Chapter 10
"An Analytical Approach to Investments, Finance and Credit"

Secondary Markets: Stock Investments and Valuation

Trading Stocks: An Overview

- Buying and selling stock is probably the most common activity for an individual that started for the first time to invest. It is after all an investment that triggers anyone's curiosity and excitement.
- The most common question of someone is looking to invest is "what company you think I should invest in". Everyone has the basic understanding that if I buy the stock of a company today, I am assuming that the value of such stock will go up based on their success of business.
- Investing in companies that have good business or a good product is expected but the most sophisticated investors add few other measurement criteria before they make such recommendation. These would include the risk I am taking or how long do hold such stock and how this stock is performing against a risk-free investment or how is this stock performing against the overall market. All these questions need to be addressed by the professionals when recommending a stock.

Author's Notes

- *A great book to read is Scott Patterson's (2010)* ***The Quants: How a New Breed of Math Whizzes Conquered Wall Street and Nearly Destroyed It****. It's fun to read and it covers many of the investment concepts described in this textbook, such as the capital asset pricing model (CAPM), the formula that analysts use to set their return expectation on a stock while adjusting for the market beta. The book discusses, using a lot of humor, four math geniuses called the quants that set up quantitative funds aimed at taking advantage of inefficiencies in the equity markets: Peter Muller, a mathematician; Ken Griffin, the founder of Citadel investments; Cliff Asness, the founder of AQR Capital Management; and Boaz Weinstein, chess master and card counter who traded derivatives at Deutsche Bank.*
- *The moral to this story is that even though many investors are seeking mathematical methods to take advantage of the stock market, we often find investors fall back to the Warren Buffet approach. Whatever your approach for picking the right stock, at the end of the day, after many lessons I learned for years as a banker, it's easier to pick a stock of company that had good products and services. It's much easier to defend your investment than trying to explain why your bitcoin investment did not do well.*

Secondary Trading Markets: An Overview

- Exchange markets: National exchanges serve a broad base of investors and require that the stock of traded companies meet certain standards called listing requirements:
  - New York Stock Exchange (NYSE)
  - NASDAQ
- Over-the-counter markets (OTC)
- Third and fourth markets

Indices and tracking market performance

- **Indices and tracking market performance**: **A stock market index is a method of measuring the performance of a specific segment of the stock market or economy**
  - **Price weighted -** Dow Jones Industrial Average (DJIA)

$$\mathrm{DJIA_t} = \sum_{\mathrm{i=1}}^{30} \frac{\mathrm{P_{it}}}{\mathrm{D}}$$

  - **Capitalization weighted -** Standard & Poor's 500 (S&P 500)

$$\mathrm{Index} = \frac{\Sigma \mathrm{Pt.Qt}}{\Sigma \mathrm{Pb.Qb}} \mathrm{\,.\, beginning\ index\ value}$$

How to Trade Stocks

- **Types of Orders**
  - **<u>Market Orders</u>: Market orders are BUY or SELL orders that need to be executed immediately at the current market price.**

ABC Company (ABCC) NASDAQ REAL TIME PRICES

112.50 ↑ 1.2 1.07%

ORDER BOOK

Market Maker	Bid	Ask	Size (100's) Bid/Ask
MLCO	112.50	112.75	10/12
MHMY	112.53	112.79	16/25
SALD	112.58	112.81	10/15
WEED	112.65	112.84	15/19

Fig. 10.1

  - **<u>Price-Contingent Orders or Limit Orders</u>: Investors may place an order with an instruction to buy or sell at a specific price regardless what the market prices are.**
  - **<u>Stop Order (Stop-Loss Orders or Stop-Buy Orders)</u>: A stop order is like a limit order with a condition to buy or sell at a certain price but differing on the mechanics**

Types of Markets

- **Brokered Markets**
- **Dealer Markets**

The difference between a <u>broker</u> and a <u>dealer</u> is that the dealer can hold his or her own inventory of stocks in addition to brokering the trades.

