

Impact of Cost of Capital, Financial Leverage, And The Growth Rate of Dividends on Rate of Return on Investment An Empirical Study of Amman Stock Exchange

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Abstract

This study aims to identify the most important determinants of the rate of return on investment in stocks and the application of it on industrial enterprises, contributed to the ASE, which consists of 91 industrial companies during the study period from 1997- 2009. The study used Multiple Linear Regression Analysis, The Model included a number of independent variables which are the cost of capital, Financial leverage, and growth rate of dividends. The results of the study showed that there is apposite effect and statistically significant for growth rate of dividends on rate of return on investment (dependent variable). On the other hand, the study showed no effect with statistical significance for each of the cost of capital and Financial leverage on rate of return on investment (dependent variable). It turns out that the effect of the growth rate of dividends on the rate of return on investment is not compatible with the hypotheses of the study, while that the effect of each of cost of capital and Financial leverage on rate of return on investment in the stock, consistent with the hypothesis of the study.

Keywords: Leverage, Growth Rate, Dividends, Annual Stock Owners Equity Market. Return Per Share. Retained Earnings.

Introduction

Securing funds for an organization is a very difficult task, specially in light of money shortages and variations of its cost, as well as, the degree of risks associated with each type of finance. This task became even more difficult in the face of organizations management in developing countries.

Among decisions concerned money procurement is the identification of funding type, and percentage of funds of each type, since there two types of funding, financing by owner's equity and financing by debts, the result of borrowed financing is what is called the financial leverage, defined as total liabilities divided by total Assets (AL- Agha, 2005 P. 14), but despite the existence of tax savings related to debt, using, where tax burden is deducted from tax base, which lowered the cost of debt financing returning it to a preferred funding over other types. But depending on borrowed funds without its efficient use will expose company owners to risks, causing them to claim higher level of return required.

As for financing by owners' equity, despite the beliefs held by some managers that increasing internal capital is less costly, as a financing source, in other words it is a free finance, therefore they cannot perceive that the investor has other investment opportunities (opportunity cost), along with financial cost that is to be taken into account, in addition to managers demanding that results of their operations to be higher than opportunities offered for stocks funding providers (Owners' equity financing), Managers will face difficulties in finding future investment (funding by part of capital financiers in the case of their inability to meet shareholders demands of returns which ultimately leads to the collapse of these companies stocks in the long – run, because increasing funding by owners equity is a two sides weapon, requires those in charge of firms management patience and study before making any decisions concerning financing through capital equity or not (Kareem, 2006, p2)

Problem of the Study

Amman stock Exchange is an important economic activity through financial papers interactions and investment volume in this market and through monitoring stocks and their dividends movement, a fluctuation in these stocks and dividends in a sharp way, during the period (1997 – 2009) as a result of many variables affecting the determinants of stocks revenues such as the occurrence of the world financial crisis along with wars and events occurred in the middle east.

Previous studies showed a disagreement among researchers regarding the relationship between investment and financing decisions as in the writings of Modigliani and Miller, 1958, while others maintain the existence of an impact of financing costs and financial leverage on investment decision as Neveu 1981; Aivazian et. al, 2003; and Kareem, 2006. Therefore, as a result of vision ambiguity, and disagreement among researchers findings – which might be attributed. to differing factors and environmental variables concerning each study, it is imperative to emphasize on solving these conflicts among studies through building a financing model that takes into account major financial determinants of financing sources both owned and borrowed that must be used by financial decision makers in financing investment according to Jordanian environment, which in turn, requires conducting research studies that might help in facilitating the task of financing decision making and determining the optimal financing structure. Therefore the research problem can be expressed in the following major question.

What effect each of the following variable, capital cost (borrowed and owned), Financial Leverage, and Rate of dividedness on return on investment, have in the stocks at Jordanian Industries Listed in at Amman stock Exchange?

Objectives of the Study

The main objective of this study was to identify factors affecting return on investment as well as the extent to which each factor impacts return on investment in the studied

companies, that is working on attending to these factors, in the future, to maximize benefits and wealth of shareholder, as much as possible, in addition to reaching conclusions that support knowledge in this regard.

