Institute for International Economic Policy Working Paper Series
Elliott School of International Affairs
The George Washington University

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IIEP-WP-2015-21

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December 2015

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Market Ethics With Trade in an Edgeworth Box

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Abstract:

A pure exchange model in an Edgeworth box diagram is used to highlight the basic system of market ethics that is implicitly presumed in all neoclassical economic analyses. A pure exchange model introduces the central tenet of Adam Smith that self-interest motivated traders in a market can achieve mutually beneficial outcomes. But the model also displays outcomes that, while they would not be voluntarily chosen, are nonetheless achievable by the use of force, threats of force, or deception. As such the Edgeworth box is a vehicle to explain requisite ethical principles, including the importance of property rights and perfect information, by demonstrating the unfavorable outcomes that can arise when excessive self-interest (aka greed) is used to take advantage of others.

Keywords: Trade, Ethics, Pure Exchange, Edgeworth box

[1] The author is thankful for support from the GW Institute for International Economic Policy and for research assistance from Jacob Burman.

Introduction

The fundamental assumptions in all neoclassical economic models are that individuals are self–interested, and rational. They will use all information available to them (in many instances that information will be perfect) and take actions to maximize profit in production and utility in consumption. Homo economicus is the term commonly used to describe individuals with these behavioral characteristics in economic models.

To many people the Homo economicus assumption is often viewed with suspicion or derision. Ben-Ner and Putterman (1998) state that "Homo economicus is at best amoral, and at worst outright immoral: he will engage in any actions that will benefit him, theft, cheating, and - why not? -- murder, irrespective of their impact on the welfare of others." The popular perception is that economic man is excessively greedy and will do anything in his power to improve his lot. He has no "other-regarding" or altruistic preferences. In short, he is not a very pleasant person.[2]

Although economics praises self-interest, even greed, as beneficial to the workings of the economy and society, many other social observers consider greed to be an immoral trait that would best be supplanted by altruistic behaviors. Hollywood movies reinforce the perception of excessive greed in economic and business dealings by regularly portraying business as an evil force in the world; one where money-making motives enable exploitation, theft and harm to others. In the classic movie Wall Street (1987) Michael Douglas' character makes an impassioned speech explaining why "greed, for lack of a better word, is good," which matches the economic notion that self-interest is a positive force. When Douglas' character is brought down and imprisoned by the end of the movie though,

[2] See Snower (2014), Ubel (2014).

popular impressions about greed are vindicated. In the sequel, Wall Street: Money Never Sleeps (2010), Michael Douglas' character, having had a chance to reflect in prison on the errors of his ways, makes another speech in which he criticizes his original "greed is good" perspective.

Because homo economicus is a cornerstone of the entire neoclassical paradigm, students that are new to economics, sometimes quickly infer that economic theory does not contain a moral compass. In 2011 during the Occupy Wall Street movement, some students at Harvard University boycotted N. Gregory Mankiw's principles of economics course arguing that neoclassical economics had a conservative bias and was not sufficiently sensitive to the injustices in the economic system. This popular sentiment later inspired the CORE-Econ project at Oxford's Institute for New Economic Thinking, intended to provide a more enriching curriculum for introductory economics students. It's Director, Wendy Carlin, argued that a change in approach is needed because, " .. experimental methods have shown that people are more fair-minded and moral, and less calculating than the so called Economic Man of the textbooks."[3] [4]

This paper confronts these perceptions by demonstrating that in order for markets to function effectively it is important for individuals to adhere to several ethical constraints. These ethical principles are embedded in the assumptions of economic models and are well known in the early economics literature, however, they are downplayed so much in introductory textbooks today that it is likely that most students leave their first courses with an unsatisfactory appreciation of the importance of ethics in economics. The

[3] Carlin, Wendy, Financial Times Opinion, "Economics explains our world – but economics degrees don't," 17 Nov, 2013.
[4] Also see Henrich et.al, (2001) for a demonstration of alternative economic motives.

fact that business values and economic motivations are viewed so negatively and suspiciously by the general public is one indication that the ethical content of economics is not being adequately conveyed.

In a review of the top introductory microeconomics textbooks, it was found that all of them include some discussion about ethical issues, especially a mention of the importance of property rights and concerns about inequality.[5] However, in most instances the discussion of these issues was relegated to later chapters or was mentioned in passing. Further, none of the texts convey a complete account of the importance of ethical behavior to a smooth functioning market. In particular they rarely discuss what might happen when the ethical foundations falter. One slight exception is the online textbook created by the Core project, which does emphasize potential inequitable outcomes in markets, however, it does so, not in the context of a standard neoclassical model, but with a model designed to illustrate the potential for inequitable division of the surplus from trade.[6]

Most textbooks have a discussion about market imperfections, or market failures, such as externalities, public goods and common resources and they all suggest how government intervention can be used to correct for these market imperfections. However, none of the texts discuss what Coleman (1985) described as pre-market failures; namely failures in the ethical principles that underpin a functioning market and that are needed in order for perfectly competitive markets to even be possible.[7]

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[5] The textbooks reviewed include Baumol & Blinder (2015), Besanko et.al. (2011), Case et.al. (2014), Frank, et.al. (2013), Hubbard & O'Brian (2015), Krugman & Wells (2013), Mankiw (2015),McConnell et.al. (2011), O'Sullivan et.al. (2014), and Parkin (2014).
[6] See in particular Carlin et.al. (2014), Chapter 5 on Property, Contract and Power.
[7] Also see Skaperdas (2003).

