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Chapter 1

Discovering Why Macroeconomics Is a Big Deal

Macroeconomics is what macroeconomists do. Okay, that's a bit circular. Still, it helps make the point that macroeconomics is different from microeconomics . . . which is what *microeconomists* do. Whereas microeconomists study the behavior of individuals — for example, a consumer's choice of what goods to buy or how much to save — and firms —such as a company's decision about what price to set — macroeconomists study the economy as a whole. The comedian PJ O'Rourke captured this difference humorously when he noted that “Microeconomics concerns things that economists are specifically wrong about, while macroeconomics concerns things economists are wrong about generally!”

Even macroeconomists (at least most of them) recognize both the humor and the insight in O'Rourke's comment. From the Great Depression of the 1930s to the Great Recession of recent years, the economy has often taken turns that economists have failed to predict. As we will see, this inability to call every

macroeconomic turn is not so surprising . . . even if it is disappointing. The macroeconomy is a huge and complex system, and macroeconomists don't and may well never be able to forecast its movements with anything like perfection. Still, macroeconomists do know a lot. Even when they don't predict events in advance, that knowledge can help us understand events looking back.



REMEMBER

This understanding is important for at least three reasons. The first is that macroeconomics affects almost every part of your life. From whether you're employed or unemployed, to how much you earn, how much tax you pay, what services the government provides and how easy or difficult you find borrowing money — macroeconomics really matters.

The second reason is that knowing some macroeconomics can help policy makers avoid obvious mistakes. And it can help voters who select the politicians to choose ones who won't make obvious mistakes.

The third reason is that sometimes the right policy is not always clear. Because the macroeconomy is so complex, there will be pros and cons to any policy choice. In fact, it's largely because different macroeconomists will weigh these pros and cons differently that they'll sometimes (often?) disagree.



REMEMBER

The bottom line then is that understanding some macroeconomics lets you in on a big part of how the world works.

This chapter sets the scene for the rest of the book with a short introduction to macroeconomics. It covers the main topics and concerns of macroeconomists, the tools they use, how macroeconomic theory can guide macroeconomic policy, and how the macroeconomy can run into problems both small and large.

The Big Picture: Checking Out the Economy as a Whole

Macroeconomists try to understand the economy as a whole. This means they look at the behavior of aggregate variables, that is, not just one household's expenditure on wine or even the consumption of wine in total across all households (intoxicating as that might seem), but the total expenditure of all households for all consumer goods over some interval of time. And along with that total consumer expenditure, macroeconomists consider a host of other aggregate variables such as national unemployment, market interest rates, and some index of what's happening to prices in general. Of course, all these variables are related. So, working out what a shock to consumer spending means for interest rates, prices,

unemployment, and other variables is pretty tricky. Working out how macro-economic policy should respond to such a shock is trickier still.

As you can see, macroeconomics is a wide-ranging discipline. Therefore, it requires people with exceptional skills (ahem). Here we discuss just two: how macroeconomists are like detectives and doctors (just don't ask us to take a close look at that unsightly mole — please).

Investigating why macroeconomists are like detectives

Being a good macroeconomist is in many ways like being a detective at a crime scene. Good detectives carefully collect evidence at the scene and form theories about what may have happened. They use that evidence to test which theories are most plausible. Of course, the evidence from a single crime may or may not prove conclusive. Over time, though, evidence from many crimes along with improved technology for gathering and analyzing evidence leads to better theories and an improved ability in any one case to rule some suspects out and others in.



REMEMBER

Similarly, macroeconomists gather evidence about economies in the form of data. They then form a hypothesis about how the data came to be and test it to see whether the data supports it or not.

Unfortunately, neither detectives nor macroeconomists have labs in which they can run carefully controlled experiments to test their various hypotheses precisely. This is an advantage reserved to natural sciences such as chemistry, physics, and medicine. If a macroeconomist wants to work out the impact on the economy of cutting government spending by half, she can't just do it and see what happens! She can, however, look at the data (across countries and across time) and try to infer the likely relationship between government spending and other macroeconomic *variables* (like inflation, unemployment, and real GDP).

That kind of statistical inference though is fraught with problems. For example, imagine that you notice two facts: that countries with higher levels of education tend to be richer and that as the people of a country become more educated, it becomes richer. On the basis of these facts you reach the conclusion that more education *causes* people to become richer.

