MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

V.N. KARAZIN KHARKIV NATIONAL UNIVERSITY

ELEMENTARY ECONOMICS

LECTURES

for students of the direction “Medicine” of the Specialization “General Medicine”

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Reviewers: E.M. Vorobyov, Head of Economic Theory Department of the V.N. Karazin Kharkiv National University, Doctor of Science (Economics), Professor; A.O. Kvitka, Ph.D. in Economics, Assistant Professor of Economic Theory and Economic Management Methods Department of the V.N. Karazin Kharkiv National University.

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Stoianova O.E.

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The present lectures of normative educational subject “Elementary Economics” study was executed in accordance to the educational and qualification programme for training the specialists of direction “Medicine” of the specialization “General Medicine”. The lectures include such comprehensive modules as: 1) General economic categories, Introduction into Economics; 2) Economizing problem, Market economy; 3) Market Demand and Supply; 4) Private and Public sectors of economy; 5) World economy, National income.

PREAMBLE

The present lectures of normative educational subject “Elementary Economics” study was executed in accordance to the educational and qualification programme for training the specialists of direction “Medicine” of the specialization “General Medicine”.

Subject matter of this educational subject is economic relations among people that arise in the process of production, distribution, exchange and consumption of economic goods. These economic relations are regulated by objective economic laws and realized through economic behaviour of the subjects that take decisions under conditions of unlimited demands and limited resources.

The lectures of educational subject **includes such comprehensive modules as:**

1. General economic categories. Introduction into Economics;
2. Economizing problem. Market economy;
3. Market Demand and Supply;
4. Private and Public sectors of economy;
5. World economy. National income.

Aim of educational subject “Elementary Economics” is a complex study of economic relations as a form of social production, understanding basics of economic life of the society in connection with people’s demands and interests, study of effective use of limited production resources by the society and ways to achieve maximum final results of human demands satisfaction that constantly grow.

The main tasks of the subject “Elementary Economics” study are to provide high level of general economic training of students, make the basis for students to further master knowledge of specialized theoretical and clinical professional and practical subjects (law, political science, sociology, social medicine and health care organization, general hygiene, epidemiology).

LECTURE 1:

INTRODUCTION INTO ECONOMICS: THE NATURE, METHOD, HISTORY

Total hours - 2

1. Introduction into economic science;
2. Methodology of economics;
3. Positive and Normative economics;
4. The economic perspective.

1. Introduction into economic science

What economy is? We want food, clothing, cars, big houses and other goods and services associated with a comfortable standard of living. We also want better schools, more roads, and cleaner streets. Unfortunately, we can't have it all. Our ability to produce goods and services is limited[1].

It's the same kind of problem you have with your time. You might like to go the movies, go shopping, hang out with friends, even attend classes (of economy, I hope!) With only 24 hours in a day, you've got to make choices. If you decide to go to the movies, you have less time to study. In effect, the sacrificed study time is a cost of going to the movies.

Faced with such tradeoffs, you must decide how best to use your scarce time.

For the larger economy, time is also limited. So, too, are the resources needed to produce desired goods and services. To get more houses, more cars, or more movies, we need not only time but also resources to produce these things.

This is done through the organizational mechanism we call **the economic system.**

Economics is the social science which concerned with the *efficient* use or management of *limited* productive *resources* to achieve *maximum satisfaction* of human material wants[2].

Or, we can say, it is the study of how best to allocate scarce resources among competing users.

Economics consists of 3 items:

1) Economics;
2) Macroeconomics;
3) Microeconomics.

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Backhouse, Roger E., and Steven Medema (2009). "Retrospectives: On the Definition of Economics", Journal of Economic Perspectives, 23(1).

Political economy studies *all* the social processes and phenomenon between people. This is the study of economic relationships between people in producing, distributing, exchanging and consuming material goods and services.

Macroeconomics - the study of aggregate economic behavior, of the economy whole[1] (=forest).

Macroeconomics speaks of such magnitudes as *total* output, *total* level of employment, *total* income, *aggregate* expenditures, the *general* level of prices, and so forth, in analyzing various economic problems in general.

Macroeconomics examines the forest, not the trees.

Microeconomics - the study of individual behavior in the economy, of the components of the larger economy[2] (=trees).

Here we talk of an individual industry, firm, or household, and concentrate on such magnitudes (size) as the output or price of a specific product, the number of workers employed by a single firm, the revenue or income of a particular firm or household, or the expenditures of a given firm or family.

In microeconomics we examine the trees, not the forest.

Some general principles of economics:

First principle of economics is that we live in a world of scarcity.

Second principle is that we have unlimited wants and desires.

Thus, absolute material abundance is not possible. This fact is the basis for our definition of economics: **economics is concerned** with the efficient use of limited productive resources to achieve maximum satisfaction of human material wants.

There are 3 categories of resources:

1. Natural materials - forests, land, minerals, rivers, oceans, wildlife, oil, etc.
2. Human resources (capital) - knowledge and skills, innovation, ingenuity, etc. (Education is developing human capital. Investing in human capital).
3. Physical capital – machinery , technology, tools, computers, equipment, etc. Man-made resources.

These resources are also classified as **factors of production (**resources used to produce goods and service). There are 4 of them[3]:

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

- ✓ lands,
- ✓ labor,
- ✓ capital,
- ✓ entrepreneurship (there is limited number of people with the creativity and skill (entrepreneurial talent) to use these resources in production).

The more factors of production we have, the more we can produce in a given period of time.

Land means much more to the economist than to most people. Land is all natural resources- all "gifts of nature"- usable in the productive process. Such resources as arable land, forests, mineral and oil deposits, and water resources come under this classification[1].

Capital, or investment goods, is all manufactured aids to production, that is, all tools, machinery, equipment, and factory, storage, transportation, and distribution facilities used in producing goods and services and getting them to the ultimate consumer.

Capital – the sum of money, property, goods, and other valuables used to generate (create) income by investing in a some business.

The process of producing and purchasing capital goods is known as *investment.*

Two other points are relevant. First, *capital goods* ("tools") differ from *consumer goods* in that the latter satisfy wants directly, whereas the capital goods do so indirectly by facilitating production of consumable goods.

Second, the term "capital" as here defined does *not* refer to money. True, business executives and economists often talk of "money capital," meaning money available to purchase machinery, equipment, and other productive facilities. But money, as such, produces nothing; hence, it is not considered an economic resource. *Real capital* - tools, machinery, and other productive equipment - is an economic resource; *money* or *financial capital* is not.

Labor is a broad term the economist uses for *all the physical and mental talents of men and women available and usable in producing goods and services*[2]. (This excludes a special set of talents - entrepreneurial ability - which, because of their special significance in a capitalistic economy, we consider separately.) The services of a logger,

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

retail clerk, machinist, teacher, professional football player, nuclear physicist and physician all fall under the general heading of labor.

Finally, there is the special human resource we label **entrepreneurial ability,** or, simply, enterprise.

Entrepreneur is a person who is willing to launch a new venture or enterprise and accept full responsibility for the outcome (profits or losses). Or we can say Entrepreneur is an owner or manager of a business enterprise who makes money through risk or initiative.

We can assign four *related functions to the entrepreneur*[1].

1 The entrepreneur takes the *initiative* in combining the resources of land, capital, and labor to produce a good or service. The entrepreneur is the driving force behind production and the agent who combines the other resources in what is hoped will be a profitable venture.

2 The entrepreneur makes basic *business-policy decisions,* that is, those nonroutine decisions which set the course of a business enterprise.

3 The entrepreneur is an *innovator* - the one who attempts to introduce on a commercial basis new products, new productive techniques, or even new forms of business organization.

4 The entrepreneur is a *risk bearer.* This is apparent from a close examination of the other three entrepreneurial functions. The entrepreneur in a capitalistic system has no guarantee of profit. The reward for his or her time, efforts, and abilities may be profits *or* losses and eventual bankruptcy. The entrepreneur risks not only time, effort, and business reputation, but his or her invested funds.

Most of the ideologies of the modern world have been shaped by **the great economists of the past**:

- Adam Smith;
- David Ricardo;
- Karl Marx;
- John Maynard Keynes.

Adam Smith, "An Inquiry into the Nature and Causes of the Wealth of Nations" or "The Wealth of Nations", (1776)[2].

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Smith, Adam (1776). An Inquiry into the Nature and Causes of the Wealth of Nations, and Book IV, as quoted in Peter Groenwegen (1987).

The eighteenth-century economist Adam Smith argued that nations would prosper with less government interference and more reliance on the "invisible hand" of the marketplace.

As he saw it, markets were efficient mechanisms for deciding what goods to produce, how to produce them, and what wages to pay.

The term laissez faire (of Adam Smith) means "let it be," that is, keep government from interfering with the economy, because such interference will disturb the efficient working of the market system.

Smith's writings (The Wealth of Nations) encouraged **governments to take a more passive role** in "the business of business."

David Ricardo, "Principles of Political Economy and Taxation" (1817)[1].

British economist recognized as a founder of the school of classical economics and regarded as one of history's most important economists.

Ricardo first articulated the law of diminishing returns. One of the most fundamental laws of economics, it holds that as more and more resources are combined in production with a fixed resource - for example, as more labor and machinery are used on a fixed amount of land - the additions to output will diminish.

On foreign trade, Ricardo is famous for his theory of comparative advantage. He argued that there are gains from trade if each nation specializes completely in the production of the good in which it has a "comparative" cost advantage, and then trades those goods with other nations in exchange for other goods.

Karl Marx, "Capital" (1893)[2].

Karl Marx saw things differently. In his view, a freewheeling marketplace would cater to the whims of the rich and neglect the needs of the poor. Workers would be exploited by industrial barons and great landowners. To "leave it to the market," as Smith had proposed, would encourage exploitation.

In the mid-nineteenth century, Karl Marx proposed a radical alternative: overturn the power of the elite and create a communist state in which everyone's needs would be fulfilled.

Marx's writings "Capital" encouraged communist revolutions and the development central planning systems. The (people's) **government, not the market, assumed responsibility for deciding** what goods were produced, at what prices they were sold, and even who got them.

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[1] Marshall, Alfred (1890 [1920]). Principles of Political Economy, v. 1, pp. 1–2 [8th ed.]. London: Macmillan.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

John Maynard Keynes "The General Theory of Employment, Interest and Money" (1936)[1]. The English economist John Maynard Keynes also encouraged **governments** (England, USA) to play a more **active role** in reducing unemployment.

2. Methodology of economics

What do economists do? What are their goals?

Answer to those questions is - Principles, Problems, and Policies[2].

Economists formulate economic **principles** useful in the establishment of **policies** designed to solve economic **problems**.

The procedures employed by economists we will summarize in Figure 1.1. Economists ascertain and gather facts relevant to a specific economic problem. This task is called **descriptive** or **empirical economics** (box 1). Descriptive or empirical economics is concerned with gathering the facts relevant to some problem or aspect of the economy and with testing hypotheses against the facts to validate theories.

Economists **generalize** about the way individuals and institutions actually behave. This principle is called **economic theory** or "economic analysis" (box 2). So, theoretical economics involves **generalizing** about economic behavior.

Generalizing – it is the process of making general or universal applicable; reducing smth to a general form, class, or law.

As you see in Figure 1.1, economists move from theory to facts in studying economic behavior and move from facts to theory.

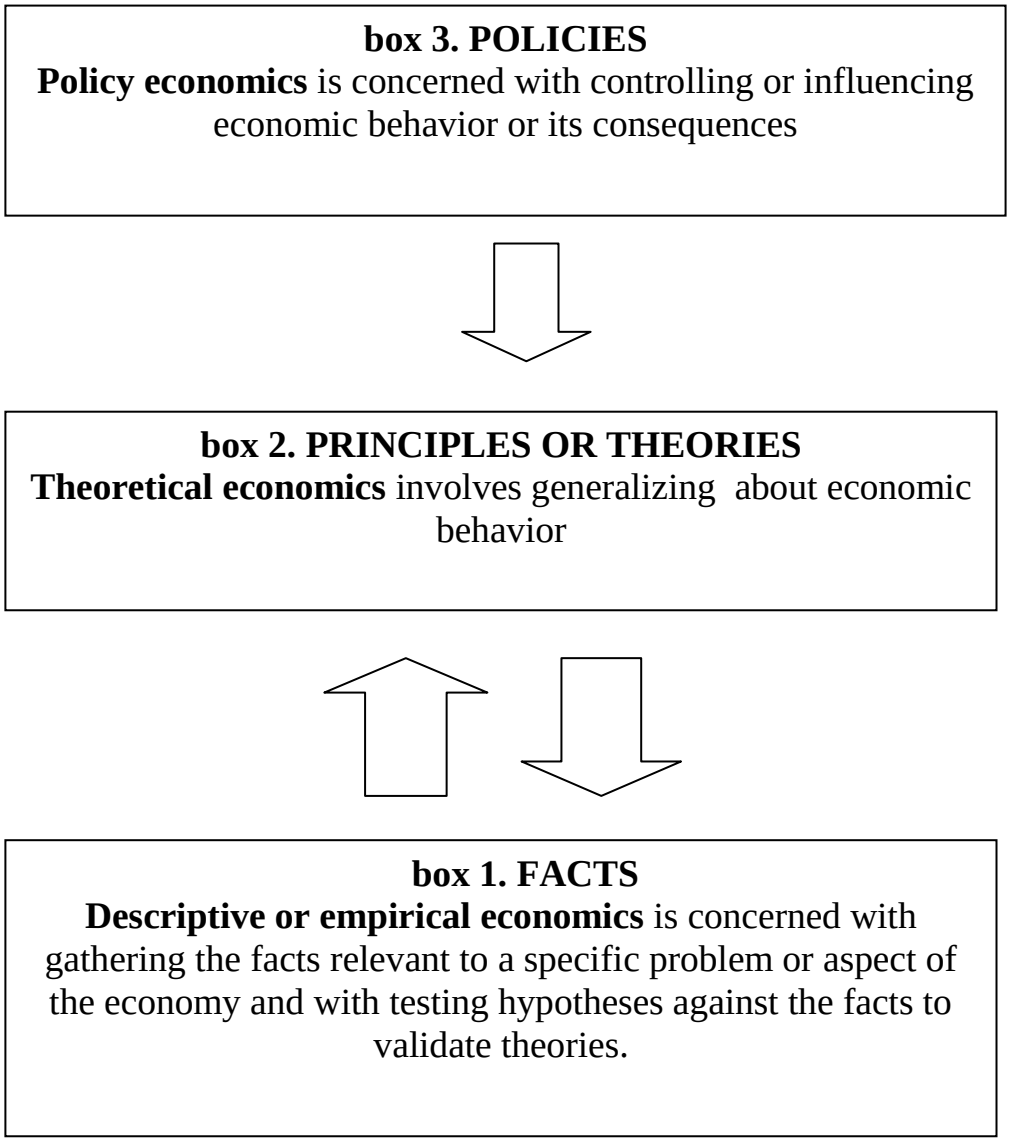
Finally, the general knowledge of economic behavior which economic principles provide can then be used in formulating policies.