This paper uses an Edgeworth box diagram depicting a pure exchange model to demonstrate a simple method to teach principles of economics students the relevance and importance of ethics in the functioning of the simplest market economy. The paper will highlight first, what are the foundational ethical principles of a pure exchange market; second, why adherence to this system of ethics can enhance the effectiveness of the market; third, the limits of the homo economicus assumption and why market effectiveness requires restraints on self interested behavior (in other words, why homo economicus cannot act as brutish as he likes); fourth, the methods that have been employed, both private and public, to encourage ethical behavior and how they assist in maintaining market effectiveness. With respect to the third point, the paper will demonstrate the critical importance of self-interested behavior to making markets work, but will also show how excessively self-interested behavior – or, greed - can damage market effectiveness. Understanding the boundary between acceptable self-interest and greed is something all students of economics should understand. With respect to the fourth point, this paper will highlight the role of social norms and government in promoting ethical behavior on the part of market participants.

Note that this paper does not consider all aspects of market ethics, but rather focuses only on those ethical principles required to guarantee an effective outcome in the simple process of exchange or trade. Other potential elements of market ethics arise from the implications of competition among firms, the distribution of resources, and the presence of market imperfections. While these issues are important too, they are beyond the scope of this paper.

Introducing the Edgeworth Box

A market is any place where the exchange of goods or services occurs. As such, exchange is the defining, or fundamental, activity of a market. Adam Smith highlighted that exchange is a purely human feature when he said, "nobody ever saw a dog make a fair and deliberate exchange of one bone for another with another dog."[8]

Economists have long used the graphical construction called the Edgeworth box, especially in intermediate economics courses, to teach the basic principles of market exchange. Among its best uses is to demonstrate the principle of Pareto optimality and provide a clear depiction of the conditions in a trading equilibrium. However, pared down to its more fundamental assumptions, the Edgeworth box becomes highly instructive instrument in a number of other respects. First, it allows one to demonstrate the basic construction of an economic model and how assumptions impact the conclusions that are reached. Second, by relaxing those assumptions we can demonstrate the ethical underpinnings that help make a simple market function more effectively.

Although the Edgeworth box is difficult to understand for principles of economics students, the pure exchange model that it describes has a limited number of assumptions and is one of the simplest of all economic models. As such, it can be useful to present this as the first economic model in an introductory microeconomics course. This can be done effectively by de-emphasizing the optimizing solution (saving those details for an intermediate course) and emphasizing instead how each assumption in the model affects the outcome. The lesson proceeds as follows with the assumptions introduced as needed for each step.

[8] Smith, Adam, Wealth of Nations, : B.I, Ch.2, Of the Principle which gives Occasion to the Division of Labour in paragraph I.2.2.

Assume,

1) there are two agents, call them Smith and Jones,
2) there are only two goods, apples and oranges,
3) the apples and oranges are homogeneous, all of like size and quality.
4) both agents know perfectly the quality of all apples and oranges
5) Smith and Jones have well defined and consistent preferences over all consumption bundles of apples and oranges. This means they can rank-order every potential consumption bundle as preferred, indifferent, or unpreferred in comparison with every other bundle.
6) both agents know their preferences perfectly over the relevant ranges.
7) both Smith and Jones always prefer more apples and more oranges to less (i.e., no satiation occurs) and
8) consumption of each product exhibits diminishing marginal utility.

Under these assumptions one can introduce indifference curves in a standard diagram for one agent, say Smith, and show how diminishing marginal utility determines their convex-to-the-origin shape and how moving to a bundle up and to the right increases utility.[9] The next step is to introduce Jones with an upside-down indifference curve diagram (i.e. with the origin in the upper-right (I like to say he's inclined to stand on his head!) and point out that in his case utility rises as you move to a bundle in the lower leftward direction.

[9] It can also be helpful to point out how an alternative assumption, like constant marginal utility, would result in linear indifference curves and that the assumption of increasing marginal utility would change the curvature to concave-to-the-origin.

Next,

9) assume an endowment of apples and oranges for Smith and Jones: say Smith is endowed with 10 oranges and 0 apples, while Jones is endowed with 10 apples and 0 oranges.

