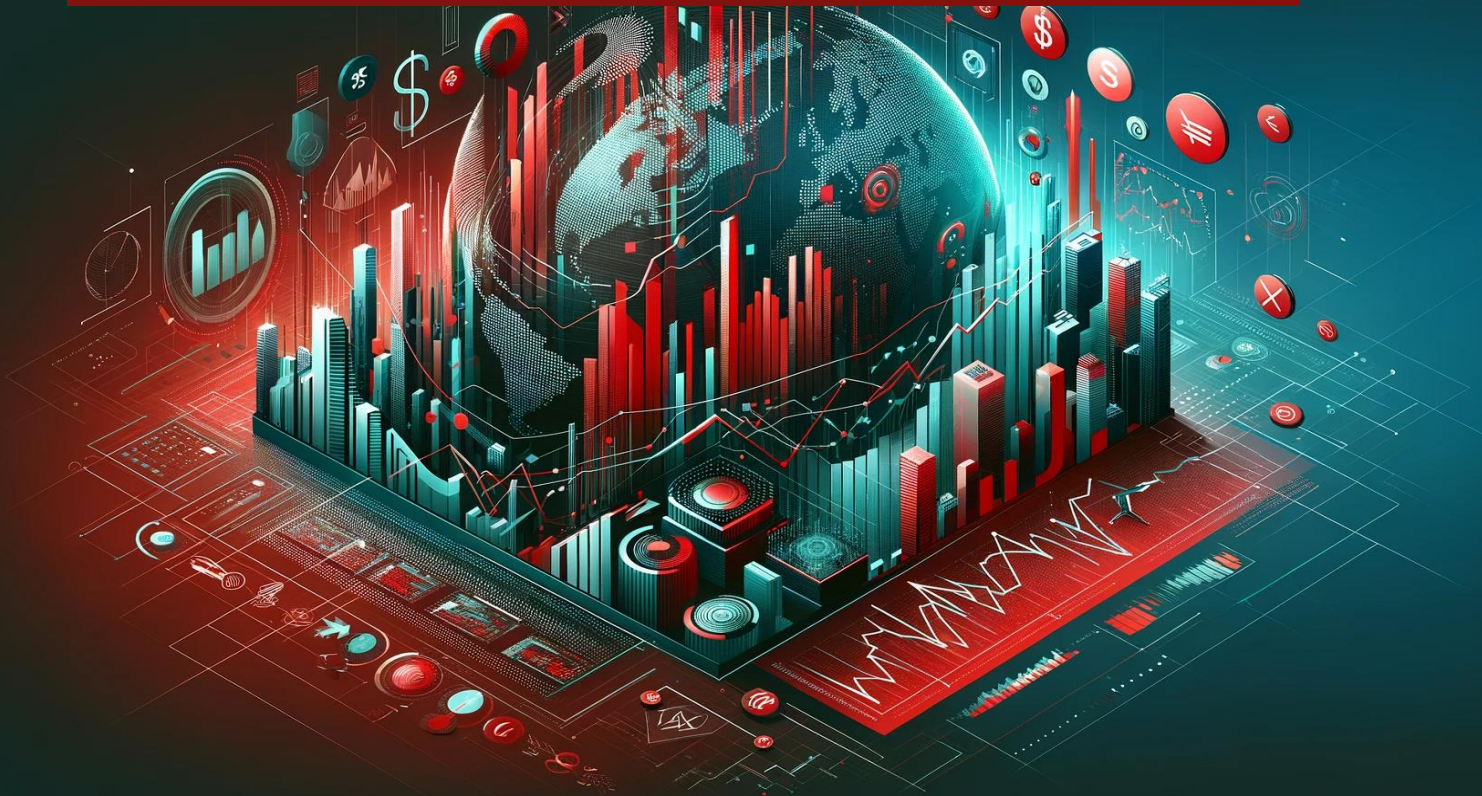


Economic Indicators Practical Perspective

8 CPD Hours

All Classes of Business



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Topic 1 MAJOR FINANCIAL MARKET FORCES

LEARNING OUTCOMES

After studying the topic, the learner should be able to-

- Explain and differentiate between the different financial markets.
- Describe the primary drivers of financial market movements.
- Understand and explain what economic indicators are.
- Distinguish between the different types of economic indicators.

1.1 INTRODUCTION

This course aims to delve into the concept of economic indicators and their predictive value and causal effect on the economy. The first topic aims to acquaint the learner with the most important concepts pertaining to understanding economic indicators. The second topic outlines the economic indicators of relevance to the South African financial markets. We conclude by exploring the predictive value of economic indicators in relation to financial market movements.

