

Introduction to Economics

Preliminaries

31 July 2025

04 August 2025

07 August 2025

Economics (1)

- Origin: Greek words *oikos* (house) and *nomos* (laws)
 - Laws or rules related to house/ households
 - It might sound strange but “...households and economies have much in common” (Mankiw)
- Definitions
 - Adam Smith: An Inquiry into the Nature and Causes of the Wealth of Nations
 - The Wealth of Nations (1776)
 - A lengthy text that includes discussions on
 - labour (e.g., division of labour)
 - accumulation of capital (land and other forms)
 - the revenue and expenditure of the sovereign (expenditure on different public services, taxes)
 - Main criticism: material definition – focus on material goods; wealth comprises only material goods

Economics (2)

- Definitions (*contd.*)
 - Marshall: a study of mankind in the ordinary business of life
 - Principles of Economics (1890)
 - A focus of Marshall's work has been business organisations
 - Discussion on demand, supply, marginal costs, utility, elasticity, national income and its distribution; extensive use of mathematics and diagrams – even though at later stages of life, Marshall became “increasingly cautious of its usefulness in economic reasoning”
 - Welfare definition – actions of human in the pursuits of welfare. Again, the term welfare was narrowly interpreted to mean material welfare
 - The structure of introductory economics courses even today is very much influenced by Marshall's book as very aptly defined by Peter Groenewegen in introduction to the reprint: “things are **wanted** and are therefore **produced**; these products are sold in the market at an exchange **value** determined by supply and demand; and this market value is **distributed** as income to those who helped to produce it, that is, the labourers, owners of capital, entrepreneurs (Marshall preferred the English term 'undertakers') and landlords”
 - Robbins: the science which studies human behavior as a relationship between ends and means
 - Ends: wants, often unlimited
 - Means: resources, often scarce
 - An Essay on the Nature and Significance of Economic Science (1932)
 - Behavioral definition – study of human behavior

Economics (3)

- An Indian perspective
 - *Artha*: the sustenance or livelihood (*vrttih*) of human beings
 - Stands for both material well-being as well as the means of securing such well-being (viz., wealth)
 - *Arthasastra*: the science dealing with the means of the acquisition and protection of the *artha*
 - Discusses three-fold economic activities (*vartta*) of agriculture, cattle-rearing/ animal husbandry and trade/ commerce. These activities (in that era) were the means to obtain livelihood
 - It is likely that the scope of term *artha* is much broader. It includes protection and acquisition of territory inhabited
 - While *vrttih* is primarily an individual pursuit, the latter (extended meaning) is a state activity. Accordingly, the text covers both internal (to ensure general well-being) as well as external (including, foreign policy) spheres of the state affairs
 - In the current context, we can think of the former to be micro in nature and the latter, macro
 - Among others, there is a detailed treatment of state economy in the text
 - Also note that given an elaborate discussion on society, social life, and state administration, the text goes beyond material well-being
- Source: The Kautilya Arthasastra, Part III by RP Kangle, Motilal Banarsidass, published 1969

Economics (3)

- Economists study
 - How people make decisions
 - How people interact
 - How the economy as a whole works

Decision making (1)

- People face trade-offs
 - HUL211 and, say, HUL212
 - Guns and butter
 - Environment and growth
 - Efficiency and equity. *Efficiency*: getting maximum benefit from the scarce resources; *Equity*: whether the benefit are uniformly distributed in the society
- There is always an opportunity cost
 - Cost of the opportunity forgone/ next best alternative
 - Studying and being in the job market

Decision making (2)

- People are rational
 - *Rationality*: people purposefully do the best they can to achieve their objectives
 - Firms maximize profits; individuals maximize satisfaction from consumption
 - Marginal benefits and marginal costs,
 - airline pricing (average vs marginal cost)
- People respond to incentives
 - Incentive: something that induces a person to act
 - A price rise – impact on consumers and suppliers (next slide)
 - Attendance policy at IIT
 - Understanding what incentives would work is crucial for public policy
 - Tax policies, penalty on passengers without ticket, the odd-even in Delhi