This final aspect of economics is called **policy economics** (box 3). **Policy economics** is concerned with controlling or influencing economic behavior or its consequences.

[1] Economics. Paul A. Samuelson, William D, Nordhaus.

[2] Marshall, Alfred (1890 [1920]). Principles of Political Economy, v. 1, pp. 1–2 [8th ed.]. London: Macmillan.

Figure 1.1:



Continuing to use Figure 1 as a reference, we now examine ***policy economics*** (box 3), as the economist's methodology, in more detail.

Economic policies are designed to achieve certain **economic goals,** let us recognize a number of goals which are widely accepted in society[1].

They include:

1. **Economic Growth.** The production of more and better goods and services, or, more simply, a higher standard of living, is desired.

2 **. Full Employment.** Suitable jobs should be available for all willing and able to work.

3 **. Economic Efficiency.** We want maximum benefits at minimum cost from the limited productive resources available.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

4 **. Price Level Stability.** Sizable upswings or downswings in the general price level, that is, inflation and deflation, should be avoided.

5 **. Economic Freedom.** Business executives, workers, and consumers should enjoy a high degree of freedom in their economic activities.

6 **. An Equitable Distribution of Income.** No group of citizens should face stark poverty while others enjoy extreme luxury.

7 **. Economic Security.** Provision should be made for those who are chronically ill, disabled, handicapped, laid off, aged, or otherwise unable to earn minimal levels of income.

8 **. Balance of Trade.** We seek a reasonable balance in our international trade and financial transactions.

3. Positive and Normative economics

Positive economics deals with facts (once removed at the level of theory) and avoids value judgments[1].

Normative economics, in contrast, involves someone's value judgments about what the economy should be like or what particular policy action should be recommended based on a given economic generalization or relationship[2].

Positive economics concerns *what is,* while normative economics embodies subjective feelings about *what should be.*

Positive economics deals with what the economy is actually like; normative economics examines whether certain conditions or aspects of the economy are desirable or not.

Examples: Positive statement: "Unemployment is 7 percent of the labor force." Normative statement: "Unemployment should be reduced."

Whenever word such as "should" appear in a sentence, there is a strong chance you are dealing with a normative statement.

4. The economic perspective

The methodology used by economists is common to all the natural and social sciences. And all scholars try to avoid the reasoning errors just discussed. Thus, economists do *not* think in a special way, but they *do* view things from a special perspective.

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[1] Andrew Caplin and Andrew Schotter, The Foundations of Positive and Normative Economics, Oxford University Press, 2008.

[2] Andrew Caplin and Andrew Schotter, The Foundations of Positive and Normative Economics, Oxford University Press, 2008.

The **economic perspective** entails several critical and closely interrelated features, including *scarcity, rational behavior*, and *benefit-cost comparisons*.

Scarcity and Choice.

From our definition of economics, it is easy to see why economists view the world from the vantage point of scarcity. Human and property resources are scarce. It follows that outputs of goods and services must be scarce or limited, and scarcity limits our options and necessitates choices. We "can't have it all." If not, what should we choose to have[1]?

At the core of economics is the idea that "there is no free lunch." Someone may treat you to lunch, making it "free" to you, but there is a cost to someone - ultimately to society.

Scarce inputs of farm products and the labor of cooks and waiters are required. These resources could have been used in alternative productive activities, and those activities - those other goods and services - are sacrificed in providing your lunch.

Rational Behavior.

Economics is grounded on the assumption of "rational self-interest." Individuals make rational decisions to achieve the greatest satisfaction or maximum fulfillment of their goals[2].

Thus, consumers seek to spend their incomes rationally to get the greatest benefit or satisfaction from the goods and services their incomes allow them to buy.

Rational behavior means people will make different choices, because their circumstances, constraints and available information differ.

For example, you may have decided that it is in your self-interest to attend college before entering the labor force, but a school classmate has decided to forgo additional schooling and take a job.

Why the different choices? Your academic abilities, along with your family's income, may be greater than those of your classmate. You may also be better informed, realizing that college-educated workers make much higher incomes and are less likely to be unemployed than workers with a school education.

Thus, you choose for college while your school classmate with fewer human and financial resources and less information chooses a job. Both are rational choices, but based on differing constraints and information.

Of course, rational decisions may change as circumstances change. Suppose, the government decides it is in the national interest to increase the supply of college-educated workers. As a result, government policy changes to provide greater financial

[1] Essentials of economics. Badley R. Schiller.

[2] Essentials of economics. Badley R. Schiller.

assistance to college students. Under these new conditions, your school classmate may choose for college rather than a job after graduating from school.

Rational self-interest is not the same as being selfish. People make personal sacrifices to help family members or friends and contribute to charities because they derive pleasure from doing so. Parents contribute financially to their childrens' educations because they derive satisfaction from that choice.

Marginalism: Benefits and Costs

The economic perspective focuses largely on **marginal analysis** - decisions which compare marginal benefits and marginal costs[1]. *Marginal* means "extra," "additional," or "a change in."[2] Most economic choices or decisions entail changes in the status quo. When you graduated high school you faced the question of whether you should get *additional* education. Similarly, businesses are continuously deciding whether to employ more or fewer workers or to produce more or less output.

In making such choices rationally, we must compare marginal benefits and marginal costs. Because of scarcity, any option or choice will entail both extra benefits and additional costs.

Example: Your time is scarce. What will you do with, say, two "free" hours on a Saturday afternoon? Option: Watch Kharkov State University's team play football on TV. Marginal benefit: the pleasure of seeing the game. Marginal cost: Any of the other things you sacrifice by spending an extra two hours in front of the TV, including studying, jogging, or taking a nap.

If the marginal benefit exceeds the marginal cost, then it is rational to watch the game. But if you perceive the marginal cost of watching the game to exceed its marginal benefits, then one of the other options should be chosen.

On the national level government is continuously making decisions involving marginal benefits and costs. More spending on health care may mean less spending on homeless shelters, aid for the poor or military security.

Lesson: In a world of scarcity the decision to obtain the marginal benefit with some specific choice includes the marginal cost of forgoing something else.

Again, there's no free lunch.

[1] Essentials of economics. Badley R. Schiller.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

LECTURE 2:

ECONOMIZING PROBLEM

Total hours - 2

1. *The foundation of economics*
2. *Economics: employment and efficiency*
3. *Production possibility curve*
4. *Models of economic systems*

You make decisions every day which capture the essence of economics. Suppose you have S30 and are deciding how to spend it. Should you buy a new pair of jeans? Or USB flash card? Go to a night club?

Similarly, what to do with your time between three and six o'clock on, say, a Thursday afternoon? Should you work extra hours on your part-time job? Do research on a term project? Prepare for an economics test? Watch TV? Take a nap?

Money and time are both scarce and making decisions in the context of scarcity implies costs. If you choose the jeans, the cost is the forgone USB or night club. If you nap or watch TV, the cost might be a low grade on your test.

Scarcity, choices, and costs[1] - these are the building blocks of this lecture.

1. The foundation of economics

Two fundamental facts which constitute the **economizing problem** provide a foundation for the field of economics. What are they?

We must carefully state and fully understand these two facts, because everything that follows depends directly or indirectly on them.

1. *Society's material wants, that is, the material wants of its citizens and institutions, are virtually unlimited or insatiable.*
2. *Economic resources - the means of producing goods and services - are limited or scarce*[2].

Unlimited Wants

In the first statement, *what do we mean by "material wants"*? We mean, first, the desires of consumers to obtain and use various *goods* and *services* which provide **utility** - the economist's term for pleasure or satisfaction, obtained from a good or service.

Utility - pleasure or satisfaction obtained from a good or service.

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Essentials of economics. Badley R. Schiller.

An amazingly wide range of products fills the bill in this respect: houses, automobiles, toothpaste, laptops, pizzas, sweaters, and the like.

Innumerable products sometimes classified as *necessities* (food, shelter, clothing) and *luxuries* (perfumes, yachts) all can satisfy human wants[1].

(Services satisfy our wants as much as products. Repair work on my car, the removal of our appendix, a haircut, and legal advice also satisfy our wants).

Businesses and units of government also seek to satisfy material wants. Businesses want factory buildings, machinery, trucks, warehouses communications systems, and other things that help them realize their production goals. *Government*, reflecting the collective wants of its citizenry or goals of its own, seeks highways, schools, hospitals, and military hardware.

As a group, these *material wants are insatiable*, or *unlimited*.

Our wants for a *particular* good or service can be satisfied; over a short period of time we can get enough toothpaste or beer. But! Over time, our wants multiply. As we fill some of the wants on the list, we add new ones later. Not long ago, we didn't want personal computers, light beer, fax machines, and USB flash drives because they didn't exist.

Over time, wants change and multiply, fueled by development of new products and extensive advertising and sales promotion.

The overall objective of all economic activity is the attempt to satisfy all these diverse material wants.

Scarce Resources

In considering the second fundamental fact - *economic resources are limited or scarce* - what do we mean by **economic resources[2]?**

In general, we mean all *natural, human, and manufactured resources* that go into the production of goods and services. This covers a lot of ground: factory and farm buildings and all equipment, tools, and machinery used to produce manufactured goods and agricultural products; transportation and communication facilities; innumerable types of labor; and land and mineral resources of all kinds.

There are 3 categories of resources (see lecture 1).

Also, these resources (which we need to produce goods and services) are called factors of production (see lecture 1).

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

2. ***Economics: employment and efficiency***

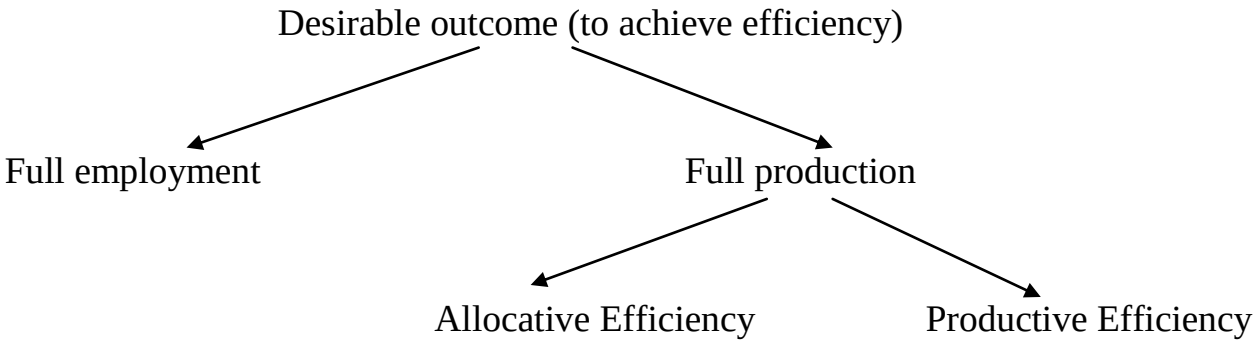
Restating the basic definition of economics: *Economics is the social science concerned with the problem of using or administering scarce resources (the means of producing) to attain the greatest or maximum fulfillment of society's unlimited wants (the goal of producing)*[1].

Economics is concerned with "doing the best with what we have." If our resources are scarce, we cannot satisfy all of our unlimited material wants. The next best thing is *to achieve the greatest possible satisfaction* of these wants.

Economics is a **science of efficiency**- efficiency in the use of scarce resources. Society wants to use its limited resources efficiently; it wants to get the maximum amount of useful goods and services produced with its available resources.

To achieve this desirable outcome it must realize both:

- ✓ full employment and
- ✓ full production.



Full Employment: Using Available Resources

By **full employment** we mean all available resources should be employed[2]. No workers should be involuntarily out of work; the economy should provide employment for all who *are willing and able to work*. Nor should capital equipment or arable land sit idle.

[1] Backhouse, Roger E., and Steven Medema (2009). "Retrospectives: On the Definition of Economics", Journal of Economic Perspectives, 23(1).

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

Note we say all *available resources* should be employed. Each society has certain customs and practices which determine what particular resources are available for employment.

For example, legislation and custom provide that children and the very aged should not be employed. Similarly, it is desirable for productivity to allow farmland to lie fallow periodically. And it is desirable to "conserve" some resources for use by future generations.

Full Production: Using Resources Efficiently

But the employment of all available resources is insufficient to achieve efficiency. Full production must also be realized.

By full production we mean that all employed resources should be used so that they provide the maximum possible satisfaction of our material wants. If we fail to realize full production, economists say our resources are underemployed[1].

Full production *implies two kinds of efficiency* - allocative and productive efficiency.

Allocative Efficiency means that resources are being devoted to that combination of goods and services most wanted by society. It is obtained when we produce the best or optimal output-mix[2].

For example, society wants resources allocated to USB flash drives, rather than compact discs and cassettes. We prefer word processors and laptops, not manual type-writers. Xerox copiers are desired, not mimeograph machines.

Productive Efficiency is realized when desired goods and services are produced in the least costly ways.

When we produce, say, USB flash drives at the lowest achievable unit cost, this means we are expending the smallest amount of resources to produce USB flash drives and therefore making available the largest amount of resources for the production of other wanted products.