Indicate the position of the endowment bundle on Smith's right-side up diagram and Jones' upside down diagram. Also draw a representative indifference curve through each endowment point.

To create the Edgeworth box, slide the two diagrams together and superimpose the endowment points. (See Figure 1) The result is an "Edgeworth" box with dimensions equal to the total quantity of apples and oranges, in this case 10 oranges wide by 10 apples high.[10]

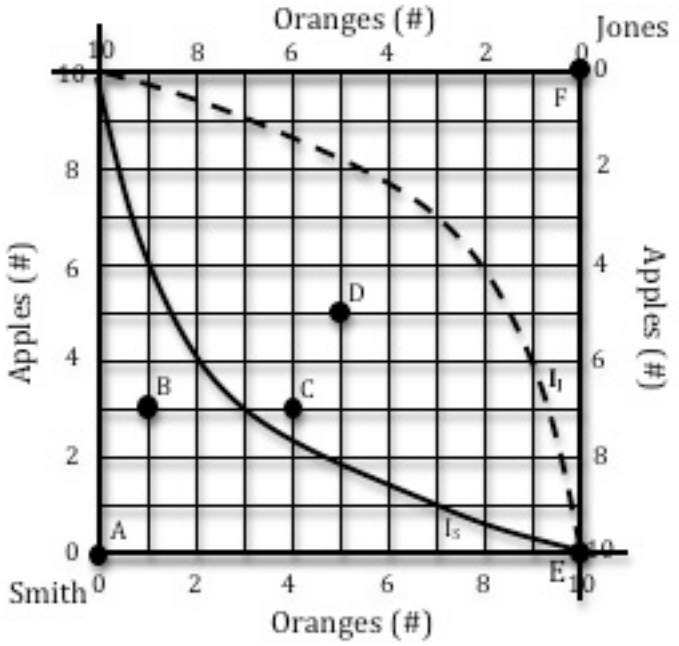
It is useful to explain to students how every point in the box represents an alternative allocation of 10 apples and 10 oranges between the two agents. To move from one allocation to another, the agents will have to adjust their holdings with each other. One method to adjust allocations is through trade, but as is discussed below, it is not the only method.

Define the terms of trade as the ratio of the quantities of goods traded in moving from the endowment to any other allocation via trade. Highlight that the terms of trade is the price of a good, but measured not in dollar terms (since there is no money in this simple

[10] Point E represents the endowment. Smith's indifference curve through the endowment point is the solid curve whereas Jones' indifference curve is the dashed curve.

economy) but in units of the alternative good.[11] One can also show how the terms of trade can be written as the ratio of the dollar prices of the two goods if money were used in this economy instead. For example, if P_O is he dollar price of an orange and P_A is the dollar price of an apple, then P_O/P_A is the the number of apples traded per orange

Figure 1



Smith and Jones' indifference curves passing through their endowment points create a "lens" in the center of the diagram. The lens is the most important feature of the graph since any trade that results in an allocation within the lens will put both agents on a higher indifference curve and hence will raise both agents' utility. Trading into the lens is mutually beneficial.

[11] Students can practice the principle by calculating the terms of trade if Smith and Jones were to trade to points B C or D in Figure 1.

Gains from Trade

Next, we can discuss the possible outcomes when Smith and Jones meet together in a "market." A market is defined as any place or space where Smith and Jones can communicate with each other and exchange goods. The most vivid example is a farmer's market or a grocery store. However, it worth noting that websites like Amazon create a virtual marketplace; money is transferred electronically and goods arrive via parcel services.

10) Assume Smith and Jones can clearly communicate with each other.

Smith or Jones will have to discuss the terms of trade and someone must make an offer. An implicit assumption, that could be made explicit here, is that the traders share a common language.

Trade will also require an objective. Initially we can assume a simple one, namely,

11) Smith and Jones are both self-interested and want to increase their utility. (Later we will introduce the stronger assumption of utility maximization).

We will also assume that agents can accept an offer and trade, or refuse an offer and not trade. Thus we assume,

12) All trades are mutually voluntary.

Thus, if a suggested offer would result in a final allocation outside the lens, such as at point B, then although one agent would benefit (Jones) the other agent would suffer a reduction in utility and thus would refuse to trade. However, if the suggested offer results in a final allocation within the lens (and not on the initial indifference curves) then both Smith and Jones, knowing their preferences fully, and having a clear understanding of the

quality of the homogeneous goods, would reach a higher indifference curve and experience an increase in utility due to exchange. Logic dictates they would trade because it achieves their objectives and thereby would also be *mutually voluntary.* There are many ways to state this result: 1) Both agents *gain from trade*. 2) *Trade is a win-win* outcome. 3) Trade, or exchange, creates an increase in value, a *surplus value*. 4) I tell students that trade generates *happiness bursts* for both Smith and Jones. All of these terms can be used to describe the outcome of mutually voluntary trade, or exchange.