Decision making: incentives (1)

← → ↺ 🏠 ⓘ indianexpress.com/article/cities/delhi/delhi-metro-lost-three-lakh-commut... ⌵ ⌵ ⌵ 🔍 passenger + monthwis →

☰ **The Indian EXPRESS** 🔍 f 📡 🌐

Ad closed by Google
Stop seeing this ad
Ads by Google ⓘ

Home > Cities > Delhi > After fare hike in October, Delhi Metro lost over three lakh commuters a day, RTI data reveals

After fare hike in October, Delhi Metro lost over three lakh commuters a day, RTI data reveals

The daily average ridership of the metro came down significantly to 24.2 lakh in October from 27.4 lakh in September, translating to a decline of around 11 per cent.

3K SHARES

f SHARE 🐦 G+ 🍷

By: **Express Web Desk** | New Delhi | Updated: November 24, 2017 9:19 pm



Ad closed by Google
Stop seeing this ad
Ads by Google ⓘ

⬆

Incentives (2)

This article studies technology adoption in a cluster of soccer-ball producers in Sialkot, Pakistan. We invented a new cutting technology that reduces waste of the primary raw material and gave the technology to a random subset of producers. Despite the clear net benefits for nearly all firms, after 15 months take-up remained puzzlingly low. We hypothesize that an important reason for the lack of adoption is a misalignment of incentives within firms: the key employees (cutters and printers) are typically paid piece rates, with no incentive to reduce waste, and the new technology slows them down, at least initially. Fearing reductions in their effective wage, employees resist adoption in various ways, including by misinforming owners about the value of the technology. To investigate this hypothesis, we implemented a second experiment among the firms that originally received the technology: we offered one cutter and one printer per firm a lump-sum payment, approximately a month's earnings, conditional on demonstrating competence in using the technology in the presence of the owner. This incentive payment, small from the point of view of the firm, had a significant positive effect on adoption. The results suggest that misalignment of incentives within firms is an important barrier to technology adoption in our setting.

Organizational Barriers to Technology Adoption: Evidence from Soccer-Ball Producers in Pakistan*



David Atkin, Azam Chaudhry, Shamyla Chaudry, Amit K. Khandelwal, Eric Verhoogen

Author Notes

The Quarterly Journal of Economics, Volume 132, Issue 3, August 2017, Pages 1101–1164,
<https://doi.org/10.1093/qje/qjx010>

Incentives (3)

Abstract

To ensure sufficient access to healthcare in remote areas, some countries allow physicians to directly dispense prescribed drugs through on-site pharmacies. Depending on the medication prescribed, this may pose a significant financial incentive for physicians to over-prescribe. This study, therefore, explored the effect of on-site pharmacies on antibiotic dispensing in a social health insurance system. Investigating physicians' prescribing behavior is especially relevant in the case of antibiotics, as over-utilization expedites antimicrobial resistance, leading to the development of untreatable bacterial infections. The empirical analysis was based on comprehensive administrative data on 13,741 antibiotic prescriptions issued by all 4044 public general practitioners (GPs) in Austria between 2016 and 2019. Switches from dispensing to non-dispensing status (and vice versa) were exploited in a difference-in-difference framework to mitigate a potential selection bias. GPs with the right to dispense over the entire observed period were used as the control group, and those who had either lost or gained the right to dispense as the treatment group. The results from a log-linear mixed model show that not currently operating an on-site pharmacy is associated with a 9.2% lower dispensing rate (i.e., antibiotics per 1000 yearly consultations). The results are robust to potential differences between GPs who switch from dispensing to non-dispensing and those who switch from non-dispensing to dispensing, to potential patient sorting, and to different functional forms. A

Financial incentives and antibiotic prescribing patterns: Evidence from dispensing physicians in a public healthcare system

