A STUDY OF DIFFERENT METHODS USED FOR STOCK VALUATION

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ABSTRACT

I have in this thesis tried to explain the different analyzing methods and then tried to apply an approach called the EIC approach by scientifically analyzing common stock valuation in the belief that analyzing the stock requires a top down approach to understand the stock and the effect of the macro economic variables on the stock. I have tried to use all relevant fundamental information available to investors to determine intrinsic values of stocks mechanically.

I have first tried to explain the different concepts related to stocks and their analysis. These concepts are core to the ultimate concept of analyzing and valuation of the stocks.

The second thing I have tried to explain is the concept of top down approach or the EIC approach to analyzing the stock. This approach encompasses the overall economic trend and their relation on the market, the analysis of the industry and its effects on the company.

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Thanks to my parents for your love and support, without which this project would not have been completed.

DEDICATION

To my Parents, whose unconditional love has inspired me throughout my life.

Thanks for your support – words can’t describe how much it means to me.

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CHAPTER 1

INTRODUCTION

Common stock valuation today is still a very subjective and unscientific matter. Most financial professionals compare different ratios of one stock with the same ratios of other, similar stocks (Bajaj and Vijh 1995). Others calculate efficient frontiers and buy stocks based on correlation coefficients (Bamber 1987), but only few apply the fundamental principle of valuation, which states that the value of any financial asset is the cash flow or earnings, or value this asset generates for its owner (Copeland 1979). In this thesis, I present a short overview of the “top down approach to common stock valuation” and the theory and literature related to the topic, which is analysis of common stock and equity valuation and forecasting to arrive at a fair value for the stock.

Rationale

As stated, common stock is a premier in stock market therefore its price determination mechanisms has been worked out in the form of different theories to decide on actual price outcome. In recent years, due to decline in interest rates and other government policies, stock market has provided with maximum yield on investment, which raises the importance of study.

This study reveals basic facts of share price determination process. Can be used as secondary source of information for further analysis and policy measures in future.

Problem Statement

“Practical implication of theories and Work model developed and presented for common stock valuation”.

Main Objectives

Following are the crisp objectives of study:

- Introduction to equity and its different classifications.
- Explanation of theories and Work model developed and presented so far in this regard.
- Practical implication of some of these models to decide on conclusion.
- Conclusion based on the research thesis.

Limitations

- Limited time. Time constraint has proved biggest hurdle in research study to complete study and present findings.
- Given the nature of Pakistan based market, there holds little co-relation between actual outcome and desired results based on the models presented in short run.

CHAPTER 2

LITERATURE REVIEW

Definition of a Stock

Plain and simple, stock is a share in the ownership of a company. Stock represents a claim on the company's assets and earnings. As you acquire more stock, your ownership stake in the company becomes greater (Lakonishok and Vermaelen 1990). Whether you say shares, equity, or stock, it all means the same thing.

Holding a company's stock means that you are one of the many owners (shareholders) of a company, and, as such, you have a claim (albeit usually very small) to everything the company owns(Fama, 1970). Yes, this means that technically you own a tiny sliver of every piece of furniture, every trademark, and every contract of the company. As an owner, you are entitled to your share of the company's earnings as well as any voting rights attached to the stock.

A stock is represented by a stock certificate. This is a fancy piece of paper that is proof of your ownership. In today's computer age, you won't actually get to see this document because your brokerage keeps these records electronically, which is also known as holding shares "in street name." This is done to make the shares easier to trade. In the past when a person wanted to sell his or her shares, that person physically took the certificates down to the brokerage. Now, trading with a click of the mouse or a phone call makes life easier for everybody.

Being a shareholder of a public company does not mean you have a say in the day-to-day running of the business. Instead, one vote per share to elect the board of directors at annual meetings is the extent to which you have a say in the company. For instance, being a Microsoft shareholder doesn't mean you can call up Bill Gates and tell him how you think the company should be run.

Debt vs Equity

Why does a company issue stock? Why would the founders share the profits with thousands of people when they could keep profits to themselves? The reason is that at some point every company needs to raise money. To do this, companies can either borrow it from somebody or raise it by selling part of the company, which is known as issuing stock. A company can borrow by taking a loan from a bank or by issuing bonds. Both methods fit under the umbrella of "debt financing." On the other hand, issuing stock is called "equity financing." Issuing stock is advantageous for the company because it does not require the company to pay back the money or make interest payments along the way (Kim and Verrecchia 1990).. All that the shareholders get in return for their money is the hope that the shares will some day be worth more. The first sale of a stock, which is issued by the private company itself, is called the initial public offering (IPO).

It is important that you understand the distinction between a company financing through debt and financing through equity. When you buy a debt investment such as a bond, you are guaranteed the return of your money (the principal) along with promised interest payments (Pilbeam,1998). This

isn't the case with an equity investment. By becoming an owner, you assume the risk of the company not being successful. Just as a small business owner isn't guaranteed a return, neither is a shareholder. As an owner your claim on assets is lesser than that of creditors. This means that if a company goes bankrupt and liquidates, you, as a shareholder, don't get any money until the banks and bondholders have been paid out. Shareholders earn a lot if a company is successful, but they also stand to lose their entire investment if the company isn't successful.

Risk

It must be emphasized that there are no guarantees when it comes to individual stocks. Some companies pay out dividends, but many others do not. And there is no obligation to pay out dividends even for those firms that have traditionally given them. Without dividends an investor can make money on a stock only through its appreciation in the open market. On the downside, any stock may go bankrupt, in which case your investment is worth nothing.

Although risk might sound all negative, there is also a bright side. Taking-on greater risk demands a greater return on your investment. This is the reason why stocks have historically outperformed other investments such as bonds or savings accounts.

Different Type of Stocks

There are two main types of stocks: common stock and preferred stock.

