to create an inflatable floating trampoline business. He had an idea to create a large inflatable floating trampoline, about the size of a traditional yard trampoline, that would allow people to paddle the contraption into a lake, and jump on it and off it into the water. It would have rope ladders on the side so that once a person jumped into the water, he or she could climb back on and do it again. The entrepreneur believed that customers would be willing to pay as much as $1000 for such a watercraft. He found in the area where he lived a manufacturer of whitewater rafts that used a material that would be perfect for the manufacture of the large inflatable donut that would comprise the base of the trampoline. After a few calculations, the entrepreneur discovered that he would have to spend over $2000 to purchase the material for just one large inflatable donut. After labor and other parts, the trampoline would cost close to $3000 to build. Obviously, if the entrepreneur was correct about people's willingness to pay for the trampoline being about $1000, it could not be built and sold at a profit.

Though the entrepreneur only saw a blunt and discouraging message in the profit and loss statement, the invisible hand was actually conveying a very sophisticated message on behalf of millions of market participants throughout the world. You see, the large inflatable trampoline was to be created with scarce resources from all around the world, and the fact that the trampoline could not be produced at a profit implied that society would rather have the scarce resources employed in their alternative pursuits.

Take for instance the rubber material that would go into the inflatable floating base. Because it is scarce, if it is used for large inflatable trampolines, fewer whitewater rafts could be made. The opportunity cost of producing a floating trampoline is fewer whitewater rafts. The invisible hand is communicating to the trampoline manufacturer that the opportunity cost of a floating trampoline is greater than the benefit. Or in other words, the message is that society would rather have whitewater rafts than floating trampolines. This message is communicated to the trampoline manufacturer by the self-interested producer of the rubber material by the fact he sells the rubber to the highest bidder. In order for the trampoline manufacturer to secure some, he must pay at least as much as the whitewater raft manufacturer. Since the entrepreneur was not able to profitably purchase some of the material for the production of a trampoline, the invisible hand was ensuring that the scarce resource be used in the production of the more valuable whitewater rafts.

An Example - The Pencil

Just as the invisible hand directs resources to their best use, it coordinates the actions of millions of individuals around the world for the production of even some of the simplest items. For instance, Leonard Reed used the story of the creation of a simple #2 yellow wooden pencil to illustrate the wonders of the free market system. [16] He pointed out that there is not a single person on the face of the earth who knows how to do everything required to make a pencil. When one considers the millions of individuals that each contribute small pieces of know-how to the construction of the pencil, he could not help but be convinced. First there are the cedar trees that are cut in Oregon. Think of the expertise of all those working for the logging company and also the expertise that went into the creation of the heavy equipment used by the logging company. The heavy equipment uses petroleum products. Think of the expertise contributed by millions of individuals around the world to supply the gasoline and oil that the loggers use in their equipment. And this is just scratching the surface of the complexity of supplying the wooden shaft of the pencil. Consider the graphite which comes from mines in Ceylon. There is also the paint which is made from petroleum products from around the world. What is the story behind the piece of metal that holds the eraser? It has its own complicated international history. There is not a single person on the face of the earth which could sit down and write the how-to manual for the creation of the simple yellow wooden pencil. It is too complicated.

Perhaps you will find the following fact to be even more astounding. "Neither the worker in the oil field nor the chemist nor the digger of graphite or clay nor any who mans or makes the ships or trains or trucks nor the one who runs the machine that does the knurling on [the] bit of metal nor the president of the company performs his singular task because he wants [a pencil]." Their motivation is something other than a pencil. Each of these millions that participate in the creation of the pencil performs their individual tasks out of self-interest. Each has their own goals, dreams, and desires. After considering the opportunities that they have, each of these millions have decided to participate in the creation of a pencil. Many of them participate without even knowing that they are participating in making a pencil. Some of the participants around the world may not even know what a pencil is.

Perhaps the most astounding fact pertaining to the creation of the pencil is that the millions of individuals that have lent their creativity and know-how to the creation of the pencil did so without any human mastermind. None were forced. There was no body of experts directing or orchestrating the pencil's creation. Market forces or the "invisible hand" is what is behind the cooperation of millions of people in the creation of the simple wooden yellow pencil. Each of the millions of individuals that contributed a small piece of know-how to the creation of the pencil did so in exchange for some money so that other goods and services, other than a pencil, could be acquired. Because there is no master mind, each individual is able to freely choose whether to contribute his expertise and labor. Rather than being forced, each was acting in his inherent and inalienable right to pursue happiness.

