US economic indicators

An introductory analysis and implications to stock trading

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Definition: An economic indicator refers to a statistical measure that offers insights into the performance and well-being of an economy. It serves as a tool for policymakers, investors, businesses, and other stakeholders to evaluate the current state of the economy and make informed decisions based on that information. Economic indicators include various metrics, such as gross domestic product (GDP), inflation rate, unemployment rate, consumer price index (CPI), stock market indices, and interest rates, which help identify trends and potential risks that may affect economic activity.

Prominent types with detailed explanation:

(1) Gross Domestic Product (GDP) is a measure of the total value of all final goods and services produced within a country's borders during a specific period of time, typically a year or a quarter. It is one of the most important indicators of a country's economic health, providing insight into the overall size and growth of the economy.

GDP is calculated by adding up the value of all goods and services produced in the economy, including consumer goods, investment goods, government spending, and net exports (the difference between exports and imports). The calculation of GDP can be done using three different approaches: the production approach, the income approach, and the expenditure approach.

The production approach to calculating GDP involves adding up the total value of all goods and services produced in the economy. This method accounts for the total value of all goods and services produced, regardless of who purchases them.

The income approach to calculating GDP involves adding up all the income earned by individuals and businesses in the economy. This includes wages, profits, rent, and interest payments, among other forms of income.

The expenditure approach to calculating GDP involves adding up all the spending on goods and services in the economy. This includes consumption

spending by households, investment spending by businesses, government spending, and net exports.

GDP is often used as a key indicator of a country's economic performance and is closely watched by economists, policymakers, and investors. A growing GDP generally indicates a healthy and growing economy, while a shrinking GDP may suggest economic contraction and potential recession. However, GDP has its limitations, including its failure to account for income inequality, environmental sustainability, and non-monetary aspects of well-being, among other factors. Therefore, other indicators such as the Human Development Index (HDI) and the Genuine Progress Indicator (GPI) are sometimes used in conjunction with GDP to provide a more comprehensive picture of a country's economic and social well-being.

The formula for calculating GDP using the **expenditure approach** is:

GDP = C + I + G + (X - M)

Where:

C = household consumption expenditure

I = investment expenditure by businesses

G = government expenditure on goods and services

X = exports of goods and services

M = imports of goods and services

The formula for calculating GDP using the **production approach** is:

GDP = GVA + taxes - subsidies

Where:

GVA = Gross Value Added, which is the total value of goods and services produced by all industries in the economy

taxes = indirect taxes levied by the government, such as sales tax, excise duty, etc.

subsidies = government subsidies given to industries to reduce their costs of production

The formula for calculating GDP using the **income approach** is:

GDP = compensation of employees + operating surplus + mixed income + taxes - subsidies

Where:

compensation of employees = wages and salaries paid to employees

operating surplus = profits earned by businesses

mixed income = income earned by self-employed individuals

taxes = indirect taxes levied by the government, such as sales tax, excise duty, etc.

subsidies = government subsidies given to industries to reduce their costs of production

All three of these approaches should theoretically give the same result for GDP, though there may be small differences due to measurement errors and statistical discrepancies.

(2) **Unemployment rate** is a measure of the percentage of the labor force that is actively seeking employment but unable to find work. It is an important indicator of labor market conditions and reflects the level of economic activity in a country. To calculate the unemployment rate, we need to first define the labor force. The labor force includes all individuals who are employed or unemployed but actively seeking work. It does not include those who are not seeking work, such as retirees or individuals who are unable to work. The **formula** for calculating the unemployment rate is:

Unemployment rate = (Number of unemployed workers / Labor force) x 100%

where: Number of unemployed workers = the number of individuals who are actively seeking work but unable to find it

Labor force = the sum of employed and unemployed individuals who are actively seeking work.

A higher unemployment rate indicates that a larger percentage of the labor force is unable to find work, which can indicate a weaker economy and labor market. A lower unemployment rate indicates that a smaller percentage of the labor force is unemployed, which can indicate a stronger economy and labor market.

However, the unemployment rate does not capture all aspects of the labor market, such as the underemployed, individuals who have given up looking for work, or those who are employed but not in jobs that fully utilize their skills and experience. Therefore, it is important to consider other labor market indicators such as labor force participation rate and employment-to-population ratio in conjunction with the unemployment rate.