But wait a minute! How do you know that it isn't the other way around: when a country is richer it spends more on education? In which case, people becoming richer is *causing* them to have more education. Or a third variable may be causing high levels of education and wealth (such as a well-functioning political and legal system). In which case, a country being well off and well educated is *correlated* but not causally linked.

Macroeconomists and their models

Partly because economists (micro and macro) can't easily conduct lab experiments, and partly because statistical inference is complicated, they turn to building models — simplified versions of reality — in order to think through complex problems (see the later section “Modeling the Macroeconomy” for more on models).

There are several advantages to using formal models:

- » **Macroeconomic problems are complex:** They're so complex that trying to tackle them head-on is almost bound to fail. In this case, a model is like a roadmap. It doesn't tell you every twist and turn or bump in the road. But it does give a good tool for thinking about how to go from point A to point B. For example, if the question is why average wages in the U.S. are much higher than average wages in Bangladesh, a macroeconomist can safely build a model that ignores the fact that within each country there is a lot of wage and skill variability across workers. That data would be relevant to explaining why different people have different wages, but not why the U.S. average is many times that of the Bangladesh average.
- » **Modeling forces you to develop logically consistent hypotheses.** For example, it's likely that interest rates include an inflation premium. All else equal, lenders charge a higher interest rate in an environment of 10 percent inflation than in one of 0 inflation. If this is true, however, then a model that says the Federal Reserve can set the interest rate wherever it likes regardless of the inflation rate has a consistency problem even before one starts to test it with data.
- » **Modeling forces you to make your assumptions explicit:** Results in economics papers often read along the following lines: “If we assume X and Y, then Z must be true.” For example, “If we assume that households decide how much to spend on consumer goods today based on the income they expect to earn on average in the future, then their spending will be less sensitive to changes in income this period.”

Making assumptions explicit is good practice because it means economists can't easily pull the wool over people's eyes. In other words, it keeps economists honest.



TIP

- » **Intuition can lead you astray:** You can spend a lot of time thinking about an economic problem and come to a conclusion that modeling subsequently proves is wrong.

For example, your intuition may tell you that firms rather than workers should pay payroll taxes (the mandatory taxes due when someone works) so that ordinary people get to keep more of their income. But by modeling this problem, economists worked out that it doesn't matter who officially pays the

tax (the worker or the firm), the outcome is the same regardless. If the firm officially pays the tax, then it passes some of the tax onto the worker by lowering wages, and if the worker officially pays the tax, then she passes on some of the tax to the firm by only being willing to work for a higher wage.

- » **Comparative statics:** Don't let the jargon scare you; *comparative statics* simply means comparing the outcome before and after some change. Modeling allows you to see what would happen if certain things within the model change. For example, after you've written down your model, you may want to see what would happen to the economy if government spending increased. The model allows you to see the impact without having to change government spending in the real world.

Macroeconomists and their questions

Macroeconomists are quite an ambitious bunch. They want to understand why the world is the way it is, and they ask some of the biggest questions around:

- » Why do economies grow over time — and why do they sometimes slip backwards into recession?
- » What causes the prices of things to rise or fall?
- » What determines key outcomes like the level of interest rates and the rate of unemployment?
- » How can economic policies foster economic growth and mitigate recessions and unemployment?



REMEMBER

Thanks to macroeconomists, a lot is now known about the answers to these and many other questions. But being an economist is much more than just 'knowing stuff' — good economists are able to look at a problem they've never seen before and use their analytical tools to see something that others may have overlooked. That's another one of the benefits of modeling.

Chapter 2 contains plenty more on the questions that macroeconomists like to ask.

Diagnosing why macroeconomists are like doctors

If you get sick, you're likely to visit a medical doctor. The physician checks out your symptoms and makes a diagnosis about the likely cause of your illness. Based on this diagnosis, she recommends a course of treatment to cure you in no time — you hope.

Just like people, economies can also get sick with things such as recessions, high inflation and high unemployment. Much like a doctor, macroeconomists have to observe the economy and try to work out the underlying cause of these problems. After working out the likely cause, they can think about policies that those in charge can implement to return the economy to health.

