NPTEL Course

Course Title: Security Analysis and Portfolio Management

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Module-10
Session-19
Technical Analysis-I

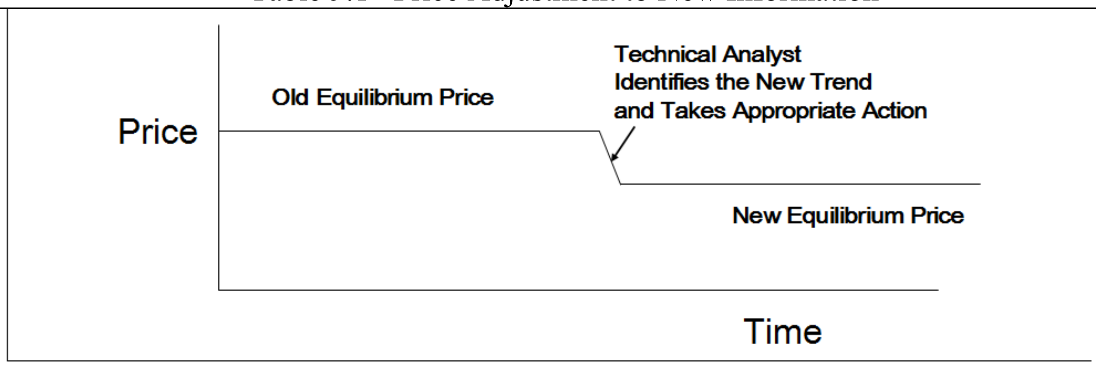
9.1. Technical Analysis

The International Federation of Technical Analysts defines technical analysis as "the systematic method of analyzing financial instruments, including securities, futures and interest rate products, with only market-delivered information such as price, volume, volatility and open interest".[1] Technical analysis involves a study of market generated historical data like prices and volumes to determine the future direction of price movement than to measure a financial assets intrinsic value. Technical analysts' approach of investment is essentially a reflection of the view that the historical performance of a financial asset like stocks and markets are indications of future movement. The predictability of technical analysis is based up on the market-delivered information such as price, volatility, volume, trading pattern and open interest.

It involves the examination of past market data such as prices and the volume of trading, which leads to an estimate of future price trends and therefore an investment decision. The fundamental assumption is that using data from the market itself is a good idea because the market is its own best predictor.

Technical analyst's view of price adjustment to new information:

Table 9.1 Price Adjustment to New Information



Source:

1 http://www.ifta.org/

9.2. Underlying Assumptions of Technical Analysis

Following are the four assumptions that support the basic approach of technical analysis:

1. The market value of any good or service is determined solely by the interaction of supply and demand
2. Supply and demand are governed by numerous factors, both rational and irrational
3. Disregarding minor fluctuations, the prices for individual securities and the overall value of the market tend to move in trends, which persist for appreciable lengths of time
4. Prevailing trends change in reaction to shifts in supply and demand relationships and these shifts can be detected in the action of the market

9.3 Difference Between Technical Analysis and Fundamental Analysis

These two terms refer to different approaches for investment decision by using different methodologies and research techniques for forecasting the future trends of price movement. Fundamental analysis is an investment strategy or philosophy which attempts to measure the intrinsic value of a financial asset like stock by studying everything from the macro economic and industry conditions to the internal management and financial condition of companies. Technical analysis on the other hand is the evaluation of financial assets historical market statistics such as past prices, volatility, trading volume to measure a financial assets future price. It does not look in to the intrinsic value rather it uses charts to identify patterns and trends that may suggest what a financial asset like stock will do in the future.

Technical analysts believe that there is no point of evaluating the fundamentals as the all fundamental information must have already reflected in the stock's price. Fundamental analysis takes a relatively long-term approach as compared to the short term approach of the technical analysts. In other words the basic difference between fundamental and technical analysts can be seen as the difference between investing versus trading. However, in the world of stock analysis, which strategy works best is always debated and perhaps the combination of both gives the suggestive results.