(3) **The Consumer Price Index (CPI)** is a measure of the average change in prices paid by urban consumers for a basket of goods and services over time. The basket of goods and services includes items such as food, clothing, housing, transportation, and medical care, among others. CPI is an important economic indicator that is used to track changes in the cost of living and to gauge inflation.

The calculation of CPI involves comparing the prices of a fixed basket of goods and services over time. The basket of goods and services is determined based on the spending patterns of urban consumers, and the prices of the items in the basket are collected periodically to calculate changes in price levels.

The formula for calculating CPI is:

CPI = (Cost of basket in current period / Cost of basket in base period) x 100

where:

Cost of basket in current period = the total cost of the basket of goods and services in the current period. Cost of basket in base period = the total cost

of the same basket of goods and services in the base period, which is usually a previous year.

The CPI is often used to adjust wages, pensions, and other payments that are linked to the cost of living. It is also used by policymakers to make decisions related to monetary policy, such as adjusting interest rates to manage inflation. However, the CPI has some limitations, including the fact that it may not accurately reflect the spending patterns of all households and may not fully capture changes in quality of goods and services over time. Therefore, other measures such as the Personal Consumption Expenditures Price Index (PCE) are also used to provide a more comprehensive picture of inflation trends.

(4) **The Producer Price Index (PPI)** is a measure of the average change in the prices received by domestic producers for their output over time. It is an important economic indicator that is used to track inflationary pressures at the producer level. PPI measures the price changes of goods and services sold by domestic producers in the primary markets, and it is used as an early indicator of inflationary pressures in the economy.

The calculation of PPI involves comparing the prices of a fixed basket of goods and services produced by domestic producers over time. The basket of goods and services is determined based on the types of products that are commonly produced domestically, and the prices of the items in the basket are collected periodically to calculate changes in price levels.

The formula for calculating PPI is:

PPI = (Current period price of basket of goods / Base period price of basket of goods) x 100

where:

Current period price of basket of goods = the total price of the basket of goods produced by domestic producers in the current period

Base period price of basket of goods = the total price of the same basket of goods produced by domestic producers in the base period, which is usually a previous year.

The PPI is often used by policymakers to make decisions related to monetary policy, such as adjusting interest rates to manage inflation. It is also used by businesses to monitor changes in input costs, and by investors to gain insights into the performance of the economy and individual sectors. However, like the CPI, the PPI has some limitations, including the fact that it may not fully capture changes in quality of goods and services over time, and that it may not accurately reflect the prices that businesses actually pay due to discounts, rebates, and other factors.

(5) **Personal Income and Outlays** is a report that measures the income received by individuals, households, and nonprofit institutions, as well as their spending on goods and services. It is an important economic indicator that provides insights into the level of consumer demand and overall economic well-being. Personal income refers to the total amount of money earned by individuals and households, while personal outlays refer to the total amount spent on goods and services by individuals and households.

The formula for calculating Personal Income is:

Personal Income = Compensation of employees + Proprietor's income + Rental income + Personal interest income + Dividend income + Transfer payments

Where: Compensation of employees: includes wages, salaries, and benefits paid to employees, Proprietor's income: includes income earned by self-employed individuals and owners of small businesses, Rental income: includes income earned from renting out property or land, Personal interest

income: includes interest earned on savings accounts, bonds, and other investments, Dividend income: includes income earned from stocks and mutual funds, Transfer payments: includes government payments such as Social Security, Medicare, and unemployment benefits

The formula for calculating Personal Outlays is:

Personal Outlays = Personal consumption expenditures + Interest payments + Personal transfer payments

Where: Personal consumption expenditures: includes spending by individuals and households on goods and services such as food, housing, transportation, and healthcare, Interest payments: includes interest paid on loans, mortgages, and credit card balances, Personal transfer payments: includes payments made by individuals and households to other individuals, such as gifts and charitable donations, The difference between Personal Income and Personal Outlays is known as Personal Savings.

The formula for Personal Savings is:

Personal Savings = Personal Income - Personal Outlays

A positive value for Personal Savings indicates that individuals and households are saving money, while a negative value indicates that they are spending more than they are earning.

The Personal Income and Outlays report is closely watched by economists, policymakers, and investors as an indicator of the health of the consumer sector and the broader economy. A growing Personal Income and increasing Personal Consumption Expenditures suggest a strong consumer demand, which is a key driver of economic growth.

