

How Economists Think

1. Issues and perspective

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Economics studies scarcity and choice

- The central problem economics addresses is scarcity:
 - Humankind's material wants exceed its productive capacity.
 - Therefore individuals, households, groups, societies, nations all must make choices and trade-offs:
 - allocate limited productive resources – labor, materials and machinery, clean water and air, ... – to alternative uses, and distribute the outputs – goods and services – among alternative users.
- Different methods and institutions for making these decisions have different advantages and drawbacks.
- The study of all of this constitutes economics.

What it is not

- Scarcity does not mean poverty. In fact the study of how countries can grow their economies better and increase the living standards of their citizens is one of the most important fields of research in economics. Economics is challenging, but not dismal.
- Scarcity is relative, not absolute: productive resources and technologies are inadequate in relation to their many desirable uses.
- Assessments and choices involve comparisons: Are prices high relative to wages or vice versa? Should society value spending an extra dollar on a poor person more than giving it to a richer person?

Two prominent alternative solutions

- Top-down or command economy: government makes plans for production and distribution. This goes against notions of liberty. Perhaps most importantly, found not to work well in practice: information needed to make plans hard to get.
 - Karl Marx (1875): “From each according to his ability; to each according to his need.” But people can pretend too little ability and too much need!
- Price mechanism: High price gives information of scarcity, and creates private incentive to relieve scarcity – produce more, consume less.
 - Adam Smith (1776): “It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own self-interest.” Idea of the “invisible hand”.

Qualifications

- Prices should be established in markets, where producers compete with one another to supply goods and services, and buyers compete with one another in bidding to acquire these. Under some assumptions, this can be mathematically proved to be an efficient solution to the scarcity problem, and found to work reasonably well in practice.
- But this is only the simplest “Lesson 1”. The invisible hand fails, or works imperfectly, in many situations. Need to understand why / how, and what to do then – what is the right mix of private choice and public policy.
- In these mini-lectures I offer briefly explain both possibilities, but must leave out many rich details and nuances. Much fascinating further study of economics awaits you – in further lectures and in college courses.

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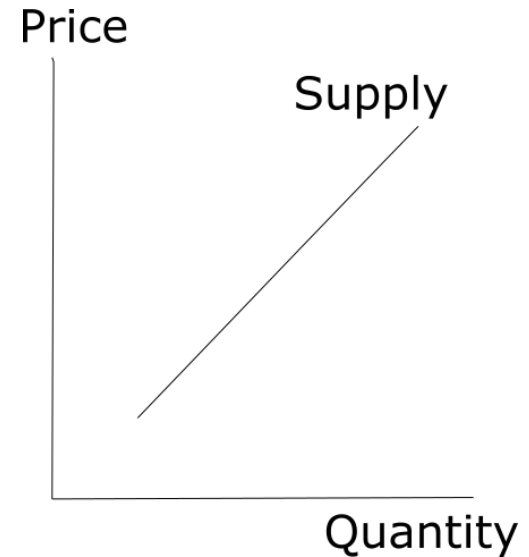
2. Demand and supply

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The supply-demand cross

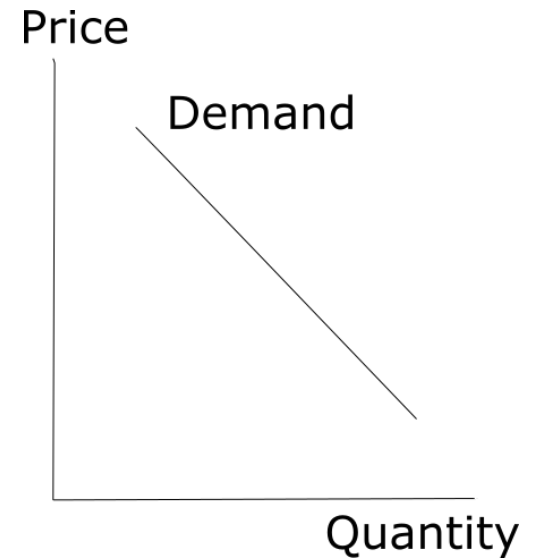
- Economists' main tool to study markets.
- In a diagram with price on one axis and quantity on the other, and two curves: a supply curve showing all possible choices of sellers, (how much they wish to supply at each conceivable price)



