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Modeling the Financial Signaling of Zero-default Debt: Empirical study on the firms listed in DJIA30 and NASDAQ100

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Modeling the Financial Signaling of Zero-default Debt: Empirical study on the firms listed in DJIA30 and NASDAQ100

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Declaration of Authorship

I, Ahmed Saeed, declare that this thesis titled, "Modeling the Financial Signaling of Zero-default Debt: Empirical study on the firms listed in DJIA30 and NASDAQ100" and the works presented in it are my own. I confirm that:

- This work was done wholly or mainly while in candidature for research degree at this university.
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Date: April 30, 2023

Abstract

This thesis examines the financial factors that corporate planners must consider to reach a zero-default debt. The thesis examines the financial fundamentals associated with zero-default debt along with the size and industry effects. The data includes quarterly financial indicators for the non-financial firms listed in DJIA30 and NASDAQ100 for the period 1990-2018. The results conclude that the fixed assets turnover is the only robust variable that can be optimized to reach zero-default debt and has positive and significant signaling effect.

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1. Introduction

A. Organization of the thesis

Signaling theory is one of the prominent theories which can be described as the act of using insider information to indirectly manipulate one's decision maker through publishing crucial information about the firm which triggers the decision of selling or buying stocks. Thus, this activity is a market signal from the top management of the company to the outsiders. For instance, when owners of a company in an initial public offering assign prestigious directors to their board in order to send a message to the public about the company's legitimacy and trustworthiness (Turban & Cable, 2003). The previous example reveals how signaling theory can be imposed in the market and how it affects investors decision indirectly. Financial signaling of corporate decisions can be classified into Financing, Investment and Dividends.

B. Research Statement

This thesis discusses the financial factors that corporate planners must consider in reaching zero-default debt.

C. Significance of the Study

This thesis offers practical as well as academic insights about the financial strategies that firms may adopt to end up with zero-default debt. The current literature focuses on the measurement of default risk.

2. Literature Review

A. Capital Structure Signaling Theory

A firm's capital structure is considered as one of the fundamental factors that affect the firms market value as any changes that occur in any of the components of the capital structure (debts or equity) directly affects the firms market value position, stake holders and investors decisions. When capital providers comprehend the impact of the change of the capital structure on the market value, they start making decisions accordingly. Thus, this explains the core effect of signaling theory (Masulis, 1983).

The company's market value is one of the crucial factors that help top managers to eliminate the agency problems with potential investors. Thus, the positive relationship between the market value of the firm and its capital structure provides a competitive advantage to the manager to apply the signaling theory effectively in the market (Ross, 1978). Moreover, it also helps directors to lessen the problem of moral hazard and adverse selection (Darrough and Stoughton, 1986). Masulis, (1983) reports a positive correlation between the firm value (stock price) and changes in debts weight and firms leverage rate. Also, asymmetric information between the firm and the outsiders aids the directors of the firm to make some changes in the capital structure of the firm as signaling theory states. Myers and Majluf have concluded that if a asymmetric information exists, debt to equity financing approach is preferred (Myers and Majluf, 1984). However, in other cases, asyimmetric information may allow the directors of the firm with a percentage of residual uncertainty that leads to the pecking order effect.

One of the early capital structure models indicated by Modigliani and Miller (1958) assumed that the market value of the firm does not depend on the capital structure since they did not put in consideration the presence of taxes, bankruptcy, and transaction cost. Meanwhile, in 1966 Modigliani and Miller initiated a new model that showed that there is a positive relationship between firm's capital structure and the value of the firm and its return due to the debt tax shield effect (Miller and Modigliani, 1966). Moreover, Taggart built on the previous models of corporate financing and stated that the market value of the company is securitized by its capital structure. In other words, corporate security issues are determined by any change in the capital structure of the company (Taggart, 1977). More studies showed that when the leverage ratio of the firm increases,

the company value, and its stock price increase (Harris and Raviv, 1990). For instance, in Finland, many of the listed companies tried to achieve certain capital structure to minimize the cost of the firm and maximize the company's profitability (Kjellman and Hansen, 1995).

The financial signaling theory requires insiders to signal to outsiders the value of the company when trying to raise finance externally through selling securities. Meaning that insiders must endure all agency costs associated with the firm's capital structure and this is known as the 'financial agency-signaling model' (Kjellman and Hansen, 1995). Studies have conducted that when the company has commitments to invest in their projects through increasing their capital expenditure, the stock and bond value should increase. In other words, the highest market value of the securities of certain firms must be driven through certain capital structure (McConnell and Muscarella, 1985).

In addition to the above, the potential signaling effects of the corporate capital structure can also be analyzed through practical approach called subset selection techniques that examine the relationship between the market value of the firm and the capital structure. Firm market value is considered as a measure that provides the firm manager with a positive impact to decrease firms' problems associated with capital suppliers. The actual advantages of subset selection are reached when an agreement is achieved between different criteria on a regressor with the one that lessens the error variance. In this case, the regressor is the most significant factor. Since the literature of subset model selection offers more valid results than those from statistical package, it has gained popularity. However, practically no single package gives all subset selection criteria. thus, the results achieved by using one statistical package are inadequate unless the researcher uses more than one package. The number of selected criteria in the model selection are not computed in any statistical package which raised the importance of the model selection (Eldomiaty, Ismail and Mostafa,2012). Many subset selection criteria have been presented in the literature of statistics and these criteria choose the subset that lessens a quantity usually expressed as the logarithm maximum probability residual sum of squares plus a penalty function which depends on the subset size. The study says that various penalty functions result in different criteria. The most popular criteria are Akaike's Information Criterion, Bayes Information Criterion (BIC) and Mallows' CP. For example, examining the potential signaling of capital structure decisions in transitional country,

subset model selection approach 259 survey. In this study, the authors appoint 10 subset selection criteria to detect the most critical determining factors that affect the exercise of corporate capital structure decisions. The 10 criteria present the widest range of criteria in literature (Eldomiaty, Ismail and Mostafa,2012). Also, the positive correlation between the firm capital structure and its market value can provide the manager with incentives because of skill while signaling through finance the framework of choice faced by the managers (Ross, 1978). Throughout the previous point, the decision to change capital structure may send positive or negative signals to the value of the company and the capital suppliers as well.

Also, when capital structure decisions send suitable signals to the market contributors, moral hazard and adverse selection problems can be avoided to some extent (Darrough & Stoughton, 1986). For instance, while increasing corporate market value, the manager is in a position to explain his decisions to the market to justify the issue of moral hazard. Simultaneously, it is not common for the manager to oppose a financing decision that can improve the corporate market value. Thus, the relationship between the market value and the capital structure can provide a monitoring function to such models of incentive-signaling-financial with agency relationships (Eldomiaty, Ismail and Mostafa,2012).

The capital structure signaling decisions is important to transitional markets for several reasons. For example, in transitional markets, the stock markets are less efficient which needs special considerations for financial elements that support corporate market value. Moreover, in transitional countries, information asymmetry is relatively higher than that of developed countries. Thus, this demands the analysis of the financial aspects that allow the company to minimize the degree of asymmetry (Eldomiaty, Ismail and Mostafa,2012). In addition to the above, transitional countries have many stages of deficiency in a transitional stage. For example, the financial market in Egypt, is relatively dominated by bank loans, which occurs quite far from the stock market even though it impacts the financial position of the stockholders later.

Thus, if capital suppliers are aware enough and informed about the consequences of adjusting the corporate capital structure, they will probably react accordingly. This is the most important point of the signaling hypothesis. According to Eldomiaty, Ismail and Mostafa, "regarding corporate financing decisions, Masulis (1983) gives support to this element of

informativeness since he studies the relationship between changes in capital structure and firm market value. His results indicate that both stock prices and firm values are positively related to changes in debt level and leverage. The signaling hypothesis states that information asymmetry between a firm and outsiders lead the former to make certain changes in its capital structure. John (1987), Myers and Majluf (1984), and Ross (1977) show that under asymmetric information, firms may prefer debt to equity financing." (Eldomiaty, Ismail and Mostafa, 2012). Which means that when capital structure decisions are informative and useful, the capital suppliers may change the financing selection and the interrelationship between debt financing, signaling and asymmetric information is proved by Luo, Brick, and Frierman (2002) where they show that high valued companies signal their values by declining their debt if the source of asymmetric information is mainly driven by the change of the cash flows.

To conclude, the company can use some strategic planning in their decision with their capital structure by increasing their debt or their equity to increase their company's market value and attract new investment opportunities.

B. Investment signaling

Firms' new investment is essential for the economy since it increases the employment opportunities that allow people to live in higher living standards that affect the whole economy. Moreover, any change in the investment of the firm cause a change in the value of the company, stock price, return, stockholders' expenditure on the firm stock through buying more stocks and increasing their investment in the firm or selling their stocks and decrease their investment (Modigliani & Miller, 1958). According to the fisher separation theorem, it assumed that the capital market is free of fractions and perfect and that the investment decision and capital structure are independent when the cost of financing from debt or equity are constant, but this theory has become no more valid since many studies and researchers starting from Myers & Majluf 1984 to challenge it. Since they have faith in good new investment leads to success of business and smooth operation but argue with the presence of perfect capital market (Myers & Majluf, 1984). Company's strategy for expansion may lead to an increase in the value of the company and its stock price because it magnifies manager's capacity to prevail over information from stock prices and raise their productivity to concentrate in making new investment decision (Foucault and Frésard, 2018). According to Dessaint, Foucault, Frésard, and Matray, they indicated that the directors of the company have inadequate ability to reduce the noise in stock prices while signaling their investment opportunities. Companies decrease investment as a reaction to non-fundamental decreases in the stock price (Dessaint, Foucault, Frésard, and Matray, 2018).

In 2016, Kumar and Li found a positive correlation between the accumulated stock return and investment after studying the dynamic impact of capital investment in innovation capacity on investment and stock return (Kumar, Li, 2016). Also, the size of the company is another factor. For example, if the company is small, it is very sensitive with a high growth rate and low dividend payout ratio since the new investment in the company is positively correlated and directly associated with the stock prices and the value of the company. This is because the decisions that are taken by the managers might be more responsive to stock prices movements (Blanchard, Rhee, and Summers,1993). Moreover, Information asymmetry is considered one of the important factors that has an impact on the investment and stock price. Z. Wang and Zhang found that the information asymmetry has a negative effect on the investment of firms and its stock price (Z.