Common Stock

Common stock is, well, common. When people talk about stocks in general they are most likely referring to this type. In fact, the majority of stock issued is in this form. We basically went over features of common stock in the last section. Common shares represent ownership in a company and a claim (dividends) on a portion of profits (Vermaelen 1985). Investors get one vote per share to elect the board members, who oversee the major decisions made by management.

Over the long term, common stock, by means of capital growth, yields higher returns than almost every other investment. This higher return comes at a cost since common stocks entail the most risk. If a company goes bankrupt and liquidates, the common shareholders will not receive money until the creditors, bondholders, and preferred shareholders are paid.

Preferred Stock

Preferred stock represents some degree of ownership in a company but usually doesn't come with the same voting rights. (This may vary depending on the company.) With preferred shares investors are usually guaranteed a fixed dividend forever. This is different than common stock, which has variable dividends that are never guaranteed. Another advantage is that in the event of liquidation

preferred shareholders are paid off before the common shareholder (but still after debt holders). Preferred stock may also be callable, meaning that the company has the option to purchase the shares from shareholders at anytime for any reason (usually for a premium).

Some people consider preferred stock to be more like debt than equity. A good way to think of these kinds of shares is to see them as being in between bonds and common shares Bamber (1987).

Different Classes of Stock

Common and preferred are the two main forms of stock; however, it's also possible for companies to customize different classes of stock in any way they want. The most common reason for this is the company wanting the voting power to remain with a certain group; hence, different classes of shares are given different voting rights. For example, one class of shares would be held by a select group who are given ten votes per share while a second class would be issued to the majority of investors who are given one vote per share.

When there is more than one class of stock, the classes are traditionally designated as Class A and Class B. Like P.T.C.L.A, P.T.C.L.B & P.I.A.A.

Stocks Trading

Most stocks are traded on exchanges, which are places where buyers and sellers meet and decide on a price. Some exchanges are physical locations where transactions are

carried out on a trading floor. You've probably seen pictures of a trading floor, in which traders are wildly throwing their arms up, waving, yelling, and signaling to each other. The other type of exchange is a virtual kind, composed of a network of computers where trades are made electronically. The purpose of a stock market is to facilitate the exchange of securities between buyers and sellers, thus reducing the risks of investing. Just imagine how difficult it would be to sell shares if you had to call around the neighborhood trying to find a buyer. Really, a stock market is nothing more than a super-sophisticated farmers market linking buyers and sellers. Before we go on, we should distinguish between the "primary" market and the "secondary" market. The primary market is where securities are created (by means of an IPO) while, in the secondary market, investors trade previously-issued securities without the involvement of the issuing-companies. The secondary market is what people are referring to when they talk about "the stock market." It is important to understand that the trading of a company's stock does not directly involve that company (www.akdtrade.com).

What Causes Prices to Change?

Stock prices change everyday by market forces. By this we mean that share prices change because of supply and demand. If more people want to buy a stock (demand) than sell it (supply), then the price moves up. Conversely, if more people wanted to sell a stock than buy it, there would be greater supply than demand, and the price would fall.

Understanding supply and demand is easy. What is difficult to comprehend is what makes people like a particular stock and dislike another stock. This comes down to figuring out what news is positive for a company and what news is negative. There are many answers to this problem and just about any investor you ask has their own ideas and strategies.

The most important factor that affects the value of a company is its earnings. Earnings are the profit a company makes, and in the long run no company can survive without them. Public companies are required to report their earnings four times a year (once each quarter). Analysts base their future value of a company on their earnings projection. If a company's results surprise (are better than expected), the price jumps up. If a company's results disappoint (are worse than expected), then the price will fall.

It's not just earnings that can change the sentiment towards a stock (which, in turn, changes its price). Investors have developed literally hundreds of these variables, ratios and indicators. Some you may have already heard of, such as the P/E ratio, while others are extremely complicated and obscure with names like Chaikin Oscillator or Moving Average Convergence Divergence (MACD).

So, why do stock prices change? The best answer is that nobody really knows for sure. Some believe that it isn't possible to predict how stocks will change in price while others think that by drawing charts and looking at past price movements, you can determine when to buy and sell.

The only thing we do know as a certainty is that stocks are volatile and can change price extremely rapidly.

Analyzing Stocks

There are two types of analysis of stock which are as follows

Fundamental Analysis

The massive amount of numbers in a company's financial statement can be bewildering and intimidating to many investors. On the other hand, if you know how to read them, the financial statements are a gold mine of information.

Financial statement analysis is the biggest part of fundamental analysis. Also known as quantitative analysis, it involves looking at historical performance data to estimate the future performance. Followers of quantitative analysis want as much data as they can find on revenue, expenses, assets, liabilities, and all the other financial aspects of a company. Fundamental analysts look at this information for insight into the performance of in the future. They don't ignore the company's stock price; they just avoid focusing exclusively on it.

Financial statements are required by law and must include a balance sheet, an income statement, a statement of cash flows, an auditor's report, and a relatively detailed description of the company's operations and prospects for the upcoming year.

The following information is presented in most financial reports, note that the order in which these are presented might vary (www.cdcpakistan.com)

- Summary of the previous year.
- Information about the company in general, its history, products and line of business.
- Letter to shareholders from the President or the CEO.
- Auditor's report telling you that the results are accurate.
- An in-depth discussion about the financial results and other factors within the business.
- The complete set of financial statements (balance sheet, income statement, statement of retained earnings, and cash flow statement)
- Notes to the Financial Statements.

- Other information on the company's management, officers, offices, new locations, etc.

How you read the financial statements really depends on who you are and what your interest in the company is. Management, creditors/lenders, partners, and investors utilize financial statements. Each group is interested in different things. For example, an investor might assess profitability, growth, stability, and the rate of dividends. On the other hand, a creditor is much more interested in the amount of debt that a company currently has and whether it has the ability to make repayments.

How is Fundamental Analysis done?

