The Impact of Capital Structure on Stock Return: Empirical Evidence from Amman Stock Exchange

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Abstract

The aim of this study is to examine the relationship between capital structure and stock return for all industrial firms listed in the Amman Stock Exchange over the period from (2007–2014) after controlling for the ratio of the market value per share to the book value per share, as a proxy of growth opportunities, the size of firm, the turnover ratio, as a proxy of stock liquidity, earnings per share, and return on assets. We use unbalanced panel data statistical approach for analysis. The empirical results suggested that there is a statistically significant negative effect of capital structure on stock return. In addition, stock liquidity and return on assets have statistically significant positive effect on stock return.

Keywords: Capital structure, Stock Return, Industrial Companies, Panel Data, ASE.

Introduction

Firms have different sources of funds; borrowing, retaining profits or issuing shares. The right hand of the balance sheet is related to the capital structure by deciding the way of combining between funds sources. Capital structure refers to the mixture of debt and equity and other sources of funds that firms' managers use to finance firms' activities. When firms' managers decide to choose a certain mixture of capital structure, they make a trade–off between risk and return. When firms depend highly on debt to finance their operations, the risk of bankruptcy will increase, which makes stockholders to demand higher rate of return (Brigham and Ehrardt, 2001). In countries where debt interest is tax deductible, firms prefer all debt to finance their capital structure. Highly levered firm is the firm, which uses high amount of debt in its capital structure. In contrast, unlevered firm is the firm, which does not use debt in its capital structure at all (Lasher, 2008).

Practical decision makers consider that equity is the most expensive form of raising capital, because shareholders should be compensated by paying them return in the form of dividends. On the other hand, debt is the cheaper form of financing because of tax deductible. However, there is no fixed proportion of leverage have to be used in the firm's capital structure, it differs from firm to another according to the kind of firm, sector, country, size, and some other variables. Moreover, the decision of choosing certain proportion of combination is one of the most difficult financial decisions because this proportion will determine the overall firm's value. However, the value of the firm should be maximized so this proportion should achieve this goal. It is important to study the firms' capital structure due to its effect on firms decisions in many fields like: investment, production and employment (Harris and Raviv, 1991).

Moreover, it is so significant to avoid bankruptcy. Ross (1977) argues that there is a positive relationship between leverage and the probability of bankruptcy. However, there is a positive relationship between equity ownership and the value of the firm (Pyle, 977). Determining capital structure could be useful for minimizing the agency cost that arises from the possible conflict of interests between managers and shareholders, and the possible conflict between shareholders and debt holders that could be appeared in the event of default. This study aims to investigate the relationship between capital structure and stock return for all industrial firms listed in the Amman Stock Exchange over the period (2007–2014).

Study Objectives

This study attempts to achieve the following objectives concerning the relationship between capital structure and stock return in the context of Jordan by examining:

1. The relationship between capital structure and stock return.
2. The relationship between market to book ratio and stock return.
3. The relationship between the size of firm and stock return.
4. The relationship between earnings per share and stock return.
5. The relationship between return on assets and stock return.
6. The relationship between stock liquidity and stock return.

Study problem

This study attempts to examine the relationship between capital structure and stock return. Therefore, we focus on investigating the relationship between capital structure and stock return, which could help managers and policy makers to make the right decision in determining the possible debt ratio that maximizes stock return. In addition, the results of this study could benefit many parties such as investors in choosing their investments and researchers for improving new research as well as could be a base for further research. We can do that by answering the following questions:

1. What is the relationship between capital structure and stock return?
2. What is the relationship between market to book ratio and stock return?
3. What is the relationship between the size of firm and stock return?
4. What is the relationship between earnings per share and stock return?
5. What is relationship between the return on assets and stock return?
6. What is the relationship between stock liquidity and stock return?

