

## **Economic Environment and Business Strategy**

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### **Business Cycles**

Hello, everyone. Welcome to this session on the business cycle, a key component of this course. Every economy, whether advanced or developing, experiences fluctuations. These fluctuations in economic activity, marked by periods of rapid growth followed by slowdowns or even recessions, are called business cycles. They are not random; they follow a pattern of expansion, peak, contraction, and recovery, shaping how firms, households, and the government behave. Understanding business cycles is essential because they affect all aspects of the global business environment.

For businesses, cycles shape demand for goods and services, investment decisions, and hiring strategies. For policymakers, business cycles inform monetary and fiscal responses aimed at stabilizing the economy. In this session, we will explore what the business cycle is and how we distinguish between booms and recessions. To make this more engaging, we will discuss both conventional and unconventional indicators of recession, ranging from GDP and inflation trends to unexpected closures.

By the end of this session, I hope you will see that understanding the business cycle is not only about macroeconomic theory but also about interpreting real-world signals that influence strategy, investment, and survival in the ever-evolving global economy. So, let me begin by defining the business cycle. The formal definition of a business cycle is a repeated pattern of expansion and contraction in economic activity. Overall, these patterns are driven by fluctuations in gross domestic product (GDP), employment, and factory income and spending. Business cycles are irregular and unpredictable in terms of timing and duration.

What we can see is that we have witnessed a business cycle, or a period, for several years. Some of them become more severe, some of them are very mild, and even the 1929 Great Depression, you know, lasted for nearly one decade. The key takeaway here is that business cycles can affect both firm strategies. They would affect their production, investment, and hiring strategies. Additionally, they can impact the government's policy responses, including monetary policy, fiscal policy, and foreign exchange rate policies.

Let me show you the different phases of the business cycle. As you can see, the x-axis represents time. For example, you can plot it from here: 1950, 1952. That is clearly visible over the year, perhaps here, for example, in 2025. What you can see here is the

output: the GDP, which represents the annual production of goods and services produced by a country each year, as well as the market value of goods and services produced by a country within a specified period, such as one year. So, let us see that on the y-axis, we plot GDP, output, or GDP.

Over time, we typically expect the economy to grow; normally, we say the economy is growing at a rate of 10 percent. That means, compared to last year's output or GDP, this country has produced 10 percent more this year. If they produced 100 billion last year and are producing 110 billion this year, we can see that they are growing at a 10 percent rate. If that is the case, we expect the actual GDP, represented by this line, the black solid line, to move upward from left to right. However, what you can see from this picture is that there is an expansion at some point in time, resulting in rising output. When output increases, the factors of production also receive employment opportunities, which means job employment will increase.

And so do I about the investment as well. The firms will expand the size of the factory, increase production, and invest in new machines and equipment. So that is called an expansion. And then there is a peak. Peak means that at this point, you can see that the first peak point is here, and another is here over a period.

That means the economy is at maximum capacity. So, then there is a recession; you can see that economic output over a period is declining. You can see that it is declining and approaching its bottom, indicating negative economic growth. When it touches the bottom, that is called a trough, which refers to the lowest point from which recovery begins. As you can see, expansion is typically followed by a peak and then a recession.

The recession means the term, the terminology that you often hear; recession means the decline in economic activity, or more formally, that is the decline in GDP growth. So, then it touches the bottom here, which is called TRO. Then, afterwards, when the bottom reaches, it is obvious that it may continue for some time; maybe over time, it will start increasing. That means this is the recovery phase. Then, that means you start expanding after a certain point in time.

Again, you can see that the economy reaches its peak. Then, what we normally expect is that if the economy is growing, it will continue to grow. However, after a certain point in time, it begins to decline. And again, this has been plotted based on the actual data. Then again, the baby is growing, but P comes here; then again, pro is growing over time.

This solid black line, which I drew with the reading on it, represents the actual GDP of a country. Over time, it has been evident that the trend has been growing, while in some countries, there has been negative growth. So, when we plot it, you can see that there is a cyclical movement, and importantly, this cyclical movement is not predictable. Perhaps, by seeing this figure, you think you can predict it; maybe it is growing from a trough and

then growing again. Maybe I can anticipate that it will go down, but it is not necessary. See, for example, here there is a trough, then it went up, but again, after reaching this point, it has gone down.

These are the various phases of the business cycle. You can see this blue line. The blue line represents the trend path of GDP. This is also referred to as natural economic growth. That means that if there were no fluctuations like that, the economy would grow naturally due to an increase in resources, improved product technology, and productivity; the economy would grow in this way.

