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CHAPTER 3

The Pure Exchange Model and Market Ethics

The pure exchange model incorporates the standard assumptions of self-interest motivation, mutually voluntary exchange, and perfect information. What is often misunderstood is that these assumptions imply that the trading individuals comply with a set of morals or ethics. This is a very important point because many people incorrectly imagine that the economic agent assumed in models is so greedy that he is allowed to do anything to advance his own interests. This view is a misconception. In actuality, individuals must adhere to a simple set of ethical principles in order to assure mutually beneficial outcomes. This section explains what those principles are.

1. SELF-INTEREST AND COOPERATION

LEARNING OBJECTIVES

- **Learn why self-interest is necessary for trade to occur.**
- **Learn why trade requires cooperation and a willingness to rely on others.**

The self-interest assumption for Smith and Jones is an important one because without it trade is unlikely to occur. If either one did not care about increasing his utility through trade then there would be no reason to bring products to the market. Perhaps people would come together to converse and share stories, but if there were no goods and no trade then there also would also be no market.

Raising one's own utility is the motivation that leads Smith and Jones to trade. However, trade also requires a willingness on the part of both to cooperate. To understand why, we can revise the story by assuming that one of the participants (say, Jones) was raised to believe in self-sufficiency. Perhaps he was taught that reliance on others is risky and so one should always provide for oneself rather than cooperate with others. In this case Jones is still self-interested, except his interest is secured only if he does not come to rely on Smith for his happiness.

If this were the case, then Jones would have no desire to trade with Smith if they ever were to meet in a market. Although Smith may try to convince Jones that his happiness can rise with trade (if Smith only considers Jones's preferences over the goods), Jones would refuse since it goes against his principle of self-sufficiency. Presumably, the value of Jones's self-sufficiency conviction outweighs the utility he would get from consuming a more satisfying mix of apples and oranges. We can still contend that Jones is self-interested, except that Jones derives utility not only from consumption but also from the mechanism by which the goods are secured.

In this case, Jones's desire for self-sufficiency is an ethical constraint on his behavior; one that would prevent the realization of gains from trade. Smith's willingness to cooperate and strike a deal with Jones can likewise be considered an ethical conviction; one that is necessary to generate the gains from market exchange. As such, a set of ethical principles that includes a requirement for self-sufficiency is inconsistent with markets. Instead, a market consistent set of ethical principles must include cooperation and a willingness to rely on one another; both traders must share this conviction. In other words, markets require social cooperation.

KEY TAKEAWAYS

- If individuals are not self-interested and do not pursue greater utility, then trade will not occur.
- An ethic of self-sufficiency is incompatible with trade.
- A market consistent set of ethical principles must include cooperation and a willingness to rely on one another.

2. HONESTY AND MARKETS

LEARNING OBJECTIVES

- **Learn why the perfect information assumption implies the traders act honestly.**
- **Learn why dishonest behavior can result in win-lose outcomes.**
- **Learn how honesty is sufficient to guarantee mutually beneficial trade, but is not a necessary condition.**

Perhaps one reason Jones's parents would teach a principle of self-sufficiency is because they may have had bad dealings with traders in the past. Jones's father may have tested markets in his time only to learn that traders invariably would claim to be selling high quality products when in actuality they were of low quality, or, would promise to deliver goods in the future but would fail to do so. Most of us have had incidents in our life where the products we purchased were not the products we thought we were buying.

For example, suppose Smith is interested in maximizing utility by all possible means. Suppose his endowment of 10 oranges in the previous example is partially of poor quality. As an orange grower, he may know that some of the oranges are bruised, tasteless and are mostly inedible. However, to maximize his utility, it is in his interest to withhold that information from Jones. One possibility is to package the oranges and wrap them in plastic, thereby making it impossible for Jones to inspect the oranges but at the same time suggesting they are easier to carry away. By placing the best oranges on the top of the package, a customer might infer that all the oranges are of the quality of those exposed. Smith might also prevent customers from opening the package for inspection by arguing that it would ruin the packaging.

If Jones asks Smith whether all the oranges are of the same quality as the ones in view, Smith could respond dishonestly and say that all the oranges are of the highest quality. By being deceptive, Smith is seeking a higher price for his oranges in exchange for apples with Jones. He is trying to get Jones to trade on the basis information that Smith knows is false. In this way Smith's utility will be higher after trade but Jones will be worse off after he learns the true quality of the oranges. It is even possible he will be so much worse off that he will regret that he even made the trade.