Barbara Stacherl^{a b}  , Anna-Theresa Renner^{c d} , Daniela Weber^{e f} 

Incentives (4)

The Cost of Influence: How Gifts to Physicians Shape Prescriptions and Drug Costs

MELISSA NEWHAM*

MARICA VALENTE[†]

April 2023

Abstract

This paper studies how gifts – monetary or in-kind payments – from drug firms to physicians in the US affect prescriptions and drug costs. We estimate heterogeneous treatment effects by combining physician-level data on antidiabetic prescriptions and payments with causal inference and machine learning methods. We find that payments cause physicians to prescribe more brand drugs, resulting in a cost increase of \$30 per dollar received. Responses differ widely across physicians, and are primarily explained by variation in patients' out-of-pocket costs. A gift ban is estimated to decrease drug costs by 3-4%. Taken together, these novel findings reveal how payments shape prescription choices and drive up costs.

Incentives ... a double-edged sword? (Mankiw)

- “When policymakers fail to consider how their policies affect incentives, they often end up with unintended consequences. For example, consider public policy regarding auto safety. Today, all cars have seat belts, but this was not true 50 year ago” ...later, in the US, “Congress responded with laws requiring seat belts a standard equipment on new cars...How does a seat belt law affect auto safety? The direct effect is obvious: When a person wears a seat belt, the probability of surviving an auto accident rises. But that’s not the end of the story because the law also affects behavior by altering incentives. The relevant behavior here is the speed and care with which drivers operate their cars. Driving slowly and carefully is costly because it uses the driver’s time and energy...Consider how a seat belt law alters a driver’s cost–benefit calculation. Seat belts make accidents less costly because they reduce the likelihood of injury or death. In other words, seat belts reduce the benefits of slow and careful driving. People respond to seat belts as they would to an improvement in road conditions—by driving faster and less carefully. The result of a seat belt law, therefore, is a larger number of accidents. The decline in safe driving has a clear, adverse impact on pedestrians... When analyzing any policy, we must consider not only the direct effects but also the less obvious indirect effects that work through incentives. If the policy changes incentives, it will cause people to alter their behavior.”

Markets: how people interact

- Trade can make everyone better off
 - Gains from specialization – think of a family isolating itself from all other families (needs to grow food, make cloths, build home)
 - Competition and efficiency
- Markets are usually a good way to organize economic activity
 - Market allocations are efficient
- Markets and economic activity
 - Command economy (centrally planned economy): government owns and directs the means of production – land, labor, capital – or, the scarce resources. Also decides how the output will be divided among different goods and services. Example, Soviet Union and Eastern Europe
 - Market economy (*laissez-faire*): individuals and firms, in other words market forces of demand and supply, decide. The “invisible hand” guides! Example, United States
 - Mixed economy
 - Where do you classify the Indian economy?

Markets: how people interact

- Market failure: markets can fail
 - Markets may not always allocate the resources efficiently
 - Externality (an individual's action may influence well-being of another) and market power (an economic agent can unduly influence the prices) may lead to market failures
 - Markets may also ignore social equity
 - Hence, we need government to enforce rules and maintain institutions
 - Market economies also need government to enforce property rights so that individuals can own/ control resources. If a farmer expects the crop to be stolen, will s/he farm? We rely on the government-provided law and order to enforce our right over the items we produce
 - Property rights: the ability of an individual to own and exercise control over scarce resources

13 August 2007

Indians predated Newton 'discovery' by 250 years

A little known school of scholars in southwest India discovered one of the founding principles of modern mathematics hundreds of years before Newton according to new research.

Property rights

- The contributions of Prof C K Raju (and Prof G G Joseph)
 - “The beginnings of modern maths is usually seen as a European achievement but the discoveries in medieval India between the fourteenth and sixteenth centuries have been ignored or forgotten.”
 - “There were many reasons why the contribution of the Kerala school has not been acknowledged - a prime reason is neglect of scientific ideas emanating from the Non-European world - a legacy of European colonialism and beyond.”
 - “For some unfathomable reasons, the standard of evidence required to claim transmission of knowledge from East to West is greater than the standard of evidence required to knowledge from West to East.”

