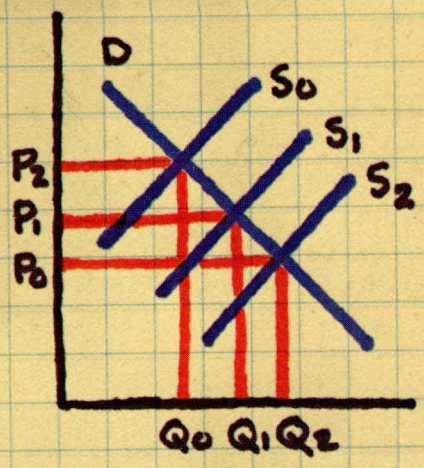


# MACRO *Principles of Economics*

Fifth Edition  
Willis L. Peterson



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# **Principles of Economics**

## **MACRO**

**Willis L. Peterson**  
University of Minnesota



Fifth Edition 1983

**RICHARD D. IRWIN, INC.**  
Homewood, Illinois 60430

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## Preface

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This book is designed to be used as the core text in a one-quarter or one-semester principles course in macroeconomics. It is intended for students who have either had no previous training in economics or have taken only the micro principles course. The introductory material on demand and supply in Chapter 2 should provide sufficient background in this area for those students just beginning their study of economics. This material may be omitted for those students who have had a micro principles course.

Although the material in this book is somewhat more advanced than has been traditionally presented in principles texts, the general reaction received from the thousands of students I have taught using the previous four editions is that the material is challenging but not more difficult to grasp than their other basic science courses, such as biology, chemistry, mathematics, or physics. Because concepts and analysis of problems are emphasized as opposed to descriptive material, the text tends to be relatively compact. But one should not underestimate the amount of material presented.

Although I have tried to retain the direct and easy-to-read style of the previous four editions, this Fifth Edition has undergone the greatest change of any of the previous revisions. Three new chapters have been added: (1) Classical Economics, (2) The Rational Expectations Hypothesis, and (3) Supply Side Economics. Since Classical Economics was primarily macro-oriented, this chapter should provide readers with a clearer perspective on the origins of modern macrotheory. The rational expectations and supply side chapters present much of the new developments in the profession

during recent years. The discussion of the short-run and long-run Phillips curves has been expanded and moved out of Chapter 3 into the chapter on rational expectations.

Major changes in the other chapters include an expanded discussion and figures on military spending in the United States (Chapter 4), the placing of the *IS-LM* appendix at the end of Chapter 6 rather than at the end of the book, new sections in the fiscal and monetary policy chapters on rational expectations and supply side economics, expanded coverage of the sources of income inequality (Chapter 13), and new figures on the per capita stocks of human and nonhuman capital in the richest and poorest nations of the world in Chapter 15. Of course, the tables have been updated with the most recent figures available.

Comments and suggestions from the reviewer of the Fourth Edition—Boyd Collier of the University of Texas at Austin—other adopters, and my students have been most beneficial in preparing this Fifth Edition. My thanks to all.

**Willis Peterson**

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## **Introduction to macroeconomics**

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### **“MICRO” VERSUS “MACRO” ECONOMICS**

During its approximately 200-year history, economics has evolved into two major subdisciplines: microeconomics and macroeconomics. As its name implies, microeconomics is concerned mainly with small segments of the total economy—individual consumers and producers or groups of consumers and producers that are known as markets or industries. The subject matter of microeconomics deals in part with allocating resources to their most valuable uses so as to maximize the total output of the economy. Considerable emphasis also is placed on wage and price determination, which affects the distribution of the total output.

Macroeconomics, the topic of this book, is concerned mainly with economic aggregates, or the economy as a whole. The subject matter of macroeconomics deals to a large extent with the problems of unemployment and inflation. In large part, these problems also influence the total output of society and the distribution of this output.