The supply-demand cross

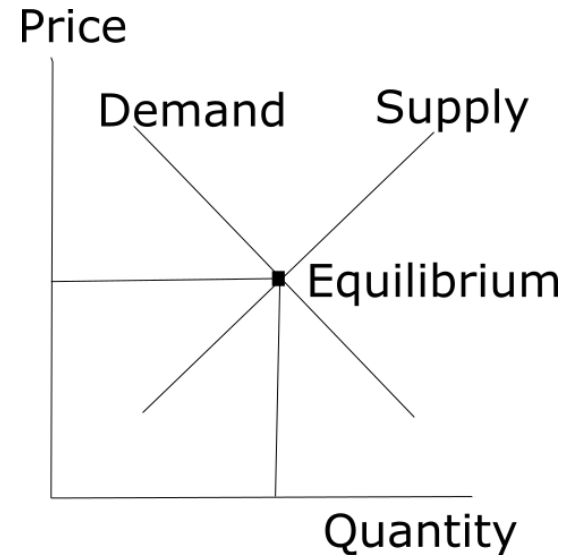
- Economists' main tool to study markets.
- In a diagram with price on one axis and quantity on the other, and two curves: a supply curve showing all possible choices of sellers, and a demand curve showing those of buyers.

(These are shown as straight lines only for visual simplicity. Actual shapes vary, and for any specific market, can be found using statistical methods.)



The supply-demand cross

- Economists' main tool to study markets.
- In a diagram with price on one axis and quantity on the other, and two curves: a supply curve showing all possible choices of sellers, and a demand curve showing those of buyers.
- The meeting-point of the two curves shows the price-quantity combination where the two sides' choices are mutually consistent: market equilibrium.



Supply curve

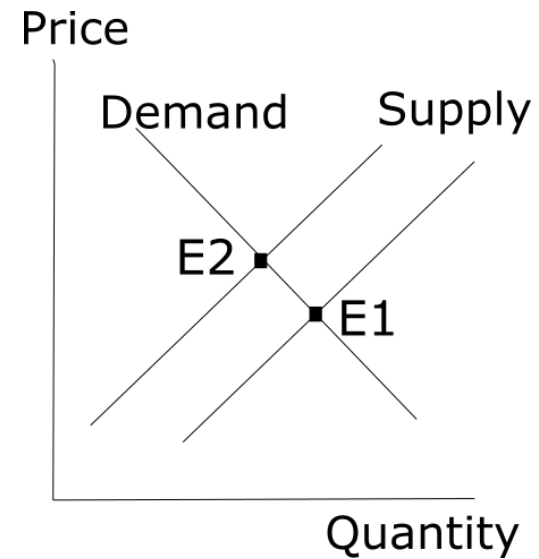
- Generally slopes upward: a higher price makes it worthwhile or profitable to produce more and offer it for sale, by
 - working harder or hiring more labor, overtime for existing labor, using equipment more intensively or investing in more, using more raw materials,
 - transferring resources from other uses,
 - drawing down on previously accumulated inventories,
 - bringing worse-quality land into production,
 - extracting minerals, crude oil etc from lower-quality deposits ...
- Exceptions exist, but reserved for next level of study

Demand curve

- Can arise from rational calculation of how to spend income and time on alternative wants. But can also be instinctive or impulse actions, social pressures, media influences etc. Economics nowadays includes such psychological and sociological perspectives in its methodology.
- Generally slopes downward – less purchased at higher price – by
 - substitution of similar things that are now relatively less expensive
 - making at home instead of buying in market, and similar workarounds
 - reorganizing schedules e.g. reduce driving when gas prices rise
 - doing without, for some non-essentials
 - resisting impulse purchases and social pressures, ...
- Again exceptions exist; you will meet them at next-level courses

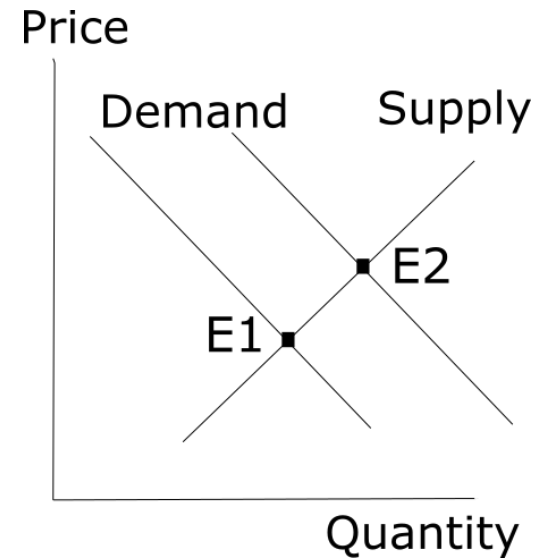
Shift of equilibrium 1

- Changes arising outside this market can shift supply and demand curves in it, and therefore shift its equilibrium.
- Example: drought reduces coffee crop; shifts supply curve of coffee at your store to the left. Equilibrium shifts from E1 to E2. Price is higher and quantity lower.
- These adjustments may take time. Equilibrium is tendency, not perfect reality at every instant.