Suppose society has only $100 worth of resources available. If we can produce a USB flash drives with only $5 of resources, then $95 of resources would be available to produce other goods. This is clearly better than producing the USB flash drive for $10 and only having $90 of resources for alternative uses.

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

In real-world terms, do we want our farmers harvesting wheat with scythes or picking corn by hand when elaborate harvesting equipment will do the job at a much lower cost per bushel.

In summary, **allocative efficiency** means resources are apportioned among firms and industries to obtain the particular mix of products society wants the most.

Productive efficiency means each good or service in this optimal product-mix is produced in the least costly fashion.

Full production means producing the "right" goods (allocative efficiency) in the "right" way (productive efficiency)[1].

Quick review:

- ✓ Human material wants are virtually unlimited.
- ✓ Economic resources - land, capital, labor, and entrepreneurial ability - are scarce or limited.
- ✓ Economics is concerned with the efficient management of scarce resources to achieve the maximum fulfillment of our material wants.
- ✓ Economics entails the pursuit of full employment and full production, the latter involving both allocative and productive efficiency.

3. Production Possibilities Curve

We can clarify the economizing problem through the use of a production possibilities curve.

This device reveals the core the of the economizing problem: *Because resources are scarce, a full-employment, full-production economy cannot have an unlimited output of goods and services. As a result, people must choose which goods and services to produce and which to forgo.*

Assumptions

Several assumptions will set the stage for our illustration[2].

1. ***Efficiency.*** The economy is operating at full employment and achieving productive efficiency.
2. ***Fixed Resources.*** The available supplies of the factors of production are fixed in both quantity and quality. But they can be shifted or reallocated, within limits, among different uses; for example, a relatively unskilled laborer can work on a farm, at a fast-food restaurant, or as a gas station attendant.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

3. ***Fixed Technology.*** The state of the technological arts is constant; that is, technology does not change during our analysis. Assumptions 2 and 3 are another way of saying that we are looking at our economy at a specific point in time, or over a very short period of time. Over a relatively long period it would be unrealistic to rule out technological advances and the possibility that resource supplies might vary.

4. ***Two Products.*** To further simplify, suppose our economy is producing just two products - industrial robots and pizza - instead of the innumerable goods and services actually produced.

   Pizza is symbolic of **consumer goods,** those goods which directly satisfy our wants; industrial robots are symbolic of **capital goods,** those goods which satisfy our wants *indirectly* by permitting more efficient production of consumer goods.

Necessity of Choice

From our assumptions we see that a choice must be made among alternatives. Available resources are limited.

Consequently, the total amounts of robots and pizza that our economy can produce are limited. *Limited resources mean a limited output.* Since resources are limited in supply and fully employed, any increase in the production of robots will mean shifting resources away from the production of pizza. And the reverse holds true: If we step up the production of pizza, needed resources must come at the expense of robot production. *Society cannot have its cake and eat it, too.* Facetiously put, there's no such thing as a "free lunch." This is the essence of the economizing problem[1].

Though the data in the following **production possibilities curves** are hypothetical, the points illustrated have tremendous practical significance.

Table 2.1:

Type of product	**Productive alternatives**				
PIZZA (in hundreds)	0	1	2	3	4
ROBOTS	10	9	7	4	0

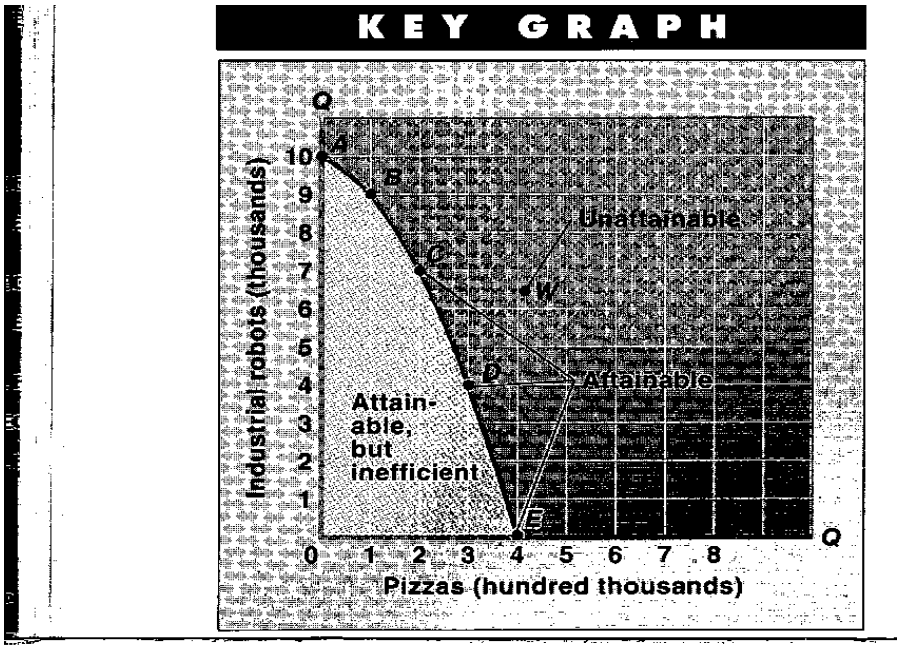
Let's view Production Possibilities Curve **graphically**.

We employ a simple two-dimensional graph, arbitrarily putting the output of robots (capital goods) on the vertical axis and the output of pizza (consumer goods) on the horizontal axis, as in Figure 1[2].

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

Figure 2.1: PPC



To graph those five price-quantity possibilities in Table 1, we draw perpendiculars from the appropriate points on the two axes.

In plotting the "0-pizza-10-robots" possibility, we draw a perpendicular from the horizontal (pizza) axis at 0 to meet a perpendicular drawn from the vertical (robots) axis at 0.

If this is done for all five possibilities, *the result is a series of points* in Figure 2.1. Each point represents a specific price and the corresponding quantity the consumer will purchase at that price[1].

Each point on the production possibilities curve represents some maximum output of the two products. Thus *the curve is a frontier.*

To realize the various combinations of pizza and robots which fall <u>on</u> the production possibilities curve, *society must achieve both* full employment and productive efficiency.

Points lying <u>inside</u> the curve are also attainable, but are not as desirable as points on the curve. These interior points imply *a failure to achieve* full employment and productive efficiency.

Points lying <u>outside</u> the production possibilities curve, like point *W,* would represent greater output than at any point on the curve; but such points are *unattainable with the current supplies of resources* and technology.

The production barrier of limited resources and existing technological knowledge prohibits production of any combination of capital and consumer goods lying outside the production possibilities curve.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

Quick review:

- ✓ The production possibilities curve illustrates 2 concepts:
  a. the *scarcity* of resources is implicit in that all combinations of output lying outside the production possibilities curve are unattainable;
  b. choice is reflected in the need for society to select among the various attainable combinations of goods tying on the curve;
- ✓ Full employment and productive efficiency must be realized for the economy to operate on its production possibilities curve.

4. Unemployment, growth and the future

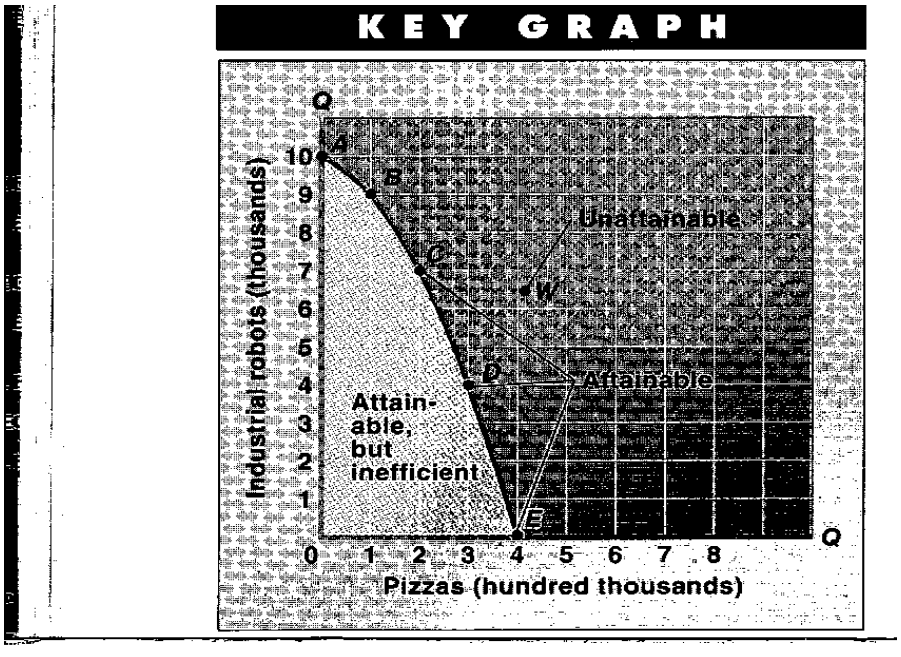
Let's now release the first three assumptions underlying the production possibilities curve to see what happens.

Unemployment and Productive Inefficiency (point U)

The first assumption was that *our economy is characterized by full employment* and *productive efficiency*.

How would our analysis and conclusions be altered if idle resources *were available* or if least-cost production *was not realized*?

Figure 2.2: PPC



With full employment and productive efficiency, our five alternatives (points A-C) in Figure 2.2 represent a series of maximum outputs; they illustrate combinations of robots and pizzas which might be produced when the economy is operating at full capacity[1].

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

With unemployment or inefficient production, the economy would produce less than each alternative shown in the table.

Graphically, a situation of unemployment or productive inefficiency can be illustrated by a point *inside* the original production possibilities curve (let's imagine point *U)*.

Here the economy is falling short of the various maximum combinations of pizza and robots reflected by all the points *on* the production possibilities curve.

A move toward full employment and productive efficiency will entail a greater output of one or both products[1].

A Growing Economy (point W)

When we drop the remaining assumptions that the quantity and quality of *resources and technology are fixed*, the production possibilities curve will shift position; that is, the potential total output of the economy will change[2].

Expanding Resource Supplies. *Let's abandon* the assumption *that total supplies* of land, labor, capital, and entrepreneurial ability are *fixed in both quantity and quality*.

Common sense tells us that over time a nation's growing population will bring about increases in supplies of labor and entrepreneurial ability.

Also, labor quality usually improves over time. And although we are depleting some of our energy and mineral resources, new sources are being discovered. The drainage of swamps and the development of irrigation programs add to our supply of arable land.

The net result of these increased supplies of the factors of production will be the ability to produce more of both robots and pizza.

The greater abundance of resources results in a greater potential output of one or both products at each alternative. Economic growth, in the sense of an expanded potential output, has occurred.

But such a favorable shift in the production possibilities curve does not guarantee the economy will actually operate at a point on that new curve. The economy might fail to realize fully its new potentialities. Some, for example, 125 million jobs will give us full employment now, but ten or twenty years from now our labor force, because of a growing population, will be larger, and 125 million jobs will not be sufficient for full

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Samuelson, Paul A.; William D. Nordhaus (2004). Economics. McGraw-Hill. ch. 1, p. 5 (quotation) and sect. C,"The Production–Possibility Frontier", pp. 9–15.

employment[1]. The production possibilities curve may shift, but the economy may fail to produce at a point on that new curve.

Technological Advance. Our other assumption is *a constant or unchanging technology*. We know that technology has progressed remarkably over a long period.

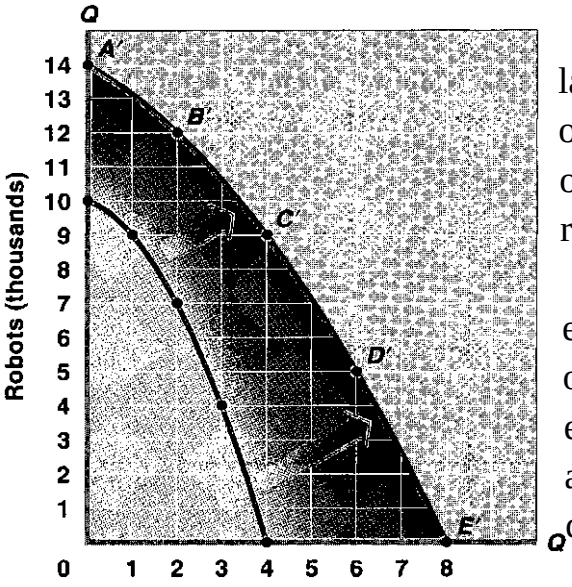
An advancing technology involves new and better goods *and* improved ways of producing them.

For now, let's think of *technological advance* as comprising only *improvements in capital facilities* - more efficient machinery and equipment. Such technological advance alters our economizing problem by improving productive efficiency, allowing society to produce more goods with fixed resources.

As with increases in resource supplies, technological advance permits the production or more robots *and* more pizza.

When the supplies of resources increase or an improvement in technology occurs, the production possibilities curve of Figure 2.2 shifts outward and to the right, as illustrated by the A`B`C`D`E` in Figure 2.3.

Figure 2.3: Economic growth and the production possibilities curve



Economic growth- the ability to produce a larger total output - is reflected in a rightward shift of the production possibilities curve; it is the result of increases in resource supplies, improvements in resource quality, and technological progress.

The consequence of growth is that our full-employment economy can enjoy a greater output of *both* robots and pizza. While a static, no-growth economy must sacrifice some of X to get more Y, a dynamic, growing economy can have larger quantities of both X and Y[2].

Note, that economic growth does *not* typically mean proportionate increases in a nation's capacity to produce various products (as you can see it in Table 1).

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Samuelson, Paul A.; William D. Nordhaus (2004). Economics. McGraw-Hill. ch. 1, p. 5 (quotation) and sect. C,"The Production–Possibility Frontier", pp. 9–15.

Quick review:

- ✓ Unemployment and the failure to realize productive efficiency cause the economy to operate at a point inside its production possibilities curve.
- ✓ Expanding resource supplies, improvements in resource quality, and technological progress cause economic growth, depicted as an outward shift of the production possibilities curve.

4.Models of economic systems

A society can use many different institutional arrangements and coordinating mechanisms to respond to the economizing problem.

