

## **Learning Module 2: Understanding Business Cycles**

### **LOS 2a: describe the business cycle and its phases**

A business or economic cycle is a recurring expansion and contraction in economic activity affecting broad segments of the economy. Specifically, a business cycle has the following features:

- A business cycle depends on the enterprise.
- Business cycles have anticipated sequences of phases, alternating from expansions and contractions (or upswings and downturns).
- The phases of a business cycle occur at approximately the same time in an economy.  
Business cycles are recurrent. This implies that they occur repeatedly over time but not regularly or cyclically.

### **Types of Business Cycles**

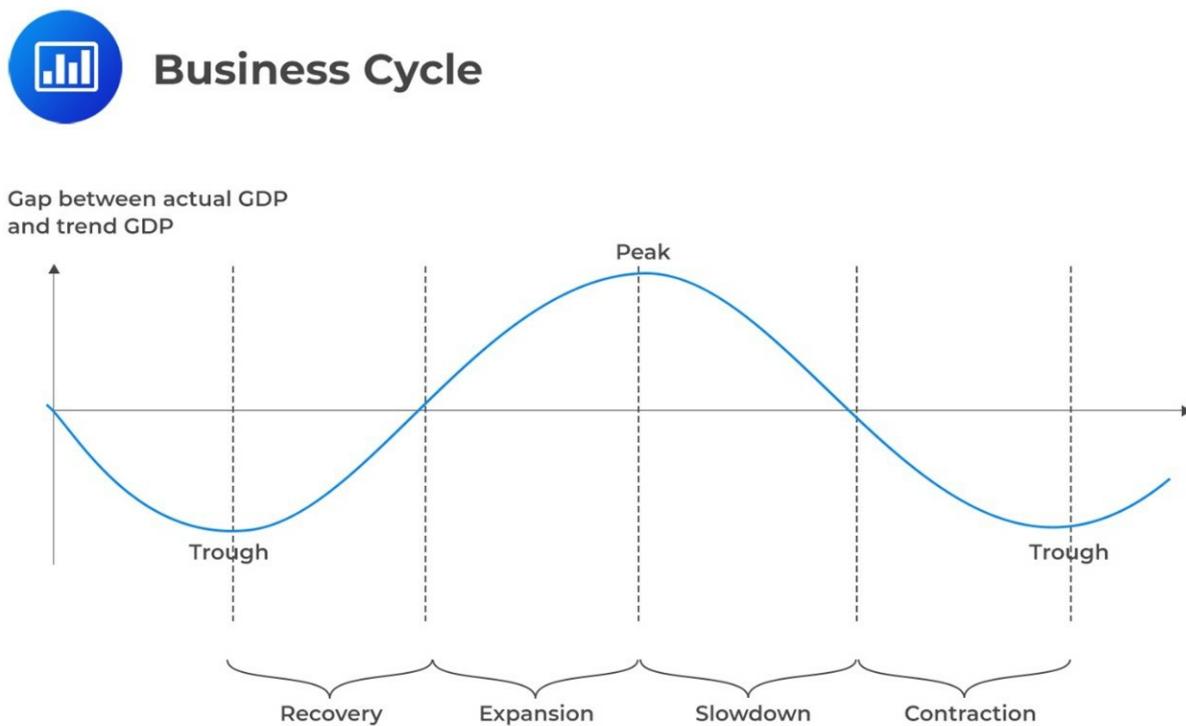
The different types of business cycles that analysts should be aware of include:

1. **Classical cycle:** The classical type of cycle shows fluctuations in economic activity, such as GDP. It has shorter contraction phases between peaks and troughs and longer expansion phases. However, it's not commonly used due to its inability to distinguish short-term fluctuations from long-term trends.
2. **Growth cycle:** The growth cycle examines fluctuations around the long-term trend and emphasizes the interaction between actual economic activity and the trend. It separates economic activity into components affected by long-term trends and short-term variations.
3. **Growth rate cycle:** The growth rate cycle is an economic cycle defined by changes in the growth rate of economic activity, such as the GDP growth rate. Contrary to the case of the classical and growth cycle, peaks and troughs are detected earlier. The benefit of this method is that it does not require the calculation of a long-term growth trajectory.