The existence of unemployment implies that the total output of society is smaller than it need otherwise be. Unemployment also has an effect on the distribution of society's output in that the unemployed suffer a reduction in income, which in turn means that they cannot place as large a claim on society's goods and services. In regard to inflation, it is acknowledged that this phenomenon causes increased uncertainty in the economy. If, as a result, investment is curtailed, future output is diminished from what it would otherwise be. Investment funds may also be diminished during

inflation because of the disincentive that inflation places on saving, particularly if interest rates are held at artificially low levels by usury laws. Also, as will be pointed out in later chapters, attempts to reduce inflation invariably lead to increased unemployment, which reduces total output and alters its distribution. Inflation has other undesirable distributional effects as well. Those whose wages rise less rapidly than the price level lose relative to those who are able to maintain the purchasing power of their earnings. Perhaps the main distributional effect of inflation is that it reduces the real wealth of those who hold the major portion of their assets in the form of money while increasing the wealth of those who own assets, such as real estate, that rise in value during inflation. (The economic effects of inflation will be discussed in more detail in Chapter 3.)

One can say, therefore, that both micro- and macroeconomics deal with the size of society's output of goods and services and the distribution of this output. After completing the study of the micro and macro areas, however, one will see that the methods of analysis used in each differ to a considerable degree.

It should also be said that macroeconomics can itself be divided into two major subdivisions. One is sometimes referred to as a study of income and employment theory; the other, as the study of monetary theory. The first deals to a large extent with the effects of government spending and taxation on the level of economic activity. The second is concerned mainly with the effect of the quantity of money and interest rates on the economy. As you might expect, then, the actions of government are very important in the study of macroeconomics.

## **POLITICS AND ECONOMICS—POLITICAL ECONOMY**

In view of the importance of government in the study of macroeconomics, we should not be surprised to learn that politics and economics are closely related. Indeed, economics has been called the study of political economy. This was especially true during the 19th century. With the passage of time, political science and economics gradually emerged as separate, although closely related, disciplines.

We would expect, too, that much of the disagreement and controversy inherent in politics would carry over into economics, particularly in the macro area. This cannot be denied. People of a more conservative political outlook tend to prefer a society with a minimum of government intervention. Although it is unwise to generalize too much here, it seems reasonably safe to say that economists of a more conservative political philosophy also prefer a minimum of government intervention, particularly in the economic activities of society.

Virtually all economists probably would agree on the need for a certain amount of federal government intervention. For example, there is little question about the need for government regulation of the money supply or

the provision for certain public goods such as national defense or roads. Moving toward the liberal pole (and we should recognize various degrees of liberalism or conservatism rather than an all-or-none situation), we find people who are willing to delegate more decision-making authority to government. Again, the more liberal economists tend to fall within this category. Although most economists make a sincere attempt at being objective or “scientific” in their profession, it is important to recognize that their political philosophies may, to some degree, carry over into their economic analyses.

There are, of course, exceptions in each group. We find some economists, probably a growing number, who would be labeled as fairly conservative because of their objection to increased government intervention in the marketplace. But these same economists might at the same time appear quite liberal on other issues such as their support of a more equalitarian distribution of income. Thus, it is often misleading to label someone, particularly an economist, conservative or liberal solely on the basis of one or two criteria.

## POSITIVE VERSUS NORMATIVE ECONOMICS

Economists, recognizing that they do have different political philosophies and that these divergent points of view may influence policy recommendations, have attempted to sort out as much as possible the *positive* from the *normative*. We can think of positive economics as “what is” and normative economics as “what should be.” For example, an economist may determine that a tax increase will take  $X$  billions of dollars away from the private sector. But it is a different matter to say that the  $X$ -billion-dollar-tax increase is the best thing for the economy. The first statement is considered positive economics, while the latter is of a normative nature.

One should not conclude, however, that all positive statements are true. For example, it has been argued that if government spending is increased, unemployment will decrease. This is a positive statement, but recent experience has led some economists to argue that this is not necessarily true. In all sciences, there are ideas that at one time were regarded as true or correct but were subsequently rejected in light of new evidence or ideas. It is not necessarily true either that all positive statements are objective and devoid of value judgments. Deciding what is important does involve some value judgment. Moreover, in conducting a study the researcher must decide what data to collect, how to organize and analyze the data, and other procedures. Beware of the statement, “Let the facts speak for themselves.” What the facts say depends a great deal on which facts are used and how they are presented.<sup>1</sup>

<sup>1</sup> For an entertaining little book on the use of statistics, see Darrell Huff, *How to Lie with Statistics* (New York: W. W. Norton, 1954).