Wang and Zhang, 1998). Studies in 2014, showed that the presence of information asymmetry has a crucial negative impact on the value and the return of the stock. Also, the asymmetry information is linked with the investors due to the lack of accurate information and time (Han, Kim, Lee, 2014). The higher information asymmetry projects are funded by the equity while the projects with low information asymmetry are funded by the debt since the debtors need to aware and know more information about their investments (Baxamusa, Mohanty, and Rao, 2015). This indicated that companies must reduce the information asymmetry to encourage investors to inject their money to the company and increase the new investment to increase the value of the company and its shares (Baxamusa, Mohanty, and Rao, 2015). Therefore, many regulations started to appear to reduce the level of information asymmetry that will allow new investment opportunities for firms to raise in the market. After the implementation of the Sarbanes-oxley act, the information asymmetry decreased and allowed investment opportunities to increase (Chowdhury, Kumar, and Shome, 2016). Lower rate of information asymmetry has a positive correlation with firm investment at the time of underinvestment and negative correlation with firm investment at the time of overinvestment (Belleflamme & Peitz, 2014).

According to Michael J. cooper, Huseyin Gulen, and Michael J. Schill, one of the main functions of capital markets is the accurate value of real investment because firms purchase and dispose of assets, economic efficiency demands that the market properly capitalizes such transactions. Also, growing evidence identifies is a significant preference in the market's capitalization of corporate asset investment and disinvestment. The conclusions indicate that corporate actions associated with asset expansion like public equity offerings, acquisitions, public debt offerings, and bank loan initiations have a tendency to be followed by stages of abnormally low returns. On the other hand, actions associated with asset contraction like spinoffs, share repurchases, debt prepayments, and dividend initiations tend to be resulted by phases of abnormally high return. Also, studies showed that there is a negative relationship between different ways of cooperating investment and the cross section of return. For instance, capital raising, sales growth rate, accruals and capital investment are found to have negative correlations with the future return. (Michael J. Cooper, Huseyin Gulen, And Michael J. Schill, 2008).

Investment is the backbone of any company that generates more economic actions for individuals and enterprises (Ghufain, Xiangqing, and Suleman,2019). Previous studies have mentioned many issues that influence a firm's investment opportunities. In 2017, Ağca and Mozumdar stated that internal funds and cash flows are crucial and significant determining factors of firm investment. In 2014, Białowolski and Weziak Białowolska perform a study on Polish firms and noticed that payment delays and legal and macroeconomic factors significantly influence firm investment decisions. They also show that cash flow sensitivity has a major negative effect on company investment at the time of high growth rate options. In 2003, Alti said that firm investment is sensitive to its cash flows in case of stable financing. In 2014, Asker, Farre-Mensa, and Ljungqvist mentioned that short-termism misrepresents the investment decision of stock market-listed firms. In comparison with private companies, public company finances are significantly fewer and are less quick to respond to changes in investment opportunities, mostly in industries where stock prices are more sensitive to earnings news.

In addition to the above, in 2018, Foucault and Frésard stated that the company's strategies for expansion can lead to an increase in the value of the company because it increases its managers' capacity to succeed over information from stock prices and increase their efficiency in making investment decisions. Dessaint, Foucault, Frésard, and Matray (2018) said that firm managers have inadequate ability to differentiate the noise in stock prices at the time of signaling their investment opportunities. Also, companies decrease their investment as a reaction to non-fundamental falls in stock prices. In 2016, Kumar and Li studied the impacts of capital investment on stock returns and investment and realized a direct relationship between stock returns and investment. Small firms are highly sensitive with low dividend payout ratios and high growth rates. A company's investment is positively correlated with stock prices because managers' investment decisions might be quicker to respond to stock prices changes. According to Blanchard, Rhee, and Summers (1993), there is a positive relationship between firms' investment expenditures and stock prices. Information asymmetry is one of the most vital elements that affect the investment of companies. In 1998, Z. Wang and Zhang presented a model of principal–agent relation and realized that information asymmetry has a major negative impact on company's investment. Also, Han, Kim, Lee, and Lee in 2014 stated that the presence of information asymmetry has a significant negative influence on the companies' stock returns and that information asymmetry is correlated

with investors due to lack of time and accurate information. In 2015, Baxamusa, Mohanty, and Rao discussed the impact of information asymmetry on firm investment and indicated that equity is used to finance project with higher information asymmetry, on the other hand, debt is used to finance investment with lower information asymmetry. Moreover, information asymmetry has a major impact on companies' investment assessments and enhances the firm value, information spread and the expected bankruptcy cost (Tsai, 2008). Cui and Deng (2007) improved a theoretical model with theories on information asymmetry and corporate governance and determined that information asymmetry has a major negative impact on company investment. Information asymmetry influences the investment chances of companies because excellent information is the key element of this effect on company investment. Also, the level of the firm positively affected by the level of company's profitability and the higher the profit is generated by the company the higher good signaling for the investors to invest in this company and the increase in the demand for certain stock the increase in its value (Ririh 2020).

C. Dividend Signaling Theory

Dividend policy was considered one of the most complicated issues faced by financial economists. Till now many issues are not clear about the factors that affect the dividend policy and how they are interacting. In 1961, Miller and Modigliani stated that the value of the firm is independent of its dividend policy at the perfect market (Miller and Modigliani, 1961). However, the market is not perfect that made this study invalid. Many researchers examined the relation between the stock price and the dividend.

The dividend discount model is the starting point to many of research that analyzed many characteristics of the relationship between dividends and stock prices. Accordingly, the information asymmetry theory has been developed and gives generic clarification of the mutual effect between the change in dividends and the change in price and the value of the company (Eldomiaty and Atia, 2015). In other words, the dividend discount model indicated the value of the company, and its stock price are affected by the dividend policy of the company. Consequently, the information asymmetry theory explained the mutual effects between the movement in dividends and price of the stocks (Akerlof, 1970). According to Watts, high management of the company may use dividend to convince the investors with certain information, thus the more of dividend to the shareholders means less information asymmetry to the firm (Watts,1973). Also, S. Bhattacharyya stated that managers always have insider information about the cash flow of the company that can be used to signal the market with certain information about the company and it could be through dividends. Bhattacharyya also indicated that the better the news that is published to the public, the higher are the dividends that are going to affect the value of the firm. Some investors need regular cash inflow generated from their investment and the dividends for these investors will be more cost efficient than selling a certain portion of their investment and paying transaction cost for it. Thus, it is considered for many of the investors to get income from dividends of their investment is more cost effect than getting the same amount of return from selling part of their investment like securities and paying a transaction cost for selling them (Bhattacharyya, 1979). Many significant papers in signaling theory of dividend policy is presented at that time typically describe the informational asymmetry by bestowing the manager with information about some the expected cash flow of the firm and the results in these models shows that the higher the expected cash flow the higher is the dividend.

Rational equilibrium model indicated that investors believes that there is a direct relationship between the dividends and the expected cash flow since that the managers have insider information about the future cash flow of the company and the value of the stock price (Bar-Yosef and Venezia, 1991). Brennan and Thakor classified the investors into two categories which are informed and uninformed investors. They concluded that the uninformed investor in a closed market operation always tenders and the informed investor not on the other hand, in an open market operation. The informed investor always sells his investment and uninformed investors not (Brennan and Thakor, 1990). Cheng, Fung, and Leung (2007) stated that any changes in the dividends policy of the company leads to changes in the market value and the stock price of the firm. Till now, the factors that affect this relationship between the dividend policy and the stock price still to be one of the debates and academic researchers. Thus, the forecasted dividend payout ratios can be applied effectively for signaling reason as well as proxy for measuring the agency problems (Tarek eldomiaty and Ola atia, 2015). However, in 2001, Fama and France indicated that the transaction cost overtime has decreased since the desire for gaining money from the dividends has decreased and people started to make their own homemade dividends.

According to Determinants of Dividend Policy: Evidence from Polish Listed Companies, that we already discussed before in the Litterial review, Bogna Kaźmierska-Jóźwiaka stated that there is positive signaling theory of dividends theory. Since the company has a surplus and sufficient amount of liquid cash that will be able to distribute higher amount of dividends than the companies that have insufficient amount of liquid cash to distribute for their shareholders equity.
Many studies have concentrated on the common stock price and the value of the firm is affected by the dividend payout ratio (Durand, 1955; Graham & Dodd, 1951). They indicated that any changes in the dividends policy of the firm affect the market value of the firm and the stock price. The following studies show that the relationship between dividends and stock prices is extremely complex and inconclusive. By separating the impact of systematic risk, results about how company value is influenced by dividend policy in the non-existence of other mitigating factors. Several experimental research have concentrated on how the stock price volatility and the systematic risk level of the firm got effected by dividends policy. Also, according to Beaver, Kettler, and Scholes (1970), an indirect relationship is concluded between firms' betas and payout ratio. This theory shows how differences in dividends affect the timing of receiving the cash flow of the asset. In

1986, Dyl and Hoffmeister claim that the dividend policy influences security duration and the riskiness of underlying stock. According to Gordon in 1959, "The earlier one receives payment, the less susceptible is the value of a capital asset to changes in the discount factor. With the dividend in hand, investors are subject to less interest rate risk, thus reduced level of systematic risk. All other things being equal, the reduced level of systematic risk will influence the firm's cost of capital and, eventually, the firm's stock price" (Gordon, 1959).

Graham, Harvey, and Michaely (2005) examined the practice of dividends payout and interviewed 384 financial executives to verify why they are paying dividends. The avoidance of negative consequences, signaling, common stock valuation and making the firm less risky were the obvious reasons why the financial executives are paying dividends. However, the study couldn't conclude or have quantifiable reason for why or how the firm becomes less risky while paying dividends.

Carter and Schmidt (2008) provided a mathematical model that explains the relationship between systematic risk and dividend yield. A significant indirect relationship between the corresponding level of systematic risk and company's dividend yield was found because of the model to confirm that company's dividend yield must be considered as responsible factor in the assessment of company's level of systematic risk. However, individual firms could be able to change their risk level of the stock by changing their dividend policy. By doing this, firms may be able to recognize the advantages of a lower cost of capital and broader access to long-term capital markets. At this point, their model is not robust regarding signaling effects. This suggests an opportunity for more research on the signaling issue. To conclude, dividends signaling is considered one of the ways that firms use to increase its value and stocks price.

3. Research Hypothesis

The study examines the following testable hypotheses.

Hypothesis 1: "The financing decisions associated zero-default debt have significant effect on total stock returns."

Hypothesis 2: "The investment decisions associated zero-default debt have significant effect on total stock returns."

Hypothesis 3: "The dividend decisions associated zero-default debt have significant effect on total stock returns."

Hypothesis 4: "A significant difference exists between observed and zero-default debt.

4. Research Objectives

This thesis aims at fulfilling the objectives that follow.

1. Examine the effects of financing decisions associated with zero-default debt on total stock returns.
2. Examine the effects of investment decisions associated with zero-default debt on total stock returns.
3. Examine the effects of dividend decisions associated with zero-default debt on total stock returns.
4. Examine the potential differences between observed financial decisions (financing, investment, and dividend) and the financial decisions that are associated with zero-default debt.

