ECONOMICS Lecture 6
Value Theory and Exchange

Dedicated to Adam Smith

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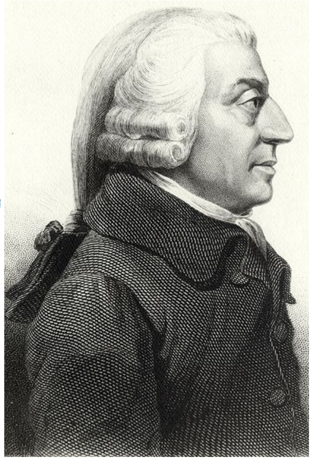
Topics

- What Constitutes Wealth?
- The Diamond-Water Paradox
- Use Value and Exchange Value
- Modeling Market Exchange

The things which have the greatest value in use have frequently little or no value in exchange; on the contrary, those which have the greatest value in exchange have frequently little or no value in use.
~Adam Smith, 1776



This lecture revives two vital concepts in the value theory by Adam Smith and applies them to understanding market exchange. The classical value theory and trade theory are two of the foundations of political economy.

Adam Smith vs Mercantilists

The dominant economic theory of Smith's time was *mercantilism*. It held that the wealth of a nation was to be assessed by the amount of money and goods within its borders at any given time. Smith calls this "stock." Mercantilists sought to restrict trade because this increased the assets within the borders which, in turn, were thought to increase wealth. Smith opposed this, and the sentence cited below shifted the definition of national wealth to a different standard: labor.

The annual labour of every nation is the fund which originally supplies it with all the necessaries and conveniencies of life which it annually consumes, and which consist always either in the immediate produce of that labour, or in what is purchased with that produce from other nations. (WN intro.1)

https://www.iep.utm.edu/smith

Labor, Trade, Wealth of Nations

The main point of The Wealth of Nations is to offer an alternative to mercantilism.

Labor brings wealth, Smith argues. The more one labors the more one earns. This supplies individuals and the community with their necessities, and, with enough money, it offers the means to make life more convenient and sometimes to pursue additional revenue. Free trade, Smith argues, rather than diminishing the wealth of the nation, increases it because it provides more occasion for labor and therefore more occasion to create more wealth. *Limited trade keeps the amount of wealth within the borders relatively constant, but the more trade a country engages in, the wider the market becomes and the more potential there is for additional labor and, in turn, additional wealth. This point leads Smith to divide stock into two parts, that which is used for immediate consumption—the assets that allow a person to acquire necessities—and that which is used to earn additional revenue. This latter sum he calls "capital" (WN II.1.2), and the term "capitalism" (which, Smith does not use) is derived from its use in a commercial system: capital is specifically earmarked for reinvestment and is therefore a major economic engine.*

https://www.iep.utm.edu/smith/#H3

Adam Smith vs Physiocrats

Physiocracy is an economic theory developed by a group of 18th-century Age of Enlightenment French economists (François Quesnay 1694–1774, the marquis de Mirabeau 1715-1789 and Anne-Robert-Jacques Turgot 1727–1781) who believed that the wealth of nations derived solely from the value of "land agriculture" or "land development" and that agricultural products should be highly priced.

The physiocrats made a significant contribution in their emphasis on productive work as the source of national wealth. However, for the physiocrats, only agricultural labor created this value in the products of society. All "industrial" and non-agricultural labors were "unproductive appendages" to agricultural labor.

https://en.wikipedia.org/wiki/Physiocracy

What is Wealth? How to Create it?

- The first theme in The Wealth of Nations is that regulations on commerce are ill-founded and counter-productive. In Smith's time, the prevailing view was that gold and silver was wealth, and that countries should boost exports and resist imports in order to maximize this metal wealth. Smith's radical insight was that a nation's wealth is really the stream of goods and services that it creates.
- The myth of material wealth: economic growth consists not in increasing output of things, but increasing the generation of wealth.
- "Wealth equals material things" is *not* a valid claim, as it omits key aspects of economic life like "specialization" and "exchange" in Adam Smith's commercial society. Wealth, in the economic way of thinking, is whatever people value. Value is in the eye of the chooser.
- What do we gain from trade? Is it accurate to say that the two goods traded have equal value? Can trade add value and create wealth?