A Trading Equilibrium

In the previous section, the behavioral assumption was a desire only to increase utility and thus any allocation in the lens is a possible outcome (such as points C and D in Figure 1). One way to determine a unique outcome is to introduce alternative assumptions about imperfect information and discuss a bargaining process over the allocation of the surplus value.[12] However, if information is perfect and Smith and Jones are rational, we can narrow the possible trade outcomes first by assuming that

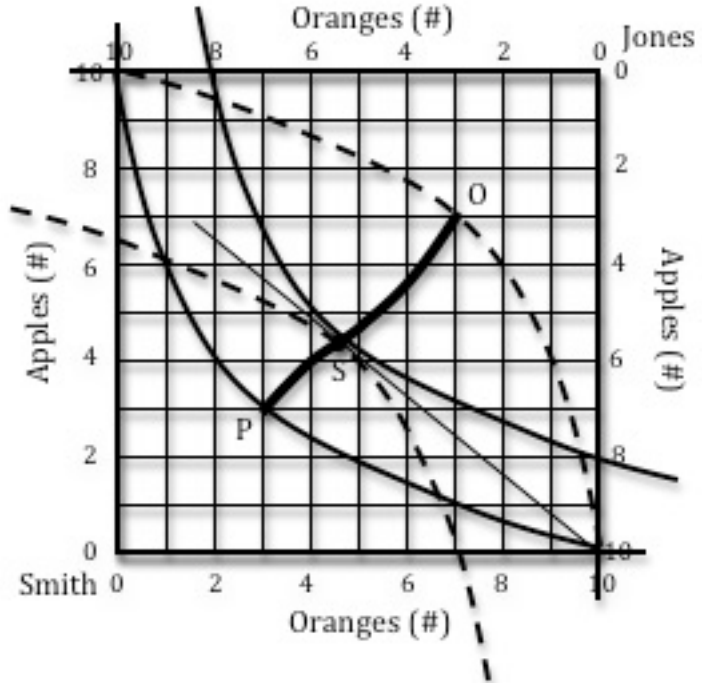
13)Smith and Jones exhaust any potential mutual gains from trade

In this case we can demonstrate that the final outcome must be at a Pareto optimal allocation. These are the set of allocations within the lens such that the marginal rates of substitution between oranges and apples MRS = MU_O/MU_A are equal between Smith and Jones. The set of points satisfying $MRS^S = MRS^J$ are the points of tangency between indifference curves within the Edgeworth box. This is shown as the solid line between P and O in Figure 2 below. Pigou called this set of outcomes the "range of practicable

[12] Nash (1950), and Harsanyi (1956) are two of many papers on this issue.

bargains."[13] With assumption (13) we can eliminate many outcomes in the lens but would not have a unique outcome.

Figure 2



To obtain a unique solution we can introduce the strongest version of the behavioral assumption, namely that,

12) Smith and Jones simultaneously *maximize* their utility.

The mathematics of optimization yields the condition that each agent reach an allocation that equates the terms of trade (P_O/P_A) with his marginal rate of substitution of oranges to apples, MRS = MU_O/MU_A. Since both agents must maximize simultaneously the final condition is $MRS^S = (P_O/P_A) = MRS^J$ and is shown as point S in Figure 2.

In summary at this stage, we can say that if Smith and Jones both have perfect knowledge about their preferences over two homogeneous goods of known qualities, if

[13] Quoted in Harsanyi (1956).

their preferences exhibit diminishing marginal utility and if more is better, and if they trade mutually voluntarily so as to maximize their individual utility after trade, then they will trade to a unique allocation such as point S in Figure 2 that is Pareto optimal. The result is mutual gains from trade; that is, both traders benefit and since the gains from trade are exhausted. Economists would say the outcome is efficient.

The Implicit Ethics in Market Exchange

Typically textbooks avoid explaining the construction and application of economic models. As a result, students may believe that the models are depictions of the real world as the world really exists. From the above discussion a student might believe that individuals have utility functions and known indifference curves and that they maximize their utility and trade to their mutual advantage … always. However, the model as described above is not a perfect representation of the world. It is a simplification and in many instances the assumptions made are not satisfied in the real world.

The method used above to describe the model demonstrates how a model is an exercise in deductive reasoning. Model development involves determination of a set of conditions (assumptions) that are sufficient (and sometimes necessary) to logically guarantee a set of results (implications). Models provide the researcher with a window into a simpler more perfect world that is not fraught with the many complications that exist in the real world. A model is a purposefully simplified version of reality and as such should never be considered a perfect reflection of the real world; all models would fail this test.