Historically, the industrially advanced economies of the world have differed essentially in two ways. What are they? Can you name them?

Let's examine the main characteristics of two "polar" types of economic systems[1].

Competitive market system

Market system is characterized by the private ownership of resources and the use of a system of markets and prices to coordinate and direct economic activity.

In such a system each participant is motivated by his or her own self-interests; each economic unit seeks to maximize its income through individual decision making.

The market system communicates and coordinates individual decisions and preferences. Because goods and services are produced and resources are supplied under competitive conditions, *there are many independently acting buyers and sellers of each product and resource*.

As a result, economic power is widely dispersed. Advocates of market system argue that such an economy is conducive to efficiency in the use of resources, output and employment stability, and rapid economic growth.

Hence, there is little or no need for government planning, control, or intervention. The term *laissez faire (of Adam Smith)* means "let it be," that is, keep government from interfering with the economy, because such interference will disturb the efficient working of the market system[2].

Government's role is therefore limited to protecting private property and establishing an appropriate legal framework for free markets.

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Smith, Adam (1776). An Inquiry into the Nature and Causes of the Wealth of Nations, and Book IV, as quoted in Peter Groenwegen (1987).

1. *Private ownership rights* for consumption goods, labor and assets. Firms are privately owned. Property is privately owned.
2. *Unregulated market prices* - no price, wage or interest rate controls.
3. *Role of government*: enforce the rules but stay out of the game. Role of government is to enforce property rights, enforce contracts, prevent fraud, force and coercion, provide for national defense, provide local law enforcement, etc. Political process is not used to distort market outcome. *Decision-making* is decentralized, no form of central planning.

The Command Economy

The polar alternative to market system has been the **command economy** or **communism,** characterized by *public ownership* of virtually all property resources and the rendering of economic decisions through *central economic planning*[1].

All major decisions concerning the level of resource use, the composition and distribution of output and the organization of production are determined by a central planning board.

Business firms are governmentally owned and produce according to state directives.

Production targets are determined by the planning board for each enterprise and the plan specifies the amounts of resources to be allocated to each enterprise so that it might realize its production goals.

The division of output between capital and consumer goods is centrally decided and capital goods are allocated among industries in terms of the central planning board's long-term priorities.

1. *Government* plays *active role* in economic organization.
2. *Prices are regulated* by government.
3. Private ownership may be illegal, or minimal.
4. Economy operates under *central planning* or political planning.

Mixed Systems

Real-world economies fall between the extremes of market system and the command economy.

For example, the *United States* economy leans toward market system, but with important differences[2].

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

Government plays an active role in economy in promoting economic stability and growth, in providing certain goods and services which would be underproduced or not produced at all by the market system, and in modifying the distribution of income.

In contrast to the wide dispersion of economic power among many small units which characterizes market system, American capitalism has spawned powerful economic organizations in the form of large corporations and labor unions.

The ability of these power blocs to manipulate and distort the functioning of the market system to their advantage is a further reason for governmental involvement in the economy.

While the former *Soviet Union* historically approximated the command economy, it relied to some extent on market-determined prices and had some vestiges of private ownership.

Recent reforms in the former Soviet Union, China, and most of the eastern European nations are designed to move these command economies toward more capitalistic, market-oriented systems.

North Korea and Cuba are the best remaining examples of centrally planned economies.

But private ownership and reliance on the market system do not always go together, nor do public ownership and central planning.

For example, the *fascism* of Hitler's Nazi Germany has been dubbed **authoritarian capitalism** because the economy had a high degree of governmental control and direction, but property was privately owned.

In contrast, the former *Yugoslavian economy* of the 1980s was **market socialism,** characterized by public ownership of resources coupled with considerable reliance on free markets to organize and coordinate economic activity.

The Swedish economy is also a **hybrid system**. Although over 90 percent of business activity is in private hands, government is deeply involved in achieving economic stability and in redistributing income.

Similarly, the *capitalistic Japanese economy* entails a great deal of planning and "coordination" between government and the business sector[1].

The Traditional Economy

Many less developed countries have **traditional** or **customary economies.** Production methods, exchange and distribution of income are all sanctioned by custom.

Heredity and caste circumscribe economic roles of individuals and socioeconomic immobility is pronounced.

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

Technological change and innovation may be closely constrained because they clash (сталкиваться) with tradition and threaten the social fabric. Economic activity is often secondary to religious and cultural values and society's desire to perpetuate the status quo.

The point is that there is no unique or universally accepted way to respond to the economizing problem. Various societies, having different cultural and historical backgrounds, different mores and customs, and contrasting ideological frameworks - not to mention resources which differ both quantitatively and qualitatively -use different institutions in dealing with the reality of relative scarcity.

China, the United States, and Great Britain, for example, are all - in terms of their accepted goals, ideology, technologies, resources, and culture- attempting to achieve efficiency in the use of their respective resources.

The best method for responding to the unlimited wants-scarce resources dilemma in one economy ***may be inappropriate for another economic system***[1].

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

LECTURE 3:

DEMAND AND SUPPLY

Total hours - 2

1. *Demand*
2. *Supply*
3. *Demand and Supply: Market Equilibrium*

The tools of demand and supply can take us far in understanding not only specific economic issues, but also how the entire economy works.

In this lecture we examine the nature of markets and how prices and outputs are determined.

Markets defined

A* market *is *an institution or mechanism which brings together buyers ("demanders") and sellers ("suppliers") of particular goods and services*[1].

Markets exist in many-forms. The corner gas station, the fast-food outlet, the music store, café, night club, exhibition, supermarket - all are familiar markets.

Auctioneers bring together potential buyers and sellers of art, livestock, used farm equipment, and sometimes real estate.

All these situations which link potential buyers with potential sellers constitute markets.

1. Demand

Demand is a schedule which shows the various amounts of a product consumers are willing and able to purchase at each price in a series of possible prices during a specified period of time.

Demand portrays a series of alternative possibilities which can be set down in tabular form.

It shows the quantities of a product which will be demanded at various possible prices, all other things equal.

We usually view demand by looking at price; that is, we read demand as showing the amounts consumers will buy at various possible prices.

It is equally correct and sometimes more useful to view demand by looking at quantity. Instead of asking what quantities can be sold at various prices, we ask what prices can be gotten from consumers for various quantities of a good.

Table 1 is a hypothetical ***demand schedule*** for a single consumer purchasing bushels of corn.

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

Table 3.1: An individual buyer's demand for corn

Price per bushel, $	Quantity demanded per week
5	10
4	20
3	35
2	55
1	80

This tabular portrayal of demand reflects the relationship between the price of corn and the quantity the consumer would be willing and able to purchase at each of these prices.

We say willing and able, because willingness alone is not effective in the market. I may be willing to buy a Porsche, but if this willingness is not backed by the necessary dollars, it will not be effective and, therefore, not reflected in the market.

In Table 1, if the price of corn were $5 per bushel, our consumer would be willing and able to buy 10 bushels per week; if it were $4, the consumer would be willing and able to buy 20 bushels per week; and so forth[1].

The demand schedule does not tell us which of the five possible prices will actually exist in the corn market. This depends on demand and supply. Demand is simply a tabular statement of a buyer's plans, or intentions, with respect to the purchase of a product.

To be meaningful the quantities demanded at each price must relate to a specific period - a day, a week, a month. To say "a consumer will buy 10 bushels of corn at $5 per bushel" is meaningless. To say "a consumer will buy 10 bushels of corn per week at $5 per bushel" is clear and meaningful. Without a specific time period we would not know whether demand for a product was large or small.

Law of Demand

A fundamental characteristic of demand is this: **All else being constant, as price falls, the quantity demanded rises.** Or, **other things being equal, as price increases, the corresponding quantity demanded falls[2].**

In short, there is a negative or inverse relationship between price and quantity demanded. Economists call this inverse relationship the **law of demand.** So, people buy more at a law price than at a high price.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

The "other things being constant" assumption is critical here. Many factors other than the price of the product under consideration affect the amount purchased. The quantity of Nikes purchased will depend not only on the price of Nikes, but also on the prices of such substitutes as Reeboks and Adidas.

The law of demand in this case says that fewer Nikes will be purchased if the price of Nikes rises and the prices of Reeboks and Adidas all remain constant.

In short, if the relative price of Nikes increases, fewer Nikes will be bought. However, if the price of Nikes and all other competing shoes increase by some amount- say $5- consumers might buy more, less, or the same amount of Nikes.

What is the foundation for the law of demand? There are several levels of analysis on which to argue the case[1].

1. Common sense and simple observation are consistent with the law of demand. People ordinarily do buy more of a product at a low price than they do at a high price.

   Price is an obstacle which deters consumers from buying. The higher this obstacle, the less of a product they will buy; the lower the price obstacle, the more they will buy. A high price discourages consumers from buying; a low price encourages them to buy.

   The fact that businesses have "sales" is evidence of their belief in the law of demand. "Bargain days" are based on the law of demand. Businesses reduce their inventories by lowering prices, not by raising them.

2. *In any given time period* each *buyer* of a product *will derive less satisfaction* or benefit or utility from each successive unit consumed.

   The second "Big Mac" will yield less satisfaction to the consumer than the first; and the third still less added benefit or utility than the second. Because consumption is subject to diminishing marginal utility- consuming successive units of a particular product yields less and less extra satisfaction - consumers will only buy additional units if price is reduced.

3. The law of demand also can be explained in terms of income and substitution effects.

   The **income effect** indicates that, at a lower price, you can afford more of the good without giving up other goods.

   A decline in the price of a product will increase the purchasing power of your money income, enabling you to buy more of the product than before. A higher price will have the opposite effect.

   The **substitution effect** (suggests that, at a lower price, you have the incentive to substitute the cheaper good for similar goods which are now relatively more expensive. Consumers tend to substitute cheap products for dear products.

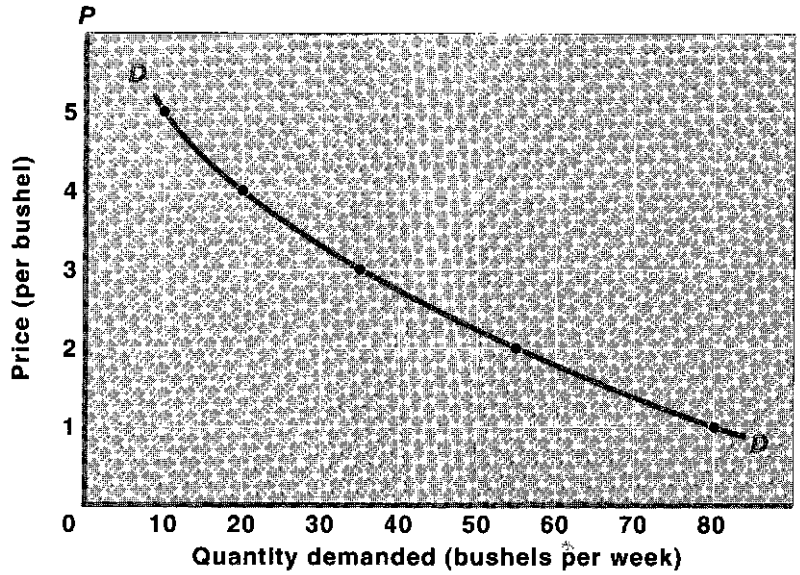
[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

For example, a decline in the price of beef will increase the purchasing power of consumer incomes, enabling them to buy more beef (the income effect). At a lower price, beef is relatively more attractive and is substituted for pork, mutton, chicken, and fish (the substitution effect). The income and substitution effects combine to make consumers able and willing to buy more of a product at a low price than at a high price.

The Demand Curve

This inverse relationship between product price and quantity demanded can be represented on a simple graph where, by convention, we measure quantity demanded on the horizontal axis and price on the vertical axis.

Figure 3.1: The Demand Curve



To graph those five price-quantity possibilities in Table 3.1, we draw perpendiculars from the appropriate points on the two axes.

In plotting the "$5-price-10-quantity-demanded" possibility, we draw a perpendicular from the horizontal (quantity) axis at 10 to meet a perpendicular drawn from the vertical (price) axis at $5.

If this is done for all five possibilities, the result is a series of points in Figure 3.1[1]. Each point represents a specific price and the corresponding quantity the consumer will purchase at that price.

And now we can generalize on the inverse relationship between price and quantity demanded by drawing a curve to represent all price-quantity-demanded possibilities within the limits shown on the graph.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

The resulting curve is called a **demand curve,** let's label it D1.

It slopes downward and to the right because the relationship it portrays between price and quantity demanded is negative or inverse.

The law of demand - people buy more at a low price than at a high price- is reflected in the downward slope of the demand curve.

What is the advantage of graphing our demand schedule? After all, Table 3.1 and Figure 3.1 contain exactly the same data and reflect the same relationship between price and quantity demanded.

The advantage of graphing is that we can represent clearly a given relationship- in this case the law of demand - more simply than if we relied on verbal and tabular presentation. A single curve on a graph, if understood, is simpler to state and manipulate than tables and lengthy verbal descriptions.

Graphs are invaluable tools in economic analysis. They permit clear expression and handling of sometimes complex relationships.

Determinants of Demand

We assume that price is the most important influence on the amount of any product purchased. But the economist knows that other factors can and do affect purchases. In locating a demand curve such as D1, it must be assumed that "other things are equal"; that is, certain determinants of the amount demanded are assumed to be constant. When any of these determinants change, the location of the demand curve will shift to the right (D2) or left (D3) of D1. For this reason determinants of demand are referred to as demand shifters[1].

The basic determinants of market demand are:

1) The tastes or preferences of consumers,

2) The number of consumers in the market,

3) The money incomes of consumers,

4) Prices of related goods, and

5) Consumer expectations about future prices and incomes.