Economy as a whole

- Output, prices, and unemployment
- Why do we bother so much about economic growth (next slide)?
 - Standard of living depends upon ability to produce goods and services
 - Productivity is an important determinant of standard of living; cross-country studies indicate that a substantial amount of variation in the living standards can be attributed to the differences in countries' productivity
- Persistent inflation is generally not believed to be good for an economy
 - Imposes different costs on society
 - Oil prices have led to changes in the government
 - In the short run, there may be trade-off between inflation and unemployment (high money supply -> high demand for goods and services -> firms employ more workers -> employment is up -> unemployment is low. Note that high money supply implies high inflation)
 - Dilemma: policies push inflation and unemployment in opposite directions



A HAPPY NEW YEAR
INDIA'S LARGEST ENGLISH NEWSPAPER



Presents
HAPPYTIMES
#HowCoolIsThat

STEP INTO 2020 WITH COOL EYEGLASSES & SUNGLASSES FROM COOLWINKS!

Every participant gets sunglasses for free* with 500 Coolwinks E-voucher.

WIN Weekly draws for 12000 **TIMESPOINTS** every Sunday.

Answer 2 simple questions correctly to win e-vouchers the same day

To participate, SMS your <CITY> <SPACE> A1 <SPACE> <Answer 1> <SPACE> A2 <SPACE> <Answer 2> to 8745966661

₹1000 Coolwinks E-Vouchers (min. order value ₹1000) for 10000 winners daily.

A Green ride for the new decade!
Participate daily this month for a chance to ride home an eco-friendly Avon E-Bike.

*T&Cs www.toihappytimes.com

₹102 lakh cr investment plan for mega infra push

Centre, States To Split 78% Of Expenditure

TIMES NEWS NETWORK

New Delhi: Finance Minister Nirmala Sitharaman on Tuesday unveiled a Rs 102 lakh crore infrastructure investment plan for the next five years, with less than a fifth consisting of new projects to begin with.

It hopes to expand the pipeline, which was part of BJP's manifesto, in the coming months with Rs 3 lakh crore of state projects to be added in the next few weeks.

The announcement came at a time when the Centre is keen to step up investment and the pipeline is seen to be signalling a step in that direction. Infrastructure gaps are seen as a major reason for hobbling faster expansion of economic activity and faster construction of new roads, power facilities and ports along with irrigation facilities are expected to also result in demand for cement and steel, which have been hit by the

₹10,250,704cr investment planned from 2019-20 to 2024-25

80% of investment to flow into energy, road, railways, urban infra, housing and irrigation

KEY TARGETS

74% rise in power generation capacity — from 356GW to 619GW



50% of additional capacity to be in renewable and nuclear energy

50% rise in length of national highways



10% of NH to be expressways

100% households to have piped water supply

Double farmer income



80% internet penetration — up from 40% today

73 new medical colleges

Core sector output falls for 4th month

For the first time in eight years, core sector output fell for the fourth straight month. As many as five out of the eight sectors covered by the index saw a contraction. The only silver lining was that the pace of decline slowed down, suggesting that the worst may be over. Latest data showed that core sector production was down 1.5% in November. **P 19**

Bank credit to industry slips 4%

Bank credit to industry shrunk by 3.9%, or Rs 1.13 lakh crore, during the first eight months of the current financial year, according to data released by the RBI. Despite this, overall bank credit continues to be up 1% largely due to home loans and other personal loans. According to bankers, there is no fresh demand for bank credit for investment. **P 19**