## Phases of the Business Cycle

In this section, we will focus on the growth cycle. Precisely, we'll consider the business cycle as fluctuations around the potential output.

Note that a business cycle is a series of recurring fluctuations in economic activity, consisting of expansion and contraction. These fluctuations can be divided into four phases: recovery, expansion, slowdown, and contraction. The phases can be illustrated in the figure below:



- 1. Recovery phase:** During the recovery phase, the economy goes through a trough, and the negative output gap starts to narrow. Both consumers and businesses experience activity levels below their potential, but there is a noticeable increase in these activity levels. Businesses reduce layoffs, rely on overtime, and then transition to hiring, stabilizing unemployment. Inflation remains at a moderate level during this phase.
- 2. Expansion phase:** During this phase, the economy experiences growth, leading to a positive output gap. Both consumers and businesses see increased growth in their activities. Businesses transition from using temporary employees to permanent hiring,

causing unemployment rates to stabilize and eventually decrease. Additionally, prices and interest rates may begin to rise. As the expansion continues, there may be shortages in production factors, and companies might reduce further investments due to overcapacity in productive resources.

3. **Slowdown phase:** During the slowdown phase, the economy reaches its peak relative to potential output, with a reduced positive output gap. Although consumers and businesses still experience above-average activity, their growth rates begin to slow, eventually dipping below average. Businesses continue to hire, but at a slower rate, leading to a further reduction in the unemployment rate, although the decline is less rapid. Inflation also picks up pace during this phase.
4. **Contraction phase:** During the contraction phase, the economy gets weaker, producing less than it could. Confidence among consumers and businesses drops. Businesses start by cutting work hours, eliminating overtime, and stopping new hires before resorting to layoffs, which makes the unemployment rate go up. In this phase, inflation decreases, but it takes some time. A recession happens when the overall economic activity shrinks, and if this reduction is substantial, it can become a depression.

## **Leads and Lags in Business and Consumer Decision-making**

To identify the cycle's turning points, we rely on the actions of businesses and consumers. Now, let's describe the market conditions and investors for each phase.

### **Recovery Phase**

When the asset markets anticipate the end of a recession and the onset of an expansion phase, the value of risky assets will be adjusted upwards. As an expansion is anticipated, markets will begin to reflect higher profit expectations in the prices of corporate bonds and stocks.

Generally, the stock market reaches its lowest point (trough) approximately three to six months before the economy bottoms out and well before economic indicators show signs of improvement.

### **Expansion Phase**

After an economy firmly establishes an expansion phase, it often enters an even more vigorous stage known as a "boom." During the boom, the economy extends its boundaries, experiences strong confidence, sees significant profit growth, and encounters expanded credit activity.

In this scenario, businesses might expand to a point where finding skilled workers becomes challenging. To attract employees, they increase wages and keep expanding their operations. Strong cash flows and borrowing as businesses compete against other employers sustain this growth.

If the government or central bank becomes worried about the economy overheating, they may intervene.

## **Slowdown Phase**

In a boom, the riskiest assets often experience significant price hikes. Meanwhile, risk-free assets like government bonds, which were in high demand during a recession, may have lower prices and, therefore, offer higher yields. Additionally, investors may worry about increased inflation, which can lead to higher nominal interest rates.

## **Contraction Phase**

In the contraction phase, investors often place more value on secure assets. They prefer government securities and stocks of companies with stable or growing cash flows, such as utility companies and essential goods producers. This preference arises because a reliable income stream becomes more valuable during times of employment uncertainty or decline.

## Question

Identify the option that is most likely to indicate an economy undergoing a recession.

- A. The central bank initiates the repurchase of treasury securities.
- B. The real GDP records negative growth for two consecutive quarters.
- C. There is a substantial decline in economic activities within the business sector.