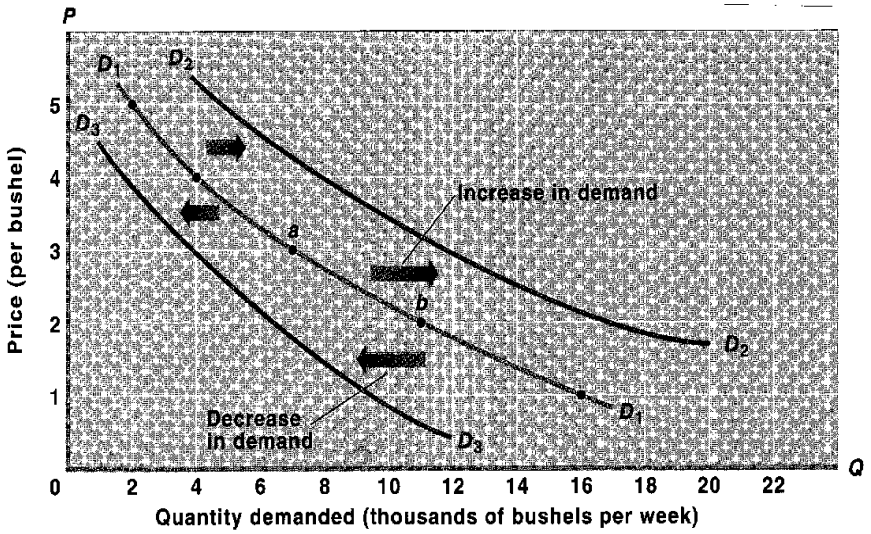
Changes in Demand

A change in one or more of the determinants of demand will change the demand curve in Figure 2. A change in a shift in the location of the demand curve, is called a **change in demand**[2].

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

Figure 3.2:



If consumers become willing and able to buy more corn at each possible price, the result will be an **increase in demand**. This increase in demand is reflected in a shift of the demand curve to the right, as from D1 to D2.

Conversely, a **decrease in demand** occurs when, because of a change in one or more of the determinants, consumers buy less corn at each possible price. Graphically, this decrease in demand is shown as a shift of the demand curve to the left, for example, from D1 to D_3 in Figure 3.2.

Let's now examine how changes in each determinant affect demand[1].

1. **Tastes.** A change in consumer tastes or preferences favorable to a product - possibly prompted by advertising or fashion changes - will mean that more will be demanded at each price; that is, demand will increase. An unfavorable change in consumer preferences will decrease demand, shifting the curve to the left.

   Technological change in the form of a new product may affect consumer tastes. For example, the introduction of compact discs has greatly decreased the demand for long-playing records.

   Consumer concerns over the health hazards posed by cholesterol and obesity have increased the demands for broccoli, low-calorie sweeteners, and fresh fruits, while decreasing the demands for beef, veal, eggs, and whole milk. Medical studies linking beta carotene to the prevention of heart attacks, strokes, and some types of cancer have greatly boosted the demand for carrots.

2. **Number of Buyers.** An increase in the number of consumers in a market will increase demand. Fewer consumers will decrease demand.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

For example, improvements in communications have given financial markets international range, increasing demand for stocks and bonds.

And the "baby boom" after World War II increased demand for diapers, baby lotion, and services of obstetricians. When the "baby boomers" reached their twenties in the 1970s, the demand for housing increased. Conversely, the aging of the baby boomers in the 1980s and 1990s has been a factor in the recent "slump" in housing demand. Also, increasing life expectancy has increased demands for medical care, retirement communities, and nursing homes[1].

3. **Income.** How changes in money income affect demand is more complex.

For most commodities, a rise in income will cause an increase in demand. Consumers typically buy more steaks, sunscreen, and stereos as their incomes increase. Conversely, the demand for such products will decline as incomes fall. Commodities whose demand varies directly with money income are called **superior,** or **normal, goods** (quantity of jeans).

Although most products are normal goods, there are a few exceptions. As incomes increase beyond some point, the amounts of bread or lard or cabbages purchased at each price may diminish because higher incomes allow consumers to buy more high-protein foods, such as dairy products and meat. Rising incomes may also decrease demands for used clothing and third-hand automobiles. Similarly, rising incomes may cause demands for hamburger and margarine to decline as wealthier consumers switch to T-bones and butter.

Goods whose demand varies inversely with a change in money income are called **inferior goods.**

4. **Prices of Related Goods**. Whether a particular change in the price of a related good will increase or decrease the demand for a product will depend on whether the related good is a substitute for it or a complement to it.

A substitute is a good which can be used in place of another good.

A complement is a good used in conjunction with another good.

Substitutes. Butter and margarine are examples of substitute goods. When the price of butter rises, consumers buy less butter, increasing the demand for margarine. Conversely, as the price of butter falls, consumers will buy more butter, decreasing the demand for margarine.

When two products are substitutes, the price of one good and the demand for the other are directly related. So it is with Nikes and Reeboks, sugar and Nutrasweet, Toyotas and Hondas, and Coke and Pepsi.

Complements. Other products are related and are complementary goods; they "go together" in that they are used in tandem and jointly demanded. If the price of gasoline falls and, as a result, you drive your car more, this extra driving will increase your demand for motor oil.

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

Conversely, an increase in the price of gasoline will diminish the demand for motor oil. Thus gas and oil are jointly demanded; they are complements. So it is with ham and eggs, tuition and textbooks, movies and popcorn, golf clubs and golf balls, cameras and film. When two commodities are complements, the price of one good and the demand for the other are inversely related.

Many goods are not related to one another - they are **independent goods**. For example, with such pairs as butter and golf balls, potatoes and automobiles, bananas and wristwatches, a change in the price of one would have little or no impact on the demand for the other.

5. Expectations. Consumer expectations about future product prices, product availability, and future income can shift demand.

Consumer expectations of higher future prices may prompt them to buy now, to "beat" anticipated price rises; similarly, the expectation of rising incomes may induce consumers to be freer in current spending. Conversely, expectations of falling prices and income will decrease current demand for products.

Example: If freezing weather destroys much of Florida's citrus crop, consumers may reason that forthcoming shortages of orange juice will escalate its price. They may stock up on orange juice by purchasing large quantities now.

One more example, concerning USA: Additional Federal excise taxes imposed on beer, wine, and distilled liquor on January 1, 1991, sharply increased demand in December of 1990 as consumers "bought early", to beat anticipated price increases[1].

In summary, **an increase in demand** - the decision by consumers to buy larger quantities of a product at each possible price - can be caused by:

1 A favorable change in consumer tastes,
2 An increase in the number of buyers,
3 Rising incomes if the product is a normal good,
4 Falling incomes if the product is an inferior good,
5 An increase in the price of a substitute good,
6 A decrease in the price of a complementary good,
7 Consumer expectations of higher future prices and incomes.

Be sure you can "reverse" these generalizations to explain a decrease in demand.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

Table 3.2 provides additional illustrations to reinforce your understanding of the determinants of demand[1].

Table 3.2: Determinants of demand: factors that shift the demand curve

1. **Change in buyer tastes.** Example: Physical fitness increases in popularity, increasing the demand for jogging shoes and bicycles.
2. **Change in number of buyers.** Examples: Japanese reduce import quotas on American telecommunications equipment, increasing the demand for it; a birthrate decline reduces the demand for education.
3. **Change in income.** Examples: An increase in incomes increases the demand for such normal goods as butter, lobster, and filet mignon, while reducing the demand for such inferior goods as cabbage, retreaded tires, and used clothing.
4. **Change in the prices of related goods.** Examples: A reduction in airfares reduces the demand for bus transportation (substitute goods); a decline in the price of compact disc players increases the demand for compact discs (complementary goods).
5. **Change in expectations.** Example: Inclement weather in South America causes the expectation of higher future coffee prices, thereby increasing the current demand for coffee.

Changes in Quantity Demanded

A "change in demand" must not be confused with a "change in quantity demanded."

A **change in demand** is a shift in the entire demand curve either to the right (an increase in demand) or to the left (a decrease in demand). The consumer's state of mind concerning purchases of this product has been altered. The cause: a change in one or more of the determinants of demand.

The term "demand" refers to a schedule or curve; therefore, a "change in demand" means that the entire schedule has changed and that graphically the curve has shifted its position.

In contrast, a **change in the quantity demanded** designates the movement from one point to another point - from one price-quantity combination to another - on a fixed demand curve. The cause of a change in quantity demanded is a change in the price of the product under consideration.

In Figure 2 the shift of the demand curve D1 to either D2 or D3 is a "change in demand." But the movement from point a to point b on curve D1 is a "change in the quantity demanded."

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

Quick review:

- ✓ A market is any arrangement which facilitates purchase and sale of goods, services, or resources.
- ✓ The law of demand indicates that, other things being constant, the quantity of a good purchased will vary inversely with its price.
- ✓ The demand curve will shift because of changes in **a** consumer tastes, **b** the number of buyers in the market, **c** incomes, **d** the prices of substitute or complementary goods, and **e** expectations.
- ✓ A "change in quantity demanded" refers to a movement from one point to another on a stable demand curve; a "change in demand" designates a shift in the entire demand curve.

2. Supply

Supply is a schedule which shows the amounts of a product a producer is willing and able to produce and make available for sale at each price in a series of possible prices during a specified period[1].

This **supply schedule** portrays a series of alternative possibilities, such as shown in Table 3, for a single producer of corn. Supply tells us the quantities of a product which will be supplied at various prices, all other factors held constant.

Table 3.3: An individual producer's supply of corn

Price per bushel, $	Quantity supplied per week
5	60
4	50
3	35
2	20
1	5

Our definition of supply indicates that supply is usually viewed from the vantage point of price. That is, we read supply as showing the amounts producers will offer at various prices. It is equally correct and more useful in some instances to view supply from the reference point of quantity.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

Law of Supply

Table 3 shows a positive or direct relationship between price and quantity supplied. **As price rises, the corresponding quantity supplied rises**; **as price falls, the quantity supplied also falls**. This particular relationship is called the **law of supply[1].**

Producers will produce and offer for sale more of their product at a high price than at a low price. This again is basically a commonsense matter.

Price is a deterrent from the consumer's standpoint. A high price means that the consumer, being on the paying end of this price, will buy a relatively small amount of the product; the lower the price obstacle, the more the consumer will buy.

The supplier is on the receiving end of the product's price. To a supplier, price is revenue per unit and therefore an inducement or incentive to produce and sell a product. Given production costs, a higher product price means greater profits and thus an incentive to increase the quantity supplied.

Consider a farmer who can shift resources among alternative products. As price moves up in Table 3, the farmer will find it profitable to take land out of wheat, oats, and soybean production and put it into corn. Furthermore, higher corn prices will make it possible for the farmer to cover the costs associated with more intensive cultivation and the use of larger quantities of fertilizers and pesticides. The result is more corn.

Now consider a manufacturer. Beyond some point manufacturers usually encounter increasing production costs per added unit of output. Therefore, a higher product price is necessary to cover these rising costs. Costs rise because certain productive resources - in particular, the firm's plant and machinery - cannot be expanded quickly. As the firm increases the amounts of more readily variable resources such a labor, materials, and component parts, the fixed plant will at some point become crowded or congested. Productive efficiency will decline and the cost of successive units of output will increase. Producers must receive a higher price to produce these more costly units. Price and quantity supplied are directly related[2].

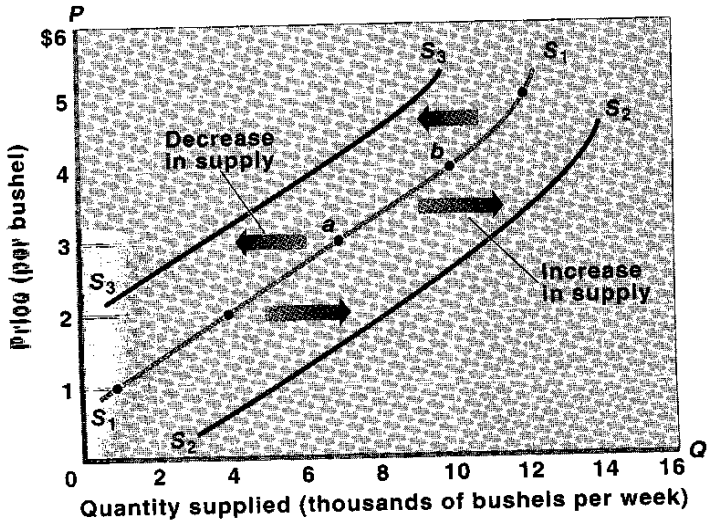
The Supply Curve

As with demand, it is convenient to represent graphically the concept of supply. Our axes in Figure 3.1 are the same as those in Figure 3.3, except for the change of "quantity demanded" to "quantity supplied" on the horizontal axis.

Figure 3.3: The supply curve; Changes in the supply of corn

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed, McGraw-Hill/Irwin, New York, USA.



Determinants of Supply

In constructing a supply curve, the economist assumes that price is the most significant influence on the quantity supplied of any product.

But, as with the demand curve, the supply curve is anchored on the "other things are equal" assumption. The supply curve is drawn assuming that certain determinants of the amount supplied are given and do not change. If any of these determinants of supply do change, the supply curve will shift.

The basic determinants of supply are:

1) Resource prices,
2) The technique of production,
3) Taxes and subsidies,
4) Prices of other goods,
5) Price expectations, and
6) The number of sellers in the market.

A change in any one or more of these determinants or supply shifters will cause the supply curve for a product to shift either to the right or the left.

A shift to the right, from S1 to S2 in Figure 3, designates an increase in supply: producers will supply larger quantities of the product at each possible price.

A shift to the left, S1 to S3 in Figure 3, indicates a decrease in supply: suppliers offer less at each price.

Changes in Supply

Let's consider how changes in each of these determinants affect supply[1]:

1. Resource Prices. The relationship between production costs and supply is an intimate one. A firm's supply curve is based on production costs; a firm must receive higher prices for

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

additional units of output because those extra units cost more to produce. It follows that decreases in resource prices will lower production costs and increase supply, shifting the supply curve to the right.

If prices of seed and fertilizer decrease, we can expect the supply of corn to increase. Conversely, an increase in resource prices will raise production costs and reduce supply, shifting the supply curve to the left. Increases in the prices of iron ore will increase the cost of producing steel and reduce its supply[1].

2. Technology. A technological improvement means new knowledge permits us to produce a unit of output with fewer resources.