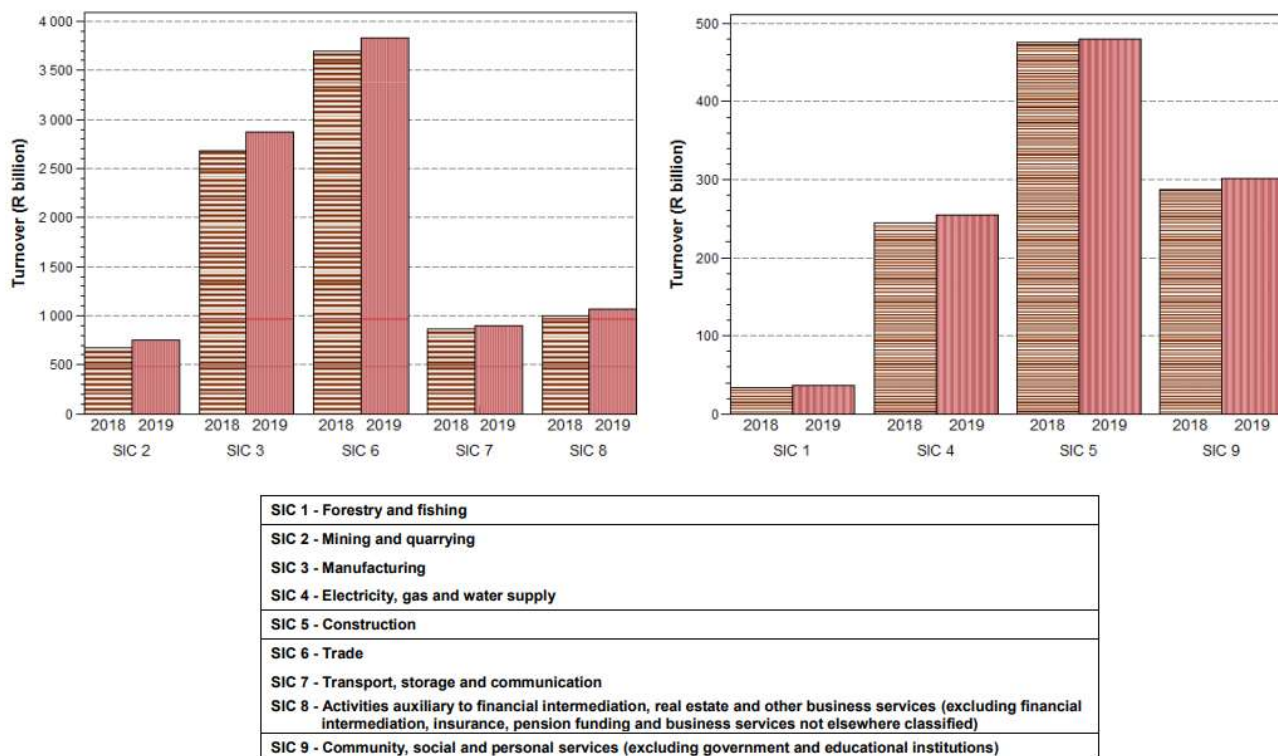
1.2 THE SOUTH AFRICAN ECONOMY

An economy encompasses all activity related to production, consumption and trade of goods and services in an area, this is done through some combination of market transactions and decision making. Everyone, from individuals to entities and governments participate in this process. The economy of a particular region or country is governed by its culture, laws, history, and geography, among other factors. It evolves due to the participants' choices and actions. For this reason, no two economies are identical.

The South African economy is primarily based on private enterprise, but the government (state) participates in many ways. The South African economic policy has been aimed primarily at sustaining growth and achieving a measure of industrial self-sufficiency. However, political policy and instability, corruption, and declining investment have complicated the economic situation even further. Therefore, the government's current efforts are to maintain business confidence and boost foreign investment into South Africa; the core element of its economic approach.

The South African economy relies mostly on nine industry sectors. The figure below provides the financial turnover and economic contribution by sector.

Figure 1.1: Comparison of turnover per industry 2018 and 2019



Stats SA, "P0021 - Annual Financial Statistics (AFS) 2019," Stats SA (Department: Statistics South Africa, December 17, 2020), <http://www.statssa.gov.za/publications/P0021/P00212019.pdf>.

1.3 THE DIFFERENT FINANCIAL MARKETS

Financial markets play a vital role in facilitating the smooth operation of free-market economies by allocating resources and creating liquidity for businesses. The financial markets make it easy for buyers and sellers to trade their financial holdings. Financial securities and instruments are designed to provide a return for investors (investors are regarded as lenders as they have money on hand) and make these funds available to those who need additional money (borrowers).

The financial markets can be divided into the equity market, bond market, money market and foreign exchange market. Trading in these markets can occur in the present (spot trading), or a contract can be entered into to trade in one of these markets in the future. These are known as derivative products. Derivative products are created in the financial markets and in commodity markets that are vital to economic activity such as gold, oil, and wheat.

1.4 DRIVERS OF FINANCIAL MARKETS MOVEMENTS

Movements in the financial markets (price fluctuations) create the possibility of profiting from participation in the financial markets. There are major factors that cause both long- and short-term market movements.

Knowing how the major market factors shape movements in the financial markets can provide valuable insights into investment opportunities. The following drivers of the South African economy are seen as pivotal to assessing the strength, direction and stability of the South African economy by market participants and therefore directly affect the South African financial markets:

- Supply and demand
- Inflation rate
- Interest rate
- Expectations and sentiment

1.4.1 Supply and demand

The first influencing factor we consider is supply and demand for financial securities and instruments. Each effective market has a supply of a specific product or service, and a demand for that product or service. As supply decreases or demand increases, the price for a product will increase as participants outbid one another to obtain a seemingly finite supply of the product.

The financial markets have a similar dynamic. Savings (investments) represent the supply side in the financial markets, and financing needs the demand side.

The theoretical system would determine that the interest rate (price for money) would drop if there are a surplus savings (supply) in the market. Still, suppose there are savings in the market which are not used to finance income-making activities. In that case, the national income will eventually decline, probably bringing about a decline in the savings rate, which could work against the fall in interest rates.

Because of the interaction between the various financial, commodity and service markets in an economy, the simple supply and demand theory determining prices in its raw form is not accurate for explaining or predicting market movements. The effect further undermines the theory that international transactions can have on supply and demand in the financial markets. Countries that predominantly export, are increasing the demand for their currency which can drive up inflation. However, the money can be reinvested and can stimulate the financial markets in the country.

1.4.2 Inflation as a driver of financial market movements

Inflation is one of the foremost drivers of financial market movements, especially in countries adopting an inflation target, including South Africa.

Inflation is a general rise in the price level in an economy over a period of time. It reflects the speed of price changes. Therefore, it is indicative of how quickly or slowly prices are rising. When the general price level rises, each unit of currency buys fewer goods and services; consequently, inflation reflects a reduction in the purchasing power per unit of money.

Monetary policy and fiscal policy are the two most widely recognised tools used to influence a country's economic activity and consequently, financial market movements. Monetary policy is primarily concerned with the total supply of money in circulation and is generally carried out by central banks, such as the South African Reserve Bank (SARB). Monetary policy plays a significant role in the well-being of an economy through its stabilising function.

Since February 2000, South Africa is following inflation targeting as a framework for monetary policy. The Minister of Finance, in conjunction with SARB, publicly announces medium-term quantitative targets for inflation. Under such a framework, the main goal is price stability, and SARB must use monetary policy instruments to achieve the inflation target.

The standard measure of inflation is the inflation rate, the annualised percentage change in a general price index, usually the Consumer Price Index (CPI) and the Production Price Index (PPI). The CPI measures the prices of a given basket of goods and services at the retail level, while the PPI measures the production cost of goods. The South African Reserve Bank (SARB) prefers to target a CPI variant, namely the CPIX, which is the CPI excluding interest costs on mortgage bonds. By excluding interest rate costs (which fall under the SARB's control) from the overall CPI, the CPIX inflation rate reflects cost increases outside SARB's direct control.

Inflation affects economies in various positive and negative ways. The adverse effects of inflation include an increase in the opportunity cost of holding money, uncertainty over future inflation which may discourage investment and savings. If inflation were rapid enough, shortages of goods as consumers begin hoarding out of concern that prices will increase in the future. Positive effects include reducing unemployment due to nominal wage rigidity, allowing the central bank more leeway in carrying out monetary policy, encouraging loans and investment instead of money hoarding, and avoiding deflation inefficiencies.

Financial market movements depend on how market participants expect SARB to respond to the inflation rate. Various theories have attempted to explain the existence of inflation and the factors that drive inflation. Consequently, the drivers of inflation can be regarded as indirect drivers of financial market movements. Some of these theories are considered in the subsections following.

(I) The Monetarist approach

The monetarist approach contends that changes in the money supply are the most significant determinants of the rate of economic growth and business cycle behaviour.