5. Research Methodology

The methodology in this thesis follows two avenues. The first is an optimization algorithm and the second is a regression analysis.

A. Optimization Algorithm.

This algorithm focuses on the adjustment of the items in the firms' balance sheet and income statement to reach a target which is zero-default debt (Eldomiaty, et al., 2016). The items in a balance sheet and income statement can usually be classified into financing, investment and dividends variables. The optimization algorithm can be illustrated as follows (Luenberger and Ye, 2008; Vavasis, 1991).

$$f(y) = A$$

$$\text{Subject to} \quad \begin{matrix} h_j(x) \geq 0 \\ x_i \in X \end{matrix}$$

Where:

y refers to observed financing, investment, and dividend variables.

A refers to the Objective Function that observed probability of default = zero

h_j is set of constraints as follows.

- Total Assets = Total Liabilities and Owners Equity
- Cost of Goods Sold < Sales Revenue
- Dividends < Net Profits
- Accumulated Depreciation < Gross Fixed Assets

Zero-default debt $DR_{zero\ default}$ is computed as follows (Eldomiaty et al., 2016).

$$DR_{zero\ default} = \frac{V_A \times N\{d_1\} - V_E}{TA \times e^{-rt}}$$

V_A = total market value of equity + book value of debt

$N\{d_1\}$ = The standard normal cumulative distribution assuming that the random component of the firm's asset returns is normally distributed, or $\approx N(0,1)$

V_E = Market value of Equity

TA = Total Book value of Assets

e = exponent

r = risk-free rate of return (3-month T. Bill rate)

t = time period (Quarter)

B. Data

The data used in this study are obtained from Reuters © financial database. The data includes the firms listed in NASDAQ and DJIA indexes. The data covers the period 1990-2018 on a quarterly basis.

C. Dependent Variables

This thesis examines the total stock returns as a measure of the signaling effect. This variable is computed as follows.

$$TSR_t = \frac{P_t + D_t}{P_{t-1}}$$

Where:

TSR_t = Total stock returns; P_t = stock price at time t; P_{t-1} = stock price at time $t-1$; D_t = Dividend per share at time t

D. Independent Variables

The independent variables include the financial ratios being calculated from the income statement and balance sheet and grouped into financing, investment, and dividends variables.

E. Regression Analysis

The regression analysis requires prior standard statistical tests that include linearity versus nonlinearity and Fixed and Random Effects test.

The issue of linearity versus nonlinearity is examined using Regression Equation Specification Error Test, RESET (Ramsey, 1969; Thursby and Schmidt, 1977; Thursby, 1979; Sapra, 2005; Wooldridge, 2006) is employed to test the two hypotheses that follow.

$$H_0 : \hat{\gamma}^2, \hat{\gamma}^3 = 0$$
$$H_1 : \hat{\gamma}^2, \hat{\gamma}^3 \neq 0$$

The null hypothesis refers to linearity and the alternative refers to nonlinearity.[1] The estimating equation of the random effect nonlinear model takes the form of Least Squares Dummy Variables (LSDV) that follows.

$$y_{ik} = \alpha_k + \sum_{i=1}^{k} \beta_{ik} X_{ik}^3 + \lambda_k + \upsilon_{ik}$$

Where $t = 1, \ldots, n$

k = number of firms in each group.

y_{ik} = Total stock returns

X_{ik} = The independent variables are examined in two groups. The first group includes the observed variables related to financing, investment, and dividend decisions. The second group includes financing, investment, and dividend variables that are associated with zero-default risk.

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[1] $F-\text{statistic} = \dfrac{(SSE_R - SSE_U) \div J}{SSE_U \div (T-K)}$ where SSE_R and SSE_U are the sum squared errors for the restricted and unrestricted models respectively, J refers to the two hypotheses under consideration, T is the number of observations, and K is the number of regressors.

λ_k = Random error term due to the individual effect.

υ_{it} = Random error.

Since the data are cross section-time series panel, the Hausman specification test (Hausman, 1978; Hausman and Taylor, 1981) is required to determine whether the fixed or random effects model should be used. The test looks for the correlation between the observed x_{it} and the unobserved λ_k, thus is run under the hypotheses that follow.

$$H_0 : \text{cov}(x_{it}, \lambda_k) = 0$$
$$H_1 : \text{cov}(x_{it}, \lambda_k) \neq 0$$

Where x_{it} = regressors, and λ_k = error term.

6. Results and Discussion

First model: The relationship between financial Fundamentals associated with Observed Debt Ratio and Total Stock Returns

Table (1): **Descriptive Statistics**

In this subsection, descriptive statistics such as mean, standard deviation, minimum, and maximum are presented for all the variables of the study.

Variable	Obs	Mean	Std. dev.	Min	Max
Total Stock Returns	12,582	.2716106	1.37806	-2.942	11.06292
Cash/Current Assets	12,582	.3287956	2.315429	-37.24	219.9333
Inventory/Current Assets	12,582	.2137771	1.443237	-37.30	143.8
Accounts Receivables/Current Assets	12,582	.2497856	1.665245	-63.02	90.3
Observed Accounts Payables Deferral Period	12,582	205.4297	1229.497	-232.2	45000
Observed Accounts Receivable Collections Period	12,582	120.0027	1293.55	-2700	32400
Observed Inventory Conversion Period	12,582	91.85767	430.1338	-270	15300
Net Working Capital/Total Assets	12,582	.2037464	.6663782	-17.09	1.017467
Cash Ratio	12,582	1.270091	8.353751	-3.5	804
Working Capital/Net Sales	12,582	10.55537	95.57752	-103.1	4364
Working Capital/Cash Flow	12,582	-3.5e+12	9.86e+14	-9.7e+1	5.27e+16
Total Assets Turnover	12,582	.2301704	.1904937	-.3519	2.246836
Fixed Assets Turnover	12,582	.7622664	2.289719	-8	95.25825
Fixed Assets/Total Debt	12,582	4.642552	59.19033	-195.0	1184
Current Liabilities/Net Worth	12,582	.7511854	8.751381	-95.67	524.0105
Current Liabilities/Inventory	12,582	12.30667	95.98213	-27.90	3673
Short Term Debt/Total Debt	12,582	.5507717	.3560909	-19.23	5.633663
Net Worth/Fixed Assets	12,582	1.578549	3.126567	-23.69	106.2519
Long Term Debt/Total Assets	12,582	.2852644	.4088311	-.4095	4.155521
Retained Earnings/Total Assets	12,582	6.35e+08	6.90e+10	-1.507	7.74e+12
Dividend Yield	12,581	184.896	1935.245	-.014	61577.42

Table (2): Testing for Multicollinearity: Variance Inflation Factors (VIF)

Variable	VIF
Cash/Current Assets	4.64
Inventory/Current Assets	4.45
Observed Accounts Receivable Collections Period	2.69
Observed Inventory Conversion Period	2.02
Observed Accounts Payables Deferral Period	1.96
Accounts Receivables/Current Assets	1.82
Short Term Debt/Total Debt	1.45
Long Term Debt/Total Assets	1.44
Net Worth/Fixed Assets	1.30
Total Assets Turnover	1.25
Working Capital/Net Sales	1.13
Fixed Assets Turnover	1.11
Net Working Capital/Total Assets	1.08
Dividend Yield	1.05
Fixed Assets/Total Debt	1.04
Cash Ratio	1.03
Current Liabilities/Inventory	1.00
Current Liabilities/Net Worth	1.00
Working Capital/Cash Flow	1.00
Retained Earnings/Total Assets	1.00

Table (3): Testing for Fixed Vs Random Effects (Hausman test).

Ho: difference in coefficients not systematic
chi2(16) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 111.44
Prob>chi2 = 0.00000

From the above table, we can conclude that the best model for fitting the first model is fixed effect model as the p-value associated with the test is less than 5%.

Table (4): Testing for Linearity Vs Non-linearity (RESET test)

Ramsey Testing for Linearity Vs Non-linearity (RESET test) using powers of the fitted values of Observed Determinants of Total Stock Returns.

Table (5): Testing for Linearity Vs Non-linearity

Ho: the model has no omitted variables; H_1: the model has omitted variables.
F (3, 12557) = 0.92
Prob > F = 0.4301

From the above we can conclude that at 95% confident we fail to reject the null hypothesis of the Testing for Linearity Vs Non-linearity (Reset test) which means that the linear model is appropriate.

Table (6): Testing for Heteroskedasticity: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance of residuals
Variables: fitted values of Observed Determinants Of Total Stock Returns
chi2(1) = 118322.28
Prob > chi2 = 0.0000

From the above table we can conclude that the null-hypothesis of the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity is rejected and this with confident 95%, this mean that variances of residuals are not constant, this means that we will use the robust estimation in order to estimate the parameters of the model.

Table (7) : Summary of the model

```
Fixed-effects (within) regression               Number of obs      =     12,581
Group variable: ID                              Number of groups   =        121

R-sqaured:                                      Obs per group:
     Within  = 0.1052                                         min =        102
     Between = 0.5896                                         avg =      104.0
     Overall = 0.3829                                         max =        104

                                                F(20,12440)        =      73.12
corr(u_i, Xb) = 0.5712                          Prob > F           =     0.0000
```

Table (8): Observed Financial Determinants of Total Stock Returns

Variables	Total Stock Returns
Short-Term Investment Indicators	
Cash/Current Assets	-0.000136
	(0.00152)
Inventory/Current Assets	0.00160
	(0.00252)
Accounts Receivables/Current Assets (Liquidity Ratio)	-0.00244***
	(0.000776)
Observed Accounts Payables Deferral Period	-1.86e-06
	(4.97e-06)
Observed Accounts Receivable Collections Period	4.09e-06
	(2.96e-06)
Observed Inventory Conversion Period	5.55e-07
	(5.85e-06)
Net Working Capital/Total Assets (Liquidity Ratio)	0.00638***
	(0.00232)
Cash Ratio	0.000229
	(0.000355)
Working Capital/Net Sales	7.26e-06
	(1.42e-05)
Working Capital/Cash Flow (Liquidity Ratio)	3.22e-18 ***
	(1.19E-18)
Total Assets Turnover (turnover ratio)	0.110***
	(0.0313)
Long-Term Investment Indicators	
Fixed Assets Turnover	-4.52e-05
	(0.000617)
Fixed Assets/Total Debt	-9.35e-06
	(5.32e-05)
Current Liabilities/Net Worth	-0.000409
	(0.000531)
Financing Indicators	
Current Liabilities/Inventory	2.51e-05
	(1.86e-05)
Short Term Debt/Total Debt (debt ratio – leverage ratio)	-0.0255***
	(0.00750)
Net Worth/Fixed Assets	-0.00115
	(0.000809)
Long Term Debt/Total Assets	-0.00758

	(0.0101)
Retained Earnings/Total Assets (profitability ratio)	6.11e-14***
	(1.51e-15)
Dividends Indicators	
Dividend Yield	5.73e-05***
	(6.79e-06)
Constant	0.252***
	(0.0108)
Observations	12,581
R-Squared	0.3829
Number Of ID	121
Robust Standard Errors in Parentheses	
*** P<0.01, ** P<0.05, * P<0.1	

Firstly, the account receivable / current assets ratio is considered as liquidity ratio that measures the availability of the cash in the company and influences the dividends decision if the company will distribute dividends to the shareholders or not. Also, if the company has a higher liquidity ratio may indicate that they can pay higher dividends that companies have insufficient level of cash.