https://www.adamsmith.org/the-wealth-of-nations

Adam Smith: Labor Theory of Value

Every man is rich or poor according to the degree in which he can afford to enjoy the necessaries, conveniences, and amusements of human life. *But after the division of labour has once thoroughly taken place, it is but a very small part of these with which a man's own labour can supply him. The far greater part of them he must derive from the labour of other people, and* ***he must be rich or poor according to the quantity of that labour which he can command, or which he can afford to purchase.*** *The value of any commodity, therefore, to the person who possesses it, and who means not to use or consume it himself, but to exchange it for other commodities, is equal to the quantity of labour which it enables him to purchase or command. Labour, therefore, is the real measure of the exchangeable value of all commodities.*

Adam Smith, Wealth of Nations, Book I, Ch6

Adam Smith: Labor Theory of Value

In that early and rude state of society which precedes both the accumulation of stock and the appropriation of land, the proportion between the quantities of labour necessary for acquiring different objects seems to be the only circumstance which can afford any rule for exchanging them for one another. ***If among a nation of hunters, for example, it usually costs twice the labour to kill a beaver which it does to kill a deer, one beaver should naturally exchange for or be worth two deer.*** *It is natural that what is usually the produce of two days' or two hours' labour, should be worth double of what is usually the produce of one day's or one hour's labour.*

Adam Smith, Wealth of Nations, Book I, Ch6

https://www.marxists.org/reference/archive/smith-adam/works/wealth-of-nations/book01/ch06.htm

The Meaning of Value to Smith

In a passage of Adam Smith's An Inquiry into the Nature and Causes of the Wealth of Nations, he discusses the concepts of value in use and value in exchange, and notices how they tend to differ:

*“The word **VALUE**, it is to be observed, has two different meanings, and sometimes expresses the **utility** of some particular object, and sometimes the **power of purchasing** other goods which the possession of that object conveys. ….”*

Adam Smith, Wealth of Nations (1776), Book I

The Diamond–Water Paradox

*The one may be called "**value in use**;" the other, "**value in exchange**." The things which have the greatest value in use have frequently little or no value in exchange; on the contrary, those which have the greatest value in exchange have frequently little or no value in use.*

Nothing is more useful than water: but it will purchase scarce anything; scarce anything can be had in exchange for it. A diamond, on the contrary, has scarce any use-value; but a very great quantity of other goods may frequently be had in exchange for it.

Adam Smith, Wealth of Nations (1776), Book I

The Diamond–Water Paradox

- Adam Smith is often considered to be the classic presenter of this well-known "diamond-water paradox".
- Can you summarize the idea behind the paradox?
- Why is it a paradox? In what sense?

A Diamond is Forever – Eternity Ring

De Beers successfully advertised diamonds to manipulate consumer demand. One of the most effective marketing strategies has been the marketing of diamonds as a symbol of love and commitment. In 2000, Advertising Age magazine named 'A Diamond is Forever' the best advertising slogan of the 20th century.

https://www.debeers.com/en-us/how-to-select-your-diamond.html https://en.wikipedia.org/wiki/De_Beers#Marketing

Solving the Paradox

- Which is more valuable, diamond or water?
- Which is more valuable, diamond or life?
- Which is more valuable, water or life?
- Which is most valuable, D, W, or L?

Use Value and Exchange Value

- **Use Value:** the highest value a consumer esteems from the consumption of a good or service, it can be measured by the maximum amount the consumer is willing and able to pay for the good or service.
- **Exchange Value:** the amount of money or property a consumer actually pays for a good or service. In the market, it is equivalent to the price of that good.
- **Exchange Condition:** a consumer will buy the item if its use value >= its exchange value, by definition.
- **Net gains from exchange (surplus):**

  the difference between use value and exchange value.

The Diamond–Water Paradox

- Adam Smith struggled with what came to be called the paradox of "value in use" versus "value in exchange."
- The paradox was, strictly speaking, a meaningless statement, for Smith had no basis on which he could compare such heterogeneous quantities.
- Moreover, Smith's statement that value in use could be less than value in exchange was clearly a moral judgment, not shared by the possessors of diamonds.
- However, Smith's idea on value in use and value in exchange is extremely meaningful for understanding market exchange.