## Solution

**The correct answer is B.** Two consecutive quarters of negative growth in real GDP is a widely recognized technical indicator of a recession. Negative GDP growth reflects a declining economic output and is a clear sign of economic contraction.

**A is incorrect:** When the central bank starts buying back treasury securities, it is usually a monetary policy measure aimed at injecting liquidity into the economy. This action is more associated with stimulating economic growth rather than indicating a recession. Therefore, Choice A is not the most likely indicator of an economy undergoing a recession.

**C is incorrect:** A notable drop in business sector activity might signal a slowdown, but it doesn't necessarily mean there's a recession. A recession is a more extended period of economic decline.

## **LOS 2b: describe credit cycles**

Credit cycles describe the changing availability and pricing of credit. They describe the growth in the private sector credit, i.e., its availability and usage of loans.

Credit cycles are tied to the real economy. When the economy is strong, lenders are eager to offer credit with good terms. However, in a weak economy, lenders are less willing to provide credit and make the terms unfavorable. This can lead to a drop in asset value, more economic problems, and increased defaults.

## **Applications of Credit Cycles**

Loose private sector credit is considered to have contributed to a number of financial crises, such as the 2008-2009 global financial crises.

Business cycles can be amplified because of changes in access to external financing. Consequently, there are linkages between business and credit cycles. Recessions accompanied by financial disruption tend to be longer and deeper, while recoveries combined with rapid credit growth tend to be stronger.

Credit cycles tend to be longer, deeper, and sharper than business cycles. Additionally, the length of credit cycles tends to be longer than that of business cycles.

## **Consequences for policy**

Investors will pay attention to the stage in the credit cycle for the following reasons:

- It helps them comprehend developments in the housing and construction markets.
- It helps them evaluate the extent of business cycle expansions as well as contractions.
- It helps them better predict policymakers' actions.

Traditional monetary and fiscal policies try to reduce business cycle ups and downs. However,

macroprudential stabilization policies are now essential to target financial booms. This is important because studies have shown that sharp increases in credit cycles are closely linked to future banking crises.

## Question

Investors will pay attention to the stage in the credit cycle least likely because:

- A. It helps them better anticipate policymakers' actions.
- B. Credit cycles tend to be longer, deeper, and sharper than business cycles.
- C. It helps them understand developments in the housing and construction markets.

## Solution

**The correct answer is B.**

Investors do not pay attention to the stage in the credit cycle because credit cycles tend to be longer, deeper, and sharper than business cycles. They do so for the following reasons:

- It helps them understand developments in the housing and construction markets.
- It helps them assess the extent of business cycle expansions as well as contractions.
- It helps them better anticipate policymakers' actions.

**LOS 2c: describe how resource use, consumer and business activity, housing sector activity, and external trade sector activity vary over the business cycle and describe their measurement using economic indicators**

The use of resources necessary for the production of goods and services fluctuates during a business cycle. Specifically, they include fluctuations in inventory management, employment, and investment in physical capital with economic fluctuations.

## **Fluctuations in Workforce and Company Costs**

### **Recovery**

In this phase, as the economy improves, resources are used more, jobs are created, and unemployment decreases. Reduced interest rates and lower prices encourage consumers and businesses to spend more, which boosts aggregate demand.

Economic indicators reflecting recovery include **an increase in GDP and industrial production, a decrease in unemployment claims, and an increase in building permits**.

### **Expansion**

Businesses switch from using overtime and temporary employees to hiring, leading to a stabilization and eventual decrease in the unemployment rate.

Economic indicators of expansion include **strong GDP growth, increments in consumer spending and confidence, and a rise in manufacturing orders**.

### **Slowdown**

During this phase, resource use declines, hiring slows, and unemployment decreases gradually. Economic activity remains above average but decelerates, and some factor shortages may emerge as demand approaches supply levels.

Economic indicators that signal a slowdown include **decelerating growth in GDP**, a **decrease in stock market indices**, and **potential increases in inflation indicators**.