In many real-world situations, consumers do have nearly perfect information. When products are purchased regularly, the consumer learns how to identify good quality from bad quality. She may also learn which companies, or which stores, sell products that more closely match her preferences. In these types of situations, the perfect information assumption is probably valid. However, in many other situations, especially when trades occur only occasionally, the consumer does not have perfect knowledge.

In the pure exchange model we assume that traders have perfect information about the products they are buying and that the products are homogeneous. The latter assumption is made so that the terms of trade do not vary depending on which apples are traded for which oranges. Homogeneity assures that all goods are of identical quality. The assumption of perfect information assures that traders know everything they need to know to make the decision about whether to trade and what terms of trade are acceptable. Both high and low quality goods may be brought to the market, but perfect information assures that the price of lower quality goods will be lower.

Perfect information also means that Smith or Jones is not deceived. Successful deception would result in a terms of trade that is negotiated on the basis of information that is false. Consequently, Smith or Jones may be worse off after trade than before once they later realize the deception. Thus, to assure that trade is mutually advantageous, we must rule out the negative outcomes that can arise via trickery and deceit.

Sometimes the lack of knowledge inspires entire businesses that do nothing more than acquire and transmit information about products to potential consumers. Examples include Consumer Reports, CNET.com, Expedia.com, Hotels.com, and Progressive Insurance. These types of market activities help achieve a market outcome that is closer to the assumptions made in standard economic models.

Alternatively though, we can say that the assumption of perfect information in the pure exchange model is equivalent to assuming honest behavior on the part of the traders. Traders are expected to make full disclosure of the features and qualities of their products. Individuals are also presumed to know precisely how much utility a product of that quality will yield. Honesty also means that promises (or contracts) are fulfilled. If a trader promises to ship a product to another later then the product that arrives is what is expected and in the period of time offered. If promises cannot be fulfilled for reasons outside the control of the traders, then honesty requires traders make reasonable amends.

Honesty is a moral and ethical principle that most everyone is taught from an early age. Our parents teach us to always tell the truth and not to hide information from others. Religions around the world impart the same moral teachings. In economics, honesty helps assure that trades are mutually advantageous.

Honesty is sufficient to guarantee mutual benefits, but it is not a necessity. For example, consider a merchant who is just a little dishonest and hides the fact that several units of a large product shipment are defective. Full knowledge of the defective products would alter the purchaser's willingness to pay for the product. Once the purchaser discovers the defective products, although she will surely feel the trade was less favorable than expected, she may still be better off relative to not having traded at all. In this example, deception would shift the surplus value created through trade from the buyer to the seller, but both might still be better off than before trade. For this reason, markets may continue to function and lead to mutual benefits as long as dishonesty is not too severe. Thus, honesty is a sufficient condition to guarantee mutually beneficial trade but it is not necessary.

Necessary vs. Sufficient Conditions

A necessary condition (N) is one that *must* be satisfied in order for an outcome (O) to occur. In terms of formal logic we would say the O --> N, or if O is observed then N must be true. Thus, in section 3.1 we suggested that if mutually beneficial trade occurs (O) then it must be that the traders are self-interested and seek to increase their utility. Self-interested utility seeking is necessary for trade.

A sufficient condition (S) is one that if satisfied guarantees that an outcome (O) will occur. In terms of formal logic we would say the S --> O, or if S is assumed then O logically follows. In this section we suggest that honesty is a sufficient condition (S) for mutually beneficial trades (O) because honesty rules out the deceptive practices that could leave a trader worse off after trade.

KEY TAKEAWAYS

- The assumption of perfect information and homogeneous goods in the pure exchange model is equivalent to assuming that the traders are honest, fulfill their promises and do not engage in deception.
- Deceiving another about the quality of a traded product or failure to fulfill a promise to deliver the expected products may result in a loss to the deceived trader.
- If misinformation about a product is minor, a trade may still be mutually beneficial, however, the allocation of the surplus value will shift in the direction of the deceiver.
- Because of the previous bullet point, honesty and fulfillment of promises are sufficient to assure mutual benefits from trade but are not necessary conditions.