Monetarists argue that an increase in the money supply will increase the price level. Accordingly, monetarists believe that growth in the money supply or its components (e.g. private credit extension) should be monitored as a precursor to inflation.

When monetarist theory works in practice, central banks, which control the monetary policy instruments, can exert much power over economic growth rates. In such economies, the financial markets are sensitive to the publication of possible inflation drivers such as money supply and credit extension figures. The M3 money supply and private credit extension are of particular interest to the financial markets.

Definition: M3 money supply

A measure of the money supply that includes M1 and M2 money supply (cash, checking deposits, savings deposits, money market securities, mutual funds, and other time deposits) as well as large time deposits, institutional money market funds, short-term repurchase agreements (repo), and larger liquid assets.

Rapid growth in the M3 money supply driven by rapid growth in private credit extension is acceptable if backed by additional production volumes. In contrast, looming inflation pressures are likely when there is a large imbalance between the supply of goods and services (as measured by GDP growth) and in credit extension.

The reason for this is that more money is available to buy proportionally fewer products and services. Therefore, price levels rise to maintain equilibrium. A consequent depreciating rand could further increase inflation.

SARB mostly rely on the classical reserve system to rectify the imbalance rather than increasing the cash reserve ratio. Banks are obliged to hold a percentage of deposits (known as the cash reserve ratio) received in the form of cash reserves with SARB and lend the remaining percentage of the deposits.

When the bank experiences a shortage of cash reserves, the bank can borrow the money from other banks in the interbank market. However, when there is not enough liquidity within the interbank market, the bank can obtain money from SARB through the repurchase tender system.

Under the repurchase tender system, banks apply for refinancing by tendering for SARB funds at weekly auctions of repurchase agreements (repos) with seven-day maturities. The interest rate at which repurchase agreements are bought is known as the repo rate and is fixed by SARB. Therefore, SARB can easily adjust the cost of credit (interest rates) by changing the repo rate as this represents the price of borrowing money by banks. An increase in the repo rate means that money supply is decreased as persons will be less likely to enter into credit transactions at high rates.

(II) The Keynesian approach

Keynesians believe that inflation can be caused by demand-pull factors (such as money supply increases, government spending increases and export demand increases) and/or cost-push factors (e.g. wage rate increases, price increases imports such as oil, and increases in profit rates). According to Keynesians, all these factors should, therefore, be monitored.

Subsequently, Keynesian economics was used to refer to the concept that optimal economic performance could be achieved (and economic slumps prevented) by influencing aggregate demand through activist stabilisation and economic intervention policies by the government.

(III) The Structural approach

The structural approach contends that an increase in investment expenditure and the expansion of money supply to finance it are the only proximate and not the ultimate factors responsible for inflation in the developing countries. They argue for analysing dis-aggregative and sectoral demand-supply imbalances to explain inflation in the developing countries as according to them, aggregate output, especially of food-grains, has not been increasing sufficiently in the developing countries to match the increase in demand brought about by the increase in investment expenditure, and money supply. Further, they argue that voluntary savings have not fully financed investment expenditure, and as a result, excessive deficit financing has been done.

The structural approach sees inflation as a process. Structuralists argue that the economy is given an inflationary bias by underlying factors (e.g. bargaining power of trade unions, the size of the public sector, and the economy). Initiating factors (e.g. demand-pull factors and cost-push factors) may trigger or intensify a particular inflationary episode. Propagating factors spread the initial impulses through the economy over time.

1.4.3 Interest rates as a driver of financial market movements

As explained earlier, current interest rates in an economy are based on the classical reserve system's repo rate. However, the government can also influence current interest rates by fiscal policy decisions. Fiscal policy is how a government adjusts its spending levels and tax rates to monitor and impact a country's economy.

The decision on how to finance the government's deficits will affect the supply and demand for cash balances, short and long-term deposits (M3 money supply), and thus influence interest rates if the government decides to finance its monetary needs with the issuing of short-term securities such as treasury bills, the demand for money in the short-term market increases, exerting upward pressure on interest rates.

Interest rates and expectations about them are among the major drivers of financial market movements as interest rates directly affect the supply and demand of money in an economy. SARB's Monetary Policy Committee decides on the appropriate level of the repo rate. As a lagging indicator, South African interest rates generally confirm what already happened in the economy. Due to the major influence exerted by interest rates, it is necessary to continually assess the other economic indicators to predict the next move in the repo rate and consequently the general level of interest rates.

Interest rates affect the economy in various ways; for example, a reduction in interest rates tends to encourage borrowing, which results in increased consumer and investment spending and increased imports (as domestic demand increases), a higher level of economic activity and possibly higher inflation. On the other hand, rising interest rates will translate into a smaller demand for loans, which will suppress inflation as consumption and, as a result, prices will fall.

However, interest rates also affect how much money is received for the funds deposited in a bank. At low-interest rates, income from deposit does not cover the level of inflation. If interest rates are so high that they outweigh inflation, then bank deposits are an excellent way to earn a higher income. Changes in interest rates also affect the relative attractiveness of holding a currency.

1.4.4 Expectations and sentiment

Expectations and sentiment are other factors influencing the financial markets. The analysis and resultant positions taken by financial market participants are based on the information they receive about government policy and other drivers. When enough people agree on one direction, the market enters into a trend that could sustain itself for many years. Trends are also perpetuated by market participants who were wrong in their analysis. When they are forced to exit their losing trades, it pushes prices further in the current direction.

Sentiment is how certain groups feel about a specific economy, and the view is not only based on rational factors or complete insight into the economy. These sentiments can create a bias or expectation of future price movements and trend direction.

1.5 ECONOMIC INDICATORS

Financial markets respond and depend on information that generates movements in prices and volumes, thereby creating opportunities for profits. Information that may move the financial markets may be in the form of political, military, economic, natural, social or other events, such as political unrest in a key country, a terrorist attack, a natural disaster or a country defaulting on its sovereign and foreign debt commitments, as well as public health crises such as the COVID-19 pandemic.

It can also include policy decisions taken domestically or in important other countries (key countries), such as decisions to raise interest rates, adjust taxes, change labour legislation, or for instance Britain's decision to exit the EU (Brexit). Information is sometimes also created to create and manipulate movement in these markets.

Another category of information is the release of economic indicators that are supposed to gauge the economy's performance. An economic indicator is a piece of economic data, usually of macroeconomic scale, that is used as one of the tools to interpret current or future investment possibilities. These indicators also help to judge the overall health of an economy.

Economic indicators can be anything the investor chooses, but specific pieces of data released by the government and non-profit organisations have become widely followed. The table following provides examples of standard widely used economic indicators.