For example, an economy is in recession if its *gross domestic product* (GDP) falls, where GDP is the amount of stuff it produces, as discussed in Chapter 4. Often recessions are caused by insufficient demand in the economy for goods and services. Knowing this, macroeconomists can prescribe some medicine: perhaps temporarily stimulating demand in the economy.



TIP

Policy-makers can raise demand in two basic ways (we talk more about them in this chapter's later "Plotting Economic Policy" section):

- » **Use monetary policy:** Basically pumping new money into the economy in the hope that this reduces interest rates throughout the economy and thereby encourages households to consume and firms to invest. Chapter 14 has loads more on monetary policy.
- » **Use fiscal policy:** Increasing government spending — which increases the demand for goods and services directly — or decreasing taxes — which policy-makers hope encourages households to consume and firms to invest. Flip to Chapter 15 for the lowdown on fiscal policy.

Economies can also suffer from high levels of inflation. This is often caused by excess demand for goods and services. So, using monetary policy to *raise* interest rates or fiscal policy to *cut* government spending or to *increase* taxes can help here. One other issue here, though, is the role of inflation expectations. For instance, if workers expect high inflation, they may demand high wage increases that cause inflationary price increases. In this case, policy-makers also need to convince the public that they are committed to fighting inflation in the future (check out Chapter 5).

Looking at the Key Macroeconomic Variables

In order to work out what's going on in an economy, macroeconomists need to see cold hard facts. They need to know how much stuff is being produced in the economy, at what rate prices are going up and how easy or difficult it is for businesses to get credit and for people to find jobs.

Fortunately, in many countries (and all developed ones) statistics on output (GDP), inflation, interest rates, and unemployment, as well as lots of other variables are today measured relatively accurately and on a regular basis.

Considering GDP: What we make and what we earn

When macroeconomists look at an economy, one of the first things they want to know is how much economic activity is taking place. They ask questions such as:

- » How much is the economy producing in terms of goods and services?
- » What are people's income and average living standards?
- » How do the production and living standards of today compare with those of, say, 30 years ago?



TIP

Luckily, a basic indicator tells them a lot about all these things – *Gross Domestic Product (GDP)*, the subject of Chapter 4. A country's GDP tells you the value of all goods and services produced in one year.

In the U.S., for example, in 2015 the combined value of everything produced is estimated to be just a bit over \$18 trillion. That's a big number because the U.S. economy is very big. In fact, it's the world's largest economy by a long shot. The GDP for China, the second largest, is estimated to be about \$11.2 trillion. That's still a big number, but it's nearly \$7 trillion smaller than the U.S.



TIP

The sum of each person's production has to equal the total of all production. A second way to think about all this is to recognize that every time someone pays for something, whether it's to hire a worker or to buy a power tool, someone else receives that payment as income. So, total production must be the same as total income. We earn what we make.

A third way to view GDP is to recognize that each payment involves an explicit market trade of dollars for something. So GDP is also a measure of how much people are trading with each other in the marketplace. This allows us to recognize one more feature of GDP — namely, that GDP does *not* include non-market exchanges. The services of stay-at-home spouses who care for children and clean the house are not part of GDP. Likewise, transactions for illegal activities that take place in the underground economy are also not part of GDP. Although these and other services are important, omitting them from our analysis does not usually lead to real problems. For some economies, though, especially those in which tax evasion is widespread, we need to augment official GDP with estimates of the

underground or non-market economy to get a good measure of economic activity overall.



REMEMBER

Often you want to know how much on average each person in a country gets, instead of its total GDP. No problem. By dividing GDP by the number of people in a country you get *GDP per capita* (average income per person). This figure allows you to compare living standards between two countries. In 2013, the U.S. had GDP per capita of around \$53,000, while in the U.K. it was around \$42,000. Therefore, the average American earned around \$11,000 more than the average Brit.



TIP

Employment and unemployment are big concerns for both macroeconomists and ordinary citizens. In fact, probably no macroeconomic variable is more closely watched by so many people as the national unemployment rate reported at the start of each month (it's 5 percent as this is being written). If you think about it, though, the employment and unemployment numbers are going to be closely related to GDP, especially on a cyclical basis. When businesses cut back on production, fewer inputs like labor are needed. Employment falls and unemployment rises. Just the opposite happens in a boom where production is high, and lots of workers are needed to make those products. Turn to Chapters 7 and 16 for more on unemployment.