Study Importance

The importance of this study comes from the importance of the relationship between capital structure and stock return. There are some studies examine the relationship between capital structure, size, growth rate, and stock return (e.g. Acheampong *et al*., 2014). However, others examine the effect of capital structure, liquidity, size on stock return (e.g. Bergrren and Bergqvist, 2014). Few studies were conducted in Jordan examining the relationship between capital structure and stock return and its impact on the financial decisions (e.g., Gharaibeh, 2014). Therefore, this study could provide valuable information to various entities like managers, researchers, shareholders and investors. The difference of this study from literature comes from the large sample of data through including all industrial firms listed in the Amman Sock Exchange and considering the effect of the financial crises 2007 –2008 as well. To the best of authors' knowledge, there is no study in Jordan examine the relationship between capital structure and stock return including all variables that used in this study. Further, this study provides recent investigations of the research problem and research questions because it relies on recent period (2007-2014). This study could be useful for firms' managers in determining the best proportion of debt and equity that maximizes the firm's value. In addition, the results of this study could be useful for firm managers in attracting new investors as well as the researchers could based on this study for further research.

Literature Review

Capital structure has received the attention of many researchers and many studies are conducted to examine the effect of capital structure on stock return on both developed and emerging markets. Some studies argue that capital structure determines stock return (e.g. Bhandari, 1988) while another ones argue that stock return determines capital structure (e.g. Welch, 2004).

Other studies show that capital structure and stock return are simultaneously affecting each other (e.g. Yang, Lee, Gu, and Lee, 2010). However, some studies show that there is no relationship between the two variables (e.g. Modigliani and Miller, 1958).

Titman and Wessels (1988) argue that firms, which their products are unique or specialized, have relatively low debt ratio, larger firms tend to use significantly less short–term debt than smaller firms. Profitable companies have relatively less debt relative to the market value of their equity. No variation in convertible debt ratios across companies and they cannot support the idea that argues existence of relationships between debt ratios and non–debt tax shield, expected growth volatility or the collateral value of firm's assets.

Determinants of Stock Return

Masulis (1983) argues that financial leverage is one of the most important factors that explain stock return. The results reveal a negative relationship between financial leverage and stock return. Adami *et al* (2010) examine the relationship between stock return and leverage by using 2673 companies listed in the London Stock Exchange over the period (1980– 2008). The study demonstrates a negative relationship between financial leverage and stock return. There is a significant and negative relationship between gearing and returns when the gearing is the sole independent variable. Managers can enhance the return of shareholders by avoiding gearing altogether, when they include other explanatory variables (tax rates and industry concentration) gearing remains significant and negative. When they estimate returns with CAPM, they find that companies having higher tax rates earn higher returns. However, when returns estimate by Fama–French, the result shows that when the gearing increase by one percent, returns fall by 0.01. When they use four-factor Carhart model the results show a negative and significant relationship between gearing and monthly abnormal returns. Baradarannia and Peat (2013) examine the effect of liquidity on stock returns over the period (1926–2008). The estimations are obtained through OLS method. They use the following control variables: relative size, liquidity of portfolio, moment portfolio variable. The results show a positive relationship between stock liquidity and expected return. In addition, there is a significant relationship between systematic liquidity risk and expected return.

Uremadu and Efobi (2012) explore the impact of capital structure and liquidity on corporate returns by taking 10 firms in Nigeria over the period (2002–2006). They use OLS including log–linear least squares application for analysis. The results show a negative relationship between return and value of long-term debt, ratios of long-term debt to total liability, and ratios of short-term debt to total liability, and ratios of short-term debt to total liability; and equity capital to total liability. In addition, there is a positive relationship between profitability and domestic liquidity rate, ratios of long-term debt to equity capital and value of short-term debt.

Ahmad *et al* (2013) explore the co-determinants of capital structure and stock return of 100 non-financial companies in the Karachi stock exchange (KSE) over the period (2006-2010). The results show that stock return and leverage affect each other, while liquidity, growth and profitability have a significant effect on both leverage and stock return. The relationship between profitability and financial leverage is negative but it affects the stock return positively, there is a positive impact of growth on leverage and stock return, but there is a negative relationship between liquidity and both financial leverage and stock return, finally, the size of the firm has insignificant relationship with financial leverage and stock return.

Acheampong *et al* (2014) examine the impact of market size and financial leverage on stock return of five companies in manufacturing sector in Ghana for the period (2006-2010). The results show a significant and negative impact of financial leverage on stock return and a positive and significant impact of the firm's size on stock return. In addition, there is a direct relationship between the size of tradable shares and stock liquidity; tradable shares have a stronger size effect than the non–tradable shares. For a given level of leverage, small companies generate higher returns than larger ones, and with higher decrease of leverage this effect increases. There is decreasing stock–price sensitivity to leverage for large companies, because of the large market capitalization and highly levered firms; the size effect on stock returns is limited and very small.

