

CHAPTER TWO

Review of Literature

Table of Contents

2.1	Introduction.....	19
2.2	Origin & Journey of The Term ‘Value’	19
2.2.1	The Greek Period	20
2.2.2	Medieval Era	20
2.2.3	Mercantilism and Physiocracy & Psychological Thought.....	21
2.2.4	Classical Thought.....	23
2.2.5	Neoclassical Thought.....	24
2.2.6	Equilibrium and Neoclassical Thought.....	25
2.2.7	Monetary price and Neoclassical Thought	25
2.3	Valuation of Equity Shares	27
2.3.1	Technical Analysis.....	27
2.3.2	Fundamental Analysis.....	28
2.4	Economy Analysis	29
2.4.1	Empirical Studies Assessing Causal Relationship or Impact of Microeconomic Variable on Various Indices.....	29
2.5	Industry Analysis	36
2.5.1	Empirical Studies in The Field of Industry Analysis.....	36
2.5.2	Information Technology Industry:.....	38
2.5.3	Automobile Industry	39
2.6	Company Analysis	40
2.6.1	Valuation Without Using Established Methods.....	40
2.6.2	Valuation Through Well-Established Valuation Methods.....	46
2.7	Empirical Studies Comparing DDM, DCF, RIV & Relative Valuation Methods.....	70
2.8	Empirical Studies on Fundamental Analysis Using E-I-C Framework.	74
2.9	Research Gap	77
	Works Cited.....	78

Chapter Two: Review of Literature

2.1 Introduction

The research project titled ‘Valuation Using E-I-C Framework: An Analytical Study of Select Listed Indian Companies’ investigates the origin, evolution and advancement of firm valuation practices in India with the objective of historicizing the concept of ‘value’ and its progression towards the concept of ‘firm value’. Additionally, the research seeks to propose and analyse various valuation models in order to identify their effectiveness laying the stress on the theoretical foundation and evolution of different valuation models. The first section of this chapter delves into the origins of the term ‘value’, also its historiography in the field of firm valuation, signifying its pertinence in assessing the worth of companies. The second section of the chapter examines and critically evaluates valuation models for their practical applicability and efficacy in determining firm value. The final section of this chapter concludes with the identification of the research problem, based on a detailed discussion and analysis of the existing literature in the field laying the foundation for the subsequent stages of the research.

2.2 Origin & Journey of the Term ‘Value’

यथा महान्ति भूतानि भूतेषु व्यपश्रियाणि।
नैव तेषु अवभूयन्ते एवमेव ईक्षेत आत्मानम्॥

Brihadaranyaka Upanishad, Chapter 1, Section 4, Verse 10

As large beings, though present in small ones, are not perceived by them, so the Self, though present in all beings, is not perceived by them, except by the seer of subtle insight.

The above sloka teaches that the true value (or essence) of something is not always apparent and can only be understood by those with the insight to perceive deeper reality.

संपत्तौ च विपत्तौ च महतामेकरूपता।

उदये सविता रक्तः रक्तश्चास्तमये तथा ॥

Chanakya Niti, Chapter 3, Verse 6

Great remains the same in both prosperity and adversity, just as the sun appears red at both sunrise and sunset. Just like the sun remains the same in its essence, a true valuer must look beyond fluctuations to determine the real value by analyzing the economic, industry, and company factors impartially.

The term ‘value’ originated from the old French word ‘Valoir’, meaning ‘be worth,’ can further be traced back to the Latin word ‘Valere’. Different disciplines have varying perspectives on the term ‘value’. In dictionaries, value is defined as something that deserves, its importance, worth, or usefulness. In mathematics, value refers to the numerical amount represented by an algebraic term, a magnitude, quantity, or number. In music, value indicates the relative duration of a sound denoted by a note. In commerce, value refers to estimating the monetary worth of something. Throughout history, there have been various names assigned different cultures and countries have assigned various names to represent the worth of something in different cultures and countries, offering diverse thoughts and opinions influencing the determination of value. At the outset, an attempt has been made to historicise the concept of ‘value’ through various ages.

2.2.1 The Greek Period

In the ancient Greece around 4th century BC, the term value was defined as ‘fair price for work performed’ or ‘fair exchange value’. According to Plato (427 BC-347 BC) value is price paid to craftsman for his work done (Jowett), while, Aristotle believed that value is exchange value which is derived by exchanging exactly what people had at the beginning, and to be neither losers nor gainers (Sewall). Later, in the Greco-Roman era there was no significant contribution to the concept of Value. However, roman catholic church contributed to definition of value during middle age.

2.2.2 Medieval Era

During the Middle Ages, the Roman Catholic Church and theologians held the belief that the true value of goods was determined by a ‘just price’. This concept, influenced by Aristotle’s idea of exchange value at a corrective price, aimed to ensure that no party gained more than what they gave in a transaction. However, as trade flourished during this period, it became increasingly challenging to determine an exact just price. Consequently, theologians allowed some flexibility in price determination. Various perspectives on the relationship between price and value lingered

highlighting the fluidity in the value concept: Thomas Aquinas argued that price and value could be distinct concepts, while St. Bernard suggested that price, individual utility, and general utility determined value. St. Anthony viewed value as encompassing the general usefulness of a good in satisfying wants, its scarcity, and its capacity to please individuals., John Nider, in cases where determining the exact just price (value) was not feasible, proposed the acceptance of a probable value.

The Roman catholic church or ‘theologians’ considered the true value was ‘just price’ which must be such that nobody can gain more than he gives from the exchange of goods resembling Aristotle’s exchange value at corrective price. However, during the Middle Ages, the trade was in uptrend which made it less possible to determine exact just price, so theologians were bound to allow some freedom in determining the price. Thinkers believed that price and value can be different (Thomas Aquinas), price, individual utility and general utility determines value (St. Bernard), in broader perspective, general usefulness of a good in satisfying wants, scarcity of the goods and capacity of goods pleasing to the individual, as the determinants of value (St. Anthony) and whenever it may not be possible to discover exact just price (value), one will have to satisfy with a probable value (John Nider) (Sewall, 1901). Thus, in middle age, initially ‘just price’ was considered as value but with an increase in trade and competition ‘utility’ was considered as value of commodity. All these transformations gave birth to mercantilism, where value is determined through the forces of supply and demand.

2.2.3 Mercantilism and Physiocracy & Psychological Thought

These evolving notions of value during the Middle Ages eventually gave rise to mercantilism, where value was determined by the forces of supply and demand, influenced by increased trade and competition. The mercantilist school of thought, dominant in Europe from the 16th to the 18th century, viewed the ‘actual market price’ as the value of commodities, determined by the forces of supply and demand and their utility (E.K. Hunt). Initially, mercantilists associated value with the concept of a fair or just price (Sabba da Castiglioni, Buollinsegni, Sig. Scaccia (Sewall) . However, thinkers like Grotius connected value to the common price rather than just price. Others, such as Puffendorf and Giovanni Peri, defined value as the esteem held for a commodity due to its capacity to satisfy human needs or utility. The idea emerged that the value of goods relative to one another

depended on their subjective utilities or their capacity to bring happiness **Nicholas Barbon, John Locke, John Law**, (Sewall) (Vaughn). Geminiano Montanari stated that value or exchange value depended on subjective utility. Mercantilists generally believed that value was derived from utility (Bernardo Davanzati, (Ernesto Screpanti) (Sewall). Concurrently, during the mercantilist era, Physiocracy emerged in France, with its proponents emphasizing land as the source of all value. William Petty and Richard Cantillon discussed the distinction between intrinsic, natural value (Ernesto Screpanti) and market value, with Cantillon attributing value to land. Francois Quesnay, leader of Physiocrats, focused on the value of agricultural products, considering agriculture as the sole creator of wealth. Le Trosne differentiated between value at first hand and subsequent value, considering utility, costs, supply, and competition as determinants of value. Some Physiocrats, including Turgot, Galiani, and Condillac, studied value from a psychological perspective, emphasizing desire and bargaining power. The concept of value for Psychological Thought was derived from utility. Ultimately, classical thought emerged without a universally accepted formula for value following the eras of mercantilism and Physiocracy.

‘The Physiocrats’ known as ‘Economists’ put in efforts to explain why land was the source of all value. **William Petty (1623-1687)** completely dumped the subjective theory of value; he believed in the concept of ‘natural value’ which is dependent upon factors of cost of production-land & labor (Ernesto Screpanti). **Richard Cantillon (1680-1734)** also gave the distinction between intrinsic value & market value and believed that things do not always exchange in the market at their intrinsic value. However, intrinsic value influences the market value(Sewall). Being French economists, he also preferred ‘land’ as determinant of intrinsic value while other group of economists believed in ‘labor’ as the determinant (Ernesto Screpanti). Thus, Richard Cantillon believed land causes value reiterating that the agriculture derives true value. **Le Trosne (1728–1780)**, follower of Quesnay, differentiated between value at first hand and subsequent value. **Francois Quesnay (1694-1774)**, leader of Physiocrats, discussed value-in use and value-in exchange, both from the point of view of production as well as exchange. According to him, ‘only agriculture’ creates wealth whereas all other sectors are just reproducers of the agricultural products. So, the measure of the wealth is the value of the sale of the product of the soil at first hand. While the value of exchange, i.e., market price is the result of the competition among the buyer or seller of the good (Sewall). The second is that which is added to the product by subsequent

labor. He considered utility, indispensable costs, state of supply and competition of consumers & products offered for sale as important determinants of value, underpinning the significance of ‘land’, labor’ being a part of agriculture as determinants of value (Sewall).

2.2.4 Classical Thought

The rise of classical economics in late 18th century Britain marked a departure from the prevailing mercantilist theory. Adam Smith, in his seminal work ‘The Wealth of Nations,’ argued that the combination of capital, land, and labor in the production process gives rise to value or exchange value. (E.K. Hunt), (Mooya). According to Smith, the price or exchange value is determined by the summation of wages, profits, and rents. David Ricardo, a critic of Smith’s theory, proposed the labor theory of value, excluding rents from price calculations. Ricardo believed that value is determined by labor and profit alone. (Ernesto Screpanti) Karl Marx further developed the labor theory of value, emphasizing that the value of a commodity is determined by the average labor hours spent on its production and the wages paid to labor. Thomas Robert Malthus, while teaching Smith’s ‘Wealth of Nations,’ acknowledged Smith’s theory of value as labor commanded. However, Ricardo’s labor theory of value faced immediate criticism, with opponents arguing that value is fundamentally exchange value and depends on the costs of production, including labor payment. (Prychitko). The true value is ‘exchange value’ and not ‘absolute value’ (**Robert Torrens**), which is just the quantitative relationship between two goods which are to be exchanged (**Samuel Bailey**) and depend upon the conditions both of supply and of demand (**Nassau William Senior**, (Ernesto Screpanti). Anti-Ricardian economists rejected the labor theory of value, with William Forster Lloyd proposing the concept of diminishing marginal utility as a determinant of value. John Stuart Mill argued that all factors of production contribute to the creation of value, not just labor. In the era of classical economics, economists focused on exchange value determined by production costs, with varying emphasis on labor (Baggins). John Stuart Mill’s thoughts had effect in developing Alfred Marshal’s anti-Ricardian thoughts (vivo). However, the rise of marginalists in the neoclassical era replaced the cost-of-production theory of value with the theory of marginal utility. Neoclassical economists held different perspectives on value, with some emphasizing marginal utility theory, others highlighting the equilibrium intersection of demand and supply, and a third group asserting that monetary price determines value.

2.2.5 Neoclassical Thought

Neoclassical thought emerged in the early 1900s and has persisted in the present day, introducing various definitions of value. John Bates Clark posited that value is determined by utility (Dr. Chung Hwan Kwak). The Marginal Revolution, initiated by economists such as Stanley Jevons, Carl Menger, and Leon Walras, independently developed the principle of marginal utility. Their theory explained that the value or utility of each additional or marginal unit diminishes. Consequently, value is entirely dependent on marginal utility (Grampp), and the interaction of supply and demand (Reisman). This perspective emphasizes that both parties in an exchange gain because they receive something more valuable to them in return (Beggins). Carl Menger made significant contributions to the subjective theory of value. Knut Wicksell further advanced the marginal approach to analyzing value and distribution without making assumptions about a free or perfectly competitive economy.

Eugen von Böhm-Bawerk stressed the need to supplement the universal law of marginal utility with provisions specifically related to the value of goods. Friedrich von Wieser argued that cost depends on subjective or psychological value and introduced the concept of opportunity cost, whereby the value of an alternative foregone opportunity determines cost. This shift from the classical emphasis on production costs to the neoclassical emphasis on marginal utility marked a significant change (Barber).. However, the neoclassical economists did not fully consider the diminishing utility of consuming a product in one sitting, leading to the recognition that in the long run, it is the cost of production that plays a vital role in determining the value of goods. Friedrich von Wieser argued that the Cost depends on its subjective value or psychological value and gave concept of ‘alternative cost’ also known as ‘opportunity cost’ and argued that cost depends on the value of an alternative opportunity lost.

Leon Walras made notable contributions to the theory of general equilibrium, laying the foundation for thinking about perfectly competitive markets. Although his equilibrium theory contained unrealistic assumptions, it provided the groundwork for neoclassical economists to develop the concept of market value and derive price theory from the equilibrium between supply and demand.

2.2.6 Equilibrium and Neoclassical Thought

The neoclassical thought in economics emerged through the combination of the Marginal Revolution and a scientific approach to analyzing phenomena. In this framework, the cost of production represents the supply side, while marginal utility indicates the demand side of a commodity. Alfred Marshall, considered the father of neoclassical thought, recognized that both supply and demand determine value (Shailesh). Influenced by John Stuart Mill, Marshall believed that all factors of production determine the cost of production, which he referred to as real cost. Marshall integrated the concepts of supply and demand into his own formulation of the theory of demand to explain the theory of equilibrium, which in turn explains value. According to Marshall, the intersection of the demand curve and supply curve at equilibrium represents the value of a good (Ernesto Screpanti). Several Italian economists, including Enrico Barone, Vilfredo Pareto, and Maffeo Pantaleoni, also referred to general equilibrium in their determination of value (Krishnan). (Ernesto Screpanti). Pantaleoni, known as 'the Marshall of Italy,' applied Marshall's marginalist approach to determine the value of goods without explicitly relying on the concepts of supply and demand (Ernesto Screpanti).

Gustav Cassel developed a unique general-equilibrium model that diverged from the marginal utility concept, using the demand function as the primary concept and breaking the link between utility functions and demand functions. Irving Fisher independently reinvented a general equilibrium approach that others had already developed but expanded on Walras by constructing a hydraulic mechanism to replicate the calculation of general equilibrium (W.Diamond). Piero Sraffa, unlike other Italian economists of his time, believed that the value of a commodity is determined by the quantity of labor directly or indirectly involved in its production (wood). Therefore, Sraffa continued to advocate for labor as a determinant of value.

2.2.7 Monetary price and Neoclassical Thought

Ludwig von Mises, a prominent Austrian economist during his era, advocated for laissez-faire economics and argued that value depends on the individual's eagerness or willingness to pay, which is reflected in the monetary price they are willing to offer (Butler). According to Mises, price itself represents value. On the other hand, Hyman Minsky proposed that value is determined by the sum of all benefits derived from owning an asset, including implicit advantages, minus the

associated costs of holding that asset (Sergery Beshenov). Wassily Leontief, in contrast, posited that the value of output is contingent upon the quantity and value of the inputs used in its production. Thus, various neoclassical thinkers held diverse perspectives on value, extending beyond the notions of cost of production or utility.

Drawing upon the historical perspectives on value, it can be summarized that in ancient Greece, the concept of ‘fair wages’ or ‘fair exchange price’ was considered determinative of true value. During the Middle Ages, the notion of a ‘just price’ emerged, considering the efforts, expenses, and risks undertaken by individuals. The mercantilist school of thought associated value with the market price, viewing it as an indicator of ‘intrinsic value’ or ‘real value’ determined by the intersection of demand and supply. Physiocracy, which coexisted with mercantilism, offered differing views on value, with some Physiocrats emphasizing land as the primary determinant while others, known as psychologists, focusing on utility. Classical economists attributed value to the factors of production, including capital, land, and labor, although some placed greater emphasis on land and labor. Neoclassical economists recognized the significance of all factors of production—land, labor, capital, and rent—in determining value. Within neoclassical thought, three perspectives prevailed for determining value: marginal utility, equilibrium, and monetary price.

Thus, the ‘value’ of ‘intrinsic value’ indicates how much we can pay for the commodity while buying it or how much can we pay for the security while investing into it. Thus, knowing value can help us in taking correct investment decisions and one does not end up paying more or less than required. But for the purpose of buying or investing the saving is prerequisite.

Socio economic system across the globe propagates savings for the future sustainability and survival and these savings need to be converted into investment. The severe competition in business world creates need for merger or acquisition by other companies where the calculation of ‘true worth’ or ‘value’ of the business enterprise being merged or acquired is required. Various business valuation methods: 1) market capitalisation, 2) Times Revenue Method 3) Earning multiplier, 4) Discounted cashflow, 5) book value, 6) liquidation value is used by valuer for business valuation. However, the individuals cannot by the whole business so, they can invest in equity shares of the company. An Investor may feel confused while choosing the security/stock for

investing into it because investor can know the market price from stock market, paying which they buy share, but they do not know intrinsic value of share. The 'Real worth' or 'Intrinsic value' of equity can be known by carrying out valuation. Here, valuation is a process to calculate the Real worth or value of commodity or stock.

2.3 Valuation of Equity Shares

Value of an asset or a security can be determined by carrying out the valuation process. There are two popular approaches available for carrying out valuation processes for determining the intrinsic value of the firm -technical analysis and fundamental analysis. The technical analyst concentrates on the study of market actions and trends, while the fundamental analyst studies all the possible factors affecting market prices (Murphy, 1999). Though both the approaches work on the same objective of predicting the future price, the fundamentals analysis studies the causes of market movement, while the technical analysis studies the effects of the same (Murphy, 1999).

2.3.1 Technical Analysis

Technical analysis has its origin in the theories recommended by Charles Dow, the founder of The Wall Street Journal. Technical analysis is the study of Market Actions, in terms of price, volume, and open interest, principally with the help of Charts, for predicting future price trends (Murphy, 1999). Technical analysis uses a wide range of methods for transforming historical prices into projections. In the late 1800s, technical analysis methods principally related to creating charts following the 'book method' (Dow, 1901). Technical analysis is a tool and technique which gives a framework for guiding investment management decisions through the supply and demand methodology to arrive at market prices by assuming that the supply and demand of traded securities have influence on their current market prices (Scott, Carr, & Cremonie, 2016).

Won et al. (Won, Manzur, & Chew, 2003) noted that the member firms of Singapore Stock can earn extraordinary profits by applying technical analysis. Similarly, (Brock, Lakonishok, & LeBaron, 1992), (Rodríguez, Sosvilla, & Andrada, 2001) strongly supported the profitability of technical trading rules. While (Pandya H. , 2013) noted that the technical analysis is effective in correctly predicting prices for the selected companies of IT sector. Further, (Lo, Mamaysky, & Wang, 2000) observed that numerous technical indicators do supply incremental information and

having some practical value to a large number of U.S. stocks and Dimitrios Vasiliou, et al. (2006) expressed strong support for most popular trading rules - Moving Averages and MACD Indicator of technical strategies while testing it for Athens General Index (Vasiliou, Eriotis, & Papathanasiou, 2006).

There exist debates about technical analysis for its use of past trends to predict the future as critics argue that the prices can tell us where we were, but it cannot guide us regarding where we will be in the future (Murphy, 1999). In order that the exclusive dependency on past prices for predicting future prices can be reduced for accurate prediction, the concept of fundamental analysis approach and hybrid approach emerged.