## THE INDIVIDUAL VERSUS SOCIETY

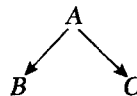
Most of us are accustomed to looking at the world from the perspective of the individual. However, we find in our study of macroeconomics that what is true for the individual person need not hold true for society, or even for groups of people. Standing up to watch a touchdown run at a football game provides a good noneconomic example. If just one person stands up, that person can gain a much better view, but if everyone in the stadium stands up, no one is much better off.

The distinction between the individual and society is especially important in monetary policy. Any individual would be considered better off if the amount of money earned were doubled, for this would mean the person now has access to twice the amount of goods and services. But if the total quantity of money in the entire economy were doubled, the total quantity of real goods and services available to the people would not necessarily change. As we go along we will encounter other situations where circumstances are much different for the individual than for society.

## CAUSE AND EFFECT

If two events happen in proximity to each other, there is a temptation to conclude that the second event was caused by the first. Whenever we observe two events such as these, we should always inquire whether there might have been a third event that caused both to occur. A good example is the stock market crash of 1929 and the ensuing Great Depression of the early 1930s. This order of events has prompted some people to argue that the stock market crash caused the Great Depression. But as we shall see later, a third independent event probably offers a better explanation for the Great Depression than does the stock market crash, although the crash probably contributed to the depressed state of the economy once unemployment began to increase.

The possibility of one event causing two other events to occur is illustrated by the diagram below. In this example, event *A* occurs first, and then events *C* and *B* occur as a consequence of *A*. If event *C* happens to take place after event *B*, one might be led to believe that *B* caused *C*, especially if event *A* is not evident or well publicized. Before concluding that one event has caused a later, second event, one should always ask, was there a third, less noticeable event that caused both to occur? Even if the answer turns out to be no, it is still a good idea to ask the question.



## UNLEARNING PRECONCEPTIONS

One of the characteristics of studying economics, particularly macroeconomics, is that most people bring with them at the start at least some preconceived ideas of how the economy functions. In fact it is almost impossible not to form economic opinions in view of the vast amount of reporting of economics by the news media. This is both good and bad. It is good because people are becoming more aware of the importance of government economic policy in their lives. But it is bad to the extent that people form erroneous ideas of how the economy operates and the effect of government policy. Unfortunately many myths, half-truths, and misconceptions about the economy appear in the news media just about every day.

One of the major reasons for this problem is that there are many influential people both in government and in the news who are carrying out economic analysis without the benefit of economics training. Few, if any, professional occupations can make this claim (or excuse). To practice law or medicine one must have the appropriate degree from an accredited college. Indeed, to be a plumber or electrician a person must complete a number of years of apprenticeship training. Not so in economics. Economics is practiced by everyone, and the importance of one's practice increases with his or her influence over the nation's affairs. Nations have paid a dear price for having leaders who have had little or no understanding of economics.

Throughout this book it is more than likely that you will come across ideas quite different from those you had previously learned and accepted. Understandably it is difficult to unlearn old ideas, but economics training will be of much greater value if you approach it with an open mind, allowing the new ideas you encounter to at least compete with your old preconceptions.

## ECONOMIC THEORIES—A FRAMEWORK FOR THINKING

Needless to say, the economy is very complex. Each day millions of economic decisions are made by millions of people. Some of these decisions, especially those made by the government, have far-reaching and long-lasting consequences. To study each decision, however, even the major ones, would be a hopelessly complicated task. We would soon be bogged down in a maze of dull and uninteresting detail. Thus, economists have found it useful to construct theories of the economy. As such, economic theories provide a framework for thinking. They help us to identify and separate the important information for making economic decisions from the trivial or unimportant.

In a sense, economic models or theories are similar to movies or stage plays in that they present only the important and necessary information. While watching a movie we seldom see details or incidents that do not bear

directly on the plot. For example, one never sees the leading character searching for a parking place, standing in line to check in baggage at an air terminal, going through customs, or sitting for extended periods in the plane. These details would be just boring and uninteresting, adding nothing to the entertainment. Instead we generally observe the plane taking off or landing, which in a few seconds can convey the idea of a several-thousand-mile journey. In other words, only the important and necessary information is presented. The same is true of an economic theory. For example, if we are interested in why the price of beef is increasing, we do not consider the price of golf balls or umbrellas, because these prices have little, if any, bearing on the price of beef. Theories highlight the necessary and important information bearing on a decision or problem. That is why theories are useful.