Olowoniyi and Ojenike (2013) explore the relationship between capital structure and stock return. As a sample, 85 firms listed on the Nigeria Stock Exchange over the period (2000-2010) are taken for analyzing the above relationship. They use panel co-integration approach for analyses. The results of their study show that there is a long-run relationship between capital structure and stock return; therefore, attention must be paid to the two variables simultaneously.

Chambers *et al* (2013) examine whether (β) and the capital structure among firm-specific factors influencing stock return, and find the direction of this influence. As a sample, 65 industrial companies traded in the Istanbul Stock Exchange (ISE) for the period (1994-2010) are taken for analysis. Panel data multiple regression is used for analysis. The results show that there is a positive effect of (β) and total debt/market ratio value on nominal and real stock return for 3 periods, and a negative effect of total debt / market ratio on nominal and real stock return over (1994-2002). In addition, a positive effect of earnings per share on stock returns during the period (1994-2002). Finally, other control variables have no statistically significant effect on stock return for all periods.

Bergrren and Bergqvist (2014) examine the relationship between capital structure and stock return by taking 50 Swedish companies over the period (2009-2013). They use multiple regression panel data for analysis. The results show a positive effect of financial leverage, growth, and liquidity on stock return. However, there is a negative effect of profitability on stock return. In addition, the size of firm has a significant effect on financial leverage and stock return, and finally, volatility has a significant effect on financial leverage. Gharaibeh (2014) examines the effect of capital structure and stock liquidity on stock return for a sample of 15 industrial firms listed in the Amman Stock Exchange over the period (2009-2012). The result shows a significant but a weak relationship between liquidity and stock return. However, there is insignificant relationship between capital structure and stock return. The results also show a big difference in variables (stock returns, liquidity and capital structure) because of the nature of each industry sector.

Njoki (2014) examines the relationship between capital structure and stock return for a sample of 50 companies listed in the Nairobi Securities Exchange over the period (2011-2013). The results show a positive effect of financial leverage on stock return. The size of firm and profitability has no significant effect on stock return. Finally, there is a positive effect of operating leverage on stock return. Hung *et al* (2014) examine the determinants of stock return by including all stocks listed in the NYSE, AMEX, and NASDAQ over the period (1926–2012). The results show that market beta has an important role in determining the cross section of stock returns in two moment CAPM the WML-augmented FF model and the Fama-French model, cross section of stock returns is also associated with size, liquidity, momentum, and value and the explanatory power of the variables is lost over crises periods.

Chiang and Zheng (2015) examine the relationship between liquidity and expected excess return in United States, Canada, France, Germany, Italy, Japan and United Kingdom over the period (1990–2009). Panel data regression of monthly 20 years data is used to obtain the results. The results show a positive relationship between market liquidity risk and excess stock returns, while a negative relationship between firm–level liquidity and excess stock returns. Tahmoorespour *et al* (2015) examine the relationship between capital structure and stock return by selecting firms in 8 countries in the Asia Pacific region over the period (1990-2012). The results show that the effect of capital structure depends on the nature of industry and the market as well. There is a negative relationship between return and debt to common equity in Australia, China and Korea. Finally, there is a positive effect of long-term debt to common equity in Australia and Korea in the basic material industry.

To the best of authors' knowledge, there is only one study conducted in the context of Jordan examines the relationship between capital structure, liquidity and stock return (Gharaibeh, 2014). However, there are many differences between our study and the study of Gharaibeh (2014). Gharaibeh (2014) uses only two independent variables (capital structure and liquidity), while we use six independent variables (financial leverage, earnings per share, firm's size, stock liquidity, profitability, and the ratio of the market value per share to the book value per share). The second difference is the size of the sample to be taken; Gharaibeh (2014) takes 15 industrial firms). However, our study takes all industrial firms listed in the Amman Stock Exchange. The third difference is the period of the study. Gharaibeh (2014) covers the period (2009-2012), while our study covers the period (2007-2014) which includes the global financial crises (2007-2008) which ignored in Gharaibeh (2014).