Thinking about inflation: Is more less?

If you ask people how they feel about inflation, they will probably tell you that they dislike it. Ask them why, and they probably say that it makes them poorer. Well, it might make some people poorer, especially in the short run. In the long run though, the impact of inflation — at least at moderate levels — is pretty much zero for the things that really matter, such as *real wages* (how much stuff you can buy with your wage).

In the short run

Consider this example, which shows that inflation in the short term can indeed make some people worse off . . . and others better off.

Imagine that you're negotiating your wage with your employer for next year. Both of you expect inflation to be zero. You go into the negotiation and ask for a 3 percent pay increase because you believe that as a highly skilled and experienced professional, you deserve such a pay raise.

Your employer is reluctant though. Business is tough, and the firm is being squeezed from all sides. On the other hand, she doesn't want to lose a valued

employee and incur the time and effort of finding a suitable replacement. After some discussion, you both compromise and agree on a 2 percent pay raise.

The contract is written up and signed. Next year comes along and low-and-behold inflation isn't zero, it's 3 percent. Because everything costs 3 percent more, and your income has risen only 2 percent, you can only afford to buy 99 percent of all the things you used to buy. Macroeconomists say that in *nominal* (purely monetary) terms, you had a pay raise of 2 percent, but in terms of how many goods and services you can actually buy, you had a *real* wage decrease of 1 percent.

However, your pain is your employer's gain. All prices, including hers presumably, have risen by 3 percent. Yet she's only paying you 2 percent more. Whatever the dollar value of your salary is, she's getting an additional 1 percent that you thought was coming your way.



REMEMBER

In short, inflation can hurt some people (and help others) in the short run.

In the long run

In the short run, if inflation isn't what it was expected to be, people can have their real incomes changed and some can be worse off. But in the long run, after prices have had time to adjust and contracts have had time to be rewritten to reflect more accurate expectations, moderate inflation shouldn't have much impact on your real wage. This is because macroeconomists think (and the data supports) that in the long run people care about real things. You care about your real wage; your boss cares about how much she's paying you in real terms, and so on. Therefore, any impact of inflation on your real income should disappear.

We're not saying that whether an economy has low or high inflation doesn't matter. Not at all. Especially very high inflation or even higher hyperinflation does do damage. In Zimbabwe in 2008, the annual rate of inflation exceeded over 231 million percent. The price for a small pack of coffee beans reached nearly 1 billion Zimbabwean dollars. A loaf of bread cost the same amount as the price of 12 cars a decade earlier. Such high inflation rates make trading very difficult. Just carrying around sufficient cash can be a burden unless the denominations are adjusted accordingly. Indeed, Zimbabwe ultimately issued a 100 trillion (Zimbabwean) dollar bill — the highest denomination of any currency ever. Yet even if it's possible to carry enough cash, people still don't like it. At very high inflation rates, anyone with a \$100 trillion dollar bill loses a lot of value even over the course of a just a single day. In fact, rather than carry that much cash for 24 hours, it was common for Zimbabweans to change local currency into more stable foreign currencies three or more times a day. That involves costs of its own. High inflation has all sorts of costs, and these can be substantial. You'll read more about these in Chapter 5.

Interesting notes about credit and capital

Inflation is a persistent rise in the prices paid for buying chunks of GDP, that is, the prices paid for buying goods and services. There is another price, though, that is not about the cost of goods and services. This is the price of *credit* — the return that has to be paid by anyone who wants to borrow funds. This includes businesses that borrow to pay for new plant and equipment. Even if the business instead issues shares of stock to finance that purchase, it again can do so only by promising shareholders a return on their investment.

Macroeconomists often refer to this cost of credit or financial capital as the *interest rate*. Of course, the business press reports lots of interest rates each day. But so long as they move up and down together, we can capture what's going on with all of them by talking about any one “interest rate.” Usually, we use some benchmark like the prime interest rate to which the other rates are somewhat anchored. So, we can talk about the cost of credit by referring to this one key interest rate.

How the interest rate is determined is one of the enduring questions of macroeconomics. Economists from Adam Smith to Karl Marx to John Maynard Keynes and others have found this issue, well, *interesting*. Ultimately, though, one thing is clear: The interest rate has to be related to the profit or rate of return earned on the capital that the credit is used to purchase.