Examples of standard widely used economic indicators are as follows:

- Gross Domestic Product (GDP)
- Consumer Price Index (CPI)
- Gross National Product (GNP)
- Retail sales
- Interest rates
- Bond yields
- Unemployment figures
- Price of crude oil

Most of these economic indicators have a specific release schedule, allowing investors to prepare for and plan on seeing certain information at certain times of the month and year. However, the knowledge gained from the economic indicators must be weighed for correctness against other factors as indicators are usually not hundred percent accurate due to several factors. This will be elaborated on, further in the text.

1.5.1 Types of economic indicators

The economic cycle is the fluctuating state of an economy from periods of economic expansion to contraction. Economic indicators can be categorised according to the correlation of their movements with the economic cycle. Indicators can lead, lag or coincide with the economic cycle.

Leading indicators are used to predict an economy's future movements. The information used to compose leading indicators change before the economic cycle. One of the top leading indicators is the equity market itself. Though not the most critical leading indicator, it's the one that most investors look at. Because equity prices factor in forward-looking performance, the market can indicate the economy's direction, if earnings estimates are accurate.

Coincident indicators, which include the country's GDP, are seen with specific economic activities. Many policymakers and economists follow this real-time data as these indicators reflect the present economic situation in no small degree.

A lagging financial indicator, such as interest rates only changes sometimes after a shift in the economic cycle. Therefore, lagging indicators confirm long-term trends, but they do not predict them. This is useful because many leading indicators are often volatile, and short-term fluctuations in them can obscure turning points or lead to false signals. Looking at lagging indicators is one way to confirm whether a shift in the economy has occurred.

The table following provides examples of economic indicators as categorised according to their correlation with the economic cycle.

Table 1.1: Examples of economic indicators

Leading indicators	Coincident indicators	Lagging indicators
Share prices	Gross Domestic Product (GDP)	Gross National Product (GNP)
New vehicles sold	Employment Levels	Consumer Price Index (CPI)
Survey of business confidence	Retail Sales	Interest Rates

1.5.2 Interpretation of economic indicators

An economic indicator is only useful if one interprets it correctly. History has shown strong correlations between economic growth, as measured by GDP, and corporate profit growth. However, determining whether a specific company may grow its earnings based on one indicator of GDP is nearly impossible.

Indicators provide signs along the road, but the best investors utilise many economic indicators, combining them to gain insight into patterns and verifications within multiple data sets.

There is no denying the objective importance of interest rates, gross domestic product, and existing home sales or other indexes. They are considered objectively crucial because they measure the cost of money, spending, investment, and the activity level of a significant portion of the overall economy.

Topic 2 INTERNATIONAL AND DOMESTIC INDICATORS

LEARNING OUTCOMES

After studying the topic, the learner should be able to describe-

- The most relevant South African economic indicators.
- International economic indicators that impact the South African financial markets.

2.1 INTRODUCTION

As economies become more and more globalised, financial markets participants must consider domestic economic indicators and international indicators as the South African economy's performance depends significantly on how other countries perform.

Foreign financial markets are viewed as alternatives by both domestic and foreign investors. Movements in foreign financial markets have significant impacts on South African financial markets. Economic policy in other countries, primarily interest rate policy, also affects South African markets. Therefore, the topic will consider the mostly tracked South African economic indicators and some international indicators that can provide insight into the health of the domestic economy.

2.2 SOUTH AFRICAN ECONOMIC INDICATORS

The subsections following will consider the following South African Economic Indicators:

- Consumer Price Index (CPI)
- Gross Domestic Product (GDP)
- Unemployment rate
- Formal non-agricultural employment
- Balance of payments
- Composite business cycle indicators
- Retail trade sales
- Purchasing Managers Index (Kagiso PMI)
- M3 money supply
- Other cyclical indicators

2.2.1 Consumer Price Index (CPI)

The South African Consumer Price Index (CPI) indexes the cost of a representative basket of consumer goods and services (including VAT). It shows the change in prices of a standard package of goods and services South African households purchase for consumption over time. The items in the basket and their relative weights are obtained based on a wide-ranging survey of household income and spending. The value of the basket in the base period is taken as 100, and each subsequent index value indicates how much prices have changed since the base period.

CPI as such is not inflation; it is an indication of the level of prices. An assessment is made of how much the CPI has risen in percentage terms over a given period compared to the CPI in a preceding period to measure inflation. The CPI gives the government, businesses, and citizens an idea about prices changes in the economy, and can act as a guide to make informed decisions about the economy.

Statistics South Africa (Stats SA) is the reporting agency in South Africa responsible for releasing the monthly CPI figures in the Statistical Release P0141: Consumer Price Index, usually released on the third or fourth Wednesday of the month following the one to which the CPI applies which can be obtained on the following website: <http://www.statssa.gov.za>.

2.2.2 Gross Domestic Product (GDP)

Gross domestic product (GDP) is the total value of everything produced within a country's borders. When economists talk about the size of the economy, they are referring to GDP.

GDP includes the product's final value, but not the parts that go into it (to avoid double-counting). For example, a South African footwear manufacturer uses shoelaces and other materials made in South Africa, but only the shoe's value gets counted; the shoelaces don't.

(I) Calculation of GDP

GDP can be estimated independently from the following three different angles or perspectives:

1. **Production, value-added or output method:** Sums the value-added (production minus input costs) by all businesses.
2. **Expenditure (spending) method:** Add all spending – private consumption, government consumption, investment, and net exports (exports minus imports).
3. **Income method:** Add all income – income from production, profits, income from self-employment, rental income, trading surpluses of government enterprises and corporates.

Theoretically, all three methods should deliver the same results. In practice, discrepancies exist due to shortcomings in data collection, timing differences and the lack of informal sector data.

Stats SA follows the production approach and estimates GDP quarterly and publishes its estimates in the Statistical Release, approximately seven to eight weeks after the end of the quarter. SARB uses the expenditure approach, and its first estimates are published in the first Quarterly Bulletin following the quarter to which the estimates apply (i.e. with a lag of about one quarter).

(II) Interpretation

Analysts, are not primarily interested in the level of GDP but in its growth from year to year, (the economic growth rate). To calculate a meaningful growth rate, the original, unadjusted GDP data have to be adjusted to eliminate the impact of price increases (i.e. the impact of inflation) and obtain the real, inflation-adjusted GDP. Once the real GDP data has been obtained, the rate of economic growth can be determined by calculating the percentage change in real GDP from year to year. From a growth perspective, only real GDP data have any relevance. When market participants refer to GDP growth, they are referring to an increase in real GDP.

Due to the publication lag of between six weeks (production data) and almost a quarter (expenditure data), analysts tend to use various individual current indicators: new-car sales, the physical volume of manufacturing production, and real retail sales proxies to estimate the current economic growth. These indicators have shorter publication lags and therefore serve as more timely indicators of economic trends.