Methodology

The population and sample of study

The population consists of all industrial firms listed in the Amman Stock Exchange over the period (2007-2014), however, the sample varies from year to another over (2007-2014) due to using unbalanced panel data. Some firms are excluded because of the data availability. We choose industrial sector because of the following reasons: It is the largest one among industry sectors (in terms of numbers) and the high contribution of the industrial sector to Jordanian GDP.

Source of data

The data that used in this study to examine the relationship between the capital structure and stock return is derived from the Amman stock exchange (ASE) based on the financial statements (balance sheet and income statement) of the industrial firms.

Statistical approach

We use *T*–test for examining the significance of the relationship between each independent variable and the dependent one while we use *F*–test for examining the overall significance of the regression model. Entry of data and the preparation of variables for analysis as well as the transformation of variables are done by Excel. Summary statistics and diagnostic tests as well as the results of the simple and multiple regression models are obtained by using the statistical software packages SPSS and STATA. We use unbalanced panel data to examine the empirical relationship between capital structure and stock return for all industrial firms listed in the Amman Stock Exchange over the period (2007–2014). Correlation coefficients matrix is used to find the relationship between each independent variable and the dependent one and to check the direction of the relationship between two independent variables as well. In addition, correlation coefficients matrix and variance inflation factor (VIF) can be used to detect the multicollinearity between independent variables (Asteriou and Hall, 2007**;** Gujarati and Porter, 2010**;** and Wooldridge, 2013).

Variables definition

Dependent variable

Stock return: Stock return is calculated by taking the natural logarithm of the closing price in the last trading day plus the dividend paid during the year divided by the closing price in the first trading day for the same year. This can be expressed algebraically as follows:

$$RETURNi,t = LN\frac{Pi,t + Di,t}{Pi,t-1} \quad \ldots\ldots \quad (1)$$

Where $Pi,t, Pt-1, Di,t$ is closing price for the last trading day, closing price for the first trading day, dividends for firm i in year t, respectively?

Independent variable

Capital structure: many studies have examined the relationship between the capital structure and stock return. Khan *et al* (2013) do not find relationship between capital structure and stock return while Adami *et al* (2010) and Uremadu and Efobi (2012) find a negative relationship. However, Bergrren and Bergqvist (2014) find a positive relationship

Capital structure can be calculated by the total liabilities divided by total assets. This can be represented algebraically as follows:

$$LEVi,t = \frac{TLi,t}{TAi,t} \quad \ldots\ldots \quad (2)$$

Where TLi,t, TAi,t are total liabilities, total assets for firm i in year t, respectively.

Control variables

This study examine the impact of the turnover as a proxy of stock liquidity, the ratio of the market value per share to the book value per share as a proxy of growth, earnings per share, the size of the firm, and profitability as control variables.

Growth: some studies show a positive relationship between opportunities growth and capital structure Gharaibeh *et al* (2007). There are some studies find a positive relationship between growth and stock returns (e.g., Bergrren and Bergqvist (2014). Growth can be calculated by dividing the market value per share to the book value per share. This can be presented algebraically as follows:

$$MBi,t = \frac{MVi,t}{BVi,t} \quad \text{..... (3)}$$

Where; MVi,t, BVi,t is market value per share, book value per share for firm i in year t, respectively.

Firm's Size: some studies find a statistically significant positive effect of size on stock returns (e.g., Gharaibeh *et al*., 2007). There are some studies find no statistically significant relationship between the size of firm and stock return (e.g., Njoki, 2014).

The size of firm can be measured by the natural logarithm of the market capitalization. This can be represented algebraically as follows:

$$SIZEi,t = LN(MCi,t) \quad \text{..... (4)}$$

Where MCi,t is market capitalization for firm i in year t.

Earnings per share: Some studies show a relationship between stock return and earnings per share (e.g. Chambers *et al*., 2013). Earnings per share can be calculated by dividing net income on the number of shares outstanding. This can be represented algebraically as follows:

$$EPSi,t = \frac{NIi,t}{\#Si,t} \quad \text{..... (5)}$$

Where NIi,t, $\#Si,t$ are net income, and number of shares outstanding for firm i in year t, respectively.