That means, for example, that if this growth rate is 2 percent, we think the economy will grow by 2 percent or 3 percent each year over time, and so on. This is not the actual GDP; the blue line is drawn based on the trend line, which is a linear prediction derived from the actual GDP. By observing the actual GDP, we plot this line, which is called a trend line or trend GDP. That means that if there were no business cycle or cyclical fluctuations in output, the economy would be moving along its natural path, called the trend path or the natural output path. The trend path of GDP is the path represented by the blue line, showing what GDP would be if the factors of production were fully utilized (full employment), and is also referred to as the natural growth rate.

That means all factors of production are optimally and naturally utilized. If there is no disturbance from either the demand or supply side, GDP would continue to grow. Always remember this trend line; this is not the actual GDP, but rather a trend line based on the actual GDP. That is the cyclical line we are showing here; based on that, we project a trend line. That is called the natural GDP. Therefore, this trend path of natural GDP, which we cannot directly observe, clarifies our current position in the economic cycle, indicating whether we are in a recessionary phase or an economic boom phase.

This calculation is typically performed here, based on which we determine the output gap. The output gap is the difference between potential GDP and actual GDP. So, when the actual GDP is the output gap, you can see, for example, that this point represents potential GDP, also known as natural GDP, or the trend line I mentioned. Please note that this refers to potential GDP or natural GDP, which is the peak, whereas this is the actual GDP. This gap, known as the GDP gap, represents the distance between the current level and the desired level. You can see that this one is positive.

That means economies are overheating, or that factories in this country are operating at full capacity, producing more goods and services than their natural capacity allows. This overheating results in increased demand for goods and services, and factories operate at full capacity. Now, suppose the factories have been operating 16 hours; now they are working 18 or 20 hours. Typically, laborers work 8 hours, but now they are working 10 hours. Perhaps there is a huge demand for goods and services, and factories respond by

producing more, which in turn increases economic activity. The economy enters an expansionary phase.

This gap is positive, indicating a favorable difference. This represents the negative gap, which is the difference between potential GDP and actual GDP. This is a negative phenomenon, known as a recession. Sometimes, if it becomes even worse, this downturn is referred to as a depression. So, this one is called negative; negative means underutilized capacity, which means employment is at risk. So, what does that mean? Consider this point: normally, the economy can produce this much output. Look at the corresponding line on the y-axis.

In that particular year, possibly 1960. So, normally, if all factors of production are present in the normal economic scenario, they can produce this much output. For example, 100 billion here, just add 100 billion dollars' worth of goods and services. However, during this period, it is evident that they are now producing only 20 billion.

The gap here is that 80 billion of that decline in output, compared with their natural output, means they are not producing goods and services. The level of economic activity has declined, resulting in a lack of demand, and therefore, many people will remain unemployed. Consequently, people's incomes will continue to decrease. This is referred to as the negative output gap; the negative gap is often referred to as the recessionary phase, or it is often considered the worst-case scenario for any economy to imagine. Let me also show you the historical output gap over the period from 1960 to 2012.

These shaded bars represent the major recessions in the U.S. The following examples illustrate these periods: 1970, 1975, the 1980s, 1982, the 1990s, and, more recently, 2008 and 2009, which were followed by the financial crisis and eventually led to the economic recession. As the largest economy in the world, the U.S. is subject to tremors or implications that extend globally, affecting other countries as well. Those engaged in trade or economic interaction with the U.S. will also be affected. As you can see, this is due to cyclical deviation, which indicates a deviation from potential output.

Again, you can see that the trend line—here, actual GDP is shown in blue and the trend line in a black solid line—shows the gap. So, that gap is negative wherever you see it; this is the negative gap. Additionally, there is a gap here because we are plotting from 1960 to 2010, a long time period. So, even if we assume this, you will come to know this gap more explicitly. Additionally, inflation and deflation are closely tied to the business cycle. Suppose there is a boom; that means there is a positive output gap.

At that time, prices and inflation were rising because economic activity was high. This means firms are incentivized to produce more goods and services, resulting in greater availability. If aggregate demand increases, it drives the economy. Then, firms have even more incentive to produce more goods and services, and they will be working overtime;

laborers will also be working overtime. And if aggregate demand is driving the economy, then it is obvious that when demand increases, the topic we studied in one of the sessions means that prices will also increase. Typically, during a boom period, prices rise, accompanied by periods of growth and increased demand.

Normally, during a boom, prices rise, and then during a recession, a negative output gap occurs, meaning the actual observed GDP is less than the natural GDP. At that time, aggregate demand will be lower than normal, leading to a decline in prices and, in some cases, deflation. Generally, these are the features: if there is an increase in economic activity, a high GDP is typically accompanied by high prices, and a low GDP is typically accompanied by low prices. However, there is an exception from the 1970s known as stagflation.

It means that GDP is low. But we normally expect that a low GDP means prices should be low. However, in the 1970s, the economy experienced low GDP growth, accompanied by high two-digit inflation, an economic phenomenon that had not been observed before. Overall, we are examining inflation from the 1960s to the 1970s. I am simply demonstrating how to plot inflation and the business cycle here. You know that this bar represents the recession in the US, and we plot inflation.