EXERCISES

1. Consider the following situations. Discuss possible methods consumers would use to acquire the necessary information to assure that the purchase is satisfactory.
   A. Bob is visiting a foreign city on business and is looking for a reasonably priced restaurant to have dinner.
   B. Elizabeth wants to hire a contractor to remodel her kitchen.
   C. Annika and Pablo want to see a good horror movie tonight.
   D. Tom just bought a new car and needs to buy auto insurance.
2. Consider the situations in Q1 again, but assume the year is 1990, before the internet and the widespread use of cellular phones.
3. Indicate whether each condition below is *necessary, sufficient*, *necessary and sufficient, or neither* for each outcome to arise.
   1. The effect of clouds on rainfall.
   2. The effect of a large dose of arsenic in food causing the death of a person.
   3. The effect of electricity on the movie displayed on a television set.
   4. The effect of a battery in the operation of a laptop computer.
   5. The effect of sugar on the sweetness of a cup of coffee.
   6. The effect of darkness on the ability to see the stars from the surface of the earth.
   7. The effect that nightime has on the ability to see the stars from the surface of the earth.
   8. The effect of clear skies on the ability to see the stars from the surface of the earth.

3. PROPERTY PROTECTION AND MARKETS

LEARNING OBJECTIVES

- **Learn how the assumption that trades are mutually voluntary implies an ethical principle involving the respect for property.**
- **Learn that a respect for property rules out theft, threats and violence against others.**
- **Learn how theft, threats and violence are alternative mechanisms to trade that can improve the well-being of a person, but not without simultaneously reducing well-being of another.**

In the pure exchange model individuals are assumed to seek maximum utility via mutually voluntary trade. However, within the context of the model it is possible that a much higher utility can be obtained than through trade. For example, Smith's utility would be at the ultimate maximum if he could obtain all of Jones' apples while simultaneously keeping all his oranges.

To obtain all the goods, Smith would need an alternative mechanism instead of trade. One possible method is via force. Smith could hit Jones over the head and rush off with all of his apples. A second method is a threat of violence. Smith could threaten to hit Jones over the head if Jones doesn't give him all his apples. Finally, Smith could obtain all the apples via stealth. When Jones leaves his apples momentarily unattended, Smith takes the apples and flees.

No one would hesitate for a moment to call these actions theft. Smith is clearly stealing the apples from Jones in all three cases. It is also clear that mutually voluntary trade is not occurring. Smith will become better off through these actions but Jones will clearly be worse off. Nonetheless, it is worth considering why Smith or Jones would not resort to these actions if their motivation were indeed to maximize their own utility.

Utility maximization by all means possible must include the use of violence as a mechanism. Indeed, if Smith considers the use of force against Jones to obtain all the apples, Jones may equally consider the use of force against Smith to acquire all of Smith's oranges. The result could be an all-out war between the two to gain sole possession of the available goods.

The use of force against others to obtain valuable commodities is a common occurrence. Warfare generally involves armed conflict to acquire control of another's resources. Indeed, warfare has such a prominent position in the historical record that history often seems to be mostly about the sequence of wars among peoples and the leaders who led these battles. Although modern people decry the use of violence against others, violence and theft continue to be widespread.

In the pure exchange model, the assumption that exchange is mutually voluntary is critically important and worthy of further discussion. Its importance is best seen by considering how much more difficult trade would be if violence, theft and coercion were a common occurrence. For example, if Smith or Jones were regularly attacked or threatened and had their items taken away from them then they could respond in several possible ways. First, the traders might decide to stay away from the market. Why go to a market to trade if your safety is threatened and your goods are stolen? A second response would be protection. If others threaten you with a big club, then bring a bigger club. If items are regularly stolen away secretly, then hide them or secure them so no one else can find them or take them. A third response is to develop a mutual respect for the property of each individual. If individuals had a moral code that proscribed violence, coercion and theft; if individuals believed that what's mine is mine and what's yours is yours to do as you like with it; if people would refrain from the urge to satisfy their self-interest by taking; then markets could function and trade would lead to mutual benefits. Clearly this option is difficult to obtain because it requires shared sentiments and cooperation.