Profitability: some studies show a negative relationship between profitability and stock return (e.g. Bergrren and Bergqvist, 2014), however, other studies find a positive and significant relationship between profitability and stock return (e.g. Gharaibeh *et al*., 2007; and Alnajjar, 2014). On the other hand, other studies find no relationship between stock return and profitability (e.g. Njoki, 2014). Profitability can be measured by the return on assets (ROA), which can be calculated by dividing net income on total assets. This can be represented algebraically as follows:

$$ROAi,t = \frac{NIi,t}{TAi,t} \quad \text{..... (6)}$$

Where; NIi,t, TAi,t are net income and total assets, for firm i in year t, respectively.

Liquidity: Some studies show a significant but a weak relationship between stock liquidity and stock return (e.g. Gharaibeh, 2014). Others demonstrate a positive and significant relationship between stock liquidity and stock return (e.g. Bergrren and Bergqvist, 2014; and Chiang and Zheng, 2015)**.** Stock liquidity is measured by turnover ratio, which can be calculated by dividing the number of shares traded over the number of shares outstanding. This can be presented algebraically as follows**:**

$$TURNi,t = \frac{\#TSi,t}{\#OSi,t} \quad \text{..... (7)}$$

Where; $\#TSi,t$, $\#OSi,t$ are the number of shares traded and the number of shares outstanding for firm i in year t, respectively.

Study Hypotheses

The following hypotheses are formulated to answer the questions of this study:

H01: There is no statistically significant effect of capital structure on stock return.
H02: There is no statistically significant effect of the market to book ratio on stock return.
H03: There is no statistically significant effect of size of the firm on stock return.

H04: There is no statistically significant effect of earnings per share on stock return.
H05: There is no statistically significant effect of profitability on stock return.
H06: There is no statistically significant effect of stock liquidity on stock return.

Based on the models that have been developed by Berggren and Bergqvist (2014), Uremadu and Efobi (2012), Acheampong *et al* (2014), and Olowoniyi & Ojenike (2013), we developed the model of this study on the way that explains the relationship between capital structure and stock return including some variables, which will be more valuable to reach the study objectives.

$$RETURNi,t = \beta 0 + \beta 1TURNi,t + \beta 2MBi,t + \beta 3EPSi,t + \beta 4SIZEi,t + \beta 5LEVi,t + \beta 6ROAi,t + \beta 7DUMi,t + Ei,t \quad (8)$$

Where: $RETURN$, $TURN$, MB, EPS, $SIZE$, LEV, ROA, DUM denote stock return, turnover ratio, market to book ratio, earnings per share, the size of firm, financial leverage, return on assets, and dummy variable, respectively. E: random error, i: firm, t: year, $\beta(s)$: parameters.

Empirical Results and Discussion

Before starting discussing the results and accepting or rejecting the hypotheses of this study. It is worth to check if the data are ready for analysis and showing the reliability of results. We can do this task by using the diagnostic tests such as the correlation matrix as well as the variance inflation factor (VIF) to show whether there is a perfect correlation among independent variables. Further, Durbin-Watson can be used for checking autocorrelation problem among errors.

Diagnostic tests

In this section, we present the correlation coefficients between the explanatory variables to show the direction and the strength of the relationship between any pair of explanatory variables as well as the explained variable by using correlation matrix. If the correlation coefficient is more than 0.7, then there is an evidence of the existence of the Multicolinearity problem. However, if the correlation coefficient is less than 0.7, then there is no Multicollinearity problem (Asteriou and Hall, 2007**;** Gujarati and Porter, 2010; and Wooldridge, 2013).

Table 1: Correlation matrix

	TURN	MB	EPS	SIZE	LEV	RETURN	ROA
TURN	1.0000						
MB	-0.0243	1.0000					
EPS	-0.1385	-0.0549	1.0000				
SIZE	-0.1989	0.0146	0.6408	1.0000			
LEV	0.0950	0.1152	-0.2504	-0.1584	1.0000		
RETURN	0.1057	-0.0392	0.2158	0.1686	-0.1889	1.0000	
ROA	-0.2364	-0.1572	0.6640	0.4843	-0.3524	0.3093	1.0000

Table (1) presents the correlation coefficients among the variables that used in this study. As can be seen from the above table that the correlation coefficient suggests no Multicollinierity problem, where is no correlation coefficient greater than (0.70). Variance Inflation Factor (VIF) is another way for testing the existence of multicollinearity problem. In other words, detecting whether there is multicollinearity or not. (VIF) measures how much collinearity can increase the variance of an estimated regression coefficient. The cut-off point for (VIF) is 10 (Asteriou and Hall, 2007**;** Gujarati and Porter, 2010**;** and Wooldridge, 2013).