Three problems of economic organization

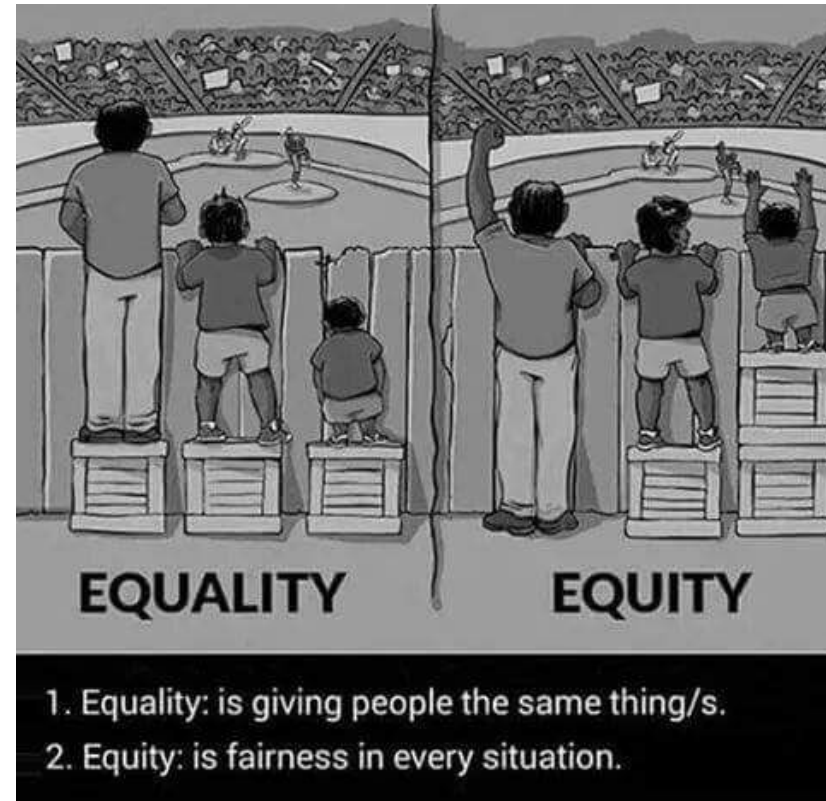
- **What** commodities are produced and in what quantities?
 - Guns and butter
 - Recall that resources are scarce
- **How** to produce these goods?
 - Inputs and technology
 - Power generation (coal/gas/oil/solar/hydro/wind/geothermal/ocean)
- **For whom** are the goods produced?
 - Dividing the national product among different households

Market economy: the economic functions of government

- Why do we need government intervention?
- Three main functions:
 - Efficiency: promoting competition
 - Equity: tax and expenditure; redistributive policy
 - Macro stability and growth: growth promotion, unemployment, inflation

Efficiency and Equity

- Efficiency
 - Several notions
- Equity
 - Is different from equality



The role of government

Failure of market economy	Government intervention	Current examples of government policy
Inefficiency:		
Monopoly	Encourage competition	Antitrust laws, deregulation
Externalities	Intervene in markets	Antipollution laws, antismoking ordinances
Public goods	Encourage beneficial activities	Provide public education, build roads
Inequality:		
Unacceptable inequalities of income and wealth	Redistribute income	Progressive taxation of income and wealth Income-support or transfer programs (e.g., subsidize health care)
Macroeconomic problems:		
Business cycles (high inflation and unemployment)	Stabilize through macroeconomic policies	Monetary policies (e.g., changes in money supply and interest rates) Fiscal policies (e.g., taxes and spending programs)
Slow economic growth	Stimulate growth	Improve efficiency of tax system Raise national savings rate by reducing budget deficit or increasing budget surplus

Microeconomics and Macroeconomics

- The terms micro and macro were used together for the first time by Ragnar Frisch (1953)
- Micro: study of how households and firms make decisions and how they interact in markets; concerned with individuals
- Macro: study of economy-wide phenomena; concerned with the operation of economy as a whole
 - inflation, unemployment, and output (growth)
- Linkage: macro is aggregation of micro
 - impact of tax cut on output depends on how do households respond to the tax cut
- Distinctions: each field has its own tools, methods, and set of models; address different questions