In other words, the existence of a market and its effectiveness depends on people adhering to a simple set of ethical constraints respecting the personal property of others. If we also imagine that each person is an individual who is free to exercise control over his or her own person (i.e., a person owns herself), then any act of violence against another person can be seen also as a violation of the moral principle of respect for property. Thus a respect for property proscribes both theft of objects as well as violence or injury to another person.

Where these moral constraints come from is subject to further debate. One could imagine that God communicated the moral code by commanding humans not to steal or kill each other. Alternatively, one could imagine that once surpluses began to arise during the agricultural revolution in the early Neolithic age, early humans also discovered that mutual gains and improvement of living standards were possible, but only if people cooperated with each other in markets and followed a new ethical code of behavior. The code of market ethics includes respect for the property of others, proscribes violence, theft and coercion, and promotes honesty and trustworthiness. With these features in a model of exchange, traders have the incentive to come together in markets, exchange to their mutual benefit, and repeat the process over and over again.

Reality Check

In the pure exchange model we assume that the traders who come to the market have perfect information and that all exchanges are mutually voluntary. These assumptions imply moral or ethical constraints on the behavior of the traders. In particular, we are assuming that individuals are honest and trustworthy. They do not deceive each other about the nature of the products. They fulfill their promises. They respect the property of the other and do not steal. They do not use force or violence to injure each other or to coerce an exchange that is not acceptable. If an individual wishes not to trade, he has the freedom to leave the market without relinquishing his possessions.

These assumptions may seem quite strong because violence, theft and deception are clearly a part of the world we live in. Some even claim that the behavioral assumption of self-interest does not match reality because humans have social sentiments that include altruism, compassion and concerns about fairness. This contention is somewhat misguided though since, as shown in this section, the basic behavioral assumption in economics is not unmitigated self-interest, but rather self-interest constrained by a set of moral or ethical principles. Furthermore, the ethical constraints are not just a part of the pure exchange model, but are a feature of every economic model in which producers and consumers come together in a market and voluntarily exchange one thing for another. Thus, every time we analyze a market using supply and demand curves, traders are assumed to be following the ethical principles unless an assumption is otherwise explicitly relaxed.

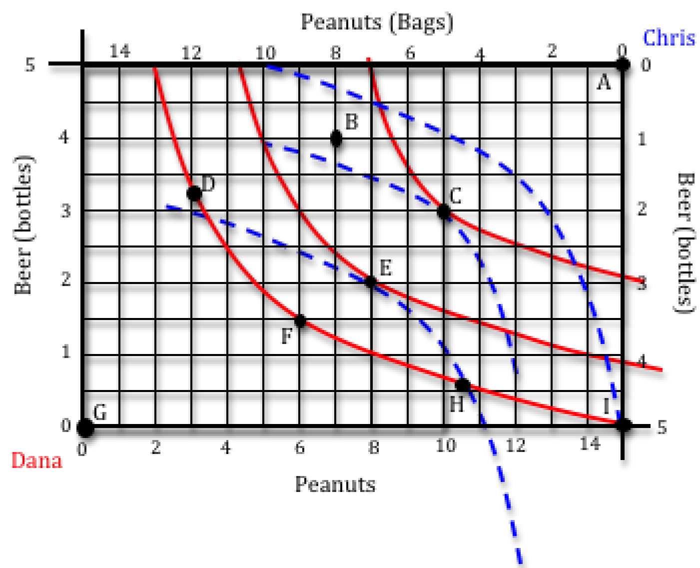
In addition, economic models are developed to simplify the world while shedding light and understanding on economic phenomenon. A model is never a perfect depiction of the real world and we should not expect it to be. What the pure exchange model demonstrates is the conditions that are necessary and sufficient to assure that market exchange benefits all participants. The model says that mutually beneficial outcomes for all traders will arise if the ethical principles are fulfilled. If the ethical constraints were not satisfied, then exchange might generate mutual benefits occasionally, but that outcome would not be logically assured.

KEY TAKEAWAYS

- The code of market ethics includes respect for the property of others, proscribes violence, theft and coercion, and promotes honesty and trustworthiness.
- The existence of a market and its effectiveness depends on people adhering to a set of ethical constraints respecting the personal property of others.
- If the ethical principles are not followed, then mutually beneficial outcomes cannot be guaranteed.