Planned Economy vs. Unplanned Economy

When choosing between economic systems, the choice is sometimes framed as a planned economy or an unplanned economy, but the question really is not whether there should be planning. It is a question of who should plan. Should a mastermind, a state bureaucracy, or elected politicians make decisions about what should be produced, how, and by whom? Or should each individual be able to plan in accordance with his own dreams and goals? The **invisible hand** makes it clear that it is most beneficial to society for each individual to plan for himself. As each individual makes his own plans in accord with his self-interest, the invisible hand guides the individual to act in the interests of others. If you are to become wealthy in a free market economy, you must come up with a good or service that millions of others are willing to voluntarily give up some of their scarce money for. History has taught that in a system where each is able to plan for himself, the coordinating effects of the market system create more abundance out of the scarcity we are given than the centrally planned alternative.

It is important to understand that the notion that a free market is a system that runs on greed is incorrect. Self-interest is not the same thing as greed: especially unbridled greed rooted in pride. Those that are greedy for wealth and power are generally in favor of legal changes that destroy property rights and markets. We learn in the Book of Mormon that pride leads to secret combinations which lead to legal plunder and the destruction of the rule of law, thus undermining free markets. [17]

Section 5: Review of Market Failure

There are three market failures that are commonly cited as justification for government intervention into the free market. The first is called an **externality** (see information below). A second market failure is the lack of provision of a **public good** (see information below). The third market failure is **asymmetric information** specifically adverse selection and moral hazard (see information below).

Economists argue that the government must step in and force people to pay for public goods (through taxation) which they enjoy the benefit of since it is impossible for the market to force people to reveal whether they want the good or not. They also argue that taxes or subsidies should be imposed to correct externalities. The third type of market failure can be corrected through measures that make information more transparent.

In these three market failures, there is a limited role for the government to intervene in the market to make sure that the proper level of economic activity takes place. However, there are times that the private market can correct these market failures. Each of these will be discussed in detail below. If you want a more complete treatment of these please visit the ECON 150 Microeconomics Webnotes - Lesson 12. The information below is just a part of that lesson.

Market Failure 1 - Externalities

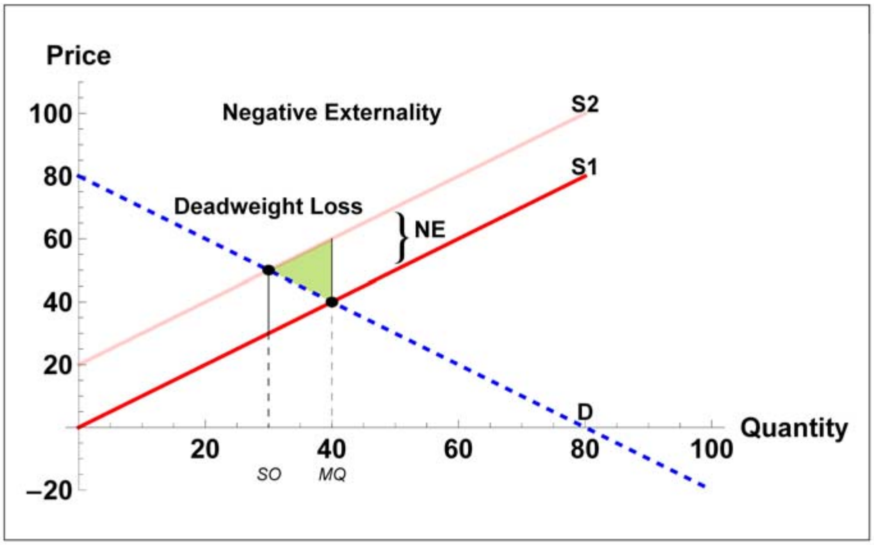
Adam Smith taught each individual, seeking only his own gain, “is led by an invisible hand to promote an end which was no part of his intention,” that end being the public interest. However, there are times when the market outcome differs from the outcome that society considers optimal. This market failure may occur when there is an externality, an external benefit or cost that is enjoyed or imposed on a third party other than the buyer or seller of the good. Externalities may exist in either the production or consumption of the good or service.

Negative Externalities

When a **negative externality** is present, there is a cost imposed on a third party not involved in the production or consumption of the good. Examples of negative externalities include various forms of pollution, such as air pollution from factories or power plants, water pollution; noise pollution such as airports or even roommates; and drivers who are impeded by drugs, alcohol, or texting.