Many people rightly believe that when you buy a share of stock you are buying a proportional share in a business. As a consequence, to figure out how much the stock is worth, you should determine how much the business is worth. Investors generally do this by assessing the company's financials in terms of per-share values in order to calculate how much the proportional share of the business is worth. Some knows this as “fundamental” analysis, and most who use it view it as the only kind of rational stock analysis.

Although analyzing a business might seem like a straightforward activity, there are many flavors of fundamental analysis. Investors often create oppositions and subcategories in order to better understand their specific investing philosophy. In the end, most investors come up with an approach that is a blend of a number of different approaches. Many of the distinctions are more academic inventions than actual practical differences. For instance, economists who study the stock market even though market practitioners do not find these labels to be quite as useful have codified value and growth.

Technical Analysis

There are two major types of analysis for predicting the performance of a company's stock - fundamental and technical. The latter looks for peaks, bottoms, trends, patterns, and other factors affecting a stock's price movement and then making a buy/sell decision based on those

factors (Eilifsen (1999). It is a technique many people attempt; though very few are truly successful.

Today, the world of technical analysis is huge. There are literally hundreds of different patterns and indicators investors claim to be successful.

How is Technical Analysis done

Technical analysis is a method of evaluating securities by analyzing statistics generated by market activity, past prices, and volume. Technical analysts do not attempt to measure a security's intrinsic value, instead they look for patterns and indicators on stock charts that will determine a stocks future performance.

Technical analysis has become popular over the past several years, as more and more people believe that the historical performance of a stock is a strong indication of future performance. The use of past performance should not come as a big surprise. People using fundamental analysis have always looked at the past performance by comparing fiscal data from previous quarters and years to determine future growth. The difference lies in the technical analyst's belief that securities move with very predictable trends and patterns. These trends continue until something happens to change the trend, and until this change occurs, price levels are predictable (www.akdtrade.com).

Arguments against Technical Analysis

Technical analysis assumes that certain chart formations can indicate market psychology about either an individual stock or the market as a whole at key points. However, most of the statistical work done by academics to determine whether the chart patterns are actually predictive has been inconclusive at best, as detailed in Burton Malkiel's (*A Random Walk Down Wall Street)*. Much of the faith in technical analysis hinges on anecdotal experience, not any kind of long-term statistical evidence, unlike certain quantitative and fundamental methodologies that have been shown in many instances to be pretty predictive. Critics of technical analysis feel that it is basically as useful as reading tea leaves.

Stock Valuation

Market Efficiency

The stock investment process looks considerably different depending on the investor’s belief about market efficiency. The discussion in the academic literature about whether the stock market is efficient or not is endless long and the conclusions differ too. Based on the belief in the degree of market efficiency, two major investment theories emerged that still separate the financial community. On the one hand is fundamental analysis based on the idea of non-efficient markets and on the other hand modern portfolio theory (MPT) with a strong faith in market efficiency (Fama, Eugene (1970).

Fundamental Analysis

Fundamental analysis is an investment approach that uses existing economic information, such as historical financial statements or different fundamental information about a company, to make investment decisions. The principles of fundamental analysis were first outlined in the book ‘Security Analysis’ of Graham and Dodd (Graham and Dodd, 1934). Two approaches to fundamental analysis are widely used today: the ‘Top down’ and the ‘Bottom up’ approach.

The idea behind the *‘Top down’* approach is to use all information available, including macroeconomic data, to make an investment decision. In general, fundamental analysts look first at the current macroeconomic conditions, because for them the decision to invest depends mainly on what stage of the business cycle the economy is heading and which industry is expected to perform well in the forecasted economic environment. Then analysts try to find the best companies in these industries. The stock selection process is based on the idea that the stock of the selected company must outperform its peers in the industry and the industry must outperform other industries.

Modern Portfolio Theory

Modern portfolio theory (MPT) is based on the idea of efficient markets. The underlying philosophy of this investment theory is that all investors in the marketplace are intelligent, profit-oriented and are trying to find miss-priced stocks. The large number of informed participants will ultimately drive a stock price to its intrinsic value and hence create an efficient market. In

such an environment mis-priced stocks would be detected immediately, the under- or overvaluation would disappear and no profit could be gained from using any form of investment analysis (Kim, Verrecchia (1991).

In other words, the MPT states that all stocks are priced fairly and nobody can persistently outperform the market. Consequently, followers of this method of investing will try to reduce risk by diversification and costs by minimizing transaction fees and taxes. The optimal investment strategy is the creation of an efficient portfolio based on covariance of all the stocks in the global marketplace. In practice however, this strategy usually means investing in index funds.

Equity Valuation Models

As discussed above is equity valuation a complex and therefore diverse process. In this process, equity valuation models help specifying what is to be forecasted, direct to the information needed to make the forecast, and shows how to relate the forecasted data into an intrinsic value estimate. Three major valuation model categories can be distinguished:

1. Asset based Valuation
2. Absolute Valuation or Discounted Cash Flow models
3. Relative Valuation or Price Multiple models.

Other methods exist like the yield-based valuation method, which focuses on dividend yield when the investment priority is income, or option valuation models that explicitly consider management flexibility in the value

creation process. We focus on the three main valuation techniques above as they are conceptually the most appealing, generally applicable and widely used.

(1) Asset based Valuation

Asset based valuation is closely associated with Value investing dating back to Benjamin Graham's book 'Security Analysis' (Graham and Dodd, 1934). After several years of confusion about the value of equity prices in the largest bear market in history, Graham researched stock prices and outlined for the first time something like a scientific approach to common stock valuation. He finds that the law of diminishing returns in a competitive economy implies that growth does not always create value and furthermore is usually not persistent.

