Introduction to Economics

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Outline

Objectives

- Introduction to the basics of economics
- Basic terms, concepts, and tools
- Basics of *mainstream* neoclassical synthesis
- The course is based mainly on Mankiw [2007] with Varian [2010] extending some topics - but do not hesitate to use other sources
- Feel free to share questions and comments. Course is held in lecture/discussion mode.

Requirements

- Attendance - optional - but active attendance rewarded (3 pts each, max 15)
- Written exam (in December or Januray - date TBA) based on readings and lectures (max 100 pts)
  - min. 60 pts to pass

Course outline

1. Introduction to Economics - Methodology, Assumptions and Models + Supply & Demand
   1. Chapters 1-2
   2. Chapters 4-6
2. Consumers, Producers and Efficiency of Markets + Externalities and Public goods
   1. Chapter 7
   2. Chapters 10-11
3. Theory of Consumer Choice + Theory of Firms
   1. Chapter 21
   2. Chapter 13
4. Market Structures
   1. Chapters 14-17
5. Macroeconomics
   1. Chapters 22-24 and 27-28

Outline

Definition

- Economics is the study of how people make decisions to reach their goals

  - which in turn explains how society allocates its scarce resources

- Note: *Economics* is the science, *Economist* is practitioner and *Economy* is the sum of people, products and relations in a certain area

- Economics assumes that:

  - Resources are scarce
  - People behave in a rational way, pursuing their own interests and utility
  - Economy reaches equilibrium

- Economics is not a religion! Economists disagree with each other

  - assumptions and models...
  - traditional view: rational behavior - does it hold? Continuous functions..., indifference..., market failures... etc.

Microeconomics vs. Macroeconomics

- They address various levels of analysis and ask different questions.
  They are intertwined, interconnected but also distinct and peculiar
- **Microeconomics** focuses on households' and firms' decisions and
  their interactions on the market.
- **Macroeconomics** addresses the economy-wide phenomena such as
  product (GDP), unemployment, inflation, balance of payments (i.e.
  foreign trade)
- There is more consensus in microeconomics than in macroeconomics
  (among economists, see below)
    - Both develop **theories** that are used for **predictions**

Differences between economists

- "Economics is the only field where two people can win the Nobel Prize for saying the exact opposite thing"
    - Hayek vs. Myrdal (1974), Shiller vs. Fama (2013)
- Economics has mainstream paradigm mostly agreed on by economists - but no theory is without drawbacks (assumptions of the models)
- Example Alston et al. [1992]:
    - Ceiling the estate lease decreases quantity and quality of housing available (93%)
    - Floating exchange rates facilitate effective international monetary setting (90%)
    - Minimal wage increases unemployment of youth and unskilled (79%)
    - Taxation of environmental pollution is more effective than limiting physical emissions (79%)

Basic terms

- **Scarcity** - or No Free Lunch. A thing is scarce when it has a **limited supply** (and people want to consume it)
- **Utility** - the pleasure, happiness, or satisfaction obtained **from the consumption** of a good or service
- **Opportunity costs** - trade-off - if you get something, you give up the opportunity to get the next best thing (if attend a lecture, you give up the opportunity to watch a movie or go for a drink etc.)
- **Equilibrium** - state of economy when no variable changes unless influenced from outside. (Pareto or Nash)
- **Variable** - measurable category worth observing. May be *stock* or *flow*, *dependent* or *independent*

Outline

Economic Models

- Basic and probably the most prolific tool of economics
- Simply put: Observation $\Rightarrow$ Hypothesis (model) $\Rightarrow$ Testing $\Rightarrow$ Evaluation (acceptance, rejection, or modification of the hypothesis/model)
- To explain how individuals and firms allocate resources and how market prices are determined (and many more), economists use a **model**: *a description of the relationship between two or more economic variables*
- Technically, models may be of many different kinds (e.g. deterministic or stochastic) and based on various platforms (econometrics, general equilibrium, agent based, ...)

Assumptions

- **Ceteris paribus** or "other things equal" assumption - when working with models, only one thing is allowed to change, everything else remains the same
- **Generalization** - Models abstract from reality, miss many features of real world so they can focus on those important.
- Models both describe (explain) and predict. A good model makes sharp, clear predictions that are consistent with reality.
- Good model does not need to be complex. But simple models describe simple behavior.
  - Some very simple models make sharp predictions that are incorrect, and other more complex models make ambiguous predictions—any outcome is possible—which are untestable

Issues

Everything should be made as simple as possible, but not simpler.