This need not be viewed as a fatal flaw though. Adjusting the assumptions in a model is like running an experiment, in that it allows us to judge the importance of each assumption in reaching the conclusion. Relaxing assumptions also provides a better understanding of why the assumption was included in the first place. Sometimes the assumption is there because the economist believes it is a critical feature of the real world. But many times the assumption is there merely because it simplifies the analysis and rules out more complicated situations. Distinguishing these two types of assumptions for students, what I label consequential and inconsequential assumptions, is a very useful exercise.[14]

The Necessity of Self Interest

Utility seeking self-interest motivates the creation of surplus value through exchange. To understand the importance of this motivation one can imagine an alternative assumption.

First of all, if one or both of the agents were not self interested, meaning they have no desire to increase their utility, then we cannot assure that any discussion about trading possibilities will actually result in trade. Some motivation to improve one's well-being is necessary for trade to occur at all. Thus, trade requires some degree of self-interest, although not necessarily maximization of utility.

Second, suppose that Smith wishes to increase his utility though trade, but suppose Jones has grown up in a family that preaches the value of self-sufficiency. Both agents may

[14] For example calling the two goods apples and oranges is inconsequential t the main result, the result remains true no matter what the two goods are. But assuming that Smith and Jones have prefect information, or that they maximize utility, is consequential because relaxing these will change the final result.

be self-interested but Jones' interest is better served by relying on his own endowment and thus he prefers not to trade. Jones' indifference curves over the goods may still be relevant, but only under the added assumption that different bundles being compared are acquired independently and not via the dependency of trade. With this new assumption, the potential surplus value will not arise, because trade does not occur. Because of Jones' preferences he prefers this outcome, but Smith is clearly worse off if he cannot find a trading partner with the same values willing to cooperate. Acceptance of utility-seeking self-interest achieved via dependency on trade with others, then, is an ethical principle needed for a market to function. Another way to say this is that Smith and Jones agree to cooperate with each other, to help each other out through trade. In contrast, a belief in self-sufficiency is non-cooperative and thus implies an alternative ethic that is inconsistent with the operation of a simple market.

However, there are additional ethical principles implicitly hidden within the assumptions listed above; first that trades are mutually voluntary and second that there is perfect information about preferences and goods.

The Necessity of Respect for Property

If Smith is truly intent to maximize his utility and wants to reach the highest utility possible then that outcome would be realized at point K in Figure 1 where Smith gets all of Jones' apples while simultaneously keeping all of his oranges. Jones' utility falls to zero in this outcome and thus Jones would never agree to it; the outcome would not be mutually voluntary. But if we ask whether it is conceivable for this allocation to be realized, the answer is yes.

One mechanism is by the use of violence or force: Smith could hit Jones with a club, knock him out cold, and take all his apples. Another possibility is by threat: Smith could point a gun at Jones, threaten to shoot him if he doesn't give him his apples, thereby forcing compliance. A third possibility is by stealth: if Jones leaves his goods momentarily unattended, Smith could surreptitiously put Jones' apples into his own bag. No one would hesitate to call any of these actions "theft." Smith is clearly stealing the apples to achieve his maximum utility. However, in calling this theft, certain assumptions are implicitly being made.

First we are assuming that Jones owns the apples. They belong to him. They are his possession or property. Theft only has meaning if we first assume a property system in which individuals are assumed to own their possessions.

At its most basic level, property requires a belief on the part of the participants that a possession gives the privilege of its use. It's a belief that what's mine is mine to use as I please, and what's yours is yours. As such, the taking of what's yours as mine (theft), is a violation of a system of property.

That respect for personal property may reasonably extend to property in one's own body. One of the greatest fears that people have is the concern about physical injury. While injury can arise when a thief steals something from another, injury can also occur without the intent to steal. For example, a criminal may be motivated by anger and merely intent on causing harm to others. Alternatively a terrorist group may cause injury and death by exploding a bomb in a public place. These actions put individuals at risk of injury or death. They can also affect the functioning of market activity if the well being of individuals is threatened either at the market location or while the persons or goods are in

transit to the market location. Thus, it is important for traders to feel safe and secure when they travel to and participate in the market. If physical safety is sufficiently threatened they may not go to the market and thus trade will not occur. In other words, without such respect or protections, the market may not even materialize.

For the market to function effectively we must assume adherence to an ethical principle for the acceptance and respect for property claims. The property principle is cooperative because both agents must accept the principle together and be willing to depend on each other through trade for mutual advantage.[15]

In a market model, when we assume that market participants accept only mutually voluntary trades, we are also implicitly accepting that the participants refrain from theft or threats of force to get their own way. The ethical principle is an acceptance and respect for personal property. Without this the market will fail.