Given the prices of these resources, this will lower production costs and increase supply. Recent breakthroughs in superconductivity portend the possibility of transporting electric power with little or no loss. Currently, about 30 percent of electric power transmitted by copper cable is lost. Consequence? Significant cost reductions and supply increases might occur in a wide range of products where electricity is an important input.

3. Taxes and Subsidies. Businesses treat most taxes as costs. An increase in sales or property taxes will increase costs and reduce supply. Conversely, subsidies are "taxes in reverse." If government subsidizes the production of a good, it in effect lowers costs and increases supply.

4. Prices of Other Goods. Changes in the prices of other goods can also shift the supply curve for a product. A decline in the price of wheat may cause a farmer to produce and offer more oats at each possible price. Conversely, a rise in the price of wheat may make farmers less willing to produce and offer oats in the market.

A firm making athletic equipment might reduce its supply of basketballs in response to a rise in the price of soccer balls.

5. Expectations. Expectations concerning the future price of a product can affect a producer's current willingness to supply that product. It is difficult, however, to generalize how the expectation of higher prices will affect the present supply of a product. Farmers might withhold some of their current corn harvest from the market, anticipating a higher corn price in the future. This will cause a decrease in the current supply of corn.

Similarly, if the price of one company's stock is expected to rise significantly in the near future, the supply offered today for sale might decrease. On the other hand, in many types of manufacturing, expected price increases may induce firms to add another shift of workers or expand their production facilities, causing supply to increase[2].

6. Number of Sellers. Given the scale of operations of each firm, the larger the number of suppliers, the greater the market supply. As more firms enter an industry, the supply curve will

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

shift to the right. The smaller the number of firms in an industry, the less the market supply will be. This means that as firms leave an industry, the supply curve will shift to the left.

Table 3.4 provides a checklist of the determinants of supply; the accompanying illustrations deserve careful study.

Table 3.4: Determinants of supply: factors that shift the supply curve

Change in resource prices. Examples: A decline in the price of fertilizer increases the supply of wheat; an increase in the price of irrigation equipment reduces the supply of corn.
Change in technology. Example: The development of a more effective insecticide for corn rootworm increases the supply of corn.
Changes in taxes and subsidies. Examples: An increase in the excise tax on cigarettes reduces the supply of cigarettes; a decline in subsidies to state universities reduces the supply of higher education.
Change in prices of other goods. Example: A decline in the prices of mutton (баранина) and pork increases the supply of beef.
Change in expectations. Example: Expectations of substantial declines in future oil prices cause oil companies to increase current supply.
Change in number of suppliers. Examples: An increase in the number of firms producing personal computers increases the supply of personal computers; formation of a new professional football league increases the supply of professional football games.

Changes in Quantity Supplied

The distinction between a "change in supply" and a "change in quantity supplied" parallels that between a change in demand and a change in quantity demanded[1].

A **change in supply** means the entire supply curve shifts.

An increase in supply shifts the curve to the right; a decrease in supply shifts it to the left. The cause of a change in supply is a change in one or more of the determinants of supply.

The term "supply" refers to a schedule or curve. A "change in supply" therefore must mean that the entire schedule has changed and that the curve has shifted.

A **change in the quantity supplied** refers to the movement from one point to another on a stable supply curve. The cause of such a movement is a change in the price of the specific product under consideration.

Shifting the supply curve from S1 to S2 or S3 in Figure 3 entails "changes in supply." The movement from point a to point b on S1, however, is a "change in quantity supplied."

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

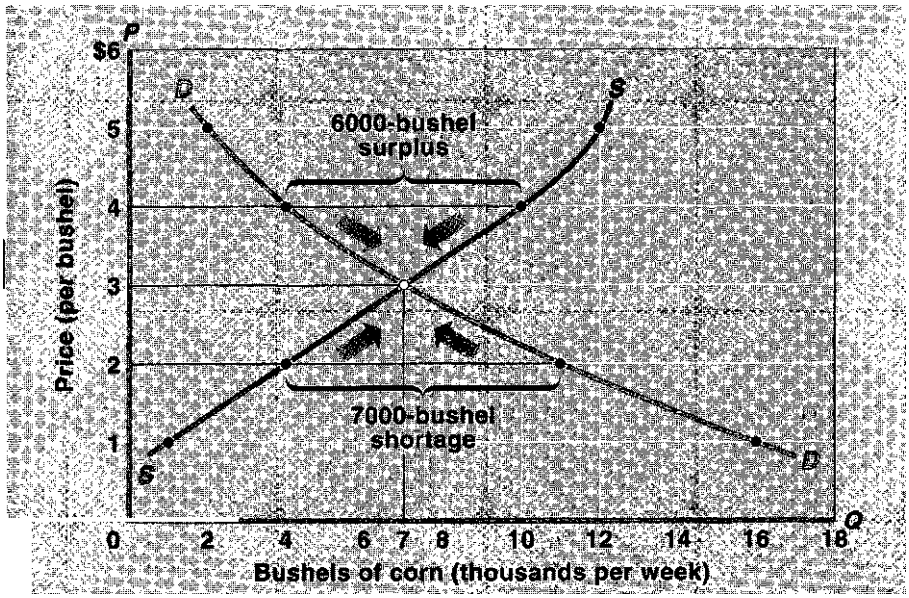
Quick review:

- ✓ The law of supply states that, other things being unchanged, the quantity of a good supplied varies directly with its price.
- ✓ The supply curve will shift because of changes in **a** resource prices, **b** technology, **c** taxes or subsidies, **d** prices of other goods, **e** expectations regarding future product prices, and the number of suppliers.
- ✓ A "change in supply" means a shift in the supply curve; a "change in quantity supplied" designates the movement from one point to another on a given supply curve.

3. Supply and demand: market equilibrium

We may now bring supply and demand together to see how interaction of the buying decisions of households and the selling decisions of producers determines the price of a product and the quantity actually bought and sold[1].

Figure 3.4 puts the market supply and market demand curves for corn on the same graph, the horizontal axis now measuring both quantity demanded and quantity supplied.



Equilibrium

We have eliminated every price but $3. At $3, and only at this price, the quantity farmers are willing to produce and supply in the market is identical with the amount consumers are willing and able to buy.

The economist calls this price **equilibrium price,** equilibrium meaning "in balance" or "at rest "[2].

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

At any price above the equilibrium price of $3, quantity supplied will exceed quantity demanded. This surplus will cause a competitive bidding down of price by sellers eager to rid themselves of their surplus. The falling price will cause less corn to be offered and will simultaneously encourage consumers to buy more.

Any price below the equilibrium price will entail a shortage; quantity demanded will exceed quantity supplied. Competitive bidding by buyers will push the price up toward the equilibrium level. This rising price will simultaneously cause producers to increase the quantity supplied and ration buyers out of the market, eliminating the shortage.

Graphically, the intersection of the supply curve and the demand curve for the product will indicate the equilibrium point. In this case equilibrium price and quantity are $3 per bushel.

LECTURE 4:

PRIVATE AND PUBLIC SECTORS

Total hours - 2

1. *Private sector (households) of the economy;*
2. *Private sector (businesses) of the economy;*
3. *Public sector (government) of the economy.*

Here we will provide some descriptive detail about the private sector (households and businesses) and introduce and analyze the public sector (government) of the economy[1].

Our goal is to understand households, businesses, and governmental units as die primary decision makers of our economy.

1. Private sector (households) of the economy

Households as Income Receivers

The household sector is composed of the ultimate suppliers of all economic resources and simultaneously the major spenders in the economy.

We will consider households first as income receivers and second as spenders.

There are two related approaches to studying income distribution.

1. The functional distribution of income indicates how society's money income is divided among wages, rents, interest, and profits. Here total income is distributed according to the function performed by the income receiver. Wages are paid to labor, rents and interest compensate property resources, and profits flow to the owners of corporations and unincorporated businesses.
2. The personal distribution of income shows the way total money income of society is apportioned among individual households.

The Functional Distribution of Income

The largest source of income for households is the wages and salaries paid to workers by the businesses and governmental units hiring them.

Proprietors' income - the incomes of doctors, lawyers, small business owners, farmers, and other unincorporated enterprises - is in fact a combination of wage, profit, rent, and interest incomes.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

The other three sources of earnings are self-defining. Some households own corporate stock and receive dividend income on their holdings.

Many households also own bonds and savings accounts which yield interest income. Rental income results from households providing buildings, land, and other natural resources to businesses.

The functional distribution of income indicates how income is divided among wages, rents, interest, and profits.

Personal Distribution of Income

The personal distribution of income shows how income is apportioned among households. (Most economists agree there is considerable inequality in the distribution of income).

Table 4.1: Highest Unemployment Rates in the world

	Country	unemployment rate (%)
1	Zimbabwe	95.00
2	Nauru	90.00
3	Liberia	85.00
4	Burkina Faso	77.00
5	Turkmenistan	60.00
6	Djibouti	59.00
7	Namibia	51.20
8	Senegal	48.00
9	Nepal	46.00
10	Kosovo	45.00

According to 2010

Table 4.2: Countries with the Highest Employment Rates

	Country	Percentage of people aged 15 to 64 that are employed (OECD Countries)
1	Iceland	82.8
2	Switzerland	77.4
3	Denmark	76.0
4	Norway	75.6
5	New Zealand	73.5
6	Sweden	73.5
7	Netherlands	72.7
8	United Kingdom	72.7
9	Canada	72.6
10	United States	71.2
12	Japan	68.7
19	Korea, South	63.6
30	Turkey	46.1

According to 2010

Households as Spenders

How do households dispose of their income? Part flows to government as personal taxes, and the rest is divided between personal consumption expenditures and personal saving[1].

Personal Saving

Economists define saving as "that part of after-tax income which is not consumed"; hence, households have just two choices with their incomes after taxes - to consume or to save[2].

Saving is that portion of current (this year's) income not paid in taxes nor used in the purchase of consumer goods, but which flows into bank accounts, insurance policies, bonds and stocks, and other financial assets.

Reasons for saving center around security and speculation. Households save to provide a nest egg for unforeseen contingencies - sickness, accident, unemployment - for retirement from the work force, to finance the education of children, or simply for

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

financial security. Also, people save for speculation. You might channel part of your income to purchase securities, speculating they will increase in value.

The desire or willingness to save is not enough. You must be able to save, which depends on the size of your income. If your income is very low, you may dissave; that is, you may consume in excess of your after-tax income. You do this by borrowing and by digging into savings you may have accumulated in years when your income was higher.

Both saving and consumption vary directly with income; as households get more income, they divide it between saving and consumption.

Personal Consumption Expenditures

Approximately, over four-fifths of total income flows from income receivers back into the business sector as personal consumption expenditures[1].

The size and composition of the economy's total output depend on the size and composition of the flow of consumer spending.

Consumer spending is classified as:

1) Expenditures on durables,
2) Expenditures on nondurables, and
3) Expenditures on services.

If a product generally has an expected life of three years or more, it is called a **durable good**; if its life is less than three years, it is labeled **nondurable.**

Automobiles, video recorders, washing machines, personal computers, and most furniture are durables. Most food and clothing items are nondurables.

Services refer to the work done by lawyers, barbers, doctors, mechanics, and others for consumers.

Quick review:

- ✓ The functional distribution of income indicates how income is divided among wages, rents, interest, and profits; the personal distribution of income shows how income is apportioned among households.
- ✓ Wages and salaries are the major component of the functional distribution of income. The personal distribution reveals considerable inequality.
- ✓ Approximately, over 80 percent of household income is consumed; the rest is saved or paid in taxes.
- ✓ Over half of consumer spending is for services.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

2. *Private sector (businesses) of the economy*

The Business Population

Businesses constitute the second major aggregate of the private sector.

To avoid confusion, we first explain some terms. In particular, we distinguish among a plant, a firm, and an industry[1].

A plant is a physical establishment - a factory, farm, mine, retail or wholesale store, or warehouse which performs one or more functions in the fabrication and distribution of goods and services.

A business firm is the business organization which owns and operates these plants.

An industry is a group of firms producing the same, or similar, products.

Legal Forms of Businesses

Today the business population is extremely diverse, ranging from giant corporations like General Motors with 700,000 employees to neighborhood speciality shops and groceries with one or two employees and sales of only $100 or $150 per day.

This diversity makes it necessary to classify business firms by some criterion such as legal structure, industry or product, or size.

The business population is distributed among the three major legal forms: (1) the sole proprietorship, (2) the partnership, and (3) the corporation.

Sole Proprietorship

A sole proprietorship is an individual in business for himself or herself. The proprietor owns or obtains the materials and equipment needed by the business and personally supervises its operation[2].

This simple type of business organization has certain advantages:

1) A sole proprietorship is easy to organize - there is virtually no legal red tape or expense.
2) The proprietor is his or her own boss and has substantial freedom of action. Since the proprietor's profit income depends on the enterprise's success, there is a strong and immediate incentive to manage the business efficiently.

But the disadvantages of this form of business organization are great:

1. With rare exceptions, the financial resources of a sole proprietorship are insufficient to permit the firm to grow into a large enterprise. Finances are usually limited to what

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

the proprietor has in the bank and to what he or she can borrow. Since proprietorships often fail, commercial banks are not eager to extend them credit.

2. Being in complete control of an enterprise forces the proprietor to carry out all management functions. A proprietor must make decisions concerning buying, selling, and the hiring and training of personnel, not to mention the technical aspects involved in producing, advertising, and distributing the product. In short, the potential benefits of specialization in business management are usually inaccessible to the typical small-scale proprietorship.
3. Most important, the proprietor is subject to unlimited liability. Individuals in business for themselves risk not only the assets of the firm but also their personal assets. If assets of an unsuccessful proprietorship are insufficient to satisfy the claims of creditors, claims can be filed by creditors against the proprietor's personal property.

Partnership

The partnership form of business organization is a natural outgrowth of the sole proprietorship. Partnerships were developed to overcome some of the shortcomings of proprietorships[1].

In a partnership, two or more individuals agree to own and operate a business. Usually they pool their financial resources and business skills. Similarly, they share the risks and the profits or losses.

What are the advantages of a partnership?