According to the observed Financial Determinants of the Total Stock Returns table, we indicated that the variable (Accounts Receivables/Current Assets) is negatively significant with the value of the company which means that it has negative signaling effect on the firm value (Table 8). On the other hand, there is positive signaling theory of dividends theory (Bogna,2015).

Moreover, we indicated from the observed financial determinants of the total stock returns table that there is other two variables that measure the liquidity ratio for the firm which are net working capital/total assets and working capital/cash flow. The results for both variables are positively significant on the firm value (Table 8). Consequently, the results for them agree with the results of Bogna Kaźmierska-Jóźwiaka (Bogna,2015).

According to the observed Financial Determinants of the Total Stock Returns table, we found that the total assets turnover that measures the firms' performance ratio has a positive significant effect on the value of the total stock return (Table 8). Also, there is a positive signaling impact for the total assets turnover and the performance of the firm and how effective a company total asset is generating sales revenues and the appreciation of the value of the firm (Obaid,2016).

In addition to the above, one more variable is Short Term Debt/Total Debt that is stated in the table above and appears that it has negative significant effect on the total stock return (Table 8). This variable indicates the short-term debt ratio and how the company is obligated to pay their liability in a short period and how that may also affect leverage ratio and liquidity ratio. There is a positive correlation between the firm value (stock price) and changes in debts weight and firms leverage rate (Masulis, 1983). Also, more studies showed that when the leverage ratio of the firm increases, the company value and its stock price increase (Harris and Raviv, 1990). For instance, in Finland, many of the listed companies tried to achieve certain capital structure to minimize the cost of the firm and maximize the company's profitability (Kjellman and Hansen, 1995). This means how capital structure for the firm has a effect signaling on its value.

Profitability ratio is considered one of the most variables that has investment signaling effects since that all the investors are seeking profit after tax more than the initial invested capital. Retained Earnings/Total Assets is considered one of the variables that reflects the profitability ratio and how the performance of the company is going on. According to the observed Financial Determinants of the Total Stock Returns table, we found that Retained Earnings/Total Assets and the profitability ratio have a significant positive impact on the stock return (Table 8). According to Ririh Dian Pratiwi in "Do capital structure, profitability, and firm size affect firm value?", stated that the level of the firm positively affected by the level of company's profitability and the higher the profit is generated by the company the higher good signaling for the investors to invest in this company and also the increase in the demand for certain stock the increase in its value. Also, according to our previous research, any increase in the profits in the company followed by increase in its value and the opposite is correct any decrease in the profit in the company followed by decrease in its value.

Dividend Yield is one of the variables that are stated above in the observed Financial Determinants of the Total Stock Returns table that is usually used to calculate and estimate the value of the firm based on the dividends paid by the company. The dividend yield ratio in the above table indicated a significant positive relationship with the total stock return (Table 8). Dividend yield ratio has significant positive impact on total stock return with confident 95% and the p value is less than 0.05 and total stock return equals 5.73e-05, this means that when the dividend yield ratio increases

by one unit the total stock return increases by 5.73e-0 5units given that all other independent variables are constant.

High management of the company may use dividend to convince the investors with certain information, thus the more of dividend to the shareholders means less information asymmetry to the firm and the higher value of the firm (Watts,1973). Also, any changes in the dividends policy of the company lead to changes in the market value and the stock price of the firm (Cheng, 2007).

To sum up, we indicated from the observed financial determinants of total stock returns that we have 7 variables out of 20 variables are significant variable and influence the total stock return and the value of the firm and below are the variables with their signs (Table 8).

- Accounts Receivables/Current Assets (Negative Sign)
- Net Working Capital/Total Assets (Positive Sign)
- Working Capital/Cash Flow (Positive Sign)
- Total Assets Turnover (Positive Sign)
- Short Term Debt/Total Debt (Negative Sign)
- Retained Earnings/Total Assets (Positive Sign)
- Dividend Yield (Positive Sign)

Second model: The relationship between financial Fundamentals associated with Zero-Default Debt and Total Stock Returns

Table (9): Testing for Fixed Vs Random Effects (Hausman test).

Ho: difference in coefficients not systematic
chi2(16) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 110.49
Prob>chi2 = 0.00000

From the above table, we can conclude that the best model for fitting the first model is fixed effect model as the p-value associated with the test is less than 5%.

Table (10): Testing for Linearity Vs Non-linearity (RESET test)

Ramsey Testing for Linearity Vs Non-linearity (Reset test) using powers of the fitted values of the financial fundamentals associated with zero-default debt.

Table (11): Results for the RESET test

Ho: model has no omitted variables
F(3, 12557) = 1.09
Prob > F = 0.352

From the above we can conclude that at 95% confident we fail to reject the null hypothesis of the Testing for Linearity Vs Non-linearity (Reset test) which mean that the linear model is appropriate.

Table (12): Heteroskedasticity test: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance of residuals; H_1: Random variance of residuals
chi2(1) = 114334.38
Prob > chi2 = 0.0000

From the above table we can conclude that the null-hypothesis of the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity is rejected and this with confident 95%, this mean that variances of residuals are not constant, this means that we will use the robust estimation in order to estimate the parameters of the model.

Table (13): Summary of the model

```
Fixed-effects (within) regression               Number of obs      =        12,581
Group variable: ID                              Number of groups   =           121

R-squared:                                      Obs per group:
     Within  = 0.1039                                         min =           102
     Between = 0.5606                                         avg =         104.0
     Overall = 0.3645                                         max =           104

                                                F(20,12440)        =         72.13
corr(u_i, Xb) = 0.5544                          Prob > F           =        0.0000
```

Table (14): The Financial Fundamentals Associated with Zero-Default Debt

Variables	Total Stock Returns
Short-term Investment Indicators	
Cash/Current Assets	-0.000107
	(0.00167)
Inventory/Current Assets	0.00177
	(0.00276)
Accounts Receivables/Current Assets	-0.00278***
	(0.000974)
Observed Accounts Payables Deferral Period	-6.08e-06**
	(2.47e-06)
Observed Accounts Receivable Collections Period	8.50e-06***
	(2.71e-06)
Observed Inventory Conversion Period	-7.86e-06
	(1.35e-05)
Net Working Capital/Total Assets	0.00382**
	(0.00190)
Cash Ratio	0.000289
	(0.000321)
Working Capital/Net Sales	1.44e-05
	(1.66e-05)
Working Capital/Cash Flow	3.22e-18***
	(1.17e-18)
Long-term Investment Indicators	
Total Assets Turnover	0.130***
	(0.0354)
Fixed Assets Turnover	-0.000263
	(0.000680)
Fixed Assets/Total Debt	-8.94e-06
	(5.96e-05)
Financing Indicators	
Current Liabilities/Net Worth	-0.000445
	(0.000526)
Current Liabilities/Inventory	2.33e-05
	(1.80e-05)

Short Term Debt/Total Debt	-0.0296*
	(0.0161)
Net Worth/Fixed Assets	-0.00116
	(0.000846)
Long Term Debt/Total Assets	0.00317
	(0.0144)
Retained Earnings/Total Assets	6.11e-14***
	(1.51e-15)
Dividend Indicator	
Dividend Yield	5.76e-05***
	(7.05e-06)
Constant	0.258***
	(0.0126)
Observations	12,581
R-Squared	0.3645
Number Of ID	121
Robust Standard Errors in Parentheses	
*** P<0.01, ** P<0.05, * P<0.1	

According to the above table (14), we are going to analysis the results of the financial fundamentals after optimizing with zero-default debt and compering them with the results of observed financial determinants of total stock returns that we just analyzed in table (8).

Starting with the variable Account receivables / Current assets that measures the availability of the cash in the firm and may affect the decision for dividends. However, after using the optimizing model with zero-default debt we indicated that it has negative significance to the value of the firm and the total stock return. In addition to the above, that was the same result and trend and significancy for Account receivables / Current assets in the observed financial determinants before optimizing model. This means that it is a robust variable, and the corporate planner of a firm can use it to reach zero-default debt.

Secondly, the observed accounts payables deferral period that is used to know the period that the company takes to payback its credits to the suppliers or contractors and the company with higher observed accounts payables deferral period means that it is a good indicator since the company is going to use the available cash and liquidity in other short-term investments. We indicated that observed accounts payables deferral period has a negative significant effect on the total stock

return of the company (Table 14). On the other hand, the same variable here was not the same significance in the observed financial determinants of total stock returns that was negative insignificant variable before optimizing model. This means that the observed accounts payables deferral period as a variable must be taken into consideration by the corporate planner to have an impact on the total stock return and the value of the firm.

In addition to the above, the account receivable collection period variable has a different significance and trend in the financial fundamentals associated with zero-default debt (table 14) than it has in the results of observed financial determinants of total stock returns (table 8). First, the accounts receivable collection period associates the outstanding receivables of the firm with its total sales and that is used to know the duration that customers are taking to pay the company, so a low number of accounts receivable collection period is considered better, since it means that the firm is collecting its receivables faster. The results in table 14 is that the account receivable collection period variable has a significant positive impact on the total stock return and the value of the company. On the other hand, the account receivable collection period variable was an insignificant variable in the observed financial determinants of total stock returns table before optimizing model. This means that it is a new significant variable after optimizing model to reach zero-default debt and must be taken into consideration by the corporate planner to have an impact on the total stock return and the value of the firm.

The results reported in the financial fundamentals associated with zero-default debt table that the variable net working capital/total assets has significant positive impact on the total stock return. Moreover, the same variable has the same trend and significance in the observed financial determinants of total stock returns table before optimizing model (Table 8). Thus, the variable net working capital/total assets is a robust variable, and the corporate planner of a firm can use it to reach zero-default debt.

In addition to the above, working capital/cash flow variable has a significant positive impact on the total stock return and it was the same trend and significance in the observed financial determinants of total stock returns table. Thus, the variable working capital/cash flow is a robust variable, and the corporate planner of a firm can use it to reach zero-default debt.