Trading Strategies

- **Buying on Margin Strategy:** Buying on margin is when an investor is leveraging the purchase of a company's stock or borrowing part of the initial investment from a bank or broker

Buying on Margin Vs No-Margin

	Initial Purchase of Stock			Margin Loan			Investment
Year 0	Purchase Stock Price @	Number of Shares Purchased	Total Cost	Margin Percentage %	Obtaining Margin Loan	Annual Interest on Margin Loan (Cost) %	Initial Cash by Investor
Buying on Margin	$ 100.00	100	$ (10,000)	50.00%	$ 5,000	5.00%	$ (5,000)
Buying with on Margin	$ 100.00	100	$ (10,000)	0%	$ -		$ (10,000)

		Final Sale of Stock			Profit				HPR%
	Year 1	Sell Stock Price @	Number of Shares Purchased	Total Proceeds	Payment of Margin Loan	Payment of Interest Expense	Net Proceeds After Loan Payment	Net Profit Less Initial Cash by Investor	Profit / Initial Investment
Selling @ a gain	Buying on Margin	$ 120.00	100	$ 12,000	$ (5,000)	$ (250)	$ 6,750	**$ 1,750**	**35.00%**
	Buying with on Margin	$ 120.00	100	$ 12,000	$ -	$ -	$ 12,000	**$ 2,000**	**20.00%**
Selling @ a loss	Buying on Margin	$ 80.00	100	$ 8,000	$ (5,000)	$ (250)	$ 2,750	**$ (2,250)**	**-45.00%**
	Buying with on Margin	$ 80.00	100	$ 8,000	$ -	$ -	$ 8,000	**$ (2,000)**	**-20.00%**

Figure 10.2

Trading Strategies

- **Short-Selling Strategy:** Short selling is the process where an investor borrows the stock and then sells it immediately at the current price and will profit when the stock price declines

Short Sale

	Initial Short Sale			Buying the Stock / Cover Short Sale			
	Short Sell Stock Price	Shares Borrowed	Credit on Short Sale	Stock Price	Payment to Purchase New Shares	Profit/Loss	HPR%
Selling Short	$ 100.00	100	$ 10,000	$ 50	$ (5,000)	$ 5,000	50.0%
Selling Short	$ 100.00	100	$ 10,000	$ 60	$ (6,000)	$ 4,000	40.0%
Selling Short	$ 100.00	100	$ 10,000	$ 70	$ (7,000)	$ 3,000	30.0%
Selling Short	$ 100.00	100	$ 10,000	$ 80	$ (8,000)	$ 2,000	20.0%
Selling Short	$ 100.00	100	$ 10,000	$ 90	$ (9,000)	$ 1,000	10.0%
Selling Short	$ 100.00	100	$ 10,000	$ 100	$ (10,000)	$ -	0.0%
Selling Short	$ 100.00	100	$ 10,000	$ 110	$ (11,000)	$ (1,000)	-10.0%
Selling Short	$ 100.00	100	$ 10,000	$ 120	$ (12,000)	$ (2,000)	-20.0%
Selling Short	$ 100.00	100	$ 10,000	$ 130	$ (13,000)	$ (3,000)	-30.0%

Figure 10.3

Short Interest Ratio (SIR)

Short Interest to Volume Ratio (Days to cover)

Program Trading Strategies

- **Algorithmic Trading:** Algorithmic trading is based on complex mathematical formulas built on powerful computers. These algebraic formulas are built based on historical stock movements to predict the direction of a given stock.
- **High-Frequency Trading:** High-frequency trading, a subset of algorithmic trading, is a type of trading done by state-of-the-art fast computers. A high-frequency trader makes profits on the bid-ask spread and cross-market arbitrage strategies, even at very small differentials
- **Dark Pools:** Dark pools are trading programs that are set up by large broker-dealers for their clients or for its proprietary traders with the purpose of trading in private.

Stock Analysis

- Fundamental Analysis
  - Growth, Income, or Value Investing
  - Growth Companies and Growth Stocks
  - Value Companies and Value Stocks
  - Income Companies and Income Stocks
  - Defensive Companies and Stocks
  - Cyclical Companies and Stocks
  - Speculative Companies and Stocks