The mutually voluntary assumption also implies an expression of freedom for the individual that is closely connected to individual property rights. If a terms of trade is suggested that would lead to a reduction in welfare for one of the agents, the mutually voluntary assumption implies that an individual is free to refrain from trade. If a participant wants to trade she can, but if she prefers not to, then she can hold onto her original endowment. There can be no coercion to trade on unacceptable terms. Coercion of any sort would require the power of force, or threat of force, against the weaker of the market participants. However, the market model assumes that such expressions of power do not occur; instead trades are always mutually voluntary.

[15] This argument is made by Coleman (1987) attributing the idea originally to Frank Knight.

The belief in a property system and respect for it can arise in several ways. First, it may be inculcated through a process of religious training (thou shalt not steal; thou shalt not kill) and enforced with the threat of eternal damnation for serious violators. In this case a person may have a belief in a God given "right" to property and any violation of that right represents a transgression against God.

Secondly though, a property system can be created by the State through the establishment of property laws with enforcement accomplished using a criminal justice system. In this case, a property "right " is established by the State and violations of those rights can result in State penalties.

Note that a property "right" is not absolutely necessary for the market to function; instead one merely needs the individuals to accept each others' property claims and agree to avoid force and coercion to benefit themselves. The establishment of "rights," with its associated enforcement, instead represents a mechanism designed to achieve this objective.

The Necessity of Honesty

Another key assumption of the standard market model is that the participants have perfect information about their preferences, about the products and their quality and about how the market works. Violations of one or more of these assumptions can lead to unsatisfactory outcomes.

For example suppose the two participants know their own preferences perfectly and that the goods are of identical and known quality. Suppose further that the market consists of many traders who regularly exchange goods at a price of one orange per apple

(to a point such as D in Figure 1). However, suppose one of the two traders, say Smith, is a newcomer to the market and is not aware of the usual price. In this case, Jones, sensing the presence of a novice, might offer the terms, 2 oranges per apple, (trading to point C in Figure 1) while telling Smith that this is the usual price in the market. If Smith reckons that with that offer he can raise his welfare then he might exchange mutually voluntarily with Jones.

Note that the presence of imperfect information now offers an opportunity for Jones to deceive Smith and get a better deal for himself. Relative to the typical market pattern, Jones improves his welfare. Smith is not worse off with the trade, just worse off relative to the market standard. In this case Jones uses deception to shift the surplus in his direction. They both go home with surplus value, only Jones gets a bigger share of it. Smith might never realize the deception unless he later becomes a regular trader in the market and learns the typical terms of trade. At that point he might avoid future trades with Jones. This explains why deception can cause negative reputation effects and long term losses and why this activity is less likely when market participation is recurring. Jones' actions could pay off, however, if he believes his interaction with Smith is a one-time event.

Consider another situation. Suppose the products are not homogeneous and of known quality. Indeed suppose that traders are communicating with each other from a distance, relying on verbal or written descriptions of the products being traded but without having an opportunity to examine and check the goods being purchased. In this case there is room for deception again. Indeed one real world problem that regularly arises is that, products once received and paid for turn out not to be at the expected quality level or standard. Alternatively, money may not be received from the buyer after the products have

been delivered. Or again, products are often advertised in ways that embellish its qualities well beyond its true nature.

All of these situations require a lack of information for at least one of the participants. Clearly, numerous deceptive practices are possible with imperfect or asymmetric information. If the traders truly had perfect knowledge about the products, as is generally assumed in the standard market model, then such deceptions could not occur.

Table 1 provides a comparison between the standard way of presenting the assumptions of a pure exchange model and the ethics based set of assumptions. The standard economics description "rules-in" the good outcome. It illustrates what would have to be true to assure mutual gains from trade in a market. The ethics-based set of assumptions, in contrast, "rules-out" the bad outcomes that could arise. They illustrate what could arise if certain ethical norms were not followed. Both sets of assumptions are consistent with each other and lead to the same results.

Table 1

Comparison of Assumptions in a Pure Exchange Model

Standard Economics Description	**Ethics-Based Description**
Traders are self interested utility-seekers (maximizers); Traders accept dependency of trade	Traders are self interested utility-seekers (maximizers); Traders accept dependency of trade
Trade is mutually voluntary	Property rights: Endowments are owned by the trading agents;

	Agents know who owns what
	Property rights are respected: No theft and no damage occurs
	Freedom to trade or not trade is respected: agents do not use force or threat of force
	Personal safety is guaranteed: Agents do not use force or threat of force to affect the outcome.
Homogeneous goods	No deception; No lying or cheating occurs; Promises are fulfilled
Perfect Information: Agents know own preferences Agents know market norms Agents know product qualities	

Common Market Misunderstandings

By emphasizing the ethics-based assumptions to students it is possible to clarify some widespread misunderstandings. Consider the following questions that can be used to promote student discussion.