—Albert Einstein

- Composition problem - Even if we know behavior of every single element, even their sum, the system as a whole might work otherwise
- Omitting variables, observing false causality, confusing correlation with causality
    - eg. wee see $A \Rightarrow B$ while it's $B \Rightarrow A$ or $C \Rightarrow \{A, B\}$ etc.
- Garbage in garbage out
- Economics is a social science
    - Largest dispute in Economics - Methodenstreit (1880s!) - philosophy and epistemology - today, economics largely using methods of natural science (which may also be the root of many problems)

From economics to policy

- Positive x normative economic statements:
- P - A testable hypothesis about cause and effect, eg: *Recent decrease of crude oil is accompanied by Saudi Arabian' budget deficit*. Positive economics thus deals with factual statements.
- N – A value judgment or a conclusion as to whether something is good or bad, eg: *Saudi government should decrease its oil export dependency to make its public budgets more robust*. Normative economics, part of economic policy (and politics)

Issues - Economics x Politics

- Combination of N and P might by tricky.
- *Recent decrease of crude oil is caused by Saudi Arabian' budget deficit.*
- Good intentions pave the road to hell – Czech proverb (and indeed positive statement)
- It is nice to have good intentions embodied in normative statements of high moral profile (eg *Poverty should be eradicated*; *Oil should be cheap and widely available*). However, quite a lot of economic prescriptions based solely on normative (and often intuitive) assumptions lead to disasters or at least adverse effects. (Setting minimum wage or maximum price. . .)
- The more precise and positive based objectives the better outcomes.

Mankiw's Ten Principles of Economics

1. People Face Tradeoffs
2. The Cost of Something Is What You Give Up to Get It
3. Rational People Think at the Margin
4. People Respond to Incentives
5. Trade Can Make Everyone Better Off
6. Markets Are Usually a Good Way to Organize Economic Activity
7. Governments Can Sometimes Improve Market Outcomes
8. A Country's Standard of Living Depends on Its Ability to Produce Goods and Services
9. Prices Rise When the Government Prints Too Much Money
10. Society Faces a Short-Run Tradeoff between Inflation and Unemployment

Do not take for granted - this is not a sacred religious text... Some are normative ((6 leading to) 7, 10) utility functions are strictly **subjective** - we will talk about this later...

Outline

Basic Terms

- **Good(s)** - a thing satisfying a need. A thing scarce in its availability (remember previous lecture) - which means there is a price of it
- **Market** - Group of buyers and sellers of *particular* good, exchanging it for a certain negotiated price
- **Competition** -
    - A *process*, clash of buyers to buy or sellers to sell (offering lowest price to catch a customer)
    - More importantly: a particular *structure* of a market (i.e. a competitive market, monopoly, oligopoly etc.)
- **Quantity** (Q) - the amount of good (quantity demanded, quantity supplied, quantity produced etc.)
- **Price** (P) - represents relative scarcity of a good (usually compared with money or other good) as an interaction of supply and demand

Quantity demanded

- Demanded Q of a good is *an amount of good one buys at certain price.*
- Q demanded thus cannot be found without relation to price
- Set of all possible amounts demanded at all possible prices is the **demand** (quantity demanded as function of the good's price: $Q^D = f(P)$)

Price	1	2	3	4	5	6	7	8	9
Q	17	15	13	11	9	7	5	3	1

Demand
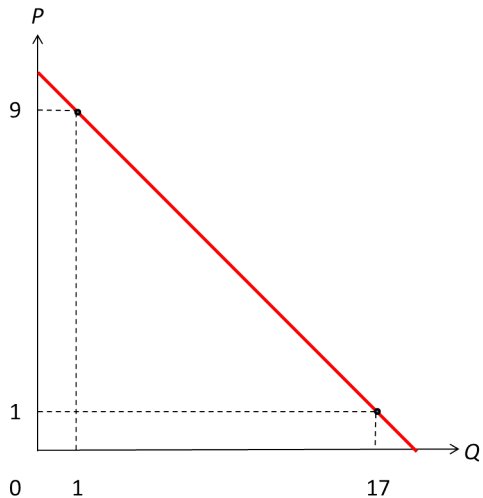
Quantity supplied

- Supplied Q of a good is *an amount of good one offers (sells) at certain price*.
- Q supplied thus cannot be found without relation to price!
- Set of all possible amounts sold at all possible prices is the **supply** (quantity demanded as function of the good's price: $Q^S = f(P)$)