EXERCISE

1. Answer the following questions based on the Edgeworth Box diagram below using the labeled points A – I as needed. Suppose the diagram describes two individuals, Chris and Dana. Dana is initially endowed with 15 bags of peanuts and zero bottles of beer and Chris is endowed with zero bags of peanuts and 5 bottles of beers. Suppose the solid lines are Dana's indifference curves while the dotted lines are Chris's indifference curves.
    A. Which labeled point represents the endowment?
    B. Which labeled point or points give Chris a higher utility than E?
    C. Which labeled point or points are mutually beneficial after trade?
    D. Which among all the labeled points gives Dana the highest utility?
    E. By what mechanism could Dana achieve the point that gives her the highest utility?



4. SELF-INTEREST VS. GREED

LEARNING OBJECTIVES

- **Learn a method to distinguish between self-interest and greed.**
- **Learn why greed, when applied in markets, results in negative outcomes.**

Greed is generally viewed as a vice that is responsible for many of the problems that human society faces. Indeed, greed is listed as one of Christianity's seven deadly sins. And yet, it is not uncommon for economists to suggest that greed is a good thing. In the movie Wall Street, Michael Douglas' character even makes an impassioned speech that many accept arguing that greed has marked the upward surge of mankind. How can we account for such an extreme difference of opinion?

Greed is defined in the dictionary as an intense selfish desire especially for wealth and power. Alternatively, we might say that greed is extreme self-interest. However, in defining it this way, it would be useful to establish criteria for when self-interest is extreme and when it is not. The above discussion provides a method for doing so.

The pure exchange model highlights that self-interest of the traders is a necessary condition to inspire trade; without it there would be no trade. In addition when traders meet in a market and adhere to the ethical constraints proscribing violence, coercion and theft while maintaining honesty and trustworthiness, then trade is win-win. Both sides leave happier than before trade. However, if Smith or Jones violates the ethical constraints, then they may be able to raise their own well-being even more, but only at the expense of the other person. Self-interest without ethics generates a win-lose outcome.

Ethics then is what distinguishes self-interest from greed. Self-interest is extreme, that is, it becomes greed, when the self interest is satisfied via unethical means. If a person betters him or herself using violence, theft or deception then self-interest has gone too far. However, if a person satisfies his or her self-interest in a market while always adhering to these ethical principles, then all gains for oneself are simultaneously generating gains for others in mutual win-win trades. Self-interest is indeed necessary for markets to work; but self-interest without market ethics goes too far and becomes greed.

KEY TAKEAWAYS

- If a person pursues her self-interest while adhering to the ethical constraints described in this chapter, then market, or trading, outcomes are win-win.
- If a person pursues her self-interest, while violating one or more of the ethical principles described in this chapter, then mutually favorable market outcomes are unlikely to arise. In this case outcomes will likely be win-lose.
- Self-interest becomes greed when it is satisfied by violating one or more of the ethical principles. In other words, greed involves securing self benefits via deception, non-fulfillment of promises, theft, violence, or threats of violence.

EXERCISE

1. For each of the following situations, indicate whether it is an instance of reasonable self-interest or an instance of greed. Briefly explain why.
   A. An auto repair shop is highly profitable because it adds $50-$100 in extra unnecessary repairs to each customer's bill.
   B. A towing company is profitable because it charges customers $150 to retrieve their cars that were towed because of an expired vehicle inspection sticker.
   C. The Walton family becomes billionaires by selling affordable items at their worldwide chain of Walmart stores.
   D. A lawyer becomes wealthy by helping individuals receive settlements from auto insurance companies for injuries that may or may not have been caused in vehicle accidents.
   E. An entrepreneur becomes wealthy selling low quality items priced near $1 each at a chain of dollar stores.
   F. Napoleon Bonaparte increased the wealth and status of France, for a short time, by conquering much of Europe with his military forces.

5. ETHICS ENFORCEMENT

LEARNING OBJECTIVE

- **Learn the private, public and religious mechanisms that are used to help enforce ethical behavior in modern society.**

Although the ethical constraints assumed in the pure exchange model are not always fulfilled in the real world it is worth exploring the wide variety of mechanisms and institutions that have developed to force compliance with these principles.

First, there are self-protections. One way to prevent theft is to erect fences and walls, put valuable commodities into locked storage chambers; and hire guards with advanced weapons to defend the products. To defend against deception one could inspect all items carefully before purchasing and develop long term trading relationships with trustworthy merchants. Merchants can attest to the quality of their products by offering guarantees and warranties. They may also provide free samples or have independent external organizations evaluate and report the quality of their products to customers.