Shift of equilibrium 2

- Coffee is believed to be a superfood preventing heart attacks. Demand curve shifts to the right. Equilibrium shifts from E1 to E2 as shown in the diagram. Result: higher price and higher quantity.
- Changes in market prices and quantities depend on the nature of the “shock” that shifts the supply and/or demand curves. Statistical methods for identifying such causes and effects exist; you will study and apply them in higher-level courses.



How Economists Think

3. Macroeconomics

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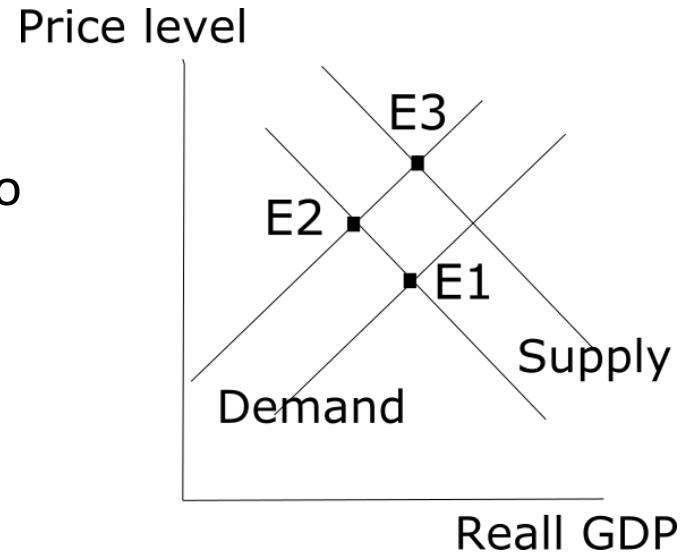
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Aggregate supply and demand

- Previous mini was about one market – e.g. coffee (although even that could be split into several markets by location, quality, ...). In later studies you will also examine how one market influences outcomes in others, e.g. the price of coffee affects the demand for tea (substitute) and sugar (complement). All that is the focus of microeconomics.
- But same supply-demand analysis can be applied to the economy as a whole, and helps explain levels of, and movements in, aggregates such as the Gross Domestic Product (GDP) and employment, and the overall price level and inflation. This mini gives a brief introduction to these methods.

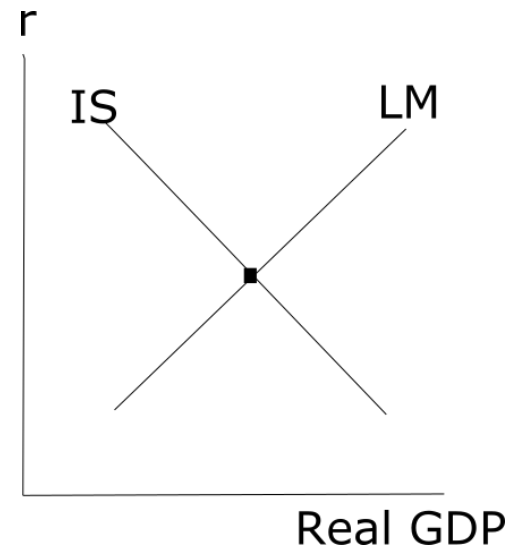
Example: effects of the pandemic

- Figure shows the general price level on the vertical axis, and “real” (inflation-corrected) GDP on the horizontal. If supply curve shifts to the left, for example because of the Covid-19 pandemic and its shocks to the supply chain, the equilibrium shifts from E1 to E2: lower GDP and higher price level (stagflation).
- If the government responds with fiscal and monetary stimulus (expands aggregate demand), equilibrium shifts to E3, raising employment back to original level but the price level is now higher (inflation).