For example, if Mac Row Airlines could borrow \$250 million for a new Boeing 787 at an interest rate of 6 percent, and if that plane would generate \$25 million in annual profit, or 10 percent, the company would surely borrow the funds and make the investment. The extra \$25 million in profit would more than cover the 6 percent annual interest charges of \$15 million, leaving an extra \$10 million for Mac Row shareholders.

But you ask, why stop at one plane? Why not buy a second aircraft? Well, Mac Row might do that. It might even buy a third, or even a fourth. But at some point, the return on an additional plane will start to decline. Planes are not nearly as profitable when they fly at 60 percent capacity as they are when at 90 percent capacity; or when they keep flying at 90 percent capacity but do so at lower prices. That's what will happen though as Mac Row adds more planes. If it keeps the price the same, it will have the same number of customers in total but a lot fewer per plane. If it cuts fares, it may keep its planes nearly full but only by foregoing a lot of revenue. Either way, the return falls as more planes are added. So long as that return exceeds the 6 percent that Mac Row has to pay to finance a plane purchase, it will do so. However, once it's clear that the return on an additional plane will be less than 6 percent, Mac Row will stop investing in new aircraft.



REMEMBER

This example illustrates a nearly universal law about capital (and other inputs). It's called the *Law of Diminishing Returns*. In words, it simply says that the marginal return on capital machinery falls as we add more capital to a given labor force. It also works in reverse. The marginal return on capital rises as we take away machines and equipment, again holding the labor force constant.

Of course, Mac Row is not the only airline in the economy, and aircraft are not the only form of capital. But what holds true at one firm will hold true for the economy overall. As more firms add more capital (given the total labor force), the marginal return on capital falls. And firms will be doing just that — adding capital — so long as the marginal return exceeds the interest rate. Eventually, this additional capital will drive the return down to a level where it is equal to the interest rate (plus any depreciation). When that happens, the incentive to acquire more physical capital is gone.

This is what macroeconomists consider a full capital stock *equilibrium*. In such a state, the amount of capital — relative to the labor force — is such that the capital's marginal return net of depreciation equals the interest rate. So, there's no incentive to change the capital stock up or down.



REMEMBER

The interest rate is the price of credit. It reflects the general financial climate and, in particular, the cost of acquiring funds for investing in physical capital like plants and equipment. Hence, there is a link between the interest rate and the return on capital. Due to diminishing returns, the latter rises (or falls) as the capital-to-labor ratio falls (or rises). Chapter 6 talks more about this relationship.

Modeling the Macroeconomy

We've already indicated that economists love modeling — no, not prancing down the catwalk, though they're an attractive bunch, obviously. Economists use *models* — usually mathematical ones — that allow them to describe in simplified terms the basic forces that determine the economic outcomes of interest.

Macroeconomists are no exception to this rule. Indeed, the goal of much macroeconomic research is to develop a theoretical model of the macroeconomy that captures the essential macroeconomic relationships.

In the chapters in Parts 3 and 4, we build some models of the economy, which can be used to analyze how the economy works and how different macroeconomic variables affect one another. Here, we want to lay the groundwork for what constitutes a “good” macro model.

Digging into the basics of macroeconomic models

Traditionally, there are three big questions or three key variables that a good macro model has to explain:

- » GDP
- » A measure of what's happening to prices
- » The interest rate

A good macro model therefore will show how these three variables are determined. Of course, in the process, the model will also reveal how other important variables, like unemployment and the government deficit, are determined. But most macro models start with those three issues.

Two more quick points: First, we want one model for all three issues. We don't want one model for determining GDP, another for inflation, and still another for the interest rate. We want a unified theory.

Second, and to some extent in contradiction to the quest for a unified theory, we have to recognize that in macroeconomics, the long run may be different from the short run. Hence, although we want one model for all three variables, we may have to have one that describes their behavior in the short run and another one that does so for the long run. You can't always get what you want.

Of course, another prime quality of a good macro model is that it works — that it helps us understand and even predict macroeconomic events. That's where the data come in. Once we have a sensible model structure, we can use the data to get real-world estimates of the model's key parameters. With luck, that will make the model better at tracking and predicting the economy. But remember, life and the economy are full of surprises. Who knew that oil prices would collapse at the end of 2015?