Assets turnover variable is other variable that we indicated from (table 14) that it has significant positive impact on the total stock return and has the same trend and significance in the observed financial determinants of total stock returns table (Table 8). Thus, the variable Assets turnover is a strong variable, and the business planner of a firm can use it to reach zero-default debt.

Short term debt / total debt variable refers to the obligation of the firm to pay their liability in a short period and how that may also affect leverage ratio and liquidity ratio. The results reported in the financial fundamentals associated with zero-default debt table showed that short term debt / total debt variable has a significant negative impact on the total stock return. On the other hand, the same variable has the same trend and significance in the observed financial determinants of total stock returns table (Table8). This means that the variable short-term debt / total debt is a strong variable, and the business planner of a firm can use it to reach zero-default debt and it has an impact on the total stock return and the value of the firm.

According to the financial fundamentals associated with zero-default debt table, retained Earnings/Total Assets has a significant positive impact on the total stock returns and it has the same trend and significance in the observed financial determinants of total stock returns table (Table 8). Thus, the variable retained Earnings/Total Assets is a robust variable, and the corporate planner of a firm can use it to reach zero-default debt.

The results reported in table 14 indicated that the variable dividend yield has significant positive impact on the total stock return, and it has the same trend and significance in the observed financial determinants of total stock returns table before optimizing model (Table 8). This means that the variable dividend yield is an effective variable, and the business planner of a company can use it to reach zero-default debt and it has an influence on the total stock return and the value of the firm.

To sum up, after a compassion between the financial fundamentals associated with zero-default debt table and the observed financial determinants of total stock returns table, we concluded that the same 7 significant variables in the observed financial determinants of total stock returns table are still exists in the financial fundamentals associated with zero-default debt table after optimizing. This means that these 7 significant variables are very robust variables, and the

corporate financial planner of any institution can use these variables to reach zero-default debt. These variables are listed below:

- Accounts Receivables/Current Assets (Negative Sign)
- Net Working Capital/Total Assets (Positive Sign)
- Working Capital/Cash Flow (Positive Sign)
- Total Assets Turnover (Positive Sign)
- Short Term Debt/Total Debt (Negative Sign)
- Retained Earnings/Total Assets (Positive Sign)
- Dividend Yield (Positive Sign)

In addition to the above significant variables, two more significant variables are found in the financial fundamentals associated with zero-default debt table. This means that these significant variables must be taken into consideration by the corporate planner to have an impact on the total stock return and the value of the firm. These two variables are listed below:

- Observed Accounts Payables Deferral Period (Negative Sign)
- Observed Accounts Receivable Collections Period (Positive Sign)

Third model: The Financial Fundamentals Associated with Zero-Default Debt: The size effect.

Table (15) Descriptive Statistics of Proxies for Size

In this subsection, descriptive statistics such as mean, standard deviation, minimum, and maximum are presented for all the variables of the study.

Variable	Obs	Mean	Std. dev.	Min	Max
Natural log of Market Value of Equity (Proxy for Size)	12,580	8.965511	2.4901	-3.244	15.31941
Weighted Growth of Fixed Assets (Proxy for Size)	12,580	.0001109	.007237	-.1338	.7468454

Table (16): Testing for Fixed Vs Random Effects (Hausman test).

Ho: difference in coefficients not systematic
chi2(13) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 233.18
Prob>chi2 = 0.00000

From the above table, we can conclude that the best model for fitting the first model is fixed effect model as the p-value associated with the test is less than 5%.

Table (17): Testing for Linearity Vs Non-linearity (Reset test)

Ramsey Testing for Linearity Vs Non-linearity (RESET test) using powers of the fitted values of the financial fundamentals associated with zero-default debt.

Ho: The model has no omitted variables, H_1: The model has no omitted variables
F(3, 12546) = 1.083
Prob > F = 0.356

From the above we can conclude that at 95% confident we fail to reject the null hypothesis of the Testing for Linearity Vs Non-linearity (Reset test) which means that the linear model is appropriate.

Table (18): Testing for Heteroskedasticity: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance of residuals; H_1: Random variance of residuals
Variables: fitted values of the financial fundamentals associated with zero-default debt
chi2(1) = 80791.35
Prob > chi2 = 0.0000

From the above table we can conclude that the null-hypothesis of the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity is rejected and this with confident 95%, this mean that variances of residuals are not constant, this means that we will use the robust estimation in order to estimate the parameters of the model.

Table (19): Summary of the model

```
Fixed-effects (within) regression               Number of obs      =        12,572
Group variable: ID                              Number of groups   =           121

R-squared:                                      Obs per group:
     Within  = 0.1140                                         min =           100
     Between = 0.4276                                         avg =         103.9
     Overall = 0.2643                                         max =           104

                                                F(22,12429)       =         72.68
corr(u_i, Xb) = 0.4586                          Prob > F          =        0.0000
```

Table (20): The Financial Fundamentals Associated with Zero-Default Debt: The size effect.

Variables	Total Stock Returns
Short-Term Investment Indicators	
Cash/Current Assets	-0.000485
	(0.00169)
Inventory/Current Assets	0.00234
	(0.00276)
Accounts Receivables/Current Assets	-0.00280***
	(0.000936)
Observed Accounts Payables Deferral Period	-4.36e-06
	(7.03e-06)
Observed Accounts Receivable Collections Period	8.76e-06**
	(4.22e-06)
Observed Inventory Conversion Period	-9.28e-06
	(1.32e-05)
Net Working Capital/Total Assets	0.00322*
	(0.00180)
Cash Ratio	0.000424

	(0.000271)
Working Capital/Net Sales	1.92e-05
	(1.49e-05)
Working Capital/Cash Flow	3.22e-18***
	(1.17E-18)
Long-Term Investment Indicators	
Total Assets Turnover	0.147***
	(0.0324)
Fixed Assets Turnover	-0.000341
	(0.000676)
Fixed Assets/Total Debt	-7.03e-06
	(5.31e-05)
Financing Indicators	
Current Liabilities/Net Worth	-0.000589
	(0.000709)
Current Liabilities/Inventory	1.07e-05
	(1.37e-05)
Short Term Debt/Total Debt	-0.0260
	(0.0162)
Net Worth/Fixed Assets	-0.000246
	(0.00123)
Long Term Debt/Total Assets	0.00746
	(0.0127)
Retained Earnings/Total Assets	6.11e-14***
	(1.51e-0-15)
Dividend Indicators	
Dividend Yield	5.66e-05***
	(6.18e-06)
Proxies for Size	
Log Market Value of Equity (Proxy for Size)	0.00969**
	(0.00470)
Weighted Growth of Fixed Assets (Proxy for Size)	-0.354***
	(0.00991)
Constant	0.163***
	(0.0477)
Observations	12,572
R-Squared	0.264
Number Of ID	121
Robust Standard Errors In Parentheses	
*** P<0.01, ** P<0.05, * P<0.1	

Firm size is one of the essential factors that affect the value of the firm, and it can be observed from the size of the sales of the company and the total assets owned by the company. This means that if the company has a large value of sales in the current year that will increase the forecasted sales for the coming years since the base year is high and that will increase the value of the firm. Also, if a company has a high amount of fixed assets that means that the company needs high invested capital to operate that leads to higher value for the company. Consequently, that will lead to the large size of the company and the investors interested in investing and cooperating with the large companies than the small one and that will also increase its value (Pratiwi, 2020).

This study after adding the size effect to the financial fundamentals associated with zero-default debt found that two additional variables reflect the proxy for size effects have significant impact on the value of the firm. The two variables are the log market value of equity variable that has positive significant impact on the value of the firm and the weighted growth of fixed assets that has a negative significant effect on the total stock return. This means that the log market value of equity variable and the weighted growth of fixed assets variable are two significant variables that corporate planners must put into consideration while their strategy to increase the value of their firms.

On the other hand, other researchers concluded that the size of the company has no effect on the value of the firm if it is seen from its total assets because the size of the assets does not necessary indicated to the efficiency and effectiveness of the invested capital from the management (Dewi and Wirajaya, 2013).

Fourth model: The Financial Fundamentals Associated with Zero-Default Debt: The Industry Effect

Table (21): Descriptive Statistics

In this subsection, descriptive statistics such as mean, standard deviation, minimum, and maximum are presented for all the variables of the study.

Variable	Obs	Mean	Std. dev.	Min	Max
Entertainment	12,582	.0468924	.2114168	0	1
Software (System & Application)	12,582	.0919568	.2889764	0	1
Pharmacy Services	12,582	.0082658	.0905434	0	1
Medical Supplies	12,582	.0147035	.1203682	0	1
Diversified Co.	12,582	.0147035	.1203682	0	1
E-Commerce	12,582	.0340168	.1812797	0	1
Air Transport	12,582	.0082658	.0905434	0	1
Biotechnology	12,582	.0533302	.2246999	0	1
Semiconductor	12,582	.1002225	.3003084	0	1
Computer Software	12,582	.0165316	.127513	0	1
Internet	12,582	.0128755	.112742	0	1
Telecom. Services	12,582	.0321888	.1765083	0	1
Industrial Services	12,582	.0193133	.1376292	0	1
Retail (General)	12,582	.0643777	.2454343	0	1
Transportation	12,582	.0128755	.112742	0	1
Real Estate (General/Diversified)	12,582	.0064378	.0799802	0	1
Healthcare Equipment	12,582	.0193133	.1376292	0	1
Wireless Networking	12,582	.0064378	.0799802	0	1
Healthcare Products	12,582	.0321888	.1765083	0	1
Advertising	12,582	.0064378	.0799802	0	1
Construction	12,582	.0064378	.0799802	0	1
Financial Svcs. (Div.)	12,582	.0257511	.1583981	0	1
Drugs (Biotechnology)	12,582	.0128755	.112742	0	1
Food Processing	12,582	.0128755	.112742	0	1
Hotel/Gaming	12,582	.0064378	.0799802	0	1
Beverage (Soft Drink)	12,582	.0064378	.0799802	0	1

Retail (Automotive)	12,582	.0064378	.0799802	0	1
Automotive	12,582	.0128755	.112742	0	1
Human Resources	12,582	.0064378	.0799802	0	1
Computers/Peripherals	12,582	.0128755	.112742	0	1
Broadcasting	12,582	.0064378	.0799802	0	1
Software (Internet)	12,582	.0064378	.0799802	0	1
Bank (Money Center)	12,582	.0064378	.0799802	0	1
Electronics	12,582	.0064378	.0799802	0	1
Aerospace/Defense	12,582	.0128755	.112742	0	1
Heavy Truck & Equip	12,582	.0064378	.0799802	0	1
Oil/Gas (Production and Exploration)	12,582	.0128755	.112742	0	1
Beverage	12,582	.0064378	.0799802	0	1
Computer Services	12,582	.0064378	.0799802	0	1
Farming/Agriculture	12,582	.0064378	.0799802	0	1
Drug (Pharma)	12,582	.0064378	.0799802	0	1
Apparel	12,582	.0064378	.0799802	0	1