Significance of the Study

The study significance stems from being the firsts (as to the researchers knowledge) study addressing this topic in a detailed way, conducted on the Jordanian industrial companies at Amman stock Exchange in addition to that, this research helps in clarifying the effect of capital cost, Financial leverage and growth of returns on investment; where this might contribute in a practical framework for financial decision making in areas of securing and using money in a manner that maximizes business companies market value.

Hypothesis of the Study

The following Null hypothesis were formulated and tested:

Ho₁ : Capital cost (owned and borrowed) has no significant effect on rate of return on investment for industrial companies in Jordan.

Ho₂ : Financial Leverage has no significant effect on rate of return on investment for Jordanian industrial companies.

Ho₃ : Distribution on return on investment growth rate have no significant effect on return on investment for Jordanian industrial companies.

Population of the Study and Sample

Research population consists of all industrial companies Listed at Amman stock exchange totaling for (91) companies during the period (1997 – 2009) While the study sample consisted of (51) such companies whose data represents the study requirements, comprising (61%) of the study population. The study sample was chosen after excluding the following companies:

1. Companies that merged and no sufficient data about them was available during the study period totaling for 50 companies (55%).
2. Companies that did not distribute any profits during the study period totaling for (61) companies (81%).
3. Companies that did not take long – term debts during the study period, totaling for (10) companies (11%). The following table shows the study sample.

Table 1

The Study Sample

Number	Company Name
1.	Paper and cartoon factories.
2.	Arab potash company.
3.	National Chlorine industry
4.	Union Tobacco and cigarettes industry company.
5.	Jordan Cement company.
6	Metal pipes Arabian industry company.
7.	ARAL (Arab aluminum industry company
8.	Dar Al Dawa for investment and development.
9.	Jordan Ceramics factories.
10.	Arab center for pharmaceuticals.
11.	International Tobacco and cigarettes.
12..	Modern Jordan Cables
13.	Al – Zei for clothes industries.
14.	Middle east complex for engineering and electronic industries.
15.	Jordan Tanning Company

Research Methodology

This study employed both descriptive and analytical approaches using two techniques: the first was using or relying on locally and internationally available literature either as research studies related to the topic or using the web to cover the theoretical part of the study, as well as annual reports, of the studied companies, issued by Amman stock Exchange, in addition to annual and statistical bulletins issued monthly by Jordan Central Bank to cover the empirical part of the study. The second technique was analyzing of data collected about the study sample for (13) years, from 1997 – 2009), therefore Multiple linear Regression Analysis model was employed to determine the most important variables governing stock dividends or earning per share. So, in this section, factors affecting this process, including capital cost, financial Leverage, and distributions growth rate, which can be formulated in the following mathematical model.

$$R_j = a + \beta_1 KWACC + \beta_2 FL + \beta_3 g + E$$

Where:

1. **(R_j)** return per share which represents the dependent variable and measures income rate realized by the investor for employing his money in common stocks, and consists of two parts: distributions return which can be calculated through dividing distributed earnings by purchasing price, and the second part is the, rate of return (loss), on capital realized by the investors through the difference between sale and purchase price divided by purchasing price, and can be expressed as (Rajbi and Al- hares, 1998, P 83).

$$R_j = \frac{P_{jt} - P_{jt-1} + D_{jt}}{P_{jt-1}}$$

Where

R_j = Return on investment share j for the period t

P_{jt} = Annual stock_(j) closing price(t) (Selling Price)

P_{jt-1} = Annual stock_(j) closing price for the year (t – 1) (Purchasing price).

D_{jt} = profits distribution on stock (j) for the year (t) (Dividends).

2. Weighted Average Cost of Capital (WACC) defined as (discount rate) minimum return required either as internal financing (financing through stocks or debt financing (External financing) which must exceed the return which can be realized by the investor if he invested his money in other place away from risks (opportunity cost), therefore this cost comprises two types: Owned financing cost (k_e) and borrowed financing cost (k_{dt}). Average costs of both types for every company will be used when calculations are made (Obiedat, 2003 p.42).

$$WACC = k_e \frac{E}{E+D} + \frac{D}{E+D} k_{dt} (1-T)$$

Where:

E = Owners equity Market value.