Stock Analysis

- Technical Analysis
  - **Trendline Analysis**
  - **Price Channel**
  - **Average-Line Analysis**
  - **Momentum Indicators Analysis (MI)**

$$\text{MI}=\frac{\text{close (i)}}{\text{close (i}-\text{n)}}\ \text{x}\ 100$$

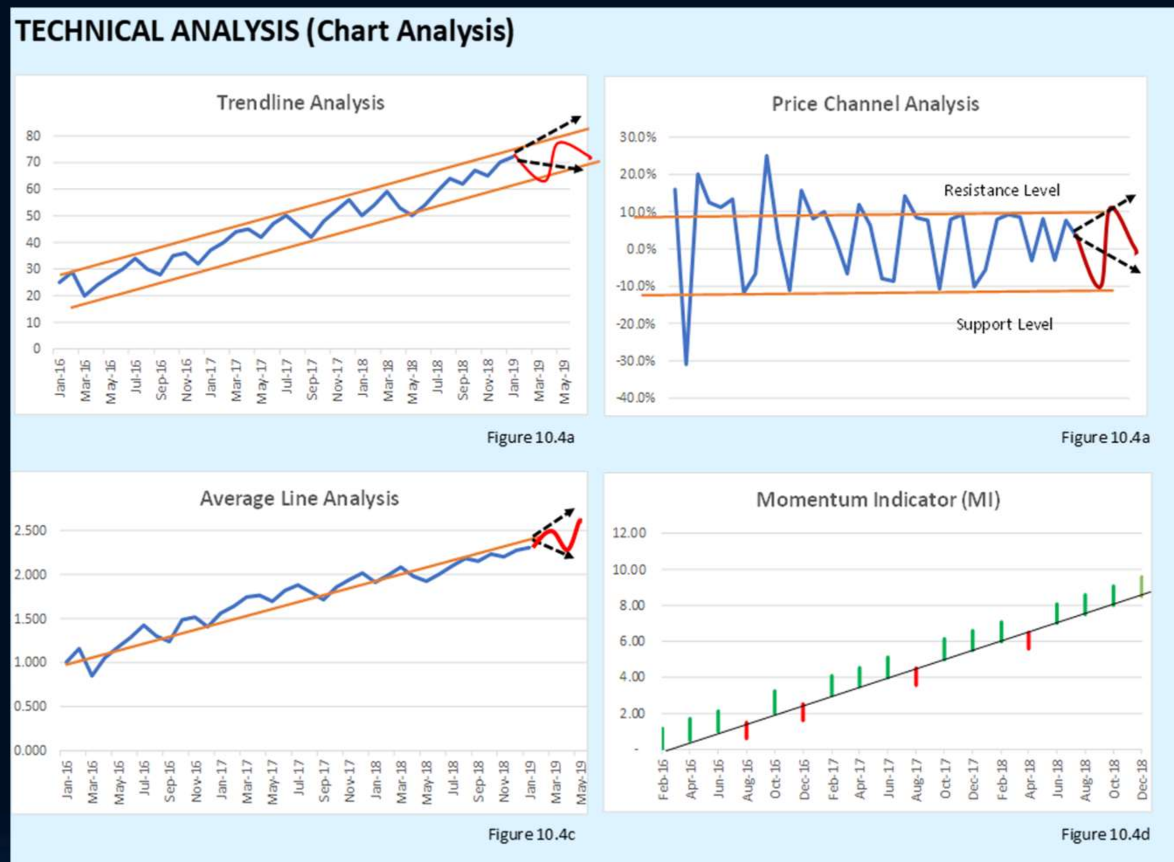

Figure 10.4

Dividend Payment Process

- **Declaration date:** This is the date by which the board of directors declares dividends. In their announcement they mention two other dates including the record date and the payable date.
- **Record date:** This is the date the shareholder must register on or before to receive the dividend.
- **Payable date:** This is the date that the dividend is paid to the shareholder on record.
- **Ex-dividend date:** This is the date 2 business days prior to the record date. Any regular way trades of the stock take 3 days to settle (T+3), which will give the official title of the stock

Stock Analysis

- **Behavioral Finance Analysis**

The original passage by Keynes (1936) reads: Even apart from the instability due to speculation, there is the instability due to the characteristic of human nature that a large proportion of our positive activities depend on spontaneous optimism rather than mathematical expectations, whether moral or hedonistic or economic. Most, probably, of our decisions to do something positive, the full consequences of which will be drawn out over many days to come, can only be taken as the result of animal spirits—a spontaneous urge to action rather than inaction, and not as the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities. (pages161-162)

  - **Forecasting errors**
  - **Overconfidence**
  - **Conservatism**
  - **Framing**
  - **Mental accounting**
  - **Regret avoidance**