

Determinants of Share Price Volatility: A Theoretical Review towards Revitalizing Fundamental Analysis

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Abstract: In seeking to explain the determinants of share price volatility, empirical direction has been provided by return generating models. To read these models are used to estimate the expected returns on risky securities. This paper argues that especially in respect to frontier economies such as the ones found in developing countries, the role of fundamentals in explaining share price volatility cannot be gainsaid. This paper therefore attempts to answer a common yet essential question: what are the key theoretical underpinnings which may support an empirical enquiry on share price volatility centred on a fundamental analysis? Based on dividend relevance theory this study posits that dividend expressed either as dividend yield or pay out does not influence share price volatility. Conversely the dividend irrelevance theory does postulate the inverse. When complemented by efficient market hypothesis, this review posits that there is a significant relationship between historical financial performance and share price volatility. In a nutshell these postulations can be transformed into hypotheses for testing towards conducting deductive quantitative study as expected among applied finance scholars. It is expected that the extraction of such empirical evidence will confirm the place of this theories in understanding security market dynamics especially in frontier economies.

Keywords: share price volatility; fundamental analysis; dividend theory; efficient market hypothesis.

INTRODUCTION

The risk-return axis has become an acceptable phenomenon in finance. The debate on share price variability is however very far from resting. Sometimes the return is too good to be true but so can be the risk. Commentators have fondly come to refer it as the 'bubble and the burst'. Either way the investor is left asking difficult questions some of which this paper will try to address. Danthine & Donaldson [1] posit that a financial system is a set of institutions and markets permitting the exchange of contracts and the provision of services for the purpose of allowing the income and consumption streams of economic agents to be desynchronized hence, made less similar. They carry on explaining that desynchronization occurs in respect to the two key elements of finance: time and risk. According to Bailey [2] time desynchronization is essential because the financial systems is expected to form discretely received incomes into continuous streams of consumption. Risk desynchronization ensures a balance between risk and return.

The primary function of financial markets is therefore understood as an intermediary between

surplus lenders and deficit borrowers in a financial system so that households and businesses with surplus funds can lend to persons and business who require to use such funds in exchange for some return. Fabozzi & Drake [3] opine that financial markets' economic functions include price discovery, liquidity and reduced transaction costs. Price discovery means that the interactions of buyers and sellers in a financial market determine the price of the traded financial assets. Equivalently, they determine the required return that participants in a financial market demand in order to buy a financial instrument. Because the motivation for those seeking funds depends on the required return that investors demand, it is this function of financial markets that signals how the funds available from those who want to lend or invest funds will be allocated among those needing funds and raises those funds by issuing financial instruments which occurs in a structured manner in securities exchanges. One of the instruments that behave in line with the description above is an ordinary share otherwise referred as common stock or equity.

Ordinary shares bestow voting rights to the holder, may exist perpetually except in liquidation, and earn a return relative to the firm's return. These characteristics make shares the most preferred instruments among investors yet the most risky, the fact that rational investors are risk averse notwithstanding [4]. The risk of the shares arises because prices at which they have been bought may rise or fall in the course of trading. On another front, the risk may present as failure by the issuer to pay the anticipated return in the form of dividend.

Holt & Laury [5] opine that risk aversion behaviour of investors has generated a lot of concern and interest leading to numerous inquiries on the determination of such risk especially the one associated in changes in stock prices. This risk has come to be referred to as share price volatility. The price of a share at any time, or its market value, represents the price that buyers in a free market are willing to pay for it. [3] Describe this as the market value of shareholders' equity which is the value of all owners' interest in the company. In essence it can be deduced that price of a share today is the present value of the dividends and share price the investor expects to receive in the future. The price therefore represents the uncertainty associated with receiving future payments, timing of future payments, and a compensation for tying up funds to the investment.

A further expounding on the role of a market price of a share has been provided by Cochrane [6] who states that it represents an opportunity cost since it appears in the wealth constraint as the amount that has to be paid, or is received, per unit of the share price volatility, hence the basis of economic analysis. On the other hand, price conveys information meaning that today's share price reveals information about prices in the future.

It can also be inferred that prices guide investors' actions yet their reliability as a guiding factor depends on investors' ability to predict share price changes occurring in the future knowing that they are bound to vary from time to time. This variability can also be referred to as share price volatility. According to Guo [7] share price volatility is a systemic risk faced by investors who possess ordinary share investments. Damodaran [8] suggest that volatility is the deviation of mean returns from expected returns and therefore represent either positive or negative volatility otherwise known as upside or downside risk. This indicates that large values of volatility reflect returns fluctuating in a wide range hence more risk. Accordingly, the higher the volatility of prices, the lesser the attractive the shares to shareholders and so it is expected that in the long run, the valuation of company's shares will reduce.

