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Defining *Recession*

Over time, an economy fluctuates between periods of above- and below-average short-term growth. These fluctuations are referred to as the economy’s “business cycle.” As the economy moves through the business cycle, gross domestic product (GDP) and several additional economic indicators rise and fall. Policymakers may seek to act preventatively or swiftly when recessions occur, making the identification of recessions a critical component of fiscal and monetary policy.

This In Focus discusses how U.S. recessions are officially defined, what rules of thumb economists and policymakers use to gauge the health of the economy, and how accurate those unofficial measures tend to be. For further discussion of the business cycle and the economy, see CRS In Focus IF10411, *Introduction to U.S. Economy: The Business Cycle and Growth*, by Lida R. Weinstock.

Dating the Business Cycle

Although fluctuations in economic activity are referred to as a “cycle,” the economy generally does not exhibit a regular and smooth cycle. Predicting recessions and expansions is notoriously difficult due to the irregular pattern of the business cycle. There may also be short periods of decreasing economic activity interspersed within an expansionary period and vice versa. Recessions are also not a consistent length or depth—the past two recessions, for example, were two months and 18 months, respectively, but were both deep relative to most historical recessions. For more information about recessions and their causes, see CRS Report R47479, *Common Causes of Economic Recession*, by Lida R. Weinstock.

Business cycles are dated according to the peaks and troughs of economic activity. A single business cycle is dated from peak to peak or trough to trough. Recessions are not determined by the federal government and are not defined in statute. The National Bureau of Economic Research (NBER)—an independent nonprofit organization that conducts and disseminates economic research—is generally credited with determining recession start and end dates in the United States.

Technical Definition of Recession

NBER defines *recession* as a “significant decline in economic activity that is spread across the economy and that lasts more than a few months,” but it does not have a set numerical formula to determine a recession. Instead, NBER evaluates three criteria—depth, diffusion, and duration—using a variety of monthly economic indicators including income, employment, consumption, sales, and industrial production.

An outsized impact to one criterion can make up for a weaker impact to another. For example, in July 2021, NBER declared the United States to have been in a recession from March to April 2020 owing to the extreme drop in economic activity, despite the brevity of the contraction.

Because NBER considers length and depth of economic downturns in determining recessions, it dates recessions and expansions with a lag. The length of the lag is not consistent across all business cycle dating, but it can be many months after the recession began. While historical dating of recessions is important in terms of understanding and learning from past economic business cycles, economists and policymakers must often rely on other indicators in order to implement timely policy responses.

Rule-of-Thumb Recession Indicators

Given that a timely policy response to an economic downturn is generally advantageous, economists and policymakers tend to look to unofficial, rule-of-thumb recession indicators that provide more real-time information that can inform policy decisions.

Many such indicators exist, and economists follow these indicators closely—either to predict impending recessions or to track the business cycle in real time. While no rule-of-thumb indicator perfectly maps onto all cases of officially declared recessions, each can provide insight into economic conditions that may be helpful for policymakers. While there are many ways to track economic conditions and model the likelihood of impending or current recession, three popular indicators are two quarters of negative real GDP growth, the Sahm rule, and the inverted yield curve. As of August 2024, both the Sahm rule and the yield curve indicate that the U.S. economy is in or nearing a recession.

Two Quarter Negative GDP Rule

A popular rule of thumb is that recessions feature at least two consecutive quarters of decreasing real (inflation adjusted) GDP, often characterized as “negative growth.” GDP is the primary measure of economic activity, so it stands to reason that recessions would feature some amount of negative growth. Each of the 12 U.S. recessions since 1947 has featured negative growth. However, not all recessions feature *two consecutive quarters* of negative growth. For example, the recession that occurred at the beginning of the COVID-19 pandemic was two months long, not even the length of one quarter. In addition, two quarters of negative growth can occur independent of a recession. For example, real GDP growth was negative in the first and second quarters of 2022 (largely owing to high inflation as opposed to negative nominal growth, high unemployment, or other conditions associated with

recessionary conditions) without an accompanying recession.

That six months' worth of data is required to trigger this rule likely lessens its predictive power and means that, if a recession began in the first quarter of negative growth, this rule would not trigger until the seventh month of the recession. (GDP data is released the month after the end of the quarter.)

Although NBER considers GDP growth in its quarterly business cycle dating, it cites several reasons for not using the two-quarter rule as a definition for recessions, including not relying on just one indicator, considering the depth of decline in activity, using more frequent monthly data (so as to provide monthly dates for recessions), and accounting for discrepancies in output and income data.