1) Like the sole proprietorship, it is easy to organize. Although a written agreement is almost invariably involved, legal red tape is not great.
2) Greater specialization in management is possible because there are more participants.

Because there are several participants, the odds are that the financial resources of a partnership should be greater than those of a sole proprietorship. Partners can pool their money capital and are usually somewhat better risks in the eyes of lending institutions.

Disadvantages. The partnership may not overcome the shortcomings of the proprietorship as expected, and may raise some potential problems the sole proprietorship does not have.

1. Whenever several people participate in management, this division of authority can lead to inconsistent policies or to inaction when action is required. Worse yet, partners may disagree on basic policy.
2. The finances of partnerships are still limited, although generally superior to those of a sole proprietorship. But the financial resources of three or four partners may still not be enough for the growth of a successful enterprise.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

3. The continuity of a partnership is precarious. The withdrawal or death of a partner generally means dissolution and complete reorganization of the firm, disrupting its operations.
4. Unlimited liability plagues a partnership, just as it does a proprietorship. In fact, each partner is liable for all business debts incurred, not only as a result of each partner's own management decisions, but also as a consequence of the actions of any other partner. A wealthy partner risks money on the prudence of less affluent partners.

Corporation

Corporations are legal entities, distinct and separate from the individuals who own them. These governmentally designated "legal persons" can acquire resources, own assets, produce and sell products, incur debts (влезать в долги), extend credit, sue and be sued, and carry on all those functions any other type of enterprise performs[1].

The advantages of the corporate form of business enterprise have catapulted it into a dominant position in modern capitalism. Although corporations are relatively small in number, they are frequently (зачастую) large in size and scale of operations.

1) The corporation is by far the most effective form of business organization for raising money capital. The corporation features unique methods of finance - the selling of stocks and bonds - which allow the firm to tap the savings of untold thousands of households. Through the securities market, corporations can pool the financial resources of extremely large numbers of people. Financing by the sale of securities also has advantages from the viewpoint of the purchasers of these securities. First, households can now participate in enterprise and share the expected monetary reward without assuming an active part in management. In addition, an individual can spread any risks by buying the securities of several corporations. Finally, it is usually easy for the holder of corporate securities to sell those holdings. Organized stock exchanges make it easy to transfer securities among buyers and sellers, which increase the willingness of savers to buy corporate securities.

   Corporations have easier access to bank credit than other types of business organizations. Corporations are better risks and are more likely to provide banks with profitable accounts.
2) Corporations have the distinct advantage of limited liability. The owners (stockholders) of a corporation risk only what they paid for their stock. Their personal assets are not at stake if the corporation suffers bankruptcy. Creditors can sue the corporation as a legal person, but cannot sue the owners of the corporation as individuals. Limited liability clearly eases the corporation's task in acquiring money capital.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

3) Because of their advantage in attracting money capital, successful corporations find it easier to expand the size and scope of their operations and to realize the benefits of expansion. They can take advantage of mass-production technologies and greater specialization in the use of human resources. While the manager of a sole proprietorship may be forced to share her time among production, accounting, and marketing functions, a corporation can hire specialized personnel in these areas and achieve greater efficiency.
4) As a legal entity, the corporation has a life independent of its owners and its officers. Proprietorships are subject to sudden and unpredictable demise, but, legally at least, corporations are immortal.

The transfer of corporate ownership through the sale of stock will not disrupt the continuity of the corporation. Corporations have permanence, lacking in other forms of business organization, which is conducive to long-range planning and growth.

The corporation's advantages are of tremendous significance and typically override any accompanying disadvantages. Yet there are drawbacks of the corporate form[1].

1. There are some red tape and legal expense in obtaining a corporate charter.
2. From the social point of view, the corporate form of enterprise lends itself to certain abuses. Because the corporation is a legal entity, unscrupulous business owners sometimes can avoid personal responsibility for questionable business activities by adopting the corporate form of enterprise.
3. A further disadvantage of corporations is the double taxation of corporate income. That part of corporate income paid out as dividends to stockholders is taxed twice - once as part of corporate profits and again as part of stockholders' personal incomes.
4. In sole proprietorships and partnerships, the owners of the real and financial assets of the firm also directly manage or control those assets. In large corporations where ownership is widely diffused over tens or hundreds of thousands of stockholders, there is separation of ownership and control. The roots lie in the typical stockholder. Most stockholders do not vote, or, if they do, merely delegate their votes to the corporation's present officers. Not voting, or the automatic signing over of proxy votes to current corporate officials, makes those officials self-perpetuating.

The separation of ownership and control is of no consequence so long as the actions of the control group and the wishes of the ownership group are in accord. But the interests of the two groups are not always identical. Management, seeking the power and prestige which accompany control over a large enterprise, may favor unprofitable expansion of the firm's operations. Or a conflict of interest can develop over dividend

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

policies. What portion of corporate earnings after taxes should be paid out as dividends, and what amount should be retained by the firm as undistributed profits? And corporation officials may vote themselves large salaries, pensions, bonuses, and so forth, out of corporate earnings which might otherwise be used for increased dividend payments.

4. ***Public sector (government) of the economy***

Legal and social framework

Government provides the legal framework and the services needed for a market economy to operate effectively. The legal framework provides the legal status of business enterprises, defines the rights of private ownership, and makes it possible to provide for enforcement of contracts. Government also establishes legal "rules of the game" governing the relationships of businesses, resource suppliers, and consumers with one another. Through legislation, government can referee economic relationships, detect foul play, and exercise authority in imposing appropriate penalties[1].

Services provided by government include police powers to maintain internal order, a system of standards for measuring the weight and quality of products, and a monetary system to facilitate exchange of goods and services.

These measures are designed to prevent fraudulent activities by producers and to increase the public's confidence in the integrity of the market system. Similar legislation pertains to labor-management relations and relations of business firms to one another.

This type of government activity is presumed to improve resource allocation. Supplying a medium of exchange, ensuring product quality, defining ownership rights, and enforcing contracts increase the volume of exchange. This widens markets and permits greater specialization in the use of property and human resources. Such specialization means a more efficient allocation of resources.

However, some argue that government overregulates interactions of businesses, consumers, and workers, stifling economic incentives and impairing productive efficiency.

Maintaining Competition

Competition is the basic regulatory mechanism in a capitalistic economy. It is the force which subjects producers and resource suppliers to the dictates of consumer sovereignty. With competition, buyers are the boss, the market is their agent, and businesses are their servants.

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

It's completely different with **monopoly.** Monopoly exists when the number of sellers becomes small enough for each seller to influence total supply and therefore the price of the commodity being sold[1].

In a monopoly sellers can influence, or "rig," the market in their own self-interests, to the detriment of society as a whole. Through their ability to influence total supply, monopolists can restrict the output of products and enjoy higher prices and, frequently, persistent economic profits. These above-competitive prices and profits directly conflict with the interests of consumers. Monopolists are not regulated by the will of society as are competitive sellers. Producer sovereignty supplants consumer sovereignty to the degree that monopoly supplants competition. In a monopoly resources are allocated in terms of the profit-seeking interests of sellers rather than in terms of the wants of society as a whole. Monopoly causes a misallocation of economic resources.

That's why government attempt to control monopoly in such ways[2]:

1. Regulation and Ownership. In the case of "natural monopolies" - industries in which technological and economic realities rule out competitive markets - government has created public commissions to regulate prices and service standards. Transportation, communications, and electric and other utilities are industries which are regulated in varying degrees.
2. Antimonopoly Laws. In nearly all markets, efficient production can be attained with a high degree of competition.

Redistribution of Income

The market system is impersonal. It may distribute income with more inequality than society desires. The market system yields very large incomes to those whose labor, by virtue of inherent ability and acquired education and skills, commands high wages. Similarly, those who possess - through hard work or easy inheritance - valuable capital and land receive large property incomes.

But others in our society have less ability, have received modest amounts of education and training, and have accumulated or inherited no property resources. Thus, their incomes are very low. Furthermore, many of the aged, the physically and mentally handicapped, and female-headed families earn only very small incomes or, like the unemployed, no incomes at all through the market system. In the market system there is considerable inequality in the distribution of money income and therefore in the distribution of total output among individual households. Poverty amidst overall plenty in our economy persists as a major economic and political issue.

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

Government's role in ameliorating income inequality is reflected in a variety of policies and programs[1]:

1. **Transfers.** Transfer payments provide relief to the destitute, aid to the dependent and handicapped, and unemployment compensation to the unemployed. Social security and Medicare programs provide financial support for the retired and aged sick. These programs transfer income from government to households which would otherwise have little or none.
2. **Market Intervention.** Government also alters the distribution of income by market intervention, that is, by modifying the prices established by market forces.
   Price supports for farmers and minimum-wage legislation are illustrations of government price fixing designed to raise incomes of specific groups.
3. **Taxation.** The personal income tax has been used historically to take a larger proportion of the incomes of the rich than the poor.

Reallocation of resources

Economists recognize market failure occurs when the competitive market system either:

1) Produces the "wrong" amounts of certain goods and services, or

2) Fails to allocate any resources whatsoever to the production of certain goods and services whose output is economically justified.

The first case involves "spillovers" or "externalities," the second "public" or "social" goods[2].

Spillovers or Externalities

The idea that competitive markets automatically bring about efficient resource use rests on the assumption that all the benefits and costs of production and consumption of each product are fully reflected in the market demand and supply curves respectively. It is assumed that there are no spillovers or externalities associated with the production or consumption of any good or service.

A spillover occurs when some of the benefits or costs of production or consumption of a good "spillover" onto parties other than the immediate buyer or seller. Spillovers are also called externalities because they are benefits and costs accruing to some third party external to the market transaction.

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

Spillover Costs. When production or consumption of a commodity inflicts costs on a third party without compensation, these costs are spillover costs.

Examples of spillover costs include environmental pollution. (1) When a chemical manufacturer or meat-packing plant dumps its wastes into a lake or river, swimmers, fishermen, and boaters - not to mention communities' water supplies - suffer spillover costs. Human health hazards may arise and wildlife may be damaged or destroyed. (2) When a petroleum refinery pollutes the air with smoke or a paint factory creates distressing odors, the community bears spillover costs for which it is not compensated. (3) Acid rain and global warming are spillover costs which receive almost daily media attention.

What are the economic effects? Recall that costs underlie the firm's supply curve. When a firm avoids some costs by polluting, its supply curve will lie further to the right than when it bears the full costs of production. This results in a larger output and causes an overallocation of resources to the production of this good.

Correcting for Spillover Costs. Government can do two things to correct this overallocation of resources. Both are designed to internalize the external costs, that is, to make the offending firm pay these costs rather than shift them to society[1].

1) Legislation. In our examples of air and water pollution, the most direct action is legislation prohibiting or limiting pollution. Such legislation forces potential polluters to bear costs of properly disposing of industrial wastes. Firms must buy and install smoke-abatement equipment or facilities to purify water contaminated by manufacturing processes. The idea is to force potential offenders, under the threat of legal action, to bear all costs associated with their production.
2) Specific Taxes. A less direct action is based on the fact that taxes are a cost and therefore a determinant of a firm's supply curve. Government might levy a specific tax which equals or approximates the spillover costs per unit of output. Through this tax, government attempts to shove back onto the offending firm those external or spillover costs - which private industry would otherwise avoid - and thus eliminate the overallocation of resources.

Spillover Benefits. But spillovers may also appear as benefits. Production or consumption of certain goods and services may confer spillover or external benefits on third parties or the community at large for which payment of compensation is not required.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

(1) Measles and polio immunization shots result in direct benefits to the immediate consumer. But immunization against these contagious diseases yields widespread and substantial spillover benefits to the entire community.

(2) Discovery of an AIDS vaccine would benefit society far beyond those vaccinated. Unvaccinated individuals would clearly benefit by the slowing of the spread of the disease.

(3) Education is another example of spillover benefits. Education benefits individual consumers: "More educated" people generally achieve higher incomes than "less educated" people. But education also provides benefits to society. The economy as a whole benefits from a more versatile and more productive labor force, on the one hand, and smaller outlays on crime prevention, law enforcement, and welfare programs, , on the other. There is evidence indicating that any worker with a given educational or skill level will be more productive if associated workers have more education. Significant, too, is the fact that political participation correlates positively with the level of education in that the percentage of persons who vote increases with educational attainment.

Spillover benefits mean the market demand curve, which reflects only private benefits, understates total benefits. The demand curve for the product lies further to the left than if all benefits were taken into account by the market. This means that a smaller amount is produced or, alternatively stated, there is an underallocation of resources to the product.

Correcting for Spillover Benefits. How might the underallocation of resources associated with spillover benefits be corrected? The answer is to either subsidize consumers (increase demand), subsidize producers (increase supply), or, in the extreme, have government produce the product[1].

1) Increase Demand. In the case of higher education, government can provide low-interest student loans and grants to provide student employment or in helping disadvantaged people become productive participants in the economy, society as a whole benefits.
2) Increase Supply. In some cases government might find it more convenient and administratively simpler to subsidize producers. This is also true with higher education where state governments provide substantial portions of the budgets of public colleges and universities. These subsidies lower costs to students and increase educational supply. Public subsidization of immunization programs, hospitals, and medical research are additional examples.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

3) Government Provision. A third policy option arises if spillover benefits are extremely large: Government may simply choose to finance or, in the extreme, to own and operate such industries.

This option leads us into a discussion of public goods and services.

Public Goods and Services

Private goods, which are produced through the market system, **are divisible** in that they come in units small enough to be afforded by individual buyers. Also, private goods are subject to the **exclusion principle**, the idea that those willing and able to pay the equilibrium price get the product, but those unable or unwilling to pay are excluded from the benefits provided by that product[1].

Certain goods and services - public or social goods - would not be produced by the market system because their characteristics are opposite those of private goods.

Public goods are indivisible, involving such large units that they cannot ordinarily be sold to individual buyers. Individuals can buy hamburgers, computers, and automobiles through the market, but not highways, space telescopes, and air-traffic control.

More importantly, the exclusion principle does not apply to public goods; there is no effective way of excluding individuals from their benefits once those goods come into existence.