You can see that this is empirical evidence explaining what happened to inflation during this business cycle. As you can see, our exception is that in the 1970s, there was an exception; otherwise, the pattern followed normal expectations, which means that during a boom, inflation is high, and during recessionary times, inflation declines, resulting in a low inflation rate. What causes a business cycle? This is an important topic for inquiry for economies over a period. It is a never-ending list of causes. Once we discuss this in general, however, let me first point out the general causes.

Generally, it is understood that there will be demand shocks, changes in consumer confidence, and credit cycles; as a result, demand will fluctuate. A demand shock is a shock to the aggregate demand side of the economy. Similarly, there will be shocks on the supply side. One is an oil crisis. For example, in the 1970s, the formation of the OPEC countries caused a supply-side shock because oil prices increased.

For firms, production costs increased. Similarly, the COVID-19 pandemic in 2020 was a supply-side shock. The ongoing wars between Russia and Ukraine, as well as the war between Palestine and Israel, also created shocks to most economies. Then comes the financial crisis, which I will discuss in detail in a future session.

That also causes the business cycle. For instance, the 2008-09 recession was a direct result of the 2006-07 real estate crisis, which in turn paved the way for the 2007-08 financial crisis, ultimately leading to the 2008-09 economic crisis. So, the economic crisis is essentially the recession we are currently discussing. Similarly, policy changes,

including adjustments in monetary and fiscal policies, can also impact business activities, and these changes in economic activity will, in turn, affect GDP. Sometimes changes in interest rates occur because the central bank is following a tight monetary policy, which causes the interest rate to increase. As a result of the interest rate increase, the cost of production for firms rises, which affects their profits. Consequently, they reduce their investment in expanding machines and factories, leading to a decline in economic activity and, ultimately, a decline in GDP.

Similarly, fiscal tightening can occur when governments reduce spending to decrease the fiscal deficit, which can also lead to a decline in aggregate demand, especially if consumer incomes are reduced as a result. Overall, a decline in aggregate demand can lead to business cycles. In a recession or a boom, aggregate supply does not equal aggregate demand. Please recall that in one of the sessions, while discussing GDP, we explored how the circular flow diagram can be used to address both aggregate supply and aggregate demand. If aggregate supply is almost equal to aggregate demand, the economy is in a state of stability. That means that if aggregate supply is, for example, 100 billion, it is indeed 100 billion.

Then you know that producing 100 billion of goods and services generates equivalent factory income, which means the factors of production will also receive 100 billion of factory income, and that will also be spent in the form of aggregate spending, which means equivalent aggregate demand will be generated. Therefore, an equivalent aggregate demand will be generated. Using the circular flow, we see that the amount spent on buying these goods and services will be used again in the next production cycle, as these firms will produce goods and services again because equivalent factors will be generated. But what happens when aggregate demand is not equal to aggregate supply? That would create a discrepancy in economic activities because what if they produce \$100 billion in goods and services, but the aggregate demand for these, for example, is only \$70 billion spent on buying them? That means 30 billion is not used here. Therefore, inventory accumulation occurs when goods and services remain unsold. Unsold output is also referred to as inventory accumulation.

Overall, this is the aggregate demand. As a result, if inventory accumulation occurs, firms will reduce their investment, leading to a decline in investment over time. Investment includes not only spending on machines and equipment but also on inventories, such as the desired versus undesired accumulation of inventory. If aggregate demand is less than aggregate supply, that means there is a large mismatch. Normally, I would say that in the short run, some mild discrepancy is acceptable; it is not problematic because we cannot always ensure that aggregate supply equals aggregate demand. However, if it continues for a long time, perhaps for one or two years, then that would create a problem; inventory accumulation would result in excess inventories and unsold production.

That means the firms will cut back production, which will reduce their economic activity and lead to unemployment, gradually causing the economy to sink into recession. The point I mentioned is that in one of the figures here, I have shown both the actual output and the potential output. The potential output that we have shown is based on the observed output; we predicted what the natural output or potential output would be, which we cannot observe. One macroeconomic policy is to maintain output as close as possible to its potential. But what is the potential output? Since we cannot see it, what we observed here is that in the figure, we have shown the actual output that we drew based on it.

However, in the present period, for example, this quarter, we can see the actual output because the GDP figure has been released. We can see that this is the actual output, but we cannot see the potential output based on the previous year's GDP. We can plot it or make a forecast. Suppose we do not know whether we are using an expansionary policy above the potential output. Suppose the actual GDP is, for example, above the potential output; that means the economy is at its peak.