2.3.2 Fundamental Analysis

First, in 1934, Graham and Dodd in seminal text ‘Security Analysis’ recognized the significance of fundamental analysis while valuing the stock for investment purpose (Graham & Dodd, security Analysis). valuation is treated as the ‘heart of finance’ (Damodaran, 2006). Fundamental analysis is an approach to determine ‘what ought to be price’ or ‘intrinsic value’ of the particular security, with the help of analyzing various macroeconomic and microeconomic factors (McKeen & Schmidt, 2023). An intrinsic value is that value, which is justified by the facts, e.g. assets, earnings, dividends, definite prospects, including the factor of management’ of the company (Graham & Dodd, security Analysis). Thus, fundamental analysis is aimed at determining the value of corporate securities by a careful examination of key value-drivers, such as earnings, risk, growth, and competitive position (Lev & Thiagarajan, 1993). valuation shares presume that the market price of a share can be different from its intrinsic value (Pinto, Henry, Robinson, Stowe, & Rath, 2010). ‘Market prices for stocks fluctuate at great amplitudes around intrinsic value but, over the long term, intrinsic value is virtually always reflected at some point in market price (Buffett).’ Profits are made by purchasing the mispriced /undervalued security and then waiting for the market to rectify ‘the incorrect valuation’. Thus, the aim of fundamental analysis is to identify mispriced securities through valuation (Kothari, 2001).

Further, accurate valuation involves considering company, economy, and industry factors for firm value because the value of company is affected by economy as well as industry related factors also.

If all the variables considered are taken together, its known as Economy-Industry-Company framework.

2.4 Economy Analysis

The first pillar of E-I-C framework is Economic analysis. Many studies have made and attempt to find the impact of many microeconomic factors on stock prices. The association between macroeconomic variables and stock prices has catch attention from economists, security analysts, investors, practitioners, and policymakers (Kwon & Shin, 1999). Many studies have made and attempt to find the impact of such microeconomic factors on stock prices. The following are some of the studies conducted to examine the impact of such variables on stock return.

2.4.1 Empirical Studies Assessing Causal Relationship or Impact of Microeconomic Variable on Various Indices.

Fama's study assessed the relationship between inflation and stock return running cross correlation and regression tests for the period 1953-1977 and observed that inflation negatively affects stock returns (Fama, 1981). Dr. Ashoka M.L. & Hamid Reza Keihani's study examines macroeconomic variables' impact on Nifty 50 index from 2010 to 2020, observed that inflation rate has a negative, while oil price change rate and GDP growth rate, have a positive impact on Nifty 50 (M.L. & Keihani, 2021).

Darrat and Brocato's study (1994) explored the impact of macroeconomic factors on U.S. stock market stock pricing applying multivariate vector autoregressive analysis & indirect causality tests. They found the market inefficient for federal budget deficit, term structure, and risk premium variables, but efficient for industrial production, inflation, and base money. (Darrat & Brocato, 1994).

Bhattacharya and Mukherjee (2002) studied the relationship between stock prices and five macroeconomic variables in India applying unit-root tests, cointegration and the long-run Granger non-causality test and using monthly data for from 1992-93 to 2000-01. They found no causal relationship between stock prices and money supply, national income, interest rate. However, the

index of industrial production and inflation significantly impacts stock prices (Bhattacharya & Mukherjee, 2002).

Dharmendra Singh's study examined the causal relationship between BSE SENSEX and three macroeconomic variables: wholesale price index (WPI), index of industrial production (IIP), and exchange rate (Rs/\$). study used Monthly data from April,1995 to March 2009 and applied correlation, unit root stationarity tests and Granger causality tests. Results showed IIP has bilateral causality with BSE SENSEX, while WPI has unilateral causality. The study concluded that the Indian stock market gains informational efficiency for exchange rate and inflation (Singh D. , 2010).

Kumar (2011) studied the causal relationship between macroeconomic variables and stock prices in India. They conducted unit-root tests, cointegration, and Granger causality tests on the Nifty Index and six macroeconomic variables: real effective economic rate (REER), foreign exchange reserve (FER), and balance of trade (BOT), foreign direct investment (FDI), index of industrial production (IIP), wholesale price index (WPI) using monthly data from 1st April 2006 to 31st March 2010. Results showed co-integration between Nifty and only one variable, the wholesale price index (WPI). No casual relation was found as per Granger causality test (Kumar, 2011).

Fidlizan Muhammad et al. (2012) analyzed 4 economic variables'-gross domestic product, inflation (CPI), unemployment rate and loan rate-impact on automobile sales in five ASEAN countries namely Malaysia, Singapore, Thailand, Philippines and Thailand. They used annual data from 1996 to 2010 & applied panel error-correction model. study concluded that the variables have long term correlation with car sales (Muhammad, Hussin, & Razak, 2012). Similarly, Johan (2020) examined the determinants of car sales in ASEAN countries-Indonesia, Thailand, Malaysia, Singapore, and Vietnam, using data of 2005 to 2016 and multilinear regression. Results showed that the gross domestic product per capita, inflation, interest rate, and the foreign exchange rate significantly affected car sales in five ASEAN countries but the growth of GDP per capita does not affect car sales (Johan, 2020).

Joshi and Giri (2015) examined the impact of macroeconomic variables on stock market returns in India. index of industrial production, fii, gold prices, treasury bill rates, wpi, crude oil price and

real effective exchange rate were taken as independent variable and CNX Nifty was taken as dependent variable. They used monthly data from April 2004-July 2015 and applied Ng-Perron unit root tests, ARDL bounds test, and VECM to test short and long-run dynamic relationships. The results confirmed a long run co-integrating relationship between macroeconomic variables and stock prices in India (Giri & Pooja, 2017)

Patra & Rao (2017) examined the relationship between India's automobile sales, fuel prices, lending rate, and GDP per capita over 27 years from 1990 to 2016 applying Johansen Cointegration Test and the Error-correction Model (ECM). They found that GDP positively impacts automobile sales, while petroleum prices and interest rates negatively affect sales (Patra & Rao, 2017).

Prof. Swami Prasad Saxena and Dr. Sonam Bhadauriya (2018) aimed to identify causal interactions between NSE returns and macroeconomic variables. They identified 14 key macroeconomic variables, including gross domestic product, index of industrial production, wholesale price index, balance of payments, foreign exchange reserves, foreign exchange rate, repo rate, treasury bills rate, prime lending rate, foreign institutional investments, trading volume, market capitalization, crude oil prices and gold prices. The Granger causality test identified three causal relationships: stock market returns granger cause to BOP, repo rate granger cause to RPR, and MCP granger cause to stock market returns (Saxena & Bhadauriya, 2018).

Garg & Kalra's study period was 1991 to 2017, they applied Pearson correlation and found a positive relationship between SENSEX and exchange rates, inflation, gold prices, foreign exchange rates, and GDP. The unemployment rate showed a negative relationship with SENSEX (Garg & Kalra, 2018).

Thapa and Choudhury's study examined the relationship between macroeconomic factors and the automobile industry applying Granger causality. They found that the gross domestic savings significantly and positively impacts automobile sales, while lending-rate, unemployment, and fuel and power prices negatively affect sales (Thapa & Choudhury, 2018).

Anandaraj Saha & Satabdee Banerjee (2019) studied the connection between macroeconomic variables and Stock Market from 1988 to 2016. Pearson's Correlation Co-efficient, Johansen Cointegration test, Vector Error Correction model, Impulse Response Function test, Augmented Dickey-Fuller and Philip-Perron Unit Root tests were conducted. They found causal long-run and dynamic short-run associations, but individual variables did not improve the market in the long-run or short-run (Saha & Banerjee, 2019).

Gopinathan and Durai's 2019 study examined the long-run relationship between BSE Sensex and macroeconomic variables like index of industrial production, wholesale price index, money & exchange rate taking monthly data from April 1994 to July 2018. The standard cointegration tests observed no relationship between the variables but wavelet coherency model observed long-run, nonlinear and time-varying relationship exists (Gopinathan & Durai, 2019).

Krishna Gadasandula's 2019 study examined the relationship between Nifty and four macroeconomic variables-GDP, inflation, exchange rate and bank rate, using quarterly data from March 2000 to December 2017 and applying Johansen's co-integration approach and Granger and Geweke causality tests. Results revealed no bidirectional causality (Gadasandula, 2019).

Keswani & Wadhwa (2019) examined the impact of five macroeconomic factors on NSE and BSE performance using monthly data for 2006-2016 and applying the ADF, correlation, multiple regression and granger causality test. Results showed a strong positive relationship between disposable income, government policies, exchange rate, and share price, while interest and inflation rates had an inverse relationship with share price (Keswani & Wadhwa, 2019).

Roy's study found the long-run equilibrium relationship between stock prices and macroeconomic variables, GDP, FDI, import, and export, using co-integration and causality techniques. (Roy, 2020).

Zahariah Mohd Zain (2020) conducted the study on the data for from 1950 to 2016 by applying ordinary least square method along with multiple regression models. The study revealed that the impact of GDP on car sales in Proton is positive while inflation, and unemployment have an inverse effect (Zain, Rahim, Thaheer, & Samsudin, 2020).

Naz and Siddiqui's study examined the causal relationship between Pakistan's automobile stock returns, stock prices, sensitive price indicator, interest rate, and exchange rate using a VAR econometric model and Granger causality test. Results showed a causal relationship between stock prices and interest rate returns exists (Naz & Siddiqui, 2020).

Ruwanga Wijesooriya (2021) studied the causal relations between four macroeconomic variables in Sri Lanka: nominal exchange rate, total imports, 3-months T-Bill rate, wholesale price index, and All Share Price Index. He applied correlation analysis, unit root test, and Granger causality test on monthly data from January 2007 to December 2017. Results showed bidirectional causality between total imports and All Share Price Index (ASPI) variables, while two unidirectional causal relations existed between All Share Price Index (ASPI) and exchange rate and 3-months T-Bill rate.

Table 2. 1: Summary of Macroeconomic Variables Studied by Various Researchers

V a r i a b l e s	A u t h o r s					
	GDP	GDP Growth Rate	Inflation	Interest Rate	Exchang e Rate	
Fama (1981)	0	0	1	0	0	
Ali F. Darrat & Joe Brocato(1994)	0	0	1	0	0	
Bhattacharya & Mukherjee (2002)	0	0	1	1	0	
Agrawalla & Tuteja (2008)	0	0	1	0	1	
Dharmendra Singh(2010)	0	0	1	0	0	
Ashish Kumar(2011)	1	0	1	0	0	
Fidlizan Muhammad at el. (2012)	0	0	1	0	1	
Pooja Joshi & A.K.Giri (2015)	0	1	0	0	1	
Giri A. K. & Joshi Pooja(2017)	0	0	0	0	0	
Patra & Rao, 2017).	1	0	1	0	1	
Saxena & Bhadauriya (2018)	1	0	1	0	1	
Garg & Kalra,(2018).	0	0	0	0	0	
Thapa & Choudhury(2018)	0	0	0	0	0	
(Saha & Banerjee, 2019)	0	0	1	0	1	
(Gopinathan & Durai, 2019).	1	0	1	0	1	
(Gadasandula, 2019).	0	0	1	1	1	
(Keswani & Wadhwa, 2019).	1	0	0	0	0	
Subrata Roy(2020)	1	0	1	1	0	
Suwinto Johan(2020)	1	0	1	0	0	
Zahariah Mohd Zain at el. (2020)	0	0	0	1	1	
Naz & Siddiqui, 2020)	0	0	1	0	1	
(Wijesooriya, 2021).	1	0	1	0	0	
(M.L. & Keihani, 2021).	8	1	1	4	1	2
Total no. of times the variable studied						

Foreign Exchange Reserve	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Balance Of Trade	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
FDI	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
Federal Budget Deficit	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Term Structure	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Risk Premium	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
IIP	0	1	1	1	1	1	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	8
Base Money/ Money Supply	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4
National Income	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Credit To Private Sector	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Real Effective Economic Rate	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Unemployment Rate	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	3
Loan Rate	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Gold Prices	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Treasury Bill Rate	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3
Crude Oil Prices	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	5

Bop	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Repo	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Prime Lending Rate	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	3
FII	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Trading Volume	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Market Capitalisation	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Gross Domestic Saving	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Prices to Fuel & Power	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Bank Rate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Import & Export	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Imports	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Disposable Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Government Policies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
GDP Per Capita	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1

Above listed 23 studies are in the field of economic analysis. These studies have tried to examine the impact of various macroeconomic factors on market prices. It is observed that different authors have studied different factors. The most studied macroeconomic factors are Gross Domestic Product (GDP), wholesale price index (WPI), Index of industrial production (IIP), Exchange rate, crude oil prices. Regression analysis is found to be widely used statistically for investigating the influence of macroeconomic variables on share price movements.

2.5 Industry Analysis

The second pillar of E-I-C analysis is industry analysis which is an appraisal tool employed by businesses and analysts to become aware of the industry's competitive position. It helps in understanding the demand-supply statistics of industry, degree of competition within the industry, level competition of the industry with other emerging industries, future outlooks of the industry and the impact of external factors on the industry. Michel E Porter's 5 Forces Model is the most popular & widely used tool for industry analysis. Porter identified five competing forces in his 1979 Harvard Business Review article: threat of entrance, supplier and buyer negotiating power, substitute threat, buyer bargaining power, and rivalry among current rivals. These factors highlight the attractiveness of a sector and aid investors in foreseeing structural changes, which helps them make informed investment decisions (Porter, 2008).

2.5.1 Empirical Studies in The Field of Industry Analysis

Porter identified five competing forces in his 1979 Harvard Business Review article: threat of entrance, supplier and buyer negotiating power, substitute threat, buyer bargaining power, and rivalry among current rivals. These factors highlight the attractiveness of an industry and aid investors in foreseeing structural changes, which helps them make informed investment decisions (Porter, 2008). Ajit Prasad (2011) analyzed the global airline industry using Michel E Porter's 5 Forces Model, adding the 6th factor 'force of the complementors' suggested by Mr. Andrew Grove, the then CEO of Intel in 1996. He identified buyers as business travelers and vacationers, suppliers as air-traffic control, substitutes as private jets or trains, new entrants as firms entering the industry, airlines like British Airways, Lufthansa, and United competing on their differentiating factors, and complementors as government policies or terrorist groups (Prasad, 2011). Similarly, Mugo (2020) found Porter's five forces framework significantly impacts Kenya's telecommunication industry, highlighting threats from new entrants, high bargaining power from buyers, customer loyalty, product differentiation, process innovation, and substitutes affecting profitability (Mugo, 2020). Whereas PEST analysis was used by Abdullah and Shamsheer (2011) to examine the pharmaceutical industry in Bangladesh. They found increased investment from multinational producers as well as support from demography, economic conditions, and government policies. To comply with Bangladesh's national drug legislation, however, manufacturers must adhere to extremely tight requirements. In order to establish itself in the international pharmaceutical market, Bangladesh

should take advantage of the 11-year window between 2005 and 2016 with caution and smart preparation (Abdullah & Shamsher, 2011). M. Prasanna et al. Michael porter's five forces analysis of Indian IT industry revealed that competitive rivalry and the bargaining power of buyer is very high (+5), while the bargaining power of suppliers, the threat of Substitute is extremely Low (-4) and the threat of New Entrant is extremely low (-2). Further, HHI (Herfindahl Hirschman Index) indicates perfect competition is prevailing in Indian IT industry. (M. Prasanna, Mr. Niranjan, & Snigdhabiyani, 2014)

On the other hand, the use of SWOT analysis in the Netherlands' healthcare industry was examined by Jeroen van Wijngaarden et al. (2012) using four case studies. They discovered that SWOT analysis is not appropriate for strategic analysis because it is often applied to strategy rather than performance analysis. Instead, they proposed an alternative SWOT analysis tool for the health care sector grounded on three pillars: stakeholder expectations, resources, and contextual developments (Wijngaarden, Scholten, & Wijk, 2012). However, Shabanova et al. (2015) examined the competitive advantages of the Russian supermarket 'Perekrestok' using PEST-analysis as well as SWOT analysis. They discovered that economic and social factors were important determinants of purchasing power. The external environment contains threats and opportunities for supermarkets' strategic plans. and the weaknesses were low sales share and insufficient pricing flexibility. Marina Gregoric (2014) used PESTEL analysis to investigate the tourist destinations of Croatia and Qatar. She discovered that Croatia has the potential to attract business travelers, but she emphasized the necessity for infrastructure regulation and political and economic stability to foster a favorable reputation. She added that Qatar is already known as a destination for business travelers, efforts should be made to promote sociocultural advancement, long-term development, and the preservation of the country's cultural and natural assets (Gregoric, 2014).

The above studies are indicative of industry analysis of different industries from all over the globe. Widely used methods for industry analysis in above stated studies are Competitive Forces Model (Porter's 5 Forces), Broad Factors Analysis (PEST Analysis) and SWOT Analysis. It is to be noted, industry analysis is carried out using the suitable method as per need & convenience and there is no universally accepted method for industry analysis.

The purpose of the present study is to suggest the key variables which a common investor should track for taking a well-informed investment decision. In addition to this, the study tried to review literature which can identify the mostly tracked, limited number of key variables. The present research has undertaken case study which includes industry analysis of information technology industry & Automobile industry. The next portion of the present research study indicates literature review specifically of these two industries with a view to identifying the most studied variables of IT industry and Automobile industry. Discussed below are research studies related to the information technology industry and the automobile industry.

2.5.2 Information Technology Industry:

Dang & Singhal studies Revenue, employment and GDP contribution by IT industry .the study found that Indian IT Sector has contributed around 7.7% to the country's GDP in 2015, IT Industry has generated revenue of Rs.9,57,493 Crores in 2018-19 and the industry has generated 105000 employments in the year 2018, hardware exports growth rate of India was 7-8% in 2019.further, tax holidays have been extended by the Government for special economic zones and for software technology parks of India (Dang & Singhal, 2021).

Inderjit Singh & Nirvair Singh studied trends and AAGR (Annual Average Growth Rate) of production percentage share, percentage of export share and employment contribution of the IT sector in Indian electronic industry. They found that IT sector's contributions towards foreign exchange, GDP and employment generation is maximum in whole electronic industry. (Singh & Singh, 2022).

T. Varun studied production, revenue, software exports, export destinations and employment generation by IT industry for the period of 2001-02 to 2008-09 and for period from 2013-14 to 2017-18.The study concluded that the IT sector performed well even during economic slowdown and during pandemic and generated considerable revenue, Employment and foreign Exchange for India (Varun, 2020).

Idrish Allad & Mahendra Maisuria studied contribution of IT industry in the form of GDP and revenue to the Indian Economy for the period 1994-95 to 2004-05 and observed that the contribution of IT industry in Indian Economy is significant (Allad & Maisuria, 2015).

Rahul Chattopadhyay also endorsed remarkable contribution of IT industries to Indian Economy in the form of Production and Exports. He also studied trends of IT industry growth rate and research & development expenditure of IT industry during the period of 2001-02 to 2013-14.

Table 2. 2: Summary of Variables Studied for Information Technology Industry

Variables \ Authors	Dang & Singhal	Inderjit Singh & Nirvair Singh	T. Varun	Idrish Allad & Mahendra Maisuria	Rahul Chattopadhyay	Total no. of times the variable studied
Production	0	1	1	0	1	3
Revenue	1	0	1	1		3
Exports	1	1	1	0	1	4
Employment Generation	1	1	1	0	0	3
Foreign Exchange	0	1	0	0	0	1
GDP Contribution	1	1	0	1	0	3
Tax Holidays	1	0	0	0	0	1
Industry Growth Rate	0	0	0	0	1	1
R&D Expenditure	0	0	0	0	1	1
Total factors studied	5	5	4	2	4	20

As indicated in the summary table, the most studied variables for IT industry analysis are- production, revenue, exports, employment and GDP contribution. So, the present study also observed the trends of these factors from 2014-15 to 2022-23.