Negative Externalities

A negative externality is an external cost that is imposed on a third party other than the buyer or seller of the good. The market overprovides the good. Society would rather have less of the good and have the supply of the good at S2 instead of S1.
KEY: Demand = Marginal Benefit; S1 = Marginal Private Cost. S2 = Marginal Social Cost or S2 = MPC + Externality; MQ = Market Quantity, SO = Social Optimal, NE = Negative Externality.



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If a factory is able to pollute without paying for the damages caused by the pollution, it will produce more than the socially optimal level of output. Since the firm only pays for the marginal private cost of producing the good or service, it will produce where the marginal private cost is equal to the marginal private benefit. But when there are externalities, the marginal private cost is not the same as the marginal social cost. The marginal social cost adds to the marginal private cost the cost of the externality, which graphically is the vertical distance between the marginal private cost and marginal social cost. If we were to account for the negative externality, the optimal level of production would be lower than the market quantity. As is, the excessive quantity of output creates a deadweight loss to society since the marginal social cost exceeds the marginal social benefit.

Property that is held in common, such as air, water, and public lands, belongs to everyone as a whole. Consequently no one individual has an incentive to care for it, since it doesn't belong to just her. When a resource belongs to everyone, individuals account only for the private marginal benefits and costs and fail to account for the impact of their actions on others, hence the tragedy of the commons.

Positive Externalities

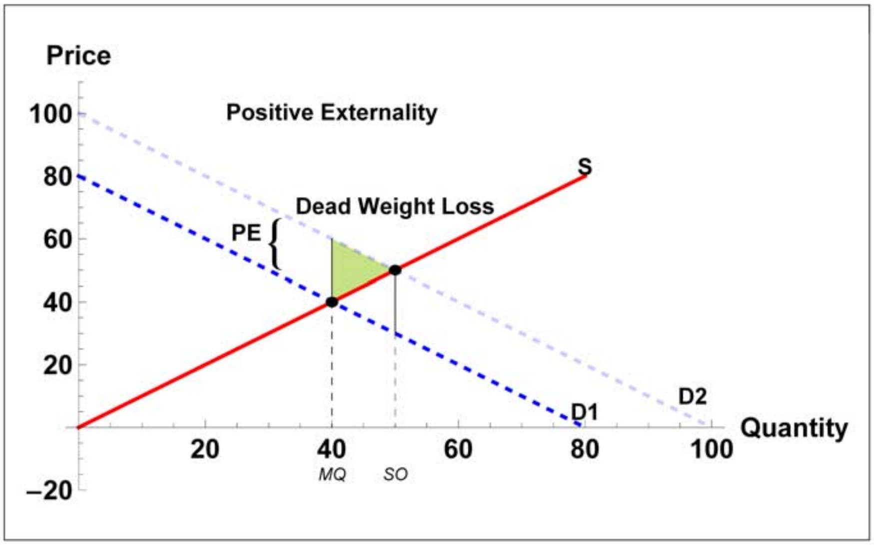
When a **positive externality** is present, the market produces less than the socially optimal quantity of the good or service, since there is a benefit to society that is not captured by the individual. Education, for example, not only benefits the individual but also society as a whole since individuals often are creating new products and services and are less likely to be involved in violent crimes or on the welfare rolls of society. However, a student will only consider the marginal private benefit and the marginal private cost when determining the quantity of education that he or she should obtain.

Other examples of positive externalities include immunizations or a neighbor who fixes up his house which in turn increases the property value of other homes on the street. A deadweight loss also exists when there is a positive externality because at the market quantity, the marginal social benefit is greater than the marginal social cost.

Positive Externalities

A positive externality is an external benefit that is enjoyed by a third party other than the buyer or seller of the good. The market underprovides the good. Society demands more of the good (D2) than the market provides (D1).

KEY: S = Marginal Cost; D1 = Marginal Private Benefit; D2 = Marginal Social Benefit; MQ = Market Quantity, SO = Social Optimum, PE = Positive Externality.



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When an externality exists, the socially optimal output is not achieved. A variety of different policies exist to correct these ranging from "command-and-control" to market-based policies.