Another problem is that the first estimates of GDP are very preliminary and are usually revised significantly during subsequent quarters. However, the financial markets tend to react to the initial estimates rather than to subsequent revised ones. As with any other economic indicator, the impact of economic growth is determined first by its expected value and second, by the actual outcome relative to its expected value.

When economic growth is high, it is vital to consider the sustainability of the high growth and the possible inflationary effect of the increase.

If high growth is expected to be permanent and without any inflationary impact, it will be positive for the financial markets, particularly the equity market. Companies should perform well, company profits, dividends and share prices should benefit. Similarly, if the actual growth rate is higher than the expected growth rate, and the higher growth is expected to continue and be non-inflationary, the same results would apply. In contrast, if the growth is expected to be inflationary, the markets will anticipate a possible increase in interest rates which will drive bond prices down and negatively impact economic growth itself.

However, if low growth is expected, or if actual growth is lower than expected and the lower growth is expected to continue, this might result in falling interest rates, which will benefit the bond market and might eventually provide some stimulus to economic growth. The declining interest rates will also tend to increase share prices.

Although GDP lags behind some monthly indicators, it contains essential data for analysing the economy and economic prospects, including expected corporate profitability. GDP may be regarded as one of the most important economic indicators, even though the financial markets do not always react to the latest GDP data because of the lag factor.

(III) Timing of release

Statistics South Africa (Stats SA) and the SARB are the reporting agencies in South Africa responsible for releasing the quarterly GDP figures. The first estimates are published in the Statistical Release P0441 - Gross Domestic Product (GDP), approximately eight to ten weeks after the end of the quarter to which the estimates apply and in the Quarterly Bulletin (SARB), following the quarter to which the estimates apply (i.e. with a lag of about one quarter) which can be obtained on the following websites: <http://www.statssa.gov.za> and <http://www.resbank.co.za>.

2.2.3 Unemployment rate

Unemployment is tough to measure, and official South African estimates were traditionally regarded as entirely unreliable. A complicating factor is that there are two basic definitions of unemployment, which gives rise to some confusion and scepticism regarding the official estimates. Other complicating factors include seasonal employment (and unemployment) and part-time employment. Various attempts have been made, however, to arrive at better estimates.

Stats SA's revised definition of the official unemployment rate is a strict definition of unemployment, which aligns with the leading International Labour Organisation (ILO) definition. More than eighty percent of both developed and less developed countries use this more stringent definition, including South Africa's major trading partners.

The strict definition of unemployment considers a person to be unemployed only if they have "taken active steps to look for work or to start some form of self-employment in the four weeks prior to the interview. They are sometimes referred to as the searching unemployed. According to the above definition, the official unemployment rate in South Africa is calculated as the percentage of the economically active population that is unemployed. The unemployment rate is obtained by expressing the total number of unemployed persons as a percentage of the total number of available workers.

By contrast, the expanded unemployment rate includes discouraged job-seekers: those that want to work but are not actively searching for a job as they have lost hope, wanted to work but there are no jobs in the area or were unable to find work that required their skills. They are sometimes referred to as the non-searching unemployed.

In contrast to South Africa where the unemployment figure is often of little interest to participants in the South African financial markets, the monthly US employment data is argued to be one of the most critical data releases for the US and the world as indicated by the Employment Situation Report (this indicator is considered in detail in a later topic). This release is regarded as the most crucial barometer of underlying strength in the US economy. Robust data maintains confidence in the US growth outlook and will also increase expectations that the Federal Reserve will move to raise interest rates which results in a strengthening of the dollar.

Statistics South Africa (Stats SA) is the reporting agency in South Africa responsible for releasing the quarterly unemployment figures in the Statistical Release P0211: Quarterly Labour Force Survey (QLFS) approximately 4-6 weeks after the end of the quarter for which the survey was conducted which can be obtained on the following website: <http://www.statssa.gov.za>.

2.2.4 Formal non-agricultural employment

Formal non-agricultural employment excludes jobs in the agricultural sector and the informal sector (including domestic work) because of seasonal employment changes in the industry. Approximately 22 000 businesses are surveyed each quarter through a questionnaire to obtain formal employment estimates in the non-agricultural sectors of the South African economy.

As market participants take heed of employment data, the focus is on the absolute number of jobs created or lost from quarter to quarter. There is hope that unemployment and formal non-agricultural employment data will become more important as their quality improves. The government focus increasingly on job creation as one of the primary goal of economic policy.

Theoretically, rising employment should be favourable for equity markets, but not favourable for the bond market due to fears of rising interest rates, which cause bondholders to sell, thereby reducing bond prices. However, falling employment might be favourable for bonds if interest rates are expected to decrease, but not favourable for equities, as profitability is expected to fall.

As mentioned above, US employment data are the most critical indicators that drive financial markets worldwide. However, South African employment data receive very little, if any attention, because they are not produced very timeously and are not regarded as particularly reliable.

Statistics South Africa (Stats SA) is the reporting agency in South Africa responsible for releasing the quarterly formal non-agricultural employment figures in Statistical Release P0277: Quarterly Employment Statistics (QES), approximately three months after the end of the quarter for which the survey was conducted, with a lag of almost one quarter which can be obtained on the following website: <http://www.statssa.gov.za>.

2.2.5 Balance of payments

The Balance of Payments (BoP) is a tabulation of a country's transaction with foreign countries and international institutions over a period. The BoP ranks among the more reliable macroeconomic indicators in South Africa. A double-entry accounting system is used to record the transactions, and in the end, the balance of payments must balance. It is sometimes difficult to account for all foreign exchange movements, and as a result, there are often a significant number of unrecorded transactions, which serve to balance the accounts.

The BoP consist of the following three accounts:

1. **Financial (capital) account:** The Financial account reflects international capital or financial flows, i.e. it records international transactions in assets and liabilities, for example, a country's financial outflows represent the acquisition of foreign investments or the repayment of foreign liabilities.
2. **Current account:** The current account balances the following records:
 - Sales of goods (including gold) to the rest of the world (exports).
 - The purchases of goods from the rest of the world (imports).
 - Service receipts from and payment for services to the rest of the world include shipping, travel & tourism and financial services.
 - Income receipts from and income payments to the rest of the world such as compensation paid to employees and investment income including interest, profit and dividends.
3. **The gold and other foreign reserves account:** This account reflects the overall balance of payments position of a country. A country receives foreign currency for exporting goods and services and from inflows on the financial account or capital inflows. A country pays out foreign currency when importing goods and services and for outflows on the financial account or capital outflows. If the receipt of foreign currency is more than the payment of foreign currency, its foreign reserves increase. The reverse is also true. As payments and receipts of foreign currency rarely coincide, foreign reserves ensure a smooth flow of international trade and finance.

The Balance of Payments is presented as monthly money values. The Balance of Payments focus on trends and size concerning GDP and is a coincident indicator of the business cycle.