| Price	1	2	3	4	5	6	7	8	9
Q	1	3	5	7	9	11	13	15	17

Supply
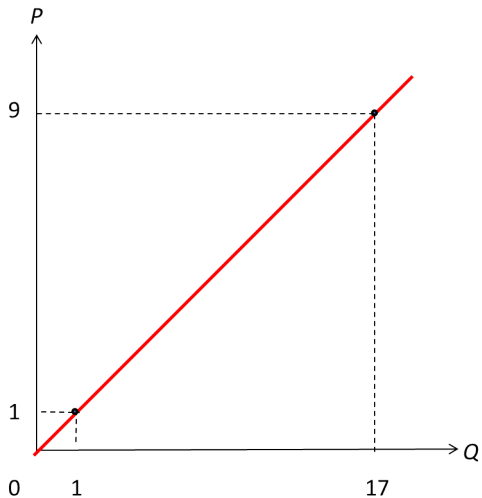
Some Remarks

- Market supply is simply the sum of all personal supplies
- Market demand is the sum of individual demands
- There are several factors determining Q^S and Q^D besides price
  - e.g. disposable income, preferences, technology, expectations etc.
  - basic relation depicted in previous figures reflects changes of Q caused by changes of P *ceteris paribus*, i.e. all other conditions unchanged
- CAUTION: in economics, supply $Q^S = f(P)$ and demand $Q^D = g(P)$ are shown using inverse demand functions - i.e. as $f^{-1}(Q^S) = P$ and $g^{-1}(Q^D) = P$
  - "at what quantity demanded (or quantity supplied) do we find this price?"
  - i.e. we draw P prices on vertical axis, and quantity on horizontal axis
  - historical: Alfred Marshall drew it like this, but it also has deeper philosophical connections - namely **both** P and Q are determined by market interactions; it also makes it easier to draw certain figures

Changes in S and D

- Changing the price *ceteris paribus* (see previous slide) causes so called "moves **on** the line" (left hand figure).
- Changing other factors such as income, preferences, technology, expectations etc. causes so called "move **of** the line" (right hand figure)
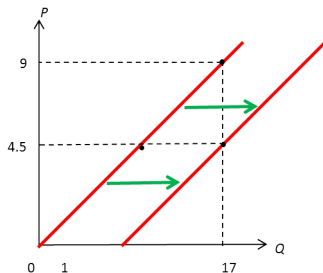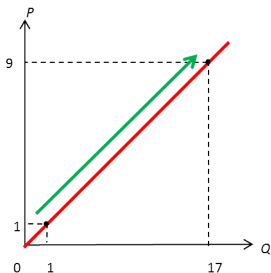
S&D and Market

- Supply and Demand interact ("meet" at the market)
  - the result of individual interactions of a large number of individuals
- Multitude of questions
  - What price will prevail on the market?
  - What quantity of good will be offered and demanded at various levels of price?
  - What quantity will be actually traded?
 - What if the price is somehow disturbed (e.g. regulated)?

Reaching Equilibrium

- Market equilibrium is defined by price when both supply and demand are balanced
- In other words: equilibrium price P^* leads to $Q^S = Q^D$
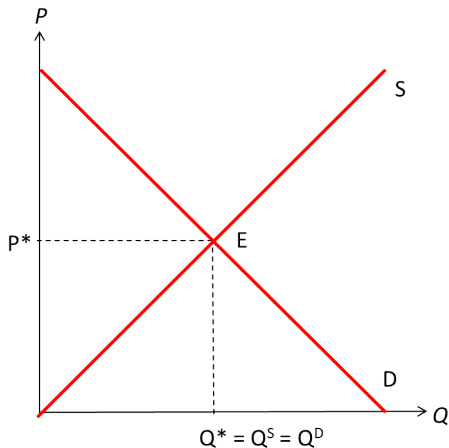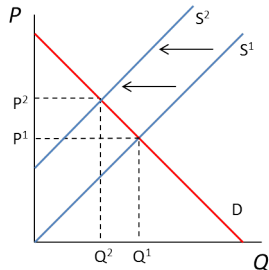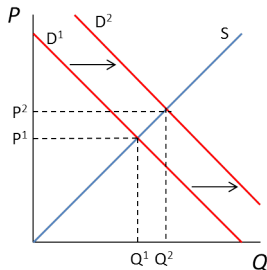
Markets Not in Equilibrium