Obtaining the benefits of private goods is predicated on purchase; benefits from public goods accrue to society from the production of such goods.

Illustration. The classic public goods example is a lighthouse on a treacherous coast. The construction of a lighthouse would be economically justified if benefits (fewer shipwrecks) exceed production costs. But the benefit accruing to each individual user would not justify the purchase of such a large and indivisible product. But once in operation, its warning light is a guide to all ships. There is no practical way to exclude certain ships from its benefits. Therefore, why should any ship owner voluntarily pay for the benefits received from the light?[2]

The light is there for all to see, and a ship captain cannot be excluded from seeing it if the ship owner chooses not to pay. Economists call this the **free-rider problem;** people can receive benefits from a good without contributing to its costs.

Because the exclusion principle does not apply, there is no economic incentive for private enterprises to supply lighthouses. If the services of the lighthouse cannot be priced and sold, it will be unprofitable for private firms to devote resources to

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

lighthouses. Here is a service which yields substantial benefits but for which the market would allocate no resources. National defense, flood-control, public health, satellite navigation systems, and insect-abatement programs are other public goods. If society is to enjoy such goods and services, they must be provided by the public sector and financed by compulsory charges in the form of taxes.

Large Spillover Benefits. While the inapplicability of the exclusion principle distinguishes public from private goods, many other goods and services are provided by government even though the exclusion principle could be applied. Such goods and services as education, streets and highways, police and fire protection, libraries and museums, preventive medicine, and sewage disposal could be subject to the exclusion principle. All could be priced and provided by private producers through the market system. But, as noted earlier, these are all services with substantial spillover benefits and would be underproduced by the market system. Therefore, government provides them to avoid the underallocation of resources which would otherwise occur. Such goods and services are called quasi-public goods. One can understand the long-standing controversies surrounding the status of medical care and housing. Are these private goods to be provided through the market system, or are they quasi-public goods to be provided by government?[1]

Quick review:

- ✓ Government enhances the operation of the market system by providing an appropriate legal foundation and promoting competition.
- ✓ Transfer payments, direct market intervention, and the tax system are ways government can lessen income inequality.
- ✓ Government can correct the overallocation of resources associated with spillover costs through legislation or specific taxes; the underallocation of resources associated with spillover benefits can be offset by government subsidies.
- ✓ Government must provide public goods because they are indivisible and the exclusion principle does not apply to them.
- ✓ Government spending and tax revenues can be manipulated to stabilize the economy.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

LECTURE 5:

DOMESTIC OUTPUT AND NATIONAL INCOME

Total hours - 2

1. Macroeconomic measurement;
2. Gross domestic product;
3. Expenditures and income approach.

This lecture will help you to understand the basics of *how government statistician and accountants* measure and record the levels of domestic output, national income, and prices for the economy.

In the present lecture we will first explain why it is important to measure the performance of the economy. Second, we define the key measure of total output - gross domestic product (GDP) - and show how it is measured. We then derive and explain several other important measures of output and income. Also measurement of the overall level of prices - the price level - is examined.

1. Macroeconomic measurement

Our first goal is to explain the ways the overall production performance of the economy is measured. This comes under the heading of national income accounting, which does for the economy as a whole what private accounting does for the individual business enterprise or, for that matter, for the household. The business executive must know how well his or her firm is doing, but that is not always immediately discernible.

A firm measures its flows of income and expenditures to assess its operations, usually for a three-month period or for the current year. With this information in hand the firm can gauge its economic health. If things are going well, the accounting data can be used to explain this success. Costs might be down or output or prices up, resulting in large profits. If things are going badly, accounting measures can help discover why. And by examining the accounts over a specific period, the firm can detect growth or decline of profits and what caused the change. All this information helps the firm's managers make intelligent business decisions.

National income accounting operates in much the same way for the economy[1]:

1. It allows us to keep a finger on the economic pulse of the nation. Our national income accounting system permits us to measure the level of production in the economy at some point in time and explain why it's at that level.

2. By comparing national income accounts over a number of years, we can track the long-run course of the economy and see whether it has grown, been steady, or stagnated.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

3. Information supplied by national income accounts provides a basis for formulating and applying public policies to improve the performance of the economy. Without national income accounts, economic policy would be based on guesswork. National income accounting allows us to keep tabs on the health of the economy and formulate polices which will maintain and improve that health.

2. Gross domestic product

There are many measures of the economic well-being of society. But the best available measure is *its annual total output of goods and services* or, as it is sometimes called, *the economy's aggregate output*. There are two ways of measuring an economy's total output of goods and services: gross national product and gross domestic product. Both measure the total market value of all final goods and services produced in the economy in one year. They are closely related, differing only in how the "economy" is defined.

Gross national product (GNP) consists of the total output produced by land, labor, capital, and entrepreneurial talent supplied by citizens, whether these resources are located in country or abroad.

For example, the share of output (income) produced by an American working in France or Saudi Arabia is included in our GNP. Conversely, the share of output (income) produced in the United States by foreign-owned resources is excluded from our GNP[1].

Gross domestic product (GDP) is slightly different. It comprises the value of the total goods and services produced within the boundaries of country, whether by citizens or foreign-supplied resources.

For instance, the value of the autos produced at a Japanese-owned Nissan factory in the United States, including profits, is a part of American GDP. Conversely, profits earned by an American-owned IBM plant in France are excluded from our GDP[2].

Specifically, the difference between GDP and GNP consists of net foreign factor income earned (output produced) in the United States. This amount is found by subtracting receipts of factor (resource) income from the rest of the world from payments of factor income to the rest of the world. Net foreign factor income earned in country can be positive or negative.

Because most nations use GDP as the measure of their output, *our focus will be on GDP*.

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[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

A Monetary Measure

If the economy produces three oranges and two apples in year-1 and two oranges and three apples in year-2, in which year is output greater? We cannot answer this question until price tags are attached to the various products as indicators of society's evaluation of their relative worth.

That's what GDP does. It measures *the market value of annual output*; it is a monetary measure. Indeed, it must be if we are to compare the heterogeneous collections of goods and services produced in different years and get a meaningful idea of their relative worth.

In Table 5.1 the money price of oranges is 20 cents and the price of apples is 30 cents. Year 2's output is greater than year l's, because society values year 2's output more highly; society is willing to pay 10 cents more for the collection of goods produced in year 2 than for goods produced in year 1.

Table 5.1

Year	Annual outputs	Market values
1	3 oranges and 2 apples	3 at 20 cents + 2 at 30 cents = $ 1.20
2	2 oranges and 3 apples	2 at 20 cents + 3 at 30 cents = $ 1.30

Avoiding Double Counting

To measure total output accurately, all goods and services produced in any specific year must be counted once, but not more than once. Most products go through a series of production stages before reaching a market. As a result, parts or components of most products are bought and sold many times. To avoid counting several times the parts of products that are sold and resold, GDP includes only the market value of final goods and ignores transactions involving intermediate goods.

By final goods we mean goods and services befog purchased for final use and not for resale or further processing or manufacturing[1]. They are "purchases not resold." Transactions involving intermediate goods refer to purchases of goods and services for further processing and manufacturing or for resale.

The sale of final goods is included and the sale of intermediate goods is excluded from GDP. Why? Because the value of final goods already includes all intermediate transactions involved in producing those final goods. To count intermediate transactions separately would be double counting and exaggerating the value of GDP.

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

Table 5.2

(1) Stage of production	(2) Sales value of materials or product	(3) Value added
	0	$ 120 (= $ 120 - $ 0)
Firm A, sheep ranch	$ 120	$ 60 (= $ 180 - $ 120)
Firm B, wool processor	180	$ 40 (= $ 220 - $ 180)
Firm C, suit manufacturer	220	$ 50 (= $ 270 - $ 220)
Firm D, clothing wholesaler	270	$ 80 (= $ 350 - $ 270)
Firm E, retail clothier	*350*	
Total sales values	**$ 1140**	
Value added (total income)		***$ 350***

To clarify this, suppose there are five stages of production in getting a wool suit manufactured and to the consumer - the ultimate or final user[1]. As Table 5.2 indicates, firm A, a sheep ranch, provides $120 worth of wool to firm B, a wool processor. Firm A pays out the $120 it receives in wages, rents, interest, and profits. Firm B processes the wool and sells it to firm C, a suit manufacturer, for $180. What does firm B do with this $180? As noted, $120 goes to firm A and the remaining $60 is used by B to pay wages, rents, interest, and profits for the resources needed in processing the wool. The manufacturer sells the suit to firm D, a clothing wholesaler, who sells it to firm E, a retailer, and then, at last, it is bought for $350 by a consumer, the final user.

At each stage, the difference between *what a firm has paid for the product* and *what it receives for its sale* is paid out as wages, rent, interest, and profits for the resources used by that firm in helping to produce and distribute the suit.

How much should we include in GDP in accounting for the production of this suit? Just $350, the value of the final product. This figure includes all the intermediate transactions leading up to the product's final sale. It would be a gross distortion to sum all the intermediate sales figures and the final sales value of the product in column 2 and include the entire amount, $1140, in GDP. This would be double counting: counting the final product and the sale and resale of its

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

various parts in the multistage productive process. The production and sale of the suit has generated $350, not $1140, worth of output and income.

To avoid double counting, national income accountants are careful to calculate *only the value added by each firm*. ***Value added*** is the market value of a firm's output less the value of the inputs which it has purchased from others. In column 3 of Table 5.2 the value added of firm B is $60, the difference between the $180 value of its output and the $120 it paid for the inputs provided by firm A. By adding together the values added by the five firms in Table 5.2, the total value of the suit can be accurately determined. Similarly, by calculating and summing the values added by all firms in the economy, we can determine the GDP - the market value of total output.

3. *Expenditures and income approach*

GDP measures *the annual production of the economy*. The many nonproduction transactions which occur each year must be excluded[1].

Nonproduction transactions are of two major types:

1) Purely financial transactions, and

2) Secondhand sales.

Financial Transactions. Purely financial transactions are of three general kinds.

1. *Public Transfer Payments*. These are the social security payments, welfare payments, and veterans' payments which government makes to particular households. The basic characteristic of public transfer payments is that recipients make no contribution to current production in return for them. To include them in GDP would be to overstate this year's production.

2. *Private Transfer Payments*. These payments, for example, a university student's monthly subsidy from home or an occasional gift from a wealthy relative, do not entail production but simply the transfer of funds from one private individual to another.

3. *Security Transactions*. Buying and selling of stocks and bonds are also excluded from GDP Stock market transactions involve swapping paper assets. The amount spent on these assets does not directly create current production. Only the services provided by the security broker are included in GDP. However, sales of new issues of stocks and bonds transfer money from savers to businesses which often spend the proceeds on capital goods. Thus, these transactions may indirectly contribute to spending, which does account for output and hence add to GDP.

Secondhand Sales. Secondhand sales are excluded from GDP because they either reflect no current production, or involve double counting. If you sell your 1985 Ford Mustang to a friend, this transaction would be excluded in determining GDP because no current production is

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

involved. Including the sales of goods produced some years ago in this year's GDP would be an exaggeration of this year's output. Similarly, if you purchased a brand new Mustang and resold it a week later to your neighbor, we would still exclude the resale transaction from the current GDP. When you originally bought the new car, that's when its value was included in GDP. To include its resale value at a later time would be to count it twice[1].

Two Sides to GDP: Spending and Income

We now must consider how the market value of total output - or for that matter, any single unit of output - is measured. Returning to Table 2, how can we measure the market value of a suit? We can determine how much a consumer, the final user, pays for it. Or we can add up all the wage, rental, interest, and profit incomes created in its production. This second approach is the value-added technique discussed in Table 2.

The final-product and value-added approaches are two ways of looking at the same thing. What is spent on a product is received as income by those who contributed to its production. If $350 is spent on the suit, then $350 is the total amount of income derived from its production. You can verify this by looking at the incomes generated by firms A B, C, D, and E in Table 2 - $120, $60, $40, $50, and $80 - which total $350.

This equality of the expenditure for a product and the income derived from its production is guaranteed, because profit income is a balancing item. Profit - or loss - is the income remaining after wage, rent, and interest incomes have been paid by the producer. If the wage, rent, and interest incomes the firm must pay in getting the suit produced are less than the $350 expenditure for the suit, the difference will be the firm's profits. Conversely, if wage, rent, and interest incomes exceed $350, profits will be negative. That is, losses will be realized, to balance the expenditure on the product and the income derived from its production.

It is the same for the output of the economy as a whole. There are two ways of looking at GDP: One is to see GDP as the sum of all the expenditures in buying that total output. This is the output, or expenditures, approach. The other views GDP in terms of the income derived or created from producing it. This is the earnings, or allocations, or income, approach.

GDP can be determined either by adding up all that is spent to buy this year's total output or by summing up all the incomes derived from the production of this year's output. Putting this as an equation, we can say[2]:

Amount spent to purchase this year's total output

=

Money income derived from production of this year's output

[1] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

[2] Campbell R. McConnell, Stanley L. Brue (2011), Macroeconomics: Principles, Problems, and Policies, 18th ed., McGraw-Hill/Irwin, New York, USA.

This is more than an equation: It is an identity. Buying (spending money) and selling (receiving money income) are *two aspects of the same transaction*. What is spent on a product is income to those who have contributed their human and property resources in getting that product produced and to market.

Figure 5.1: The output and income approaches to GDP

Output, or expenditures, approach		**Income, or allocations, approach**
Consumption expenditures by households plus **Investment expenditures by businesses** plus **Government purchases of goods and services** plus **Expenditures by foreigners**	=GDP=	**Wages** plus **Rents** plus **Interest** plus **Profits** plus **Nonincome charges or allocations** plus **GNP-GDP adjustment**

For the economy as a whole, we can expand our identity to read as in Figure 5.1. Considered as output, all final goods produced in the country's economy are purchased by the three domestic sectors - households, businesses, and government - and by foreign buyers. On the income side of GDP, this figure shows that (the total receipts businesses acquire from the sale of total output are allocated among resource suppliers as wage, rent, interest, and profit income. Using this diagram as a point of reference, we next examine the types of expenditures and the incomes derived from them.

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