Table 2: Variance inflation factor (VIF)

Variable	VIF	1/VIF
EPS	2.37	0.421417
ROA	2.05	0.487692
SIZE	1.77	0.566414
LEV	1.15	0.868514
TURN	1.10	0.912307
MB	1.04	0.957079
DUMM	1.02	0.976750
Mean VIF	1.50	

As can be seen from Table (2) that there is no existence of the multicollinearity problem among the variables that used in this study where the largest (VIF) is for the earnings per share (EPS) which is equal to (2.37) which is far smaller than 10, while the smallest (VIF) is for dummy variable which is equal to (1.02).

Durbin Watson is a test used for detecting the autocorrelation between errors, this test known as Durbin-Watson ***d*** statistic; it is the ratio of the sum of squared differences in successive residuals to the RSS. This statistic has a very important advantage because it is based on the Ordinary Least Square (OLS) residuals that are computed by most regression packages. The value of coefficient of autocorrelation must lie between 0 and 4. If the calculated value of *d* equals zero then there is an evidence of positive autocorrelation. If it equals 4, there is an evidence of negative autocorrelation and if it is close to 2 the more the evidence that there is no autocorrelation (Asteriou and Hall, 2007**;** Gujarati and Porter, 2010**;** and Wooldridge, 2013).

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.376[a]	.141	.129	.384915136359279	1.966

Table (3) can be used to test the autocorrelations among residuals. As can be seen from the above table, the value of Durbin-Watson of 1.966 is close to two, so there is no dependency between variables indicating that there is no autocorrelation between residuals (Asteriou and Hall, 2007**;** Gujarati and Porter, 2010 **;** and Wooldridge, 2013).

Summary statistics

This section presents the mean, standard deviations, minimum and maximum for all independent variables and the dependent one, which are used in this study.

Table 4: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
TURN	522	.8864388	2.168171	.0000111	30.73072
MB	522	2.318742	21.87136	-14.22584	500.1344
EPS	522	.0761701	.4278465	-.6573912	3.737368
SIZE	522	7.064873	.6571358	5.712114	9.588285
LEV	522	.3491109	.2262654	.0039982	1.794765
RETURN	522	-.0482133	.4125374	-1.825498	1.614395
ROA	522	-.0039548	.1180605	-.9687077	.4329937

Table (4) presents a summary statistics for the variables included in the model, which are stock return, turnover ratio, the ratio of the market value per share to the book value per share, earnings per share, the size of the firm, the return on assets, and financial leverage. Stock return is the dependent variable where its mean is – 0.482133, it has a standard deviation, measures the amount of variation among firms, of 0.4125374 indicating that the industrial firms in Jordan vary regarding their stock returns. The highest value of stock return is 1.614395 and the lowest one is -1.825498. Turnover ratio is the first explanatory variable, ranges from 000, indicating that there is no trading at least for one firm in one year over the period of study, to about 30.7. Whereas its mean is about 0.886 and standard deviation is about 2.168. The ratio of the market value per share to book value per share is the second explanatory variable. It ranges from about -14 to about 500. Whereas its mean is about 2.31 and standard deviation is about 21.87.

The third predictor variable is earnings per share, it ranges from about -0.675, showing that some firms suffering from losses, to about 3.73. Whereas its mean is about 0.076, and standard deviation is about 0.427. The size of the firm is the fourth independent variable, which ranges from about 5.7 to about 9.5 with a mean of 7.06 and a standard deviation of 0.65. Showing a variation among industrial firms listed in Amman Stock Exchange over the period of study (2007-2014) in their sizes where we can find small firms and large firms in the sample of study. Return on assets (ROA), a proxy of profitability, is the fifth independent variable, which ranges from about -0.96, indicating that some firms suffering from losses, to about 0.432 with a mean of -0.003 and a standard deviation is about 0.118. The last explanatory variable is leverage (LEV) which ranges from about 0.003, indicating that some firms don't based highly on debt to finance their operations, to about 1.79 whereas its mean is about 0.349 indicating that 0.349 of the capital structure of the majority of industrial firms in Jordan is based on debt, and the standard deviation is about .226.