Table (22?): Testing for Multicollinearity (VIF)

Variable	VIF
Cash/Current Assets	4.99
Inventory/Current Assets	4.85
Observed Accounts Receivable Collections Period	2.81
Long Term Debt/Total Assets	2.32
Observed Inventory Conversion Period	2.16
Observed Accounts Payables Deferral Period	2.11
Accounts Receivables/Current Assets	1.86
Total Assets Turnover	1.71
Short Term Debt/Total Debt	1.70
Software (Internet)	1.63
Software (System & Application)	1.45
Semiconductor	1.43
Retail (General)	1.42

Net Worth/Fixed Assets	1.39
E-Commerce	1.33
Biotechnology	1.29
Financial Svcs. (Div.)	1.22
Telecom. Services	1.22
Fixed Assets Turnover	1.21
Working Capital/Net Sales	1.21
Entertainment	1.19
Net Working Capital/Total Assets	1.15
Healthcare Products	1.15
Internet	1.12
Dividend Yield	1.12
Industrial Services	1.10
Current Liabilities/Inventory	1.10
Healthcare Equipment	1.10
Medical Supplies	1.10
Food Processing	1.09
Drugs (Biotechnology)	1.08
Transportation	1.08
Diversified Co.	1.07
Aerospace/Defense	1.07
Oil/Gas (Production and Exploration)	1.07
Computers/Peripherals	1.07
Broadcasting	1.06
Fixed Assets/Total Debt	1.06
Automotive	1.06
Beverage	1.06
Human Resources	1.05
Wireless Networking	1.05
Bank (Money Center)	1.05
Cash Ratio	1.05
Advertising	1.04
Retail (Automotive)	1.04
Real Estate (General/Diversified)	1.04

Construction	1.04
Farming/Agriculture	1.04
Beverage (Soft Drink)	1.04
Electronics	1.04
Hotel/Gaming	1.04
Drug (Pharma)	1.03
Apparel	1.03
Heavy Truck & Equip	1.03
Computer Services	1.03
Current Liabilities/Net Worth	1.02
Retained Earnings/Total Assets	1.00
Working Capital/Cash Flow	1.00

Table (23): Testing for Fixed Vs Random Effects (Hausman test).

Ho: difference in coefficients not systematic
chi2(53) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 352.18
Prob>chi2 = 0.0000

From the above table, we can conclude that the best model for fitting the first model is fixed effect model as the p-value associated with the test is less than 5%.

Table (24): Testing for Linearity Vs Non-linearity (Reset test)

Ramsey Testing for Linearity Vs Non-linearity (Reset test) using powers of the fitted values of the financial fundamentals associated with zero-default debt.

Ho: The model has no omitted variables; H_1: The model has omitted variables
F (3, 12515) = 1.397
Prob > F = 0.242

From the above we can conclude that at 95% confident we fail to reject the null hypothesis of the Testing for Linearity Vs Non-linearity (Reset test) which means that the linear model is appropriate.

Table (25): Heteroskedasticity test: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance of residuals; H1: Random variance of residuals

chi2(1) = 96117.6
Prob > chi2 = 0.0000

From the above table we can conclude that the null-hypothesis of the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity is rejected and this with confident 95%, this mean that variances of residuals are not constant, this means that we will use the robust estimation in order to estimate the parameters of the model.

Table (26): Summary of the model

```
Fixed-effects (within) regression               Number of obs      =        12,581
Group variable: ID                              Number of groups   =           121

R-squared:                                      Obs per group:
     Within  = 0.1209                                         min =           102
     Between = 0.1263                                         avg =         104.0
     Overall = 0.0940                                         max =           104

                                                F(59,12401)       =         28.91
corr(u_i, Xb) = 0.2255                          Prob > F          =        0.0000
```

Table (27): The Financial Fundamentals Associated with Zero-Default Debt: The Industry Effect

Variables	Total Stock Returns
Short-Term Investment Indicators	
Cash/Current Assets	-0.000137
	(0.00169)
Inventory/Current Assets	0.00198
	(0.00276)
Accounts Receivables/Current Assets	-0.00295***
	(0.000926)
Observed Accounts Payables Deferral Period	-5.21e-06
	(8.34e-06)
Observed Accounts Receivable Collections Period	7.47e-06
	(4.69e-06)
Observed Inventory Conversion Period	-9.32e-06
	(1.16e-05)
Net Working Capital/Total Assets	0.00465**
	(0.00206)
Cash Ratio	0.000335
	(0.000328)
Working Capital/Net Sales	1.14e-05

	(1.57e-05)
Working Capital/Cash Flow	3.22e-18***
	(1.17E-18)
Long-Term Investment Indicators	
Total Assets Turnover	0.145***
	(0.0291)
Fixed Assets Turnover	-0.000381
	(0.000571)
Fixed Assets/Total Debt	3.68e-05
	(6.45e-05)
Financing Indicators	
Current Liabilities/Net Worth	-0.000473
	(0.000550)
Current Liabilities/Inventory	1.26e-05
	(1.59e-05)
Short Term Debt/Total Debt	-0.0319**
	(0.0151)
Net Worth/Fixed Assets	-0.00144*
	(0.000727)
Long Term Debt/Total Assets	0.000209
	(0.0130)
Retained Earnings/Total Assets	6.11e-14***
	(1.51e-0-15)
Dividends Indicators	
Dividend Yield	5.53e-05***
Type of Industry (Dummies; binary value)	(4.65e-06) Yes
Constant	0.264***
	(0.0131)
Observations	12,581
R-Squared	0.094
Number Of ID	121
Robust Standard Errors In Parentheses	
*** P<0.01, ** P<0.05, * P<0.1	

After examining the impact of the industry effect on the optimized financial fundamentals associated with zero-default debt, we concluded that we have eight significant variables that have an impact on the total stock return and the value of the company, and the list of variables are below:

- Accounts Receivables/Current Assets
- Net Working Capital/Total Assets

- Working Capital/Cash Flow
- Total Assets Turnover
- Short Term Debt/Total Debt
- Net Worth/Fixed Assets
- Retained Earnings/Total Assets
- Dividend Yield

This study after adding the industry effect to the financial fundamentals associated with zero-default debt found that one additional variable "net worth / fixed assets" has a significant impact on the value of the firm. This variable has a negative significant impact on the value of the firm. This means that the net worth / fixed assets variable is a significant variable that corporate planners must put into consideration while their strategy to increase the value of their firms.

Robustness Tests

Fifth model: The Financial Fundamentals Associated with Zero-Default Debt (Negatively Skewed Total Stock Returns)

Table (28): Descriptive Statistics

In this subsection, descriptive statistics such as mean, standard deviation, minimum, and maximum are presented for all the variables of the study.

Variable	Obs	Mean	Std. dev.	Min	Max
Total Stock Returns (Negatively Skewed)	7,654	0.1961532	1.12818	-2.92993	10.65179
Cash/Current Assets	7,654	.2873937	.2499418	-.349027	1
Inventory/Current Assets	7,654	.1600943	.2082965	-.001604	1
Accounts Receivables/Current Assets	7,654	.2567832	.2280955	-.020059	1
Observed Accounts Payables Deferral Period	7,654	165.1566	969.815	-310.701	20700
Observed Accounts Receivable Collections Period	7,654	95.94616	1050.137	-2700	32400
Observed Inventory Conversion Period	7,654	73.34295	305.5983	-270	7650
Net Working Capital/Total Assets	7,654	.2439988	.2728532	-2.74214	.9949386
Working Capital/Net Sales	7,654	-828762	1.46e+07	-5.91e+08	4586.483
Working Capital/Cash Flow	7,654	3.325849	680.8221	-10901.2	53039.69
Total Assets Turnover	7,654	.2226568	.1767858	-2.1e-08	1.331489
Fixed Assets Turnover	7,654	.6982166	1.681715	-4.1297	69.15381
Fixed Assets/Total Debt	7,654	3.416538	40.19068	-.00859	1621.739
Current Liabilities/Net Worth	7,654	.872524	9.33127	-94.25	561.9497
Accounts Payables/Sales	7,654	-69598.72	1249639	-5.3e+07	247.587
Short Term Debt/Total Debt	7,654	.544743	.2684375	0	1
Net Worth/Fixed Assets	7,654	1.516998	2.953487	-23.691	106.2519
Long Term Debt/Equity	7,654	1.060253	13.98355	-231.89	688.6369
Retained Earnings/Total Assets	7,654	-.0030893	.1426649	-1.8786	.7406146
Dividend Yield	7,654	108.7845	1221.188	0	41082.74

Table (29): The results for the Multicollinearity test (VIF)

Variable	VIF
Accounts Payables/Sales	3.81
Working Capital/Net Sales	3.74
Observed Accounts Receivable Collections Period	3.37
Observed Inventory Conversion Period	3.35
Observed Accounts Payables Deferral Period	2.09
Current Liabilities/Net Worth	1.95
Total Assets Turnover	1.95
Inventory/Current Assets	1.91
Net Working Capital/Total Assets	1.54
Accounts Receivables/Current Assets	1.47
Net Worth/Fixed Assets	1.44
Cash/Current Assets	1.42
Retained Earnings/Total Assets	1.34
Short Term Debt/Total Debt	1.31
Fixed Assets Turnover	1.23
Dividend Yield	1.10
Fixed Assets/Total Debt	1.03
Working Capital/Cash Flow	1.02
Current Liabilities/Inventory	1.01

Table (30): Testing for Fixed Vs Random Effects (Hausman test).

Ho: difference in coefficients not systematic
chi2(13) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 166.99
Prob>chi2 = 0.00000

From the above table, we can conclude that the best model for fitting the first model is fixed effect model as the p-value associated with the test is less than 5%.

Table (31): Testing for Linearity Vs Non-linearity (Reset test)

Ramsey Testing for Linearity Vs Non-linearity (Reset test) using powers of the fitted values of Total Stock returns (Negatively Skewed).

Ho: The model has no omitted variables; H_1: The model has no omitted variables
F(3, 7630) = 1.58
Prob > F = 0.1919

From the above we can conclude that at 95% confident we fail to reject the null hypothesis of the Testing for Linearity Vs Non-linearity (Reset test) which means that the linear model is appropriate.