(6) **Retail sales** is a measure of the total sales of goods and services by retail establishments, which include brick-and-mortar stores, online retailers, and

other businesses that sell directly to consumers. Retail sales is an important economic indicator that provides insights into consumer spending patterns and overall economic activity.

The formula for calculating retail sales is:

Retail Sales = Total Sales Revenue - Returns, Allowances, and Discounts

Where: Total Sales Revenue: includes the total amount of sales made by a retail establishment during a given period of time, including both cash and credit sales. Returns, Allowances, and Discounts: includes refunds, exchanges, and other allowances given to customers, as well as discounts and sales promotions offered by the retailer.

Retail sales are typically reported on a monthly basis by government agencies such as the U.S. Census Bureau and are broken down by industry, region, and other factors.

Retail sales are an important indicator of consumer spending patterns, as consumer spending accounts for a significant portion of economic activity. A strong retail sales report is usually viewed positively by investors and can contribute to economic growth. However, a weak retail sales report may indicate weaker consumer demand and can potentially lead to a slowdown in economic activity.

(7) **Industrial Production and Capacity Utilization** is a report that measures the physical output of the nation's factories, mines, and utilities. It reflects the level of industrial activity and the percentage of production capacity being used, providing insights into the health of the manufacturing sector and broader economic activity.

The formula for calculating Industrial Production is:

Industrial Production = (Output of manufacturing + Mining + Utilities) / Base Period Output x 100

Where: Output of manufacturing: includes the total value of goods produced by manufacturing establishments. Mining: includes the total value of natural resources extracted from the earth, such as coal, oil, and minerals. Utilities: includes the total value of services provided by utility companies, such as electricity, natural gas, and water.

The formula for calculating Capacity Utilization is:

Capacity Utilization = (Actual Output / Potential Output) x 100

Where: Actual Output: represents the physical output of manufacturing, mining, and utilities. Potential Output: represents the maximum level of output that could be achieved with full utilization of available resources, such as labor, capital, and technology.

Industrial Production and Capacity Utilization are closely watched by economists, policymakers, and investors as an indicator of the health of the manufacturing sector and the broader economy. An increase in Industrial Production and Capacity Utilization suggests a growing economy with increased demand for goods and services. Conversely, a decrease in Industrial Production and Capacity Utilization indicates a weaker economy with decreased demand for goods and services.

(8) **Housing Starts and Building Permits** are economic indicators that measure new residential construction projects initiated and authorized by building permits. These indicators provide valuable insights into the health of the housing market and the construction industry.

Housing Starts refer to the number of new residential construction projects that have begun during a specific period of time, typically a month. A housing start is counted when construction has begun on the foundation of the new residence. **The formula for calculating Housing Starts** is:

Housing Starts = Number of new residential construction projects begun during the month

Building Permits, on the other hand, refer to the number of permits issued for new residential construction projects during a specific period of time. A building permit is typically required before construction can begin on a new residential property. **The formula for calculating Building Permits** is:

Building Permits = Number of permits issued for new residential construction projects during the month

An increase in Housing Starts and Building Permits suggests a growing demand for new residential properties, which can lead to increased economic activity and job growth in related industries such as construction and real estate. Conversely, a decrease in Housing Starts and Building Permits indicates a weakening demand for new residential properties, which can indicate a slowdown in the economy.

It is worth noting that while Housing Starts and Building Permits are related, they are not always in sync with each other. For example, a high number of building permits may be issued but construction may not begin immediately, leading to a delay in the number of Housing Starts. Additionally, a high number of Housing Starts may be initiated without the need for a building permit, such as for remodeling or renovation projects.

(9) **Durable Goods Orders** is a report that measures the value of new orders placed with manufacturers for durable goods, which are products expected to last at least three years. This indicator is useful for assessing the health of the manufacturing sector and future production activity.

The formula for calculating Durable Goods Orders is:

Durable Goods Orders = Total value of new orders for durable goods during the month

Durable goods include a wide range of products such as automobiles, aircraft, appliances, machinery, and electronics, among others. The report is broken down by industry and product category, providing insights into which industries are experiencing increased demand for their products.