TIP

Macroeconomists mainly work with very simple models — at least to begin with. For example, as a first guess they will assume that all households are the same, or that the government is a completely benevolent social planner, or that people want to buy only one good called the *consumption good*. Economists then try to understand how this simple world works. When they've achieved that aim, they can relax the assumptions one at a time to see whether things change: for example, "I wonder what would happen if households were different from one another, or if politicians were mainly interested in winning the next election?"

Meeting the agents that participate in the models

Economic models feature three types of *agents* (or decision-makers) who interact with each other. Here, we introduce briefly the different decision-makers represented in a macroeconomic model and what they do:



TIP

» **Consumers/households:** Individuals like you who have to make choices, such as how much should I buy? What should I buy? How much should I work? and so on.

Economists sometimes use consumers and households interchangeably, because often decisions about what choices to make are made at the level of the household. The working assumption for how consumers behave is that they're *rational* and that they try to maximize their *well-being* (utility in economics jargon) subject to any constraints they face.

Often economists are criticized for assuming that people are rational, but much of this criticism stems from a misunderstanding about what economic rationality means. Individuals are considered rational in an economic sense if they're able to rank options according to their preferences. So, for example, if presented with three options — watch TV, eat chocolate, or go to the gym — a rational person can rank the options and decide, say, to first eat chocolate; second, watch TV; third, go to the gym. That's all rationality means. Similarly, *maximize their utility* simply means that people choose the thing that they prefer most.

» **Firms:** These are organizations that turn *inputs* (such as raw materials and labor) into *outputs* (goods and services people want to buy). Economists assume that firms *maximize their profits*, which sort of makes sense because in a market economy the owners of any business are likely to want as much profit as possible. That's not to say that some businesses don't have other objectives, such as revenue maximization or certain social objectives. But for most businesses, these objectives are secondary to profit maximization.

» **Government/policy-makers:** People who can change economic policy. For example, they can decide what tax rates or interest rates to set, or how much the government should spend. In some economic models, policy-makers are assumed to be *benevolent social planners*, which means that they're just trying to do what's best for society. In other models, they're *rent-seeking* or *strategic*, meaning that they may want to win the next election or increase the size of their departments. The correct assumption depends on the problem at hand.

Plotting Economic Policy

Policy-makers are potentially some seriously powerful people. They can take actions that can influence the economy not only today but also for years to come. This section is a brief overview of economic policy.

Monetary policy: Controlling the economy's money supply



REMEMBER

Monetary policy refers to policy directed towards changing the amount of money in circulation and thereby influencing the interest rates in an economy.

In the United States, this job falls to the Federal Reserve (often called the Fed). Like the central banks of other countries and probably more than most, the Fed has a large amount of autonomy regarding how exactly it uses the tools at its disposal to meet those objectives and even to determine what those objectives are. For example, the Fed has set as one of its main goals the achievement of 2 percent annual inflation. It also cares about GDP and unemployment, though. In recent years, it has set its policy pretty much to do what it can to support economic recovery and keep unemployment low, even though many Congressional Republicans have expressed the view that these policies are not good for the U.S.

Here are the two types of monetary policy:

- » **Expansionary monetary policy:** Involves increasing the supply of money in order to reduce the interest rate and stimulate the economy. In the short run, it usually results in higher output but also higher inflation, although the inflation effect has been very weak in recent years.
- » **Contractionary monetary policy:** Involves reducing the supply of money in order to increase the interest rate and slow down the economy. In the short run, it usually results in lower output but also lower inflation.

Conventional monetary policy involves putting enough money in circulation to achieve the interest rate and credit conditions that the Fed believes are consistent with its inflation and unemployment goals. In recent times, however, with many interest rates at or close to the minimum of zero, the Fed's ability to lower them further in an effort to encourage more credit-sensitive spending has been quite limited. Therefore, starting in late 2008, as the economy struggled with recession, the Fed began the first of several rounds of *quantitative easing*: increasing the money supply in the hope of stimulating the economy further, not by lowering interest rates, but by increasing *liquidity* (making it easier to borrow money by

making sure there is enough cash around) and maybe even generate some inflation. (Check out Chapter 14 for loads more on monetary policy.)