D= firm debts market value.

T = firm's tax rate.

k_e = cost of owned finance.

k_{dt} = cost of external finance.

* (k_e) = cost of owned finance and is defined as minimum return required by common stock holders where this cost will be calculated, for each of the studied companies, using the following capital assets pricing model (CAPM) (Doherty, 2003, p. 119).

$$k_e = R_f + [E(R_m) - R_f] \times \beta_i$$

Where:

k_e : Cost of internal (owned financing) (required rate of return on owner's equity) represented by

R_f : Risk free rate of return (return on deposits certificates issued by central bank for three months

$E(R_m)$: Average of alternative market portfolio return.

β_i = Beta coefficient for stock (i) (systematic risk)

$[E(R_m) - R_f]$: Market risk premium (risk compensation)

k_{dt} : = borrowed finance cost: defined as average return that should be realized on debt financed investment (Actual interest rate) and was calculated by the following equation (Obiedate, 2008, p.41).

$$k_{dt} = k_d \times (1 - T)$$

Where:

k_{dt} : Borrowed finance cost (debt offer tax).

k_d : debt cost before tax.

T = Tax rate.

This cost was calculated for each of the sample companies through getting banks interest costs dividing them by debts and long – term accounts receivable, which are usually declared in the firm's annual report at Amman stock exchange. While for companies for which no financial data was available for one of the years, average interest rates on debts listed in the annual reports and monthly reports related to central bank, were used. Tax rate for each firm and for each year was calculated through one of the following ways:

$$\frac{\text{Net profit before tax} - \text{Net profit after tax}}{\text{Net tax}}$$

$$* \text{ Tax rate} = \frac{\text{Net profit before tax}}{\text{Net profit before tax}}$$

$$** \text{ Tax rate} = \frac{\text{Annual Income Tax}}{\text{Net profit before tax}}$$

3. Financial Leverage (FL): calculated by dividing total liabilities by total Assets, and it reflects the degree to which debts are used by industrial companies in financing their investments, since overusing or over. Emphasizing on debts in finance will increase the firms financial leverage. Which in turn affects stock prices in the stock market, and in general creditors prefer low debt rate percentage to provide some kind of protection, in addition, high debt percentage makes the company face difficulty in future borrowing (Abdullah, 1995, p. 185).

4. Distributions growth rate (g), defined as fixed and expected growth of profit distributed per share (common stock) and reflects the extent of progress and expansion of firm. This rate was calculated according to the following equation (Al. Fadel and Noor, 2003, p. 185).

Fixed g = RoA X Retained earnings (I).

Retained earnings (b) = 1- distribution percentage

$$\text{Distribution percentage} = \frac{\text{Distributed profit per share}}{\text{Profit per share}}$$

$$\text{RoA} = \frac{\text{Net profit}}{\text{Total Assets}}$$

Significant Previous Studies

Return on investment in share, was the subject of interest of scholars and researchers in areas of financial management, therefore several studies addressing this topic were conducted, especially in the foreign literature. Researches reviewed many previous studies related to the topic in an attempt to enhance the study theoretical background and models used in these studies and to compare their results with the current study results.

Modigliani and Miller study (1958), which was the first study addressing the relationship between financial leverage (capital structure) with both capital cost and firm value. Its aim was to prove that market value of the firm is independent from its capital structure, regardless of fluctuations in financial leverage. The study was conducted in (1958) on a number of American firms and found an evidence that negated the effect of capital structure on capital cost, and as such, it doesn't affect the firm value, as well as, investment decisions but not financing decision, that affect the firm values.

A study by Miles and Ezzell, (1986) which sought at building a finance theory through the empirical linking between firm's market value, measured by return on investment and financial leverage value. Through administration on an American sample of companies, the

* This equation was used by the two researchers for the period 1997 – 1999.

**This equation was used by the two researchers for the period 2000 – 2009.

study revealed a high effect of the relationship between capital cost and financial leverage in determining both firms' actual value and level of systematic and nonsystematic risks.