In seeking to explain the determinants of share price volatility, empirical direction has been provided by return generating models. These models are used to estimate the expected returns on risky securities. Factors that explain security returns as well as volatilities can be classified as macroeconomic, fundamental, and technical factors. This paper argues that especially in respect to frontier economies such as the ones found in developing countries, the role of fundamentals in explaining share price volatility cannot be gainsaid.

Given, fundamental analysis is buoyed by valuation theories which seem to suggest that prices and attendant volatility can be explained by value drivers which can also be regarded as financial performance indicators [9, 10]. Indeed Fama & French [11] have vigorously confirmed that share price returns are explained more by factors such as size and book-to-price ratio rather than the capital asset pricing model (CAPM) suggested beta factors. Carhart [12] and Chan, Chen, & Lakonishok [13] have also lent credence to the usefulness of the Chart Momentum factor in explaining asset prices, returns and associated volatility. Viebig & Poddig [14] have clearly explained that fundamental valuation for equity will depend on several value drivers which have a strong impact on the value of equities, including sales growth, operating margins, capital expenditures and change in net working capital, among others. This paper therefore attempts to answer a common yet essential question: what are the key theoretical underpinnings which may support an empirical enquiry on share price volatility centred on a fundamental analysis?

THEORETICAL FRAMEWORK

Clearly, there are several theories which inform debate on the issues the study is seeking to underpin. Since Gordon [15] expressed interest in this subject, there has been consistent and painstaking effort to clarify and explain what determines the value of the firm from which the share price is derived. For instance Viebig & Poddig [14] explains that a host of valuation theories exist in finance, such as mean-variance; state preference; dividend theory; portfolio separation and market efficient hypothesis theory among others which postulate the value of the firm and its accompanying changes such as volatility.

This review persuaded to anchor its discourse on two theories: dividend theory (DT) Modigliani & Miller [16]; Brennan [17]; Black & Scholes [18]; Gordon [15]; Jensen & Meckling [19]; Pettit [20]; Jensen, Solberg & Zorn [21] and Uddin & Chowdhury [22] and Efficient Market Hypothesis/Theory (EMH) by Fama [23]. Dividend theory has

been considered because dividend as seen as the most appropriate proxy for value especially from an investor's view point. EMH on the other hand finds credence in the information content of returns and in the case in point dividends.

Dividend Theories

The key theoretical concern in dividends is whether they affect the shareholders' value in this case being a presentation of future expectations and the attendant price of the share. Different finance and economics scholars have advanced different theories some representing original thought and others being counteractions. Generally these theories can be categorised into two; those that premise that dividend is irrelevant and therefore would not affect investors' expectations hence the price and those that premise exactly the opposite.

Irrelevance of Dividend Policy

Miller & Modigliani [16] proposed irrelevance theory suggesting that the wealth of the shareholders is not affected by dividend policy. It is argued in their theory that the value of the firm is subjected to the firm's earning, which comes from company's investment policy. The literature proposed that dividend does not affect the shareholders' value in the world without taxes and market imperfections. They argued that dividend and capital gain is two main ways that can contribute profits of firm to shareholders. When a firm chooses to distribute its profits as dividends to its shareholders, then the stock price will be reduced automatically by the amount of a dividend per share on the ex-dividend date. So, they proposed that in a perfect market, dividend does not affect the shareholder's return.

The premises by Miller and Modigliani (MM) have attracted their fair share of attention leading to a host of studies seeking to discount or support their claims such as Brennan, [17]; [18]; [24] and [22]. On this context it would be plausible to propose that since shareholders wealth not affected by dividend policy prices are bound to remain unchanged with the declaration and payment of dividends. The guiding proposition then becomes:

Proposition

Dividend policy expressed either as dividend yield or pay out does not influence share price volatility.

Relevance of Dividend Policy

Contrary to MM propositions other subsequent theorists have opined that dividends are relevant to the extent that they affect the value of the firm in return affecting investors' expectations, prices and their volatility. Relevance has been explained to arise from

uncertainty of future dividends, information content of dividends, agency costs, and clientele effects.

Relevant dividend theory is intent on explaining the relationship between dividend earnings given to investors and their effect on the value of the firm and by extension share prices and attendant volatilities. Dividend theory posits that dividend of the firm which is dictated by firm's performance is either relevant or irrelevant in its effect on shareholders wealth. Since shareholders wealth is a futuristic element expressed as shareholders expectations, then if dividend is relevant, it will influence these expectations, the amount that the shareholder is willing to invest today which is the price and the attendant variability. It is against this background that Gordon [15] posits that dividend yield and pay-out ratio both of which are dividend variables are capable of influencing share price volatility. Similar positions are held by [21, 22].