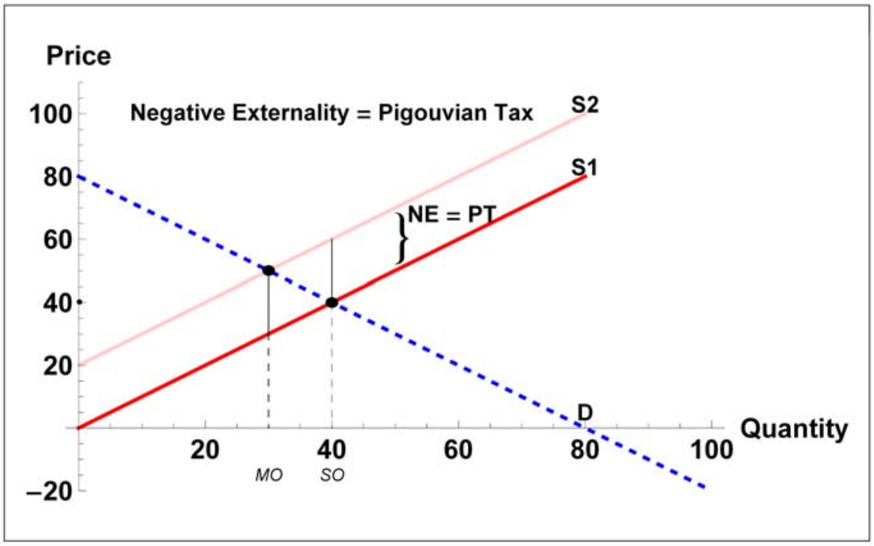
Command-and-control options often include legislation limiting the amount of the activity along with regulatory bodies to monitor the behavior of the industry. For example, government may require all firms to cut emission levels by 30 percent within five years. For common resources, such as fish and wildlife, government will set harvest limits and issue a limited number of licenses that specify what can be caught and in what location. They may also restrict the equipment that can be used in harvesting such as net or boat size. As limits are set, the government must monitor the behavior of firms to ensure that they are abiding by the standards. When a firm is out of compliance, fines are imposed.

Solving the Market Failure - Pigouvian Tax

Solving the Market Failure – Pigouvian Tax

To correct for the negative externality, a government will impose a Pigouvian tax. The tax is the vertical distance between S1 and S2. The tax will decrease the equilibrium quantity and increase the price of the good. Therefore, less of the good that produces the negative externality is produced.

KEY: Demand = Marginal Benefit, S1 = Marginal Private Cost, S2 = Marginal Social, Cost = MPC + Externality, MO = Market Outcome, SO = Social Optimal, NE = Negative Externality, PT = Pigouvian Tax.



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Economist Arthur Pigou recommended levying a tax on the good equal to the amount of the negative externality or a subsidy equal to the amount of the positive externality in order that firms internalize the externality.

A firm producing a negative externality would pay its marginal private cost plus a **Pigouvian tax** equal to the externality, and would thus reduce its production to the socially optimal level of output, since it would be paying for the damage caused to others.

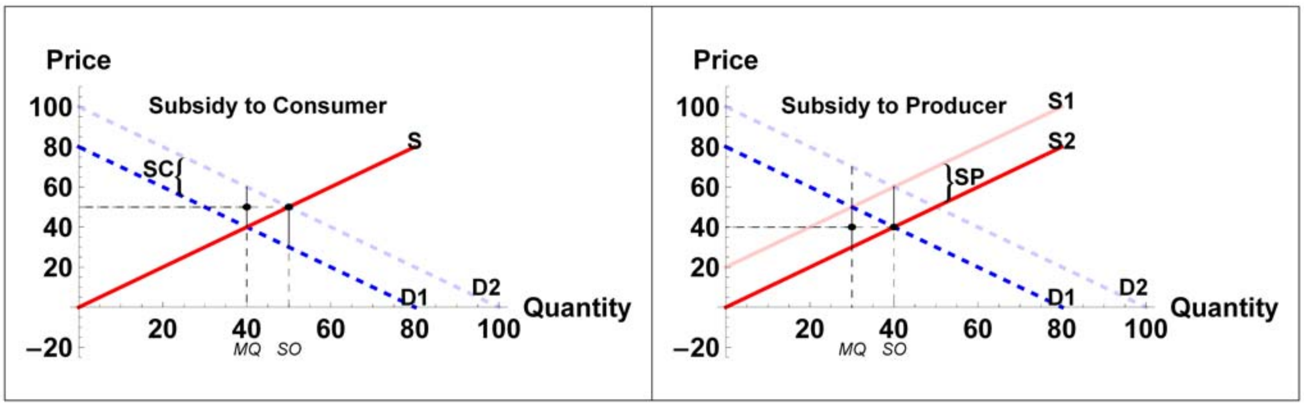
Alternatively, government may determine the optimal level of pollution, then assign or sell tradeable emission permits (cap-and-trade), which allow firms to produce a certain amount of the particular pollution, such as sulfur dioxide. The advantage of permits over the traditional command and control system, is that the pollution standard is met in a more efficient manner. To be in compliance, firms can buy permits, install scrubbers or other devices that reduce the amount of pollution emitted, or reduce their output. Firms are able to meet the standards in the least cost method which benefits them as well as society.