Sahm Rule

Economist Claudia Sahm created a popular real-time recession indicator in 2019. The Sahm rule is triggered when the three-month moving average of the unemployment rate increases by 0.5 percentage points or more relative to its low in the previous 12 months. The Sahm rule has typically been triggered in the beginning months of a recession, so it does not predict recessions beforehand as much as indicate that one is occurring. Still, an indicator triggered in the first months of a recession would typically be more timely than an NBER declaration.

The Sahm rule is based on a historical pattern showing that a rise in unemployment above a specific threshold tends to be followed by a further rise, making the initial increase a reasonably accurate recession indicator. Sahm originally created the rule as the criteria for triggering timely fiscal stimulus—hence its use of relatively real-time data.

Inverted Yield Curve Rule

Historically, many recessions have been preceded by *inverted yield curves*. The yield curve shows the different interest rates on U.S. Treasury securities among various maturities at a given point in time. Typically, it is upward sloping, meaning that interest rates on shorter-term securities are lower than on longer-term securities. The general reasoning is that, for example, an investor may demand a higher rate of return on a 30-year Treasury than on a three-month Treasury, because economic conditions are harder to predict over longer periods, so the 30-year investors are essentially taking on more risk than the three-month investors are. When the yield curve inverts, it indicates that investors believe interest rates will be lower in the future, possibly due to expectations that current or near-term economic conditions will deteriorate.

There are other reasons that the yield curve may invert, such as expectations of lower inflation or shifting foreign interest rates. Investors may also have expectations of a slowing economy but not necessarily a recession.

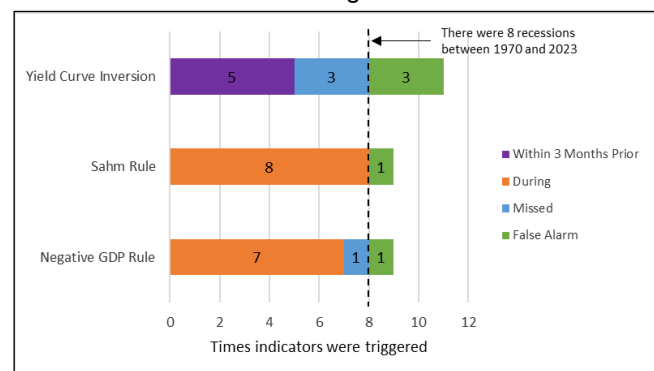
It is fairly common practice to use the difference between either the 10-year Treasury and three-month Treasury or the 10-year Treasury and two-year Treasury as a recession indicator. A negative difference with either of these

measures indicates an inversion of the yield curve. The three-month Treasury tracks the effects of monetary policy more closely than does the two-year given that monetary policy affects shorter-term interest rates more so than longer-term interest rates. A negative 10-year minus three-month Treasury is indicative of contractionary monetary policy, which, historically, has often resulted in recession.

How Effective Are Rule of Thumb Indicators?

There have been eight U.S. recessions since 1970. **Figure 1** below shows how well each rule of thumb predicted or coincided with historical recessions, using one quarter prior as the predictive criteria. Under these criteria, the inverted yield curve is the only rule that provides any predictive power beforehand, but it also misses more recessions than the others do. The Sahm rule was the only rule to identify all recessions once they started, but it also got triggered one time without a recession occurring. In many ways, it is not surprising that the Sahm rule and two-quarter rule have less predictive power than the yield curve does. The yield curve tells economists something about the *expectations* of investors, while GDP and unemployment are both telling economists something about the *current* health of the economy.

Figure 1. Unofficial Indicator Performance
For Recessions from 1970 through 2023



Source: CRS calculations using NBER, Federal Reserve Bank of St. Louis, and Bureau of Economic Analysis data.

Notes: This analysis used the difference between the 10-year Treasury and three-month Treasury. Owing to data availability, the yield curve references a secondary market rate three-month Treasury for 1970-1976. Different results would occur with different maturities. This analysis uses current revised data, which may be different from when they were first published.

Of note, if different criteria were used, the results of this analysis would change. For example, if the time frame for prediction were lengthened to 12 months instead of three months before the recession started, the yield curve would have predicted all eight of the recessions (and eliminated all false alarms) that occurred between 1970 and 2023, and the Sahm rule would have predicted the 1970-1971 recession. If anything, this is illustrative of the point that the accuracy of any unofficial recession indicator is somewhat in the eye of the beholder.

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