## Contraction

In this phase, firms reduce expenses and eliminate overtime. Companies may retain workers even if they are underutilized to save on rehiring expenses. Firms may also gain from employee loyalty, which boosts productivity.

Prolonged contractions lead to more aggressive cost-cutting, such as laying off workers beyond the strict minimum.

Moreover, in the prolonged contraction phase, there will be low capacity utilization and reduced investment in new equipment. Banks are cautious about lending.

**Economic indicators** such as a rise in the **unemployment rate**, a **decrease in GDP**, and a **fall in consumer spending** confirm the contraction phase.

## Fluctuations in Capital Spending

Changes in capital spending play a vital role in economic activity. It involves businesses making long-term investments in assets like property and equipment. These investments vary with economic conditions and follow the business cycle.

## Recovery Phase

During the recovery phase of the business cycle, excess capacity exists from the previous contraction. Companies focus on efficiency improvements rather than capacity expansion.

Capital spending begins at a low point but rises as economic conditions improve. Companies often invest in quickly advancing technology like software and hardware to modernize their operations. This helps them stay competitive and efficient.

## Expansion Phase

As the economy enters the expansion phase, companies benefit from favorable business conditions and increasing demand. Capacity utilization levels rise from previously low levels.

Increased earnings and cash flows give businesses the financial capacity to increase their investment spending. Customer orders and capacity utilization further grow, prompting companies to focus on expanding their productive capacity. This phase is often characterized by heavy investments in complex equipment, warehouses, factories, and infrastructure that support increased production and capacity.

## **Slowdown Phase**

During a slowdown, the economy is still growing, but the rate of growth begins to slow down. Business conditions may be at their peak, and companies might experience healthy cash flows.

However, interest rates tend to rise during this phase to prevent overheating and encourage investment slowdown. New orders intended for capacity expansion may signal the late stage of the expansion phase. Even in the slowdown phase, businesses continue to place new orders as they operate at or near their capacity limits.

## **Contraction Phase**

In the contraction phase, characterized by reduced demand, declining profits, and cash flows, companies experience a fall in business activity.

Economic downturn leads to a halt in new orders and the cancellation of some existing orders. This initial cutback can be severe and worsen the downturn. As the contraction continues, the reduction in spending on heavy equipment intensifies. It begins with cuts in technology and light equipment spending and then extends to construction and heavy equipment as the economic situation deteriorates.

## **Fluctuations in Housing Sector Activity**

The housing sector plays a crucial economic role and is closely tied to the business cycle.

Changes in housing activity can be indicative of shifts in economic conditions. Here's how the housing sector activity varies over the business cycle:

## **Recovery Phase**

During the recovery phase of the business cycle, as the economy starts to emerge from a downturn, there is an increase in consumer and business confidence. This often leads to increased demand for housing as consumers feel more secure about their financial situation. Housing construction and sales begin to pick up, and real estate prices may start to stabilize or rise moderately.

## **Expansion Phase**

As the economy enters the expansion phase, consumer incomes rise, and employment improves. This leads to further growth in housing demand as people have more disposable income to invest in homes. Home construction and real estate sales thrive during this phase, and property prices tend to rise.

## **Slowdown Phase**

In the slowdown phase, economic growth starts to decelerate. This can lead to a slowdown in the housing sector as well. While demand for housing may remain relatively strong, the pace of growth in construction and sales may start to taper off. Property price appreciation may also slow down or stabilize during this phase.

## **Contraction Phase**

In a contraction or recession, the housing sector often faces significant challenges. Economic uncertainty, job losses, and reduced consumer confidence can cause a drop in housing demand. Home sales may decrease, construction projects might be delayed, and property prices can decline. Tightened credit conditions can also play a role in the housing sector's contraction.

# **Fluctuations in External Trade Sector Activity**

External trade, also known as international trade, refers to the exchange of goods and services between different countries. The external trade sector activity is also influenced by the business cycle:

## **Recovery Phases**

During the recovery, trade volumes gradually increase as demand begins to recover. This often leads to increased domestic consumption and higher demand for goods and services.