At that time, if we use expansionary monetary or fiscal policy, it means the economy has already been affected. If we spend more and reduce the interest rate, firms will produce more, which would help curb inflation. Similarly, if policymakers use contractionary policy when the economy is below its potential output, they create unnecessary unemployment without realizing that the economy is currently experiencing a recession. At that time, if they reduce the interest rate or cut fiscal spending, the economy may already be contracting; it may naturally bounce back, but without knowing that actual GDP is less than natural GDP, following a contractionary policy will further increase the pace of the recession. So, the question is, how do we know if we are in a recession right now? In general, the Business Cycle Dating Committee within the NBER in the US declares when a recession has begun and ended in the US. Typically, they use GDP decline as a key indicator; other indicators include job losses, income stagnation, and falling investment.

These are all the indicators they normally use to determine whether the economy is currently experiencing a recession. It's essential to remember that, in the short term, a decline or contraction in economic activity does not necessarily constitute a recession. That is where the NBER studies and observes the economy. If the decline in economic activity is severe enough, then they will finally declare that the economy has been in a recession for the last year. But as I mentioned, this will take time. Therefore, economists, policymakers, and firms often use unconventional indicators to signal a recession.

In the real world, there is an information lag, a delay between a change in the economy and the dissemination of knowledge about that change. So, whether the economy is currently experiencing a recession or not, it is not easy to confirm, but we will receive

many signals that indicate the economy is in a recession. One is called the R word. The word "R" is the frequency of the word "recession" in newspapers and media. You know that for the last two years, since the COVID pandemic, or two years before that, you can see that this word has been widely used across media, which means countries have been experiencing a recession.

That is one case, especially during the COVID-19 pandemic, when this word has been widely used. That means it is one indicator for policymakers, firms, and even consumers to determine whether the economy is experiencing a recession. Another one is called the Men's Underwear Index. It means that during recessionary times, households typically cut back on non-essential expenses. One of the things it involves is the sale of companies that produce men's underwear.

If their sales are declining, that is one indication that the economy is currently in a recession. That means low demand signals weaker consumer spending and lower output in that sector. Another example is garbage collection. During economic hardship, households tend to reduce their waste.

That means less household waste is generated. That means people buy less and consume less. There won't be any waste. Normally, when municipalities collect waste and weigh it, if at a particular point in time they notice that the weight of the garbage they will be recycling is significant, they will resell it. At that point, they will bear the weight of this. And in a particular period, maybe six months to one year, if they see that the weight of garbage has come down, that is an indication that the economy is going through some economic hardship.

However, we cannot fully confirm that the economy is in a recession; perhaps a mild one is occurring. Similarly, diaper sales are declining because families are postponing expenses or reducing consumption of necessities. The lipstick index was coined by Leonard Lauder. That means that in recessions, luxury sales drop, but small, affordable indulgences, such as cosmetics, rise as consumers shift their spending patterns. So, why this matters is that these unorthodox indicators capture consumer psychology more effectively than official statistics, which often take time to provide real-time clues before the official GDP or unemployment data, and also reveal everyday behavior that can reflect larger macroeconomic stress.

However, this is not always a perfect predictor but rather a valuable complementary signal. There is research on using these unorthodox indexes, and most of the time, it indicates whether the economy is currently experiencing a recession or not. Understanding the business cycle is highly relevant to firms, as the economy's business cycle has significant implications for them. During an expansion, investment

opportunities increase. During a recession, firms tend to focus on cost-cutting measures, resulting in layoffs of workers and lower sales.

Ultimately, this is strategically important because the firm must adapt its pricing, production, and hiring practices during this period. I am showing you some of the major recessions in the US, which have had tremors around the world. You can see the period from 1929 to 1938, known as the Great Depression. It lasted nearly ten years. The peak unemployment rate was 25%, and GDP declined by 30% over this period.

And we will go through this recession, one by one, in the next session. The most important research on the recession will study the magnitude of the problem and examine the policy responses. Typically, to combat the recession, various economic policies have been employed, including monetary policy, fiscal policy, and automatic stabilizers such as unemployment benefits and progressive taxes. The objective is to smooth the cycle, reduce the extremes, and stabilize the economy before the recession itself, if the government receives a signal. The recession is ongoing; if it is about to occur, then at that time, as a countermeasure, they will utilize these policy tools. In some cases, if a recession is already underway, governments also employ these economic policies to help the economy recover.

It has global dimensions as well. I will discuss this in detail in some of the forthcoming sessions. To conclude, what we saw here is business cycles. This normally happens. These are the natural ups and downs of economic activity, especially during a recession.

It adversely affects economic growth, employment, inflation, and investment. At that time, to counteract it, the government employed various monetary and fiscal policies to mitigate, but not eliminate, the cycle, as business cycles often arise from structural shocks on either the demand or supply side. Therefore, in this context, firms must adapt and track both traditional and unconventional signals and act accordingly. Thank you for watching this session. See you at the next one. Thank you.