It appears from Table (1) that the highest correlation coefficient is between return on assets (ROA) and earnings per share (EPS) which is equal to 0.664, which is strongly positive, followed by the relationship between the size of the firm and earnings per share (EPS) which is equal to 0.6408, which is strong positive. The third highest correlation coefficient is between return on assets (ROA) and the size of the firm, which is equal to 0.484, which is strong positive. The lowest value of correlation reach 0.0146 between the ratio of the market value per share to the book value per share (MB) and the size of the firm which is positive, followed by -0.0243 which is between the ratio of the market value per share to the book value per share (MB) and turnover (TURN) which is negative. Table (3) shows that about 0.14% of the variability in the stock return can be explained by the linear relationship between (turnover, earnings per share, profitability, market to book ratio, leverage, and size) and stock return, while 86% of the variability in stock return caused by external factors.

Hausman test used to test which model (fixed or random) effect is suitable for analysis where failing to reject the null hypothesis indicating that the random effect model is appropriate for analysis, however, rejecting the null hypothesis implying that the fixed effect model is appropriate for analysis.

Table 5: Hausman test

```
. hausman fixed random

                 ---- Coefficients ----
             |      (b)          (B)          (b-B)     sqrt(diag(V_b-V_B))
             |     fixed       random       Difference          S.E.
-------------+------------------------------------------------------------
        TURN |    .0455965     .0384588       .0071377        .0041107
          MB |    .0005707     .0004538       .0001168        .0003084
         EPS |   -.0092055    -.0256536       .0164481        .0305387
        SIZE |    .0334235     .0370784      -.0036548        .0176196
         LEV |   -.1498993    -.1798643        .029965        .0419447
         ROA |    1.104942     1.109483      -.0045419        .0983904
        DUMM |   -.0386491    -.0360216      -.0026275        .0068957
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        5.27
                Prob>chi2 =      0.6267
```

As we can see from the above table, the (p) value of 0.6267 is greater than the significance level of 5%, so the random model is the appropriate one.

Regression Results

Table 6: Regression coefficients

Random-effects GLS regression — Number of obs = 522
Group variable: ID — Number of groups = 69

R-sq: within = 0.1404 — Obs per group: min = 2
between = 0.1112 — avg = 7.6
overall = 0.1411 — max = 8

Wald chi2(7) = 84.46
corr(u_i, X) = 0 (assumed) — Prob > chi2 = 0.0000

RETURN	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TURN	.0384588	.008143	4.72	0.000	.0224989	.0544187
MB	.0004538	.0007881	0.58	0.565	-.0010909	.0019985
EPS	-.0256536	.0607159	-0.42	0.673	-.1446545	.0933473
SIZE	.0370784	.0340976	1.09	0.277	-.0297517	.1039085
LEV	-.1798643	.0799935	-2.25	0.025	-.3366487	-.02308
ROA	1.109483	.2045356	5.42	0.000	.7086011	1.510366
DUMM	-.0360216	.0393174	-0.92	0.360	-.1130822	.0410391
_cons	-.2671367	.2404222	-1.11	0.267	-.7383555	.2040821
sigma_u	0					
sigma_e	.38936953					
rho	0	(fraction of variance due to u_i)				

Table (6) shows the estimation results of the study model. The results indicate a statistically significant negative effect of leverage on stock return with a coefficient of -0.1798. This result supports the signaling theory which states that the increasing of debt ratio in firm's capital structure through borrowing send a positive signal to its investors that the firm borrows money to expand its operations in a profitable projects, which in turn leads to decrease the default risk and decline the return required by investors. Suggesting that 1 unit increase in leverage would have a decrease about 0.179 percent in stock return, other thing remaining constant. This finding is consistent with the results of the study of Acheampong *et al* (2014), Masulis (1983), Uremadu and Efobi (2012), Korteweg (2004) and Adami *et al* (2010). However, inconsistent with the results of the study of Fama and French (1992), Ahmad *et al* (2013), Njoki (2014), Bergrren and Bergqvist (2014) which indicate a statistically significant positive relationship between leverage ratio and stock return.