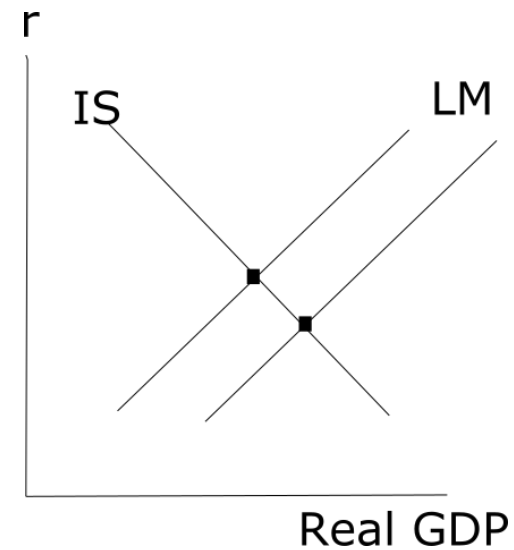
Money and interest

- Related but different methodology. Figure with interest rate r on vertical axis and (real) GDP on horizontal. Two curves:
- IS curve shows combinations of r and GDP that will equate demand for investment and supply of saving.
- LM curve shows combinations that will equate demand for, and supply of, money.
- Intersection gives equilibrium r and GDP.



Example: effect of central bank policy

- If the central bank expands the money supply, the LM curve shifts to the right. The new equilibrium has lower interest rate a higher GDP.
- Need more complete analysis: if the GDP rises close to the productive capacity of the economy, prices will start to rise. So the effect of monetary expansion – real GDP increase or inflation – depends on the initial condition of the economy.



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4. Failures of the Invisible Hand

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Best-case scenario

- For goods and services that can be produced and sold to private uses in competitive markets, the price mechanism, with its information and incentives properties, yields an efficient allocation of resources: no further gains remain to be achieved to make someone better-off without making someone else worse off.
- But that statement carries many qualifiers. In situations where any of those stipulated conditions are not valid, the invisible hand fails to achieve such an optimal outcome.
- Analyses of what happens then, and how outcomes can be improved upon, constitutes the bulk of economics beyond “Lesson 1”. This and the next mini give a brief account of various problems and solutions.

Monopoly power

- In an industry with just one or very few firms, they can restrict supply and raise prices above competitive levels. Result – inefficiently low output; high prices and profits. Contributes to greater inequalities of wealth and income.
- Reasons for this:
 - Scale or network effects, especially in modern tech industries, platforms
 - Strategic actions by incumbent firms to keep out others
 - Kings handed out, or governments tolerate, monopolies in exchange for money or political favors

Asymmetric information

- One side in a market transaction may have better information about the commodity, especially about product quality. Example: used cars. Sellers know whether their cars are good, or “lemons”. Prospective buyers don’t, so they won’t pay more than the right price for an “average” car. Then owners of better cars are reluctant to sell. That lowers the average quality on the market ... In this spiral, the whole market may collapse.
- Solution: owners of high-quality products can use “signals” that are too costly for owners of low-quality to mimic. Example: education as a signal of skill, work ethic etc. in labor market. But signals must be taken to excess to overcome mimicking, so solution carries social cost.

Inequality

- Equality of rights & opportunities versus equality of outcomes.
- Former is more basic concept, but subtle and hard to achieve
- Can be luck: parents' genes or wealth, ... Also biases (race, gender)
- Some inequality of outcomes is an unavoidable consequence of the working of incentives and information, innovation, entrepreneurship.
- But too much inequality of outcomes
 - is morally repugnant
 - leads to inequality of opportunities in the next generation
 - can create political, social conflicts – big issue during last decade
- Tax, subsidy and expenditure policies can help, but affect incentives, favor some over others, and become politically controversial.

Intergenerational Inequality

- If we use up too much of the earth's resources, too little will be left for future generations. Carbon emissions from burning petroleum, coal and wood cause climate change with serious consequences. Depletion of productive soil and fisheries also reduce their value to future generations for a long time.
- The future generations have no say in these decisions we make, so we have to exercise moderation on their behalf. This has proved difficult both economically and politically.
- These important issues in the fields of public economics and political economy are introduced very briefly in the next lecture.

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5. Public Goods, Collective Action

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Public goods

- Pure private good: (1) when one person consumes it, no one else can, (2) anyone who has not paid can be excluded from consuming.
- Pure public good: (1) one person's consumption does not interfere with another's, (2) non-payers cannot be excluded. Most extreme example: national defense against nuclear missiles.
- So no one selfishly inclined will pay anything for a pure public good, but if everyone hopes to "free-ride" on others' payments, it will not be provided! The invisible hand won't work.
- Most goods are mixed in their properties: (1) one person's use only partly affects another's (e.g. congestion), (2) consumption communal but non-payers can be excluded (e.g. clubs).