Fiscal policy: Spending or taxing more

Fiscal policy refers to any changes in government spending or taxation. Unlike monetary policy, fiscal policy isn't usually delegated to some independent authority, such as the Fed. Instead, politicians decide it and civil servants implement it "in-house."

Like monetary policy, fiscal policy can have a large impact on the economy (at least in the short run), and it also comes in two flavors:

- » **Expansionary fiscal policy:** Involves increasing government spending, reducing taxation, or both. It's designed to stimulate the economy and in the short run is likely to lead to higher output but again, possibly higher inflation.
- » **Contractionary fiscal policy:** Involves decreasing government spending, increasing taxation, or both. It's designed to slow down the economy and in the short run is likely to lead to lower output but also possibly lower inflation.

We discuss fiscal policy at length in Chapter 15.

Playing policy games

Both fiscal and monetary policy have the potential to be misused by politicians acting in their own self-interest.

For example, stimulating the economy shortly before an election in order to reduce unemployment and increase output is perfectly possible (perish the thought). In the long run, however, output and unemployment return to their original levels — only inflation is permanently higher. The government may even need to engineer a recession to get inflation back down again after the election, leading to *boom and bust* (a period of rising prosperity and falling unemployment followed by a sharp fall in living standards and a rise in unemployment).

As you can see, the short-run effect of policy may be very different from the long-run impact. For this reason, policies that are right for keeping the economy healthy in the long run may conflict with policies that are needed to handle a short-run problem. Economists have been arguing for some time that there's a need to design rules that bridge this divide—that constrain policy-makers to keep their eyes on the long run while still responding to short-run needs. We talk about these issues in Chapters 13, 14, and 15.

Hoping for the Best (and Preparing for the Worst)

From the start of 1993 to the end of 2000, the U.S. economy added nearly 23 million new jobs as the U.S. unemployment rate fell from over 7 percent to under 4 percent. Real GDP grew rapidly at an average of 3.8 percent while the inflation rate held steady at the relatively low average annual rate of 2.5 percent. And thanks partly to the strong growth and partly to the large tax increase the Clinton administration passed in its first year, the federal budget moved into surplus in 1997 for the first time in nearly 30 years.

Just over ten years later, the same U.S. economy was deteriorating rapidly as the financial crisis hit. GDP was falling and would not start to rise again until the second quarter of 2009. Unemployment rose rapidly from 5 percent at the end of 2007 to 10 percent by September 2009. The rise in long-term (more than 27 weeks) unemployment was particularly sharp. Also, in 2009, the federal budget, which had not been in surplus since 2001, showed a deficit of over \$1 trillion as a result of the weak economy and the Bush tax cuts of the early 2000s.

Counting on markets to work well

Since Adam Smith first wrote about the “invisible hand,” economists have generally held to the view that free-enterprise market economies work well. Competition keeps prices low and gives consumers a lot of choice. It also incentivizes firms to innovate. In addition, workers benefit from a free-market system in which they have choices about where and how much (part-time or full-time) they want to work.

There’s also reason to hope that market economies will work well at the aggregate level. If there is a slowdown in consumer demand across the economy, competition will lead firms to cut their prices and maintain production. By contrast, if suddenly consumers (and maybe firms) decide to go on a spending spree by borrowing a lot, interest rates will rise and choke off this extra demand.

Recognizing the potential for problems

Unfortunately, as the Great Recession of 2007–2009 has reminded us, the market’s self-regulating mechanisms aren’t always enough, and macro economies can sometimes run into serious trouble, like, recessions or serious inflation. Why this happens and what to do about it when it does have been the central issues at the heart of macro policy debates for close to a century.

To some extent, the *why* is now understood. A big part of the reason is that the self-regulating mechanisms of a modern economy don't work as quickly as they do in the idealized textbook case. In particular, wages and prices are "sticky" in that they adjust more slowly than they need to in order to keep the economy on track. Output and employment could stay high following a fall in the demand for goods and services if there is a large enough drop in prices. Real-world prices, though, don't seem to fall either fast enough or far enough. Indeed, firms often hold prices close to where they started and instead cut production. Output falls and unemployment rises as a result. To be sure, the rise in unemployment could be lessened if workers took wage cuts (which would also make it easier for firms to cut prices). But that doesn't typically happen either. Shocks to the demand for goods and services generally lead to movements in output first. The wage and price changes that could potentially keep the economy on track and prevent those swings in GDP and employment typically come only after some time has passed.