2.5.3 Automobile Industry

Ajay Nigade & Ramesh Sardar studied production, sales, export and market share trends of Indian IT Industry for the period 2011-12 to 2017-18 and concluded that the IT industry has significant contribution in Indian Economy (Nigade & Sardar, 2018).

V. Sudhamatheswaran et al. tried to investigate production, sales & export trend of Indian auto industry for the period of 2017-18 to 2023-24 and found that except for some years all the three variables have shown growing trends (Sudhamatheswaran, Umamaheswari, & Venkateswaran, 2017).

Shivani Singh also studied production, sales, and export trends for the period of 10 years from 2011-12 to 2021-22 for analyzing automobile industry (Singh, 2023)

Nidhi Agarwal also studied production and sales trends from 2009-10 to 2014-15 for analyzing overall growth and development of IT industry (Agrawal, 2015).

Sachin Sudan & Ranjeet Verma studied the trends of domestic sales and export for the year 2020-21 & 2021-21 to study & predict variability of Indian automobile industry (Sudan & Verm, 2019).

Table 2. 3: Summary of Variables Studied for Automobile Industry

Variables \ Authors	Ajay Nigade & Ramesh Sardar	V. Sudha-matheswaran	Shivani Singh	Dr. Nidhi Agarwal	Sachin Sudan & Ranjeet Verma	Total no. of times the variable studied
Production	1	1	1	1	0	4
Sales	1	1	1	1	1	5
Export	1	1	1	0	1	4
Market Share	1	0	0	0	0	1
Total no of times the variable studied	4	3	3	2	2	14

As indicated in the summary table, the mostly studied variables for Auto industry analysis are- production, revenue/sales, exports, market share. so, the present study also observed the trends of these factors from 2014-15 to 2022-23.

The literature review of information technology industry and automobile industry revealed that size of industry (in terms of revenue /production), domestic sales, exports are the commonly studied variables. Trend analysis is widely used for tracking the present position and prospects of an industry under consideration.

2.6 Company Analysis

Company analysis makes up the third and final E-I-C framework variable. There are many ways to undertake valuation using company related variables and ratios. In addition, there are established methods to conduct valuation using company-related variables.

2.6.1 Valuation Without Using Established Methods

This part of the chapter relates to review of various empirical studies conducted with the purpose of determining value of equity share through 1) ratio analysis, 2) valuation through a set of

fundamental factors 3) valuation through application of F_SCORE or G_SCORE Strategies. These are ways to carry out valuation without use of established method.

2.6.1.1 Valuation Through Company Related Financial Ratios

Ratio is a mathematical relationship between two related and quantifiable variables. Since the arrival of quantitative metrics, it has been utilized to evaluate business performance. Ratios evaluating short term & long-term solvency, profitability and liquidity are used for analyzing firm's performance. (Altman, 1968). Below mentioned studies attempted to decide value of company's share via Analysis of various ratio.

Rosenberg et al. (1985) found NYSE price inefficient, suggesting buying stock with high book-to-market value and selling stock with low book-to-market value for abnormal returns (Rosenberg, Reid, & Lanstein, 1985). Similarly, Dhatt et al. (1999) examined explanatory factors for monthly stock returns in non-financial companies on the Korean Stock Exchange. They found book-to-market ratio had the highest explanatory power, suggesting superior returns for value stocks (Dhatt, Kim, & Mukherji, 1999). (Poornima & Bhuvaneswari, 2017) also endorsed importance of book-to-market ratio for taking guided investment decision and Khotimah & Murtaqi (2015) found that in addition to Book-to-market ratio, The Total Asset Turnover ratio positively affect stock returns, while current ratio negatively affects in Indonesian food and beverage companies (Khotimah & Murtaqi, 2015). Ajekwe and Adzor Ibiame (2018) investigated the effectiveness of various ratios to select stocks in a portfolio. They used 33 accounting ratios from 2005 to 2014 to build multiple logit models. The study found that eleven accounting ratios accurately predicted stock returns in 76.6% of cases. The study recommends evaluating equity investments for 12 months before making buy or sell decisions using financial statement analysis and a logit model to achieve significant and positive excess market buy-and-hold returns after one year of portfolio formation (Ajekwe & Ibiame, 2018). Shakeel Muhammad and Gohar Ali (2018) also found that stock returns in Pakistani listed companies can be predicted using liquidity, leverage, market-related, and profitability ratios (Muhammad & Ali, 2018).

Thus, the above studies reveal that ratio analysis serves the purpose of valuation by helping in search of undervalued securities for investment purposes and ultimately helps in earning abnormal returns. The most used ratios are book-to-market value, current, total asset turnover, and debt to

equity. Further, the logit models investigate the effects of these ratios on stock market prices, demonstrating their efficiency in generating abnormal stock returns.

2.6.1.2 Valuation Through Company Related Fundamental Factors or Variables.

Ou & Penman (1989) used the logit model to predict unexpected earnings per-share from 68 accounting variables in firms from 1970 to 1983. They found that accounting fundamental variables result, stock values which are not shown by market price of equity stock, allowing undervalued securities to earn abnormal returns (Ou & Penman, 1989) and Holthausen and Larcker (1992) applied the logit model, same way as Jane A. Ou & Stephen H. Penman did not get the same result so they concluded their study with remarks that financial statement analysis in combination to logit model does not help in earning excess per share return from stock (Holthausen & Larcker, 1992). While Goslin et al. (2012) used multiple logit models to predict either the year-ahead earnings changes (earnings-based approach) or the direction of stock returns (returns-based approach). They used data from 2001 to 2006 and found that the returns-based outperformed the earnings-based in the New Zealand market (Goslin, Chai, & Gunasekarage, 2012). Alexakis et al. (2010) examined Athens stock exchange predictability using accounting information of 47 firms for period of 1993-2006 and used dynamic panel data regression model and found that portfolios selected on the basis of financial ratios yield higher returns (Alexakis, Patra, & Poshakwale, 2010). Chan et al. (1991) studied the relationship between fundamental factors and stock returns in the Japanese market from 1971 to 1988 applying univariate analysis and regression analysis. They found a significant relationship between earnings yield, size, book-to-market ratio, and cash flow yield, particularly book-to-market ratio and cash flow yield had the noteworthy positive impact on expected return (Chan, Hamao, & Lakonishok, 1991). Moreover, Abbas Kebriaee-zadeha et al. (2013) examined the relationship between stock returns and fundamental factors in 22 Tehran pharmaceutical companies, over a period of 7-years from 2004-2010 by applying panel data models from econometric methods. They identified 9 factors, including debt-equity ratio, working capital to total asset, current ratio, net profit margin, operating cycle, market share, inflation rate, total asset, and exchange rate, which explained 80% of stock return variations. Thus, these 9 factors be used for taking guided investment decision (Kebriaee-zadeha, Zartabb, Fatemic, & Radmanesha, 2013). Similarly, Vimolphattanatham et al. (2018) examined the relationships between fundamental factors and returns in the Stock Exchange of

Thailand (SET) between 2010 and 2016. Results showed Price-to-book ratio, dividend yield, and total assets value have well-built relationships. While profit margin, earnings before interest and tax, book value per share, dividend per share, asset turnover ratio, have modest relationships with market value of equity (Pariyapraser, Vimolphattanatham, & Witsaroot, 2018).

Baruch Lev and S. Ramu Thiagarajan (1993) studied fundamental factors in financial statements from 1974 to 1988. They studied inventory, accounts receivable, capital expenditure, research & development, gross margin, selling & administrative expenses, provision for doubtful receivables, effective tax, order backlog, labor force, LIFO Earnings, audit qualification applying cross section regression analysis. They found that stock returns to fundamental signals are stronger when conditioned on macroeconomic proxies. However, non-earnings signals influence is more conditional than 'earnings' (Lev & Thiagarajan, 1993). Al-Debie & Walker's (1999) study examined UK companies' non-earnings signals using regression analysis from 1984-1992. They found operating margins and cost management as the most informative non-earnings factors. However, they found no significant relationship between earnings quality and response coefficients, contradicting Lev & Thiagarajan's findings (Al-Debie & Walker, 1999).

Abarbanell and Bushee (1998) used fundamental analysis for examining the possibility of significant abnormal returns in stocks applying correlation & regression. They studied changes in inventories, accounts receivables, gross margins, selling expenses, capital expenditures, effective tax rates, inventory methods, audit qualifications, and labor force sales productivity and found that stock prices do not reflect publicly available fundamental factors' related information immediately, allowing for abnormal returns only within 12 months (Abarbanell & Bushee, 1998). Pompetzki's 2019 study updated Abarbanell & Bushee's 1997 findings, using Wharton Research Data Services data for the period of 2000 to 2018 revealing that fundamental signals like inventory, accounts receivable, and gross margin are no more predictive of future EPS changes or cumulative abnormal returns (Pompetzki, 2019).

thus, the studies mentioned above investigated the connection between various fundamental factors and the firm's stock return. To be noted- dividend, inventory, capital expenditure, gross margin, selling & administrative expenses, audit qualification, cost management, accounts receivables, effective tax rates are frequently studied company related fundamental variables.

Only, few researchers such as Abbas Kebriaee-zadeha et al. (2013) have tried to see the effect to company variables long with macroeconomic variable, on the valuation of company's stock, rest of the studies considers only company's fundamental factors for carrying out valuation and calculating the stock returns.

There were differing opinions on how well this kind of analysis worked. Further, various strategies such as F-SCORES and G-SCORES, were created with the intention of conducting valuation using predetermined set of fundamental factors.

2.6.1.3 Valuation Through F-SCORES, G_SCORES and/or D-strategy

Joseph D Piotroski introduced the concept of F_SCORE in his study of 43,043 High BM firms from 1976 to 1996. F_SCORE categorized nine fundamental factors into Profitability, Solvency, and Operating Efficiency, with performance measures categorized as good or bad based on future earnings. The study found that firms with high F_SCORE outperformed those with lower F_SCORE, indicating F_SCORE effectively discriminates between potential winners and losers (Piotroski, 2000). The final score which is popularly known as F_SCORE is represented as:

F_SCORE

$$=ROA+\Delta ROA+CFO+ACCRUAL+\Delta MARGIN+\Delta TURN+\Delta LEVER+\Delta LIQUID+EQ_OFF.$$

Here, ROA = Net Income before Extra-ordinary items, scaled by beginning-of-the-year Total Assets. ΔROA = current year's ROA less previous year's ROA, CFO = Cash Flow from operation, scaled by beginning-of-the-year Total Assets. ACCRUAL = current year's income before extraordinary items less cash flow from operations, scaled by beginning-of-the-year Total Assets. $\Delta MARGIN$ = firm's current gross margin ratio less prior gross margin ratio, $\Delta TURN$ = current year's turn over less prior year's Turnover ratio, $\Delta LEVER$ = leverage, it captures changes in long term debt level of firm, $\Delta LIQUID$ = changes in Current Ratio between current year and previous year and lastly, EQ_OFF = sources of funds in terms of equity shares issued.

G.P. Kourtis et al. (2017) noted that it is possible to earn above normal returns if the F-score mechanism is properly applied (Kourtis, Kourtis, Kourtis, & P.G.Curtis, 2017). Moreover, Tripathy & Pani's study found that high Book-to-Market firms with high F_Score can shift stock

performance in favors of investors in the Indian market (Tripathy & Pani, 2017) and Tikkanen & Äijö (2018) tested Piotroski's F-score screening method on European stock markets and observed that application of F-Scores significantly improves value investment strategies for individual investors and portfolio managers (Tikkanen & Äijö, 2018). Further, Ng and Shen (2016) studied F_SCORE, a Piotroski (2000) measure, to determine the discrimination between financially strong and financially weak firms in seven Pacific-Basin markets. They found that high F_SCORE returns outperformed low F_SCORE returns, and FSCORE's projection ability was stronger in small cap stocks than value stocks (Ng & Shen, 2016). Whereas, Geyfman et al. (2016) used accounting screens based on the Piotroski's (2000) F-score and the derived Magic P formulae and used Piotroski's F-score and Magic P formulas to assess the effectiveness of risk-adjusted outperformance of high book-to-market ratios in investment strategies. The study analyzed S&P 500 firms and found that top 50 companies with high book-to-market ratios yielded extraordinary results, while bottom 50 firms underperformed the market and top 50 F-score firms (Geyfman, Wimmer, & Rada, 2016). However, study by Van der Merwe et al. (2016) of the Piotroski's F_Score on the Johannesburg Stock Exchange (JSE) to determine its effectiveness in selecting winners from financially distressed stocks and high book-to-market value businesses using buy-and-hold strategies observed different results. The study found no conclusive evidence supporting the superiority of screened firms' returns over value stocks (Merwe, Taft, Oludele, & Akinboade, 2016).

Mohanram (2005) conducted study for applying financial statement analysis to the sample of growth or low book-to-market stocks for separating likely winners from losers. He used eight growth signals, and a single index called G_SCORE to analyze the relationship between signals and returns. He found that a growth-oriented fundamental strategy can differentiate future winners and earn higher size-adjusted returns (Mohanram, 2005). The G_SCORE is the sum of eight fundamental signals as follows:

$$G_SCORE = ROA1 + CFO1 + ACCRUAL + \sigma N1 + \sigma SG + RDINT + ADINT + CAPINT.$$

Here, ROA= Return on Asset, CFO= Cash flow from operation to Asset, ACCRUAL= Cash flow from Operations to Assets VS. Return on Asset, $\sigma N1$ = Return on Asset Variance, σSG = Sales

variance, RDINT= Research & Development to Asset, ADINT= Advertising to Asset, CAPINT= Capital Expenditure to Asset

Venkatesh et al. (2013) analyzed the financial performance of Indian IT, Pharmacy, and Banking firms using G-score and F_SCORE. They found that high G_SCORE firms earned double the returns compared to high F_SCORE firms. High G_SCORE firms received more attention from investors, while low Book-to-Market ratio firms received less attention (Venkatesh, Tyagi, & Ganesh, 2013).

Chung and Kim's 2001 study analyzed the use of structured financial statement analysis for investment decisions. They developed a firm valuation model linking market value to fundamental variables and predicted intrinsic value from financial statement variables. They created 'D-strategies' with zero net investment for a 12-month holding period, finding higher abnormal returns for small-firm sub-samples than for the large-firm sub-sample. This suggests investors can construct profitable trading strategies using structured financial statement analysis (Chung & Kim, 2001).

Thus, out of all the strategies available, the F_SCORES is widely used. Because F_SCORES generated superior results. Thus, the capacity to earn abnormal returns of F-SCORES is better. However, sticking to some ratios or factors to carry out valuation is highly risky affair. Instead, one is advisable to use established valuation methods for carrying out valuation of company.

2.6.2 Valuation Through Well-Established Valuation Methods

Researchers analyze fundamentals through ratios, context, financial statements and through various strategies like F-Scores or G-Scores. However, various absolute and relative valuation methods are also widely used. Absolute measures calculate intrinsic value and carryout valuation without comparison, while relative measures calculate relative value by comparing the value with the mean or median of comparable. The choice of method depends on factors like earnings, growth prospects, leverage stability, riskiness, dividend policy, free cash flow availability, residual income, and asset value. This literature review aims to highlight various methods for calculating asset intrinsic value.

The peculiar feature of cash flow- may be dividend, free cash flow or residual income- related method is discounting of cash flow that give the intrinsic value in absolute term. valuation models carries out valuation considering any one out of Dividend, cash flow and accounting earnings as expected cash-flow proxies. Ideally, all these cash-flow proxy variables should give same valuation results. However, all these variables create divergent results in the form of different intrinsic value (Torrez, Jafari, & Juma'h, 2006). In fact, different intrinsic value is depended not only on cash flow proxy variable but on many other factors also such as different time zone and different discounting factors. Here, discounting refers to calculating the present value of future expected cash flow using appropriate required rate of return.

Determining the required rate of return is the most difficult task to perform (Amling, 1978). The required rate of return of an investment is determined considering four factors namely, economy's real risk-free rate of return, expected inflation rate during the holding period, liquidity premium and risk premium. (Brigham, Gapenski, & Daves, 2003). Though, required rate depends on both systematic as well as unsystematic risk. The influence of systematic risk is foremost (Elton & Grubber, 1970). The Systematic risk is generally denoted by 'β' which represents the sensitivity of stock return with respect to market returns (Chandra, 2017).

Formula for calculating 'β' is as follows:

$$\text{Systematic risk or '}\beta\text{' = } \frac{\text{Cov (j,m)}}{\delta^2 m}$$

Here, Cov(j, m) = Covariance between the security's return and the market.

$\delta^2 m$ Indicates Market Variance

The required rate of return can be calculated using the 'β' value in Capital Asset Pricing Model (CAPM) formula of Sharpe and Lintner. The formula for calculating required rate of return based on 'β' is:

$$\text{Required rate of return for equity i.e. } K_E = R_f + \beta a(R_m - R_f)$$

where: R_a =Expected return on a security, R =Risk-free rate, R_m =Expected return of the market, β_a =The beta of the security & $(R_m - R_f)$ =Equity market premium.

Valuation of equity share via discounted cash flows model calculates present value company's equity share derived from predictable future cash flows that are discounted using appropriate rate representing time value of money (Fernandez, 2015). Discounting the expected cash flow for arriving at the present value is must because the value of cash flow received today is more as compared to value of cash flow to be received in future. DCF model is used still 1700s or 1800s. However, it got wide acceptance as valuation technique after stock market crash in 1929. In modern economic terms, Irving Fisher in his book 'The Theory of Interest' in 1930 and John Burr Williams in his book 'The Theory of Investment Value' in 1938, were first to use DCF method (Fisher, 1930) & (williams, 1997). John Burr Williams was the first to use Discounted Dividend based Valuation model.

Cash flow valuation techniques consider the future earnings and growth potential of a business for valuing the shares. The Dividend Discount Model uses Dividend as cash flow while Discounted Cash flow model uses free cash flow. The free cash flow of a company is generally mentioned in the form of dividends to shareholders (Edwards & Williams, 1939).

2.6.2.1 Dividend Discount Model(DDM)

Robert G. Hagstrom in his book 'The Warren Buffett way' mentioned that Warren Buffett, one of the world's greatest investors believes that the Dividend Discount Model is the best system for determining the intrinsic value of a company (Hagstrom, 2004).

A company's distribution of profits to its shareholders is referred to as a 'dividend.' The first publicly traded firm to regularly distribute dividends was the Dutch East India firm, formerly known as the United East India Company (Freedman, 2006; DK, 2014). The simplest method for evaluating equity is the Dividend Discount Model(DDM). DDM is viewed by some experts as an outdated and ineffective approach of valuation. However, DDM is frequently still seen as a practical approach of appraisal.

In the area of dividend policy also, there are two groups of authors for dividend policy. On one hand, there are theories which say, the dividend policy is irrelevant and cannot influence the value of the firm. And on another hand, there are theories which say, the dividend policy is relevant and capable of influencing the value of the firm (Lintner, 1962).

On one hand, dividend relevance known as ‘the bird in the hand theories’ are proposed by Walter (Walter, 1956), Lintner, Gordo, Shapiro and Bierman et al. (Lintner, 1962) (Gordon M. J., 1963) (Gordon & Shapiro, 1956) (Bierman, Bonini, Fouraker, & Jaedicke, 1965). Although the base of dividend relevance theory has been laid down by Graham & Dodd(1934), in their book ‘Security Analysis’ argued that ‘the sole purpose for the existence of the corporation is to pay dividends’, but Graham & Dodd did not formulate proper theory or formula on dividend relevance (Ang & Ciccone, 2011). Gordon (Gordon M. J., 1959) authenticated findings of Graham and formulated a valuation model considering dividends as determinant of value of the firm. As per traditional model a liberal pays out policy has a favorable impact on the stock price due to assured present dividends in comparisons of the insecurity of capital gains (Graham & Dodd, 2008) Lintner advocated present value of free cash flow, which includes cash dividend also, as the influencing factor for the value of the firm (Lintner, 1962). Walter suggested that the share’s prices are directly affected by dividend payout ratio (Walter, 1956) because, investors would prefer today’s known dividend income instead of tomorrow’s unknown capital gain (Ozuomba, Anichebe, & Okoye, 2016), (Farrukh, Irshad, Khakwani, Ishaque, & Ansari, 2017). Thus, it is possible to increase value of firm by increasing dividend (Singh & Tandon, 2019), (Kandpa & Kavidayal, 2015) Moreover, Fischer Black and Myron Scholes (1974) suggested that the finest way to test the impact of dividend policy on stock prices is by testing the influence of dividend yield on stock returns (Black & scholes, 1974).