Q. Why do economists sometimes contend that self-interest, even greed, is good?

A. Because in the context of the standard market model with the assumptions holding, self-interest is needed to bring individuals together in a market and create the surplus value that will accrue to both participants through trade. The desire to better oneself, when pursued under the assumptions of the market mechanism, will also benefit your trading partner. Market exchange is a win-win situation.

Q. Why do most people believe that greed is a bad thing that needs to be stamped out?

A. Because if self-interest is excessive it may lead agents to deceive, steal, or threaten others in order to achieve a better outcome for themselves, in which case surplus value is not generated for all agents. Instead one agent gains at the expense of the other. This does not occur in the standard market model because it is assumed away with the assumption that market participants adhere to a basic system of ethics.

Thus, those who applaud the Michael Douglas speech in the movie Wall Street, are basing their acceptance on one set of assumptions (self-interest that is not excessive and does not cross ethical boundaries), while those who abhor greed and believe it should be stamped out are basing their view on a different set of assumptions (that self-interest will cross the ethical boundaries and be excessive, i.e., greedy).

Indeed, the ethical system that underpins the market system can provide a way to distinguish acceptable self-interest from excessive self-interest (or greed). Acceptable self-interest includes methods to better oneself while respecting others' property, avoiding theft, deception, threats, the use of coercion and always keeping one's promises. In contrast, greed can be defined as behavior that betters oneself as a result of a violation of any of these same ethical principles. Thus, a Bernie Madoff, convicted of investor fraud,

was greedy and dishonest because he deceived his investors and was unable to fulfill his promises to them, whereas, a Bill Gates was not greedy (only self-interested) when he made billions of dollars by providing a much-desired product to people in the marketplace.

This distinction can also enable one to define a simple set of business ethics. Corporations are often disparaged under the presumption that they will do anything to satisfy their greed for greater profit. It is regularly suggested that the purpose of a corporation is to maximize the return to shareholders. This might be interpreted to mean that corporations may deceive and bribe and cheat their customers in order to improve the bottom line. As such the pursuit of profit becomes an evil trait that deserves condemnation.

That businesses are greedy presumes that they do not act ethically; but, by virtue of that, the behavior is inconsistent with the standard market model. To be consistent with the assumptions of the market model businesses would have to conform to the ethical principles forbidding theft, deception and threatening behavior. Good business ethics allows for self-interest, but does not allow for greed.

Q. Which is a more accurate depiction of reality, the market model in which self interested agents generate social benefits for all via the invisible hand of the market, or the world of market critics who believe that greed is an evil that needs to be stamped out?

A. Both are right! The world economy consists of an impressive collection of markets that have allowed for trade, and its subsequent specializations, to deliver the most extensive collection of goods and services the world has ever seen. World GDP has grown at a

phenomenal rate in the past few hundred years and it is obvious that this could not have happened without the expansion of specialization and trade motivated by self-interest. At the same time, attempts to satisfy greed via force, threat of force, deception, theft, corrupt practices, and other unethical behaviors is widespread. The ethical assumptions in a market model are clearly not always satisfied. In these cases, greed results in non-market outcomes. The world is both a place where self-interested behavior has promoted science and innovation and created new products that has fueled a phenomenal increase in the world's average standard of living AND a place where excessive greed has led to force, violence, theft, trickery, and dishonesty.

Q. Isn't it true that if unethical behaviors occur in the real world then the model is falsified, or invalid?

A. It is worth highlighting to students that a violation of an assumption of the market model does not mean that the market ceases to work or that the results of the model are falsified. It is clearly true that the assumptions of the model are not always fulfilled in the real world. Theft does exist. Companies do sometimes lie about their products. Information is never perfect. Nevertheless, in many instances the assumptions of the model are very nearly fulfilled.

One could ask students to consider all of the purchases they have made in the past month. These would include purchases of food and clothing, payment for their dorm room, purchases of cell phone and cable TV services, restaurant meals, movie tickets, etc. Then ask to estimate what percentage of these purchases they believe were reasonable; in other words did they receive what they expected and were they pleased to have purchased the

products? You might even inquire what percentage were repeat purchases. Then ask, in what percentage of these purchases did they feel deceived? Were they robbed during the month? Did they ever feel threatened or feel forced to make a purchase?

Reflections such as these should lead students to conclude that most of their monthly purchases are well informed and result in satisfactory trades that will be repeated regularly over and over again. Most students were not robbed during the month, they were not deceived, they did not feel threatened and they did not feel unsafe in the marketplaces. Note that this cannot be said about every location in the world today and it is worth asking students to consider the effects that violence, war, corrupt practices and deceptions might have on the efficiency of markets.

The implication is that the market assumptions are fulfilled much of the time in many markets around the world. Perfect enforcement of property rights can assure the mutually advantageous outcome in a market model, but that doesn't mean that markets fail completely if property right enforcement is not perfect.[16] Instead the usefulness of the model is to highlight why the favorable market outcomes are assured when the ethical assumptions of the model are fulfilled and why unfavorable outcomes can arise when the assumptions are unfulfilled. It also motivates the following question.