Table (32): Heteroskedasticity test: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance of residuals; H_1: Random variance of residuals
Variables: fitted values of Total Stock returns (Negatively Skewed)
chi2(1) = 115401.7
Prob > chi2 = 0.0000

From the above table we can conclude that the null-hypothesis of the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity is rejected and this with confident 95%, this mean that variances of residuals are not constant, this means that we will use the robust estimation in order to estimate the parameters of the model.

Table (33): Table : Summary of the model

```
Fixed-effects (within) regression               Number of obs      =      7,654
Group variable: ID                              Number of groups   =        120

R-squared:                                      Obs per group:
     Within  = 0.0815                                         min =          1
     Between = 0.6200                                         avg =       63.8
     Overall = 0.4630                                         max =        102

                                                F(20,7514)         =      33.36
corr(u_i, Xb) = 0.6390                          Prob > F           =     0.0000
```

Table (34): The Financial Fundamentals Associated with Zero-Default Debt (Negatively Skewed Total Stock Returns)

Variables	Total Stock returns (Negatively Skewed)
Short-term investment Indicators	
Cash/Current Assets	0.0558**
	(0.0272)
Inventory/Current Assets	-0.0854**
	(0.0333)
Accounts Receivables/Current Assets	-0.00451
	(0.0202)
Observed Accounts Payables Deferral Period	4.27e-06
	(2.69e-06)

Observed Accounts Receivable Collections Period	-3.03e-06
	(4.43e-06)
Observed Inventory Conversion Period	2.00e-05
	(1.56e-05)
Net Working Capital/Total Assets	-0.0297
	(0.0250)
Working Capital/Net Sales	-3.84e-10
	(3.03e-10)
Working Capital/Cash Flow	6.06e-07
	(1.31e-06)
Long-term investment Indicators	
Total Assets Turnover	0.102**
	(0.0491)
Fixed Assets Turnover	-0.00336**
	(0.00159)
Fixed Assets/Total Debt	0.000389***
	(0.000118)
Financing Indicators	
Current Liabilities/Net Worth	0.000306
	(0.000385)
Current Liabilities/Inventory	3.61E-20
	(1.76e-19)
Accounts Payables/Sales	7.33e-11
	(2.62e-09)
Short Term Debt/Total Debt	-0.0264
	(0.0268)
Net Worth/Fixed Assets	-0.00168
	(0.00113)
Retained Earnings/Total Assets	0.0464
	(0.0436)
Dividends Indicators	
Dividend Yield	8.01e-05***
	(9.40e-06)
Constant	0.187***
	(0.0170)
Observations	7,654
R-Squared	0.463
Number Of ID	120
Robust Standard Errors in Parentheses	
*** P<0.01, ** P<0.05, * P<0.1	

Sixth model: The Financial Fundamentals Associated with Zero-Default Debt Positively Skewed Total Stock Returns)

Table (35): **Descriptive Statistics**

Variable	Obs	Mean	Std. dev.	Min	Max
Total Stock Returns (Positively Skewed)	4,928	.4131126	1.712346	-2.18613	11.06285
Cash/Current Assets	4,928	.3079182	.2771599	-.402269	1
Inventory/Current Assets	4,928	.1827772	.2500943	-.5	1
Accounts Receivables/Current Assets	4,928	.2612719	.2459445	-.207272	2
Observed Accounts Payables Deferral Period	4,928	267.9805	1546.819	-2323.2	45000
Observed Accounts Receivable Collections Period	4,928	157.3665	1599.198	-14.945	32400
Observed Inventory Conversion Period	4,928	120.6141	570.9744	-22.812	15300
Net Working Capital/Total Assets	4,928	.2566081	.281615	-2.3896	.9871197
Cash Ratio	4,928	1.155309	2.445983	-5.1e-08	33.62783
Working Capital/Net Sales	4,928	-1441451	2.63e+07	-1.3e+09	3865.062
Working Capital/Cash Flow	4,928	-15.52478	587.8665	-20636.7	18656.22
Total Assets Turnover	4,928	.2183279	.1890569	-.35190	2.096871
Fixed Assets Turnover	4,928	.8404225	2.98827	-.45356	94.84697
Fixed Assets/Total Debt	4,928	3.65108	34.30762	0	747.1298
Current Liabilities/Inventory	4,928	-3.1e+14	1.55e+16	-9.1e+1	1.43e+17
Accounts Payables/Sales	4,928	-12892	4.03e+07	-2.4e+09	359.9516
Short Term Debt/Total Debt	4,928	.559763	.2775048	0	1
Net Worth/Fixed Assets	4,928	1.674147	3.375938	-23.038	54.2
Retained Earnings/Total Assets	4,928	-.03172	.2192053	-3.1858	.895249
Dividend Yield	4,927	316.8204	2707.396	0	61575.59

Table (36): Testing for the Multicollinearity (VIF test).

Variable	VIF
Observed Accounts Receivable Collections Period	2.65
Cash/Current Assets	2.08
Observed Accounts Payables Deferral Period	2.03
Observed Inventory Conversion Period	1.89
Inventory/Current Assets	1.87
Cash Ratio	1.86
Net Working Capital/Total Assets	1.81
Net Worth/Fixed Assets	1.81
Total Assets Turnover	1.72
Accounts Receivables/Current Assets	1.60
Short Term Debt/Total Debt	1.36
Retained Earnings/Total Assets	1.34
Dividend Yield	1.14
Fixed Assets Turnover	1.13
Working Capital/Net Sales	1.09
Fixed Assets/Total Debt	1.05
Working Capital/Cash Flow	1.03
Accounts Payables/Sales	1.02
Current Liabilities/Inventory	1.00

Table (37): Testing for Fixed Vs Random Effects (Hausman test).

Ho: difference in coefficients not systematic
chi2(13)= (b-B)'[(V_b-V_B)^(-1)](b-B)
= 165.05
Prob>chi2 = 0.00000

From the above table, we can conclude that the best model for fitting the first model is fixed effect model as the p-value associated with the test is less than 5%.

Table (38): Testing for Linearity Vs Non-linearity (RESET test).

Ramsey Testing for Linearity Vs Non-linearity (Reset test) using powers of the fitted values of Total Stock returns (Positively Skewed).

Ho: The model has no omitted variables; H_1:The model has omitted variables	
F(3, 4904) =	0.59
Prob > F =	0.6215

From the above we can conclude that at 95% confident we fail to reject the null hypothesis of the Testing for Linearity Vs Non-linearity (Reset test) which means that the linear model is appropriate.

Table (39): The Results for the Heteroskedasticity test: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance of residuals; H_1: Random variance of residuals
Variables: fitted values of Total Stock returns (Positively Skewed)
chi2(1) =26680.53
Prob > chi2 = 0.0000

From the above table we can conclude that the null-hypothesis of the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity is rejected and this with confident 95%, this mean that variances of residuals are not constant, this means that we will use the robust estimation in order to estimate the parameters of the model.

Table (40): Summary of the model

```
Fixed-effects (within) regression               Number of obs      =     4,927
Group variable: ID                              Number of groups   =       121

R-squared:                                      Obs per group:
     Within  = 0.1096                                         min =         2
     Between = 0.4482                                         avg =      40.7
     Overall = 0.3074                                         max =       104

                                                F(19,4787)         =     31.01
corr(u_i, Xb) = 0.4983                          Prob > F           =    0.0000
```

Table (41): The Financial Fundamentals Associated with Zero-Default Debt (Positively Skewed Total Stock Returns)

Variables	Total Stock returns (Positively Skewed)
Short-term Investment Indicators	
Cash/Current Assets	0.0272
	(0.0310)

Inventory/Current Assets	-0.0647
	(0.0758)
Accounts Receivables/Current Assets	0.0245
	(0.0389)
Observed Accounts Payables Deferral Period	-1.34e-05
	(1.27e-05)
Observed Accounts Receivable Collections Period	-3.44e-07
	(7.05e-06)
Observed Inventory Conversion Period	-7.06e-06
	(1.02e-05)
Net Working Capital/Total Assets	0.0228
	(0.0398)
Cash Ratio	-0.00446*
	(0.00251)
Working Capital/Net Sales	-2.83e-10
	(2.07e-10)
Working Capital/Cash Flow	-1.27e-05***
	(3.22e-06)
Long-term Investment Indicators	
Total Assets Turnover	0.179***
	(0.0501)
Fixed Assets Turnover	0.00155**
	(0.000780)
Fixed Assets/Total Debt	-4.61e-05
	(3.08e-05)
Current Liabilities/Inventory	3.61E-20
	(1.76e-19)
Accounts Payables/Sales	-9.54E-12
	(8.31e-11)
Short Term Debt/Total Debt	-0.0564*
	(0.0326)
Net Worth/Fixed Assets	-0.000264
	(0.00263)
Retained Earnings/Total Assets	-0.0245
	(0.0332)
Dividends Indicator	
Dividend Yield	5.13e-05***
	(1.18e-05)
Constant	0.388***
	(0.0246)
Observations	4,927
R-Squared	0.3704
Number Of ID	121
Robust Standard Errors in Parentheses	

*** P<0.01, ** P<0.05, * P<0.1

Referring to the financial fundamentals associated with Zero-Default Debt (Negatively Skewed Total Stock Returns) table, the researcher concludes that there are only six variables are significant as below:

- Cash/Current Assets (Positive sign)
- Inventory/Current Assets (Negative sign)
- Total Assets Turnover (Positive sign)
- Fixed Assets Turnover (Negative sign)
- Fixed Assets/Total Debt (Positive sign)
- Dividend Yield (Positive sign)

Also, the results in table number 41 indicated that there are only six variables are significant as the below list:

- Cash Ratio (Negative sign)
- Working Capital/Cash Flow (Negative sign)
- Total Assets Turnover (Positive sign)
- Fixed Assets Turnover (Positive sign)
- Short Term Debt/Total Debt (Negative sign)
- Dividend Yield (Positive sign)

After a comparison between the two tables with negatively and positively skewed, we concluded that there are only three common variables are significant in both models which are the following:

- Total Assets Turnover
- Fixed Assets Turnover
- Dividend Yield

It is obvious that the total assets turnover variable and dividend yield variable are fragile variables since they have the same sign in the positive and negative skewed table which means that we can not consider them as reliable variable that influence the total stock return and the value of the firm.

However, the fixed assets turnover variable is the only robust variable since it is significant in both models with different signs which means that it is the only variable that is reliable and influences the total stock return and the value of the firm.

In addition to the above, the fixed asset turnover has a positive and significant impact on the return on asset and the value of the firm (Puspita,2021). It means that when the fixed asset turnover increases the value of the firm and the total return increases. Also, total asset turnover has a significant impact on the firm value, and it does not have an impact on profitability (Hasangapon,2021).