- What happens, when the price on the market is different from equilibrium price?
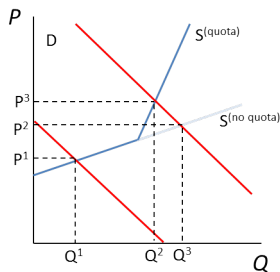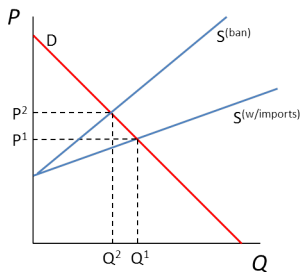- The price does not clear the market, i.e. $Q^S \neq Q^D$ (or rather $Q^S(P) \neq Q^D(P)$)
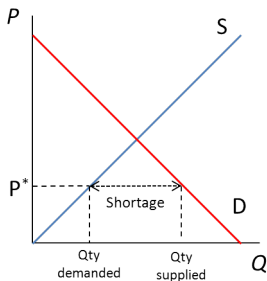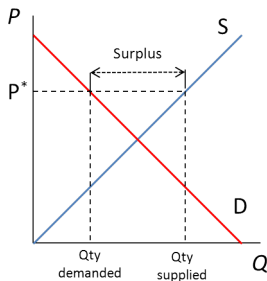
Examples

- Increase in demand $\Rightarrow$ Price$\uparrow$ and Quantity $\uparrow$
- Decrease in supply $\Rightarrow$ Price$\uparrow$ and Quantity $\downarrow$

Examples (cont.)

- Simple international trade example **?**.
- Ban (left hand figure) or quota (right hand figure) on wheat imports.
  - Both lead to a decrease in wheat supply - S↓, P↑, Q ↓
- When is the quota effective?

Competitive Markets

- Conducted analysis apply *only* on competitive markets!
  - Many buyers and sellers with insignificant market share $\Rightarrow$ price-takers
  - No market-entry-barriers
  - Perfect information, no technology-barriers
  - Homogeneous product

- Truly unhampered free market is almost non-existent
  - but it helps in conceptualization

Motivation

- Supply and Demand usually not linear
- What happens if the price changes a little?
    - On of the crucial managerial questions - is it profitable to lower the price (and sell more) or vice versa?
- Substitute goods - if we increase the price of X, Y (with unchanged price) is getting relatively cheaper

Elasticity

- $Slope = \frac{change\ in\ f(x)}{change\ in\ x}$

    - this is described by derivatives
    - let's have $y = f(x)$, then $slope = \frac{\triangle y}{\triangle x}$, if the change in x is small, then $slope = \frac{\partial y}{\partial x} = \frac{\partial f(x)}{\partial x} = $ derivative of f with respect to x

- Elasticity: $e = \frac{relative\ change\ in\ f(x)}{relative\ change\ in\ x}$

- Elasticity is a **relative change,** i.e.$e = \frac{\frac{\triangle y}{y}}{\frac{\triangle x}{x}} = \frac{x}{y}\frac{\triangle y}{\triangle x}$, so for point

    estimate of elasticity we get $e = \frac{x}{y} \underbrace{\frac{\partial y}{\partial x}}_{slope}$

- Intuition:

    - High elasticity = huge shift of $f(x)$ (Q) in response to a change in x (P)
    - Low elasticity = little shift of $f(x)$ (Q) in response to a change in x (P)

Elasticities

- Which independent variables changes
- Demand elasticities:
    - Price elasticty of demand e_{PD}
    - Income elasticity of demand e_{ID}
    - Cross price elasticity of demand (price of some other good changes) e_{CD}
- Supply elasticity:
    - Price elasticity of supply e_{PS}
- There are some special cases:0 , < 1; 1; > 1; ∞

Elasticity determinants

- Necessary vs. luxury goods
- Availability of substitutes
- Market definition (apples x fruits x food)
- Time scale
- Share of income

References

Richard M. Alston, J. R. Kearl, and Michael B. Vaughan. Is there a consensus among economists in the 1990's? *The American Economic Review*, 82(2):pp. 203–209, 1992. ISSN 00028282. URL `http://www.jstor.org/stable/2117401`.

N. Gregory Mankiw. *Principles of Economics*. Mason: Thomson Higher Education, 2007.

Hal R. Varian. *Intermediate Microeconomics. A Modern Approach*. W. W. Norton & Company, 2010.