Modeling Market Exchange

- For simplicity, we consider an exchange process where there are only two individuals - Alex and Biwei.
- Suppose A has a Bitcoin and its use value to A is $10,000; B has no Bitcoin and its use value to B is $11,000.
- Could exchange occur between Alex and Biwei?
- Under what conditions will A sell his Bitcoin? Under what conditions will B buy a Bitcoin? What are the possible prices?
- Suppose they agree on a price of $10,500, is there any gain from the exchange? How to measure such gain?
- **Buyer's surplus**: reservation price minus actual price
- **Seller's surplus**: actual price minus reservation price

Historical Price of a Bitcoin ($)

www.finance.yahoo.com/chart/BTC-USD

Use Value and Opportunity Cost

- If Biwei is willing to pay any amount higher than $10,000, Alex will sell because his gain is more than his cost.
- For Biwei, his use value of having a Bitcoin is $11,000, but if he can actually pay less than that, he would gain from the exchange. One Bitcoin is worth $11,000 to Biwei, personally; however, he pays less to Alex, therefore, he gains the difference.
- Recall that opportunity cost of an event is the highest-valued option necessarily forgone. For Alex, the use value of a Bitcoin ($10,000) is the highest amount he is willing and able to pay. Therefore, it is also Alex's opportunity cost of selling or supplying the Bitcoin to Biwei. Meanwhile, the opportunity cost of holding the Bitcoin for Alex is the exchange value received from Biwei.

Modeling Market Exchange

- An economy consists of Alex and Biwei;
- Both demand apples;
- Alex has 6 apples;
- But Biwei has none;
- Marginal use value means the use value for an extra unit.
- What is the exchange equilibrium?

Quantity of Apples	Alex's Marginal Use Value	Biwei's Marginal Use Value
1	$1.00	$2.00
2	$0.90	$1.60
3	$0.80	$1.20
4	$0.70	$0.80
5	$0.60	$0.40
6	$0.50	$0.00

Modeling Market Exchange

Refer to the assumptions in the previous slide,

- Who is the supplier of the apples?
- Who is the demander of the apples?
- What is the condition for exchange?
- In equilibrium, how many apples does Alex sell?
- How many apples does Biwei purchase?
- What is the exchange value or equilibrium price?
- All else the same, suppose Biwei has all 6 apples, what would you conclude on the new market equilibrium?

Adam Smith on Commercial Society

The term "commercial society" refers to attempts to theorize systematically the matrix of relationships and behaviors that emerged during the processes of rapidly evolving labor and goods markets, rising standards of living, and shifting class relations which occurred in Europe in the seventeenth and eighteenth centuries. These processes occupied many of the pre-eminent thinkers of the day, roused new lines of social scientific inquiry – in particular, what is today referred to as the study of political economy – and inspired many of the great figures of the Scottish Enlightenment. The most pre-eminent of these theorists, Adam Smith, argued in book I of The Wealth of Nations (1776) that commercial society arises when the division of labor is "thoroughly established," forcing highly specialized laborers to sell and barter their labor surplus in an increasingly intricate marketplace: "every man thus lives by exchanging, or becomes in some measure a merchant." In addition to the division of labor, Smith and others pointed to a system of robust property rights, a rigorous application of the rule of law, relatively broad freedom of movement for economic actors (especially laborers), and expanding domestic and international markets as the hallmarks of commercial society.

Brandon P. Turner (2014)

2014 The Encyclopedia of Political Thought. Wiley.

Evolution of The Theory of Value

The Labor Theory of Value: Classical political economists found value to be determined in production (most of the cost of production could be reduced to labor).

- Adam Smith's (1723-1790)
- David Ricardo (1772-1823)
- Karl Marx's (1818-1883)

Marginal Theory of Value: Austrian & Neoclassical School of Economics looked for value in the market act of subjective utility and mutual exchange.