Positive and normative analyses

- Need to distinguish facts from fairness
 - Prof P: Minimum-wage laws cause unemployment (scientist)
 - Prof N: The government should raise the minimum wage (policy-maker)
- **Positive**: describes how the world is; descriptive
- **Normative**: makes a claim about how the world ought to be; prescriptive
- We can confirm or refute the former by examining evidence (scientific)
- The latter cannot be judged just using data (value judgments); May involve ethics, religion, philosophy, fairness, etc. There are often no right or wrong answers to these. Example, the Rameshwari Book Depot case

Economic methodology

- Like other fields of study, economics has its own language and way of thinking: **supply**, **demand**, **elasticity**, **comparative advantage**, **consumer surplus**, **monopoly**, **regression**
- Scientists: devise theories, collect data, and analyze these data to verify or refute the theories
 - The fall of an apple from tree “motivated Newton to develop a theory of gravity that applies not only to an apple falling to the earth but to any two objects in the universe. Subsequent testing of Newton’s theory has shown that it works well in many circumstances”
- Similar interplay between theory and observation also occurs in economics

Economic methodology

- Consider the assertion that high inflation arises because the government prints too much money
 - To examine the above, one can collect and analyze data on prices and money from different countries
 - A strong correlation between money growth and inflation might indicate that the assertion is true
- However, unlike sciences, experiments are often difficult in economics
 - For example, a physicist studying gravity can drop many objects in the lab but an economist may not be able (or allowed) to manipulate a nation's monetary policy simply to generate useful data
- Role of assumptions
 - Importance of context

Economic models

- What is a model?
 - Think of a map, which represents a part of the earth's surface
 - Note that this model (the map) omits several details of the real world: it's a 2D representation, it ignores small details such as potholes and speed breakers on a road, etc
- The economy consists of many people engaged in different activities like buying, selling, manufacturing, etc
 - **Circular flow diagram**: presents a visual model of the economy
- The economy faces a choice between production possibilities
 - **Production possibility frontier**