Solving the Market Failure - Pigouvian Subsidy

Solving the Market Failure – Pigouvian Subsidy

To encourage more demand and/or production for a good that produces a positive externality, a government will offer subsidies or money to encourage the production and consumption of the good. This is called a Pigouvian subsidy. The subsidy to producers is the vertical distance between S1 and S2. The subsidy to the producer shifts the supply curve to the right from S1 to S2. There is more of the good produced. The subsidy to the consumer shifts the demand curve from D1 to D2. This also results in more of the good being produced.

KEY: MQ = Market Quantity, SO = Social Optimum, SC = Subsidy to Consumer, SP = Subsidy to Producer.



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To correct a positive externality, such as education, society can subsidized the consumer **(Pigouvian subsidy)**, increasing the demand for the good. Pell grants and other subsidized school loans increase consumer's demand for education. Alternatively, a subsidy may be given to the producer to reduce the marginal cost of providing the good.

Solving the Market Failure - Coase Theorem

In 1991 economist Ronald Coase was awarded the Nobel Prize "for his discovery and clarification of the significance of transaction costs and property rights for the institutional structure and functioning of the economy" (Nobel Prize Announcement). The **Coase theorem** argues that even when externalities exist, the efficient solution can be reached as long as transaction costs, i.e., costs of negotiating , are low, property rights are assigned, and individuals are allowed to negotiate. This efficient solution will be reached regardless of who is assigned the property right.

In many cases, transaction costs are high and negotiating can be difficult. Acid rain, for example, impacts a wide area involving millions of people. When property rights are not clearly defined, the matter is often taken to the judicial system. Some individuals will try to use the court system to force an outcome in their favor.

Market Failure #2 - Under Provision of Public Goods

Private Goods

Private goods are rival, excludable, and divisible. By "rival" we mean that the consumption of the good or service by one prevents another from consuming the item. Excludable means that those who do not pay for the good or service, cannot consume it. Finally, private goods are divisible meaning the production of the good or service can be divided among those who are consuming the good. For example if a firm produces collectible toy cars, each car can be divided and sold to a customer. To determine the market demand for the good or service, we horizontally summed the demand curves of each of the individuals. In the graph below, at a price of $40, there is only a demand for two cars from Individual 2. As the price decrease, see what happens to the market demand.

Public Goods

As we saw in our discussion of externalities, not all goods are private. **Pure public goods** are nonrival, nonexcludable, and nondivisible. National defense, for example, is a public good. The consumption, or in this case the protection, provided to one person does not diminish the protection provided to another. Regardless of whether an individual living in the country paid for the service or not, he still enjoys the benefits of that service. Last national defense is non-divisible, meaning we can't divide up the protection provided to each individual.

Being nonexcludable means that no one has to pay to consume the good and service; therefore, there is a tendency for people to be free riders, consuming the good without paying for it. Consider where many people watch the fireworks on the Fourth of July. While many stadiums often provide a show within the stadium and charge an entrance fee, most people watch the fireworks outside the stadium, since once the fireworks are shot up into the air, they can enjoy the fireworks without paying for them. Since people can enjoy the good without paying for it, the private market produces less of the good or service than is socially optimal.

Being nonrival, more than one person can enjoy the good. Thus to determine the socially optimal amount of the good or service, we do a vertical summation of each individuals willingness to pay (see graphic above). For example, lighthouses can provide service to more than one person and one person's consumption does not diminish the consumption of another. If two individuals in the market are both willing to pay 20 dollars to have a lighthouse, the willingness-to-pay for the first lighthouse is 40 dollars. For the second lighthouse, individual one is only willing to pay 10 dollars and individual two is only willing to pay 5 dollars. Vertically summing each individual's willingness to pay, we can derive the collective willingness to pay, similar in concept to the demand curve. If the marginal cost of providing a lighthouse were 30 dollars, one lighthouse would be socially optimal. Note that due to the free-rider problem, no one individual would be willing to provide a lighthouse, since the marginal cost exceeds her willingness to pay. To correct this market failure, government will typically tax individuals and provide the good or service to the public.