A study of Kane et. Al, (1989) which sought to find out the effect of capital cost and financial leverage on the return on investment. The study revealed advantages that firms might derive when increasing its reliance on debt financing, since the return on investment will increase, but, this will lead, at the same time, to increasing the probability of a firm facing bankruptcy and liquidation risks.

Smith et al, (1990) conducted a study to find out the effect of capital cost and financial leverage on the return on investment, on a (59) American industrial companies. The study revealed that both capital cost and financial leverage impacted return on investment, and suggested the use of owned and borrowed financing cost in minimizing inflation effect to achieve the required balance between capital cost and financial Leverage.

Bitro and John, (2001) study was aimed at finding out the effect of growth opportunities on debts risks and cost which will lead to finding a new debt cost and that utilizing the growth opportunities well lead to overcoming investment problem partially. The study also indicated that high risk debts might discourage investment, because it was found that the relationship in some companies was negative, meaning that firms have avoided the high risks despite the probable high returns.

Braunstein, (2002) conducted a study addressing capital cost in communication and facilities sector at California, and studied the relationship between cost of capital invested in local rural areas communication and expected return. The study revealed that return on owner's equity increased during the study period from 11.8% to 13.4% and return on investment for the same period increased from 6.84% to 9.11%. Thus the study suggested that required return on invested capital must range between 10% and 12.25% regarding such investments.

Al – aghbari, (2002) conducted a study aiming at examining the effect of financial leverage on financial performance (firm's value and short term liquidity) by administrating on (10) companies operating in Yemeni industrial and foods domains. Main findings of the study were (1) Financial Leverage has substantial effect on firms value for all firms. (2) financial leverage has a substantial effect on short – term liquidity for all firms.

Aivazian, et al,(2003) study sought to measure the effect of financial leverage on investment decisions, by investigating (863) Canadian companies for the period 1982- 1999. Financial leverage was measured based on: (1) Book value of total liabilities divided by book value of total assets; (2) Book value of long-term debts divided by total assets. The study showed that financial leverage has a negative effect on return on investment, where this negativity was more evident in the companies with low growth compared with those with high growth.

Al – shimmiri, (2003) study aimed at identifying factor affecting datedness level for Kuwaiti industrial companies, as companies operating in tax free economy. The study showed a relationship between firms performance and datedness level, as well as a direct relationship between internal investor ownership and financing decisions for these industries, furthermore financing decision has a close correlation with firms size and profitability.

Al – Agha, (2005) conducted a study aiming at identifying the effect of financial leverage and capital cost on return on investment for companies operating in Palestine, on a sample of (15) industrial companies for the period 1999-2003. Main results of the study were: (1) An inverse relationship between borrowed finance cost and return on investment; 2. An inverse relationship between type of financing employed (owned and borrowed) and their cost. (3) No relationship between financial leverage and return on investment; (4) No relationship between financing total cost and return on investment.

Kareem, (2006) conducted a study examining and assessing the relationship between capital cost (using weighted average capital cost and market returns for shares as well as identifying type and nature of the relationship between financing cost and market returns for shares in addition to and share market return, on a sample of (37) industrial companies for the period 1994 – 2004. The study revealed a significant relationship between weighted average capital cost and stocks market returns, where external (debt) financing has more affection stocks market return compared to internal (owned) financing.

A study of Salah, (2007) the purpose of this study was verifying the capacity of profit price percentage, distribution to price percentage, firms assets growth rate, retained earnings to total assets, in explaining stocks return for the period 1980 – 2000. Te study revealed that ranking companies according to their assets growth rate in the previous year was not superior to ranking them according to both profit / price percentage and distribution to price ratio In general the study revealed that distribution to price ratio was superior to the other strategies.

Abdel Ghani, (2008) study attempted to find out the effect of financing decision on institutions' financial performance and tax and financing cost effects. The study showed that positive financial performance is contingent on the institution ability in forming the optimal mix of financial structure, the extent to which available financing resources are used in a pace equal to its economic assets turnover to assure forming a wealth, and increasing growth rate, which finally results in maximizing the corporation value meanwhile financial structure is considered as basic element in assessing and measuring corporate financial performance as it is difficult to talk about an economic corporation without financial structure.