Unfortunately the word *theory* has suffered from a bad press for a long time. To students, the word often brings to mind abstract material devoid of any practical application. The feeling is probably justified if theory is learned purely for the sake of learning theory. But economic theory is not developed for its own sake; it is developed because it can be useful to explain and predict events. As we proceed, you will find that an attempt is made to apply the theories to real-world situations. Thus, if you do not find the world dull, you should not find theory dull.

We should point out, too, that just about everyone utilizes theory of one kind or another from the time they are old enough to think. To take a very simple example, we know that if we touch a hot stove we will burn a finger. Essentially this is a theory. In essence, the “hot stove theory” both explains and predicts. It explains why you might have a sore finger, and it predicts that should you touch another hot stove you will again burn a finger.

In the main, theories are developed by observing events and then generalizing from these events. Most of us formed the “hot stove theory” by touching a stove and observing (and feeling) what happened. From one or two observations we were able to generalize that touching all hot stoves results in burned fingers. Economic theories are developed in a similar manner. By identifying the prime causal factors of economic events, economists attempt to explain these events and thus predict future events.

It is common to hear people say that something is “all right in theory but not in practice.” A little reflection will reveal, however, that such a statement is illogical. If a theory is correct, that is, if it can explain or predict events, then whatever the theory predicts will happen. Something cannot be correct and incorrect at the same time. If a theory does not predict or explain an event, then it is either incomplete or incorrect. Such theories need to be reformulated, perhaps by adding new, pertinent information so that they are consistent with reality. Theories are continually being tested as they are used. Those that stand the test of time and use generally are correct. Sometimes, however, a theory may appear to be incorrect if it is applied to a set of circumstances for which it was not intended.

In the use of economic theory, it is common to see the phrases *other things equal* and *other things constant*. In order to simplify reality, it is useful to consider the impact of one factor at a time, in effect holding everything else constant, conceptually at least. This practice allows us to focus our attention on a specific point of interest, pushing into the background other factors or bits of information, even though these may also be important and be a part of the theory. It is recognized that in the real world there may be a number of important factors operating simultaneously. But if we tried to incorporate all of them at once into the analysis, it soon would become too complex to be of much use. Thus the *other things equal* phrase is not an attempt to distort the real world but rather an attempt to better understand and predict the world's events by making the theory more manageable and at the same time more powerful.

Economic theories also are known as *principles, models, or hypotheses*. Essentially all three words mean the same thing. The word *principles* in the title of the book reflects the idea that it is basically a book on economic theories. Chapter 2 presents the theories of demand and supply; Chapter 6 and its appendix present the Keynesian models; Chapter 7 is on the rational expectations hypothesis; Chapter 10 focuses on the quantity theory of money; and Chapter 14 presents the theory of international trade. These economic theories are intended to help explain and predict economic phenomena, principally unemployment and inflation. If the theories can do this, then they should be useful in helping the country avoid or at least minimize these two problems.

## THE PRODUCTION POSSIBILITIES CURVE

In studying the problems of unemployment and inflation, it is useful to have some understanding of how a market economy operates. In the remainder of this chapter and in the chapter that follows, we will present some of the basic facts of economic life. A more thorough coverage of this material is found within the subject matter of microeconomics.<sup>2</sup> If you have already studied microeconomics, these sections should provide a brief review and refresh your memory. If this is your first exposure to economics, these sections should give you ample background information to understand the material that is presented in the remainder of the book.

One of the more important economic facts of life to always bear in mind is that resources are scarce or limited, and therefore the output of goods and services is limited. This holds true for the individual, the state or region, and the nation. It also holds true regardless of the economic system—capitalism, communism, or any mixture.

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<sup>2</sup> See Willis L. Peterson, *Principles of Economics: Micro*, 5th ed. (Homewood, Ill.: Richard D. Irwin, 1983), chaps. 1–6. Copyright, © 1983 by Richard D. Irwin, Inc.

Of course, the limited nature of output in itself need not be a problem. The rub comes because for all practical purposes human wants are unlimited, or at least are substantially greater than the goods and services that can be produced to satisfy these wants. Thus every person and every nation must “make do” with fewer goods and services than they would really like to have. The phenomenon of unlimited human wants pressing against a limited output of goods and services gives rise to the necessity of making economic decisions. We cannot have everything we would like; so we have to choose the items that give us the most satisfaction for our effort or money.