Graham suggested therefore to value stocks first of all on should take the market value of the existing tangible assets of a company. He noticed that since the book value of an asset in the balance sheet reflects its historical cost, it might deviate significantly from market value if the earning power of the asset has increased or decreased significantly since its acquisition and needs therefore to be adjusted. He proposes to adjust book value to reflect reproduction costs of the asset because these are the costs a competitor would have to incur to enter the business and consequently represent the economically best estimate of the current market value of the assets. When a company is earning excess returns in a competitive economy, new firms will enter the business driving down these excess returns. This process will go on until it costs more for a new company to reproduce the necessary assets to enter the

business than the excess returns justify in terms of economic benefit. Consequently, reproduction costs reflect the fair value of a company’s assets.

Increasingly, it is however not sufficient to correct reported book values to reflect reproduction costs as certain valuable assets are not reflected in the balance sheet. The asset based valuation process requires also the re-quantification of non-monetary real assets. R&D or advertisement expenses, for example, represent a cost for new entrants that are not reflected in the balance sheet. To adjust, estimates should be made to reflect the number of years of expenses the competitor would need to invest in order to enter the business. These expenses then would be capitalized and included into the asset value. The sum of the adjusted book values of all assets would then equal the value of the company.

As these adjustments require some difficult and subjective assumptions about values, Graham favored stocks that were selling below the reproduction costs of their current assets after all liabilities have been paid. These assets do not require any adjustment. It was however easier to find such stocks during the Great Depression than it is today and since then Value investors adjusted their approach by valuing the reproduction cost of all assets as described above.

In asset based valuation, the second most reliable measure of a firm’s intrinsic value is the value of the current earnings the company is able to generate with its assets. Graham calls this ‘past performance value’ (Graham, 1973).

He assumes that the current earnings correspond to the sustainable level of distributable cash flow and that this level remains constant over the infinite future. Graham assumes though no growth in discounted earnings based on the same belief that in a competitive economy growth usually does not create value and therefore has no value.

Consequently, the third and least likely source of firm value according to Graham is the value of growth. This element is the most difficult to estimate and is accordingly highly uncertain. In a competitive environment growth creates value only when the firm is operating at a sustainable competitive advantage. The ‘past-performance value’ should therefore only be adjusted for growth if “the future appears reasonably predictable”.

(2)Absolute Valuation or Discounted CashFlow Models

Discounted cash flow (DCF) valuation models recognize that common stock represents an ownership interest in a business and that its value must be related to the returns investors expect to receive from holding it. A business generates a stream of cash flow in its operations and as owners of the business; shareholders have a legal claim on these cash flows. The value of a stock is therefore the share of cash flow the business generates for its owners discounted at their required rate of return. This is the fundamental principle of valuation as developed in the ‘Theory of Investment Value’ by John Burr Williams in 1938 (Williams, 1938). Mathematically, the principle is expressed as follows:

$$V_0 = \sum_{t=1}^{n} \frac{CF_t}{(1+k)^t}$$

V_0 = *Value of the stock in period t=0*

CF_t = *Cash flow generated by the asset for the owner of the asset in period t*

k = *Discount rate*

n = *Number of years over which the asset will generate cash flows to investors.*

The value of common stocks in DCF models is determined by the stream of expected future cash flows to investors in the nominator and their required rate of return in the denominator.

(3)Relative Valuation or Price Multiple Models

In absolute valuation the objective is to find the intrinsic value of an asset given its cash flow, growth and risk characteristics. In relative valuation the objective is to value assets based on how similar assets are priced in the market. The principle underlying relative valuation models is the law of one price - the economic theory that two similar assets should sell for similar prices.

There are two steps in correctly applying relative valuation techniques. First, stock prices have to be standardized and made comparable, usually by converting them into multiples of earnings, book values or sales. In a second step, similar firms have to be found to compare the standardized multiples to in order to determine their relative adequacy.

Four main methods using different multiples are commonly used in the relative approach to valuation of common stocks (Stowe et al., 2002):

Relative earnings valuation method

1. P/E ratio or earnings multiple, PEG ratios
2. Relative revenue valuation method: P/S ratio
3. Relative cash-flow valuation method: P/EBIT, P/EBITDA, P/CFO, EV/EBITDA ratios
4. Relative asset valuation method: P/B or B/M ratios.

Earnings multiples are commonly used when analysts have high confidence in the quality of historical and projected earnings per share (EPS) and when EPS are expected to grow. The revenue based valuation method is used when earnings are negative or declining, or when earning figures are not comparable or not representative for the future. Cash flow ratios are used in industries characterized by low or negative EPS due to large non-operating expenses or for cyclical companies with high earnings volatility.

In general, the use of earnings multiples is best when earnings are reliable. In case of a unreliable bottom line, investors should move the income statement up to EBIT, then EBITDA and if nothing else is reliable, sales. The relative asset valuation approach gained on popularity after a study by Fama and French (1992) showing that the B/M ratio is one of the best explanatory variables of historical stock returns.

Most commonly used is however the earnings multiple approach. In this method, analysts need to forecast EPS for the year ahead and determine an appropriate price-to-earnings multiple (P/E ratio). The P/E ratio expresses how many dollars the investor is willing to pay for a dollar of

expected future earnings per share. By multiplying the earnings multiple with the estimated earnings, analysts find the target price for the stock (P/E*E = P).

In summary, the relative valuation techniques are only useful when a good set of comparable companies exists, when the market is not at a valuation extreme and when the company’s fundamentals are difficult to forecast. While the multiple approaches by passes explicit projections and present value calculations, it relies on the same principles underlying the more comprehensive absolute valuation approach: value is an increasing function of future cash flows and a decreasing function of risk. Multiples are therefore only a poor substitute for comprehensive valuations.

Two approaches used during stock valuation

No matter what valuation model is applied or what analysis is done, the investor must decide on what approach he is going to use to analyze the stock whether it is the bottom up approach or the top down approach

Bottom up approach

This approach means that the analyst will first analyze the company then keep broadening the scope till he does the economic analysis. This approach is used when the analyst is analyzing just one stock or the investor knows in which market he or she is going to invest.