Statistical analysis and discussion:

Table (2) shows the results of statistical analysis for data concerning factors affecting on return on investment in stocks for the period 1997 – 2009. Using SPSS package. Statistics showed in the table are as follows: β Regression coefficient, SE standard errors, "t" an f are the calculated values, Sig is the significance level, and (D-w) is Dairban wattson test.

Table 2

Results Of Regression Analysis For The Factors Affecting Return On Investment In Stocks

R_j	β	SE	t	Sig *
WACC	- 0.071	2.429	- 0.325	0.75
FL	0.394	.3290	1. 820	0. 09
G	0.501	1.210	2.188	0. 05
F	4.579			
D-W	2.02			

**R Square = 0. 555

* significant at 0.05

The above table shows the following:

Hypothesis (1): Capital cost (owned and borrowed financing) has no statistically significant effect on return on investment in publicly held industrial companies.

Date analysis proves the correctness or validity of this hypothesis, where no statistically significant effect of at ($\alpha \leq 0.05$) of capital cost an the returns on investment in stocks, and this is consistent with Modigliani Muller, 1958; Al – agha (2005) studies, but completely inconsistent with Smith et al. (1990), Braunstin (2000) and kareem (2006) studies which showed a statistically significant effect of capital cost on return on investment in stocks. This might emphasize the continuous debate and knowledge disagreement in financial management literature about capital cost and return on investment in stocks, which can be

attributed to each study environment, in other words there might be other factors which affect return on investment in stocks. in one environment more than in an other. As for our region these factors might include the political and financial instability.

Hypothesis (2): financial Leverage has no statistically Significant effect on return on investment in stocks of publicly held industrial companies.

This hypothesis, after testing, was proven correct which means that financing by borrowing has no observed effect on return on investment in stocks, but this finding is not consistent with the financial logic, but this finding might be attributed to the fact that most companies capital structure is mostly internally financed where financial analysis showed that this type of finance reached about (90%) in its capital structure, which finally leads to these companies not profiting from tax savings. And these findings are consistent with Modigliani & Miller, 1958 study and al-agma (2005) study.

Hypothesis (3): Distributions growth rate has no significant effect on return on investment in stocks of publicly held industrial companies.

Data analysis led to the rejection of this hypothesis, meaning that distributions growth rate has a positive and effective effect on return on investment in stocks, and this might be explained by the fact that when companies retained some of its earnings, this will have a positive effect in the stocks price, because retaining some profits will result in companies expansion and extension of its investments a long with future profits increase, resulting in a decrease in capital cost, maximizing, therefore company's owners wealth since it will go hand by hand with national economy growth rate and advancement and expansion of their investments. And this explanation is consistent with Obeidat (2008) study which states that firms with positive growth rates will witness an increase of its stocks at Amman stock exchange, more than those with zero growth rate.

Conclusions and Recommendations

This study sought to find out most important factors affecting return on investment in Jordanian publicly held industrial companies at Amman stock exchange for the period (1997-2009), using multiple linear regression analysis. And the study showed a positive statistically significant effect for distributions growth rate an return on investment rate (dependent variable, on the other hand the study showed no statistically significant effect for each of capital cost and financial leverage on return on investment in stocks (dependent variable). The study also showed that the effects of distribution growth on the return on investment is not consistent with the study hypothesis, while the finding related to capital cost and financial leverage effect on return on investment in stocks was consistent with the study hypothesis furthermore the study revealed that independent variable combined have a medium effect on the dependent variable and changes occurred in it where independent variables explained about 56% of total variance.

Results obtained from this study is an actual reflection of the empirical status of companies under study, also the study results indicated the need for conducting future researches to include other sectors as well as increasing the retained earnings in these companies for its positive effect and strong on return on investment in stocks, because, companies in light of retaining some of their profits will expand and increase their investments. Finally the study suggest the increased use of financial leverage (reading the optimal capital structure for the tax saving advantage leading ultimately to maximizing return on investment in stock.

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