The fixed asset turnover is a ratio that determines the extent to which the company's ability to generate sales is based on the fixed assets owned by the company. This variable is very essential since it is measures how effective a company total asset is generating sales revenues and shows the co-integration of the financial information because it measures factor from the balance sheet (Fixed Assets) by results in total sales which is in other financial statement (Income statement) and it indicated the link of the financial analysis and how the corporate planner can link between the income statement and the balance sheet to have a variable that can measure and influence on the value of the firm.

Conclusion

This thesis examines the financial factors that corporate planners must consider in reaching zero-default debt. Starting with testing the observed financial determinants of total stock returns and then testing the financial fundamentals associated with zero-default debt to conclude that there are seven common significant variables that have a significant impact on the value of the firm and total stock return:

- Accounts Receivables/Current Assets (Negative Sign)
- Net Working Capital/Total Assets (Positive Sign)
- Working Capital/Cash Flow (Positive Sign)
- Total Assets Turnover (Positive Sign)
- Short Term Debt/Total Debt (Negative Sign)
- Retained Earnings/Total Assets (Positive Sign)
- Dividend Yield (Positive Sign)

Then we tested the size effect to the financial fundamentals associated with zero-default debt and indicated that all the above variables are significant except one variable which is short term debt / total debt. In addition to the above, we used the industrial effect model to the financial fundamentals associated with zero-default debt and found that the seven significant variables are common in this model compared with the optimized model for zero-default debt. Moreover, we used negatively skewed and positively skewed models to the financial fundamentals associated with zero-default debt and indicated that the only variable that can be considered as a robust variable and has a significant effect on the total stock return is fixed assets turnover variable which has a positive significant impact on the value of the firm.

7. References

Ağca, Ş., & Mozumdar, A. (2017). Investment–cash flow sensitivity: Fact or fiction? Journal of Financial and Quantitative Analysis, 52, 1111-1141.

Akerlof, G. A. (1970). The market for "Lemons": Quality uncertainty and the market mechanism. The Quarterly Journal of Economics, 84, 488-500.

Alti, A. (2003). How sensitive is investment to cash flow when financing is frictionless? The Journal of Finance, 58, 707-722.

Asker, J., Farre-Mensa, J., & Ljungqvist, A. (2014). Corporate investment and stock market listing: A puzzle? The Review of Financial Studies, 28, 342-390.

Bar-Yosef, S., & Venezia, I., (1991). Earnings information and the determination of dividend policy. The Journal of Economics and Business, 43, 197-214

Baxamusa, M., Mohanty, S., & Rao, R. P. (2015). Information asymmetry about investment risk and financing choice. Journal of Business Finance & Accounting, 42, 947-964.

Belleflamme, P., & Peitz, M. (2014). Asymmetric information and overinvestment in quality. European Economic Review, 66, 127-143

Beaver, W., Kettler, P., & Scholes, M. (1970). The association between market determined and accounting determined risk measures. The Accounting Review, 45, 654-682.

Bhattacharyya, S. (1979). Imperfect information, dividend policy, and "the bird in the hand" fallacy. Bell Journal of Economics, 10, 259-270

Bialowolski, P., & Weziak-Bialowolska, D. (2014). External factors affecting investment decisions of companies. Economics, 8, 44.

Blanchard, O., Rhee, C., & Summers, L. (1993). The stock market, profit, and investment. The Quarterly Journal of Economics, 108, 115-136.

Bogna Kaźmierska-Jóźwiaka. (2015). Determinants of Dividend Policy: Evidence from Polish Listed Companies. Procedia Economics and Finance 23 (2015) 473 – 477

Brennan, M. J., & Thakor, A. V. (1990). Shareholder preferences and dividend policy. Journal of Finance, 45, 993-1018.

Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st Century. Journal of Financial Economics, 77, 483-527.

Carter, M. S., & Schmidt, B. H. (2008). The relationship between dividend payouts and systematic risk: A mathematical approach. Academy of Accounting and Financial Studies Journal, 12(2). Retrieved from http:// www.freepatentsonline.com/article/Academy-Accounting-FinancialStudies-Journal/184800714.html

Chakravarty, Sagto, Huseyin Gulen, and Stewart Mayhew. (2004). Informed trading in stock and option markets, Journal of Finance 59, 1235–1257.

Cheng, L. T. W., Fung, H.-G., & Leung, T. Y. (2007). Information effects of dividends: Evidence from the Hong Kong market. Review of Quantitative Finance and Accounting, 28, 23-54.

Chowdhury, Kumar, and Shome. (2016), Investment–cash flow sensitivity under changing information asymmetry. Investment–cash flow sensitivity under changing information asymmetry. Volume 62, January 2016, Pages 28-40.

Cui, P., & Deng, K. (2007). Asymmetric information, agent-principle, corporate governance, and firms investment. Studies of Economics and Management, 10, 31-40.

Darrough, M. N. and N. M. Stoughton, (1986). "Moral Hazard and Adverse Selection: The Question of Capital Structure." Journal of Finance 41, 501–513.

Dessaint, O., Foucault, T., Frésard, L., & Matray, A. (2018). Noisy stock prices and corporate investment. The Review of Financial Studies, 32(7), 2625-2672.

Durand, D. (1955). Bank stocks and the analysis of covariance. Econometrica, 23, 30-45.

Dewi, A. S., & Wirajaya, A.(2013). Pengaruh Struktur Modal, Profitabilitas, dan Ukuran Perusahaan terhadap Nilai Perusahaan. E-Jurnal Akuntansi Universitas Udayana 4.2, 358-372.

Eldomiaty, T. and Mostafa, W. Attia, O. (2016). Empiricism of Corporate Debt Safe Buffer. Advances in Financial Planning & Forecasting, 7: 27 – 75.

Eldomiaty, Mohamed A. Ismail, and Wael Mostafa (2012). testing a potential signaling of capital structure decisions in transitional market: subset model selection approach. advances in quantitative analysis of finance and accounting volume 10(2012), pp. 255-283

Fama, E. F., & French, K. R. (2001). Disappearing dividends: Changing firm characteristics or lower propensity to pay? Journal of Financial Economics, 60, 3-43

Foucault, T., & Frésard, L. (2018). Corporate Strategy, conformism, and the stock market. The Review of Financial Studies, 32, 905-950

Foucault, T., & Frésard, L. (2018). Corporate Strategy, conformism, and the stock market. The Review of Financial Studies, 32, 905-950

Ghulam Hussain Khan Zaigham, Xiangning Wang1, and Haji Suleman Ali (2019). Causal Relation Between Stock Market Performance and Firm Investment in China: Mediating Role of Information Asymmetry

Gordon, M. J. (1959). Dividends, earnings, and stock prices. Review of Economics and Statistics, 41, 99-105.

Graham, Harvey, Michaely (2005). Payout policy in the 21st century, Journal of Financial Economics, Volume 77, Issue 3, Pages 483-527

Han, S. H., Kim, M., Lee, D. H., & Lee, S. (2014). Information asymmetry, corporate governance, and shareholder wealth: Evidence from unfaithful disclosures of Korean listed firms. Asia-Pacific Journal of Financial Studies, 43, 690-720

Harris, M. and A. Raviv, (1990). "Capital Structure and the Informational Role of Debt." Journal of Finance 45, 321–349.

Hasangapon, Iskandar, Desy Purnama. (2021). The Effect of Firm Size and Total Assets Turnover (Tato) On Firm Value Mediated By Profitability In Wholesale And Retail Sector Companies." Jurnal Ekonomi Dan Bisnis-19(3).

Kjellman, A. and S. Hansen, (1995). "Determinants of Capital Structure: Theory versus Practice." Scandinavian Journal of Management 11, 91–102.

Kumar, P., & Li, D. (2016). Capital investment, innovative capacity, and stock returns. The Journal of Finance, 71: 2059-2094.

Luenberger, David G. and Ye, Y., (2008). Linear and Nonlinear Programming. Springer, N.Y.

Luo, Brick, and Frierman.(2002). Strategic Decision Making of the Firm Under Asymmetric Information., Review of Quantitative Finance and Accounting, 19: 215–238.

Masulis, R. W. (1983), "The Impact of Capital Structure Change on Firm Value: Some Estimates." Journal of Finance 38, 107–126.

McConnell, J. and C. Muscarella, (1985). "Corporate Capital Expenditure Decisions and the Market Value of the Firm." Journal of Financial Economics 14, 399–422

Michael J. Cooper, Huseyin Gulen, And Michael J. Schill, 2008. "Asset Growth and the Cross-Sectionof Stock Returns" The Journal of Finance vol. Lxiii,

Miller, M. H. and F. Modigliani, (1966). "Some Estimates of the Cost of Capital to the Electric Industry 1954–1957." American Economic Review 56, 333–341

Miller, M. H., & Modigliani, F. (1961). Dividend policy, growth and the valuation of Shares. Journal of Business, 34, 411-433

Modigliani, F. and M. H. Miller, (1958). "The Cost of Capital, Corporation Finance and the Theory of Investment." American Economic Review 48, 261–297

Myers, S. C,and N. S. Majluf, (1984) "Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have." Journal of Financial Economics 13, 187–221

Morck, R., Shleifer, A., Vishny, R. W., Shapiro, M., & Poterba, J. M. (1990). The stock market and investment: Is the market a sideshow? Brookings Papers on Economic Activity, 157

Obaid Ur Rehman (2016). Impact of Capital Structure and Dividend Policy on Firm Value. Journal of Poverty, Investment and Development. Vol.21

Puspita, Maya Arisandy,Lydia Octaviani (2021). The Effect Of Fixed Asset Turnover And Working Capital Turnover On Profitability. JFBA : Journal of Financial and Behavioural Accounting, Volume 1, Issue 1, 75-82

Ross, S. A. (1978), "Some Notes on Financial Incentive-Signaling Models, Activity Choice and Risk Preferences." Journal of Finance 33, 777–794.

Ririh dian pratiwi, (2020). Do capital structure, profitability, and firm size affect firm value?, Jurnal Penelitian Ekonomi dan Bisnis, 5 (2), Hal: 194-202

Taggart R. A., Jr. (1977), "A Model of Corporate Financing Decisions." Journal of Finance 32, 1467–1484.

Tsai, S. C. (2008). Information asymmetry and corporate investment decisions: A dynamic approach. Financial Review, 43, 241-271.

Turban, D. B., & Cable, D. M. (2003). Firm reputation and applicant pool characteristics. Journal of Organizational Behavior, 24: 733-751.

Wang, Z., & Zhang, Z. (1998). Asymmetric information and firms investment. Economic Science, 2, 66-70

Watts, R. (1973). The information content of dividends. Journal of Business, 46, 191-211.

Vavasis, S. A., (1991). Nonlinear Optimization: Complexity Issues. Oxford University Press.