Top down approach

This approach is also called the E I C approach which means Economic - Industrial – Company approach. This approach is used when the analyst doesn’t have the understanding of the potential market, industry and company.

CHAPTER 3

METHOD

Data

The data that has been collected is mainly in subjective form, however statistical and mathematical data has also been taken into consideration. Since the nature of the topic is such that the most important data is only found in subjective form.

Research Methodology

a. Primary data collection:

Interviews from experts in relevant fields and companies audited reports & comments from auditors, form major sources of primary data.

b Secondary data collection:

Newspapers, Economic Journals, Magazines, Internet, stock broker's research reports and Television form major portion of secondary data.

Sources of Data

The major part of data is collected from secondary sources. These sources include books and periodicals, statistical abstracts, Economic Journals, case studies, online journals, stock broker's research reports and other archival records. All the above mentioned sources are qualitative in nature. There was more than one reason for selecting secondary data sources, one being that latest and up to date information was available. Secondly, the scope

of the topic was too big and going for primary data sources would have taken a lot more time, and certainly a lot more expertise which is not attainable at this level of research.

Procedure

After carefully collecting the relevant data and information about the stock valuation and stock analysis, the data has been studied in detail. From that data EIC frame work and Top–down approach to stock analysis and valuation were highlighted and applied analysis and valuation has also been clearly mentioned in the next chapter.

Feasibility of data

The proposed study is financial and technically feasible, and can be carried out successfully with access to required information. The data gathered has been properly analyzed and tabulated to reach final conclusion.

CHAPTER 4

RESULTS AND DISCUSSION

EIC framework and Top–down approach to stock Analysis and valuation

The primary motive for buying a stock is to sell it subsequently at a higher price. In many cases, dividends will be expected also. Dividends and price changes are the principal ingredients in what investors regard as return or yield.

If an investor had perfect information and insight about dividends and Stock prices over subsequent periods, he would be well on his way to great riches. But the real world of investing is full of political, economic, social, and other forces that we do not understand sufficiently to permit us to predict anything with absolute certainty.

For the security analyst, what primary influences will determine the dividend to be paid on a stock in the future and what the stock price will be in the future are the ultimate questions to be answered. A logical systematic approach to estimating future dividends and stock price is crucial.

The framework we will be using is the economic-industry-company approach, or the E-I-C framework. This approach is sometimes referred to as a "top-down" method of analysis

Economic Analysis

Whenever someone thinks of investing, he first of all needs to look at the broader economic scenario and environment of that specific country. Before investing an investor should consider the following points:(Aasmund, Eilifsen (1999)

1. The economic indicators effecting the business and investment of the country. These indicators include the macro economic indicators of the country. Along with this we looks at the trends and the tendencies of these indicator.
2. The second things that need to be looked at is the environment for investing that include the infrastructure, the regulatory environment and the investor confidence in the system.
3. The risks, involved in investing in a particular market need to be scrutinized by the prospective investor.
4. Since each market has different variables and drivers controlling the market. An investor needs to understand the dynamics of the market.

Apart from looking at the indicators alone we need to examine the variables that can and will probably affect that particular company or the security, on the average, over half the variation in a stock's price could be attributed to a market influence that affects all stock-market indexes, ' But stocks are also subject to an industry influence, over and above the influence common to all stocks.

In order to estimate stock price changes, an analyst must spend more than a little time scrutinizing forces operating in the overall economy, as well as influences peculiar industries he is concerned with. A failure to examine overall economic and industry influences is a naive error, that of assuming that individual companies follow their own private paths in a vacuum.
It is important to predict the course of the national economy because eco*nomy effect companies outlook, investor attitude and expectations and ultimately the security prices*. (Keith, Pilbeam (1998)

These are important for the security analyst or investor to know because he will be utilizing much of the output of the economists' efforts as a basis for his own opinion about the impending economic environment. In this respect, the analyst can better evaluate economic forecasts if he has at least some knowledge of alternative economic forecasting tools-not only the techniques but also their advantages and shortcomings. The 'Obviously, timing (which we consider to include both the *'what'* and 'when' issues) is of critical importance not only in a purchase decision but also in the sell decision; however, in order to ease the explanation of the relevant factors, we will restrict our discussion to the purchase question and leave it to the reader to adapt the methodology discussed in the text to the sell decision.

For example an investor purchases the stock of an automobile manufacturer that is selling near an all-time high, and shortly thereafter the automobile workers go on strike for a long period of time, the investor will surely suffer a large paper loss on his investment.

Certainly, if the investor had waited until the strike was close to being settled, other things being equal, his purchase price would have been considerably lower and his potential capital gains greatly enhanced. In analyzing the economy, a careful analyst would have considered the potential impact of an impending automobile workers' strike. (Lakonishok (1990)

However, there is yet another important reason for considering the economic environment before taking an investment action. As we have seen, research has discovered that the movement of the overall market explains approximately half the variability in stock prices. In investment jargon, this common or market effect is known as systematic ***risk.*** Furthermore, it is intuitively appealing to reason that the total market or some index of market performance is related to overall economic performance. That is, the success of the economy will ultimately include the success of the overall market. Without a positive and healthy economic environment, corporations in general will find it difficult to flourish over time, and investors' holding-period returns will suffer. This in turn will adversely affect an index of overall stock-market performance.

Industry Analysis

Investing is a business of relative changes. When the economic outlook is assessed, Along with the direction of changes in the overall market for stocks, the analyst must realize that even though industry groups and/or individual companies may find it difficult to "buck the trend," they

do not necessarily respond to the same degree. For example, it is widely assumed that heavy-goods industries fare worse in economic recessions than do consumer-goods industries. Heavy-goods industries include automobiles (and related industries such as rubber, steel, and glass) and machinery. Consumer-goods and service industries include utilities (telephone, power), food, and banks. Recessions or expansions in economic activity may translate into falling or rising stock markets with different *relative* price changes among industry groups.