An increase in Durable Goods Orders suggests that manufacturers are experiencing increased demand for their products, which can lead to increased economic activity and job growth in related industries such as manufacturing and transportation. Conversely, a decrease in Durable Goods Orders indicates weaker demand for durable goods, which can indicate a slowdown in the economy.

Durable Goods Orders can be volatile from month to month, and may be affected by factors such as changes in interest rates, consumer and business confidence, and geopolitical events. Therefore, it is important to consider longer-term trends and other economic indicators in conjunction with Durable Goods Orders when assessing the health of the manufacturing sector and the broader economy.

(10) **Business Inventories** is a measure of the value of goods held by manufacturers, wholesalers, and retailers. It provides insights into the balance between production and consumption, as well as potential future production and employment trends. Business Inventories include raw materials, work-in-progress goods, and finished products that have not yet been sold.

The formula for calculating Business Inventories is:

Business Inventories = Total value of goods held by manufacturers, wholesalers, and retailers

An increase in Business Inventories suggests that manufacturers, wholesalers, and retailers are producing more goods than they are selling, which can lead to decreased economic activity and potential job losses.

Conversely, a decrease in Business Inventories indicates that businesses are selling more goods than they are producing, which can lead to increased economic activity and potential job gains.

Business Inventories are often analyzed in conjunction with other economic indicators such as Gross Domestic Product (GDP), Durable Goods Orders, and Retail Sales to provide a more comprehensive picture of the health of the economy. Changes in Business Inventories can also provide insights into potential future production and employment trends, as businesses may adjust their production levels and employment levels based on changes in inventory levels.

Business Inventories can be volatile and are subject to seasonal fluctuations, which can make it difficult to interpret short-term changes in the data. Therefore, it is important to consider longer-term trends and other economic indicators in conjunction with Business Inventories when assessing the health of the economy.

(11) **The Consumer Confidence Index (CCI)** is a survey-based measure of consumer sentiment regarding current and future economic conditions. The CCI is designed to gauge consumer confidence, which is an important factor in predicting consumer spending and overall economic activity.

The formula for calculating the Consumer Confidence Index is:

CCI = [(Percentage of respondents who feel current business conditions are good or excellent) x 0.6] + [(Percentage of respondents who feel current business conditions are bad or poor) x 0.4] + [(Percentage of respondents who expect business conditions to improve in the next six months) x 0.3] + [(Percentage of respondents who expect business conditions to worsen in the next six months) x 0.7]

The CCI is typically calculated on a monthly basis by surveying a representative sample of consumers about their perceptions of the economy

and their own financial situation. The survey questions are designed to elicit responses about both current and future economic conditions, as well as consumer attitudes toward spending and saving.

A high CCI suggests that consumers are optimistic about the economy and their own financial situation, which can lead to increased consumer spending and economic activity. Conversely, a low CCI suggests that consumers are pessimistic about the economy and their own financial situation, which can lead to decreased consumer spending and economic activity.

CCI is a subjective measure of consumer sentiment and can be influenced by a wide range of factors, including political events, media coverage, and economic policies. Therefore, it is important to consider the CCI in conjunction with other economic indicators when assessing the health of the economy.

(12) **The Purchasing Managers' Index (PMI)** is a survey-based indicator that measures the economic health of the manufacturing sector. The PMI is calculated based on responses from purchasing managers at manufacturing companies who report on factors such as new orders, production, employment, supplier deliveries, and inventories.

The formula for calculating the PMI is:

PMI = [(P1 x 1) + (P2 x 0.5) + (P3 x 0)] / (Total Number of Respondents)

Where: P1 = Percentage of respondents reporting an increase in business activity, P2 = Percentage of respondents reporting no change in business activity, P3 = Percentage of respondents reporting a decrease in business activity.

A reading above 50 indicates expansion in the manufacturing sector, while a reading below 50 suggests contraction. The PMI is considered a leading indicator of economic activity, as changes in the manufacturing sector can have a ripple effect throughout the economy.

An increase in the PMI suggests that the manufacturing sector is expanding, which can lead to increased economic activity and job growth. Conversely, a decrease in the PMI indicates a contraction in the manufacturing sector, which can lead to decreased economic activity and potential job losses.

PMI is a subjective measure of the manufacturing sector and can be influenced by a wide range of factors, including changes in commodity prices, exchange rates, and global economic conditions. Therefore, it is important to consider the PMI in conjunction with other economic indicators when assessing the health of the manufacturing sector and the broader economy.

