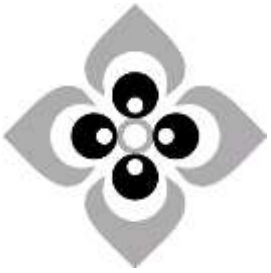


[Academic Script]

Market Efficiency (Part-1)

Subject:	Business Economics
Course:	B. A. (Hons.), 5th Semester, Undergraduate
Paper No. & Title:	Paper – 511 Investment Management
Unit No. & Title:	Unit – 2 Market Efficiency
Lecture No. & Title:	Lecture – 1 Market Efficiency (Part-1)

Academic Script

INTRODUCTION:

Financial market efficiency is an important topic in the world of finance. Most of the financiers believe that markets are neither 100% efficient, nor 100% inefficient.

The financial markets are a mixture of both, sometimes the market will provide fair returns on the investment for everyone, while at other times certain investors will generate above average returns on their investment.

POINTS TO BE COVERED IN THE PROGRAMME

Topic 1: Market Efficiency
Topic 2: The Random Walk Theory
Topic 3: Security Analysis

A. *Fundamental Analysis*
B. *Technical Analysis*

Summary of All Topics

MARKET EFFICIENCY

MEANING:

In the 1970s **Eugne Fama** defined an efficient financial market as "*one in which prices always fully reflect available information".* He developed the theory of Efficient Market Hypothesis (EMH) stated it is not possible for an investor to outperform the market because all available information is already built into all stock prices.

The efficient market hypothesis (EMH) is an investment theory that states it is impossible to "beat the market" because stock market efficiency causes existing share prices to always incorporate and reflect all relevant information. According to the EMH, stocks always trade at their fair value on stock exchanges, making it impossible for investors to either purchase undervalued stocks or sell stocks for inflated prices. As such, it should be impossible to outperform the overall market through expert stock selection or market timing, and the only way an investor can possibly obtain higher returns is by purchasing riskier investments.

EXAMPLE:

For example, the passing of the Sarbanes-Oxley Act of 2002 (United States Federal Law), which required greater financial transparency for publicly traded companies, saw a decline in equity market volatility after a company released a quarterly report. It was found that financial statements were deemed to be more credible, thus making the information more reliable and generating more confidence in the stated price of a security. There are fewer surprises, so the reactions to earnings reports are smaller. This change in volatility pattern shows the passing of the Sarbanes-Oxley Act and its information requirements made the market more efficient.

FORMS OF MARKET EFFICIENCY:

Eugene Fama identified three levels of market efficiency:

Forms	Definition
Weak form efficiency	**Stock prices fully incorporate all historical information into current prices. This means future price movements cannot be predicted by using past prices. Everything is random. In this kind of market, one should simply use a "buy-and-hold" strategy.**
Semi strong efficiency	**Stock prices fully reflect all of the publicly available information. Therefore, only investors with additional inside information could have advantage on the market.**
Strong form efficiency	**Stock prices incorporate all information - public as well as inside information. Therefore, no one can have advantage on the market in**

	predicting prices since there is no data that would provide any additional value to the investors.

HOW DOES MARKET BECOMES EFFECTIVE?

- A market has to be large and liquid.
- Accessibility and information must be widely available and released to investors at more or less the same time.
- Transaction costs have to be cheaper than an investment strategy's expected profits.
- Investors must also have enough funds.

SIX LESSONS OF MARKET EFFICIENCY:

1. Markets have no memory – price changes tomorrow are independent of price changes today.
2. Trust market prices – in an efficient market, the current market price will capture all (publicly available) information. Thus it is impossible for the average investor to consistently out-perform the market.
3. Read the entrails – if the market is efficient, it can tell us a great deal about a company's future prospects.
4. There are no financial illusions – investors only care about cash flow. Accounting changes should be irrelevant.
5. The 'do it yourself' alternative – Investors won't pay firms to do what they can do more cheaply (such as diversification).
6. Seen one stock, seen them all – most stocks are close substitutes for other stocks. Thus if the return on Company A's stock falls relative to its risk, investors will sell it and purchase the stock of Company B.

THE RANDOM WALK THEORY:

INTRODUCTION:

Friends, now we will be dealing with another theory related to the efficient market hypothesis which is created by Louis Bachelier, i.e. "**Random Walk**" theory, which states that the prices in the financial markets evolve randomly and are not connected, they are independent of each other. Random walk theory gained popularity in 1973 when Burton Malkiel wrote "A Random Walk Down Wall Street", a book that is now regarded as an investment classic. Random walk is a stock market theory that states that the past movement or direction of the price of a stock or overall market cannot be used to predict its future movement. Originally examined by Maurice Kendall in 1953, the theory states that stock price fluctuations are independent of each other and have the same probability distribution, but that over a period of time, prices maintain an upward trend.