For the analyst, industry analysis demands insight into (1) the key sectors or subdivisions of overall economic activity that influence particular industries, and (2) the relative strength or weakness of particular industry or other grouping under specific sets of assumptions about economic activity *(Webster's Dictionary)*. The analyst with an economic forecast that he has developed from scratch, or a set of figures that he has developed from forecasts prepared by others, is now ready to apply this information to an appropriate industry. Before demonstrating this, however, let us look at some definitions of an industry.

Webster's Dictionary defines an *industry* as "a department or branch of a craft, art, business, or manufacture." And more specifically: [a] group of productive or profit-making enterprises or organizations that have a similar technological structure of production and that produce or supply technically substitutable goods, services, or sources of income.

Key characteristics in an Industry analysis

In an industry analysis, the analyst should consider any number of key characteristics at some point. In this section we will enumerate and discuss several of these past sales and earnings performance, the permanence of the industry and the attitude of government toward the industry. (www.gslpk.com)

(1) Past Sales and Earnings

One of the most effective steps in forecasting is assessing the historical performance of the industry in question. Certainly, two factors with a central role in the ultimate success of any security investment are sales and earnings; therefore, in order to gain a perspective from which to forecast, looking at the historical performance of sales and earnings is helpful.

One important factor the analyst might uncover is that the history of the industry is very brief. This finding alone might make him more cautious about a commitment in this industry, because if the industry has not proved its ability to weather a variety of economic growth prospects, the opportunity of getting in on the ground floor might be a paramount consideration.

The historical record of the industry is crucial for yet another reason namely, the calculation of both average levels and stability of performance in both earnings, including growth-rate calculations. Even though past average or past variability may not be repeated in the future, the analyst needs to know how this industry has

reacted in the past. With knowledge and understanding of the reasons behind past behavior, he is better able to assess the relative magnitudes of performance in the future.'

(2) Permanence

Another important factor in an industry analysis is the relative permanence of the industry. Permanence is a phenomenon related to the products and technology of the industry, whereas the historical record just discussed deals with the behavior of the numbers without regard to the factors that underlie them. If the analyst feels that the need for this particular industry will vanish in an extremely short period of time, it would seem foolish to invest funds in the industry. Sometimes an industry fades from the scene because of a replacement industry that eliminates or diminishes.

(3) Attitude of Government toward the Industry

It is important for the analyst or prospective investor to consider the role government will play in the industry. Will it support it or other wise? Or will it restrain the industry’s development through restrictive Legislation and legal enforcement? For example, if the government feels that foreign competition is too severe for a particular domestic industry, it can impose restrictive import quotas and/or tariff that would tend to assist the domestic industry. Conversely if, the government feels the domestic industry is becoming too independent it can remove any existing barriers and thus aid foreign competition. Further

more government can assist selected industries through favorable tax legislation.

Applied Analysis & valuation

Economic Analysis of Pakistan market

“On the average, over half the variation in a stock's price could be attributed to a market influence that affects all stocks and stock-market indexes, or the KSE 100 index in our country. This study may prove more than enough to explain why the study of the overall economy and market is essential for the analysis of the stock.

Whenever some one thinks of investing he first of all needs to look at the broader economic scenario and environment of that specific country. It is of utmost importance that three points are looked at before investing.

1) The economic indicators reflecting the broader economic environment.
2) The behavior of the capital markets. (Stock markets)
3) And there effects on the petroleum sector.

So let us first look at the key economic indicators for Pakistan effecting the business and investment environment.

Economic indicators of Pakistan

We need to look at the three aspects while over viewing the economy.(www.ncel.com.pk)

1. The economic indicators effecting the business and investment of the country. These indicators include the macro economic indicators of the country. Along

with this we looks at the trends and the tendencies of these indicators.

2. The second thing that need to looked at is the environment for investing that include the infrastructure, the regulatory environment and the investor confidence in the system
3. The risks, involved in investing in a particular market also need to be scrutinized by the prospective investor

The economic indicators need to be studied to find out as to what direction the country is heading (only the relevant indicators are looked at in the following description).

(1) Growth and investment

The Pakistani economy has shown an impressive growth curve for the past few years in a row with real GDP growth. Industrial sector has grew the most, and a services sector comes second to it, while agriculture sector is the last one in the race. The growth performance was quite impressive and mainly emanated from the industrial sector reflecting an enhanced productive, as well as, job creating capacity of the economy. The distinct feature of the growth patterns had more to do with the relative strength of domestic factors in different areas rather than the impact of global developments.(www.sbp.org.pk)

(2) Per Capita Income

A sharp acceleration in per capita income was witnessed during the last two years in dollar terms mainly because of a stable exchange rate and higher real GDP growth. Against

an annual average rate of 1.4 percent in the 1990s, per capita income grew at an average rate of 13.9 percent per annum during the last two years (2002-04) and 12.0 percent during 2003-04. The per capita income in dollar terms increased from $ 526 in 1999-2000 to $652 in 2003-04 - an increase of 24.0 percent in the last four years. (www.ise.org)

(3) Privatization

The privatization program maintained its pace and succeeded in privatizing some high ticket items despite an inhospitable global environment. By end March 2004, Pakistan had completed or approved 139 transactions with gross proceeds of Rs 134.4 billion. Of this, an amount of Rs. 33.1 billion was received during the period July-March, 2003-04 from the sale of the Government's shareholding in OGDCL, NBP, POL, ARL, DG Khan Cement, SSGC, Thatta Cement, 51% GOP stake in HBL, Associated Cement, Rohri and 10% shares of Kurram Chemicals.(www.pcop.org)