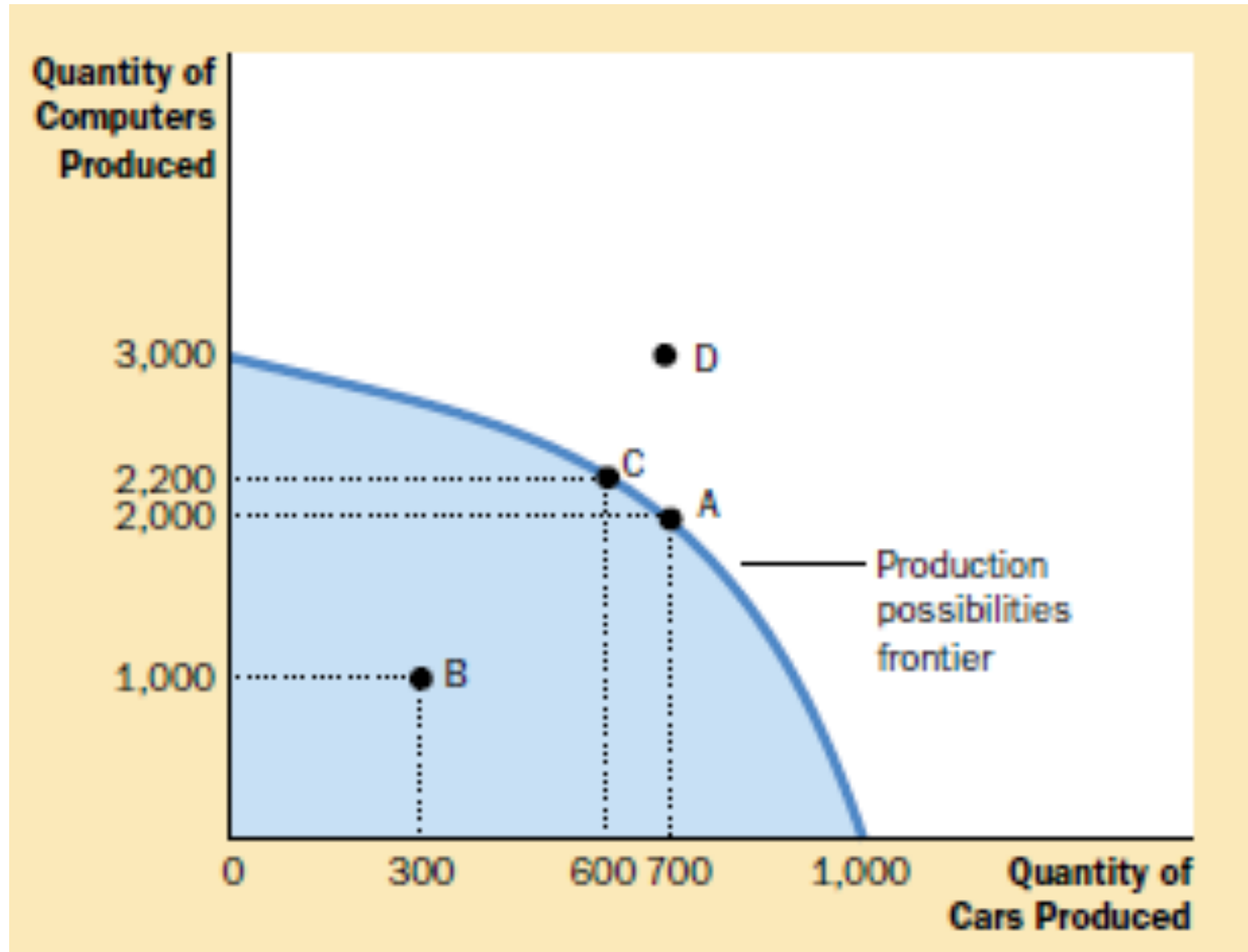
The circular flow diagram

- The economy has two types of decision makers—households and firms
 - Firms produce goods and services using inputs
 - The inputs are land, labor, and capital
 - These inputs are called the factors of production
 - Households own the factors of production and consume the goods and services that the firms produce
- Households and firms interact in two types of markets
- Product market
 - is the market for goods and services
 - households are buyers and firms are sellers: households buy the output of goods and services that firms produce
- Factor market
 - is the market for the factors of production
 - households are sellers and firms are buyers: households provide firms the inputs that the firms use to produce goods and services
- The [flow](#)