On the other hand, The ‘dividend irrelevance theories’, are advocated by Joel Dean, David Durand, Friedrich, Harry; Roberts, Edwin Kuh and Weston, J. Fred (Dean, 1951), (Durand, 1952), (Friedrich & Lutz, 1951), (Roberts, 1957), (Kuh, 1960), (Weston, 1961), and (Miller & Modigliani, 1961). They believed that bifurcation of income in to retained earnings and dividend is just a categorization of income, but such sorting cannot of affect the value of the firm (Lintner, 1962). The group of dividend irrelevance believed in factors other than dividend which can have

effect on value of firm. These factors are capital budgeting (Dean, 1951), capital structure (Durand, 1952) (Solomon, 1963), and profit maximization (Friedrich & Lutz, 1951). The most popular dividend irrelevance theory given by Miller & Modigliani (Miller & Modigliani, 1961) has got universal attention. All the researchers functioning in the field of dividend irrelevancy theory mention MM without fail. However, M& M hypothesis of dividend payment presumed that there is ‘no existences of taxes’ and ‘the market is perfect’ but these assumptions are unrealistic, therefore the dividend irrelevance theory falls short to measure the consequences of taxes and imperfect market on market price of stock.

Both sets of theories have provided convincing supportive arguments for proving their view and that’s why the research dilemma persists till date (Bezawada & Tati, 2017). This dilemma is put in correct word by fischer Black, ‘The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that don’t fit together (Black F. , 1976).’ Even using the best available methods, it is not possible to measure the effect of a change in dividend policy on stock price (Black & Scholes, 1974).

Conceptually, the dividend discount models believe that the value of stock is equal to present value of expected dividend flow discounted to the present value. Damodaran considered Dividend Discount Model as a unique case of equity valuation where valuation is done by discounting expected future dividends by the cost of equity (Damodaran, 2006). Mathematically,

$$P_0 = \frac{D_1}{(1 + k_e)^1} + \frac{D_2}{(1 + k_e)^2} + \frac{D_3}{(1 + k_e)^3} + \dots \frac{D_n}{(1 + k_e)^n}$$

John Burr Williams was the first to articulate the Discounted Cashflow (DCF) valuation, and in particular, Dividend Discounted Model (DDM) of valuation (williams, 1997). DDMs can be categorized in two viz., Single Period Valuation Model and Multi-Period Valuation Mode (Chandra, 2017).1. Single – Period Valuation Model assumes that the shares will be held only for one year. So, value of equity will be dividend for one year and sales proceeds at the end of the year. Value of share as per Single – Period Valuation Model can be written in equation as follows:

$$V_0 = \frac{D_1}{(1+r)^1} + \frac{P_1}{(1+r)^1}$$

In contrast to Single – Period Valuation, Multi-Period Valuation Model assumes that the share is held for longer period of time and market values of common shares are representative of the total of the anticipated future perpetual dividend flows, discounted to present value (Arnold, 2005). In simple words, DDM calculates the value stock by summing up two components. One, present value of all its anticipated future dividends which is assumed to be paid annually and two, present value of the probable sale price when the shares are sold (Chandra, 2017).

Thus, the intrinsic value of the equity shares can be calculated as follows:

$$V_0 = \sum_{t=1}^n \frac{D_t}{(1+r)^t} + \frac{P_n}{(1+r)^n}$$

Considering growth factor, the Multi – Period Valuation model is having many variants - Zero Growth Model, Constant Growth Model(Gordon Growth Model), Two-Stage Growth Model, Three-Stage Growth Model and H-Model (Chandra, 2017).

Zero-Growth Model assumes that there will be no growth in rate of dividend and the company will pay a stable dividend per share every year. However, Danny Miller and Peter H. Friesen studied the company's life cycle and its different stages namely, birth stage, Growth stage, Maturity stage, Revival stage and Decline stage. They found that birth, growth and Maturity stages are universal to the majority companies, but revival is enjoyed by a few companies. The declining stage can start after any other stage excluding the birth stage. The period that companies spend in the growth, maturity and revival phases is at least ten years (Miller & Friesen, 1984).

One-Stage Constant Growth Model is model traditionally used model for determining the ongoing value of a company. It assumes that the competitive advantage, symbolised by growth rate of dividend used to carry out valuation of stock based on selected period, will be available as perpetuity for both present and future investments (Forsyth, 2019). Myron J. Gordon and Eli Shapiro also assumed perpetual availability of competitive advantages, which lead to apply them

One-Stages Constant Growth Model to dividends for valuation of stock (Gordon & Shapiro, 1956). Their model of constant dividend growth has become widely known as Gordon Growth Model (GGM).

Gordon's formula for calculating the value of equity:

$$V_0 = \frac{Div_1}{K_E - g}$$

Here, Div_1 stands for expected dividend

K_E Stands for Cost of Equity

g stands for rate of growth in dividend.

Robert R. Wiggins & Timothy W. Ruefli (2002) observed that only some companies are able to sustain abnormal returns arising out of competitive advantage over time (Wiggins & Ruefli, 2002). In most of cases, abnormal returns arising out of competitive advantage have a mean reverting behavior and do not continue for longer period of time (Jacobsen, 1988). Therefore, Juan A. Forsyth developed an alternative formula to the traditional One-Stages Constant Growth Model to take care of the loss of competitive advantage over a period of time with the purpose of avoiding over estimation of the returns in the long term and also to differentiate between value created by assets in place to that of value created by growth i.e. competitive advantage. The first part of the formula indicates value explained by the current investments and another portion indicates value created by future investments (Forsyth, 2019). Juan A. Forsyth also claimed that the alternative formula given by him gives same results for value of share as the Gordon model does.

$$V_0 = I_1 + I_1 \times \frac{ROIC_1 - K_C}{K_C} + g \times I_1 \times \frac{1}{K_C} \times \left(\frac{ROIC_1 - K_C}{K_C - g} \right)$$

$ROIC_1$ stands for Expected return on invested capital

I_1 is the invested capital at the beginning of period 1

K_C indicates cost of capital

g is indicative of growth rate.

Two-Stage Growth Model is an extension of GGM. Two-Stages Growth Model was introduced by Burton G. Malkiel in 1963. Two-Stages Growth Model relaxes the assumption of constant growth and classifies the growth rate into two in the terms of time frame i.e. an extraordinary growth period for a firm for a finite number of years and two, a normal growth in perpetuity period (Malkiel, 1963).

$$V_0 = \sum_{t=1}^n \frac{D_0(1 + g_s)^t}{(1 + K_E)^t} + \frac{D_0 \times (1 + g_s)^n \times (1 + g_L)}{(1 + K_E)^n \times (r - g_L)}$$

Here, D_0 stands for current dividend

G_s stands for super normal Growth

G_L stands for normal/stable growth rate

Two-Stage Growth Model is appropriate for valuing firms that are expecting to have super normal growth rate in initial stage owing to profits arising from particular investment or a patent right. However, it is difficult to decide number of years for which the firm is expected to generate super normal growth. Further, sudden drop of rate from super normal to normal is unrealistic. Russell J. Fuller and Chi-Cheng Hsia came up with H-model which takes care of gradual drop of growth rate from super normal to normal by introducing the concept of linear decline. The period of gradual fall is assumed to last for $2H$ periods (Fuller & Hsia, 1984).

$$\frac{[D_0 \times (1 + g_L)] + [D_0 \times H(g_s - g_L)]}{r - g_L}$$

Here, G_L stands for normal/stable growth rate

G_s stands for super normal Growth rate

Molodovsky et al. used the Two-Stage Model and H-Model and developed Three-Stage Model after adding the element of payout ratio and different discount factors for the various phases

(Molodovsky, May, & Chottiner, 1965). Three-Stage Model defeats the boundaries of previous models, although it requires so many inputs;

$$p^{3st}(t) = \sum_{i=0}^{n1} \frac{EPS(t)\Pi_a(1+g_a)^i}{(1+k_{e,h})^i} + \sum_{i=n1+1}^{n2} \frac{D(t+i)}{(1+k_{e,d})^i} + \frac{EPS(t+n2)\Pi_n(1+g_n)}{(k_{e,st}-g_n)(1+k_{e,h})^{n1}(1+k_{e,d})^{n2-n1}}$$

Here, $k_{e,h}$, $k_{e,d}$, and $k_{e,st}$ are the discount rates for high, declining, and stable phases, respectively,

g_a and g_n are the growth rate at the beginning and the end of the period,

EPS stands for earnings per share,

Π_a and Π_n are the payout ratios at the beginning and end of the period, respectively.

However many studies disagree to use Dividend Discount Model to be used for valuation of stock because payment of dividend is in total discretion of management so it cannot be consider as representative of the prospects of the company. Further, the model is not suitable for those companies whose required rate of return is lower than the dividend growth rate.

Dividend growth following a series of times fails in mass of predictions, longer the period of prediction from present time, the greater the deviation (Sukono, Susanti, Aisah, Supriatna, Saputra, & Bon, 2019). So, The Divided Discount Model can be used as a supplementary tool along with DCF model and Relative Valuation Model (Ivanovski, Ivanovska, & Narasanov, 2015).

Empirical Evidence of Dividend Discount Model

Dr. Jeelan Basha V (2014) studied Asian Paints Limited's intrinsic value using Constant Dividend Growth and Capital Structure Models. Using statistical tools like Compound Annual Growth Rate (CAGR), Simple Average, and Weighted Average. The study concluded that the well informed investment decision can be taken by predicting the share price using Constant Dividend Growth and choosing an undervalued stock for investment purpose (Basha V. J., 2014). Mugoša, Ana & Popović, Saša (2015) tested the reliability of Gordon Growth Model in the valuation of stocks by

comparing the estimated price with the actual stock price values of 199 publicly traded European companies for the period 2010-2013, using Wilcoxon Signed-Rank test and Kruskal–Wallis test. Result revealed that Gordon Growth Model turn into trustworthy model for stock price valuation even during period of challenging global financial crisis influence (Ana & Saša, 2015). Similarly, Wairimu Mercy Mwangi(2017) tested Gordon’s Growth Model by comparing theoretical values with the actual dividends paid by Safaricom limited for period 2008 to 2017. Mwangi applied Paired sample t-test statistic. He noted that finding revealed that the GGM is useful for determining the value of stock price of Safaricom Limited and GGM is more appropriate for grown up firms having steady dividend growth and not for young firms with little predictable dividend patterns (Mwangi, 2017). Soumya & Paul’s 2019 study tested the applicability of DDM in valuing top 5 dividend-paying companies on the NSE, applying Absolute Percentage Error (APE) measures, Shapiro-Wilk normality test and Wilcoxon Rank Sum test, the Results showed GGM accurately estimated stock prices from 2009-2018 (Soumya & Paul, 2019). (Gacus & Hinlo., 2018) also endorsed reliability of the GGM in his study of valuation 15 stocks in Philippine Stock Exchange.

On the other hand, Tobias Olweny, Charumathi & Suraj, and Cheampong & Agalega observed different results. Tobias Olweny examined the trustworthiness of the Dividend Discount Model for valuation of Nairobi Stock Exchange companies from 1995 to 1999. The study used a Market Model and T-test to test the difference in value. Results showed the model was inconsistent in valuing common stock (Olweny, 2011). While B. Charumathi & E. S Suraj (2014) conducted study to check reliability of DDM for predicting stock prices for 14 bank stocks in BSE during 2001-02 to 2010-11. The study found that investors cannot rely on the Dividend Discount Model for the valuation bank stocks at the BSE owing to the higher prediction errors. They also added that the difference in estimated and actual values can be due to stock market incompetence, badly chosen discounting factors, information differentials and measurement problem (Charumathi & Suraj, 2014). Acheampong & Agalega(2013) applied a Paired T-test for checking whether there is any disparity between actual prices and predicted prices based on Gordon’s Growth Model for 5 banks traded in Ghana Stock Exchange during 2006-2010 and found that theoretical stock values using Gordon Growth Model are notably different from the actual prices (Acheampong & Agalega, 2013).

Whereas Zoran Ivanovski et al. suggested supplementing Dividend Discount Model (DDM) with Discounted Cashflow (DCF) Model. Zoran Ivanovski et al. (2015) conducted study to examine if Dividend Discount Model (DDM) model with Two-Phases Growth offers related and safe valuation of randomly selected long-term securities from Macedonian Stock Exchange (MSE). Komercijalna Banka and Alkaloid SC-Skopje were chosen for study. Stock prices from 2006 to 2011 for two companies were studied. The study observed that Dividend Discount Model (DDM) models can be used as supplementary tool along with DCF model for valuation at MSE (Ivanovski, Ivanovska, & Narasanov, 2015).

Above listed are empirical studies in the field of Dividend Discount Model (DDM), study period ranges from 3 to 10 years and Sample selection ranges from 5 companies to all the publicly traded companies on the entire stock exchange. Different statistical tools such as T-test, Paired sample t-test, regression analysis, multiple regression, Absolute Percentage Error (APE) measures, Symmetric Median Absolute Percentage Error (sMdAPE), Shapiro-Wilk Normality test, Wilcoxon Rank sum, Kruskal–Wallis were applied by different studies. In many studies, Dividend Discount Model (DDM) turned out to be a reliable model for predicting intrinsic value. However, one should remember that Companies may disburse dividends out of proceeds of newly issued equity and not from free cash flow which result into false signals about company's prospects (Graham & Dodd, 2008). So, one needs to value stock based on some reliable, measurable & predictable variable such as cashflow or residual income.

2.6.2.2 Discounted Free Cashflow (DCF)

The Free Cash Flow model (FCF) does not embody a major going away from traditional DDM model (DeMarzo, 2008). FCF is variant of Discounted Free Cash Flow model (DCF). Free cash flow, as defined by Jensen, is the cash flow available after a company has invested in all accessible positive net present value (NPV) projects, differing from accounting cash flow, which is derived from the accrual basis (Jensen, 1986). As per Ross et al. (2010), free cash flow refers to cash that the company is free to distribute to shareholders & creditors since it is not required for working capital or fixed asset investment (Ross, Westerfield., & Jaffe, 2010)

The Discounted Cash Flow (DCF) valuation model is a variant of the Dividend Discount Model (DDM) and aims to determine the worth of shares for shareholders. Alfred Rappaport and G B

Stewart developed the concept of ‘Shareholder Value’ by discounting future cash flow (Rappaport, 1986) and assuming dividend reinvestment for wealth maximization (Keef & Roush, 2002). Other researchers, including Hackel and Livnat and Copeland et al., also suggested use of Discounted Cash Flow (DCF) for valuing equity shares (Hackel & Livnat, 2012) (Copeland, Koller, & Murrin, 1995). Farooq and Thyagarajan also endorsed that the comparison of various valuation methods confirmed that Discounted Cash Flow (DCF), despite being complex and requiring rigorous calculations, is the best out of all options (Farooq & Thyagarajan, 2014).

Damodaran famous as the ‘Dean of Valuation’, contributed greatly to the field of valuation through his series of books. According to Damodaran, equity valuation can be carried out by discounting expected residual (free) cash flows to equity by the cost of equity. Prof. Damodaran has given the formula for calculating Free Cash Flow to equity (Damodaran, 2006):

$$= NOPAT + D\&A - Capex - Increase\ in\ NWC$$

Here, *NOPAT* is Net Operating Profit after Tax

D&A stands for depreciation & Amortization

Capex indicates Capital Expenditure

NWC stands for Net working Capital

Formula for valuing the firm with constant growth is:

$$V_0 = \frac{FCFE_1}{k_e - g_n}$$

V_0 = Value of stock today

$FCFE_1$ = Expected FCFE next year

k_e = Cost of equity of the firm

g_n = Growth rate in FCFE for the firm forever

The value of a stock with two growth rates is calculated by adding the present value of the Free Cashflow to Equity (FCFE) per year (for the high growth period) and the present value of the

terminal price at the end of the period. Valuation Formula for Discounted Cash Flow (DCF) is (Damodaran, 2006):

$$V_0 = PV \text{ of } FCFE + PV \text{ of terminal price} = \sum_{t=1}^{t=n} \frac{FCFE_t}{(1 + k_{e,hg})^t} + \frac{V_n}{(1 + k_{e,hg})^n}$$

Where $FCFE_t$ = Free cash flow to equity in year t

V_n = Price at the end of the high growth period

k_e = Cost of equity in high growth (hg) and stable growth (st)

The ending, or terminal price P_n is calculated by using the infinite growth rate g_n .

Here, terminal value can be calculated as follows:

$$V_n = \frac{FCFE_{n+1}}{(k_{e,st} - g_n)}$$

Discounted Cash Flow (DCF) Method carries out valuation based on expected future cashflow of the company. Its value is derived from two components. The first component indicates the value of forecasted period which can range from seven to ten years and the value is derived from various predictions made regarding various components of company. The second part gives an idea about terminal value of the company; this period is assumed till infinity (Jennergren, 2011). Major portion of value of share is derived from this terminal value so a minor change in any of assumptions of second part, can result into noticeable change in value. Further, the assumptions regarding terminal value are extremely tough to predict. (Reis & Augusto, 2013).

Finally, Three-Stage Growth Model is suitable for firms which are going through three stages of growth. First, an initial high growth period, then second, transitional growth period & third, an infinite stable growth rate (Damodaran, 2006).

$$V_0 = \sum_{t=1}^{t=n1} \frac{FCFE_t}{(1 + k_{e,hg})^t} + \sum_{t=n1+1}^{t=n2} \frac{FCFE_t}{(1 + k_{e,tr})^t} + \frac{V_{n2}}{(1 + k_{e,st})^{n2}}$$

Here,

k_e = Cost of equity in high growth(h_g), transitional growth(t_r) and stable growth(s_t)

V_{n2} = Terminal price at the end of transitional period

Many Authors like Seth Armitage, and Reis & Augusto found the formula of Discounted Cash Flow (DCF) is 'too much general'. According to Ekaterina Svetlova the Discounted Cash Flow (DCF) Model is only a helping and guiding tool for investment decision making. Nevertheless, the final decision is to be made by humans by applying 'qualitative overlay'. They suggested altering or adding case specific factors to this formula for better results (Svetlova, 2012). Seth Armitage suggested taking care of crucial effects of financing-related determinants on valuation of shares. He proposed to add effects arising from taxes, transactions costs, disclosure, information asymmetry and agency problems to standard formula of Discounted Cash Flow (DCF) (Armitage, 2008).

Empirical Evidence of Discounted Cash Flow Model

Ms. Shradhanjali Panda (2013) conducted study with the purpose of carrying out valuation through Discounted Cash Flow Method. The study selected sample of 5 different companies from 5 different Industries that were indexed and belonged to NSE's 'A' category companies. Quarterly intrinsic values for the year 2010 were calculated using Discounted Cash Flow (DCF) Model. The computed intrinsic values were compared to actual market price to decide the valuation efficiency of Discounted Cash Flow (DCF). Welch's t-test is carried out to test the significance level between the two values and forcefulness of the Discounted Cash Flow (DCF) Model. The results supported the strength of Discounted Cash Flow (DCF). The author also added that valuation is not a complete mystery, but with the correct values and the right technique, the true value can be estimated (Panda, 2013).