(4) Fiscal Development

Pakistan has made considerable gain on the fiscal side. The overall budget deficit has been narrowed, the revenue deficit has almost been eliminated and a primary surplus has been maintained. Resultantly, Public debt is fast moving towards a sustainable level. Much progress has been made towards fiscal consolidation. The wide-ranging tax and tariff reforms as well as reforms in the tax administration have started paying dividends. Tax collection by the Central Board of Revenue (CBR) has picked up. As a result of prudent fiscal management over the last 5 years, the

burden of interest payments on domestic budget has declined sharply, thereby, releasing resources for development and social sector program.(www.cbr.gov.pk)

(5) Money and Credit

Pakistan's banking and financial sector is much stronger today compared to the recent past and also in comparison to other countries in the Asian Region. The State Bank of Pakistan now conducts monetary policy through market-based monetary and credit management, strong corporate governance has been introduced, the foreign exchange regime has been liberalized and the SBP's capacity for supervision and prudential regulations has been strengthened. The major challenge for the country's monetary authority is to build a robust financial system in an environment of global financial restructuring. Further reforms in the banking and financial sector over the medium term must include: promoting transparency and accountability, observance of international standards, strengthening the financial system through better financial supervision, further privatization of public sector banks as well as divesting their shares through stock exchanges to retail investors.

(6) Energy

In Pakistan, primary commercial energy supplies increased by 4.0 percent during 2002-03 compared to 1.8 percent in the pervious year reaching 47.1 million tones of oil equivalent mainly due to an increase in natural gas, hydro power and coal at rates of 1.4, 0.8 and 0.3 million tones respectively. However, the supply of oil decreased by 0.4 million tones of oil equivalent in 2002-03 due to a decline

in the import of furnace and high speed diesel oil. The cement industry has started using coal, both local, as well as, imported to replace natural gas and furnace oil. There is a need to create an environment for the improvement of the energy sector in Pakistan in order to introduce competition, so that energy can be made accessible, affordable, and reliable to the people.

During July-March 2003-04 the production of crude oil per day has decreased to 62,139 barrels, from 64,905 barrels per day during the same period of last year, showing decline of 4 percent. The overall production of crude oil has also decreased to 17.1 million barrels during July-March, 2003-04, from 17.8 million barrels during the same period last year. Sector-wise consumption of petroleum products reveals that on average, the transport sector consumed 47.6 percent of the petroleum products followed by the power sector (31.9 %), industry (12.2 %), households (3.9 %), other government (2.5 %), and agriculture (1.8 %) over the last thirteen years i.e. 1990-91 to 2002-03.

To conclude that the over all economic indicators are all point upwards and hence if they do have some kind of relation with the stock markets then we can say that the future certainly looks bright.

The Stock Markets outlook

The capital markets in Pakistan have witnessed a substantial improvement since 1999-2000 with the spectacular performance of the KSE 100 index, which crossed 5600 points in April 2004, (doubling the January 2003

level) and market capitalization increasing from Rs 555 billion ($ 9.5 billion) in January 2003 to Rs 1723.0 billion in December 2004, (an increase of 210 percent). The KSE 100 index touched an all time high of 6218.40 points. A record turnover of over a billion shares was also seen twice in the year, first on August 8, 2003 and then on April 15, 2004. The fiscal year 2003-04 has been a record year for the stock market in Pakistan, with Un-precedent growth in market activity. (www.kse.com.pk)

The land-mark performance of the stock market during the current fiscal year can be attributed to a number of positive factors including; a continuation of pro-growth macro-economic policies; a stable macroeconomic environment; strong economic growth; a stable exchange rate; a positive privatization process through the capital markets; a visible improvement in the Pakistan-India relationship; appropriate reforms initiated by the Securities and Exchange Commission of Pakistan (SEC); the availability of adequate liquidity in the market; good operating and financial results from the majority of blue chip companies and the enhancement of investor confidence, etc.

Over the past few years, the Securities & Exchange Commission of Pakistan (SEC) has taken measures to restore confidence of both foreign and domestic investors by endeavoring to ensure that the market functions in a smooth and transparent manner. The SEC has actively pursued a capital market reform program geared towards the development of a modern and efficient corporate sector and capital market, based on sound regulatory principles that

provide the impetus for high economic growth. (www.secp.gov.pk)

Out of the 15 leading stock markets in the world, the KSE share index increased by 61 percent in terms of US dollar during July-April 2003-04, surpassed only by India. The other 13 leading world stock markets recorded growths ranging from 7.0 percent (China) to 48 percent (Thailand) . It is pertinent to mention here that unlike the previous year, all the leading stock markets of the world posted positive growth in the current fiscal year, which may be an encouraging indication of the world economic recovery, which might also ultimately affect the Pakistan's stock markets positively.

Industry analysis

The second on the ladder of top down analysis is the industry analysis there are many factors that need to looked at during the industry analysis which have been previously mentioned in the literary review.
We need to look at the industry and the characteristics it has shown over the past years and is expected to show in the future

Overview of the petroleum sector

(1) Present Status of oil Sector

The consumption of petroleum products in the country during 2003-2004 was 15 million tones. The demand is expected to remain around 17 million tones per annum up to

the year 2010-11. Thereafter, it is expected to increase to around 19 million tones by the year 2017-18. The refining capacity of existing local refineries is about 12.5 million tons per annum. The deficit products import will be 5 million tons in 2003-04 while it will remain around 5-6 million tons per annum up to year 2010-11. Thereafter, it is expected to increase to a level of around 8.0 million tons per annum by the year 2017-18. (www.pso.org)

Long forecasted demand and supply of petroleum products

The long term petroleum products demand/supply scenario is indicated in the following table.