### **Expansion Phase**

During the expansion phase, there are high levels of trade activity, with both imports and exports at elevated levels. This is mainly characterized by exports from a country rising, driven by the stronger demand abroad. This phase can contribute positively to a country's trade balance.

### **Slowdown Phase**

During the slowdown phase, economic growth starts to moderate. This can lead to a reduction in consumer spending, which in turn may impact the demand for imports. Exports may also experience a slowdown, especially if trading partners are also experiencing economic challenges. As a result, the trade balance might become more balanced or even show a surplus.

### **Contraction Phase**

In a contraction or recession, both domestic and global demand for goods and services can decrease significantly. This can lead to a substantial reduction in both imports and exports. Many countries may experience a trade deficit during this phase as both imports and exports decline. Trade-related industries, such as shipping and logistics, can also be negatively affected.

# **Fluctuations in Inventory Levels**

Inventory refers to the stock of goods and materials that a business holds in order to meet customer demand. Fluctuations in inventory levels are an important aspect of the business cycle and can have significant implications for businesses and the overall economy. Here's how inventory levels vary over the different phases of the business cycle:

## **Recovery Phase**

During the recovery phase of the business cycle, economic activity starts to pick up, and demand for goods and services begins to increase; hence, the decline in sales slows. As consumer confidence improves, businesses may start rebuilding their inventories to meet the rising demand.

As time progresses, production levels normalize as the surplus inventories accumulated during the downturn are eventually exhausted. As such, the inventory sales ratio starts to decline as the rate of sales recovery surpasses that of production.

## **Expansion Phase**

In the expansion phase, economic growth gains momentum, leading to stronger consumer spending and business investment. As a result, the demand for goods and services continues to rise. Businesses often increase their inventory levels to ensure they can meet the growing customer demand. This can include raw materials, work-in-progress, and finished goods.

At this stage, the inventory sales ratio is stable.

## **Slowdown Phase**

During the slowdown phase, economic growth starts to moderate, and consumer spending may slow down. Businesses become cautious about excessive inventory accumulation, as they don't want to be left with unsold goods if demand further decreases. As such, the sales slow at a higher rate than the production.

Companies may reduce the rate of inventory buildup and focus on managing their existing stocks efficiently. This is evidenced by the production slowdowns and order cancellations.

Intuitively, in this phase, the inventory sales ratio increases, reflecting the weakening of the economy.

## **Contraction Phase**

In the contraction phase or recession, economic activity declines, leading to reduced consumer spending and business investment. Businesses may face declining sales and excess inventory levels. As demand weakens, they may cut back on production and take steps to reduce inventory levels, including discounting prices, offering promotions, and reducing orders to suppliers.

In addition, the inventory sales ratio starts to decline back to normal.

## **Economic Indicators**

Economic indicators are numbers or statistics that give insights into how well an economy, a sector, or a specific aspect of economic activity is doing. These numbers are important for economists, policymakers, investors, and analysts because they show the current condition and potential future directions of the economy. Economic indicators cover various data, like economic growth, jobs, prices, consumer spending, business investments, trade, and more. They help in studying the business cycle, predicting economic trends, and making important decisions.

### **Types of Economic Indicators**

Economic indicators are classified based on their relationship to changes in economic activity and their predictive value. There are three main types of economic indicators: leading indicators, coincident indicators, and lagging indicators.

#### **1. Leading Indicators**

Leading indicators are economic variables that tend to change before the overall economy starts to change direction. They provide insights into potential future economic trends and turning points. Investors and analysts often use leading indicators to

anticipate shifts in economic activity. Examples of leading indicators include:

- Stock market indices.
- Consumer confidence indexes.
- Housing permits and construction.
- New orders for capital goods.
- The average workweek for manufacturing employees.

Leading indicators help in forecasting economic trends, providing early warning signals about potential economic shifts.

## 2. Coincident Indicators

Coincident indicators move in tandem with changes in the overall economy. They reflect the current state of economic activity and are useful for assessing the present economic condition. Coincident indicators provide a snapshot of the current economic environment. Examples of coincident indicators include:

- Gross Domestic Product (GDP).
- Industrial production.
- Personal income.