Similarly, Ivanovska et al. (2014) examined the valuation of stock market price prediction using data from 2006 to 2010 and forecasted data for six years at Macedonian Stock Exchange by Discounted Cash Flow (DCF) Method. The authors observed that the Discounted Cash Flow (DCF) Method accurately calculates company's stock value, predicting market prices, and aiding

investment decisions in the long term. (Ivanovska, Ivanovski, & Narasanov, 2014). However, Chen et al. got different results while checking the accuracy of the Discounted Cash Flow (DCF) Method. They took the Sample of 68 listed companies from the Chinese market from the year 2005 to 2019 and calculated deviations of theoretical value & actual stock price. The study concluded that the Discounted Cash Flow (DCF) Method cannot work effectively in the Chinese market with relative accuracy (Chen, Ma, & Yan, 2021).

Whereas Gardne et al., Hakim et al., Basri et al., and Konek & Srilakshmi used Discounted Cash Flow (DCF) Method to generate buy or sell signal by comparing the intrinsic value, calculated using free cashflow, with the market price of the company (Gardne, McGowa, & Moelle, 2012), (Hakim, Dr. Raden Aswin Rahadi, & M. Akmal Adrianza S.E., 2020), (Basri & Damayanti, 2020), (Konek & Ms. Srilakshmi.D). John C. Gardne et al. (2012) combined the free cash flow to equity model with the super-normal Growth Model to determine the current value of Coca-Cola. The period of the study was from 2001 to 2011. The result of the study revealed that the Coca-Cola was overvalued in 2012 because its actual value was higher than its intrinsic value as per FCFE (Gardne, McGowa, & Moelle, 2012). Muhammad Akhirul Hakim et al. (2020) carried out valuation of PT ABC, a technology company in Indonesia. They used data of from 2019 & 2020 for predicting data for up to 2025 and applied Discounted Cash Flow (DCF) Method for valuation and conducted sensitivity analysis using Microsoft Excel. Author noted that the valuation through Discounted Cash Flow (DCF) Method is extremely near to financial projection to predict startup industry pear to pear landing. The author concluded that as per Discounted Cash Flow (DCF) Method valuation PT ABC should be selected for valuation and also recommended to use sensitivity analysis while applying Discounted Cash Flow (DCF) Method valuation technique (Hakim, Dr. Raden Aswin Rahadi, & M. Akmal Adrianza S.E., 2020). Fira Octaria Basri & Sylviana Maya Damayanti (2020) carried out valuation of Perusahaan Gas Negara (PGN) of in Indonesia through the Discounted Cash Flow (DCF) Method. They obtained data using PGN's financial report from 2013 to 2018. They predicted data for 2019 to 2023 and applied Discounted Cash Flow (DCF) Method valuation using free cash flow to firm. The results revealed that the company is undervalued so the author recommended to invest in the company (Basri & Damayanti, 2020). Mrs. Shailaja Konek & Ms. Srilakshmi (2021) conducted study for valuating Skyworks

Solutions, using the data from 2016 to 2019. The resulted figure indicated that the company was undervalued at that time so they suggested buying the stock (Konek & Ms.Srilakshmi.D).

Being different from others, Florian Steiger(2010) in his working paper on finance, carefully studied conceptual and practical characteristics of the discounted cash flows valuation method. He evaluated the strengths & weaknesses of Discounted Cash Flow (DCF). The study observed that the Discounted Cash Flow (DCF) is a commanding tool to examine even complex circumstances. Nevertheless, the Discounted Cash Flow (DCF) method is affected by substantial assumption bias and even minor alteration in any of the assumptions during analysis results into radical changes in valuation results. He proved his findings with the example of BASF stock, for analysis purpose he used the cash flow projections given by Credit Suisse analysts for the years 2008 to 2013 and applied sensitivity analysis (Steiger, 2010).

Above mentioned are empirical studies in the field of valuation through discounted cash flow. Discounted Cash Flow (DCF) is still being widely used method. The present study found many research articles that were practically applying the Discounted Cash Flow (DCF) model and deciding whether the stock over valued or undervalued or correctly valued. Generally, researchers are using past 3-5 years data and other available information to predict future data for 3-5 years for calculating intrinsic value of firm. For better results, many authors have used sensitivity analysis and applied T-test for verifying accuracy of results. They found Discounted Cash Flow (DCF) is extremely accurate for deciding intrinsic value and picking up correct stock for investment.

Theoretically, The Discounted Cash Flow (DCF) valuation is the most ‘correct’ model. For its successful practical use, the user of method needs to carefully predict cash flow, discount rate & terminal value. A popular Alternative to Discounted Cash Flow is Residual Income Model. The RIV uses profit after tax and book value of equity for carrying out valuation. Residual Income Model (RIV) can be used when cash flows are unpredictable. After development of (Ohlson, 1995) model, the Residual Income Model (RIV) has emerged as competent alternative to Discounted Cash Flow (DCF) and it is also frequently used just like DCF. In recent times, many empirical studies have come out on the Residual Income Valuation (RIV) Model. Theoretically, FCFF & RIV should generally have the same results. However, empirical studies in this field give good

reason for believing that, the valuation through the RIV model appears to be superior to traditional valuation bases such as earnings, dividends, book value or free cash flows (Choi & Young-Soo, 2002).

2.6.2.3 Residual Income Valuation (RIV)

Many Researchers and authors have warned against using accounting data for carrying out valuation because the future accounting profit can easily be manipulated. However, Residual Income Valuation (RIV) Model developed by (Ohlson, 1995), has raised the need to have a fresh new viewpoint in using accounting profit while carrying out valuation. Ohlson (1995)'s Residual Income Valuation (RIV) Model has opened a new way to arrive at intrinsic value of firm. Now, investor can calculate the intrinsic value by adding book value to the present value of expected abnormal earnings. Theoretically, residual income is net income left after deducting the amount of shareholders' opportunity cost. It is the residual or remaining income after charging the costs for all the fund providers of the company which is nothing but clean surplus.

$$\text{Residual Income} = (x_t - K_E SE_{t-1})$$

Here, x_t is net income

K_E is required rate of equity

SE_{t-1} is book value at a time $t-1$.

The Residual Income Valuation (RIV) Model aligns with the Dividend Discount Model (DDM) given clean surplus accounting but offers additional benefit of applicability to both dividend and non-dividend paying companies. The traditional accounting deducts interest charges for debt, but it does not deduct cost of equity capital, but the Residual Income Valuation (RIV) Model can take care of this shortcomings of traditional accounting and deducts both cost of debt and cost of equity. RIV highlights that a company with positive net income may still fall short of adding value to the shareholders' wealth if it's net income is less than its cost of equity capital.

James A. Ohlson (1995) developed and analyzed a model to determining value of firm considering current and future earnings, book values and dividend of the firm (Ohlson, 1995). Ohlson model is related to capital market based- Accounting Research. The model studies the relation between

accounting information and capital market (Kothari, 2001). During the development of model, he realized that abnormal earnings has impact on value of firm. Here, abnormal earning meant difference between market value and book value of firm which is nothing but goodwill only. Formula for calculating value of equity as per Residual Income Valuation (RIV) indicates that two values are added i.e. Book value at time zero plus present value of residual/ abnormal earnings:

$$V_0^* = SE_0 + \sum_{t=1}^{\infty} \frac{E[x_t - K_E SE_{t-1}]}{(1 + K_E)^t}$$

Here, SE_{t-1} is the book value at time t and x_t is the net income at t .

SE_0 indicates book value at time 0

$(x_t - K_E SE_{t-1})$ Represents residual income or abnormal earnings.

The Ohlson Model (1995) and Feltham & Ohlson (1995) are significant milestones in the history of valuation (Kothari, 2001). They provide a reliable methodology for transforming accounting numbers into valuation figures, allowing for the joint use of book value and income in one valuation model (Lundholm, 1995). Ohlson also introduced clean surplus relations, where dividends reduce current book value but not current earnings (Choi & Young-Soo, 2002). Unlike traditional models, the Ohlson Model has a high R^2 , indicating that variables other than current and future earnings, book values, and dividend have extremely small value relevance (Lo & Lys, 2000).

Russell Lundholm and Terry O'Keefe (2001) disputed the Residual Income Valuation (RIV) model's superiority over the Discounted Cash Flow (DCF) model. Three key issues involved in implementing the Residual Income Valuation (RIV) Model that lead to varying intrinsic values are: incorrect terminal value inputs, errors in discount rate calculations, and omissions or inaccuracies in cash flow projections (Lundholm & O'Keefe, 2001). Consequently, Despite its importance, the RIV model fails to predict stock prices when book value is far from current year's earnings.

Empirical Evidence of Residual Income Model

Richard Frankel & Charles Lee (1998) conducted study with the objective of using the Residual Income Valuation (RIV) model to test whether the resulting value-to-price ratio is a good predictor of cross-sectional stock returns. They estimated firms' fundamental values (V) using I/B/E/S consensus forecasts and a residual income model. They observed that 'V' is highly correlated with contemporaneous stock price and the value-to-price ratio is an excellent forecaster of long-term cross-sectional returns. Moreover, their results did not vary while beta, size and book-to-price are taken in to consideration, which reflects the superior explanatory power of the Residual Income Valuation (RIV) model (Frankel & Lee, 1998). Similarly, Woo-Jong Lee and Yu Zhang(2014) conducted study to examine applicability of the value-to-price effect explained under Residual Income Valuation(RIV) model developed by Frankel and Lee (1998) for Chinese companies. For US sample they identify 50,201 firm-years during the period of 1976-2011 and sample period for Chinese firms was from 2004-2011. The study detected that the value-to-price effect exists at least for a short term generally within one year in Chinese stock markets (Lee & Zhang, 2014).

Patricia M. Dechow et al. (1999) attempted to assess empirically the residual income valuation model proposed by Ohlson(1995). Data of 50,133 observations were selected from COMPUSTAT files, CRSP daily files and I/B/E/S files and the period referred was from 1976 to 1995. The study's empirical results revealed that Ohlson model(1995) provides only minor improvements over Dividend Discount Model (Dechow, Hutton, & Sloan, 1999).

Begley and Feltham (2000) extended the Feltham and Ohlson model to include residual income forecasts for analysts to estimate future revenues and growth opportunities. study examines 5,380 firm from year 1988 to 1997. They analyzed results using regressions and found a negative coefficient on one-period ahead residual income forecast and a positive coefficient on two-period ahead forecast (Begley & Feltham, 2000).

Huong N. Higgins (2011) applied Residual Income Valuation(RIV) model after making adjustment for autocorrelation with objective of demonstrating a method to predict stock price with help of earnings forecasts by analyst as vital signals of valuation. His study was based on S&P 500 firms. he used 22 years of data spanning from 1982 to 2003 to create the prediction models and used the model to predict stock prices for period across 2004 - 2005. This paper complements other

valuation methods by blending fundamental accounting data and mechanical analyses of trends by showing the way to incorporate autocorrelation in the Residual Income Valuation(RIV) regression for improving forecast accuracy of Residual Income Valuation(RIV) (Higgins, 2011).

Firas Naim Dahmash and Dr. Majed Qabajeh (2012) examined the value relevance of Ohlson (1995) model with Jordanian data. They applied an unbalanced panel regression analysis. The sample of (365) industrial and commercial public companies listed in the Amman Security Exchange were selected. The period of study was from 2003 to 2008. The results confirmed value relevance of Ohlson (1995) for the Jordanian data. The R^2 was extremely high which indicated that the model has high explanatory power with respect to Jordanian data (Dahmash & Qabajeh, 2012).

Antonella Silvestri & Stefania Veltri (2012) carried out a multiple linear regression analysis, within a model motivated by the Ohlson model (1995), with the objective of testing the influence of the current and future accounting variables on the firm's market value. Total 30 firms from Italian Stock Market were selected. In these 30 firms,- 15 firms from banking sector, 7 from financial services sector and 8 were from insurance sector. The study results indicated that the relation between the current and future accounting variables and the market price, after controlling for market risk, was fully verified on the Italian market (Silvestri & Veltri, 2012).

Samuel I Rivera et al. (2018) conducted study with objective was to decide and investigate the value of big data for AT&T through the Ohlson model. The research was conducted in the United States in 2015 and updated in 2017. The authors did not find any statistical relevance of ohlson Model in their study. (Rivera, Román, & Schaefer, 2018).

Above studies are in the field of valuation through Residual Income Valuation(RIV). It is observed that Ohlson Model (1995) and Feltham and Ohlson Model (1995) are two milestones in the field of valuation through RIV model. (Frankel & Lee, 1998) model has also got wide popularity who included examination of value-to-price effect in RIV model. Many authors have tried to test the above models empirically by making minor alteration in original model. In most cases, data of extremely large sample are drawn from COMPUSTAT files, CRSP daily files and I/B/E/S files. Period of study ranges from 2 years up to 22 years. Many studies have applied regression analysis.

Most of study endorsed the usefulness of Residual Income Valuation(RIV) model in stock valuation.

2.6.2.4 Relative Valuation Model

‘A little inaccuracy sometimes saves a ton of explanation.’

- H.H. Munro (goodreads)

The main motivation for the popularity of multiples is their simplicity. A multiple is merely the ratio of a market price variable to a particular value driver such as earnings, of the firm. Absolute measure methods like DDM, DCF, and RIV are widely used by investment analysts and investors to calculate a company’s intrinsic value, considering fundamentals like earnings, dividends, cost of equity, leverage, and tax effects. Calculating intrinsic value requires company fundamental knowledge and calculations involved is tedious. Relative valuation Multiple helps investors determine asset prices relative to comparable assets, reducing uncertainty in stock price movements without calculating intrinsic value. (Damodaran, 2006).

Relative value multiples can be categorized as Earning Multiples, Book Value Multiples & Revenue based multiples. Earnings Multiples include Price/Earnings ratio, Value/EBIT, Value/EBITDA and Value/Cash Flow. Book Value Multiples include Price/Book Value, Value/Replacement Cost (Tobin’s Q). Revenue based multiples are Price/Sales per Share and Value/Sales (Damodaran, 2006).

Relative valuations face conceptual complexities like absolute valuations, as information is in absolute terms before being converted to relative ratios. For example, price-to -earning ratios may face difficulties like EPS and may be victimized by value illusion. Steven Greiner who was senior vice president at Charles Schwab’s Equity Ratings Department as well as author of *Ben Graham Was a Quant: Raising the IQ of the Intelligent Investor* (2011) explained that the value trap is a stock that seems undervalued by the market indicated by typical relative valuation measures, but that particular stock is low priced for justified fundamental business rationale. Such value trap stock creates a value illusion (Steven Greiner) (Fabozzi, Focardi, & Jonas, 2017).

Goedhart, Koller, and Wessels (2005) cite several ways by which multiples can mislead. Their list includes (1) the difficulty in selecting truly comparable firms within the same sector, (2) the fact

that different multiples can suggest conflicting conclusions, and (3) the idea that not all multiples are meaningful in various contexts.

Empirical Evidence of Relative Valuation Multiples

Basu's study on investment performance and P/E ratio over 14 years found that security with low P/E ratio outperforms the securities with higher P/E multiple, making it the first author to study this relationship (Basu, 1977).

Erik Lie and Heidi J. Lie (2002) studied multiples used for company valuation, analyzing data from active companies in the COMPUSTAT database. Reported data of 1998 and earnings forecasts of 1999 were studied. They found that market-to-book value of assets multiples provide more accurate predictions than sales and earnings multiples. Adjustments for cash levels do not improve valuation. Forecasted earnings improve P/E multiple estimates. EBITDA multiples provide better valuation results as compared to EBIT multiples. valuation performance differs significantly with size, profitability, and intangible value (Lie & Lie, 2002).

Liu et al. (2002) u et al. (2002) studied valuation properties of multiples and compared their relative and absolute performance. A sample of 26,613 observations of 19,879 firm years during period of 1982 to 1999 was studied. They found forward earnings multiples yielded the best results, followed by historical earnings measures, cash flow measures, and book value of equity and sales performed the worst. Further, valuation results decline for residual income modell (Liu, Nissim, & Thomas, 2002).

Young S. Park & Jung-Jin Lee (2003) conducted study with the aim of testing valuation accuracy of price-to-earning, price-to-book value, price-to-sales, and Price-to-cashflow multiples for the Japanese stock market. Period of study was from 1990 to 1999. Sample of 195 firms from 10 industries was studied. The study concluded that the Price-to-book value multiple shown the highest valuation accuracy (Park & Lee, 2003).

Andreas Schreiner (2007) Schreiner's research on valuation multiples in European and U.S. equity markets, using database of 600 European firms for the period from 1996 to 2005 and found equity value multiples outperform entity value, knowledge-related multiples perform better than

traditional multiples in science-based industries, and forward-looking multiples outperform trailing multiples. He also found that the trailing multiples are decreasing order as follows in the context of accuracy: Earnings Multiples (P/E, P/EBT, P/EBIT, and P/EBITDA) secondly, cash flow multiples (P/OCF and P/Dividends), lastly, book value multiples (P/IC, P/B, P/TA) and gross income and sales multiples (Schreiner, 2007).

Henschke & Homburg (2009) studied the impact of firm differences on valuations using industry-based multiples, studying sample for the period of 1986-2004 taken from I/B/E/S. They found that systematic errors in valuation can be forecasted accurately by comparing financial ratios of target and peer firms. They found that adequate control of differences between firms improves valuation accuracy, resulting in nearly equal performance of all value drivers (Henschke & Homburg, 2009).

Drago, S Ioan Mînjîñ A (2009) analyzed valuation results of seven multiples for BSE-listed firms. The results showed that the P/CF multiple was the best valuation performer for comparable firms based on industry membership. ROE-based selection criteria yielded the highest accuracy for P/E, P/B, P/CF, and P/TA multiples. The P/S multiple generated the least accurate valuation results for both the selection criteria. The study also found that valuation results for underdeveloped capital markets are less accurate than those of developed markets (Mînjîñ A, 2009)..

Drago, S Ioan Mînjîñ A (2009) conducted study with the aim of investigating valuation results of seven multiples for sample drawn from BSE-listed firms. For the study, five calendar years, from 2003 to 2008 and other five periods with half-years belonging to different calendar years, were analyzed. The sample of 366 BSE listed firm-periods that have positive values drivers for all seven multiples were studied. The results revealed that when the comparable firms were identified based on industry membership, the P/CF multiple turned out to be the best valuation performer. Conversely, when ROE is used as the selection criteria for comparable firms, the P/E, P/B, P/CF and P/TA multiples revealed highest accuracy. For both the selection criteria, the P/S multiple generate the least accurate valuation results. The author also noted that, valuation results for underdeveloped capital market are less accurate than that of developed market.

Norazidah Shamsudin et al. (2013) examined the relationship between historical performance of eight licensed Islamic banks in Malaysia and their stock performance using total asset turnover,

ROA, and PE ratios. They used three models namely Pooled Ordinary Least Square Models (POLS), Random Effect Model (REM), Fixed Effect Model (FEM) and applied Breusch and Pagan Langarian Multiplier Test and Hausman Fixed Test. The study found that good performance in investor's view is associated with high profitability, better efficiency, and low PE (Norazidah Shamsudin, 2013).

Muhammad Arslan & Rashid Zaman (2014) used fixed effect model for investigating the influence of dividend yield as well as P/E ratio on stock returns. 111 non-financial firms from Karachi Stock Exchange were selected. Period of study was from 1998 to 2009. The study observed significant positive impact of price earnings ratio and size of firm on stock prices while dividend yield and stock prices are negatively related. The study also suggested including the size of firm and the price earnings ratio in investment criteria for earning abnormal return (Arslan & Zaman, 2014).

Jordan R. Tilley (2015) tried to replicate the work of Basu using subsequent data by testing impact of P/E ratio on market Price. He studied market data for twenty-five years, from 1989 to 2014. Dataset contained 698,538 observations in the form of monthly closing/absolute price of stock. He applied the single-factor Capital Asset Pricing Model and the Fame-French three-factor model for testing impact of P/E ratio on market price and he found that investment in a portfolio comprised of the lowest PE ratio assets yields the highest unexplained returns over the period examined. He also found that the strategy is hold true for low and mid-priced stocks but it does not work at high price levels (Tilley, 2015).