(13) **Nonfarm Payrolls** is a measure of the change in the number of people employed in the U.S., excluding the farming sector. It is a key indicator of labor market strength and economic growth.

The formula for calculating Nonfarm Payrolls is:

Nonfarm Payrolls = Total number of workers employed in the U.S. – Number of workers employed in the farming sector

Nonfarm Payrolls are typically reported on a monthly basis by the U.S. Bureau of Labor Statistics (BLS). The report provides detailed information on employment trends by industry, region, and demographic group.

An increase in Nonfarm Payrolls suggests that the economy is growing and that employers are adding jobs, which can lead to increased economic activity and consumer spending. Conversely, a decrease in Nonfarm Payrolls indicates a potential slowdown in economic growth and job losses.

Nonfarm Payrolls report is subject to revisions as more complete data becomes available. Therefore, it is important to consider longer-term trends and other economic indicators in conjunction with the Nonfarm Payrolls report when assessing the health of the labor market and the broader economy.

(14) **Initial Jobless Claims** is a measure of the number of people filing for unemployment insurance benefits for the first time. It is a timely indicator of labor market conditions, as it provides insights into the number of people who have lost their jobs and are seeking assistance.

The formula for calculating Initial Jobless Claims is:

Initial Jobless Claims = Total number of people who filed for unemployment insurance benefits for the first time during the week

Initial Jobless Claims are typically reported on a weekly basis by the U.S. Department of Labor. The report provides information on the number of people who have filed for unemployment insurance benefits due to layoffs, plant closures, and other reasons beyond their control.

An increase in Initial Jobless Claims suggests that more people are losing their jobs, which can lead to decreased consumer spending and economic activity. Conversely, a decrease in Initial Jobless Claims indicates a potential improvement in labor market conditions and increased economic activity.

Initial Jobless Claims report is subject to volatility and can be affected by factors such as weather-related disruptions, holidays, and seasonal changes in employment. Therefore, it is important to consider longer-term trends and other economic indicators in conjunction with the Initial Jobless Claims report when assessing the health of the labor market and the broader economy.

(15) **Trade Balance** is a measure of the difference between a country's exports and imports of goods and services. It is an important economic indicator that provides insights into a country's trade relationships with other nations and its overall economic competitiveness.

The formula for calculating the Trade Balance is:

Trade Balance = Total value of exports - Total value of imports

A positive Trade Balance indicates a trade surplus, which occurs when a country's exports exceed its imports. This can be a sign of economic strength and competitiveness, as it suggests that the country is producing goods and services that are in demand by other nations. A negative Trade Balance signifies a trade deficit, which occurs when a country's imports exceed its exports. This can indicate that the country is relying on foreign goods and services, which can have implications for its economic competitiveness and long-term growth prospects.

A positive Trade Balance can lead to increased economic activity and job growth, while a negative Trade Balance can lead to decreased economic activity and potential job losses.

Trade Balance can be affected by a wide range of factors, including changes in global economic conditions, currency exchange rates, and political events. Therefore, it is important to consider longer-term trends and other economic indicators in conjunction with the Trade Balance when assessing the health of a country's economy and trade relationships.

(16) **Current Account Balance** is a broader measure of a country's international trade and financial transactions, including goods, services, income, and current transfers. It provides insights into a nation's overall economic health and its ability to sustain growth.

The formula for calculating Current Account Balance is:

Current Account Balance = (Total value of exports of goods and services + Total income received from abroad + Current transfers received) - (Total value of imports of goods and services + Total income paid abroad + Current transfers paid)

A positive Current Account Balance indicates that a country is earning more from its international trade and financial transactions than it is spending, which can be a sign of economic strength and competitiveness. A negative

Current Account Balance indicates that a country is spending more on international trade and financial transactions than it is earning, which can indicate potential economic weakness and vulnerability.

A positive Current Account Balance can lead to increased investment and job growth, while a negative Current Account Balance can lead to decreased investment and potential job losses.

Current Account Balance can be affected by a wide range of factors, including changes in global economic conditions, commodity prices, and political events. Therefore, it is important to consider longer-term trends and other economic indicators in conjunction with the Current Account Balance when assessing a country's overall economic health and its prospects for sustained growth.