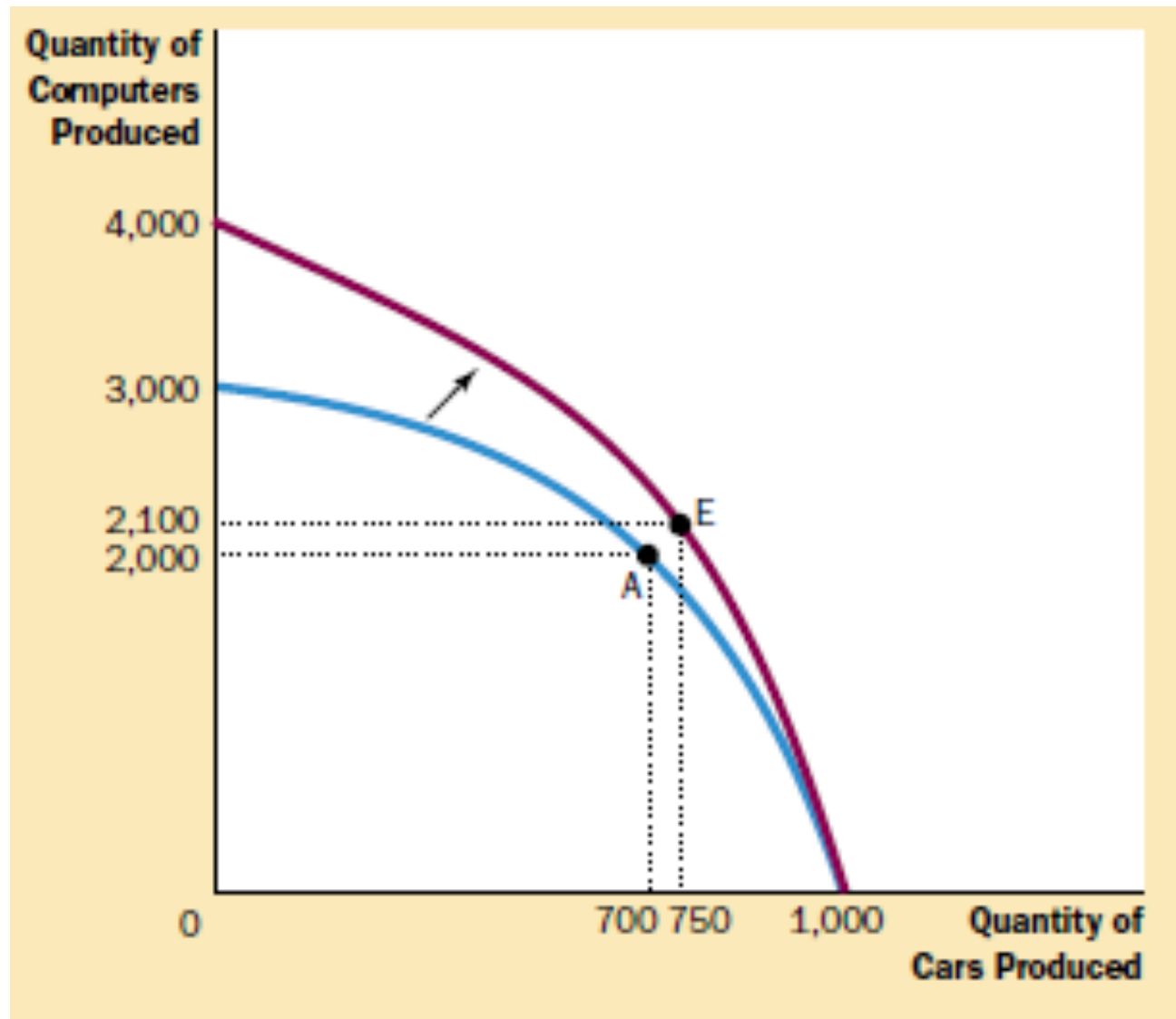
The production possibility frontier

- Shows the combinations of (the maximum possible) output that an economy can produce given the available factors of production and the production technology
- Consider an economy that produces only two goods – cars and computers
 - [The frontier](#)
 - Feasible outcome, efficient outcome, opportunity cost
- What happens when the production technology changes?
 - [Change in technology](#)

PPF: figure 1 (Source: Mankiw)



PPF: figure 2 (Source: Mankiw) [back](#)



Understanding Opportunity Cost

Opportunity cost (1)

Source: Acemoglu, Liabson and List



Is Facebook free?

Facebook doesn't charge you a penny, so it's tempting to say, "it's free."

Here's another way to think about it. What do you give up when you use Facebook? That's a different kind of question. Facebook doesn't take your money, but it does take your time. If you spend an hour each day on Facebook, you are giving up some alternative use of that time. You could spend that time playing soccer, watching Hulu videos, napping, daydreaming, or listening to music. There are many ways to use your time. For example, a typical U.S. college student employed 7 hours per week earns almost \$4,000 in a year—enough to pay the annual lease on a sports car. A part-time job is just one alternative way to use the time that you spend on Facebook. In your view, what is the best alternative use of your Facebook time? That's the economic way of thinking about the cost of Facebook.

Opportunity cost (2)

Source: Acemoglu, Liabson and List

- Link to the [example](#)