Fitri Namira & Bernardus Y. Nugroho(2016) conducted study for analyzing the impact of enterprise multiple on stock return of non-financial companies that were listed in the Indonesian Stock Exchange during the period 2006 to 2015. They applied panel data regression test. The results revealed that company having low EV multiple generates higher stock return as compared to companies having high EV multiple (Namira & Nugroho, 2016).

Rafael Igrejas et al. (2017) conducted study with the aim of investigating the projecting power of the EV/EBITDA multiple for the Brazilian stock market. The results show that EV/EBITDA multiple has a strong relationship with the companies' future returns that were listed on the BM&F BOVESPA index between 2005 and 2013. The study observed that purchase of stocks when

EV/EBITDA is low and selling stocks when EV/EBITDA is high resulted in high abnormal returns (Igrejas, Silva, Klotzle, Pinto, & Silva, 2017).

Ja Ryong Kim(2019) conducted a study with the objective of ensuring whether the models/multiples that produce a better estimate of stock price also produce superior returns in the future. Sample of 2,531 UK companies that are listed in both COMPUSTAT Global and I/B/E/S was selected. Period of the study was from 1988 to 2008. The study carried out Pricing Errors Analysis and Time-Series Returns Analysis and applied the same method of Liu et al. (2002) for comparing various methods. The study concluded that forward earnings multiples perform the best, followed by fundamental valuation models and historical earnings multiples, and book value and sales multiples performed worst (Kim, 2019).

Tahir Akhtar (2020) checked impacts of various market multiples such as price/book, price/cash flow, price/dividend, and price/sales on stock returns between emerging (ASEAN) and developed (European) financial markets. He applied t-tests, regression analysis, and dynamic panel model on sample of 4725 firms for fifteen years i.e. from 2000 to 2014. The study found that price-to-earnings and dividend growth had negative impact on stock returns in ASEAN. While price/earnings had insignificant Positive and dividend growth had positive impact on stock returns in European markets. He also noted that 'The 2008-2009 financial crisis' and 'the 2011- 2012 European debt crisis' had a negative impact on stock returns (Akhtar, 2020).

Above 15 studies have made an effort to study the role of various valuation multiples for carrying out valuation of company. It is observed that the attraction using the P/E ratio for picking up mispriced security has remained unaltered since the early days of valuation. Generally large sized samples are drawn for studying performance valuation multiples. Period of study ranges from 5 years up to 25 years. It is also noted that along with P/E ratio Enterprise Value multiple have gained popularity in recent times.

2.7 Empirical Studies Comparing DDM, DCF, RIV & Relative Valuation Methods

Eric H. Sorensen and David A. Williamson (1985) tried to test empirically 4 different models namely; Price/Earnings Multiple, Constant Growth Model, Two-Stage, and Three-Stage Model. They investigated the intrinsic value of a random sample of 150 firms taken from the S&P 400

considering data of 1981. For every model, they created 5 portfolios of 30 stocks each and arranged from undervalued to overvalued securities using estimated returns of two years. The result of their analysis found that the Three-Stage Model outperformed the Price/Earnings Multiple, Constant Growth Model, Two- Stage Model (Sorensen & Williamson, 1985).

Kaplan & Ruback's 1995 study compared the market value of highly leveraged transactions (HLTs) with the intrinsic value derived through DCF. They selected 51 HLTs between 1983 and 1989 and found that the intrinsic value of HLTs is within 10% of the market value of completed HLTs. They also calculated the EV/EBITDA multiple and found that both DCF and relative valuation methods yielded satisfactory results with close precision levels. The study concluded that DCF and relative valuation methods are trustworthy estimates of market value (Kaplan & Ruback, 1995).

Stephen H. Penman & Theodore Sougiannis (1998) conducted study with objective of comparing valuation results using Dividend, Cash Flow, and Earnings Approaches to Equity Valuation. While applying RIV, they used ex-post realization of earnings in place of ex-ante expectations. Sample of 20 portfolios at the end of each year of the sample period of 1973-1990 was studied. They observed that valuation errors are lower when accrual earnings techniques (RIV) are used instead of cash flow or dividend discounting techniques (Penman & Sougiannis, 1998).

Jennifer Francis et al. (2000) conducted a study to evaluate the accuracy of Dividend Discount, Discounted Free Cash Flow, and Discounted Abnormal Earnings Models in explaining cross-sectional variation in share prices. They obtained projected data from third-quarter Value Line reports for 2,907 companies from 1989 to 1993, and historical data from COMPUSTAT and CRSP. The study assumed a single growth phase of 5 years for each company, and terminal values were calculated assuming no growth or growth at 4%. The results showed that abnormal earning (RIV) value estimates were more accurate and explained more variation in security prices than FCF or DIV value (Francis, Olsson, & Oswald, 2000).

Jing Liu et al. conducted a study comparing valuation properties of various valuation drivers/multiples. They analyzed 26,613 observations from COMPUSTAT, IBES, and CRSP from 1982 to 1999. The results showed that forward earnings multiple produced the best results, followed by historical earnings measures, cash flow measures, and book value of equity and sales.

The residual income model also showed a decline in valuation results (Liu, Nissim, & Thomas, 2002). Liu et al. (2007) extended their study to non-U.S. companies, using forecasted operating cash flows, dividends, and earnings instead of reported data. The sample of 1,559,421 observations from 25,843 companies from Australia, France, Hong Kong, Taiwan and United Kingdom was selected from January 1987 through September 2004. They found that shifting from reported data to forecasts improved the performance of operating cash flows and earnings significantly. EPS forecasts indicated superior measures of value compared to operating cash flow forecasts for most industries in all five countries covered in the study (Liu, Nissim, & Thomas, 2007).

Efthimios G. Demirakos et al. (2010) studied the impact of different valuation models on the prediction accuracy of target prices in equity research analysis reports. They studied 490 equity research reports from 94 UK-listed firms from international investment houses from 2002 to 2004. The results showed that initially, price-to-earnings (PE) models outperformed discounted cash flow (DCF) models. However, when controlling variables causing valuation problems, DCF models improved in all aspects and performed better than PE models (Demirakos, Strong, & Walker, 2010).

Gustav Claesson (2011) carried out study with the objective of investigating the applicability of the Free Cash Flow to Equity Model and the Dividend Discount Model on ten large cap firms on the Stockholm Stock Exchange. 10 companies listed on the NASDAQ OMX Stockholm were selected for study. The selection of the company was based on size, business cycle and turnover as the main attributes. DDM is more suitable for valuation of FMCG firms, FCFE is more suitable for health service industry firms, whereas industrial goods & services industry are compatible with both DDM & FCFE. He also added that the FCFE is more suited for firms with dividend payout ratios in the range between 0.36 and 0.50 (Claesson, 2011).

Mohammad Ali Tareq's 2012 study aimed to understand why RIM provides superior value estimates than DDM when terminal value is unavailable, or the growth rate is perpetual. He empirically tested (Lundholm & O'Keefe, 2001)'s sample and found that RIM fails to provide true value estimates when the terminal value is unavailable, or the asset has a perpetual growth rate. The assumption of transversality condition, which states that the book value of the equity moves closer to zero as time moves to infinity, becomes invalid. Tareq found that if the growth rate in the

ending book value is not less than the cost of capital, RIM provides a constant present value, making it an empirically superior technique in valuation analysis(Tareq, 2012).

Christoph Hukelmann et al. (2012) conducted study to test accuracy of DDM, DCF & RIV. Period of study was from 1990 to 2006. 29 companies of the DAX 30 index were selected to conduct the study for German listed firms. Absolute prediction error and multiple regressions was applied. The results demonstrated that Dividend Discount Model (DDM) and Residual Income valuation models offer better accuracy in comparison to the free cash flow approach (Hukelmann, Mateus, & Mateus, 2012).

Georgia Pazarzi (2014) conducted study with the objective to analyzing the performance the residual income and the pricing - multiples model. Data of 473 UK companies from data stream were selected for study. Period of study was from 31/12/2001 to 31/12/2002. Average Absolute Prediction Error (APE) and Signed Prediction Error (SPE) were calculated. The study observed that the pricing -multiples model is better predictor of market prices as compared to the residual income valuation model. Further, the harmonic mean yields more reliable estimates of value for a set of different industries. Finally, none of the value driver dominates all the industries (Pazarzi, 2014).

John R. M. Hand et al. (2015) Conducted study with the objective of identifying sell-side equity analyst reports containing Discounted Cash Flow and Residual Income valuation (RIV) model, and their related valuations. The sample of 422 analyst reports issued over the period January 1998 to December 2013 covering 103 different firms of U.S. were studied. Study noted that theoretically DCF and RI are believed to be same. However, analysts study Residual Income valuation (RIV) in two contexts, ROE-RI & RNOA-RI. The study observed that analysts' DCF and ROE-RI valuations are often significantly dissimilar from each other, while their RNOA-RI and DCF valuations are incredibly close to each other. The analysts' RNOA-RI and DCF valuations are so similar because analysts 'RNOA-RI valuations are merely a repackaging of their DCF data inputs and valuations. Study also noted that between DCF and ROE-RI valuations, analysts' target prices are more determined by their ROE-RI valuations than their DCF counterparts (Hand, Coyne, Green, & Zhang, 2015).

The finding of studies conducting comparison are as follows

The 12 studies analyzed various valuation techniques to determine the best one for a company. The sample size ranged from 10 to 25,843 companies, with many examining equity analysts' reports. Absolute valuation methods require many factors related to company, industry, and economy, limiting the sample size. Relative valuation measures required a couple of variables, allowing for a larger sample. Statistical techniques like Multiple Regressions, Average Absolute Prediction Error (APE), and Signed Prediction Error (SPE) Were Applied. It is observed that, the most of the studies excluded financial companies while carrying out valuation because separate bank law is applicable to financial companies. Literature review indicated that RIV and DCF were effective absolute valuation measures, while PE ratio and Enterprise value ratios were popular relative valuation measures. Next part cover the studies which applied E-I-C framework.

Economy, industry, and company analysis were used to establish relationships between macroeconomic variables and company share price. However, in practical life, variables from economy, industry, and company have a composite influence on company share price. Some researchers attempted to measure this influence and carry out valuation using the E-I-C framework.

2.8 Empirical Studies on Fundamental Analysis Using E-I-C Framework.

Recently, some researchers tried to search for intrinsic value by following all the three steps of E-I-C framework. Discussed below are such studies in the field.

Hemal Pandya and Hetal Pandya (2013) conducted a study on Tata Motors and Maruti Suzuki to estimate their intrinsic value using the E-I-C framework. They studied trends in gross domestic product, inflation, unemployment, and foreign direct investments over unequal periods. They concluded that these microeconomic factors positively impacted the Indian automobile industry. However, they did not use statistical tools to investigate the casual relationships between microeconomic factors and industry or stock returns. They also conducted an industry analysis of the IT industry using various tools, including Michael Porter's Five Forces Analysis, SWOT analysis, and BCG Matrix. They found that the automobile sector has strong prospects. The study analyzed company performance over a four-year period from 2007 to 2011, using metrics such as Return on Equity, Book Value per Share, Earnings Per Share, Dividend Per Share, Dividend Payout Ratio, Debt-Equity Ratio, CAGR of Earnings, Sustainable Growth Rate, Beta, and Volatility of ROE to predict PE ratios, determine stock intrinsic value, and determine overvalued or undervalued securities (Pandya & Pandya, 2013).

Silpa K S et al. (2017) conducted Fundamental analysis of 5 IT companies listed at NSE. In economic analysis CAGR of GDP, inflation rate, IIP, balance of payment, fiscal deficit, current account deficit, unemployment rate was calculated for period of 5 years i.e. from 2011-12 to 2015-16 and did trend analysis. However, no attempt was made to quantify the impact of these factors on the performance of the selected company. Industry analysis was carried out using Michael Porter's five forces analysis. Lastly, Company analysis was carried out using various ratios such as EPS, Book Value, P/E ratio, return on equity and Dividend payout ratio and intrinsic value was calculated using the PE ratio (S, J, & Ambily, 2017).

Akansha Nagpal et al. (2019) carried out fundamental analysis using E-I-C approach of 5 Indian automobile companies. Period of study was from 2013-14 to 2017-18. They studied the trends of growth rate of GDP, inflation rate, unemployment rate and current account deficit for economic analysis. They carried out industry analysis using 'Porter's 5 forces model' and SWOT analysis for industry. Lastly, they studied EPS, ROE, P/E ratio, book value and attempted to find whether the stock is overvalued or undervalued using P/E ratio. The study concluded that Government of India brought numerous initiatives to enrich automotive industry in coming years to offer growth and development opportunity to Indian economy. Moreover, industry analysis endorsed investment in automobile industry (Nagpal, Chandok, & Chhabra, 2019).

Manju Y Shattennavar & Prof. Pramod S G conducted a fundamental analysis using the E-I-C framework to calculate the intrinsic value of 3 Indian companies each from IT, Pharma, and Cement. They observed economic trends such as GDP growth rate, inflation rate, foreign exchange reserve, interest rate, and India's current account to GDP. However, no statistical tools or methods were used to find a relationship between macroeconomic factors and stock price. Industry analysis was conducted using Michael Porter's 5 forces analysis, and company ratios like net profit margin, PE ratio, dividend yield, and EPS and DPS were calculated. However, no attempts were made to calculate the intrinsic value of all companies (Shattennavar & Prof. Pramod S G, 2020).

Bhumika Dang & Aditya Singhal (2021) carried out intrinsic value of 8 Indian IT companies following E-I-C framework of fundamental analysis. For economic analysis they studied trends of GDP growth rate, inflation rate, unemployment rate and corporate tax rate however, its effect or causal relationship with industry or company was not studied. Their next step was SWOT analysis

of IT industry, but they again fail to find impact of industry related factor on company. Lastly, they studied ratios such as EPS, Book Value, P/E ratio, return on equity and Dividend pay-out ratio are for analyzing the companies and determining the undervalued and overvalued companies. Unequal periods were chosen for studying various elements of economy, industry, and company and no proper conclusion derived by the study (Dang & Singhal, 2021).

Denni Sebastin Rajamani et al.(2022) conducted a fundamental analysis of TATA power from 2019-2022 using the E-I-C framework. They studied economic factors such as GDP, inflation rate, FDI, and unemployment trends but failed to quantify their association with TATA power price. The study suggested that the power sector will play a crucial role in GDP growth and employment opportunities. The SWOT analysis revealed that government initiatives in GST, infrastructure, and IT will benefit the power industry. The study also used five financial ratios namely, ROE, EPS, P/E ratio, book value per share, dividend payout ratio and debt to equity ratio to estimate intrinsic value but failed to quantify the effect of economic and industrial factors on the company's price, as only the PE ratio was used for determining intrinsic value (Rajamani.S, Haq.T.M, Kabeer.S.U, .Srivathsan.S, & .Vishwanath.M, 2022).

The studies on fundamental analysis using the E-I-C framework for automobile and IT companies are divided into three parts: economic analysis, industry analysis, and company analysis. Literature review on E-I-C framework revealed that at first place, Economic analysis considers various macroeconomic factors such as Gross Domestic Product, Inflation, Unemployment, and Foreign Direct Investments, IIP, Balance Of Payment, Fiscal Deficit, Current Account Deficit, Foreign Exchange Reserve, interest rate, but fails to quantify their impact on stock returns. The author suggests that the impact of microeconomic factors on stock returns needs to be quantified using statistical tools and techniques. Instead of relying solely on PE multiple for intrinsic calculation, other methods and multiples should be considered. Secondly, for industry analysis, methods such as industry life cycle analysis, Michael Porter's Five Forces analysis, SWOT analysis, and BCG Matrix are used. industry analysts also considers various industrial variable but fails to quantify their impact on stock returns. Lastly, Company analysis considers company-related variables such as EPS, Book Value, P/E ratio, return on equity, dividend pay-out ratio, and debt-equity ratio. However, referring only to PE multiple at the time of destemming intrinsic value is

questionable. Thus, intrinsic value calculated in all above studies was just using P/E multiple. It is observed that no attempt were made to figure out what is impact of other variables from economy, industry or even from company itself. The present study suggests to assess the impacts of various variables from Economy, industry & company rather than relaying just on one multiple.

2.9 Research Gap

Making wise investment decisions in securities requires first knowing their intrinsic Value which is nothing but true value using thorough valuation Methods. For this purpose, several techniques—including technical and fundamental analysis—are used worldwide. This paper focusses on using fundamental analysis for valuing shares, which may be done by numerous methods, such the Dividend Discount Model (DDM), Discounted Cash Flow (DCF), Residual Income Valuation (RIV), and valuation multiples. These methods, however, sometimes produce different outcomes and could leave people in doubt.

The Existing research does not agree on a universally accepted valuation method. Therefore, the present study uses a method-based comparison analysis based on case studies to find the most accurate sector-specific valuation method. Furthermore, even if most valuation studies focus just on company-specific criteria, it is important to realise that a company's share price is influenced not only by internal factors but also by more general economic and industry dynamics. This discrepancy emphasises the requirement of a comprehensive strategy including the impact of industry-specific and macroeconomic factors into the valuation process.

This study uses the Economy-Industry-Company (E-I-C) paradigm to recommend a limited number of economic and industry variable to track share price changes, therefore addressing these constraints. To suggest suitable valuation method and key variables to tracked from economy and industry for company within the purview, the study uses case studies of four listed firms and a survey of experts using questionnaire. This combined method seeks to offer a more complete and accurate structure for share valuation.

Works Cited

- Abarbanell, J. S., & Bushee, B. J. (1998, January). Abnormal Returns to a Fundamental Analysis Strategy. *The accounting Review*, 73(01), 19-45.
- Abdullah, M. N., & Shamsheer, R. (2011, December). A Study on the Impact of PEST Analysis on the Pharmaceutical Sector: The Bangladesh Context. *Journal of Modern Accounting and Auditing*, 7(12), 1446-1456.
- Acheampong, P., & Agalega, E. (2013). Examining the dividend Growth Model for stock valuation: Evidence from selected stock on the Ghana stock Exchange. *Research Journal of Finance and Accounting*, 4(8), 112-120.
- Agrawal, D. N. (2015, July). Recent Growth Trends of Automobile Industry in india. *INDIAN JOURNAL OF APPLIED RESEARCH*, 5(7), 376-378.
- Ajekwe, C. C., & Ibiamke, A. (2018). Financial Statement Analysis to Predict Stock Returns of Listed Consumer Goods Firms in Nigeria. *Journal of Finance and Accounting*, 06(01), 27-33.
- Akhtar, T. (2020). Market multiples and stock returns among emerging and developed. *Borsa _Istanbul Review*, 1-13.
- Al-Debie, M., & Walker, M. (1999). FUNDAMENTAL INFORMATION ANALYSIS: AN EXTENSION AND UK EVIDENCE. *British Accounting Review*, 31, 261–280.
- Alexakis, C., Patra, T., & Poshakwale, S. (2010, August). Predictability of Stock Returns using Financial Statement Information: Evidence on Semi-strong Efficiency of Emerging Greek Stock Market. *Applied Financial Economics*, 20(16), 1321-1326.
- Allad, I., & Maisuria, M. (2015, Feb-March). IT sector in India – Evolution, Growth and a Tool of Economic Development. *International Journal for Research in Management and Pharmacy*, 4(2), 10-13.
- Altman, E. I. (1968, September). Financial Ratios, Discriminant Analysis and the Prediction of Corporate. *The Journal of Finance*, 23(4), 589-609.