(I) Interpretation

The current account balance reflects international payments that must be matched by financial flows or official reserves changes. A current account deficit must be financed by inward financial flows (foreign investment or loans) and/or the depletion of official reserves.

Economists view the balance of payments as a reflection of what is happening in the domestic economy and regard it as one of the key economic indicators. The emphasis tends to be on ratios since the data is recorded as a nominal term which is not particularly significant. Relevant ratios include the one between the current account balance and GDP (expressed as a percentage) and between the foreign reserves and the value of imports (expressed as the number of weeks' imports that can be purchased with the reserves).

A current account deficit may indicate that a country is spending more than it is earning. However, a deficit may also imply that a country has strong growth potential that leads to higher imports and that other countries are willing to fund that growth. In South Africa, for example, imports consist mainly of capital and intermediate goods. When economic growth and investment pick up, imports increase rapidly, and trade and current account deficits tend to be recorded. Such deficits are often symptoms of a growing economy, and if they can be financed through surpluses on the financial account, they will also have no impact on the currency. As they are regarded as signs of a strong economy, they may lead to an appreciation rather than the currency's depreciation.

A current account surplus may indicate a competitive economy or that policy measures are in place, e.g. import tariffs to keep import low.

(II) Timing of release

Although the balance of payments is only published quarterly, the gold and foreign reserves level is released monthly. It indicates whether or not the SARB has been active in the foreign exchange market in an attempt to influence the value of the rand.

The SARB is the reporting agency in South Africa responsible for releasing the quarterly BoP figures in the SARB Quarterly Bulletin with a lag of almost one quarter, which can be obtained on the following website: <http://www.resbank.co.za>.

2.2.6 Composite business cycle indicators

Economic cycles (also known as business cycles) typically consist of a trough, an upswing, a peak and a downswing until the next trough is reached. Economists at the SARB examine more than 200 individual time series, ranging from real GDP to the physical volume of cement production and the average monthly wages and salaries paid by certain large employers to estimate the troughs' dates and the peaks of the economic cycles.

Then various techniques are used to determine the turning point. This process takes time; however, market participants need much more timely indications of where the economy is and where it is heading.

One technique used to address this is to compare the movements in individual time series with the turning points of the reference cycle, to identify time series that regularly lead, coincide or lag with the reference cycle. The series then identified are classified as leading, coincident, and lagging indicators, respectively.

As a next step the economists at the SARB compile indexes by combining the various groups of indicators to obtain composite business cycle indicators: the composite leading business cycle indicator; the composite coincident business cycle indicator; and the composite lagging business cycle indicator.

Each one of these composite indicators is expressed as an index. The leading indicator is used to predict the direction in which real economic activity is moving. In real time, the coincident indicator is used to determine turning points. The lagging indicator is used to confirm that a turning point has occurred. The most important one, is the leading indicator which tends to shift direction in advance of the business cycle.

The South African composite leading business cycle indicator has the following time series components:

- Average hours worked per factory worker in manufacturing.
- Job advertisement space (% change over 12 months).
- The volume of orders in manufacturing (Bureau for Economic Research).
- Business confidence index (Bureau for Economic Research).
- The number of new passenger vehicles sold (% change over 12 months).
- Gross operating surplus as a percentage of GDP.
- Interest rate spread: 10-year government bonds minus 91-day Treasury bills.

- Real M1 (six-month smoothed growth rate). The M1 money supply comprises physical currency and coin, demand deposits, travellers' checks, other checkable deposits, and negotiable order of withdrawal (NOW) accounts.
- Commodity price index for South Africa's main export commodities (USD based).
- Composite leading business cycle indicator of South Africa's major trading-partner countries (% change over 12 months).

The index has a base value of 100.

(I) Interpretation

It should always be noted when interpreting composite business cycle indicators that such composite indexes record only the direction of change in economic activity and not the level of economic activity.

Because the financial markets generally look to the future, the coincident and lagging business cycle indicators are of less interest to these markets' participants. It is only the leading indicator that potentially generates some interest. By the time it becomes available, the data on which it is based has already been published, and analysts are usually monitoring one or more of the component series in their attempts to predict what is going to happen.

The composite leading indicator only becomes of any real interest when a recession seems imminent or when there is the hope of recovery. In other words, when the economy appears to be close to a turning point. Even under those circumstances, some are still sceptical of the predictive power of composite business cycle indicators. A frequent comment made is that "the leading indicator predicted ten of the last five recessions". In general, an expected recession will be not favourable for equities and favourable for bonds (inflation and interest rates are expected to decline). At the same time, an anticipated recovery will be favourable for equities and not favourable for bonds (if inflation and interest rates are expected to rise).

(II) Timing of release

The SARB is the reporting agency in South Africa responsible for releasing the monthly composite business cycle indicators figures in the Release of Selected Monthly Data and later in the Quarterly Bulletin, with lags of two months (leading indicator) and three months (coincident and lagging indicators), usually released on the fourth Tuesday of the month, which can be obtained on the following website: <http://www.resbank.co.za>.

2.2.7 Retail trade sales

The retail sales data are published at current and at constant prices and are also seasonally adjusted. The main focus is on the real value of sales (i.e. at regular prices). However, changes in the price of oil may result in a somewhat distorted picture.

The problem is that not all consumer goods are included in the retail sales data, of which the most important exception is fuel. However, the CPI for goods is used to convert nominal retail sales (at current prices) to real, inflation-adjusted retail sales (at constant prices), and this index includes the price of fuel. The outcome is that movements in the retail price of fuel affect the price index used to obtain the inflation-adjusted value of retail sales, even though the latter excludes fuel sales.

Therefore, if the fuel price is reduced, retail sales' real value will tend to be overstated. Equally, if the fuel price is increased significantly, the real value of retail sales will tend to be understated. The fact that retail trade sales data relate to goods only is another problem. Consumer spending on services is excluded; this represents more than 40% of total consumption expenditure by South African households that do not reflect the retail trade sales data. Furthermore, the initial estimates, to which the markets tend to react, are subject to substantial revisions.

Consumer spending represents a large portion of total economic activity. Therefore, retail sales data are keenly monitored by participants in the financial markets. Good retail sales point to strong company revenues and profits and therefore tend to be positive for equity prices. On the other hand, weak or falling retail sales tend to put downward pressure on equity prices. The opposite tends to happen in the bond market. Strong retail sales point to accelerated economic growth, which is likely to lower bond prices and increase yields (interest rates). Against this, weak or falling retail sales may lead to bond prices rising.

Statistics South Africa (Stats SA) is the reporting agency in South Africa responsible for releasing the Statistical Release P6242.1: Retail trade sales, the publication lag is approximately six weeks which can be obtained on the following website: <http://www.statssa.gov.za>.