Secondly there are moral codes often propagated by religions. One way to prevent theft is to instill a belief among peoples that theft is wrong. If parents, or elders, or authoritative figures in a community would teach the value of ethical behavior then perhaps people would conform to these behavioral constraints. However, these lessons may be difficult to instill especially if those who lie, steal and cheat could consistently raise their own well-being by behaving unethically. So how could the wise elders convince others to comply with a code of ethics?

One way might be to turn ethical behavior into morality and to imagine that the moral code is commanded by a higher authority. Perhaps religion developed as a method to induce people to act in more socially advantageous ways. In a simple rendition of modern religion, God is a being external to society who lives forever. He is omnipotent and all knowing which implies that one can never hide one's actions from Him. He provides a moral code for people to follow that includes commands not to kill, steal or lie to each other. He demands respect, adoration and obedience to Himself and the moral code He provides. And finally any violation of God's wishes can lead to eternal damnation and suffering. In other words, any temporary benefit on earth that arises from immoral behavior will be more than made up for negatively in the afterlife. Viewed in this way, religion is an ingenious system to induce social cooperation. When religious beliefs are strong in a community, it will help raise the well being of society by stimulating the conditions needed for markets to thrive.

A third way to induce ethical behavior is via the power of the State. States can establish rules or laws and develop mechanisms to enforce them and to prosecute those who would violate them. For example, all modern States have established property rights systems that determine who can own what and how to register and track ownership of valuable property. Laws prohibit individuals from stealing or damaging the rightful property of others. Laws also prohibit violence against each other including murder, assault, and rape. In addition, laws are established to prevent dishonesty including prohibitions against fraud and other deceptions.

The protection of property and individual freedom infringements by foreign nationals are protected through the establishment of military forces. Domestically, police forces are established to monitor and arrest violators of national laws. Judicial systems are put into place to assess the guilt or innocence of suspected violators and to determine punishments. Punishments are either established by the law itself or determined at the discretion of judges. These punishments depend on the seriousness of the crime and can range from monetary fines to incarceration or even to the death penalty.

Thus, much like religions, legal systems are another ingenious method to induce social cooperation. When effective, they can help raise the well being of society by stimulating the conditions needed for markets to thrive.

All three methods - private protections, religious codes and legal systems - work together to help maintain compliance with the system of ethics that help markets function more effectively. Although violation of these principles is common, it is also remarkable how often they are satisfied. One test is to imagine for yourself how many of the purchases you made in the last week, or month, yielded positive benefits? How many times were you satisfied with the trades you made? In contrast, how many times did you feel swindled? How afraid were you of your personal safety in markets? How often did you have something stolen?

Although most people could tell stories of market thefts and deceptions, whether to themselves or other acquaintances, most of the time trades are made in safe conditions, with good knowledge about the products being purchased. When the ethical conditions are not satisfied, though, markets do not thrive. Nonetheless, the private, public and religious institutions that have developed over a long period of time play a crucial role in making markets work more effectively.

KEY TAKEAWAYS

- There are three mechanisms to instill compliance with the ethical principles: private protections, a religious moral code, or a State-sponsored legal system.
- All three methods—private protections, religious codes and legal systems—work together to help markets function more effectively.

EXERCISES

1. Consider a diamond necklace valued at $250,000.
    a. Indicate several methods the owner of the necklace might use to prevent the necklace from being stolen.
    b. Suppose the $250,000 necklace is stolen from its owner. What actions do you expect from the local police force? Does the State government have an obligation to find the stolen necklace? Does it have an obligation to replace the item if it is not found?
    c. Suppose you are the one who has stolen the necklace. Considering your own religious or moral beliefs, what is the expected penalty for stealing the necklace?
2. Consider the following laws. Discuss whether each law has the effect of promoting one of the ethical market principles described in this chapter.
    1. A labeling law that requires a list of all ingredients on food products.
    2. A law that merchants must collect a State sales tax on all retail sales.
    3. A law sanctioning the assault of one person against another.
    4. A law that prevents the spreading of false information about another person.
    5. A law that provides a subsidy to the producers of solar panels.