The results indicate a highly statistically significant positive effect of turnover on stock return with a coefficient 0.03845. Suggesting that a 1 unit increase in turnover ratio (TURN) would have an increase about 0.03845 percent in stock return, other things being constant. For industrial firms listed in the Amman Stock Exchange the higher the turnover ratio, the higher the stock return.

This finding is consistent with the results of the study of Baradarannia and Peat (2013) while inconsistent with the results of the study of Ahmad *et al* (2013) study, which indicates a negative impact of stock liquidity on the stock return. This result could be because the highly liquid stock could make investors to ask a high rate of return to sell their stocks. Table (6) shows the estimation results of the study model. The results indicate a statistically insignificant effect of MB ratio on stock return with a coefficient of 0.0004. This finding is inconsistent with Ahmad *et al* (2013), Hung *et al* (2014) which indicate an important role of MB on stock return.

The results indicate a statistically insignificant effect of the size of the firm on stock return with a coefficient of 0.037. This result is consistent with Njoki (2014). However, this finding is inconsistent with Acheampong *et al* (2014); Ahmad *et al* (2013), Bergrren and Bergqvist (2014); and Hung *et al* (2014). Table (6) shows the estimation results of the study model. The results indicate a statistically insignificant effect of earnings per share on stock return with a coefficient of -0.0256. This result is inconsistent with the results of the study of Chambers *et al* (2013) who find a positive effect of earnings per share on stock return during the period (1994-2002).

The results indicate a highly statistically significant positive effect of return on assets (ROA) on stock return with a coefficient of 1.10. Implying that 1 unit increase in return on assets (ROA) would have an increase about 1.10 percent in stock return. This result is in line with the results of the study of Bergrren and Bergqvist (2014). Investors hold their stock and require a high rate of return if they want to sell them because increasing profitability leads to decline the default risk for potential investors. Dummy variable is insignificant indicating that the stock return for industrial firms listed in the Amman Stock Exchange (ASE) doesn't affected by global financial crises (2007–2008). In other words, there are no differences in terms of stock return for industrial firms listed in the Amman Stock Exchange (ASE) during and after the crises. The reasons behind this result could be that the Jordanian economy is very small comparing with the global economy or could be need more time to be affected.

Summary, Conclusions, and Recommendations

Summary

Determining capital structure has a direct relationship with stock return, so it influences the financial decisions of managers especially in determining the suitable mixture of debt and equity to finance long-term investments. It also has a vital role in minimizing the agency problem that might be arises between managers and shareholders. Capital structure is related to past market and book values (Baker and Wurgler, 2002). Capital structure plays an important role in the performance of the firm, its growth, and the survival of the company (Ahmad *et al*., 2013). This study aims to examine the effect of (capital structure, stock liquidity, market to book ratio, return on assets, firm's size and earnings per share) on stock return for all industrial firms listed in the Amman Stock Exchange (ASE) by using unbalanced panel data. Moreover, this study will contribute to the literature by filling the gap in the previous studies through including the above mentioned variables and to examine the effect of them on stock return in emerging markets (Jordan).

Conclusions

Following are the essential conclusions reached through the research empirical analysis: The empirical results suggest that there is a negative and significant relationship between capital structure and stock return. The results also report a highly significant and positive relationship between both (turnover and return on assets) and stock return. The size of the firm and the market to book ratio have a positive but insignificant relationship with stock return. Finally, there is a negative but insignificant impact of earnings per share (EPS) on stock return.

Recommendations

Based on the results of study, we provide the following recommendations:

1. Industrial firms in Jordan need to use less leverage in their capital structure to make a higher stock return.
2. To increase the stock return, the firm needs to have more liquid assets.
3. Firms' managers need to pursue a policy to expand the profits of their firms to increase the stock return.

Study limitations and future extensions

There are some limitations faced this study. The most important limitation is no enough time to study a longer period and to examine all sectors of industry.

Based on the results of this study, we recommend some avenues for future researches:

1. Future research need to expand the sample of data by expanding the period of study in order to examine the relationship between stock return and other variables which included in this research.
2. Future researches need to examine the impact of more explanatory variables on stock return such as market return, tangibility, taxes and macroeconomics variable like inflation, growth in GDP, and monetary policy.

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