2.2.8 Purchasing Managers Index (Absa PMI)

The ABSA Purchasing Managers' Index (PMI) compiled by the Stellenbosch Bureau for Economic Research (BER) and sponsored by ABSA Bank, is based on the widely used and highly regarded Purchasing Managers Index (PMI) produced by the Institute for Supply Management (ISM) in the USA.

The manufacturing PMI is a composite index based on the results of five weighted questions. The results are derived from monthly surveys conducted under a representative group of purchasing managers in the manufacturing sector. In line with the experience internationally, the BER's PMI is closely watched as its consistent release on the first working day of the month means that it is one of the first indicators of how not only the manufacturing sector but also the broader economy (and business cycle) fared during the month.

Research in the USA and elsewhere has shown that the manufacturing sector has specific qualities that make it incredibly relevant as a leading or cyclical indicator for the broader economy. This often holds even as the share of manufacturing to the total Gross Domestic Product (GDP) declines over time.

This is because the manufacturing sector is a supplier of goods to the primary industry (agriculture and mining), while also exposed to the tertiary industry (such as retail and wholesale). Therefore, it is often said that the factory sector is where recessions tend to begin and end. The PMI is also a useful tool to compare the manufacturing sector's performance across countries, as the calculation and the interpretation are broadly the same across the world.

The Bureau for Economic Research (BER) is the reporting agency in South Africa responsible for releasing the monthly ABSA PMI figure on the first working day of the month following the month during which the survey was conducted, which can be obtained following website: <http://www.ber.ac.za>.

2.2.9 M3 money supply and private sector credit extension

Those of a monetarist persuasion place great emphasis on the quantity of money and credit extension. According to the monetarists, increases in money and credit are the main drivers of inflation. They thus view an increase in the growth of the money stock as an indication that the inflation rate will increase, with the full impact spread over 12 to 18 months.

The South African monetary authorities have come to recognise that the correlation between M3 growth and inflation is not (or at least is no longer) as strong as assumed to be in previous policies. Nowadays, these data are no longer regarded as being as pivotal as before. However, these indicators are still scrutinised carefully, especially by those of a monetarist bent, but are just one of a range of indicators taken into account.

It is recognised, that much of credit extension is in the form of mortgage advances, as an example. Therefore, rapid increases in credit extension tend to affect property prices (and other asset prices) rather than consumer prices. In other words, they tend to increase asset price inflation rather than consumer price inflation.

Increases in M3 and credit extension are also indications of what might happen to real economic activity. If M3 stagnates and credit extension dries up, economic activity stagnates or declines, as shown during the 2008 global financial crisis.

The SARB is the reporting agency in South Africa responsible for releasing the increases in M3 and credit extension data in SARB's Release of Selected Monthly Data and later in the Quarterly Bulletin with a lag of one month, which can be obtained on the following website: <http://www.resbank.co.za>.

2.2.10 Other cyclical indicators

The following largely leading indicators are also among those closely watched by participants in the financial markets. These indicators individually and as a group provide a comparatively timely indication of where the South African economy is and where it is heading.

- Manufacturing production and sales, released by Stats SA each month. The key data series is the index of the physical volume of manufacturing.
- Mining production and sales, released monthly by Stats SA.
- Wholesale trade sales, released monthly by Stats SA.
- New-vehicle sales (number) – released monthly by the National Association of Automobile Manufacturers of South Africa (Naamsa website: <http://www.naamsa.co.za>). Data are also published separately for various categories of vehicles (e.g. passenger cars and commercial vehicles) and for the various manufacturers.

2.3 INTERNATIONAL ECONOMIC INDICATORS

There is a high degree of interdependence in the current globalised international economic environment. This is especially true in the financial markets where an occurrence in one market can almost immediately have ramifications worldwide. If an economic indicator is released in the USA, it may move equity, bond and foreign exchange markets worldwide.

Recently China has become increasingly important in the global economy, but the trendsetter is still the USA, particularly as far as the financial markets are concerned. Therefore the USA economic indicators are still the most closely monitored in the world. Changes in these indicators can potentially cause both direct and indirect effects on financial markets elsewhere. The indirect effects being those that primarily operate via their impact on the US economy.

Japan, the main European countries, China and other emerging-market economies like Brazil and India are other potentially critical international indicators. Brazil and India are essential because most of the world economy's growth occurs in emerging countries, not in the established industrial countries.

The following subsections consider the international economic indicators that directly or indirectly affect local financial markets when predicted and released.

2.3.1 Employment Situation Report (ESR)

One of the most important, influential and anticipated international economic indicators globally is the monthly Employment Situation Report (ESR) published by the US Bureau of Labor Statistics. The ESR is released on the first Friday of each month, which has become the most crucial trading session of the month in the US financial markets and often in other financial needs.

The report is based on the Current Populations Survey of households and the Current Employment Statistics Survey of employers. The information consists of two main components: the household survey and the establishment survey. It estimates the number of people employed and unemployed in the economy, the number of hours they worked (plus a myriad of related figures).

When the results of the report are in, they are usually split up into three separate topics:

- The unemployment rate
- Nonfarm payroll
- The average workweek and wages

The data is widely anticipated. In the equities markets, the Dow Jones Industrial Average and other share price indexes can move significantly due to this report. Such changes often reverberate throughout the world.

Many Wall Street firms issue estimates of these employment numbers and these forecasts are used by business decision-makers. The report may impact corporate confidence, and therefore future business and hiring decisions. Wall Street firms, corporations, and investors use the jobs report to gauge the economy's overall health.

The foreign exchange markets has become increasingly sensitive to the report's data and pays particular attention to the establishment survey for signs that might affect the value of the US dollar.

An unexpected rise in employment, for example, may cause the US dollar to strengthen. In a 1995 study by the Federal Reserve Bank of New York, it was reported that reactions to surprises have implications for short-term interest rates. Any report that can impact the future course of monetary policy will affect the bond markets. The bond market is concerned with what the report may indicate about inflation and interest rates. A strong employment report may reveal an economy that is heating up too quickly, leading economists and traders to become concerned about inflationary pressure. However, it can also raise concerns about tighter monetary policy and future interest rate increases.

The ESR is not so much predictive as it is a historical documentation of economic conditions—with the premise being that these conditions are still in existence and might continue for the foreseeable future. Also, the numbers can have unexpected swings from month to month, with predictions being way off target for many months in a row.

2.3.2 Other important US economic indicators

The following are other US economic indicators that are closely watched by market participants:

- Gross Domestic Product (GDP)
- Consumer Price Index (CPI)
- Producer Price Index (PPI)
- Retail sales
- Consumer confidence and sentiment indexes
- The Federal Open Market Committee (FOMC) policy announcement

2.3.3 Important non-US economic indicators

Important non-US economic indicators that are closely monitored by market participants are as follows:

- **The German Industrial Production:** The German Federal Statistics Office compiles this indicator. It is a monthly indicator of industrial output in one of Europe's largest economy, Germany.
- **German IFO Business Survey:** This is a survey of German business leaders' opinions on the current and future economic climate compiled by the IFO Institute for Economic Research.
- **German CPI:** The CPI for Germany is compiled by the Federal Statistics Office and is released monthly.