9.3. Advantages of Technical Analysis

1. Not heavily dependent on financial accounting statements

Problems with accounting statements:

- Lack information needed by security analysts
- Accounting Standards allows firms to select reporting procedures, resulting in difficulty comparing statements from two firms
- Non-quantifiable factors do not show up in financial statements

2. Fundamental analyst must process new information and quickly determine a new intrinsic value, but technical analyst merely has to recognize a movement to a new equilibrium
3. Technicians trade when a move to a new equilibrium is underway but a fundamental analyst finds undervalued securities that may not adjust their prices as quickly

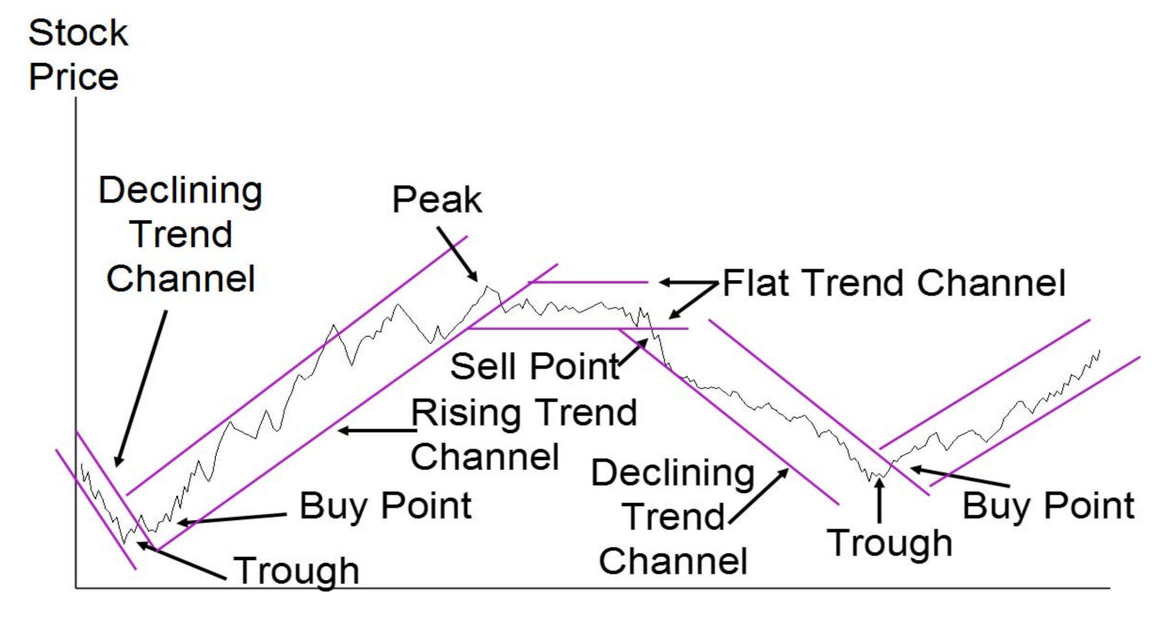
9.4. Challenges to Technical Analysis

1. Assumptions of Technical Analysis
    - Empirical tests of Efficient Market Hypothesis (EMH) show that prices do not move in trends
2. Technical Trading rules
    - The past may not be repeated
    - Patterns may become self-fulfilling prophecies
    - A successful rule will gain followers and become less successful
    - Rules require a great deal of subjective judgement

9.5. Technical Indicators

Stock cycles typically go through a peak and trough. For instance, let us analyse the following chart of a typical stock price cycle:

Table 9.2 Typical Stock Market Cycle



Source:

Here in the above chart we can see a rising trend channel, a flat trend channel, a declining trend channel, and indications of when a technical analyst would want to trade.

9.6. Technical Trading Rules

Following are the some of the trading rules that are the major tools for technical analysis:

1. Trading Rules: Contrary-opinion or trading against crowd

Many analysts rely on rules developed from the premise that the majority of investors are wrong as the market approaches peaks and troughs. Technicians try to determine whether investors are strongly bullish or bearish and then trade in the opposite direction

Under this popular trading strategy technical analysts follow certain technical indicators:

1. Mutual fund cash positions: Mutual funds assumed to act incorrectly before a market turning point. Low liquidity or low cash positions with mutual funds imply funds fully invested (bullish) and market is near or at peak. On the other hand high liquidity implies funds are bearish and thus considered a good time to buy.

2. Credit balances in brokerage accounts: Credit balances in the brokerage account increases when investors sell stocks and leave the proceeds for future investments. Technical analysts look for the build-up of credit balances as a bullish indicator as the

investors expect to reinvest the money in the short term. On the other hand a lower credit balance is an indicator of bearish indicator as it suggests lower purchasing power or a sell signal as the market approaches a peak.

3. Investment advisory opinions: If a large proportion of investment advisory services gives an indication of sell signals and are bearish with respect to future market movement, the technical analysts considers this as the approach of a bull market signal in the near future.

4. Ratio of trading volume: The ratio of trading volume is considered a measure of speculative activity when the market is in the boom phase or an over-bought phase. Recently rather than its absolute value of high or low the direction of volume ratio is considered as better proxy for market movement.

5. Put –Call Ratio: A higher put/call ratio indicates a pervasive bearish attitude which technicians consider a bullish indicator.