Table4-1

	(in million tones)			
	2002-2003	**2003-04**	**2010-11**	**2017-18**
Demand of Petroleum Products	17.2	15.0	17.0	19.0
Production from Local Refineries	9.4	10.0	11.3	11.8
Surplus Naphtha / Motor gasoline available for exports	0.6	0.8	0.8	0.8
Deficit of HSD and FO	8.4	5.0	6.5	8.2

In order to bridge up the above demand and supply gap and to improve the POL supply infrastructure, following incentives have been given under the Petroleum Policy/ Investment Policy 1997 to attract local and foreign investments:

i. Import parity price formula linked to Singapore Mean FOB spot price for the new oil refineries.

ii. Construction of oil pipelines/oil terminals on competitive tariff.

iii. Lower rate of duties / taxes for the equipment not manufactured locally.

iv. Continuation of the Policy of de-regulation in the lube industry.

Besides this, first year allowance at the rate of 90% of the capital expenditure for new refinery projects and 50% depreciation allowance for oil pipeline projects have also been ensured under the investment policy 1997.

(2) Deregulation of Petroleum Products

The present government has taken a step forward to build up investors' confidence through continuity of the government policies and honoring all agreements already in place in its letter and spirit.

- The President, the then Chief Executive of Pakistan while addressing the nation on 15th December 1999 announced the deregulation of the petroleum sector. This decision was taken with a view to attract foreign investment and to achieve the target of cost efficiency on one hand and quality services/competitive prices on the other hand through open market competition between the Oil Marketing Companies (OMCs). Ministry of Petroleum & Natural Resources has undertaken several reforms towards deregulation in accordance with the Government Policy.

Introduction of Environment Friendly Fuels

- Import of low sulphur (0.5% weight) HSD has been initiated effective 1st July 2002.
- Unleaded Gasoline is produced and marketed effective from July 2002.

Improvement in Customer Services at Retail Outlets

- Modernization of their retail outlets and installation of latest computerized dispensing units for accuracy of measurements.
- Setting up of mobile laboratories to check adulteration on the spot to ensure supply of quality products.

(3) Investment Opportunities

"Given expanding energy needs and limited domestic investment capacity for indigenous exploration, deregulated margins and returns were key for Pakistan to attract foreign direct investment in the oil sector."

The following investment opportunities are available in the downstream oil sector:

Oil Pipeline

Investment opportunities exist in following short distance pipeline projects:-

Table4-2

S.No.	Pipeline Project Million	Distance	Estimated Cost In Rs. Million
1	**Morgah - TaruJabba**	160 Km	1800
2	**Morgah-Kharian-Machhike**	300 Km	9000
3	**Faisalabad-Mandibahauddin -Kharian**	190 Km	6000
4	**Faisalabad-TobaTekSingh-Sahiwal**	90 Km	3000
5	**DeraGhaziKhan-Bannu-Peshawar**	430 Km	12000
6	**Port Qasim to Korangi**	23 Km	600

Oil Marketing Companies

In the Oil-marketing sector, five OMCs namely, Pakistan State Oil Company Limited (PSO), Shell Pakistan Limited (SPL), Caltex Oil (Pakistan) Limited (COPL), Attock Petroleum Limited (APL) and Total-PARCO Pakistan Limited (TPPL) are operating in Pakistan with an overall market share of 67%, 22%, 7%, 2% and 2% respectively. Three new OMCs viz PARCO-Pearl, Bosicar Pakistan Limited and Admore Gas Private Ltd. have been approved to market petroleum products. Pakistan offers good opportunity for

establishment of new OMC in view of its fast growing petroleum products market.(www.omc.gov.pk)

Government of Pakistan welcomes the establishment of new oil marketing companies in order to expand oil infrastructure and create healthy market competition in the downstream petroleum sector. By virtue of competitive oil industry, Pakistan expects additional benefits of meeting regional requirement, conservation of fuel and quality improvement.

(4) Future out look for the OMCs market

It is said that the five OMCs operating in the market are going to see a somewhat stagnation in growth of sales in the medium and long run. This is attributed to the fact that the oil demand fell to lower levels due to shift to other energy sources by the industrial units including IPP, Cement and Fertilizer companies, but the rise in the demand from retail outlets by consumers, rise in demand from SME and other industrial units (driven by overall increase in industrial activity) has nullified the effect of lower industrial demand from the traditional buyer such as IPPs and fertilizers etc.

But this does not mean that that the decline in industrial demand has effected all the OMCs because most of the effect was beared by PSO which had 85% of the share in the industrial sector.

CHAPTER 5
CONCLUSION AND RECOMMENDATIONS

Conclusion

To conclude I would like to say that stock analysis is not just a science. Analyzing stock requires more of diligence and understanding of the dynamics of each company under analysis, which is more or less of an art.

The most important factor that affects the value of a company is its earnings but it's not just earnings that can change the sentiment towards a stock (which, in turn, changes its price). Investors have developed literally hundreds of these variables, ratios and indicators. In fact no amount of analysis or valuation techniques can predict each and every event causing a change in the price of the stock.

Another thing to realize is the risk involvement. Since calculating risk would have been yet another field and also we would have digressed from scope of this thesis so risk factor has not been accounted for in this thesis.

But whatever the limitations of the above analysis the fact remains that the approach applied is more or less practical. And this approach does give us an insight on how a stock price is affected by changes in the economy and industry.

APPENDIX

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TERMS AND DEFINATIONS

IPO	Initial Public Offering
PTCL	Pakistan Telecommunication Corporation Limited
MACD	Moving Average Convergence Divergence
MPT	Modern Portfolio Theory
DCF	Discounted cash flow
EBIT	Earnings Before Interest and Tax
EPS	Earnings Per Share
E I C	Economic Industrial Company
KSE	Karachi Stock Exchange
ISE	Islamabad Stock Exchange
OGDCL	Oil And Gas Development Corporation Limited
NBP	National Bank Of Pakistan
SEC	Securities & Exchange Commission of Pakistan
HSD	High Speed Diesel
OMC	Oil Marketing Companies
PSO	Pakistan State Oil Company Limited
SPL	Shell Pakistan Limited
COPL	Caltex Oil Pakistan Limited
APL	Attock Petroleum Limited
TPPL	Total-PARCO Pakistan Limited