Coincident indicators help in evaluating the real-time performance of the economy and its present health.

## 3. Lagging Indicators

Lagging indicators change after the economy has already shifted. They confirm trends that have already occurred. They are used to assess the long-term effects of economic shifts. Examples of lagging indicators include:

- Unemployment rate.
- Consumer price index (CPI).
- Business spending on new equipment.
- Loan delinquency rates.

Lagging indicators provide a retrospective view of economic changes, helping to validate and understand trends that have already taken place.

## **Uses of Economic Indicators**

- They have a unique release schedule. As a result, investors can prepare and plan to access certain information at a specific time.
- They indicate the direction of the economy.
- Analysts use them to predict the possibility of investing in the future.

## **Limitations of Economic Indicators**

- They need to be correctly interpreted.
- Most of the data is somewhat inaccurate.
- Measuring gross domestic product (GDP) is almost impossible.

## **Composite Indicators**

In economics, a composite indicator can be one number, like industrial production or building permits, or it can be a mix of multiple numbers that move in the same direction. People use these composite indicators to check how the economy is doing. Usually, they collect about twelve different numbers from sources like the OECD or national research groups. The particular numbers in these indicators can be different from one place to another. However, they always gather various economic and financial facts that match how the economy is doing overall.

## **OECD Composite Leading Indicator (CLI)**

The OECD Composite Leading Indicator (CLI) is a powerful tool for understanding economic trends. Constructed from a blend of key variables, it offers a comprehensive view of economic dynamics. This composite indicator involves components that collectively provide a holistic perspective on economic performance. These components include:

- **M2 money supply:** A measure of the money circulating within an economy, reflecting liquidity and potential economic activity.
- **Economic sentiment index:** An aggregate sentiment gauge reflecting the outlook of businesses and consumers, influencing their spending and investment decisions.
- **Permits and orders:** Provides data on building permits and manufacturing orders, indicating future economic activity related to construction and manufacturing sectors.
- **Equity index:** Accesses performance of the stock market, often seen as a leading indicator of economic sentiment and overall economic health.
- **Interest rate spread:** Provides the difference between long-term and short-term interest rates, providing insights into future economic expectations.
- **Manufacturing and Service Sector Indicators:** Provides metrics from these sectors reflect production, output, and demand levels.

## **Surveys**

Economic tendency surveys conducted by central banks, research institutes, and trade associations contribute to a richer understanding of economic conditions. These surveys offer qualitative insights into various aspects:

- **Finances:** Gauging the financial health of businesses and individuals, providing clues about spending patterns and investment decisions.
- **Activity:** Measuring the level of economic activity across sectors, helping to identify growth trends or slowdowns.

- **Confidence:** Assessing the confidence of businesses and consumers in the economic outlook, influencing future behaviors.

Harmonized survey results, particularly for EU, OECD, and supranational aggregates, provide a broader view of economic sentiment across regions, facilitating international comparisons and collaborative analysis.

## Leading Indicators

The Conference Board, a US industry research organization, publishes a composite leading indicator called The Conference Board Leading Economic Index (LEI), which comprises 10 components. These components reflect the classical business cycle concept.

### Components of the LEI and Their Significance

- i. **ISM new order index:** Measures the percentage of components in a series that are rising, reflecting widespread trend movements.
- ii. **Manufacturers' new orders for consumer goods and materials:** Anticipates upturns and downturns, capturing business sentiment.
- iii. **Average weekly hours in manufacturing:** Reflects workforce dynamics, as businesses cut overtime before layoffs and increase it before rehiring.
- iv. **Average weekly initial claims for unemployment insurance:** Sensitive indicator of initial layoffs and rehiring trends.
- v. **Interest rate spread between 10-year treasury yields and overnight borrowing rates:** Predicts yield curve inversions, indicating changes in economic activity.
- vi. **Leading credit index:** Combines six leading financial indicators to assess the financial system's resilience to stress.
- vii. **S&P 500 index:** Reflects stock market trends, thus helping anticipate economic turning points, serving as an early signal.
- viii. **Building permits for new private housing units:** Indicates upcoming construction activity; permits are required before the construction of a new building can commence.