Q. What are the institutions that can or do help to promote the ethical behaviors that contribute to favorable market outcomes?

A. There are both private mechanisms and public mechanisms that are regularly applied to promote ethical behavior in society.

[16] Fukuyama (2011) argues that property rights need not be perfect but rather need to be "good enough" to foster the development of markets.

On the private side, the ethical norms of the market are a subset of virtually every society's moral codes. Children around the world are taught not to hurt each other, not to steal, lie, cheat or deceive others and to uphold their promises. All of the major world religions include these rules, among others, as principles of behavior that followers should adhere to. If everyone abided by these ethical principles throughout their lives there would be no need for any other interventions. However, despite the cultural and religious pressures, many people fail at one time or another. In modern religions these are often classified as sins that humankind is invariably drawn towards. A good person is one who adheres to the moral code, which includes these ethical principles; to act otherwise is proscribed by the religions.

However, perhaps because so many people fail to abide by these principles, societies have developed both private and public mechanisms to control unethical behavior. These mechanisms are costly.

Personal property protection is accomplished privately when businesses and households erect fences and walls, or install locks, hire guards and install security systems. Individuals may also own firearms with the expressed purpose of protecting their property and providing safety from intruders.

The problem of incomplete information and distrust can be tackled privately in a variety of ways. Businesses have established trading documents such as letters of credit, bills of lading, bank guarantees, and waybills. Businesses can also guarantee the quality that the consumer expects by providing warranties. Websites can allow previous customers to provide testimonials that help to build a company's reputation.

On the public side, state interventions include laws against violence such as those prohibiting murder, assault and rape. There are laws creating property rights and protections against theft of personal property. There are laws against false advertising, and requirements for full disclosure of ingredients through labeling. In addition to laws, there must also be an enforcement mechanism. A police force is used to patrol and catch perpetrators of crimes. A judicial system is used to make fair judgments about wrongdoing. A prison system is used to incarcerate dangerous offenders. As a result, the individual cost of violating the basic ethical principles is increased via these mechanisms and unethical behavior is thereby discouraged.

In total these mechanisms surely serve to reduce the incidence of violence, theft and deception. Although these efforts, laws and institutions do not eliminate the unethical behavior, the reduction of the incidence should raise the incentives for individuals to cooperate with each other and come together in markets to trade. Indeed one could hypothesize that the reason these ethical norms arose in early human society was precisely because they promote the mutual advantages that can arise from trade. In other words, these ethical principles may have developed in human society because cooperation promotes favorable market trading and improves the well being of the species.

Conclusion

This paper offers a method for introducing the ethics of markets to principles of economics students. The approach uses an Edgeworth box diagram describing a pure exchange market to demonstrate how certain ethical principles, such as the respect for property, the fulfillment of promises, and the avoidance of deception, threats and violence

against others, are necessary to assure the favorable win-win outcome that arises whenever trade, or exchange, occurs.

It is important to emphasize the ethical foundations for market effectiveness because too many people believe that the economic man described in models, often called homo economicus, is both greedy and amoral. This has created a false impression about economic and business behavior that is frequently accentuated in the plots of Hollywood movies.

One way to counter these false impressions is via instruction when students first begin to learn about economics, that is, in introductory microeconomics courses. The most popular economics principles textbooks today barely mention the importance of the core set of ethics sufficient to sustain a market economy. Nor do most popular texts emphasize the importance of the social, religious and government institutions that have evolved to inhibit unethical behavior. If the economics discipline does not teach these principles at the very beginning, then it is little wonder that the popular false impressions are sustained.

This illustration of these ethical principles using the pure exchange model is also conducive to explaining the functionality of models to new students of economics. Too often students think that economic models are meant to be true reflections of the real world. That can lead to a belief that if economic models seem unrealistic then they cannot generate a better understanding of the real world. However, models are simplifications of the real world and thus by definition will have assumptions that are unrealistic.

In the pure exchange model we can question the verity of many of the assumptions including utility maximization, perfect knowledge of preferences, perfect information about the quality of the goods, among others. Translated into the ethical terms, it is easy to

doubt that theft, and threats of violence, and deceptive practices, do not occur in the real world. Nonetheless, the usefulness of the model arises by comparing what would happen when the ethical and other assumptions are fulfilled, to what would happen when the assumptions are relaxed, or not fulfilled. When the assumptions do not hold we can say there are market imperfections, or market failure. With this model students can learn how much more effective market outcomes will be if participants conform to the ethical principles because they will see explicitly what can happen when they are not fulfilled. Students can also be taught how religious and political institutions have developed and are applied to mitigate the problems that arise with these particular market imperfections.

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