Public “bads”; negative externalities

- One person’s consumption interferes (negatively affects) another’s: congestion and pollution.
- Broader idea of “externalities,” positive and negative.
 - One person getting vaccinated reduces risk for others, vaccinated or not
 - One extra person driving increases time taken by all others
- If each person acts selfishly, there will be too little of activities with positive externalities, too much of those with negative.
- How to get better outcomes: (1) teach people to be more prosocial, (2) affect behavior by social norms & sanctions, (3) taxes and laws.
- What works better depends on the context: roughly, persuasion and social norms in small groups, taxes and laws in large, more diverse societies. But nothing will be perfect; must accept “second-best”.

How to provide public goods, avoid bads

- Goods that are public only within a small group, which can exclude outsiders, can provide them using its own institutions of social norms and sanctions. Example: small dams, lake fisheries.
- Larger more diverse groups need taxation to raise funds, or other forms of contributions (e.g. labor time) to produce or procure public goods, with formal laws and their enforcement.
- More generally, societies have and develop many institutions to solve problems of collective action using non-market methods.
- Quality of institutions can importantly affect whether a society has a successful economy with a good standard of living for its members.

Co-existence or no existence

- Without good institutions, societies and countries may languish in poverty, or worse.
- Too little of public goods will be provided – defense, education, health, all of which have significant public features and implications for the whole population's standard of living.
- Too much of public bads – congestion on roads, pollution of air and water, epidemics, ...
- Latest existential problem: climate change. Carbon emission is a global public bad. Its control needs rules and actions not within a society or country, but across all countries, so politically very difficult to get worldwide decisions and action.

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6. Summing Up

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What economics does

- Economics studies important questions facing society: how best to develop and use its resources, labor, and technology for the benefit of its members.
- A general finding: if production and consumption are of private goods and services, without significant public good/bad or positive/negative externalities, and trade is in competitive markets, then price system provides good information and incentives for efficient solution.
- But many matters go beyond this list of “if”s. Society must develop other institutions and policies to cope with those situations. Economics helps us understand and design these also.

The methods economics uses

- A combination of:
- (1) conceptual or theoretical analysis, often using geometric, and at higher levels algebraic and game-theoretic, techniques to build models which can illuminate the questions and find answers;
- (2) statistical analysis of data to test hypotheses and refine models for further use in forecasting etc. – this is becoming more and more important in today's age of big data and powerful fast computers;
- (3) historical analyses to get longer-term perspectives and find bigger issues and trends.

Relation to other social sciences

- Economics used to assume that all people were perfectly rational and selfish. No longer – insights from Psychology and Sociology are getting well integrated into economic analysis of behavior, and History has become increasingly more important to our understanding of the economic world.
- Economics used to assume that policy was made by governments with full information, powers, and concern for the whole of society. No longer – policy is well understood to be made with incomplete information and by governments under influence of political pressures and lobbying.
- It also used to assume that the legal system worked perfectly and costlessly to protect property rights and enforce contracts. No longer – imperfect legal and social institutions are part of the analysis.
- All this is included in detail in the next levels of your studies.

Why you should study economics further

- It is an intellectually attractive combination of scientific methods (statistical data analysis, computation, mathematical theories) and human concerns (coming from history, philosophy, even literature).
- Potential application and contribution to understanding and solving many important and pressing social problems – relief of poverty and inequality, conservation of the planet's resources, ...
- And don't forget a practical benefit: economics graduates have excellent opportunities for further studies and productive careers in business, finance/banking, law, politics, ...

Short list of suggested readings

- Avinash Dixit, *Microeconomics: A Very Short Introduction*, Oxford University Press, 2014.
- N. Gregory Mankiw, *Principles of Economics: 9th Edition*, Cengage Learning, 2020.
- John McMillan, *Reinventing the Bazaar*, WW Norton, 2002.
- Stephen J. Dubner and Steven Levitt, *Freakonomics*, Morrow, 2005.
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- Thomas C. Schelling, *Micromotives and Macrobehavior*, WW Norton, 1978.
- William J. Bernstein, *A Splendid Exchange: How Trade Shaped the World*, Grove Press, 2008.