Other Types of Goods

We have discussed two of the main types of goods. Goods can be classified in one of four different categories: private, common resources, quasi-public goods, and public goods, based on whether the good is rival and excludable in the range of demand (see graphic below). Most goods fall into the category of private goods and because they are excludable the market can provide the socially optimal quantity. Ocean fishing may be nonexcludable but rival, since the fish caught by one can not be caught by another – it is a common resource good. A toll road firm is able to exclude those using the good, and at low levels of demand the roads are non-rival, meaning one person's use of the road does not diminish the enjoyment or use the road by another – it is a quasi-public good. However, at high levels of use, such as during rush hour roads do become rival since the enjoyment or use of the road by one is diminished by the use of others.

Private, Public, Quasi–public, and Common Resources

Below are the four types of goods. Rival means that when we consume a good, someone else cannot consume it. Non–rival means that our consumption of the good does not affect someone elses consumption. Excludable means that we must pay for the good to consume it. Non–excludable means that we do not have to pay to consume the good.

	Excludable	Non-excludable
Rival	**Private Good:** Shoes Tacos	**Common Resources:** Ocean fishing Public lands
Non-rival	**Quasi-public goods** Toll Road Cell phones *Non-rival has a range	**Public Good** National Defense Lighthouses

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Market Failure #3 - Asymmetric Information

Adverse Selection

Asymmetric information, when there is an imbalance of information among parties, can also create a market failure. **Adverse selection** can arise when information is known to one party in a transaction that is not known to the other, at the time the contract is made. This is best illustrated with an example: when purchasing a used car, you might consider which type of vehicle is most likely to be sold in the used car market, a “lemon” or a car that has performed well. Adverse selection would suggest that poor quality vehicles (adverse) are most likely. The seller may not disclose all he knows about the mechanical defects of the vehicle. Not knowing the honesty of the seller means, the price offered for the vehicle will likely be less to account for this risk. Similarly, those who need insurance the most are those most likely to purchase full coverage with low deductibles. Due to this risk, insurance premiums are increased which causes some healthy individuals to decide not to purchase coverage; this further increases the cost of the insurance and results in greater adverse selection.

Moral Hazard

Another asymmetric information problem is moral hazard. **Moral hazard** occurs when the behavior of one changes after the contract is made. For example, those who purchase insurance may be less inclined to take precautions after the purchase, knowing that they are insured. Or another example, lenders may see a large credit reserve left on a potential borrower's credit cards as a red flag. This may be the case, even if the borrower is a stellar customer and has never carried a balance on the credit cards, because of the potential that a large amount of credit could easily be obtained.

Solving the Market Failure - Public and Private Solutions

A variety of methods both private and public can help to address these problems (all designed to gather information that the other party knows).

1. Health insurance companies, for example, typically have individuals fill out a health history and complete a physical exam to determine the premiums they will charge to the individual.

2. Credit scores can also help companies assess the likelihood of individuals repaying their loans and allow them to charge an appropriate interest rate. Those with good credit scores get better rates, while those who have not managed their finances appropriately in the past are charged a higher rate. Credit scores are also used in other areas, such as car insurance, since individuals who are irresponsible with their finances have a higher likelihood of being irresponsible in other behaviors as well.

3. Deductibles are designed to prevent the problem of moral hazard. If individuals have to bear at least a portion of the cost when they make an insurance claim, they are less likely to make a claim. Furthermore, the threat of having increased premiums or being dropped by the insurance company, can be a deterrent from moral hazard.

4. Product reports and reviews also provide information to help individuals make an informed decision. Publications such as Consumers Report are an independent review of products ranging from cars to washing machines. Movie reviews can be beneficial to individuals trying to make an informed decision about the content of a movie and what to watch.

5. Consumers are also more willing to purchase goods that offer warranties or money back guarantees. Many consumers often have the perception that products with good warranties are better. While this is not necessarily the case, it reduces the risk associated with purchasing the good. Even though a product may offer a warranty, there is a cost associated with returning the defective product and keeping the necessary paperwork to have the firm honor the warranty.