- Amling, F. (1978). *Investments: An Introduction to Analysis and Management* (4th ed.). Prentice Hall.
- Ana, M., & Saša, P. (2015). Towards and Effective Financial Management: Relevance of Dividend Discount Model in Stock Price Valuation. *Economic Analysis*, 48(1-2), 39-53.
- Ang, J. S., & Ciccone, S. J. (2011, NOVEMBER). Dividend Irrelevance Theory. *Dividend Irrelevance Theory*.
- Armitage, S. (2008). Incorporating financing-related determinants of value in the discounted cash flow model. *Journal of Economic Surveys*, 22(2), 274-98.
- Arnold, G. (2005). *THE HANDBOOK OF CORPORATE FINANCE*. Great Britain: Library of Congress Cataloging-in-Publication Data.
- Arslan, M., & Zaman, R. (2014). Impact of Dividend Yield and Price Earnings Ratio on Stock. *Research Journal of Finance and Accounting*, 05(19).
- Baggins, B. (n.d.). *Theories of Value*. Retrieved July 26, 2019, from <https://www.marxists.org:https://www.marxists.org/reference/subject/philosophy/help/value.htm>
- Barber, W. J. (n.d.). KNUT WICKSELL AND THE SWEDISH BRAND. In W. J. Barber, *A HISTORY OF ECONOMIC THOUGHT*.
- Basha, V. J. (2014). Empirical Study on Estimation of Value using Constant Dividend Growth (Gordon) Model: With Special Reference to Selected Companies. *International Journal of Management and Social Sciences Research*.
- Basri, F. O., & Damayanti, S. M. (2020). Company Valuation of PT Perusahaan Gas Negara Tbk. *International Conference on Economics, Business and Economic Education 2019, KnE Social Sciences*, 602–612.
- Basu, S. (1977, June). Investment Performance of Common Stocks in Relation to Their Price-Earnings Ratios: A Test of the Efficient Market Hypothesis. *Journal of Finance*, 32(3), 663-682. doi:<https://doi.org/10.2307/2326304>

- Beggins. (n.d.). *Encyclopedia Biography carl Menger*. Retrieved July 31, 2019, from The Library of economics & liberty: <https://www.econlib.org/library/Enc/bios/Menger.html>
- Begley, J., & Feltham, G. A. (2000, August 21). The Relation Between Market Values, Earnings Forecasts, and Reported Earnings. *The Relation Between Market Values, Earnings Forecasts, and Reported Earnings* 1.
- Bezawada, B., & Tati, R. (2017). Dividend Policy and Firm Valuation—A Study of Indian Electrical Equipment Manufacturing Industry. *Theoretical Economics Letters*, 07, 1233-1243.
- Bhattacharya, B., & Mukherjee, J. (2002). The Nature of the Causal Relationship between Stock Market and Macroeconomic Aggregates in India: An Empirical Analysis. *4th Annual Conference on Money and Finance, Mumbai*.
- Bierman, H. J., Bonini, C. P., Fouraker, L. E., & Jaedicke, R. K. (1965). *Quantitative Analysis For Business Decisions* (Revised edition ed.). Richard D. Irwin, Inc.
- Black, F. (1976). The Dividend Puzzle. *Journal of Portfolio Management*, 02, 5-8.
- Black, F., & Scholes, M. (1974, May). The Effects of Dividend Yield and Dividend Policy on Common Stock Prices and Returns. *Journal of Financial Economics*, 1(1), 1-22.
- Black, F., & Scholes, M. (1974, May). The effects of dividend yield and dividend policy on common stock prices and returns. *Journal of Financial Economics*, 01(01), 1-22.
- Brigham, E. F., Gapenski, L. C., & Daves, P. R. (2003). *Intermediate Financial Management* (8th International student edition ed.). Cengage Learning, Inc.
- Brock, W., Lakonishok, J., & LeBaron, B. (1992, December). Simple Technical Trading Rules and the Stochastic Properties of Stock Returns. *The Journal of Finance*, 47(05), 1731-1764.
- Buffett, W. (n.d.). *Quotes on Valuation*. Retrieved from www.novelinvestor.com: <https://quote-category/valuation/>
- Butler, E. (2010). *Ludwig von Mises – a Primer*. Great Britain: The Institute of Economic Affairs.

- Chan, L. K., Hamao, Y., & Lakonishok, J. (1991, december). Fundamentals and stock returns in japan. *The Journal of Finance*, 46(05), 1739-1764.
- Chandra, P. (2017). *Investment Analysis and Portfolio Management*. Chennai: McGraw Hill Education (India).
- Charumathi, B., & Suraj, E. S. (2014, March). The reliability of Dividend Discount Model in valuation of bank stocks at the Bombay Stock exchange. *CLEAR International Journal of Research in Commerce & Management*, 5(3), 39-44.
- Chen, D., Ma, X., & Yan, R. (2021). Stock Prices and DCF valuation – Evidence from China. *Advances in Economics, Business and Management Research*, 190, 390-397.
- Choi, & Young-Soo. (2002, september). THE RELIABILITY AND THE APPLICABILITY OF THE RESIDUAL INCOME-BASED VALUATION MODEL: Theoretical Augmentation of the Linear Information Dynamics Model and its Validity Compared with Ohlson (1995) and Edwards-Bell-Ohlson Approaches. *THE RELIABILITY AND THE APPLICABILITY OF THE RESIDUAL INCOME-BASED VALUATION MODEL: Theoretical Augmentation of the Linear Information Dynamics Model and its Validity Compared with Ohlson (1995) and Edwards-Bell-Ohlson Approaches*. ProQuest LLC (2018).
- Chung, H. Y., & Kim, J.-B. (2001, June). A Structured Financial Statement Analysis and the Direct Prediction of Stock Prices in Korea. *Asia-Pacific Financial Markets*, 08, 87-117.
- Claesson, G. (2011, June). Firm valuation: Which Model gives me the most accurate share price, the Dividend Discount Model or the Free Cash Flow to Equity model? *Firm valuation: Which Model gives me the most accurate share price, the Dividend Discount Model or the Free Cash Flow to Equity model*. Jönköping University.
- Copeland, T., Koller, T., & Murrin, J. (1995). *valuation: Measuring and Managing the Value of Companies* (2 ed.). Wiley Publishing.

- Dahmash, F. N., & Qabajeh, D. M. (2012, March). Value Relevance of Ohlson Model with Jordanian Data. *INTERDISCIPLINARY JOURNAL OF CONTEMPORARY RESEARCH IN BUSINESS*, 11(03).
- Damodaran, A. (2006). *Damodaran on Valuation: Security Analysis for Investment and Corporate Finance* (2nd ed.). Wiley.
- Dang, b., & Singhal, A. (2021, April-June). Fundamental Analysis: A Study of IT Sector in India. *HANS SHODH SUDHA*, 1(4), 17-24.
- Darrat, A. F., & Brocato, J. (1994). Stock Market Efficiency and the Federal Budget Deficit: Another Anomaly? *The Financial Review*, 29(1), 49-75.
- Dean, j. (1951). *Capital Budgeting*. Columbia Univ Press.
- Dechow, P. M., Hutton, A. P., & Sloan, R. G. (1999). An empirical assessment of the residual income valuation model. *Journal of Accounting and Economics*, 26, 1-34.
- DeMarzo, J. B. (2008). *CORPORATE FINANCE* (Third ed.). (D. Battista, Ed.) London: Pearson Education, Inc.
- Demirakos, E. G., Strong, N. C., & Walker, M. (2010). Does Valuation Model Choice Affect Target Price Accuracy? *European Accounting Review*, 19(1), 35-72.
- Dhatt, Kim, Y. H., & Mukherji, S. (1999). Relations Between Stock Returns and Fundamental. *Asia-Pacific Financial Markets*, 06, 221-233.
- Dow, C. (1901, July). Methods of Reading the Market. *Wall Street Journal*.
- Dr. Chung Hwan Kwak. (n.d.). *John Bates Clark*. Retrieved July 02, 2020, from new world encyclopedia: https://www.newworldencyclopedia.org/entry/John_Bates_Clark
- Durand, D. (1952). Costs of Debt and Equity Funds for Business: Trends and Problems of Measurement. *Conference on Research in Business Finance*. the National Bureau of Economic Research.

- E.K. Hunt, M. L. (2011). *History of Economic Thought- A CRITICAL PERSPECTIVE* (third ed.). United States of America, United States of America: M.E. Sharpe, Inc.,.
- Edwards, G., & Williams, J. (. (1939, March 1). The Theory of Investment Value. *Journal of the American*, 34, 195.
- Elton, E. J., & Grubber, M. J. (1970, February). Marginal Stockholder Tax Rates and the Clientele Effect. *Review of Economics and Statistics*, 52(1), 68-74.
- Ernesto Screpanti, S. Z. (2005). *An Outline of the History of Economic Thought* (second ed.). (D. F. Kirby, Trans.) New York: Oxford University press.
- Fabozzi, F. J., Focardi, S. M., & Jonas, C. (2017). *EQUITY VALUATION Science, Art, or Craft?* The CFA Institute Research Foundation.
- Fama, E. F. (1981). Stock returns, real activit y, inflation, and money. *The American Economic Review*, 71(4), 545 565.
- Farooq, M. S., & Thyagarajan, V. (2014, October 10). VALUATION OF FIRM: METHODS & PRACTICES-AN EVALUATION. *MPACT: International Journal of Research in Business Management (IMPACT: IJRBM)*, 2(10).
- Fernandez, P. (2015). Valuing Companies by Cash Flow Discounting: Ten Methods and Nine Theories. *EFMA 2002 London Meetings*.
- Fisher, I. (1930). *The Theory of interest*. The Macmillan Comapny.
- Forsyth, J. A. (2019). An alternative formula for the constant growth model. *Journal of Economics, Finance and Administrative Science*, 24(48), 221-240.
- Francis, J., Olsson, P., & Oswald, D. R. (2000). Comparing the Accuracy and Explainability of Dividend, Free Cash Flow, and Abnormal Earnings Equity Value Estimates. *Journal of Accounting Research*, 38(1), 45-70.
- Frankel, R., & Lee, C. (1998). Accounting valuation, market expectation, and cross-sectional stock returns. *Journal of Accounting & Economics*, 25(3), 283-319.

- Friedrich, & Lutz, V. (1951). *The theory of investment of the firm*, by Friedrich and Vera Lutz. Greenwood Press.
- Fuller, R. J., & Hsia, C.-C. (1984, September). A Simplified Common Stock Valuation Model. *Financial Analysts Journal*, 40(5), 49–56.
- Gacus, R. B., & Hinlo., J. E. (2018, January). The Reliability of Constant Growth Dividend Discount Model(DDM) in Valuation of Philippine Common Stocks. *international journal of econimics and management science*, 7(1).
- Gadasandula, K. (2019). Effect of Macroeconomic Determinants on Indian Stock Market. *Asian Journal of Managerial Science*, 8(2), 22-27.
- Gardne, J. C., McGowa, C. B., & Moelle, S. E. (2012, November). Valuing Coca-Cola Using The Free Cash Flow To Equity Valuation Model. *Journal of Business & Economics Research*, 10(11), 629-636.
- Garg, K., & Kalra, R. (2018). Impact of macroeconomic factors on Indian stock market. *Parikalpana 136 - KIIT Journal of Management*, 14(1), 134-145. doi:DOI: 10.23862/kiit-parikalpana/2018/v14/i1/17324
- Geyfman, V., Wimmer, H., & Rada, R. (2016). The Use of Accounting Screens for Separating Winners from Losers Among the S&P 500 Stocks. *Journal of Accounting and Finance*, 16(01), 45-60.
- Giri, A., & Pooja, J. (2017). THE IMPACT OF MACROECONOMIC INDICATORS ON INDIAN STOCK PRICES: AN EMPIRICAL ANALYSIS. *Studies in Business and Economics*, 12(1), 61-78.
- goodreads. (n.d.). *saki- Quotes-Quotable Quote*. Retrieved December 29, 2021, from [www.goodreads.com: https://www.goodreads.com/quotes/50684-a-little-inaccuracy-sometimes-saves-a-ton-of-explanation](https://www.goodreads.com/quotes/50684-a-little-inaccuracy-sometimes-saves-a-ton-of-explanation)
- Gopinathan, R., & Durai, S. R. (2019). Stock market and macroeconomic variables: new evidence from India. *Gopinathan and Durai Financial Innovation*, 1-17. Retrieved from <https://doi.org/10.1186/s40854-019-0145-1>

- Gordon, M. J. (1959, May). Dividends, Earnings, and Stock Prices. *The Review of Economics and Statistics*, 41(02), 99-105.
- Gordon, M. J. (1963, May). Optimal investment and financing policy. *The Journal of Finance*, 18(02), 264-272.
- Gordon, M. J., & Shapiro, E. (1956, October). Capital Equipment Analysis: The Required Rate of Profit. *Management Science*, 03(01), 102-110.
- Gordon, M. J., & Shapiro, E. (1956, October). Capital Equipment Analysis: The Required Rate of Profit. *Management Science*, 3(1), 102-110.
- Goslin, J., Chai, D., & Gunasekarage, A. (2012). The Usefulness of Financial Statement Information in Predicting Stock Returns: New Zealand Evidence Stock Returns: New Zealand Evide. *Australasian Accounting, Business and Finance Journal*, 06(02), 51-70.
- Graham, B., & Dodd, D. (2008). *Security Analysis* (6th Edition ed.). McGraw-Hill Education.
- Graham, B., & Dodd, D. (2009). *security Analysis* (6th ed.). New York, Chicago, San Francisco ,Lisbon, London, Madrid, Mexico City, Milan, New Delhi, San Juan, Seoul,Singapore, Sydney , Toronto: MC GRAW Hills.
- Grampp, W. D. (n.d.). *Wicksteed, Philip Henry*. Retrieved 07 02, 2020, from encyclopedia.com: <https://www.encyclopedia.com/social-sciences/applied-and-social-sciences-magazines/wicksteed-philip-henry>
- Gregoric, M. (2014). PESTEL ANALYSIS OF TOURISM DESTINATIONS IN THE PERSPECTIVE OF BUSINESS TOURISM (MICE). *Tourism and Hospitality Industry 2014, CONGRESS PROCEEDINGS Trends in Tourism and Hospitality Industry*, (pp. 551-565).
- Hackel, K. S., & Livnat, J. (2012). *Cash Flow and Security Analysis* (3 ed.). McGraw-Hill Education.
- Hagstrom, R. G. (2004). *The Warren Buffett Way*. (2nd, Ed.) John Wiley & Sons, 2004.

- Hakim, M. A., Dr. Raden Aswin Rahadi, R., & M. Akmal Adrianza S.E., M. A. (2020, June). VALUATION BUSINESS IN PEER TO PEER LENDING WITH DISCOUNTED CASH FLOW (DCF) METHOD. *Advanced International Journal of Banking, Accounting and Finance (AIJBAF)*, 2(3), 01-12.
- Hand, J. R., Coyne, J., Green, J., & Zhang, X. F. (2015, January). The dual use of residual income and. *SSRN electronic journals*.
- Henschke, S., & Homburg, C. (2009, May). Equity Valuation Using Multiples: Controlling for Differences Between Firms. *SSRN electronic journals*.
- Higgins, H. N. (2011, May). Forecasting stock price with the residual income model. *Review of Quantitative finance & Accounting*, 36(4), 583-604.
- Holthausen, R. W., & Larcke, D. F. (1992, june - September). The prediction of stock returns using financial statement information. *journal of Accounting and Economics*, 15(2-3), 373-411.
- Hukelmann, C., Mateus, C., & Mateus, I. (2012, November 6). How Good are Equity Valuation Models in Predicting Stock Prices? *SSRN journals*.
- Igrejas, R., Silva, R. B., Klotzle, M. C., Pinto, A. C., & Silva, P. V. (2017, Sep-Dec). Enterprise Multiple and Future Returns of the. *REBRAE, Curitiba*, 10(3), 431-443.
- Ivanovska, N., Ivanovski, Z., & Narasanov, Z. (2014). Fundamental Analysis and Discounted Free Cash Flow Valuation of Stocks at Macedonian Stock Exchange. *UTMS Journal of Economics*, 5(1), 11-24.
- Ivanovski, Z., Ivanovska, N., & Narasanov, Z. (2015). APPLICATION OF DIVIDEND DISCOUNT MODEL VALUATION AT MACEDONIAN STOCK-EXCHANGE. *UTMS Journal of Economics*, 06(01), 147-154.
- Jacobsen, R. (1988, Sep- Oct). The Persistence of Abnormal Returns. *Strategic Management Journal*, 9(5), 415-430.
- Jennergren, L. P. (2011). A Tutorial on the Discounted Cash Flow Model for Valuation of Companies. *SSE/EFI Working Paper Series in Business Administration (1998)*, 1.

- Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *The Ninety-Eighth Annual Meeting of the American Economic Association* . 76, pp. 323-329. American Economic Association .
- Johan, S. (2020). Macroeconomic determinants of auto sales in ASEAN: an empirical study in five major ASEAN countries. *Journal of ASEAN Studies*, 8(2), 95-110. doi:DOI: <https://doi.org/10.21512/jas.v8i2.6621>
- Jowett, B. (1892). The Dialogues of Plato. In B. Jowett, & B. JOWETT (Ed.), *The Dialogues of Plato* (B. JOWETT, Trans., Third Edition ed., Vol. 5, p. 362). LONDON: HUMPHREY MILFORD: Oxford University Press.
- Kaplan, S. N., & Ruback, R. S. (1995, september). The Valuation of Cash Flow Forecasts:An Empirical Analysis. *THE JOURNAL OF FINANCE*, 50(4), 1059-1093.
- Kebriaee-zadeha, A., Zartabb, S., Fatemic, S. F., & Radmanesha, R. (2013). Fundamentals and Stock Return in Pharmaceutical Companies: a Panel Data Model of Iranian Industry. *Iranian Journal of Pharmaceutical Sciences*, 09(01), 55-60.
- Keswani, S., & Wadhwa, B. (2019, August). Evaluating the Impact of Macroeconomic Variable on Indian Stock Market. *International Journal of Engineering and Advanced Technology*, 8(6), 4427-4434. doi:DOI: 10.35940/ijeat.F8972.088619
- Khotimah, K., & Murtaqi, I. (2015). THEFUNDAMENTALANALYSISOFINDONESIANSTOCKRETURN(CASESTUDY: LISTEDPUBLICCOMPANIESINSUB-SECTORFOODANDBEVERAGEFORTHEPERIOD2003-2012). *JOURNAL OF BUSINESS AND MANAGEMENT*, 04(01), 95-104.
- Kim, J. R. (2019, May-August). A Comparison of Equity Valuation Models: Empirical Evidence from a Sample of UK Companies. *European Journal of Multidisciplinary Studies*, 4(2), 105-120.
- Konek, .., & Ms.Srilakshmi.D. (n.d.). Valuation of Equity using Discounted Cash flow Method. *Journal of University of Shanghai for Science and Technology*, 23(3), 125-132.

- Kothari, S. (2001). Capital markets research in accounting. *JAE Rochester Conference April 2000*, (p. 145).
- Kothari, S. (2001). Capital markets research in accounting. *Journal of Accounting and*, 31(01), 105-231.
- Kourtis, G., Kourtis, E., Kourtis, M., & P.G.Curtis. (2017). Fundamental Analysis, Stock Returns and High B/M Companies. *International Journal of Economics and Business Administration*, 05(04), 3-18.
- Krishnan, K. (n.d.). *Enrico Barone*. Retrieved from encyclopedia britannica: <https://www.britannica.com/biography/Enrico-Barone>
- Kuh, E. (1960). CAPITAL THEORY AND CAPITAL BUDGETING. *Metroeconomica*, 12(2-3).
- Kumar, A. (2011, May). AN EMPIRICAL ANALYSIS OF CAUSAL RELATIONSHIP BETWEEN STOCK MARKET AND MACROECONOMIC VARIABLES IN INDIA. *IJCSMS International Journal of Computer Science & Management Studies*, 11(01), 2231–5268.
- Kwon, C. S., & Shin, T. S. (1999). Cointegration and causality between macroeconomic variables and stock market returns. *Global Finance Journal*, 10(01), 71-81.
- Lee, W.-J., & Zhang, Y. (2014, June). Accounting Valuation and CrossSectional Stock Returns in China. *china Accounting and finance review*, 16(2), 155-170.
- Lev, B., & Thiagarajan, S. R. (1993). Fundamental Information Analysis. *journal of Accounting Research*, 31(02), 190-215.
- Lie, E., & Lie, H. J. (2002, March/April). Multiples Used to Estimate Corporate Value. *Financial Analyst Journal*, 58(2).
- Lintner, J. (1962, August). Dividends, Earnings, Leverage, Stock Prices and the Supply of Capital to Corporations. *The Review of Economics and Statistics*, 44(03), 243-269.
- Liu, J., Nissim, D., & Thomas, J. (2002, March). Equity Valuation Using Multiples. *Journal of acoounting Research*, 40(1), 135-172.