MEANING:

The **random walk** hypothesis is a financial **theory** stating that stock market prices evolve according to a **random walk** and thus cannot be predicted. It is consistent with the efficient-market hypothesis.

It states that market and securities prices are random and not influenced by past events. The idea is also referred to as the "weak form efficient-market hypothesis."

$X_t = X_{t-1} + e_t$

Where: X_t is the value in time period t,

X_{t-1} is the value in time period t-1(one time period before)

e_t is the value of the error term in time period t.

The random walk theory suggests that stock price changes have the same distribution and are independent of each other, so the past movement or trend of a stock price or market cannot be used to predict its future movement.

It also considers technical analysis undependable because, according to Malkiel, chartists buy only after price trends are established and sell only after price trends are broken; the chartists buy or sell too late and miss the boat. According to the theory, this happens because stock prices already reflect the information by the time the analyst moves on the stock.

Further, Malkiel finds fundamental analysis flawed because analysts often collect bad or useless information and then poorly or incorrectly interpret that information when predicting stock values. Factors outside of a company or its industry may affect a stock price, rendering further the fundamental analysis irrelevant.

EXCEPTIONS TO THE RANDOM WALK THEORY (ANOMALIES):

1. Prices of small, less liquid stocks seem to have some serial price correlation in the short-term because they do not incorporate information into their prices as quickly.
2. Contrarian (A contrarian is an investor that attempts to profit by deviating from conventional wisdom) strategies tend to outperform other strategies because reversals are often based on economic facts rather than investor psychology.
3. There are seasonal trends in the stock market, especially at the beginning of the year and the end of the week.
4. Stocks with low P/E ratios tend to outperform those with high P/Es, although the tendency is volatile over time.
5. High-dividend stocks tend to provide higher returns over time because during down markets the high dividend yields often create demand for these stocks and thus increases the price

SECURITY ANALYSIS:

FUNDAMENTAL ANALYSIS:

MEANING:

Fundamental analysis is a method of evaluating a security in an attempt to measure its intrinsic value (The intrinsic value is the actual value of a company or an asset based on an underlying perception of its true value including all aspects of the business, in terms of both tangible and intangible factors. This value may or may not be the same as the current market value), by examining related economic, financial and other qualitative and quantitative factors. Fundamental analysts study anything that can affect the security's value, including macroeconomic factors such as the overall economy and industry conditions, and microeconomic factors such as financial conditions and company management.

Value investors who follow fundamental analysis typically look at both qualitative (business model, governance and target market factors) and quantitative (ratios and financial statement analysis) aspects of a business to see if the business is currently out of favour with the market and is really worth much more than its current valuation.

STRENGTH OF FUNDAMENTAL ANALYSIS:

1. Long Term Trends

   Fundamental analysis is good for long-term investments based on very long-term trends. The ability to identify and predict long-term economic, demographic, technological or consumer trends can benefit Investors.

2. Value Spotting

   Sound fundamental analysis will help identify companies that represent a good value.

3. Business Acumen

   One of the most important rewards of fundamental analysis is the development of a thorough understanding of the business. After such detailed research and analysis, an investor will be familiar with the key revenue and profit drivers behind a company.

4. Knowing Who's Who

   By understanding a company's business, investors can better position themselves to categorize stocks within their relevant industry group.

WEAKNESS OF FUNDAMENTAL ANALYSIS:

1. Time Constraints

   It is very time consuming process as the researcher has to analyse the stock from each and every angles of the fundamentals.

2. Industry/Company Specific

   Different technique and model is required for different industries and different companies which may be quite time-consuming.

3. Subjectivity

   Any changes to growth or multiplier assumptions can greatly alter the ultimate valuation.

4. Analyst Bias

   The majority of the information that goes into the analysis comes from the company itself. Companies employ investor relations managers specifically to handle the analyst community and release information. As Mark Twain said, "there are lies, damn lies, and statistics."

   Personal biases of researcher can be reflected in the analysis. It is important to be aware of these biases when analyzing a chart.

TECHNICAL ANALYSIS:

MEANING:

Technical analysis is a trading tool employed to evaluate securities and attempt to forecast their future movement by analyzing statistics gathered from trading activity, such as price movement and volume. Technical analysts focus on charts of price movement and various analytical tools to evaluate a security's strength or weakness and forecast future price changes.

ASSUMPTIONS:

Two basic assumptions of Dow Theory that underlie all of technical analysis are:

1. Market price discounts every factor that may influence a security's price.
2. Market price movements are not purely random but move in identifiable patterns and trends that repeat over time.

STRENGTHS OF TECHNICAL ANALYSIS

1. Focus on Price
   If the objective is to predict the future price, then it makes sense to focus on price movements. Price movements usually precede fundamental developments. By focusing on price action, technicians are automatically focusing on the future.
2. Supply, Demand and Price Action
   Many technicians use the open, high, low and close when analyzing the price action of a security. There is information to be gleaned from each bit of information. Separately, these will not be able to tell much. However, taken together, the open, high, low and close reflect forces of supply and demand.