- **Japan's Tankan Survey:** The Bank of Japan conducts the survey. It is a quarterly survey of business confidence in Japan.
- **Japanese Industrial Production:** The report is conducted by Japan's Ministry of Economy, Trade and Industry (METI). It is a monthly report on Japanese industrial production.
- **Chinese Industrial Production:** The report is compiled by the National Bureau of Statistics of China. It is a monthly report on China's industrial production.
- **India's GDP:** This indicator is published quarterly by the Ministry of Statistics - Central Statistical Organisation.
- **Brazil's Industrial Production:** The report is compiled monthly by the Brazilian Institute for Geography and Statistics and the Brazilian National Statistical Institute.

Topic 3 The predictive value of economic indicators

LEARNING OUTCOMES

After studying the topic, the learner should be able to describe-

- The challenges of prediction value of economic indicators.
- A theoretical framework for predicting the movement of financial markets.
- The assumptions required to predict movement of financial markets.

3.1 Challenges to the predictive value of economic indicators

Economic indicators are used to predict future financial and economic trends, and therefore the release of the indicator can also drive the financial market movements. This is only one of the challenges we face when analysing the real predictive value of economic indicators.

The effect of international economic indicators on domestic financial markets is one of the many variables outside of the market participants' control. Financial markets are also forward-looking, and expectations play a significant role in determining financial assets' prices. Nonetheless, market participants often tend to have a very short-term outlook. Overreaction and herd-like behaviour are typical, neutralising the more fundamental drivers' impact and significantly decreasing volatility.

Further challenges include but are not limited to unreliable or incorrect data, lagging data, data without domestic context can render it less relevant, for instance, the different types of unemployment rates, as mentioned in the text.

Therefore, finding a predictive model to forecast the movement of the financial markets seems an impossible task. However, any progress towards sounder economic forecasting adds a measure of perceived security and risk mitigation for market participants which is preferable to the alternative.

Starting by considering the concept of economics as the study of humanity's efforts to use limited resources to meet unlimited demands, it becomes clear that this is a study about humans. Economics is first and foremost a behavioural or social science that tries to predict human behaviour in a particular economic setting.

Social sciences traditionally have relatively weak predictive power versus that of specific natural sciences, even astronomy. James Adams captured the sentiment with the following statement: "Any astronomer can predict with absolute accuracy just where every star in the universe will be tonight. However, he cannot make such a prediction about his teenage daughter."

The economy's high interdependence level also compounds the challenge of focusing on economic activity (which naturally includes financial market movements). Due to the interconnection, it is often tricky to separate initiating economic activities (causes) from the resultant activities (effects). One way of splitting economic activities is through the *ceteris paribus* assumption; it requires examining the driving economic activity and freezing all the others. This eliminates the possibility of one economic indicator unknowingly mitigating or magnifying the impact of another.

This is not practicable in reality. For example, the JSE cannot be frozen whilst the Minister of Finance evaluates the impact of his budget speech on the JSE. Regardless, the *ceteris paribus* assumption is often the only way to deal with an intricate cobweb of related economic activities.

3.2 A theoretical framework for prediction

From the definition of economics, it is clear that we need an accurate theory of all human behaviour. Such a theory is essential to forecast the behaviour of the financial markets (movements) due to the publication of an economic indicator.

The neo-classical economists believe they have an accurate theory of human behaviour and hence of market movements. The theory purports that market movements are predictable because behind them is a predictable economic man, driven by a consistent value system. The assumptions underlying this premise are as follows:

- Investors have complete knowledge.
- Investors are always rational and not wasteful.
- Investors seek their own best interest.
- Investors desire wealth.
- Investors avoid unnecessary labour.
- Investors have the ability to make judgements to achieve the above.

These assumptions have been widely ridiculed by critics that emphasise that the real world is characterised by imperfect knowledge, risk and uncertainty. Uncertainty (inadequate knowledge) is one of the basic assumptions of a highly contested and relevant theory, the efficient market hypothesis (EMH). EMH states that upcoming price movements are driven by upcoming unknown information because all the current known information is already factored into the current price. This results in upcoming market price movements being unpredictable because their corresponding drivers (upcoming information) are unknowable and arrive randomly in the markets.

According to the EMH, all known economic conditions (or drivers) are fully reflected in the various financial markets' current prices. However, in reality, there are times when known economic conditions are only partially reflected in the different financial markets. Therefore, there could be times when rational traders are not in the majority and cannot dislocate irrational traders from their views. Such examples include the analysts' herd instinct, stop-loss strategies, the greater fool theory, contrarian investing and investors' emotions of greed and fear.

The famous British economist John Maynard Keynes (whose approach to inflation was explained earlier in the text) described investors' herd instinct on the stock exchange by comparing the stock exchange behaviour to that of judges at a beauty contest. Instead of selecting the most beautiful contestant, each judge decides the one he believes will be chosen by the other judges! Therefore, Keynes said, the markets could remain irrational longer than the investor can remain solvent!

3.3 Basic assumptions required to predict economic behaviour

Despite the critique mentioned above and apparent shortcomings of the following assumptions, they need to be made to at least attempt to reliably predict the impact of published economic indicators on the financial markets:

- The *ceteris paribus* assumption should be applied. This is that the economic indicator concerned is the only variable that is exerting an influence on the financial markets.
- The release of the indicator has no reverse impact of the financial markets.
- That market participants are rational, seeking maximum profits all of the time.

- That the current prices in the financial markets correctly reflect all the expected information about the economy (i.e. market participants try, as best they can, to be information efficient). This entails that expected (or forecast) values of economic indicators, among others, will drive the financial markets in the run-up to the publication of an economic indicator. Accordingly, significant deviations from the expected value (unexpected economic information) drive the financial markets on the economic indicator's publication date. However, if the new economic data are on par with expectations, the financial markets will not move.

It is the nature of assumptions to dilute reality. Unfortunately, that is the only way to deal with a complex reality.

3.4 Conclusion

In the text we attempted to provide an understanding for the learner of the drivers of the financial markets in order to answer the following questions when evaluating the importance of economic indicators:

1. How does an economic indicator predict movements in the market?
2. How does the release of an economic indicator(s) affect the financial markets?

By now it should be obvious that economic indicators by themselves do not provide reliable guides for analysing and predicting events in financial markets. However, a sound knowledge of these indicators is essential to anyone who wishes to gain a better understanding of the movements in the prices and volumes of various financial assets.

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