6. Franchises are another way firms employ to address asymmetric information. Restaurant chains, for example, strive to have a relatively consistent product at each location. Thus if you are visiting a new city, you know what to expect if you go to a national restaurant chain.

Solving the Market Failure - Government Intervention

Government is also involved in addressing the problems of asymmetric information.

1. Government has set various standards to insure a minimum quality ranging from food products, such as grade A milk, to bar exams to insure that individuals practicing law have some minimum competency. Some professions require that individuals receive additional training in their respective profession annually to maintain their license.

2. Inspections also promote confidence in what is being purchased. For example when filling your car up with gas, we trust that we are receiving not only the quality but also the quantity of what is indicated on the pump, because the Department of Weights and Measures has indicated that the pump has been checked and approved.

3. Various laws restrict certain activities such as insider trading. Individuals within a company are restricted from selling their stock due to information they know about the company, prior to the information being released publicly.

4. The government also may also publish reports disclosing specific information about an industry, such as accident and death rates. This allows individuals considering an industry to know more of the potential risks of the industry. In addition, agencies such as the Occupational Safety and Health Administration (OSHA) require businesses to provide certain working conditions and impose fines when the firms are not in compliance.

Solving the Market Failure - When Government Intervention Fails

While government plays a role in correcting certain market failures, they may not solve the problem for several reasons:

1. Principal-agent problem. For example, if a person in charge of the nation's welfare program (the agent) does such a great job he gets everyone off welfare (as desired by the citizens – the principals), he no longer has a job. Thus, he has the incentive to grow the welfare program so his position is more important with a larger budget. If the goal of a politician is to get reelected, he may pursue policies that are politically popular but impose additional costs on society

at some later time period. The growing national debt, is evidence, that politicians would rather spend today and force some future generation to pay for it.

2. Government may fail to recognize and account for the unintended consequences of their actions. Earlier we mentioned, flood insurance that was designed to provide affordable insurance to those in flood prone areas. However, the subsidized insurance has lead to additional people building in areas that are flood prone, due to the government subsidy. Another example is home ownership, which is politically popular; however, a portion of the housing crisis can be traced back to government "encouraging" banks to lower their lending standards and issue mortgages to individuals who would not otherwise be considered credit worthy.

3. Given the bureaucratic nature of government, government intervention generally takes longer and costs more than originally anticipated. More intervention leads to more laws and more administrative bodies to enforce those laws, which adds additional costs to the tax payers. Furthermore, many of the issues government addresses are large and complex in nature with many unknown factors, making it difficult to pass a meaningful effective bill that focuses on the problem.

4. Regulatory Capture is another potential government failure when the regulatory agency acts in the interest of those it is assigned to regulate. As described by the Economists magazine:

"The theory of regulatory capture was set out by Richard Posner, an economist and lawyer at the University of Chicago, who argued that 'Regulation is not about the public interest at all, but is a process, by which interest groups seek to promote their private interest ... Over time, regulatory agencies come to be dominated by the industries regulated.' Most economists are less extreme, arguing that regulation often does good but is always at risk of being captured by the regulated firms."

(http://www.economist.com/research/Economics/alphabetic.cfm?letter=R).

On the other hand, those with more extreme views of regulation may pursue office or positions in government in order to pass legislation aligned with their views, which may not be in the interest of society as a whole.

Given theses challenges, government should weigh the benefits of market intervention relative to the costs to determine if society would be better off or worse off with the government involvement. As citizens it is incumbent upon us to elect wise government officials who will uphold the Constitution and institute righteous laws, in additional to being willing to be personally involved (D&C 98:10). The Book of Mormon is replete with examples of nations prospering when righteous leaders were elected and stumbling when wicked leaders were in office.

Summary

Key Terms

Adverse Selection
Asymmetric Information
Capitalism
Centrally Planned Economy
Coase Theorem
Common Resources
Communism
Externality
Free Market Economy
Invisible Hand

Laissez-faire
Market Price
Mixed Economies
Moral Hazard
Negative Externality
Perfect Competition
Pigouvian Subsidy
Pigouvian Tax
Private Goods
Private Property Rights
Property Rights
Public Good
Pure Capitalism
Pure Public Goods
Quasi-public Goods
Rationing Mechanism
Self-interest
Socialism
Three Questions
Welfare Capitalism

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