3. Support/Resistance
   Simple chart analysis can help identify support and resistance levels. These are usually marked by periods of congestion (trading range) where the prices move within a confined range for an extended period. When prices move out of the trading range, it signals that either supply or demand has started.

4. Pictorial Price History
   With historical picture, it is easy to identify the following:

   - Reactions prior to and after important events.
   - Past and present volatility.
   - Historical volume or trading levels.
   - Relative strength of a stock versus the overall market.

5. Assist with Entry Point
   Technical analysis can help with timing a proper entry point. Some analysts use fundamental analysis to decide what to buy and technical analysis to decide when to buy. It is no secret that timing can play an important role in performance. Technical analysis can help spot demand (support) and supply (resistance) levels as well as breakouts. Simply waiting for a breakout above resistance or buying near support levels can improve returns.

WEAKNESS OF TECHNICAL ANALYSIS:

1. Analyst Bias
   Technical analysis is subjective and technician's personal biases can be reflected in the analysis. It is important to be aware of these biases when analyzing a chart.

2. Open to Interpretations
   Even though there are standards, many times two technicians will look at the same chart and paint two different scenarios or see different patterns. Both will be able to come up with logical support and resistance levels as well as key breaks to justify their position.

3. Too Late
   By the time the trend is identified, a substantial portion of the move has already taken place.

4. Always Another Level
   Even after a new trend has been identified, there is always another "important" level close at hand. Even if they are bullish, there is always some indicator or some level that will qualify their opinion.

DISTINCTION:

No.	Fundamental	Technical
1	**Fundamental analyst starts with the financial statements like balance sheet, cash flow statement and income statement to determine the Intrinsic Value of the security.**	**Technicians believe that company's fundamentals are all accounted for in the stock's price. They use charts to avail the information of any security.**
2	**Fundamental analysis takes a relatively long-term approach to analyze the market. They often looks at data over a number of years**	**Technical analysis can be used on a timeframe of weeks, days or even minutes.**
3	**Fundamental analysis is used to make an investment.**	**Technical analysis is used for a trade.**

TREND:

One of the most important concepts in technical analysis is that of Trend. There are three types of trend:

- Uptrends - When each successive peak and trough is higher, it's referred to as an upward trend.
- Downtrends - When each successive peak and trough is lower, it's referred to as an upward trend.
- Sideways/Horizontal Trend - When there is little movement up or down in the peaks and troughs, it's a sideways or horizontal trend.

TREND LENGTHS:

There are three trend classifications:

Long Term Trend - last long for more than a year. A long-term trend is composed of several intermediate trends.

Intermediate Trend - last between one and three months

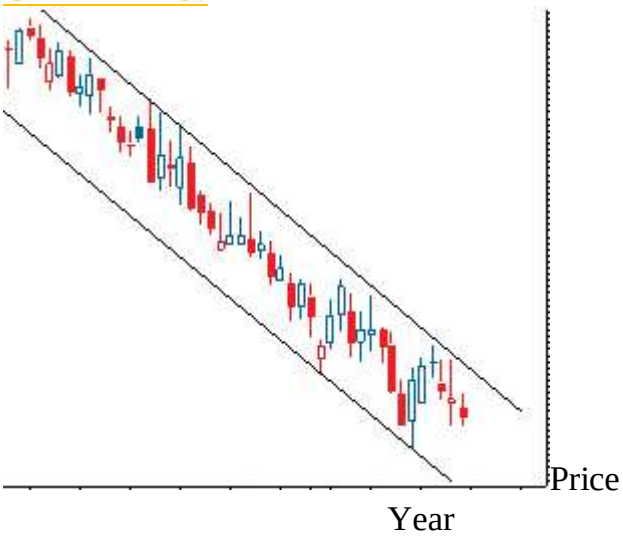
Short Term Trend - anything less than a month.

TRENDLINES:

A trendline is a simple charting technique that adds a line to a chart to represent the trend in the market or a stock.

An upward trendline is drawn at the lows of an upward trend. This type of trendline helps traders to anticipate the point at which a stock's price will begin moving upwards again. Similarly, a downward trendline is drawn at the highs of the downward trend.

CHANNELS:



A Channel is the addition of two parallel trendlines. The upper trendline connects a series of highs, while the lower trendline connects a series of lows.

SUMMARY:

Friends lets summarize today's session.

In the real world, markets cannot be absolutely efficient or wholly inefficient. In the age of Information Technology (IT), however, markets all over the world are gaining greater efficiency. IT allows for more effective and faster means to disseminate information, and electronic trading allows for prices to adjust more quickly to news entering the market. If a stock price follow a random walk, then future stock prices cannot be predicted based on past stock prices.