6. Future traders bullish on stock exchange futures: As per the contrary investment strategy when the 70 % percent of speculators are bullish the contrary opinion technicians say it is bearish market and on the opposite when this declines to 30% it becomes a bullish signal

7. Confidence index: Ratio of average yield on top 10 grade corporate bonds divided by the yield on Stock markets' average of 40 bonds. This ratio is positively related to the contrary investment opinion strategy i.e., if it shows a high value then it indicates a bullish sign and if it is low it gives the bearish sign.

8. T-Bill-Eurodollar yield spread: It measures the investor's confidence among alternative economic assets. If it shows a declining trend, the stock market experiences a trough shortly.

9. Debit balances in margin/brokerage accounts: An increase in debit balances implies buying and it is considered a bullish sign while decline in debt balance would indicate selling by the investors and would be a bearish indicator. It indicates investors confidence in the market to invest while borrowing money.

10. Williams percent range (Williams %R): This technical indicator was named after it was developed by Larry Williams. This attempts to measure overbought and oversold market conditions with the value of %R falls between a value of 100 and 0. The trading rule for this indicator follows a simple approach: If value of %R $\leq$ 20%, then it indicates overbought market and when the value of % R $\geq$ 80% the market is considered as oversold.

Additional Readings:

- Alexander, Gordon, J., Sharpe, William, F. and Bailey, Jeffery, V., "Fundamentals of Investment, 3rd Edition, Pearson Education.
- Bodie, Z., Kane, A, Marcus,A.J., and Mohanty, P. " Investments", 6th Edition, Tata McGraw-Hill.
- Fisher D.E. and Jordan R.J., "Security Analysis and Portfolio Management", 4th Edition., Prentice-Hall.
- Jones, Charles, P., "Investment Analysis and Management", 9th Edition, John Wiley and Sons.
- Prasanna, C., "Investment Analysis and Portfolio Management", 3rd Edition, Tata McGraw-Hill.
- Reilly, Frank. and Brown, Keith, "Investment Analysis & Portfolio Management", 7th Edition, Thomson Soth-Western.

Additional Questions with Answers

Session 19: Technical Analysis-I

1. What is Technical Analysis?

Ans.

- Involves the examination of past market data such as prices and the volume of trading, which leads to an estimate of future price trends and therefore an investment decision. It believes that using data from the market itself is a good idea because the market is its own best predictor.

2. What are the various assumptions of Technical Analysis?

Ans.

Underlying Assumptions of Technical Analysis:

- The market value of any good or service is determined solely by the interaction of supply and demand
- Supply and demand are governed by numerous factors, both rational and irrational
- Disregarding minor fluctuations, the prices for individual securities and the overall value of the market tend to move in trends, which persist for appreciable lengths of time
- Prevailing trends change in reaction to shifts in supply and demand relationships and these shifts can be detected in the action of the market

3. What are the various indicators of Technical Analysis?

Ans.

Technical Trading Rules and Indicators: It believes that using data from the market itself is a good idea because the market is its own best predictor.

- Contrary-Opinion: Trading Against Crowd. Many analysts rely on rules developed from the premise that the majority of investors are wrong as the market approaches peaks and troughs. Technicians try to determine whether investors are strongly bullish or bearish and then trade in the opposite direction.

- Smart Money: Attempts to emulate astute investors. Major indicators includes: Confidence Index, T-Bill-Eurodollar Yield Spread, Debit balances in Brokerage Accounts

- Other Popular Market Indicators: Mutual fund cash positions, Credit Balances in Brokerage Accounts, Investment Advisory Opinions and the Ratio of Trading Volume, Put –Call Ratio and Future Traders Bullish on Stock Exchange Futures

- Stock Prices and Volume Techniques including Dow Theory

4. What are the Advantages of Technical Analysis?

Ans.

- Not heavily dependent on financial accounting statements and free from lack information needed by security analysts
- Non-quantifiable factors do not show up in financial statements
- Fundamental analyst must process new information and quickly determine a new intrinsic value, but technical analyst merely has to recognize a movement to a new equilibrium
- Technicians trade when a move to a new equilibrium is underway but a fundamental analyst finds undervalued securities that may not adjust their prices as quickly

5. Can technical analysis bring efficiency in the portfolio selection process?

Ans.

Technical Trading Rules and Indicators: Stock cycles typically go through a peak and trough.

Challenges to Technical Analysis:

- Assumptions of Technical Analysis
  - Empirical tests of Efficient Market Hypothesis (EMH) show that prices do not move in trends
- Technical Trading rules
  - The past may not be repeated
  - Patterns may become self-fulfilling prophecies
  - A successful rule will gain followers and become less successful
  - Rules require a great deal of subjective judgment