Another part of the reason has to do with expectations. These are important because agents' actions today are deeply influenced by their expectations for the future. But expectations can be self-fulfilling — that is, they can lead to actions that make the expectation come true.

Suppose for instance that a business expects a drop in the demand for its products next year. It will likely start reducing its production now. If it's just one firm, though, this is not really a problem. What happens if a lot of businesses share this pessimism? As each cuts back its production, it lays off some of its workers. But when a lot of workers are laid off, a lot of households suddenly find that they have substantially less income. Hence, they buy a lot less goods. Demand for each business's product drops just as — and largely because — businesses expected this. The economy enters into a self-imposed recession.

Banks and other financial institutions are particularly vulnerable to self-fulfilling expectations problems. This is because banks keep only a small proportion of deposits in reserve: If you deposit \$100, perhaps only \$10 is kept in reserve in order to facilitate withdrawals — the bank lends out the other \$90. The idea is that on any given day, not many depositors are likely to withdraw money, so no need exists to keep much in reserve. This system is known as *fractional reserve banking* (see Chapter 17).

The problem with fractional reserve banking is that if people get worried about their bank's ability to facilitate withdrawals, they begin to expect that others will want to withdraw their funds before the \$10 of reserves is gone. If a lot of people feel this way, they will all rush to be first in line to withdraw their funds — a classic bank run. Since the bank cannot service all these requests it will fail unless it is "bailed out" by some other institutions. And as banks fail, households and

businesses find it harder to get credit. So, they cut back their demand and the economy finds itself in a recession again.



REMEMBER

Banks and other financial institutions are connected in a complex web of transactions. So, once one bank — especially a major one — fails, investors may get nervous about others. Depositors at many banks may then try to withdraw their funds forcing these banks to borrow quickly from others and thereby makes these secondary banks look risky. A full-scale banking crisis can quickly emerge even though many banks are — or were — quite healthy. Once again, it is the expectation of a crisis that acts to produce a crisis.



REMEMBER

Self-fulfilling expectations and other shocks can cause sudden drops in the demand for goods and services. If wages and prices could also fall quickly, such demand shocks might not lead to recessions. That doesn't seem to be the case, though. This may be because the real world is not the economist's ideal of perfect competition. Instead, it is one of imperfect competition in which wages and prices are set as the result of conscious decisions by firms and workers (or their unions). This means that wages and prices don't change so easily.

Considering policy possibilities and limitations

As mentioned earlier, policy-makers can use monetary and fiscal policies to supplement the market adjustment process. When demand is down, the Fed can cut interest rates and fiscal policy-makers can cut taxes (or raise spending) to stimulate demand rather than wait for prices to fall. When demand is excessive, they can do the opposite to bring demand down and decrease the inflationary pressures.

Policy-makers have to be careful though because even with the best of intentions, they always run the risk of making matters worse rather than better. Much like a bather who finds that the shower is at first too cold and then spends the next several minutes fiddling with the controls only to scald and freeze himself repeatedly, efforts to fine-tune the economy can actually make it gyrate more.

In addition, policy-makers have to be wary of creating a moral hazard. As 2008 progressed and the widespread failure of large numbers of banks and other financial institutions emerged as a real possibility, the fear of that outcome caused governments around the world to pump large amounts of taxpayer funds into the banking sector to keep it afloat.

But bankers aren't a silly bunch. They're quite aware that their industry is vital to the proper functioning of the wider economy. They also know that because of this

importance, if they do find themselves in difficulty, a very good chance exists that the government will bail them out. Indeed, they probably understood this before the crisis.

This leads to what economists call *moral hazard*. Knowing that the government will bail them out if real trouble emerges, banks and other financial institutions have incentives to take on excessive risk. This, of course, makes a crisis more likely.



REMEMBER

Left to its own devices, the private economy may not always run smoothly. Sticky wages and prices, along with the potential for expectations to be self-fulfilling, can lead to instability and business cycles. However, this does not mean that government interventions will automatically make things better. Lags in government actions and the potential for such actions to lead to moral hazard mean that even well-intentioned policies can actually worsen economic outcomes. Any case for active government macroeconomic policy requires that these limitations be recognized so that such policy is properly designed to be part of the solution, and not part of the problem.