Because resources are limited it follows that when we choose more of one good or service, such as a more expensive automobile, we have to give up something else, such as a vacation trip or a new color television set. Similarly, at the national level, if a country wishes to increase its supply of military armaments, it must give up other goods and services such as housing, medical care, and education. Economists refer to what has to be given up in order to produce more of something else as *opportunity cost*. For example, the opportunity cost of a trip to Europe might be a new car, a larger house, or a U.S. vacation trip, depending on what the family would have bought instead of the trip to Europe. At the national level the opportunity cost of more arms might be better housing or medical care, again depending on what the people would have produced with the resources that were not used on the arms. Of course, if the nation decides to produce the medical care or housing, the opportunity cost of these items may be a reduction in arms or national defense. Everything has an opportunity cost; nothing is absolutely free.<sup>3</sup>

A useful device for illustrating opportunity cost is the production possibilities curve. This curve is a line showing various possible combinations of two goods that can be produced with a given or fixed level of resources. The production possibilities curve shown in Figure 1–1 illustrates the various combinations of “guns” (military goods and services) and “butter” (all other goods and services) that a nation can produce with its limited resources. It is important to recognize that the production possibilities curve traces out the *maximum* possible output of these two goods that the nation can produce. For example, if the nation is at point *A* on the curve, it is producing  $g_1$  quantity of guns and  $b_0$  quantity of butter. The nation may want to have more of both guns and butter, but it cannot; the curve traces out the possible maximum amounts that can be produced during a given year or time period.

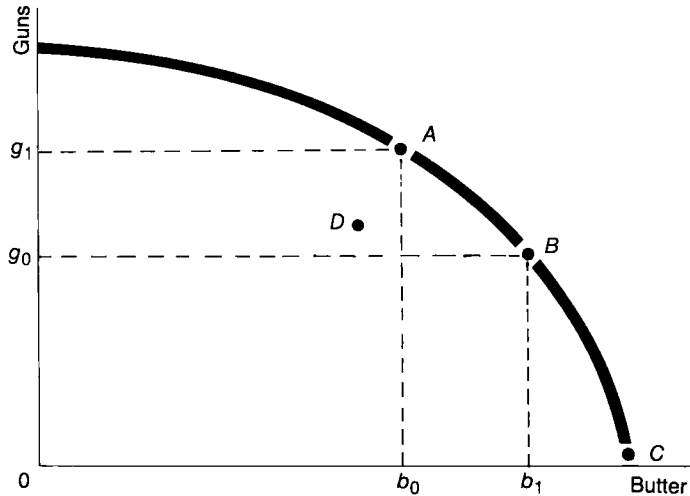
It is possible, of course, for the nation to produce more butter if it is willing to decrease its output of guns; that is, it could move from point *A* to point *B* on the production possibilities curve. Now it would be producing

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<sup>3</sup> It is assumed here that all available resources are employed in the most efficient manner possible. We will consider shortly the outcome when resource efficiency or employment can be increased.



FIGURE 1-1 A production possibilities curve



$g_0$  of guns, a smaller amount, and  $b_1$  of butter, a larger amount. (Keep in mind that points more distant from the origin represent larger quantities.) Point C represents the extreme case of zero guns and all butter. Here the nation is devoting all its resources to the production of nonmilitary goods.

Although we can be sure that a nation cannot be anywhere outside the production possibilities frontier (by definition this is impossible), there is nothing that guarantees that a nation will be on the surface of the curve. For example, a nation could be at point *D*. This means that it is not receiving the maximum possible output from its available resources. There are two reasons why this might occur: (1) the nation is not utilizing its resources in the most efficient manner or (2) some of its resources are not employed. The subject matter of microeconomics deals in large part with achieving an efficient use of resources; in this book much of our discussion will be concerned with attaining a full employment of resources.

It is interesting to note that if a nation is able to move from a sub-maximum point, such as point *D*, it may be able to increase its output of both goods simultaneously. By moving to point *A*, for example, it could increase its output of both guns and butter.

It should be understood that the production possibilities curve represents a country's output potential at a point in time. For example, it may represent output possibilities for a country during 1980. But there is nothing that requires the curve to remain fixed over a span of time. Indeed the production possibilities curve for most nations has been moving or shifting to the right over time, as illustrated by Figure 1-2. Economists call this