- Liu, J., Nissim, D., & Thomas, J. (2007, March/April). Is Cash Flow King in Valuations? *Financial Analysts Journal*, 63(2), 13 pages.
- Lo, A. W., Mamaysky, H., & Wang, J. (2000). Foundations of Technical Analysis: Computational Algorithms, Statistical Inference, and Empirical Implementation. *Journal of Finance*, 55(04), 1705-1765.
- Lo, K., & Lys, T. Z. (2000, february). The Ohlson Model: Contribution to Valuation Theory, Limitations, and Empirical Applications. *journal of Accounting, Auditing and finance*, 15(03).
- Lundholm, R. J. (1995). A tutorial on the Ohlson and Feltham/Ohlson models: Answers to some frequently asked questions. *Contemporary Accounting Research*, 11(02).
- Lundholm, R., & O'Keefe, T. (2001, June). Reconciling Value Estimates From the Discounted Cash Flow Model and the Residual Income Model. *Contemporary Accounting Research*, 18(2), 311-335.
- M. Prasanna, M., Mr. Niranjana, R., & Snigdhabiyani. (2014). Indian I.T Industry - A Model based approach to a shift towards a Prominent Presence in the Global Market. *Research journal of Economics and Business Studies*, 3, 61-69.
- M.L., D., & Keihani, H. R. (2021). The Relationship between Macroeconomic Factors and Indian Stock Market. *Journal of Contemporary Issues in Business and Government*, 27(5). doi:DOI: 10.47750/cibg.2021.27.05.090
- Malkiel, B. G. (1963). Equity Yields, Growth, and the Structure of Share Prices. *The American Economic Review*, 53(5), 1004–1031.
- McKeen, D., & Schmidt, J. (2023). *Fundamental Analysis*. Retrieved from corporate finance institute: <https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/fundamental-analysis/>
- Merwe, J. C., Taft, D. T., Oludele, A., & Akinboade. (2016, June). How effective is the Piotroski Screen on Value Stock Selection on the JSE? *Journal of Finance and Bank Management*, 04(01), 68-83.

- Miller, D., & Friesen, P. H. (1984, October). A Longitudinal Study of the Corporate Life Cycle. *Management Science*, 30(10), 1161-1183.
- Miller, M. H., & Modigliani, F. (1961, October). Dividend Policy, Growth, and the Valuation of Shares. *The Journal of Business*, 34(04), 411-433.
- Mînjîn˘A, D. S. (2009). RELATIVE PERFORMANCE OF VALUATION USING MULTIPLES. EMPIRICAL EVIDENCE ON BUCHAREST STOCK EXCHANGE. *The Review of Finance and Banking*, 1(1), 035—053.
- Mohanram, P. S. (2005, January). Separating Winners from Losers Among Low Book-to-Market Stocks Using Financial Statement Analysis. *Review of Accounting studies*, 10(02), 133-170.
- Molodovsky, N., May, C., & Chottiner, S. (1965). Common Stock Valuation: Principles, Tables and Application. *Financial Analysts Journal*, 21(2), 104-123.
- Mooya, M. M. (2016). *Real Estate Valuation theory: A Critical Appraisal*. verlag Berlin Heidelberg: Springer.
- Mugo, P. (2020). PORTER’S FIVE FORCES INFLUENCE ON COMPETITIVE ADVANTAGE IN TELECOMMUNICATION INDUSTRY IN KENYA. *European Journal of Business and Strategic Management*, 5(2), 30 - 49.
- Muhammad, F., Hussin, M. Y., & Razak, A. A. (2012). Automobile Sales and Macroeconomic Variables: A Pooled Mean Group Analysis for Asean Countries. *Journal of Business and Management* , 02(01), 15-21. Retrieved from www.iosrjournals.org
- Muhammad, S., & Ali, G. (2018). The Relationship Between Fundamental Analysis and Stock Returns Based on the Panel Data Analysis; Evidence from Karachi Stock exchange (KSE). *Research Journal of Finance and Accountin*, 09(03), 84-96.
- Murphy, J. J. (1999). *Technical Analysis of the Financial Markets*. Penguin Pblishing Group.
- Mwangi, W. M. (2017). Testing the Gordon’s Growth Model. *Research Journal of Finance and Accounting*, 8(14).

- Nagpal, A., Chandok, H., & Chhabra, M. (2019, September). A Research on Fundamental Access of Selected Automobile Companies in India. *International Journal of Innovative Technology and Exploring Engineering (IJITEE)*, 8(11), 725-736. doi:DOI: 10.35940/ijitee.K1126.09811S19
- Namira, F., & Nugroho, B. Y. (2016, May). Effect of Enterprise Multiple on Stock Return Non-Financial. *International Journal of Administrative Science & Organization*, 23(2), 86-94.
- Naz, F., & Siddiqui, D. D. (2020, August 26). *Impact of Macroeconomic Factors on Automobiles Stocks Returns in PSX*. Retrieved from <https://ssrn.com/abstract=3681309>: <https://dx.doi.org/10.2139/ssrn.3681309>
- Ng, A. C., & Shen, J. (2016, June). Screen winners from losers using simple fundamental analysis in the Pacific-Basin stock markets. *Pacific- Basic Finance Journal*, 39, 159-177.
- Nigade, A., & Sardar, R. (2018, June). Performance Analysis of Auto Industry during 2015-2017. *International Journal of Management, Technology And Engineering*, 8(6), 696-706.
- Norazidah Shamsudin, W. M. (2013, December). The Performance of Stock and the Indicators. *International Journal of Trade, Economics and Finance*, 04(06), 409-413.
- Ohlson, J. A. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research*, 11(02).
- Olweny, T. (2011, April). The Reliability of Dividend Discount Model in Valuation of Common Stock at the Nairobi Stock Exchange. *International Journal of Business and Social Science*, 2(6), 127-141.
- Ou, J. A., & Penman, s. H. (1989, November). Financial statement analysis and the prediction of stock returns. *Journal of Accounting and Economics*, 11(4), 295-329.
- Ozuomba, C., Anichebe, A., & Okoye, P. (2016, September 09). The effect of dividend policies on wealth maximization – a study of some selected plcs. *Cogent Business & Management*, 3(1).

- Panda, M. (2013, July). Valuation of Selected Indian Stocks Using Discounted Cash Flow Technique. *International Journal of Business and Management Invention*, 2(7), 09-17.
- Pandya, H. (2013). Technical Analysis for Selected Companies of Indian IT Sector. *International Journal of Advanced Research*, 01(04), 430-446.
- Pandya, H., & Pandya, H. (2013, May). Fundamental Analysis of Indian Automobile Industry. *International Journal of Current Research*, 5(5), 1273-1286.
- Pariyapraser, Vimolphattanatham, N., & Witsaroot. (2018, July-December). A STUDY ON FUNDAMENTAL FACTORS OF STOCKS AND FUTURE RETURNS. *journal of suvarnabhumi institute of technology*, 04(02), 424-452.
- Park, Y. S., & Lee, J.-J. (2003). An empirical study on the relevance of applying relative valuation models to investment strategies in the Japanese stock market. *Japan and the World Economy*, 15, 331–339.
- Patra, T., & Rao, M. J. (2017, January-June). Impact of Macroeconomic Factors on Automobile Demand in India. *Journal of International Economics*, 8(1), 97-113.
- Pazarzi, G. (2014). Comparison of the Residual Income and the Pricing – Multiples Equity Valuation Models. *International Journal in Economics and Business Administration*, II(3), 88-114.
- Penman, S. H., & Sougiannis, T. (1998). A Comparison of Dividend, Cash Flow, and Earnings Approaches to Equity Valuation. *Contemporary Accounting Research*, 15(3), 343-383.
- Pinto, J. E., Henry, E., Robinson, T. R., Stowe, J. D., & Rath, R. D. (2010). *EQUITY ASSET VALUATION*. New Jersey: John Wiley & Sons.
- Piotroski, J. D. (2000). Value Investing: The Use of Historical Financial Statement Information to Separate Winners from Losers. *Journal of Accounting Research*, 38.
- Pompetzki, A. F. (2019, May). Fundamental Signals, Future Earnings, and Abnormal Returns. *Fundamental Signals, Future Earnings, and Abnormal Returns*. University of Pennsylvania .

- Poornima, D. S., & Bhuvaneswari, M. (2017, August). A Study on Book-to-Market ratio of selected companies listed with NSE for. *PRATIBHA: INTERNATIONAL JOURNAL OF SCIENCE, SPIRITUALITY, BUSINESS AND TECHNOLOGY (IJSSBT)*, 02, 1-4.
- Porter, M. E. (2008, January). THE FIVE COMPETITIVE FORCES THAT SHAPE STRATEGY. *Harvard Business Review*, 78-93.
- Prasad, A. (2011, december). The Impact of Non-Market forces on Competitive Positioning Understanding Global Industry Attractiveness through the Eyes of M. E. Porter. *Journal of Management Research*, 11(3), 131-137.
- Prychitko, B. D. (n.d.). *Marxism*. Retrieved August 01, 2019, from The Libraray of economics & Liberty: <https://www.econlib.org/library/Enc/Marxism.html>
- Rajamani.S, D. S., Haq.T.M, .., Kabeer.S.U, .., .Srivathsan.S, & .Vishwanath.M. (2022, September). Fundamental Analysis of TATA Power. *International Journal of Creative Research Thoughts (IJCRT)*, 10(9), 825-830.
- Rappaport, A. (1986). *Creating Shareholder Value: A Guide For Managers And Investors*. The Free Press.
- Reis, P. M., & Augusto, M. G. (2013, December). The Terminal Value (TV) Performing in Firm Valuation: The Gap of Literature and Research Agenda. *Journal of Modern Accounting and Auditing*, 9(12), 1622-1636.
- Reisman, G. (2002). EUGEN VON BÖHM-BAWERK'S "VALUE, COST,. *THE QUARTERLY JOURNAL OF AUSTRIAN ECONOMICS*, 5(3), 25-35.
- Rivera, S. I., Román, J., & Schaefer, T. (2018, November 01). AN APPLICATION OF THE OHLSON MODEL TO EXPLORE THE VALUE OF BIG DATA FOR AT&T. *Academy of Accounting and Financial Studies Journal*, 22.
- Roberts, H. V. (1957, January). Current Problems in the Economics of Capital Budgeting. *The Journal of Business*, 30(01), 12-16.

- Rodríguez, Sosvilla, & Andrada. (2001, July 25). Technical Analysis in the Madrid Stock Exchange. *Technical Analysis in the Madrid Stock Exchange*. FEDEA Working Paper.
- Rosenberg, B., Reid, K., & Lanstein, R. (1985). Persuasive evidence of market inefficiency. *The Journal of Portfolio Management*, 11(3), 9-16.
- Ross, S. A., Westerfield., R. P., & Jaffe, J. (2010). *Corporate Finance* (9th ed.). Singapore.: McGraw-Hill.
- Roy, S. (2020). Causal Relationship between Stock Market. *Euro Economia* , 3(39), 227-247.
- S, S. K., J, A. M., & Ambily, D. A. (2017). A study on Fundamental Analysis of Selected IT companies Listed. *Jour of Adv. Research in Dynamical and Control Systems*, 9(5).
- Saha, A., & Banerjee, S. (2019, July). Testing for Causality between Macroeconomic Variables and Stock Market Development of India: An Empirical Exploration. *Business Studies*, XL(2), 40-58.
- Saxena, P. S., & Bhadauriya, D. S. (2018, April- September). Causal Interactions between Macroeconomic Variables and Stock Market Returns in India with Special Reference to NSE. *DIAS TECHNOLOGY REVIEW*, 15(1), 19-27.
- Schreiner, A. (2007). *Equity Valuation Using Multiples: An Empirical Investigation*.
- Scott, G., Carr, M., & Cremonie, M. (2016). *TECHNICAL ANALYSIS Modern Perspectives*. (A. F. Pratt, Ed.) CFA Institute Research Foundation.
- Sergery Beshenov, I. R. (2015, december). Hyman Minsky's financial instability hypothesis and the Greek debt crisis. *Russian journal of Economics*, 1(4), 419-438.
- Sewall, H. R. (1901, August). The Theory of value before Adam Smith. *American Economic Association*, 2(3), 1-128.
- Shailesh, k. (n.d.). *Top 14 Contributions of Alfred Marshall to Economics*. Retrieved November 27, 2019, from <http://www.economicsdiscussion.net/http://www.economicsdiscussion.net/economics-2/alfred-marshall/top-14-contributions-of-alfred-marshall-to-economics/21044>

- Shattennavar, M. Y., & Prof. Pramod S G. (2020). A study on Fundamental analysis of IT, Pharmaceuticals and Cement sector. *International E Conference on Adapting to the New Business Normal – The way ahead*. Mysuru, India.
- Silvestri, A., & Veltri, S. (2012). A TEST OF THE OHLSON MODEL ON THE ITALIAN STOCK EXCHANGE. *ACCOUNTING & TAXATIO*, 04(01).
- Singh, D. (2010, December). Causal Relationship Between Macro-Economic Variables and Stock Market: A Case Study for India. *Pakistan Journal of Social Sciences (PJSS)*, 30(2), 263-274.
- Singh, I., & Singh, N. (2022, March 12). Performance of Indian Information Technology Sector An Analysis of Two Decades. *Economic & Political Weekly*, LVII (II), 25-28.
- Singh, N. P., & Tandon, A. (2019). The Effect of Dividend Policy on Stock Price: Evidence from the Indian Market. *Asia-Pacific Journal of Management Research and Innovation*, 15(1-2), 7–15.
- Singh, S. (2023, july). Analyzing The Growth Trends Of The Automobile Industry: A Study Of Production, Sales, And Export. *International Journal of Creative Research Thoughts*, 11(7), 973-980.
- Solomon, E. (1963). *Theory of Financial Management*. Columbia University Press .
- Sorensen, E. H., & Williamson, D. A. (1985, November). Some Evidence on the Value of Dividend Discount Models. *Financial Analysts Journal*, 41(6), 60-69.
- Soumya, V., & Paul, B. P. (2019, March). Dividend Discount Model(DDM) : A study based on select companies from India. *CIKITUSI JOURNAL FOR MULTIDISCIPLINARY RESEARCH*, 6(3).
- Steiger, F. (2010, March 25). The Validity of Company Valuation Using Discounted Cash Flow Methods. *The Validity of Company Valuation Using Discounted Cash Flow Methods*.
- Sudan, S., & Verm, R. (2019). RECENT TRENDS IN INDIAN AUTOMOBILE SECTOR Recent Trends in Indian Automobile Sector. *Journal of Critical Reviews*, 6(3), 294-297.

- Sudhamatheswaran, V., Umamaheswari, R., & Venkateswaran, P. (2017, Jan-June). Future Trend in Indian Automobile Industry: A Statistical Approach. *Management Wisdome*, 6(1), 58-64.
- Sukono, Susanti, D., Aisah, I., Supriatna, A., Saputra, J., & Bon, A. T. (2019). Stock Assessment Using a Dividend Discount Model with Growth Rate Following a Time Series Pattern. *Proceedings of the International Conference on Industrial Engineering and Operations Management* (pp. 23-26). Pilsen, Czech Republic: IEOM Society International.
- Svetlova, E. (2012, August). On the performative power of financial models. *Economy and Society*, 1-17.
- Thapa, S., & Choudhury, D. K. (2018, March). Time Series Analysis of Automobile Demand in India. *International Journal of Creative Research Thoughts*, 6(1), 143-150. Retrieved from www.ijcrt.org
- Tikkanen, J., & Äijö, J. (2018, November 26). Does the F-score improve the performance of different value investments strategies in Europe? *Journal of asset Management*, 19(03), pages495–506.
- Tilley, J. R. (2015). *Investment Performance Of Common Stock In Relation To Their Price-Earnings Ratios: Basu 1977 Extended Analysis*. A Plan B paper submitted in partial fulfillment, UTAH STATE UNIVERSITY, Finance, Utah.
- Torrez, J., Jafari, M. A., & Juma'h, A. H. (2006). CORPORATE VALUATION: A LITERATURE REVIEW. *Revista Empresarial Inter Metro / Inter Metro Business Journal*, 02(02), 39.
- Tripathy, R., & Pani, B. (2017, January 10). Effect of F Score on Stock Performance: Evidence from Indian Equity. *International Journal of Economics and Finance*, 09(02), 89-99.
- Varun, T. (2020, September). Information Technology Industry in India: An Ex-Post Study. *Dogo Rangsang Research Journal*, 10(09).
- Vasiliou, D., Eriotis, N., & Papathanasiou, S. (2006). HOW REWARDING IS TECHNICAL ANALYSIS? EVIDENCE FROM ATHENS STOCK EXCHANGE (ASE). *Operational Research*, 06(02), 85-102.

- Vaughn, K. I. (1978). JOHN LOCKE AND THE LABOR THEORY OF VALUE. *journal of libertarian studies*, 2(4), 311-326.
- Venkatesh, C., Tyagi, M., & Ganesh, L. (2013, May-June). ANALYZING THE PERFORMANCE OF HIGH AND LOW BOOK-TO-MARKET RATIO FIRMS WITH SPECIFIC REFERENCE TO INDIAN IT, PHARMACY AND BANKING STOCKS. *Innovative Journal of Business and Management*, 02(03), 40-43.
- vivo, G. d. (1981, March 01). John Stuart Mill on value. *Cambridge Journal of Economics*, 5(1), 67-69.
- W.Diamond, R. (2019). Léon Walras, Irving Fisher and the Cowles Approach to General Equilibrium Analysis. *SSRN eLibrary*. University of Lausanne,.
- Walter, J. E. (1956, March). Dividend Policies and Common Stock Prices. *The Journal of Finance*, 11(01), 29-41.
- Weston, J. F. (1961, April). The Management of Corporate Capital: A Review Article. *The Journal of Business*, 34(02), 129-139.
- Wiggins, R. R., & Ruefli, T. W. (2002, Jan-Feb). Sustained Competitive Advantage: Temporal Dynamics and the Incidence and Persistence of Superior Economic Performance. *Organization Science*, 13(1), 82-105.
- Wijngaarden, J. D., Scholten, G. R., & Wijk, K. P. (2012). Strategic analysis for health care organizations: the suitability of the SWOT-analysis. *international journal of health planning and management*, 34-49.
- williams, J. B. (1997). *The Theory of Investment Value* (reprint ed.). Fraser Publishing Company.
- Won, W.-K., Manzur, M., & Chew, B.-K. (2003). How rewarding is technical analysis? Evidence from Singapore stock market. *Applied Financial Economics*, 13(07), 543-551.
- wood, j. c. (1993). *Thorstein Veblen-Critical Assessments* (Vol. 1). london and NewYork: Routledge.

Zain, Z. M., Rahim, L. N., Thaheer, A. S., & Samsudin, A. N. (2020). Short Run Macroeconomic Factors Affecting Car Sales in Proton. *Advances in Business Research International Journal*, 6(1), 88-95.