Gordon [15] suggested a valuation models relating the market value of the stock with dividend policy. Gordon studied dividend and market price of the shares and proposed that the dividend of firms affects the market value of stocks even in the perfect capital market. He stated that investors may prefer present dividend instead of future capital gains because the future situation is uncertain even if in perfect capital market. Indeed, he explained that many investors may prefer dividend in hand in order to avoid risk related to future capital gain. He also proposed that there is a direct relationship between dividend and market value of share even if the internal rate of return and the required rate of return will be the same. In Gordon [15]'s constant growth model, the share price of firm is subordinate of discounted flow of future dividends.

The relevance of dividend has further been expounded to show the relationships with various dividend components. Asquith & Mullins [25] found that relevance of dividend was based on information content of dividend. Jensen et al. [21] identified relevance of dividend based on agency cost while Pettit [20] provided that clientele effect does exist in support of dividend relevance. Consequently uncertainty of future dividends, information content of dividends, agency costs, and clientele effects cause shareholders wealth which in turn affect dividend policy. Hence the second premise:

Proposition

Dividend policy expressed either as dividend yield or pay out influences share price volatility.

Efficient Market Hypothesis Theory (EMT)

The second key theory under consideration will be the efficient market theory (EMT) and its derivative the efficient market hypothesis (EMH). The

latter theory explains the compositions of prices in respect to prevailing information. The efficient market hypothesis was first coined by Louis Bachelier, a French mathematician. In his 1900 dissertation “Théorie de la Spéculation” he “began the mathematical modelling of stock price movements and formulated the principle that ‘the expectation of the speculator is zero.’ Obviously, understood here by expectation the conditional expectation given the past information [26].

Notwithstanding this success, his work was unnoticed for decades until the mid-1960s when Paul Samuelson stumbled upon the dissertation and soon it became a hot topic for financial economists. That said, EMT owes its refined details to Professor Eugene Fama of the University Of Chicago Graduate School Of Business who started the formation of the theory as a PhD. dissertation and ended up as a life-long research. In 1970 he published a review of both the theory and the evidence for the hypothesis.

EMT espouses that there exists different form of market efficiencies in regard to information. For instance in a weak form of efficient market, prices do not incorporate all the relevant information. According to Annuar , Arrif & Shamsheer [27] and Fama & French [11] reported or predicted earnings will affect share prices hence a direct relationship between earnings volatility and share price volatility. Damodaran [8] espouses that as long as a fundamental analysis is being pursued towards valuation, then multiples arising from revenue, net income, invested capital or asset base among others may be used.

The theory assumes that market participants apart from being utility maximising, also have rational expectations. This includes the assumption that even though individuals may be wrong, the population as a whole is correct; and that people adjust their expectations according to new information. When faced with new information, some investors will overreact and others will under react. In summary, reactions will be random, but will have a constant volatility, and a known distribution function. Thus, the net effect does not allow for abnormal profit to be realised especially when considering transaction costs and spreads.

In its weakest form, the EMH assumes that all information is already incorporated into the pricing of assets. Therefore, no excess profits can be earned by basing investment strategies on past returns. This implies that technical analysis, which studies formations in past prices, is of no use in predicting the future, since past movements already known to the market, the current situation remains unknown. Conversely fundamental analysis yields novel

information on the extent to which value drivers explain price movements and may be rewarding for those keen investors who do their homework on companies’ financial statements.

Accordingly, in a weak efficient market, which could be a characteristic of a frontier security exchange, share price volatility may be predicted by earnings variability, among other measures of financial performance. This is very much in line with the proposition by Fama [23] posits that in a weak form of efficient market, prices do not incorporate all the relevant information, implying that there is a significant relationship between financial performance and share price volatility. The study can therefore premise that as long as weak information subsists:

Proposition

There is a significant relationship between historical financial performance and share price volatility.

CONCLUSION

In conclusion this discourse aligns itself to the importance of a fundamental analysis in explaining the causes of share price volatility and the key theories that can aid this pursuit. The focus has been dividend theories either in their relevant or irrelevance form. The paper has also dealt with efficient market hypothesis. The paper has also set propositions which can be transformed into hypothesis for testing towards conducting deductive quantitative study as expected among applied finance scholars. It is expected that the extraction of such empirical evidence will confirm the place of this theory in understanding security market dynamics.

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