- ix. **Manufacturers' new orders for non-defense capital goods excluding aircraft:**  
Reflects business expectations, providing early insights into trends.
- x. **Average consumer expectations for business conditions:** Reflects consumer optimism and spending, offering insights into the economic direction.

## **Insights Offered by Composite Leading Indicators:**

Composite leading indicators, such as the LEI, give important hints about how the economy is moving. When economists and analysts look at all these pieces together, they can see early signs of where the economy might be going. These indicators help people like policymakers, investors, and businesses decide what to do when the economy changes.

## **Using Economic Indicators for Business Cycle Analysis**

We can use statistics using economic indicators to identify business cycle phases. This method offers valuable insights for making informed investment decisions, allowing for the anticipation of fluctuations in various sectors' cash flows. It's important to note that the sequence of steps is flexible and may vary based on the situation.

### **Step 1**

**Data Release:** The analyst observes a rise in the reported consumer installment debt-to-income ratio.

**Analysis:** This particular indicator typically lags behind cyclical upturns.

**Possible Conclusion:** Initial signs suggest the initiation of an upturn in economic activity.

### **Step 2**

**Data Release:** The Industrial Production Index and non-farm payrolls (employees on non-agricultural payrolls) exhibit an upward trend.

**Analysis:** These indicators, considered coincident, indicate a rise in economic activity.

**Possible Conclusion:** Strengthening evidence indicates an ongoing expansion.

## Step 3

**Observation:** The equity market index has displayed an ascending trajectory, acting as a leading indicator.

**Analysis:** The analyst cross-checks the aggregate Leading Economic Index (LEI).

**Scenario 1 Analysis:** If the aggregate LEI is also experiencing an upward trend, it suggests the recovery phase is in progress, confirming higher economic output.

**Scenario 2 Analysis:** If the aggregate LEI does not exhibit an upward movement, the analyst is unable to conclusively determine the recovery phase.

Following this analytical model helps experts understand the different stages of the business cycle. This understanding helps them make smart investment choices in different industries, which can affect stocks and bonds issued by various companies. The steps in this model should be adjusted as needed to fit the current situation, making sure to fully grasp the changing economic situation.

## Big Data and Nowcasting: Real-time Insights

Big data and nowcasting have transformed economic analysis by offering real-time insights. Economists can quickly assess current economic conditions by using data from various sources, such as financial market transactions and Internet searches. This approach, called nowcasting, gives timely estimates for economic indicators that aren't updated frequently. Notable examples of nowcasting applications include:

- i. **GDPNow:** An estimation tool that utilizes real-time data to forecast current-quarter GDP growth.
- ii. **EuroCOIN:** A measure that employs diverse data sources to assess the state of the Eurozone economy.

- iii. **Purchasing Managers' Indexes (PMIs):** These surveys capture current business conditions and act as leading indicators, offering an early signal of economic performance.

These innovative techniques provide analysts with a more detailed understanding of economic fluctuations. It allows for quicker and more informed decision-making in different sectors and industries.

## Question

Which of the following statements accurately describes leading, lagging, and coincident indicators?

- A. They are consistent across different economies.
- B. They are derived from historical cyclical patterns.
- C. They are based on Keynesian or Monetarist economic theories.

## Solution

**B is correct:** Leading, lagging, and coincident indicators are determined based on historical observations of how certain variables have behaved in relation to the business cycle over time.

**A is incorrect:** Leading, lagging, and coincident indicators can vary across different economies due to differences in economic structures, policies, and other factors. Economic indicators may have different relationships to the business cycle in different countries.

**C is incorrect:** Leading, lagging, and coincident indicators are not inherently tied to specific economic theories like Keynesian or Monetarist theories. Instead, they are empirical tools used to assess and predict the state of an economy.