- William Jevons (1835-1882)
- Leon Walras (1834-1910)
- Carl Menger's (1840-1921)
- Alfred Marshall (1842-1924)

https://www.tcd.ie/Economics/assets/pdf/SER/1996/Martin_Fogarty.html
http://www.d.umn.edu/cla/faculty/jhamlin/4111/2111-home/value.htm#sraffa

The Labor Theory of Value

The value of any commodity, therefore, to the person who possesses it, and who means not to use or consume it himself, but to exchange it for other commodities, is equal to the quantity of labour which it enables him to purchase or command. ***Labour, therefore, is the real measure of the exchangeable value of all commodities. The real price of everything, what everything really costs to the man who wants to acquire it, is the toil and trouble of acquiring it.***

Adam Smith (1776) Wealth of Nations

The value of a commodity, or the quantity of any other commodity for which it will exchange, depends on the relative quantity of labour which is necessary for its production, and not on the greater or less compensation which is paid for that labour…Mr. Malthus appears to think that it is a part of my doctrine, that the cost and value of a thing be the same;—it is, if he means by cost, "cost of production" including profit.

David Ricardo (1817) Principles of Political Economy and Taxation

Utility and Costs are Subjective

- The **Austrian School of Economics** was founded in 1871 with the publication of Carl Menger's Principles of Economics. Menger, along with William Stanley Jevons and Leon Walras, developed the marginalist revolution in economic analysis.
- **All economic phenomena are filtered through the human mind**. Since the 1870s, economists have agreed value is subjective, but, following Alfred Marshall (1842-1924) in his 1890 Principles of Economics, many argued that the cost side of the equation is determined by objective conditions.
- Marshall insisted that just as both blades of a scissors cut a piece of paper, so subjective value and objective costs determine price. But Marshall failed to appreciate that **costs are also subjective because they are themselves determined by the value of alternative uses of scarce resources.** Both blades of the scissors do indeed cut the paper, but the blade of supply is determined by individuals' subjective valuations.

https://www.econlib.org/library/Enc/AustrianSchoolofEconomics.html

Say's Law: Supply Creates Demand

It is worthwhile to remark that a product is no sooner created than it, from that instant, affords a market for other products to the full extent of its own value.

J. B. Say, 1803, pp.138-9

- The crude formulation of "Say's Law" is that "supply creates its own demand" which is rather cryptic in meaning. It was first put forward in Jean-Baptiste Say's Treatise of Political Economy in 1803 and famously rejected by John Maynard Keynes in his General Theory (1936).
- It has been largely ignored by mainstream economists ever since. The idea that production is logically prior to consumption, that producers come together in "markets" to exchange what they have produced for other things which other people have produced, and that these markets "clear" at voluntarily agreed upon prices, was also taken up by James Mill in 1808 in his "defence of commerce".

https://oll.libertyfund.org/quotes/544

James Mill on the "Say's Law"

No proposition however in political economy seems to be more certain than this which I am going to announce, how paradoxical soever it may at first sight appear; and if it be true, none undoubtedly can be deemed of more importance. The production of commodities creates, and is the one and universal cause which creates a market for the commodities produced. Let us but consider what is meant by a market. Is any thing else understood by it than that something is ready to be exchanged for the commodity which we would dispose of? When goods are carried to market what is wanted is somebody to buy. But to buy, one must have wherewithal to pay. It is obviously therefore the collective means of payment which exist in the whole nation that constitute the entire market of the nation … (and) the more you increase the annual produce, the more by that very act you extend the national market, the power of purchasing and the actual purchases of the nation.

James Mill, 1808, Commerce Defended

https://oll.libertyfund.org/quotes/544

References

[1] http://en.wikipedia.org/wiki/Paradox_of_value

[2] Stigler, George (1950), The development of utility theory I. JPE 58(4)

[3] http://blog.sina.com.cn/s/blog_47841af70102e95c.html

[4] We're Still Haunted by the Labor Theory of Value https://fee.org/articles/were-still-haunted-by-the-labor-theory-of-value/

[5] Austrian School of Economics https://www.econlib.org/library/Enc/AustrianSchoolofEconomics.html

[6] Say's Law https://www.economicshelp.org/blog/glossary/says-law/

[7] 张五常 (2014),“经济学的理论结构与科学性”，《科学说需求》

Videos

201611 How is Wealth Created | Savings and Investments 8:44
https://www.youtube.com/watch?v=Oi9cq7tXkmg

201608 The Paradox of Value - Akshita Agarwal 3:45
https://www.youtube.com/watch?v=e7S8jWh6AEs

201801 The Value Of Things - How Do We Determine It? 4:36
https://www.youtube.com/watch?v=VpuEDsPvEBA